METALAIRE™

EXPERIENCE AIRE SUPERIORITY®

AIR TERMINAL UNITS

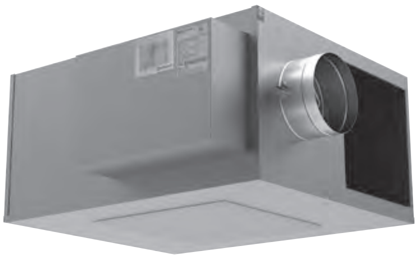
Product Catalog

METALAIRE™

SD

SINGLE DUCT AIR TERMINALS

- TH – Single Duct Unit
- TL – Low Profile Single Duct Unit
- BP – By-Pass Unit



FP

FAN POWERED TERMINALS

- FCI – Series Fan Powered Unit
- FCL – Low Profile Series Fan Powered Unit
- FCQ – Ultra Quiet Series Fan Powered Unit
- FVI – Parallel Fan Powered Unit
- FVL – Low Profile Parallel Fan Powered Unit

DD

DUAL DUCT AIR TERMINALS

- DD – Dual Duct Unit
- DH – High Performance Dual Duct Unit

RF

RETROFIT AIR TERMINALS

- SR – Square Retrofit Unit
- RT – Round Retrofit Unit
- RA – Retrofit Unit

ACC

OPTIONS, ACCESSORIES AND REFERENCE MATERIAL

METALAIRE™

SINGLE DUCT AIR TERMINAL UNITS

TH-500
SINGLE DUCT BOX
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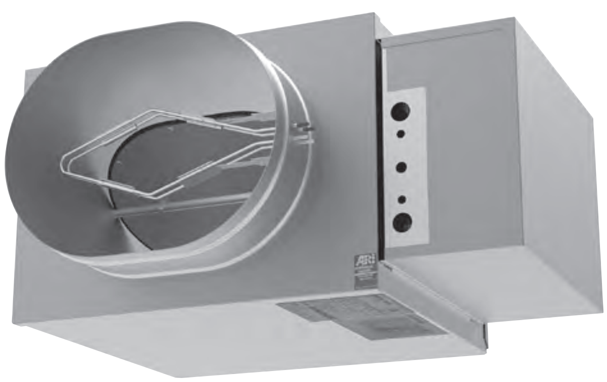

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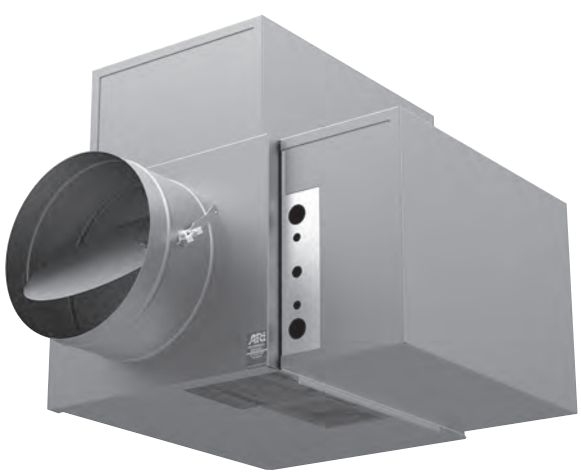

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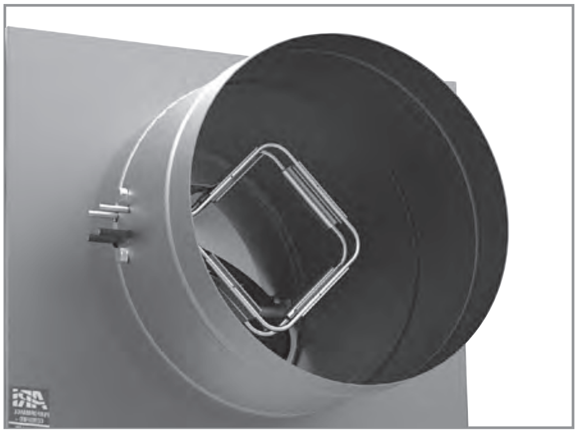
METALAIRE™



SINGLE DUCT AIR TERMINAL UNITS

The METALAIRE single duct terminal units are at the core of today's variable air volume (VAV) systems. The staple of today's HVAC system designer, VAV systems lower operating costs by using less central fan energy and less refrigeration energy. VAV systems also have lower first costs by allowing the designer to take advantage of the building's diversity.

The primary function of the METALAIRE single duct terminal units is to regulate conditioned air flow into an occupied zone in response to a control signal. METALAIRE single duct terminal units are available with a wide range of control options to suit any application. These include pneumatic, analog electronic, electric, and direct digital control (DDC). METALAIRE single duct terminal units can be applied in both pressure-dependent and pressure-independent applications in duct systems with static pressures up to 3" w.g.

With the demands of today's building designs to reduce energy in smaller mechanical spaces, the METALAIRE single duct terminal unit is the perfect choice.

MODEL NUMBER LEGEND

EXAMPLE: **TH 510 105A**

XXXXX XXX -XXXX

Model
TH
TL
THECO

Generation
5, 6, 7

Inlet Size
(04, 05, 06, etc.)

Terminal Type:
1 TH, TL

Control Sequence:
00B No Controls
05 DDC
6 Analog
1 Pneumatic

A 120/24 Transformer Voltage
C 277/24 Transformer Voltage
F 208/24 Transformer Voltage
N No Transformer
E Electric Heat

METALAIRE™

VAV Terminals
AHRI Standard 880

TH-500
SINGLE DUCT AIR TERMINAL UNIT

SPECIFIABLE FEATURES

- 22 ga. galvanized steel casing, mechanically sealed, low leakage construction.
- Damper construction of double layer 18 gauge equivalent with mechanically fastened integral blade seal.
- Butt welded round primary inlet duct to minimize leakage.
- Metal inlet flow sensor with extra balancing taps.

INDEX OF SECTIONS

METALAIRE™

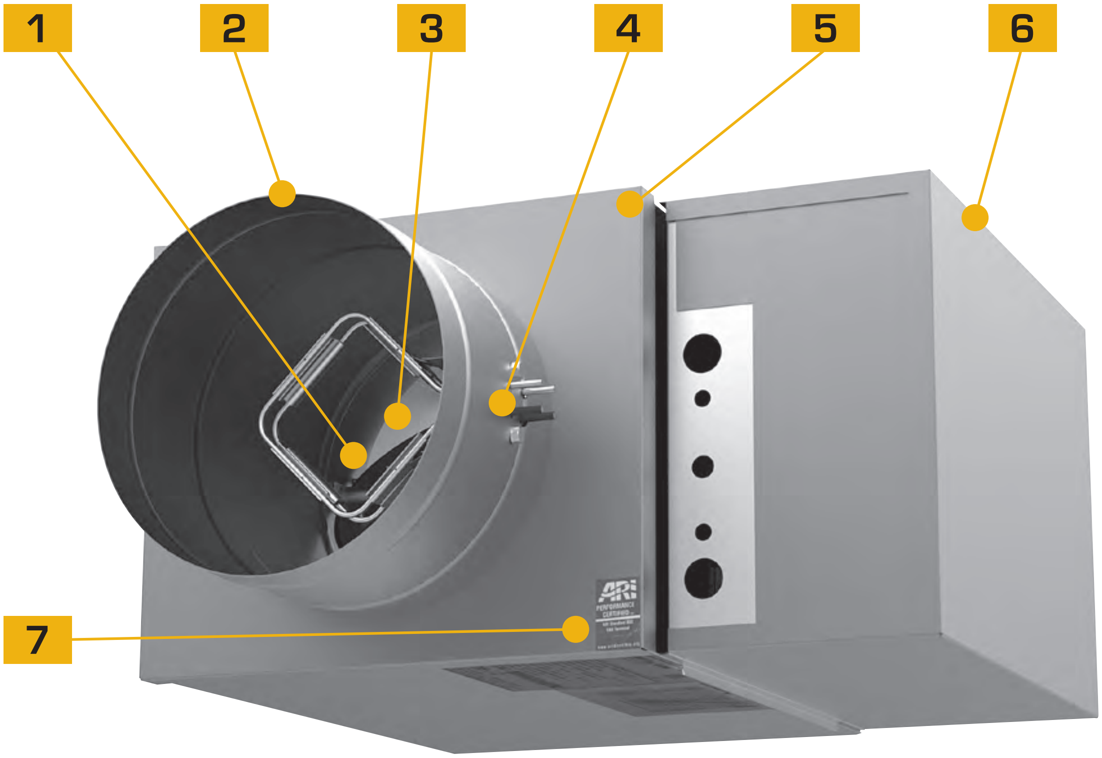
TH-500
SINGLE DUCT AIR TERMINAL UNIT

The METALAIRE TH-500 is the simplest and most widely used VAV terminal unit. Its basic components are an insulated sheet metal box, round inlet damper, flow measuring device and rectangular outlet. The unit is served by a central air handler and modulates the amount of 'primary' cooling air to the space between a minimum set point and the design airflow.

When necessary, the METALAIRE TH-500 can be provided with a heating coil on the discharge of the unit to provide for reheat.

STANDARD FEATURES

- TH-500 available in 10 unit sizes and TH-ECO-500 available in 8 sizes to handle 80-8000 CFM.
- Variable or constant volume applications.
- 22 ga. galvanized steel casing, mechanically sealed for low leakage.
- Damper construction of double layer, 18 gauge equivalent, galvanized steel with sandwiched flexible gasket, mechanically fastened to provide tight seal (<1% at 3.0" wg static pressure)
- Optional factory calibrated controls to meet all control strategies.
- Multi-quadrant, averaging flow sensor for highly accurate (+/-5%) flow readings with varying inlet duct configurations after certified balancer has balanced terminal.
- Externally accessible steel balancing taps.
- External control cabinet with offset mounting plate is standard.
- 3-beaded inlet connection tube for added rigidity and secure flex duct connections.
- 1/2" thick, dual density (1.5lb/ft^3 min.) fiberglass insulation with edges coated. Meets NFPA 90A and UL 181.
- Rectangular discharge with slip and drive cleat duct connection.
- Independently tested and certified laboratory performance data.
- Full range of options and accessories available (heating coils, disconnects, attenuators, etc.).
- Full range of liners/insulation available.



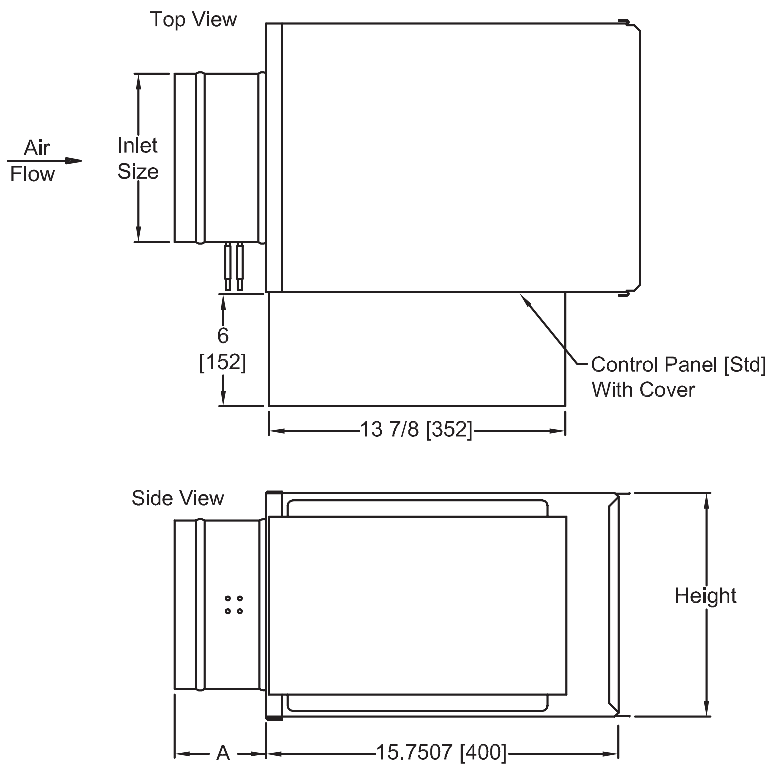
TH-500
SINGLE DUCT AIR TERMINAL UNIT

FEATURES AND BENEFITS

1. Damper rotates in a self-lubricating, long life, low friction thermoplastic bearing.
2. Continuous welded primary inlet duct to minimize leakage with three stiffening beads for added rigidity.
3. Damper construction of double layer 18 gauge equivalent with mechanically fastened integral blade seal.
4. All metal constructed inlet flow sensor with extra balancing taps.
5. Galvanized steel casing, mechanically sealed for low leakage construction.
6. NEMA 1 rated control enclosure with stand-off to prevent penetration of casing standard on all terminal units.
7. All TH-500 terminal units are AHRI certified and shipped with the AHRI seal.

METALAIRE™

TH-500
SINGLE DUCT AIR TERMINAL UNIT, COOLING ONLY

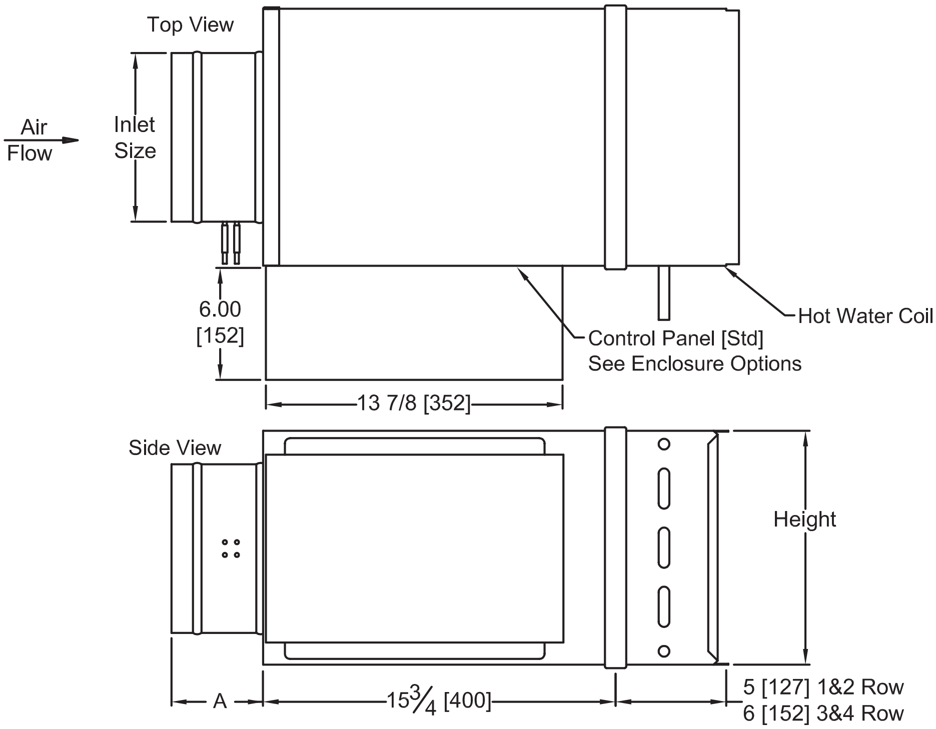


The standard location for control panel is Right Hand on Model TH.
Looking in the direction of airflow, the control panel is on the right.

The control panel will overhang the top and bottom of model TH506 1" (25.4 mm).
Control Panel Mounting Surface width by height is 13 7/8" x 9 3/4".

	Inlet Size		A		Width		Height		Unit wt.	
Model Number	in.	mm.	in.	mm.	in.	mm.	in.	mm.	lb.	kg.
TH504	3 7/8	99	10	254	12	305	8	203	12	5
TH505	4 7/8	124	10	254	12	305	8	203	12	5
TH506	5 7/8	149	5	127	12	305	8	203	12	5
TH508	7 7/8	200	5	127	12	305	10	254	15	7
TH510	9 7/8	251	5	127	14	356	12 1/2	318	18	8
TH512	11 7/8	302	5	127	16	406	15	381	22	10
TH514	13 7/8	353	5	127	20	508	17 1/2	445	24	11
TH516	15 7/8	403	5	127	24	610	18	457	29	13
TH520	19 7/8 x 15 7/8	505 x 403	3 1/2	89	30	762	20	508	47	21
TH524	23 7/8 x 15 7/8	607 x 403	3 1/2	89	38	965	20	508	58	26

TH-500
SINGLE DUCT AIR TERMINAL UNIT WITH HOT WATER COIL



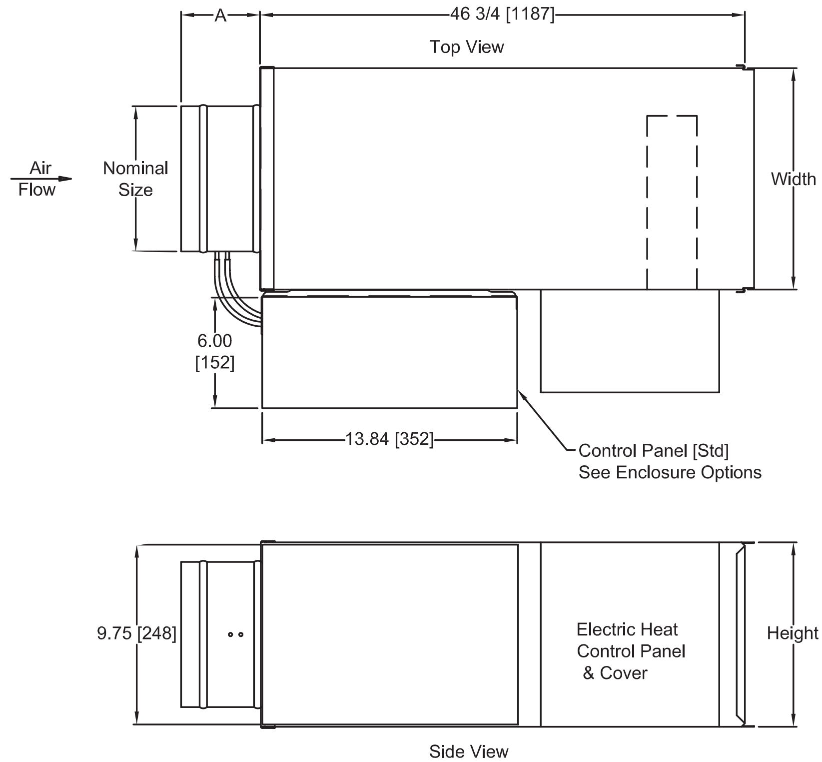
The standard location for control panel is Right Hand on Model TH.
Looking in the direction of airflow, the control panel is on the right.

The control panel will overhang the top and bottom of model TH506 1" (25.4 mm)
Control Panel Mounting Surface width by height is 13 7/8" x 9 3/4".

Model Number	Inlet Size		A		Width		Height		Unit wt.							
									1 Row		2 Row		3 Row		4 Row	
	in.	mm.	in	mm.	in.	mm.	in.	mm.	lb	kg	lb	kg.	lb.	kg.	lb.	kg.
TH504	3 7/8	99	10	254	12	305	8	203	17	7.7	18	8	21	9.5	23	10.4
TH505	4 7/8	124	10	254	12	305	8	203	17	7.7	18	8	21	9.5	23	10.4
TH506	5 7/8	149	5	127	12	305	8	203	17	7.7	18	8	21	9.5	23	10.4
TH508	7 7/8	200	5	127	12	305	10	254	20	9	22	10	26	11.8	28	13
TH510	9 7/8	251	5	127	14	356	12 1/2	318	24	11	27	12	32	14.5	38	17
TH512	11 7/8	302	5	127	16	406	15	381	31	14	34	15.4	40	18	43	19.5
TH514	13 7/8	353	5	127	20	508	17 1/2	445	34	15.4	39	17.7	48	21.8	53	24
TH516	15 7/8	403	5	127	24	610	18	457	42	19	48	21.8	54	24.5	59	26.8
TH520	19 7/8 x 15 7/8	505 x 403	5	127	30	762	20	508	64	29	72	32.7	78	35	86	39
TH524	23 7/8 x 15 7/8	607 x 403	5	127	38	965	20	508	79	36	89	40	99	45	109	49

METALAIRE™

TH-500
SINGLE DUCT AIR TERMINAL UNIT WITH ELECTRIC HEAT



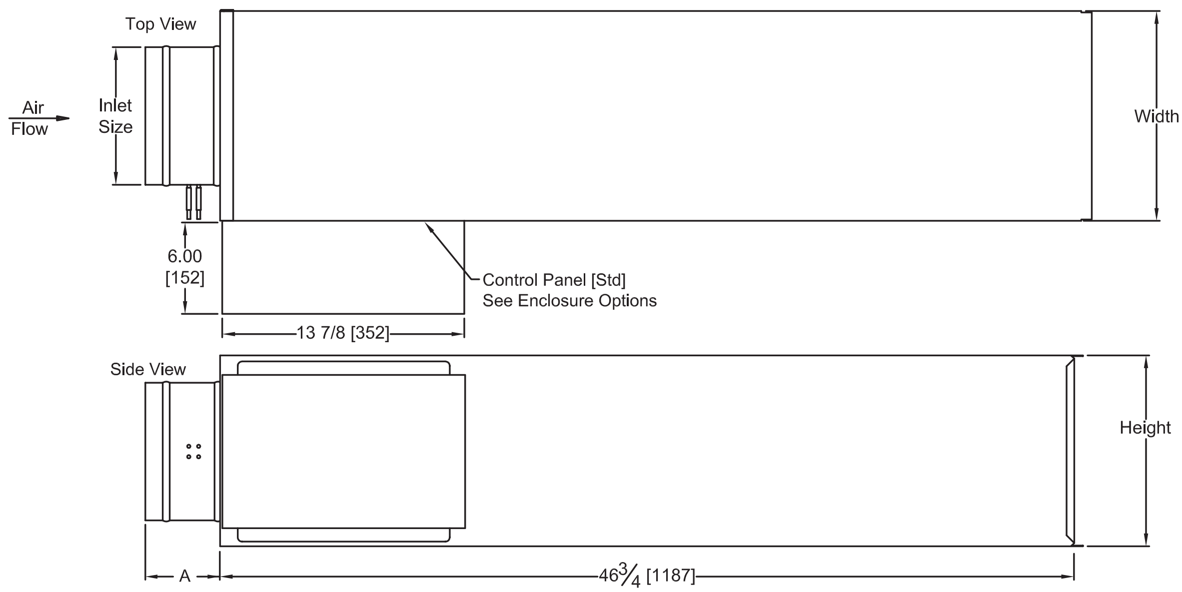
The standard location for control panel is Right Hand on Model TH.
Looking in the primary inlet, the control panel is on the right.

The control panel will overhang the top and bottom of model TH506 1" (25.4 mm).
Control Panel Mounting Surface width by height is 13 7/8" x 9 3/4".

Model Number	Inlet Size		A		Width		Height		Unit wt.	
	in.	mm.	in.	mm.	in.	mm.	in.	mm.	lb.	kg.
TH504	4	102	8	203	12	305	8	203	38	17
TH505	5	127	7	178	12	305	8	203	38	17
TH506	6	152	4	102	12	305	8	203	38	17
TH508	8	203	4	102	12	305	10	254	43	20
TH510	10	254	4	102	14	356	12 1/2	318	50	23
TH512	12	305	5	127	16	406	15	381	59	27
TH514	14	356	5	127	20	508	17 1/2	445	67	30
TH516	16	406	5	127	24	610	18	457	77	35
TH520	20 x 16	508 x 406	5	127	30	762	20	508	103	47
TH524	24 x 16	610 x 406	5	127	38	965	20	508	122	55

METALAIRE™

TH-500
SINGLE DUCT AIR TERMINAL UNIT WITH INTEGRAL ATTENUATOR



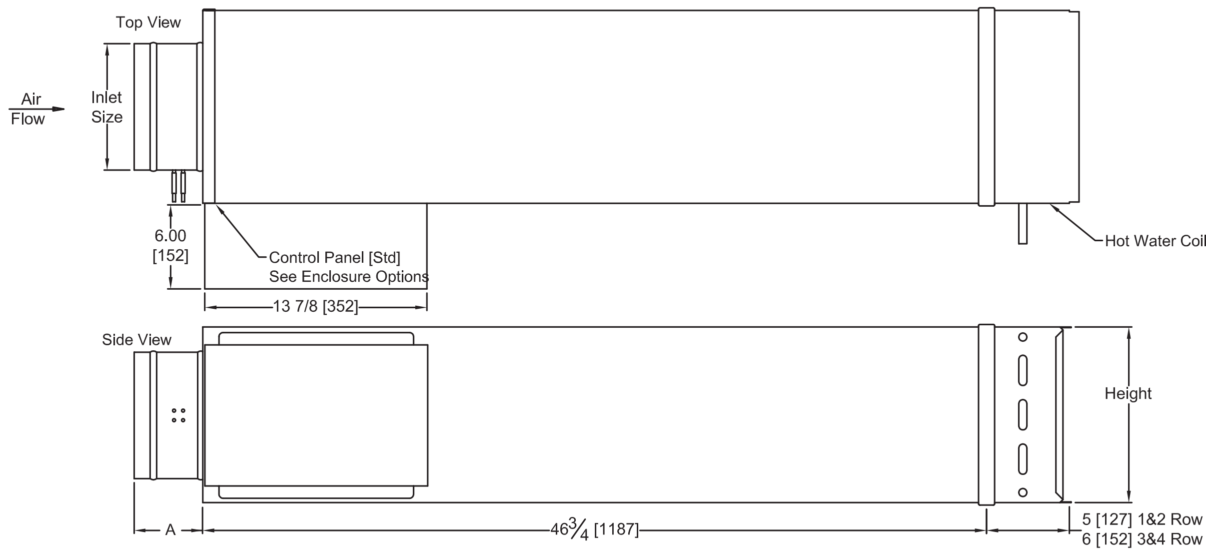
The standard location for control panel is Right Hand on Model TH.
Looking in the direction of airflow, the control panel is on the right.

The control panel will overhang the top and bottom of model TH506 1" (25.4 mm).
Control Panel Mounting Surface width by height is 13 7/8" x 9 3/4".

Model Number	Inlet Size		A		Width		Height		Unit wt.	
	in.	mm.	in.	mm.	in.	mm.	in.	mm.	lb.	kg.
TH504	3 7/8	99	8	203	12	305	8	203	12	5
TH505	4 7/8	124	7	178	12	305	8	203	12	5
TH506	5 7/8	149	4	102	12	305	8	203	12	5
TH508	7 7/8	200	4	102	12	305	10	254	15	7
TH510	9 7/8	251	4	102	14	356	12 1/2	318	18	8
TH512	11 7/8	302	5	127	16	406	15	381	22	10
TH514	13 7/8	353	5	127	20	508	17 1/2	445	24	11
TH516	15 7/8	403	5	127	24	610	18	457	29	13
TH520	19 7/8 x 15 7/8	505 x 403	5	127	30	762	20	508	47	21
TH524	23 7/8 x 15 7/8	607 x 403	5	127	38	965	20	508	58	26

METALAIRE™

TH-500
SINGLE DUCT AIR TERMINAL UNIT WITH INTEGRAL ATTENUATOR AND HOT WATER COIL



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Looking in the direction of airflow, the control panel is on the right.

The control panel will overhang the top and bottom of model TH506 1" (25.4 mm).
Control Panel Mounting Surface width by height is 13 7/8" x 9 3/4".

	Inlet Size		A		Width		Height		Unit wt.	
Model Number	in.	mm.	in.	mm.	in.	mm.	in.	mm.	lb.	kg.
TH504	3 7/8	99	8	203	12	305	8	203	12	5
TH505	4 7/8	124	7	178	12	305	8	203	12	5
TH506	5 7/8	149	4	102	12	305	8	203	12	5
TH508	7 7/8	200	4	102	12	305	10	254	15	7
TH510	9 7/8	251	4	102	14	356	12 1/2	318	18	8
TH512	11 7/8	302	5	127	16	406	15	381	22	10
TH514	13 7/8	353	5	127	20	508	17 1/2	445	24	11
TH516	15 7/8	403	5	127	24	610	18	457	29	13
TH520	19 7/8 x 15 7/8	505 x 403	5	127	30	762	20	508	47	21
TH524	23 7/8 x 15 7/8	607 x 403	5	127	38	965	20	508	58	26

TH-500
AHRI CERTIFIED RATING POINTS

AHRI Certified Radiated Sound Power, ΔPs = 1.5 in.wg

Unit Size	Min Ps	CFM	Octave Band					
			2	3	4	5	6	7
504	0.04	200	52	44	38	32	26	22
505	0.04	200	52	44	38	32	26	22
506	0.08	400	58	53	49	44	41	36
508	0.01	700	62	57	52	44	39	34
510	0.02	1100	58	58	52	44	38	32
512	0.01	1600	61	56	54	45	41	40
514	0.01	2100	62	57	55	45	40	34
516	0.03	2800	64	62	56	50	47	44
520	0.06	3000	69	67	65	61	55	48
524	0.04	5300	76	71	71	65	60	54

AHRI Certified Discharge Sound Power, ΔPs = 1.5 in.wg.

Unit Size	Min Ps	Fan CFM	Octave Band					
			2	3	4	5	6	7
504	0.04	200	65	60	55	51	46	39
505	0.04	200	65	60	55	51	46	39
506	0.08	400	67	64	60	53	49	49
508	0.01	700	75	71	62	58	55	53
510	0.02	1100	73	70	65	60	56	53
512	0.01	1600	68	67	62	60	59	57
514	0.01	2100	66	62	61	63	63	60
516	0.03	2800	74	69	66	64	64	60
520	0.06	3000	74	71	71	71	67	63
524	0.04	5300	86	85	81	77	74	71

CERTIFICATIONS AND STANDARDS

- Units tested per ANSI/ASHRAE Standard 130.
- All model sizes certified in accordance with AHRI 880 certification program.
- ETL listed to meet requirements of UL 1995 and CSA 236.
- Dual-density fiberglass insulation meets UL 181 and NFPA 90A requirements.
- Insulation meets ASHRAE 62.1 requirements for resistance to mold growth and erosion.

AHRI CERTIFIED™
www.ahridirectory.org
VAV Terminals
AHRI Standard 880

METALAIRE™

TH-500
RADIATED SOUND POWER at ΔPS = 0.50, 0.75 and 1.0 in.wg.

Unit Size	CFM (L/s)		Min Ps in.wg. (Pa)		ΔPs = 0.50 in.wg. (125 Pa)							ΔPs = 0.75 in.wg. (187 Pa)							ΔPs = 1.0 in.wg. (500 Pa)						
					Octave Band Sound Power, Lw, dB							Octave Band Sound Power, Lw, dB							Octave Band Sound Power, Lw, dB						
					2	3	4	5	6	7	NC	2	3	4	5	6	7	NC	2	3	4	5	6	7	NC
504/505 4 & 5 inch	50	(24)	0.005	(1.2)	41	32	19	19	15	7	<15	42	33	20	20	16	8	<15	43	34	21	21	17	9	<15
	100	(47)	0.015	(3.8)	43	34	23	22	19	13	<15	44	35	24	23	20	14	<15	45	36	25	24	21	15	<15
	150	(71)	0.027	(6.7)	46	38	29	26	21	16	<15	47	39	30	27	22	17	<15	48	40	31	28	23	18	<15
	200	(94)	0.038	(9.5)	49	41	35	29	23	18	<15	50	42	36	30	24	19	<15	51	43	37	31	25	20	<15
	250	(118)	0.059	(14.8)	51	43	39	32	28	26	<15	52	44	40	33	29	27	<15	53	45	41	34	30	28	<15
	300	(142)	0.071	(17.6)	53	46	43	35	32	30	17	54	47	44	36	33	31	18	55	48	45	37	34	32	19
506 6 inch	100	(47)	0.005	(1.2)	43	34	23	22	19	13	<15	44	35	24	23	20	14	<15	45	36	25	24	21	15	<15
	200	(94)	0.020	(5.0)	49	41	35	29	23	18	<15	50	42	36	30	24	19	<15	51	43	37	31	25	20	<15
	300	(142)	0.045	(11.2)	53	46	43	35	32	30	17	54	47	44	36	33	31	18	55	48	45	37	34	32	19
	400	(189)	0.080	(19.9)	55	50	46	41	38	32	20	56	51	47	42	39	33	21	57	52	48	43	40	34	22
	500	(236)	0.136	(33.9)	57	53	48	44	40	34	22	58	54	49	45	41	35	23	59	55	50	46	42	36	24
	600	(283)	0.180	(44.8)	58	55	50	46	42	36	24	59	56	51	47	43	37	25	60	57	52	48	44	38	26
508 8 inch	200	(94)	0.000	(0.0)	48	36	25	20	17	16	<15	50	39	30	26	20	19	<15	51	41	35	30	23	20	<15
	300	(142)	0.001	(0.2)	51	40	33	25	20	19	<15	53	43	37	31	24	21	<15	55	46	42	36	28	24	16
	600	(283)	0.003	(0.7)	54	44	37	33	25	20	<15	57	48	40	35	28	23	18	59	52	43	38	31	27	21
	700	(330)	0.005	(1.2)	56	46	40	35	27	21	17	58	50	42	37	30	25	20	61	53	45	40	33	28	23
	1000	(472)	0.008	(2.0)	60	52	46	42	34	27	22	62	54	48	44	36	30	25	65	57	50	45	39	33	29
	1100	(519)	0.009	(2.2)	61	53	48	44	37	30	23	63	55	50	45	38	32	26	66	58	51	47	40	35	30
510 10 inch	300	(142)	0.002	(0.5)	43	38	29	20	18	18	<15	45	40	32	23	19	19	<15	47	42	36	26	21	20	<15
	600	(283)	0.009	(2.2)	47	46	37	30	26	22	<15	50	48	42	33	28	24	15	52	51	46	36	31	25	20
	800	(378)	0.013	(3.2)	48	48	40	34	28	22	15	50	50	43	36	31	24	18	53	53	47	39	33	26	21
	1000	(472)	0.018	(4.5)	49	49	42	36	29	24	16	51	52	45	38	32	26	20	54	54	48	40	34	28	22
	1100	(519)	0.021	(5.2)	51	50	44	38	30	24	18	53	53	46	40	33	27	21	55	55	49	41	35	29	24
	1400	(661)	0.028	(7.0)	55	55	48	42	34	28	24	58	57	49	43	36	30	26	60	58	50	43	37	31	27
	1700	(802)	0.036	(9.0)	57	57	53	44	38	32	27	60	58	54	45	39	34	29	63	61	55	48	42	36	31
512 12 inch	430	(203)	0.000	(0.1)	46	37	29	22	19	20	<15	49	39	32	25	21	21	<15	51	41	36	28	23	23	<15
	800	(378)	0.001	(0.2)	50	42	35	28	26	29	<15	52	45	40	32	29	31	<15	54	48	45	36	32	32	19
	1450	(684)	0.008	(2.0)	52	47	43	36	31	31	17	55	49	47	39	34	33	21	57	52	50	41	37	36	24
	1600	(755)	0.010	(2.5)	54	48	46	39	33	32	20	56	50	48	40	35	35	22	58	53	51	42	38	37	25
	1950	(920)	0.015	(3.7)	55	51	50	42	37	36	24	57	53	51	43	39	37	25	59	54	52	44	41	39	26
	2200	(1038)	0.022	(5.5)	56	52	51	43	39	37	25	58	53	52	44	40	39	26	61	55	53	45	42	40	27
	2500	(1180)	0.025	(6.2)	57	53	52	44	40	38	26	59	55	53	46	41	41	27	62	58	56	48	44	43	31

1. *Performance data contained within a bold border outline are AHRI certified data.*
2. *Performance data not contained within a bold border outline are application ratings. Application ratings are outside the scope of the Certification Program.*
3. *Performance data is obtained from laboratory testing in accordance with AHRI 880-2011 and ANSI/ASHRAE 130-2008.*
4. *NC values are calculated using attenuation credits outlined in Appendix E of AHRI 885-2008.*
5. ***Discharge Sound power levels shown with End Reflection Corrections Included** in dB (ref: 10^{-12} watts).*
6. *Minimum Ps is the static pressure drop across the air terminal unit while the inlet damper is in the wide-open position at a given airflow rate.*

TH-500
RADIATED SOUND POWER at ΔPS = 0.50, 0.75 and 1.0 in.wg. continued

Unit Size	CFM (L/s)		Min Ps in.wg. (Pa)		ΔPs = 0.50 in.wg. (125 Pa) Octave Band Sound Power, Lw, dB							ΔPs = 0.75 in.wg. (187 Pa) Octave Band Sound Power, Lw, dB							ΔPs = 1.0 in.wg. (500 Pa) Octave Band Sound Power, Lw, dB						
					2	3	4	5	6	7	NC	2	3	4	5	6	7	NC	2	3	4	5	6	7	NC
514 14 inch	550	(260)	0.000	(0.0)	52	38	36	28	25	20	<15	53	39	37	29	26	21	<15	54	40	38	30	27	22	<15
	925	(437)	0.001	(0.2)	53	41	39	31	27	22	<15	54	42	40	32	28	23	<15	55	43	41	33	29	24	16
	1600	(755)	0.003	(0.7)	56	46	44	35	31	26	18	57	47	45	36	32	27	19	58	48	46	37	33	28	20
	1900	(897)	0.004	(1.0)	57	50	49	39	33	28	23	58	51	50	40	34	29	24	59	52	51	41	35	30	25
	2100	(991)	0.005	(1.2)	59	54	51	42	36	31	25	60	55	52	43	37	32	26	61	56	53	44	38	33	27
	2600	(1227)	0.006	(1.5)	62	56	54	43	40	36	29	63	57	55	44	41	37	30	64	58	56	45	42	38	31
	3250	(1534)	0.007	(1.7)	64	60	57	46	44	40	32	65	61	58	47	45	41	33	66	62	59	48	46	42	34
516 16 inch	750	(354)	0.001	(0.4)	54	39	30	24	19	17	<15	54	41	33	28	21	19	<15	55	43	35	30	24	20	16
	1100	(519)	0.006	(1.5)	56	45	36	29	24	20	17	56	47	39	32	26	22	17	57	49	41	34	29	24	18
	1500	(708)	0.010	(2.6)	58	51	41	35	31	26	20	58	53	44	38	33	28	21	59	55	46	40	36	30	24
	2400	(1133)	0.023	(5.7)	60	53	44	40	37	33	22	60	55	47	42	38	34	24	60	57	49	43	40	35	26
	2800	(1321)	0.030	(7.5)	61	54	47	42	39	35	23	61	56	49	44	40	36	25	62	58	51	45	42	37	27
	3600	(1699)	0.045	(11.1)	62	57	52	46	42	39	26	63	59	53	48	43	40	28	64	60	55	49	44	41	30
	4400	(2076)	0.060	(15.0)	65	61	57	50	46	43	32	66	62	58	51	47	44	33	67	63	58	52	48	45	33
520 20 x 16	1100	(519)	0.008	(2.0)	51	45	33	29	27	23	<15	53	47	35	31	29	25	<15	55	49	37	33	31	27	16
	1600	(755)	0.024	(6.0)	53	51	43	39	32	29	19	55	53	45	41	34	31	21	57	55	47	43	36	33	24
	2500	(1180)	0.055	(13.7)	59	58	56	52	44	39	31	61	60	58	54	46	41	33	63	62	60	56	48	43	35
	3000	(1416)	0.060	(14.9)	64	62	60	56	50	43	35	66	64	62	58	52	45	37	68	66	64	60	54	47	39
	4600	(2171)	0.140	(34.8)	70	67	65	62	52	47	41	72	69	67	64	54	49	43	74	71	69	66	56	51	45
	5300	(2501)	0.167	(41.6)	71	69	67	64	54	48	43	73	71	69	66	56	50	45	75	73	71	68	58	52	47
	6200	(2926)	0.202	(50.3)	74	71	69	66	56	49	45	76	73	71	68	58	51	47	78	75	73	70	60	53	49
524 24 x 16	1250	(590)	0.010	(2.5)	54	45	35	32	30	23	<15	55	46	37	34	31	25	16	55	47	39	35	32	26	16
	2000	(944)	0.015	(3.7)	58	51	44	41	36	31	20	59	52	45	42	37	32	21	59	52	46	42	38	32	21
	3000	(1416)	0.020	(5.0)	63	56	50	47	42	37	26	64	57	51	48	43	38	27	64	57	52	48	44	38	27
	4000	(1888)	0.025	(6.2)	66	61	58	53	49	42	33	67	62	59	54	50	43	34	68	62	59	55	50	44	34
	5300	(2501)	0.040	(10.0)	70	66	63	59	55	49	38	72	67	64	61	56	50	39	73	68	64	62	57	51	39
	6000	(2831)	0.050	(12.4)	73	68	66	61	57	51	42	75	69	67	63	58	52	43	76	70	68	64	59	53	44
	7200	(3398)	0.070	(17.4)	76	72	68	66	60	54	44	77	73	70	68	61	55	46	78	74	71	69	62	56	47

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4. *NC values are calculated using attenuation credits outlined in Appendix E of AHRI 885-2008.*
5. ***Discharge Sound power levels shown with End Reflection Corrections Included** in dB (ref: 10^{-12} watts).*
6. *Minimum Ps is the static pressure drop across the air terminal unit while the inlet damper is in the wide-open position at a given airflow rate.*

TH-500
RADIATED SOUND POWER at ΔPS = 1.50, 2.0 and 3.0 in.wg.

Unit Size	CFM (L/s)		Min Ps in.wg. (Pa)		ΔPs = 1.5 in.wg. (375 Pa) Octave Band Sound Power, Lw, dB 2	3	4	5	6	7	NC	ΔPs = 2.0 in.wg. (500 Pa) Octave Band Sound Power, Lw, dB 2	3	4	5	6	7	NC	ΔPs = 3.0 in.wg. (750 Pa) Octave Band Sound Power, Lw, dB 2	3	4	5	6	7	NC
504/505 4 & 5 inch	50	(24)	0.005	(1.2)	44	35	22	22	18	11	<15	44	36	23	22	19	13	<15	45	38	25	24	23	18	<15
	100	(47)	0.015	(3.8)	46	37	26	25	22	17	<15	46	38	27	25	23	19	<15	47	40	29	27	27	24	<15
	150	(71)	0.027	(6.7)	49	41	32	29	24	20	<15	49	42	33	29	25	22	<15	50	44	35	31	29	27	<15
	200	(94)	0.038	(9.5)	52	44	38	32	26	22	<15	52	45	39	32	27	24	<15	53	47	41	34	31	29	<15
	250	(118)	0.059	(14.8)	54	46	42	35	31	30	15	54	47	43	35	32	32	17	55	49	45	37	36	37	19
	300	(142)	0.071	(17.6)	56	49	46	38	35	34	20	56	50	47	38	36	36	21	57	52	49	40	40	41	23
506 6 inch	100	(47)	0.005	(1.2)	46	37	26	25	22	17	<15	46	38	27	25	23	19	<15	47	40	29	27	27	24	<15
	200	(94)	0.020	(5.0)	52	44	38	32	26	22	<15	52	45	39	32	27	24	<15	53	47	41	34	31	29	<15
	300	(142)	0.045	(11.2)	56	49	46	38	35	34	20	56	50	47	38	36	36	21	57	52	49	40	40	41	23
	400	(189)	0.080	(19.9)	58	53	49	44	41	36	23	58	54	50	44	42	38	24	59	56	52	46	46	43	26
	500	(236)	0.136	(33.9)	60	56	51	47	43	38	25	61	57	52	47	44	40	26	61	59	54	49	48	45	29
	600	(283)	0.180	(44.8)	61	58	53	49	45	40	27	62	59	54	49	46	42	29	62	61	56	51	50	47	31
508 8 inch	200	(94)	0.000	(0.0)	52	42	37	33	26	22	<15	52	43	38	35	29	23	<15	53	45	39	36	32	27	<15
	300	(142)	0.001	(0.2)	55	46	43	38	32	29	17	55	46	43	40	35	33	17	56	47	45	42	40	38	19
	600	(283)	0.003	(0.7)	60	55	47	42	36	32	24	61	57	51	45	39	36	26	61	59	54	49	43	41	29
	700	(330)	0.005	(1.2)	62	57	52	44	39	34	26	63	60	53	47	40	37	29	64	61	56	51	44	41	31
	1000	(472)	0.008	(2.0)	67	60	53	48	42	36	31	68	63	56	50	44	39	33	70	66	60	54	47	42	37
	1100	(519)	0.009	(2.2)	68	61	54	50	43	38	32	69	64	57	52	45	40	34	71	67	61	56	49	44	38
510 10 inch	300	(142)	0.002	(0.5)	50	46	40	30	25	24	<15	54	47	40	32	26	25	<15	56	47	42	35	29	26	17
	600	(283)	0.009	(2.2)	55	55	50	40	35	29	24	59	55	51	43	39	35	25	60	56	51	45	42	40	25
	800	(378)	0.013	(3.2)	56	57	51	43	37	30	26	61	60	53	46	42	38	29	63	62	56	49	45	42	32
	1000	(472)	0.018	(4.5)	57	58	52	44	38	32	27	62	63	56	49	44	40	33	64	67	60	52	47	45	38
	1100	(519)	0.021	(5.2)	58	58	52	44	38	32	27	63	64	57	50	45	41	34	65	68	61	53	48	47	39
	1400	(661)	0.028	(7.0)	63	62	54	47	41	35	32	70	66	58	52	47	44	37	71	70	63	56	50	49	41
	1700	(802)	0.036	(9.0)	66	65	59	54	46	40	35	72	67	60	55	50	48	38	73	72	64	58	53	51	44
512 12 inch	430	(203)	0.000	(0.1)	54	45	40	31	26	26	<15	55	47	41	34	29	28	16	56	47	44	38	34	33	18
	800	(378)	0.001	(0.2)	57	51	49	40	35	35	23	58	54	53	45	40	41	27	58	56	56	50	44	42	31
	1450	(684)	0.008	(2.0)	60	55	53	44	40	39	27	62	60	58	49	44	43	33	63	64	63	55	48	45	38
	1600	(755)	0.010	(2.5)	61	56	54	45	41	40	29	63	60	58	49	44	44	33	65	65	63	55	48	46	38
	1950	(920)	0.015	(3.7)	62	58	56	47	44	42	31	64	62	60	51	47	47	35	66	66	65	56	50	49	41
	2200	(1038)	0.022	(5.5)	64	59	57	49	45	44	32	66	62	60	52	48	47	35	68	67	65	56	51	50	41
	2500	(1180)	0.025	(6.2)	65	61	59	51	48	46	34	67	65	63	55	51	49	38	69	68	67	60	52	51	43

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6. *Minimum Ps is the static pressure drop across the air terminal unit while the inlet damper is in the wide-open position at a given airflow rate.*

METALAIRE™

TH-500
RADIATED SOUND POWER at ΔPS = 1.50, 2.0 and 3.0 in.wg. continued

Unit Size	CFM (L/s)		Min Ps in.wg. (Pa)		ΔPs = 1.5 in.wg. (375 Pa) Octave Band Sound Power, Lw, dB							ΔPs = 2.0 in.wg. (500 Pa) Octave Band Sound Power, Lw, dB							ΔPs = 3.0 in.wg. (750 Pa) Octave Band Sound Power, Lw, dB						
					2	3	4	5	6	7	NC	2	3	4	5	6	7	NC	2	3	4	5	6	7	NC
514 14 inch	550	(260)	0.000	(0.0)	55	41	39	31	28	23	16	55	41	39	31	28	23	16	56	42	40	32	29	24	17
	925	(437)	0.001	(0.2)	56	43	41	33	30	24	17	56	44	42	34	30	25	17	57	45	43	35	31	26	18
	1600	(755)	0.003	(0.7)	58	49	46	38	33	28	20	59	49	47	38	34	29	21	60	50	48	39	35	30	22
	1900	(897)	0.004	(1.0)	60	53	52	41	36	31	26	60	53	52	42	36	31	26	61	54	53	43	37	32	27
	2100	(991)	0.005	(1.2)	62	57	55	45	40	34	30	62	57	54	45	40	34	29	63	58	55	46	40	35	30
	2600	(1227)	0.006	(1.5)	65	59	57	46	43	39	32	65	59	57	46	43	39	32	66	60	58	47	44	40	33
	3250	(1534)	0.007	(1.7)	67	63	60	49	47	43	35	67	63	60	49	47	43	35	68	64	61	50	48	44	36
516 16 inch	750	(354)	0.001	(0.4)	56	45	39	33	28	23	17	57	47	42	36	31	26	18	59	51	47	40	36	30	21
	1100	(519)	0.006	(1.5)	58	51	45	39	34	28	20	59	53	49	44	38	32	23	61	56	51	49	40	35	25
	1500	(708)	0.010	(2.6)	60	57	51	45	41	36	26	61	59	55	50	45	42	30	63	61	57	53	49	47	32
	2400	(1133)	0.023	(5.7)	63	61	55	49	46	42	31	65	65	60	54	51	48	35	68	67	64	60	58	56	39
	2800	(1321)	0.030	(7.5)	64	62	56	50	47	44	32	67	66	61	56	53	50	37	69	69	65	62	61	59	41
	3600	(1699)	0.045	(11.1)	67	64	59	54	50	47	34	69	67	63	58	56	53	38	71	70	67	64	63	62	43
	4400	(2076)	0.060	(15.0)	69	66	62	56	54	51	37	71	69	65	60	59	56	41	73	72	69	66	65	64	45
520 20 x 16	1100	(519)	0.008	(2.0)	56	50	38	34	32	28	18	57	51	39	35	33	29	19	59	53	41	37	35	31	21
	1600	(755)	0.024	(6.0)	58	56	48	44	37	34	25	59	57	49	45	38	35	26	61	59	51	47	40	37	28
	2500	(1180)	0.055	(13.7)	64	63	61	57	49	44	36	65	64	62	58	50	45	37	67	66	64	60	52	47	39
	3000	(1416)	0.060	(14.9)	69	67	65	61	55	48	41	70	68	66	62	56	49	42	72	70	68	64	58	51	44
	4600	(2171)	0.140	(34.8)	75	72	70	67	57	52	46	76	73	71	68	58	53	47	78	75	73	70	60	55	49
	5300	(2501)	0.167	(41.6)	76	74	72	69	59	53	48	77	75	73	70	60	54	49	79	77	75	72	62	56	51
	6200	(2926)	0.202	(50.3)	79	76	74	71	61	54	50	80	77	75	72	62	55	51	82	79	77	74	64	57	54
524 24 x 16	1250	(590)	0.010	(2.5)	58	50	42	38	35	29	20	58	52	44	39	37	32	20	59	55	49	42	39	35	24
	2000	(944)	0.015	(3.7)	62	55	49	45	41	35	25	62	59	53	49	45	39	28	63	63	57	53	49	43	33
	3000	(1416)	0.020	(5.0)	67	60	55	51	47	41	31	67	64	59	55	51	45	34	69	69	64	58	55	48	40
	4000	(1888)	0.025	(6.2)	71	65	62	58	53	47	37	72	70	68	63	57	52	44	74	72	70	66	60	55	46
	5300	(2501)	0.040	(10.0)	76	71	71	65	60	54	47	78	73	71	68	62	55	47	80	76	75	70	64	58	51
	6000	(2831)	0.050	(12.4)	77	72	70	66	61	55	46	81	75	73	69	63	57	49	83	77	76	72	65	59	53
	7200	(3398)	0.070	(17.4)	81	76	74	72	65	59	50	83	79	76	74	67	60	53	85	81	79	76	69	62	56

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5. ***Discharge Sound power levels shown with End Reflection Corrections Included** in dB (ref: 10^{-12} watts).*
6. *Minimum Ps is the static pressure drop across the air terminal unit while the inlet damper is in the wide-open position at a given airflow rate.*

METALAIRE™

TH-500
DISCHARGE SOUND POWER at ΔPS = 0.50, 0.75 and 1.0 in.wg.

Unit Size	CFM	(L/s)	Min Ps in.wg.	(Pa)	ΔPs = 0.50 in.wg. (125 Pa) Octave Band Sound Power, Lw, dB 2	3	4	5	6	7	NC	NC w/ SA	ΔPs = 0.75 in.wg. (187 Pa) Octave Band Sound Power, Lw, dB 2	3	4	5	6	7	NC	NC w/ SA	ΔPs = 1.0 in.wg. (250 Pa) Octave Band Sound Power, Lw, dB 2	3	4	5	6	7	NC	NC w/ SA
504/505 4 & 5 inch	50	(24)	0.005	(1)	59	47	39	35	29	22	<15	<15	60	51	45	41	34	27	<15	<15	60	55	50	47	39	31	<15	<15
	100	(47)	0.015	(4)	60	49	39	34	30	26	<15	<15	61	53	46	41	35	30	16	<15	61	56	52	47	40	34	16	<15
	150	(71)	0.027	(7)	61	51	42	37	32	27	16	<15	62	54	48	43	37	32	17	<15	62	57	53	48	42	36	17	<15
	200	(94)	0.038	(9)	62	52	45	40	34	28	17	<15	63	55	49	45	39	33	18	16	63	58	53	49	44	37	18	16
	250	(118)	0.059	(15)	63	54	47	42	36	32	18	16	64	57	51	46	41	36	20	17	64	59	55	49	45	40	20	17
	300	(142)	0.071	(18)	64	56	51	45	38	34	16	<15	64	59	54	48	42	39	16	<15	64	61	57	50	46	43	19	<15
506 6 inch	100	(47)	0.005	(1.2)	60	49	39	34	30	26	<15	<15	61	53	46	41	35	30	16	<15	61	56	52	47	40	34	16	<15
	200	(94)	0.020	(5.0)	62	52	45	40	34	28	17	<15	63	55	49	45	39	33	18	16	63	58	53	49	44	37	18	16
	300	(142)	0.045	(11.2)	64	56	51	45	38	34	16	<15	64	59	54	48	42	39	16	<15	64	61	57	50	46	43	19	<15
	400	(189)	0.080	(19.9)	65	60	55	49	42	40	18	<15	65	61	57	50	45	44	19	<15	65	62	58	51	47	47	20	15
	500	(236)	0.136	(33.9)	68	64	59	54	48	45	22	18	68	65	61	55	50	48	24	19	68	66	62	56	52	50	25	20
	600	(283)	0.180	(44.8)	69	67	62	59	52	49	26	21	69	68	63	60	54	50	27	22	69	68	64	60	55	51	27	22
508 8 inch	200	(94)	0.000	(0.0)	62	53	46	40	34	30	17	<15	63	56	50	43	37	34	18	16	66	60	55	49	44	42	22	20
	300	(142)	0.001	(0.2)	64	57	48	43	38	33	16	<15	65	60	52	46	41	37	18	<15	68	64	58	53	49	45	22	19
	600	(283)	0.003	(0.7)	69	63	54	51	43	39	22	20	71	65	56	53	46	42	25	22	73	69	61	58	53	48	28	25
	700	(330)	0.005	(1.2)	71	65	56	54	45	40	25	22	72	67	58	55	48	43	26	23	74	70	63	60	54	50	29	26
	1000	(472)	0.008	(2.0)	75	70	62	60	52	47	28	25	77	71	64	63	54	49	30	27	79	74	67	65	58	53	33	30
	1100	(519)	0.009	(2.2)	76	71	64	62	56	50	29	26	78	72	66	64	56	51	31	29	80	75	69	67	60	54	34	31
510 10 inch	300	(142)	0.002	(0.5)	58	55	46	43	36	31	<15	<15	59	58	50	46	39	35	15	<15	62	62	55	52	46	43	20	16
	600	(283)	0.009	(2.2)	62	59	50	46	38	36	16	<15	64	62	52	49	42	39	20	16	67	65	58	54	49	46	24	20
	800	(378)	0.013	(3.2)	65	62	53	49	41	39	19	15	67	64	55	51	44	42	21	18	69	68	60	56	51	48	26	22
	1000	(472)	0.018	(4.5)	68	63	55	52	41	40	20	17	69	65	57	53	44	43	22	19	71	68	62	58	55	52	26	22
	1100	(519)	0.021	(5.2)	68	64	57	53	45	43	21	18	70	66	59	55	48	45	24	20	72	69	63	58	55	52	27	24
	1400	(661)	0.028	(7.0)	72	70	62	59	52	50	28	25	74	71	64	62	54	52	29	26	76	74	67	64	58	56	33	29
	1700	(802)	0.036	(9.0)	76	74	65	64	59	55	33	29	78	75	67	66	59	56	34	31	80	78	70	69	63	59	38	34
512 12 inch	430	(203)	0.000	(0.1)	55	47	46	45	39	35	<15	<15	58	51	48	48	44	41	<15	<15	60	53	49	49	46	44	<15	<15
	800	(378)	0.001	(0.2)	57	55	52	50	46	40	<15	<15	60	59	54	53	51	46	15	<15	62	59	54	53	51	48	15	<15
	1450	(684)	0.008	(2.0)	61	59	58	54	50	45	15	<15	64	63	60	57	55	51	20	16	65	64	60	58	56	53	21	18
	1600	(755)	0.010	(2.5)	62	60	59	55	51	46	16	<15	65	64	61	58	56	52	21	18	67	66	62	59	58	55	24	20
	1950	(920)	0.015	(3.7)	64	61	59	56	52	48	18	<15	67	65	61	59	57	54	22	19	70	68	64	62	61	59	26	22
	2200	(1038)	0.022	(5.5)	64	61	60	57	53	48	18	<15	68	65	62	60	58	55	22	19	71	69	65	63	62	60	27	24
	2500	(1180)	0.025	(6.2)	66	62	61	57	53	50	19	15	70	66	64	61	59	57	24	20	73	70	67	64	63	62	28	25

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4. *NC values are calculated using attenuation credits outlined in Appendix E of AHRI 885-2008.*
5. ***Discharge Sound power levels shown with End Reflection Corrections Included** in dB (ref: 10^{-12} watts).*
6. *Minimum Ps is the static pressure drop across the air terminal unit while the inlet damper is in the wide-open position at a given airflow rate.*

TH-500
DISCHARGE SOUND POWER at ΔPS = 0.50, 0.75 and 1.0 in.wg. continued

Unit Size	CFM	(L/s)	Min Ps in.wg.	(Pa)	ΔPs = 0.50 in.wg. (125 Pa)								ΔPs = 0.75 in.wg. (187 Pa)								ΔPs = 1.0 in.wg. (250 Pa)							
					Octave Band Sound Power, Lw, dB						NC	NC w/ SA	Octave Band Sound Power, Lw, dB						NC	NC w/ SA	Octave Band Sound Power, Lw, dB						NC	NC w/ SA
					2	3	4	5	6	7			2	3	4	5	6	7			2	3	4	5	6	7		
514 14 inch	550	(260)	0.000	(0.0)	46	38	36	34	27	22	<15	<15	51	45	43	41	36	31	<15	<15	57	51	49	49	44	39	<15	<15
	925	(437)	0.001	(0.2)	46	38	38	36	30	23	<15	<15	52	45	45	44	39	32	<15	<15	57	52	51	51	47	42	<15	<15
	1600	(755)	0.003	(0.7)	49	43	43	42	37	32	<15	<15	55	49	49	48	44	40	<15	<15	60	55	54	55	52	48	<15	<15
	1900	(897)	0.004	(1.0)	51	45	45	44	40	36	<15	<15	56	51	50	50	47	44	<15	<15	60	56	55	56	54	51	15	<15
	2100	(991)	0.005	(1.2)	53	48	49	48	44	41	<15	<15	57	53	53	53	50	47	<15	<15	62	57	57	58	57	54	18	<15
	2600	(1227)	0.006	(1.5)	58	52	52	51	48	47	<15	<15	61	56	55	56	54	52	16	<15	65	59	59	60	59	57	21	<15
	3250	(1534)	0.007	(1.7)	64	57	54	54	52	55	19	<15	66	60	57	58	56	58	22	<15	67	62	60	61	61	60	24	16
516 16 inch	750	(354)	0.001	(0.4)	48	43	41	33	29	25	<15	<15	54	49	45	40	37	34	<15	<15	60	55	53	48	46	43	<15	<15
	1100	(519)	0.006	(1.5)	50	45	43	36	32	26	<15	<15	56	51	47	43	40	35	<15	<15	62	57	53	50	48	44	<15	<15
	1500	(708)	0.010	(2.6)	53	48	45	41	36	31	<15	<15	58	53	50	47	43	39	<15	<15	64	59	56	53	51	47	15	<15
	2400	(1133)	0.023	(5.7)	60	55	53	50	44	40	<15	<15	64	59	57	54	50	46	15	<15	68	63	61	58	56	52	20	18
	2800	(1321)	0.030	(7.5)	64	58	58	55	49	44	<15	<15	67	62	61	58	54	49	19	16	71	66	64	61	59	55	24	21
	3600	(1699)	0.045	(11.1)	69	63	64	60	55	50	20	18	71	66	65	62	59	54	24	21	74	69	67	64	63	58	27	25
	4400	(2076)	0.060	(15.0)	74	67	68	65	57	53	26	25	75	69	68	66	60	57	27	26	77	71	69	67	64	61	30	29
520 20 x 16	1100	(519)	0.008	(2.0)	49	43	42	36	34	34	<15	<15	54	50	49	43	42	42	<15	<15	59	56	55	50	49	49	<15	<15
	1600	(755)	0.024	(6.0)	54	50	48	42	39	36	<15	<15	58	55	53	48	46	43	<15	<15	62	59	58	54	52	50	15	<15
	2500	(1180)	0.055	(13.7)	64	62	59	54	51	44	19	16	66	64	61	58	55	50	21	19	68	66	63	61	58	55	24	21
	3000	(1416)	0.060	(14.9)	69	67	64	60	57	52	25	22	71	68	65	62	60	55	26	24	72	69	66	64	62	58	27	25
	4600	(2171)	0.140	(34.8)	76	73	72	70	63	55	32	29	78	75	74	73	66	59	34	32	79	76	75	75	68	62	35	33
	5300	(2501)	0.167	(41.6)	80	76	75	74	66	57	35	33	82	78	77	76	69	60	38	35	83	79	78	78	71	63	39	37
	6200	(2926)	0.202	(50.3)	83	79	78	79	69	58	39	37	85	80	79	81	72	62	40	39	86	81	81	83	74	65	41	40
524 24 x 16	1250	(590)	0.010	(2.5)	47	52	45	44	38	35	<15	<15	60	58	53	51	48	45	<15	<15	65	63	61	58	58	54	20	18
	2000	(944)	0.015	(3.7)	60	61	55	52	48	46	18	15	65	64	60	58	54	51	21	19	68	67	64	63	59	57	25	22
	3000	(1416)	0.020	(5.0)	71	68	63	60	59	56	26	24	74	70	66	63	61	58	28	26	76	72	68	66	62	60	31	28
	4000	(1888)	0.025	(6.2)	73	69	64	62	62	57	27	25	76	71	68	65	64	60	29	27	79	74	71	67	66	62	33	31
	5300	(2501)	0.040	(10.0)	77	75	66	67	65	64	34	32	80	77	69	70	68	66	37	34	82	79	72	72	70	67	39	37
	6000	(2831)	0.050	(12.4)	79	76	69	68	66	65	35	33	82	78	72	71	69	67	38	35	84	80	75	73	71	68	40	38
	7200	(3398)	0.070	(17.4)	82	80	72	69	69	66	40	38	85	82	75	72	72	68	42	40	87	84	78	74	74	69	45	42

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4. *NC values are calculated using attenuation credits outlined in Appendix E of AHRI 885-2008.*
5. ***Discharge Sound power levels shown with End Reflection Corrections Included** in dB (ref: 10^{-12} watts).*
6. *Minimum Ps is the static pressure drop across the air terminal unit while the inlet damper is in the wide-open position at a given airflow rate.*

TH-500
DISCHARGE SOUND POWER at ΔPS = 1.50, 2.0 and 3.0 in.wg.

Unit Size	CFM	(L/s)	Min Ps in.wg.	(Pa)	ΔPs = 1.5 in.wg. (375 Pa)								ΔPs = 2.0 in.wg. (500 Pa)								ΔPs = 3.0 in.wg. (750 Pa)							
					Octave Band Sound Power, Lw, dB						NC	NC w/ SA	Octave Band Sound Power, Lw, dB						NC	NC w/ SA	Octave Band Sound Power, Lw, dB						NC	NC w/ SA
					2	3	4	5	6	7			2	3	4	5	6	7			2	3	4	5	6	7		
504/505 4 & 5 inch	50	(24)	0.005	(1)	62	57	52	49	41	33	17	<15	62	57	52	49	41	33	17	<15	64	59	52	51	43	35	20	17
	100	(47)	0.015	(4)	63	58	54	49	42	36	18	16	63	58	54	49	42	36	18	16	65	60	54	51	44	38	21	18
	150	(71)	0.027	(7)	64	59	55	50	44	38	20	17	64	59	55	50	44	38	20	17	66	61	55	52	46	40	22	20
	200	(94)	0.038	(9)	65	60	55	51	46	39	21	18	65	60	55	51	46	39	21	18	67	62	55	53	48	41	23	21
	250	(118)	0.059	(15)	66	61	57	51	47	42	22	20	66	61	57	51	47	42	22	20	68	63	59	53	49	44	25	22
	300	(142)	0.071	(18)	66	63	59	52	48	45	21	16	66	63	59	52	48	45	21	16	68	65	61	54	50	47	24	19
506 6 inch	100	(47)	0.005	(1.2)	63	58	54	49	42	36	18	16	63	58	54	49	42	36	18	16	65	60	54	51	44	38	21	18
	200	(94)	0.020	(5.0)	65	60	55	51	46	39	21	18	65	60	55	51	46	39	21	18	67	62	55	53	48	41	23	21
	300	(142)	0.045	(11.2)	66	63	59	52	48	45	21	16	66	63	59	52	48	45	21	16	68	65	61	54	50	47	24	19
	400	(189)	0.080	(19.9)	67	64	60	53	49	49	22	18	67	64	60	53	49	49	22	18	69	67	62	55	51	51	26	21
	500	(236)	0.136	(33.9)	70	68	64	58	54	52	27	22	70	68	64	58	54	52	27	22	72	70	66	60	56	54	29	25
	600	(283)	0.180	(44.8)	71	70	66	62	57	53	29	25	71	70	66	62	57	53	29	25	73	72	68	64	59	55	32	27
508 8 inch	200	(94)	0.000	(0.0)	66	60	54	50	46	44	22	0	67	61	55	52	48	46	23	21	68	62	56	54	50	48	25	22
	300	(142)	0.001	(0.2)	68	64	56	53	49	48	22	0	69	65	57	55	51	50	24	20	70	66	58	57	53	52	25	21
	600	(283)	0.003	(0.7)	73	68	59	56	53	52	27	22	74	69	60	58	55	54	29	26	75	70	61	60	57	56	30	27
	700	(330)	0.005	(1.2)	75	71	62	58	55	53	31	25	76	72	63	60	57	55	32	29	77	73	64	62	59	57	33	30
	1000	(472)	0.008	(2.0)	80	75	67	66	61	58	34	33	81	76	68	68	63	60	35	32	82	77	69	70	65	62	37	34
	1100	(519)	0.009	(2.2)	81	76	69	68	62	60	35	36	82	77	70	70	64	62	37	34	83	78	71	72	66	64	38	35
510 10 inch	300	(142)	0.002	(0.5)	62	62	56	53	48	45	20	15	62	62	56	53	48	45	20	16	64	64	57	55	50	48	22	19
	600	(283)	0.009	(2.2)	68	66	61	57	52	49	25	20	68	66	61	57	52	49	25	21	70	68	63	59	55	53	27	24
	800	(378)	0.013	(3.2)	70	68	63	58	54	51	26	21	70	68	63	58	54	51	26	22	72	70	65	61	57	53	28	25
	1000	(472)	0.018	(4.5)	72	69	64	59	55	52	27	22	72	69	64	59	55	52	27	24	74	71	66	61	57	54	29	26
	1100	(519)	0.021	(5.2)	73	70	65	60	56	53	28	24	73	70	65	60	56	53	28	25	74	72	68	62	59	55	31	27
	1400	(661)	0.028	(7.0)	77	75	69	65	60	57	34	29	77	75	69	65	60	57	34	31	79	76	71	66	63	60	35	32
	1700	(802)	0.036	(9.0)	81	79	72	70	64	60	39	34	81	79	72	70	64	60	39	35	83	81	74	71	66	64	41	38
512 12 inch	430	(203)	0.000	(0.1)	61	55	49	50	47	46	<15	<15	62	56	50	51	48	47	<15	<15	64	58	52	53	50	49	16	<15
	800	(378)	0.001	(0.2)	63	58	52	53	50	49	<15	<15	64	59	53	54	51	50	15	<15	66	61	55	56	53	52	18	<15
	1450	(684)	0.008	(2.0)	66	64	59	58	56	54	21	16	67	65	60	59	57	55	22	19	69	67	62	61	59	57	25	21
	1600	(755)	0.010	(2.5)	68	67	62	60	59	57	25	20	69	68	63	61	60	58	26	22	71	70	65	63	62	60	28	25
	1950	(920)	0.015	(3.7)	73	71	66	65	64	63	29	25	74	72	67	66	65	64	31	27	76	74	69	68	67	66	33	29
	2200	(1038)	0.022	(5.5)	74	72	67	66	66	64	31	26	75	73	68	67	67	65	32	28	77	75	70	69	69	67	34	31
	2500	(1180)	0.025	(6.2)	76	73	69	67	67	66	32	27	77	74	70	68	68	67	33	29	79	76	72	70	70	69	35	32

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TH-500
DISCHARGE SOUND POWER at ΔPS = 1.50, 2.0 and 3.0 in.wg. continued

Unit Size	CFM	(L/s)	Min Ps in.wg.	(Pa)	ΔPs = 1.5 in.wg. (375 Pa) Octave Band Sound Power, Lw, dB								ΔPs = 2.0 in.wg. (500 Pa) Octave Band Sound Power, Lw, dB								ΔPs = 3.0 in.wg. (750 Pa) Octave Band Sound Power, Lw, dB							
					2	3	4	5	6	7	NC	NC w/ SA	2	3	4	5	6	7	NC	NC w/ SA	2	3	4	5	6	7	NC	NC w/ SA
514 14 inch	550	(260)	0.000	(0.0)	62	58	56	56	53	48	15	<15	64	60	58	58	55	50	18	15	67	63	61	61	58	53	21	19
	925	(437)	0.001	(0.2)	63	59	57	58	55	51	15	<15	65	61	59	60	57	53	18	15	68	64	62	63	60	56	21	19
	1600	(755)	0.003	(0.7)	65	61	60	61	59	56	20	<15	67	63	62	63	61	58	22	18	70	66	65	66	64	61	25	21
	1900	(897)	0.004	(1.0)	65	61	60	62	61	58	22	<15	67	63	62	64	63	60	24	18	70	66	65	67	66	63	27	21
	2100	(991)	0.005	(1.2)	66	62	61	63	63	60	24	<15	68	64	63	65	65	62	26	19	71	67	66	68	68	65	29	22
	2600	(1227)	0.006	(1.5)	68	63	62	64	64	62	26	16	70	65	64	66	66	64	28	20	73	68	67	69	69	67	31	24
	3250	(1534)	0.007	(1.7)	69	64	63	65	65	63	27	17	71	66	65	67	67	65	29	21	74	69	68	70	70	68	32	25
516 16 inch	750	(354)	0.001	(0.4)	66	61	57	55	54	52	18	<15	67	62	58	57	56	54	19	16	69	64	60	59	58	56	21	19
	1100	(519)	0.006	(1.5)	67	62	59	57	56	53	19	<15	68	63	60	59	58	55	20	18	70	65	62	61	60	57	22	20
	1500	(708)	0.010	(2.6)	69	64	61	59	58	55	21	17	70	65	62	61	60	57	22	20	72	67	64	63	62	59	25	22
	2400	(1133)	0.023	(5.7)	72	67	64	62	62	58	25	21	73	68	65	64	64	60	26	24	75	70	67	66	66	62	28	26
	2800	(1321)	0.030	(7.5)	74	69	66	64	64	60	27	23	75	70	67	66	66	62	28	26	77	72	69	68	68	64	31	29
	3600	(1699)	0.045	(11.1)	76	71	68	66	66	62	29	26	77	72	69	68	68	64	31	29	79	74	71	70	70	66	33	31
	4400	(2076)	0.060	(15.0)	78	72	69	68	67	64	31	29	79	73	70	70	69	66	32	31	81	75	72	72	71	68	35	34
520 20 x 16	1100	(519)	0.008	(2.0)	66	64	63	60	59	59	23	16	67	65	64	61	60	60	24	20	68	66	65	62	61	61	25	21
	1600	(755)	0.024	(6.0)	68	66	64	62	60	59	24	19	69	67	65	63	61	60	25	22	70	68	66	64	62	61	26	24
	2500	(1180)	0.055	(13.7)	72	70	68	66	64	62	28	24	73	71	69	67	65	63	29	27	74	72	70	68	66	64	31	28
	3000	(1416)	0.060	(14.9)	74	71	71	71	67	63	29	25	76	73	71	71	67	64	32	29	77	74	72	71	68	65	33	31
	4600	(2171)	0.140	(34.8)	83	79	78	79	72	67	39	35	84	80	79	80	73	68	40	38	85	81	80	81	74	69	41	39
	5300	(2501)	0.167	(41.6)	86	82	81	83	75	68	42	39	87	83	82	84	76	69	44	41	88	84	83	85	77	70	45	43
	6200	(2926)	0.202	(50.3)	89	84	84	88	78	70	45	43	90	85	85	89	79	71	46	45	91	86	86	90	80	72	48	46
524 24 x 16	1250	(590)	0.010	(2.5)	66	65	62	60	59	58	22	18	67	66	63	61	60	59	24	21	68	67	64	62	61	60	25	22
	2000	(944)	0.015	(3.7)	70	68	66	64	61	59	26	21	71	69	67	65	62	60	27	25	72	70	68	66	63	61	28	26
	3000	(1416)	0.020	(5.0)	77	73	69	67	64	62	32	27	78	74	70	68	65	63	33	31	79	75	71	69	66	64	34	32
	4000	(1888)	0.025	(6.2)	80	76	72	70	67	64	35	31	81	77	73	71	68	65	37	34	82	78	74	72	69	66	38	35
	5300	(2501)	0.040	(10.0)	86	85	81	77	74	71	46	41	87	86	82	78	75	72	47	45	88	87	83	79	76	73	48	46
	6000	(2831)	0.050	(12.4)	89	88	84	80	77	74	50	45	90	89	85	81	78	75	51	48	91	90	86	82	79	76	52	50
	7200	(3398)	0.070	(17.4)	91	90	86	82	79	76	52	47	92	91	87	83	80	77	53	51	93	92	88	84	81	78	54	52

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METALAIRE™

TH-500 CASING LEAKAGE

Casing Leakage, CFM						
Inlet Size	0.25" ΔPs	0.50" ΔPs	1.00" ΔPs	1.50" ΔPs	2.0" ΔPs	3.0" ΔPs
6	2	3	4	5	6	7
8	2	3	5	6	6	8
10	3	4	6	8	9	10
12	3	5	7	9	10	12
14	4	6	9	11	12	15
16	5	7	10	12	14	17
20	5	7	10	12	14	17
24	6	8	12	14	17	20

TH-500 DAMPER LEAKAGE

Damper Leakage, CFM			
Inlet Size	1.5" ΔPs	3.0" ΔPs	6.0" ΔPs
6	3	4	7
8	3	4	7
10	4	5	7
12	4	5	7
14	4	6	8
16	4	6	8
20	N/A	N/A	N/A
24	N/A	N/A	N/A

TH-500 MINIMUM PRESSURES

Unit Size	CFM	Unit ΔPs (in. wg)	Unit ΔPt (in. wg)	Unit + 1R Coil, ΔPs (in. wg)	Unit + 1R Coil, ΔPt (in. wg)	Unit + 2R Coil, ΔPs (in. wg)	Unit + 2R Coil, ΔPt (in. wg)	Unit + 3R Coil, ΔPs (in. wg)	Unit + 3R Coil, ΔPt (in. wg)	Unit + 4R Coil, ΔPs (in. wg)	Unit + 4R Coil, ΔPt (in. wg)
504 / 505 4-inch 5-inch 506 6-inch	100	0.005	0.020	0.02	0.03	0.04	0.05	0.05	0.06	0.05	0.06
	200	0.020	0.079	0.06	0.12	0.10	0.16	0.14	0.20	0.18	0.24
	300	0.045	0.178	0.12	0.25	0.21	0.34	0.29	0.42	0.37	0.50
	400	0.080	0.316	0.20	0.44	0.34	0.58	0.47	0.71	0.60	0.84
	500	0.125	0.494	0.31	0.67	0.51	0.87	0.69	1.05	0.88	1.24
	600	0.180	0.712	0.39	0.92	0.69	1.22	—	—	—	—
508 8-inch	300	0.001	0.039	0.05	0.09	0.10	0.14	0.16	0.20	0.20	0.24
	400	0.001	0.069	0.08	0.15	0.16	0.23	0.24	0.31	0.32	0.39
	500	0.002	0.108	0.11	0.22	0.23	0.34	0.35	0.46	0.46	0.57
	600	0.003	0.155	0.15	0.30	0.32	0.47	0.47	0.62	0.63	0.78
	700	0.004	0.211	0.19	0.40	0.41	0.62	0.61	0.82	0.82	1.03
	800	0.005	0.275	0.25	0.52	0.52	0.79	0.78	1.05	—	—
	900	0.007	0.348	0.31	0.65	0.63	0.97	—	—	—	—
	1000	0.008	0.430	0.37	0.79	0.75	1.17	—	—	—	—
510 10-inch	400	0.004	0.030	0.04	0.07	0.09	0.12	0.13	0.16	0.17	0.20
	600	0.009	0.068	0.09	0.15	0.18	0.24	0.25	0.31	0.35	0.41
	800	0.016	0.121	0.15	0.25	0.29	0.39	0.37	0.47	0.56	0.66
	1000	0.025	0.189	0.21	0.38	0.41	0.58	0.49	0.66	0.81	0.98
	1200	0.036	0.272	0.29	0.52	0.58	0.81	0.65	0.88	—	—
	1400	0.049	0.370	0.38	0.70	0.78	1.10	—	—	—	—
	1600	0.063	0.483	0.48	0.90	—	—	—	—	—	—
512 12-inch	800	0.020	0.070	0.09	0.14	0.19	0.24	0.26	0.31	0.34	0.39
	1000	0.031	0.110	0.14	0.22	0.27	0.35	0.38	0.46	0.49	0.57
	1200	0.045	0.158	0.20	0.31	0.38	0.49	0.52	0.63	0.68	0.79
	1400	0.061	0.215	0.25	0.41	0.49	0.65	0.67	0.83	0.88	1.04
	1600	0.080	0.281	0.32	0.52	0.59	0.79	0.85	1.05	—	—
	1800	0.101	0.356	0.40	0.66	0.72	0.98	—	—	—	—
	2000	0.125	0.439	0.49	0.80	0.87	1.18	—	—	—	—
	2200	0.151	0.532	0.57	0.95	—	—	—	—	—	—

1. *ΔPs = static pressure drop; ΔPt = total pressure drop.*
2. *Calculations of ΔPs and ΔPt were performed using standard air with a density of 0.075 lbm / cu.ft.*
3. *Data based on testing standard METALAIRE hot water coils per AHRI Standard 410.*
4. *Unit ΔPs and Unit ΔPt are pressure drops across the air terminal unit while the inlet damper is in the wide-open position.*
5. *Data applies to air terminal units with hot water coil mounted on the discharge side.*
6. *"—" is shown when the static pressure drop exceeds 0.50 in. wg.*

METALAIRE™

TH-500
MINIMUM PRESSURES continued

Unit Size	CFM	Unit ΔPs (in.wg.)	Unit ΔPt (in.wg.)	Unit + 1R Coil, ΔPs (in.wg.)	Unit + 1R Coil, ΔPt (in.wg.)	Unit + 2R Coil, ΔPs (in.wg.)	Unit + 2R Coil, ΔPt (in.wg.)	Unit + 3R Coil, ΔPs (in.wg.)	Unit + 3R Coil, ΔPt (in.wg.)	Unit + 4R Coil, ΔPs (in.wg.)	Unit + 4R Coil, ΔPt (in.wg.)
514 14-inch	1000	0.000	0.044	0.06	0.10	0.12	0.16	0.19	0.23	0.25	0.29
	1300	0.000	0.075	0.09	0.16	0.19	0.26	0.29	0.36	0.38	0.45
	1600	0.001	0.113	0.13	0.24	0.27	0.38	0.41	0.52	0.54	0.65
	2000	0.001	0.177	0.18	0.36	0.39	0.57	0.59	0.77	0.79	0.97
	2300	0.001	0.234	0.24	0.47	0.50	0.73	0.75	0.98	--	--
	2600	0.002	0.299	0.29	0.59	0.61	0.91	--	--	--	--
	3000	0.002	0.398	0.37	0.77	0.78	1.18	--	--	--	--
	3300	0.003	0.482	0.44	0.92	--	--	--	--	--	--
516 16-inch	1600	0.030	0.094	0.12	0.18	0.23	0.29	0.33	0.39	0.45	0.51
	2000	0.044	0.144	0.18	0.28	0.33	0.43	0.48	0.58	0.62	0.72
	2300	0.052	0.185	0.22	0.35	0.42	0.55	0.60	0.73	0.78	0.91
	2600	0.070	0.239	0.28	0.45	0.52	0.69	0.75	0.92	--	--
	3000	0.085	0.310	0.36	0.58	0.66	0.88	0.95	1.17	--	--
	3300	0.100	0.373	0.42	0.69	0.77	1.04	--	--	--	--
	3600	0.113	0.438	0.48	0.81	0.89	1.22	--	--	--	--
	4000	0.131	0.532	0.58	0.98	--	--	--	--	--	--
520 20 x 16	1500	0.008	0.028	0.05	0.07	0.11	0.13	0.16	0.18	0.21	0.23
	2000	0.013	0.049	0.08	0.12	0.17	0.21	0.25	0.29	0.33	0.37
	2500	0.021	0.077	0.13	0.19	0.25	0.31	0.37	0.43	0.48	0.54
	3000	0.030	0.111	0.18	0.26	0.35	0.43	0.50	0.58	0.66	0.74
	3500	0.041	0.151	0.23	0.34	0.45	0.56	0.65	0.76	0.86	0.97
	4000	0.053	0.198	0.29	0.44	0.56	0.71	0.82	0.97	--	--
	5000	0.083	0.309	0.44	0.67	0.82	1.05	--	--	--	--
	6000	0.120	0.445	0.61	0.94	--	--	--	--	--	--
524 24 x 16	2000	0.014	0.040	0.06	0.09	0.12	0.15	0.17	0.20	0.23	0.26
	3000	0.031	0.090	0.13	0.19	0.24	0.30	0.35	0.41	0.45	0.51
	4000	0.056	0.160	0.22	0.32	0.40	0.50	0.58	0.68	0.75	0.85
	5000	0.087	0.250	0.33	0.49	0.59	0.75	0.84	1.00	--	--
	6000	0.125	0.360	0.45	0.68	0.81	1.04	--	--	--	--
	6500	0.152	0.428	0.52	0.80	--	--	--	--	--	--
	7000	0.173	0.493	0.59	0.91	--	--	--	--	--	--

1. *ΔPs = static pressure drop; ΔPt = total pressure drop.*
2. *Calculations of ΔPs and ΔPt were performed using standard air with a density of 0.075 lbm/cu.ft.*
3. *Data based on testing standard METALAIRE hot water coils per AHRI Standard 410.*
4. *Unit ΔPs and Unit ΔPt are pressure drops across the air terminal unit while the inlet damper is in the wide-open position.*
5. *Data applies to air terminal units with hot water coil mounted on the discharge side.*
6. *" --" is shown when the static pressure drop exceeds 0.50 in.wg.*

TH-500
HOT WATER COILS MBH SELECTION DATA – IMPERIAL UNITS

Unit Size	Rows	Connection OD (in)	GPM	Head Loss (ft-H_2O)	CFM							
					100	200	300	350	400	450	500	600
504 505 506	1	0.625	1	0.46	5.1	7.2	8.6	9.1	9.6	10.0	10.3	11.0
			2	1.76	5.4	7.8	9.5	10.1	10.7	11.2	11.7	12.5
			3	3.86	5.5	8.1	9.8	10.5	11.2	11.7	12.2	13.2
			4	6.73	5.6	8.2	10.0	10.7	11.4	12.0	12.6	13.5
			Airside Ps		0.01	0.04	0.07	0.10	0.12	0.15	0.18	0.24
504 505 506	2	0.875	1	0.12	7.5	11.1	13.4	14.3	15.0	15.7	16.3	17.3
			2	0.46	8.1	12.5	15.5	16.8	17.8	18.8	19.7	21.2
			4	1.75	8.4	13.4	17.0	18.4	19.8	21.0	22.1	24.1
			6	3.84	8.5	13.7	17.5	19.1	20.6	21.9	23.1	25.2
			Airside Ps		0.03	0.08	0.16	0.21	0.26	0.32	0.38	0.51
504 505 506	3	0.875	1	0.07	8.9	13.2	15.9	16.8	17.7	18.4	19.0	20.0
			2	0.28	9.6	15.2	19.1	20.6	21.9	23.1	24.1	25.9
			4	1.09	10.0	16.5	21.3	23.2	25.0	26.6	28.0	30.5
			6	2.44	10.2	17.0	22.2	24.3	26.3	28.0	29.7	32.5
			Airside Ps		0.04	0.12	0.24	0.31	0.39	0.47	0.56	0.77
504 505 506	4	0.875	1	0.05	9.7	14.5	17.4	18.4	19.3	20.1	20.7	21.7
			2	0.20	10.5	17.0	21.4	23.2	24.7	26.0	27.1	29.1
			4	0.79	10.9	18.6	24.2	26.6	28.7	30.6	32.3	35.3
			6	1.77	11.1	19.2	25.3	28.0	30.4	32.5	34.5	38.0
			Airside Ps		0.05	0.16	0.32	0.41	0.52	0.63	0.75	1.02

Unit Size	Rows	Connection OD (in)	GPM	Head Loss (ft-H_2O)	CFM							
					500	600	700	800	1000	1200	1400	1600
508	1	0.625	1	0.63	12.1	12.9	13.5	14.1	15.1	15.9	16.5	17.1
			2	2.39	13.7	14.7	15.6	16.4	17.7	18.8	19.7	20.5
			3	5.24	14.3	15.4	16.4	17.3	18.8	20.1	21.1	22.1
			4	9.14	14.7	15.9	16.9	17.9	19.5	20.8	21.9	22.9
			Airside Ps		0.11	0.15	0.19	0.24	0.36	0.49	0.64	0.81
508	2	0.875	1	0.17	18.6	19.8	20.9	21.7	22.5	23.1	25.1	--
			2	0.63	22.5	24.3	25.9	27.3	28.5	29.6	33.0	--
			4	2.39	25.1	27.5	29.6	31.5	33.1	34.6	39.4	--
			6	5.22	26.2	28.8	31.1	33.2	35.1	36.7	42.2	--
			Airside Ps		0.23	0.32	0.41	0.51	0.62	0.74	1.31	--
508	3	0.875	1	0.08	21.8	23.1	24.1	25.0	26.3	27.3	--	--
			2	0.31	27.5	29.8	31.6	33.2	35.8	37.8	--	--
			4	1.21	31.7	34.8	37.5	39.9	43.8	47.0	--	--
			8	4.78	34.3	38.1	41.5	44.4	49.5	53.8	--	--
			Airside Ps		0.35	0.47	0.61	0.77	1.11	1.51	--	--
508	4	0.875	2	0.21	30.9	33.4	35.4	37.1	39.9	--	--	--
			4	0.84	36.3	40.0	43.1	45.9	50.5	--	--	--
			6	1.87	38.5	42.8	46.5	49.8	55.4	--	--	--
			8	3.32	39.8	44.4	48.5	52.1	58.3	--	--	--
			Airside Ps		0.46	0.63	0.82	1.02	1.49	--	--	--

Heating capacity data in tables assume an entering water temperature (EWT) of 180°F, and an entering air temperature (EAT) of 65°F, which corresponds to a temperature difference of 115°F. Smaller temperature differences will result in a decrease of heating capacity. To obtain the heating capacity at another temperature difference, refer to the hot water coil notes located in the Reference Section.

METALAIRE™

TH-500
HOT WATER COILS MBH SELECTION DATA – IMPERIAL UNITS continued

Unit Size	Rows	Connection OD (in)	GPM	Head Loss ($ft-H_2O$)	CFM 500	600	700	800	1000	1200	1400	1600
510	1	0.625	1	0.11	13.4	14.3	15.0	15.6	16.7	17.5	18.2	18.7
			2	0.43	15.7	16.9	17.9	18.8	20.4	21.6	22.7	23.6
			4	1.63	17.2	18.6	19.9	21.1	23.0	24.7	26.0	27.3
			6	3.58	17.8	19.3	20.7	22.0	24.1	25.9	27.5	28.8
			Airside Ps		0.06	0.08	0.10	0.13	0.19	0.25	0.33	0.42
510	2	0.875	1	0.36	20.5	21.9	23.0	24.0	25.5	26.7	27.7	28.5
			2	1.43	25.2	27.4	29.3	30.9	33.6	35.8	37.6	39.1
			3	3.20	27.3	29.9	32.2	34.2	37.6	40.4	42.8	44.8
			4	5.68	28.5	31.4	34.0	36.2	40.0	43.2	46.0	48.3
			Airside Ps		0.12	0.17	0.22	0.27	0.39	0.54	0.69	0.87
510	3	0.875	1	0.24	23.7	25.1	26.2	27.1	28.6	29.6	30.4	31.1
			2	0.94	30.4	33.0	35.1	36.9	39.9	42.2	44.0	45.5
			4	3.79	35.3	39.0	42.2	45.0	49.8	53.6	56.8	59.6
			6	8.53	37.3	41.6	45.3	48.6	54.3	59.0	63.0	66.5
			Airside Ps		0.19	0.25	0.33	0.41	0.59	0.80	1.04	1.30
510	4	0.875	2	0.83	34.3	37.3	39.7	41.7	45.0	47.5	49.5	--
			4	3.35	40.3	44.7	48.6	51.9	57.5	62.0	65.8	--
			6	7.54	42.7	47.9	52.4	56.5	63.4	69.1	73.9	--
			8	13.41	44.0	49.6	54.6	59.0	66.8	73.2	78.8	--
			Airside Ps		0.25	0.34	0.43	0.54	0.79	1.07	1.39	--

Unit Size	Rows	Connection OD (in)	GPM	Head Loss ($ft-H_2O$)	CFM 800	1000	1200	1400	1600	1800	2000	2200
512	1	0.875	2	0.54	22.2	24.1	25.7	27.1	28.2	29.3	30.2	31.0
			4	2.07	24.8	27.3	29.4	31.2	32.7	34.1	35.4	36.5
			6	4.53	25.9	28.6	30.9	32.9	34.6	36.2	37.6	38.9
			8	7.90	26.5	29.3	31.7	33.8	35.7	37.4	38.9	40.3
			Airside Ps		0.07	0.11	0.15	0.19	0.24	0.30	0.36	0.42
512	2	0.875	2	0.33	34.1	37.2	39.7	41.7	43.4	46.2	47.3	48.4
			4	1.30	40.4	44.9	48.7	51.8	54.6	59.2	61.2	62.9
			6	2.89	43.1	48.3	52.7	56.5	59.9	65.5	67.9	70.1
			8	5.10	44.6	50.3	55.1	59.2	62.9	69.2	71.9	74.4
			Airside Ps		0.16	0.23	0.32	0.41	0.51	0.74	0.87	1.01
512	3	0.875	2	0.23	42.4	46.0	48.9	51.2	53.1	54.7	56.1	57.3
			4	0.90	51.3	57.2	62.0	66.1	69.6	72.6	75.2	77.6
			8	3.55	57.2	64.9	71.5	77.2	82.2	86.7	90.7	94.3
			12	7.95	59.5	68.0	75.4	81.8	87.6	92.7	97.4	101.6
			Airside Ps		0.24	0.35	0.47	0.61	0.77	0.93	1.11	1.31
512	4	0.875	2	0.42	47.6	51.6	54.7	57.2	59.2	60.9	62.3	--
			4	0.73	58.6	65.6	71.2	76.0	79.7	83.4	86.4	--
			8	2.89	65.9	75.3	83.4	90.4	96.5	101.9	106.7	--
			12	6.47	68.7	79.2	88.4	96.4	103.5	110.0	115.8	--
			Airside Ps		0.32	0.46	0.63	0.82	1.02	1.25	1.49	--

Heating capacity data in tables assume an entering water temperature (EWT) of 180°F, and an entering air temperature (EAT) of 65°F, which corresponds to a temperature difference of 115°F. Smaller temperature differences will result in a decrease of heating capacity. To obtain the heating capacity at another temperature difference, refer to the hot water coil notes located in the Reference Section.

TH-500
HOT WATER COILS MBH SELECTION DATA – IMPERIAL UNITS continued

Unit Size	Rows	Connection OD (in)	GPM	Head Loss (ft-H_2O)	CFM 600	700	800	1000	1500	2000	2500	3000
514	1	0.625	1	0.20	19.8	21.9	22.7	23.5	26.3	28.2	29.5	30.6
			2	0.74	23.4	26.6	27.9	29.1	33.6	36.9	39.3	41.3
			3	3.36	25.9	29.8	31.4	33.0	37.1	41.1	44.2	46.8
			4	6.17	26.8	31.1	32.9	34.6	39.1	43.6	47.1	50.1
			Airside Ps		0.02	0.04	0.05	0.06	0.11	0.19	0.27	0.37
514	2	0.875	2	0.39	34.4	39.4	41.4	43.3	50.1	54.7	58.0	60.6
			4	1.52	39.7	46.6	49.6	52.3	63.0	70.7	76.6	81.4
			6	3.36	41.8	49.7	53.1	56.2	68.9	78.4	85.8	91.9
			8	5.84	43.0	47.4	51.3	58.4	72.3	82.9	91.3	98.2
			Airside Ps		0.05	0.09	0.10	0.12	0.24	0.39	0.57	0.78
514	3	0.875	2	0.25	42.8	46.1	48.9	53.5	61.2	66.0	69.4	71.8
			6	2.20	52.1	57.6	62.7	71.5	88.5	100.8	110.3	117.9
			8	3.89	53.4	59.4	64.8	74.5	93.4	107.6	118.7	127.8
			10	6.05	54.3	60.5	66.2	76.3	96.6	112.1	124.4	134.5
			Airside Ps		0.08	0.10	0.13	0.19	0.37	0.59	0.86	1.17
514	4	0.875	4	0.78	55.4	61.2	66.3	75.0	90.9	101.7	109.5	115.5
			6	1.26	58.3	64.9	71.0	81.6	101.9	116.5	127.5	136.3
			8	3.08	59.8	66.9	73.5	85.2	108.2	125.3	138.6	149.4
			12	6.89	61.3	69.0	76.1	89.0	115.1	135.3	151.6	165.0
			Airside Ps		0.11	0.14	0.17	0.25	0.49	0.79	1.15	1.56

Unit Size	Rows	Connection OD (in)	GPM	Head Loss (ft-H_2O)	CFM 1000	1500	2000	2500	3000	3500	4000	4200
516	1	0.625	1	0.23	25.4	28.5	30.5	32.0	33.2	34.1	34.8	35.1
			2	0.86	31.6	36.7	40.3	43.1	45.3	47.1	48.7	49.2
			4	3.25	35.9	42.8	47.9	51.9	55.3	58.1	60.5	61.4
			6	7.12	37.6	45.3	51.1	55.8	59.7	63.0	65.9	66.9
			Airside Ps		0.04	0.08	0.14	0.20	0.27	0.36	0.45	0.49
516	2	0.875	2	0.41	46.2	53.7	58.8	62.4	65.2	67.5	69.3	69.9
			4	1.59	55.8	67.8	76.4	83.0	88.4	92.7	96.5	97.8
			6	2.52	60.0	74.2	84.8	93.1	100.0	105.8	110.8	112.6
			8	6.21	62.3	77.9	89.7	99.2	107.1	113.8	119.6	121.7
			Airside Ps		0.09	0.18	0.29	0.42	0.57	0.74	0.93	1.01
516	3	0.875	2	0.26	57.1	65.5	70.8	74.4	77.0	79.1	80.7	81.3
			4	1.03	70.4	85.7	96.3	104.2	110.3	115.3	119.4	120.8
			8	4.06	78.9	100.0	115.9	128.5	138.8	147.4	141.1	157.5
			10	6.31	80.8	103.4	120.7	134.6	146.1	155.9	154.8	167.4
			Airside Ps		0.14	0.27	0.44	0.63	0.86	1.11	1.40	1.51
516	4	0.875	2	0.20	63.2	72.1	77.5	81.0	83.5	85.5	--	--
			4	0.80	79.5	97.1	109.1	117.8	124.4	129.7	--	--
			8	1.80	86.1	115.1	134.3	149.3	161.4	171.5	--	--
			10	4.95	91.8	119.3	140.4	157.3	171.2	182.8	--	--
			Airside Ps		0.18	0.36	0.58	0.84	1.15	1.49	--	--

Heating capacity data in tables assume an entering water temperature (EWT) of 180°F, and an entering air temperature (EAT) of 65°F, which corresponds to a temperature difference of 115°F. Smaller temperature differences will result in a decrease of heating capacity. To obtain the heating capacity at another temperature difference, refer to the hot water coil notes located in the Reference Section.

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TH-500
HOT WATER COILS MBH SELECTION DATA – IMPERIAL UNITS continued

Unit Size	Rows	Connection OD (in)	GPM	Head Loss (ft-H_2O)	CFM							
					2000	2500	3000	3500	4000	4500	5000	5500
520	1	0.875	2	0.33	43.8	46.7	49.0	50.9	52.4	53.8	54.9	55.9
			4	1.30	54.0	58.5	62.3	65.4	68.1	70.5	72.6	74.4
			6	2.89	58.6	64.0	68.5	72.4	75.7	78.7	81.3	83.7
			8	5.10	61.2	67.2	72.2	76.5	80.2	83.6	86.6	89.3
			Airside Ps		0.07	0.11	0.15	0.19	0.24	0.30	0.36	0.42
520	2	0.875	2	0.56	63.3	67.2	70.2	72.5	74.4	75.9	77.3	78.4
			4	1.12	84.3	91.8	97.8	102.7	106.9	110.4	113.5	116.2
			8	3.89	100.7	111.9	121.3	129.2	136.0	142.1	147.4	152.2
			10	6.05	104.8	117.1	127.3	136.2	143.9	150.7	156.8	162.2
			Airside Ps		0.16	0.23	0.32	0.41	0.51	0.62	0.74	0.87
520	3	1.125	4	0.44	97.4	106.1	112.9	118.5	123.1	127.1	130.5	133.4
			6	0.97	109.4	121.1	130.6	138.5	145.3	151.2	156.3	160.8
			8	1.71	116.3	130.0	141.3	151.0	159.3	166.5	173.0	178.7
			12	3.79	124.1	140.1	153.7	165.5	175.8	185.0	193.2	200.7
			Airside Ps		0.19	0.29	0.40	0.52	0.66	0.81	0.97	1.15
520	4	1.125	6	0.62	124.6	137.8	148.3	157.0	164.3	170.5	175.8	180.6
			10	1.70	139.8	157.5	172.4	184.9	195.8	205.3	213.8	221.3
			14	3.31	147.2	167.5	184.8	199.7	212.8	224.4	234.9	244.3
			18	5.44	151.6	173.5	192.3	208.8	223.4	236.5	248.3	259.0
			Airside Ps		0.26	0.38	0.53	0.69	0.88	1.08	1.29	1.53

Unit Size	Rows	Connection OD (in)	GPM	Head Loss (ft-H_2O)	CFM							
					2000	2500	3000	3500	4000	5000	6000	7000
524	1	0.875	2	0.36	48.7	52.0	54.6	56.7	58.5	61.3	63.5	65.3
			4	1.41	60.3	65.7	70.0	73.7	76.8	82.0	86.2	89.6
			6	3.13	65.6	71.9	77.2	81.8	85.7	92.3	97.7	102.3
			8	5.52	68.5	75.6	81.4	86.6	91.0	98.6	104.8	110.0
			Airside Ps		0.05	0.07	0.10	0.13	0.16	0.24	0.32	0.42
524	2	0.875	2	0.27	68.4	72.7	75.9	78.4	80.5	83.6	85.9	87.6
			4	1.05	91.7	100.2	107.0	112.6	117.3	124.8	130.6	135.2
			8	4.15	109.9	122.7	133.4	142.6	150.5	163.8	174.4	183.2
			10	6.45	114.3	128.4	140.2	150.5	159.4	174.5	186.7	197.0
			Airside Ps		0.11	0.16	0.21	0.27	0.34	0.50	0.68	0.88
524	3	1.125	3	0.28	94.7	102.0	107.6	112.0	115.6	121.1	125.1	128.2
			6	1.07	118.8	132.0	142.9	151.9	159.6	172.0	181.7	189.6
			10	2.92	131.1	148.2	162.7	175.2	186.0	204.3	219.0	231.3
			15	6.46	138.0	157.5	174.3	189.1	202.2	224.5	243.1	258.8
			Airside Ps		0.13	0.19	0.26	0.34	0.43	0.64	0.88	1.16
524	4	1.125	4	0.29	117.9	128.3	136.3	142.6	147.7	155.5	161.3	165.7
			8	1.16	144.4	162.4	177.2	189.7	200.3	217.6	231.2	242.1
			12	2.58	155.0	176.8	195.4	211.3	225.3	248.6	267.5	283.2
			18	5.76	162.7	187.5	209.1	228.0	244.9	273.7	297.6	317.9
			Airside Ps		0.17	0.25	0.35	0.46	0.58	0.86	1.18	1.54

Heating capacity data in tables assume an entering water temperature (EWT) of 180°F, and an entering air temperature (EAT) of 65°F, which corresponds to a temperature difference of 115°F. Smaller temperature differences will result in a decrease of heating capacity. To obtain the heating capacity at another temperature difference, refer to the hot water coil notes located in the Reference Section.

TH-500
HOT WATER COILS kW SELECTION DATA – METRIC UNITS

Unit Size	Rows	Connection OD (mm)	Water Flow (L/s)	Head Loss (kPa)	Airflow (L/s) 47	94	142	165	189	212	236	283
504 505 506	1	15.9	0.06	1.37	1.5	2.1	2.5	2.7	2.8	2.9	3.0	3.2
			0.13	5.26	1.6	2.3	2.8	3.0	3.1	3.3	3.4	3.7
			0.19	11.54	1.6	2.4	2.9	3.1	3.3	3.4	3.6	3.9
			0.25	20.12	1.6	2.4	2.9	3.1	3.3	3.5	3.7	4.0
			Airside Ps (kPa)		0.00	0.01	0.02	0.02	0.03	0.04	0.04	0.06
504 505 506	2	22.2	0.06	0.36	2.2	3.3	3.9	4.2	4.4	4.6	4.8	5.1
			0.13	1.37	2.4	3.7	4.5	4.9	5.2	5.5	5.8	6.2
			0.25	5.23	2.5	3.9	5.0	5.4	5.8	6.1	6.5	7.1
			0.38	11.48	2.5	4.0	5.1	5.6	6.0	6.4	6.8	7.4
			Airside Ps (kPa)		0.01	0.02	0.04	0.05	0.06	0.08	0.09	0.13
504 505 506	3	22.2	0.06	0.21	2.6	3.9	4.7	4.9	5.2	5.4	5.6	5.9
			0.13	0.84	2.8	4.5	5.6	6.0	6.4	6.8	7.1	7.6
			0.25	3.26	2.9	4.8	6.2	6.8	7.3	7.8	8.2	8.9
			0.38	7.29	3.0	5.0	6.5	7.1	7.7	8.2	8.7	9.5
			Airside Ps (kPa)		0.01	0.03	0.06	0.08	0.10	0.12	0.14	0.19
504 505 506	4	22.2	0.06	0.15	2.8	4.2	5.1	5.4	5.7	5.9	6.1	6.4
			0.13	0.60	3.1	5.0	6.3	6.8	7.2	7.6	7.9	8.5
			0.25	2.36	3.2	5.4	7.1	7.8	8.4	9.0	9.5	10.3
			0.38	5.29	3.3	5.6	7.4	8.2	8.9	9.5	10.1	11.1
			Airside Ps (kPa)		0.01	0.04	0.08	0.10	0.13	0.16	0.19	0.25

Unit Size	Rows	Connection OD (mm)	Water Flow (L/s)	Head Loss (kPa)	Airflow (L/s) 236	283	330	378	472	566	661	755
508	1	15.9	0.06	1.88	3.5	3.8	4.0	4.1	4.4	4.7	4.8	5.0
			0.13	7.14	4.0	4.3	4.6	4.8	5.2	5.5	5.8	6.0
			0.19	15.66	4.2	4.5	4.8	5.1	5.5	5.9	6.2	6.5
			0.25	27.32	4.3	4.7	4.9	5.2	5.7	6.1	6.4	6.7
			Airside Ps (kPa)		0.03	0.04	0.05	0.06	0.09	0.12	0.16	0.20
508	2	22.2	0.06	0.51	5.4	5.8	6.1	6.4	6.6	6.8	7.3	--
			0.13	1.88	6.6	7.1	7.6	8.0	8.3	8.7	9.7	--
			0.25	7.14	7.3	8.1	8.7	9.2	9.7	10.1	11.5	--
			0.38	15.60	7.7	8.4	9.1	9.7	10.3	10.7	12.4	--
			Airside Ps (kPa)		0.06	0.08	0.10	0.13	0.15	0.18	0.33	--
508	3	22.2	0.06	0.24	6.4	6.8	7.1	7.3	7.7	8.0	--	--
			0.13	0.93	8.1	8.7	9.3	9.7	10.5	11.1	--	--
			0.25	3.62	9.3	10.2	11.0	11.7	12.8	13.8	--	--
			0.50	14.29	10.0	11.2	12.2	13.0	14.5	15.8	--	--
			Airside Ps (kPa)		0.09	0.12	0.15	0.19	0.28	0.38	--	--
508	4	22.2	0.13	0.63	9.0	9.8	10.4	10.9	11.7	--	--	--
			0.25	2.51	10.6	11.7	12.6	13.4	14.8	--	--	--
			0.38	5.59	11.3	12.5	13.6	14.6	16.2	--	--	--
			0.50	9.92	11.7	13.0	14.2	15.3	17.1	--	--	--
			Airside Ps (kPa)		0.11	0.16	0.20	0.25	0.37	--	--	--

Heating capacity data in tables assume an entering water temperature (EWT) of 82°C, and an entering air temperature (EAT) of 18°C, which corresponds to a temperature difference of 64°C. Smaller temperature differences will result in a decrease of heating capacity. To obtain the heating capacity at another temperature difference, refer to the hot water coil notes located in the Reference Section.

TH-500
HOT WATER COILS kW SELECTION DATA – METRIC UNITS continued

Unit Size	Rows	Connection OD (mm)	Water Flow (L/s)	Head Loss (kPa)	Airflow (L/s) 236	283	330	378	472	566	661	755
510	1	15.9	0.06	0.33	3.9	4.2	4.4	4.6	4.9	5.1	5.3	5.5
			0.13	1.29	4.6	4.9	5.2	5.5	6.0	6.3	6.6	6.9
			0.25	4.87	5.0	5.4	5.8	6.2	6.7	7.2	7.6	8.0
			0.38	10.70	5.2	5.7	6.1	6.4	7.1	7.6	8.1	8.4
			Airside Ps (kPa)		0.01	0.02	0.02	0.03	0.05	0.06	0.08	0.10
510	2	22.2	0.06	1.08	6.0	6.4	6.7	7.0	7.5	7.8	8.1	8.3
			0.13	4.27	7.4	8.0	8.6	9.0	9.8	10.5	11.0	11.4
			0.19	9.56	8.0	8.8	9.4	10.0	11.0	11.8	12.5	13.1
			0.25	16.98	8.3	9.2	10.0	10.6	11.7	12.6	13.5	14.1
			Airside Ps (kPa)		0.03	0.04	0.05	0.07	0.10	0.13	0.17	0.22
510	3	22.2	0.06	0.72	6.9	7.3	7.7	7.9	8.4	8.7	8.9	9.1
			0.13	2.81	8.9	9.7	10.3	10.8	11.7	12.4	12.9	13.3
			0.25	11.33	10.3	11.4	12.4	13.2	14.6	15.7	16.6	17.5
			0.38	25.5	10.9	12.2	13.3	14.2	15.9	17.3	18.4	19.5
			Airside Ps (kPa)		0.05	0.06	0.08	0.10	0.15	0.20	0.26	0.32
510	4	22.2	0.13	2.48	10.0	10.9	11.6	12.2	13.2	13.9	14.5	--
			0.25	10.01	11.8	13.1	14.2	15.2	16.8	18.2	19.3	--
			0.38	22.54	12.5	14.0	15.3	16.5	18.6	20.2	21.6	--
			0.50	40.08	12.9	14.5	16.0	17.3	19.6	21.4	23.1	--
			Airside Ps (kPa)		0.06	0.08	0.11	0.13	0.20	0.27	0.35	--

Unit Size	Rows	Connection OD (mm)	Water Flow (L/s)	Head Loss (kPa)	Airflow (L/s) 378	472	566	661	755	850	944	1038
512	1	22.2	0.13	1.61	6.5	7.1	7.5	7.9	8.3	8.6	8.8	9.1
			0.25	6.19	7.3	8.0	8.6	9.1	9.6	10.0	10.4	10.7
			0.38	13.54	7.6	8.4	9.0	9.6	10.1	10.6	11.0	11.4
			0.50	23.61	7.8	8.6	9.3	9.9	10.5	11.0	11.4	11.8
			Airside Ps (kPa)		0.02	0.03	0.04	0.05	0.06	0.07	0.09	0.10
512	2	22.2	0.13	0.99	10.0	10.9	11.6	12.2	12.7	13.5	13.8	14.2
			0.25	3.89	11.8	13.1	14.3	15.2	16.0	17.3	17.9	18.4
			0.38	8.64	12.6	14.1	15.4	16.5	17.5	19.2	19.9	20.5
			0.50	15.24	13.1	14.7	16.1	17.3	18.4	20.3	21.1	21.8
			Airside Ps (kPa)		0.04	0.06	0.08	0.10	0.13	0.18	0.22	0.25
512	3	22.2	0.13	0.69	12.4	13.5	14.3	15.0	15.5	16.0	16.4	16.8
			0.25	2.69	15.0	16.7	18.2	19.4	20.4	21.3	22.0	22.7
			0.50	10.61	16.7	19.0	20.9	22.6	24.1	25.4	26.6	27.6
			0.76	23.76	17.4	19.9	22.1	24.0	25.6	27.1	28.5	29.7
			Airside Ps (kPa)		0.06	0.09	0.12	0.15	0.19	0.23	0.28	0.33
512	4	22.2	0.13	1.26	13.9	15.1	16.0	16.7	17.3	17.8	18.2	--
			0.25	2.18	17.2	19.2	20.8	22.3	23.3	24.4	25.3	--
			0.50	8.64	19.3	22.0	24.4	26.5	28.3	29.8	31.2	--
			0.76	19.34	20.1	23.2	25.9	28.2	30.3	32.2	33.9	--
			Airside Ps (kPa)		0.08	0.11	0.16	0.20	0.25	0.31	0.37	--

Heating capacity data in tables assume an entering water temperature (EWT) of 82°C, and an entering air temperature (EAT) of 18°C, which corresponds to a temperature difference of 64°C. Smaller temperature differences will result in a decrease of heating capacity. To obtain the heating capacity at another temperature difference, refer to the hot water coil notes located in the Reference Section.

TH-500
HOT WATER COILS kW SELECTION DATA – METRIC UNITS continued

Unit Size	Rows	Connection OD (mm)	Water Flow (L/s)	Head Loss (kPa)	Airflow (L/s)							
					283	330	378	472	708	944	1180	1416
514	1	15.9	0.06	0.60	5.8	6.4	6.6	6.9	7.7	8.3	8.6	9.0
			0.13	2.21	6.9	7.8	8.2	8.5	9.8	10.8	11.5	12.1
			0.19	10.04	7.6	8.7	9.2	9.7	10.9	12.0	12.9	13.7
			0.25	18.44	7.8	9.1	9.6	10.1	11.4	12.8	13.8	14.7
			Airside Ps (kPa)		0.00	0.01	0.01	0.01	0.03	0.05	0.07	0.09
514	2	22.2	0.13	1.17	10.1	11.5	12.1	12.7	14.7	16.0	17.0	17.7
			0.25	4.54	11.6	13.6	14.5	15.3	18.4	20.7	22.4	23.8
			0.38	10.04	12.2	14.6	15.5	16.5	20.2	23.0	25.1	26.9
			0.50	17.46	12.6	13.9	15.0	17.1	21.2	24.3	26.7	28.8
			Airside Ps (kPa)		0.01	0.02	0.02	0.03	0.06	0.10	0.14	0.19
514	3	22.2	0.13	0.75	12.5	13.5	14.3	15.7	17.9	19.3	20.3	21.0
			0.38	6.58	15.3	16.9	18.4	20.9	25.9	29.5	32.3	34.5
			0.50	11.63	15.6	17.4	19.0	21.8	27.3	31.5	34.8	37.4
			0.63	18.08	15.9	17.7	19.4	22.3	28.3	32.8	36.4	39.4
			Airside Ps (kPa)		0.02	0.02	0.03	0.05	0.09	0.15	0.21	0.29
514	4	22.2	0.25	2.33	16.2	17.9	19.4	22.0	26.6	29.8	32.1	33.8
			0.38	3.77	17.1	19.0	20.8	23.9	29.8	34.1	37.3	39.9
			0.50	9.21	17.5	19.6	21.5	24.9	31.7	36.7	40.6	43.7
			0.76	20.59	17.9	20.2	22.3	26.1	33.7	39.6	44.4	48.3
			Airside Ps (kPa)		0.03	0.03	0.04	0.06	0.12	0.20	0.29	0.39

Unit Size	Rows	Connection OD (mm)	Water Flow (L/s)	Head Loss (kPa)	Airflow (L/s)							
					472	708	944	1180	1416	1652	1888	1982
516	1	15.9	0.06	0.69	7.4	8.3	8.9	9.4	9.7	10.0	10.2	10.3
			0.13	2.57	9.3	10.7	11.8	12.6	13.3	13.8	14.3	14.4
			0.25	9.71	10.5	12.5	14.0	15.2	16.2	17.0	17.7	18.0
			0.38	21.28	11.0	13.3	15.0	16.3	17.5	18.4	19.3	19.6
			Airside Ps (kPa)		0.01	0.02	0.03	0.05	0.07	0.09	0.11	0.12
516	2	22.2	0.13	1.23	13.5	15.7	17.2	18.3	19.1	19.8	20.3	20.5
			0.25	4.75	16.3	19.9	22.4	24.3	25.9	27.1	28.3	28.6
			0.38	7.53	17.6	21.7	24.8	27.3	29.3	31.0	32.4	33.0
			0.50	18.56	18.2	22.8	26.3	29.0	31.4	33.3	35.0	35.6
			Airside Ps (kPa)		0.02	0.04	0.07	0.10	0.14	0.18	0.23	0.25
516	3	22.2	0.13	0.78	16.7	19.2	20.7	21.8	22.5	23.2	23.6	23.8
			0.25	3.08	20.6	25.1	28.2	30.5	32.3	33.8	35.0	35.4
			0.50	12.14	23.1	29.3	33.9	37.6	40.6	43.2	41.3	46.1
			0.63	18.86	23.7	30.3	35.3	39.4	42.8	45.6	45.3	49.0
			Airside Ps (kPa)		0.03	0.07	0.11	0.16	0.21	0.28	0.35	0.38
516	4	22.2	0.13	0.60	18.5	21.1	22.7	23.7	24.4	25.0	--	--
			0.25	2.39	23.3	28.4	31.9	34.5	36.4	38.0	--	--
			0.50	5.38	25.2	33.7	39.3	43.7	47.3	50.2	--	--
			0.63	14.80	26.9	34.9	41.1	46.1	50.1	53.5	--	--
			Airside Ps (kPa)		0.04	0.09	0.14	0.21	0.29	0.37	--	--

Heating capacity data in tables assume an entering water temperature (EWT) of 82°C, and an entering air temperature (EAT) of 18°C, which corresponds to a temperature difference of 64°C. Smaller temperature differences will result in a decrease of heating capacity. To obtain the heating capacity at another temperature difference, refer to the hot water coil notes located in the Reference Section.

TH-500
HOT WATER COILS kW SELECTION DATA – METRIC UNITS continued

Unit Size	Rows	Connection OD (mm)	Water Flow (L/s)	Head Loss (kPa)	Airflow (L/s)							
					944	1180	1416	1652	1888	2124	2360	2596
520	1	22.2	0.13	0.99	12.8	13.7	14.3	14.9	15.3	15.8	16.1	16.4
			0.25	3.89	15.8	17.1	18.2	19.1	19.9	20.6	21.3	21.8
			0.38	8.64	17.2	18.7	20.1	21.2	22.2	23.0	23.8	24.5
			0.50	15.24	17.9	19.7	21.1	22.4	23.5	24.5	25.4	26.1
			Airside Ps (kPa)		0.02	0.03	0.04	0.05	0.06	0.07	0.09	0.10
520	2	22.2	0.13	1.67	18.5	19.7	20.6	21.2	21.8	22.2	22.6	23.0
			0.25	3.35	24.7	26.9	28.6	30.1	31.3	32.3	33.2	34.0
			0.50	11.63	29.5	32.8	35.5	37.8	39.8	41.6	43.2	44.6
			0.63	18.08	30.7	34.3	37.3	39.9	42.1	44.1	45.9	47.5
			Airside Ps (kPa)		0.04	0.06	0.08	0.10	0.13	0.15	0.18	0.22
520	3	28.6	0.25	1.32	28.5	31.1	33.1	34.7	36.0	37.2	38.2	39.1
			0.38	2.90	32.0	35.5	38.2	40.6	42.5	44.3	45.8	47.1
			0.50	5.11	34.1	38.1	41.4	44.2	46.6	48.8	50.7	52.3
			0.76	11.33	36.3	41.0	45.0	48.5	51.5	54.2	56.6	58.8
			Airside Ps (kPa)		0.05	0.07	0.10	0.13	0.16	0.20	0.24	0.29
520	4	28.6	0.38	1.85	36.5	40.3	43.4	46.0	48.1	49.9	51.5	52.9
			0.63	5.08	40.9	46.1	50.5	54.1	57.3	60.1	62.6	64.8
			0.88	9.89	43.1	49.0	54.1	58.5	62.3	65.7	68.8	71.5
			1.14	16.26	44.4	50.8	56.3	61.1	65.4	69.2	72.7	75.8
			Airside Ps (kPa)		0.06	0.09	0.13	0.17	0.22	0.27	0.32	0.38

Unit Size	Rows	Connection OD (mm)	Water Flow (L/s)	Head Loss (kPa)	Airflow (L/s)							
					944	1180	1416	1652	1888	2360	2832	3304
524	1	22.2	0.13	1.08	14.3	15.2	16.0	16.6	17.1	17.9	18.6	19.1
			0.25	4.21	17.7	19.2	20.5	21.6	22.5	24.0	25.2	26.2
			0.38	9.36	19.2	21.1	22.6	24.0	25.1	27.0	28.6	30.0
			0.50	16.50	20.1	22.1	23.8	25.4	26.6	28.9	30.7	32.2
			Airside Ps (kPa)		0.01	0.02	0.02	0.03	0.04	0.06	0.08	0.10
524	2	22.2	0.13	0.81	20.0	21.3	22.2	23.0	23.6	24.5	25.2	25.6
			0.25	3.14	26.8	29.3	31.3	33.0	34.3	36.5	38.2	39.6
			0.50	12.40	32.2	35.9	39.1	41.8	44.1	48.0	51.1	53.6
			0.63	19.28	33.5	37.6	41.1	44.1	46.7	51.1	54.7	57.7
			Airside Ps (kPa)		0.03	0.04	0.05	0.07	0.08	0.12	0.17	0.22
524	3	28.6	0.19	0.84	27.7	29.9	31.5	32.8	33.8	35.5	36.6	37.5
			0.38	3.20	34.8	38.6	41.8	44.5	46.7	50.4	53.2	55.5
			0.63	8.73	38.4	43.4	47.6	51.3	54.5	59.8	64.1	67.7
			0.95	19.31	40.4	46.1	51.0	55.4	59.2	65.7	71.2	75.8
			Airside Ps (kPa)		0.03	0.05	0.06	0.08	0.11	0.16	0.22	0.29
524	4	28.6	0.25	0.87	34.5	37.6	39.9	41.8	43.2	45.5	47.2	48.5
			0.50	3.47	42.3	47.6	51.9	55.5	58.6	63.7	67.7	70.9
			0.76	7.71	45.4	51.8	57.2	61.9	66.0	72.8	78.3	82.9
			1.14	17.22	47.6	54.9	61.2	66.8	71.7	80.1	87.1	93.1
			Airside Ps (kPa)		0.04	0.06	0.09	0.11	0.14	0.21	0.29	0.38

Heating capacity data in tables assume an entering water temperature (EWT) of 82°C, and an entering air temperature (EAT) of 18°C, which corresponds to a temperature difference of 64°C. Smaller temperature differences will result in a decrease of heating capacity. To obtain the heating capacity at another temperature difference, refer to the hot water coil notes located in the Reference Section.

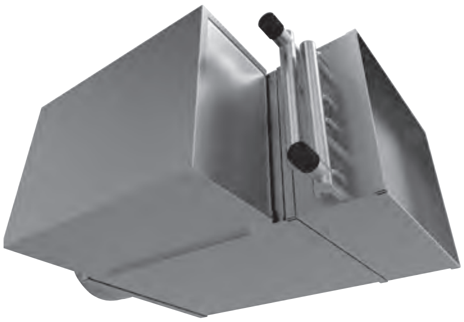
TH-500
ACCESSORIES AND COMPONENTS
HOT WATER COILS

When ordered with the air terminal, the hot water coil is shipped attached to the discharge of the terminal casing via slip and drive connections. The discharge end of the casing has slip and drive connections for easy connection to downstream ductwork. The hot water coil is constructed of aluminum fin and copper serpentine-type tubes with male sweat connections tested at 300 psig.

Coil selection may be made using METALAIRE Terminal Selection Software. Contact your METALAIRE representative for a copy. In the interest of energy conservation and due to the possibility of condensation, all hot water coils are marked, "Coil must be externally insulated after installation in the field." Hot water coils are tested in accordance to AHRI. Options, at an additional charge on hot water coils, include access doors for inspection and cleaning, and inlet/outlet on opposite sides of coils.

HOT WATER COIL CONSTRUCTION DETAILS

- Hot water coils are factory mounted on the discharge of the terminal and are available with an optional integral coil access door.
- Coils are enclosed in 20 gauge coated steel casing with slip and drive connection.
- Fins are rippled and sine wave type constructed from heavy gauge aluminum, mechanically bonded to the tubes.
- Tubes are copper with a minimum wall thickness of 0.016" with male solder header connections.
- Coils are leak tested to 300 psig with minimum burst of 2000 psig at ambient temperature.
- Coil performance data is based on tests run in accordance with AHRI standard 410; coils are AHRI certified and include AHRI label.



Coil Connection Size, Inches (mm)				
TH Size	1 Row	2 Row	3 Row	4 Row
504 / 505 / 506	5/8" (15.8)	7/8" (22.2)	7/8" (22.2)	7/8" (22.2)
508	5/8" (15.8)	7/8" (22.2)	7/8" (22.2)	7/8" (22.2)
510	5/8" (15.8)	7/8" (22.2)	7/8" (22.2)	7/8" (22.2)
512	7/8" (22.2)	7/8" (22.2)	7/8" (22.2)	7/8" (22.2)
514	5/8" (15.8)	7/8" (22.2)	7/8" (22.2)	7/8" (22.2)
516	5/8" (15.8)	7/8" (22.2)	7/8" (22.2)	7/8" (22.2)
520	7/8" (22.2)	7/8" (22.2)	1 1/8" (28.6)	1 1/8" (28.6)
524	7/8" (22.2)	7/8" (22.2)	1 1/8" (28.6)	1 1/8" (28.6)

All coils have 10 fins/inch with the exception of 3&4 row coils on 20 & 24 boxes which are 8 FPI

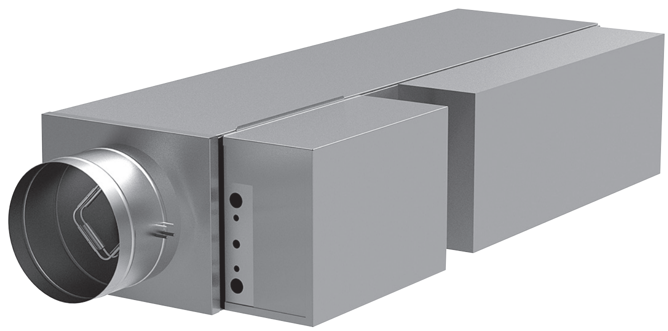
All accessories which can be attached to the Single Duct Boxes are not a part of the AHRI certification program but ratings can be affected by their use.

TH-500
ACCESSORIES AND COMPONENTS
ELECTRIC HEAT

Electric heater elements, as illustrated on this page, are integral to the air terminal. The discharge end has slip and drive connections for easy connection to downstream ductwork. ETL® listed heaters are provided with a fan interlock relay. Heaters that will be controlled electronically must include a 24 VAC control circuit to operate with the low voltage controls on the air terminal. Heater plenums are internally insulated. When an air terminal is ordered with clean room lining and electric heat, the heater plenum is either internally lined with optional foil backed insulation or closed cell foam or may require external insulation in field.

INCLUDED WITH EACH HEATER ASSEMBLY:

- Heater and cabinet mounted on the discharge of the TH-500
- Discharge plenum with 1/2" fiber face lining
- Air pressure switch
- De-energizing magnetic contactors per step and backup magnetic contactor
- Primary automatic reset high temperature limit (disc type)
- Backup manual reset high temperature limit (disc type)
- Non-isolated transformer
- Slip and drive connections
- Heater is shipped factory mounted and wired



ELECTRIC HEATER ASSEMBLY CONSTRUCTION DETAILS

- Electric reheat coils are factory mounted on the discharge of the air terminal. The heaters are ETL listed for zero clearance, and are tested in accordance with UL Standard 1995, CSA-C22.2 No. 236 and the National Electric Code (NEC). Heater casings are constructed of heavy-duty zinc-coated steel. Element wire is high grade nichrome alloy derated to 45 watts per square inch density. Element wire is supported by moisture-resistant steatite ceramics.
- Ceramics are enclosed in reinforcement brackets spaced across the heater element rack at 2" to 4" intervals. Controls are contained in a NEMA 1 control cabinet with a hinged, latching door. A permanent wiring diagram is affixed to the inside of the control cabinet door for field reference.

All accessories that can be attached to the Single Duct Boxes are not a part of the AHRI certification program but ratings can be affected by their use.

TH-500
ELECTRIC HEATER CAPACITIES

Single Phase				
Unit Size	**Heater Voltage**	**Min. kW Step**	**Max. kW**	**Max. Steps**
504 505 506	120	1	4	2
	208	0.6	4	2
	240	0.6	4	2
	277	0.6	4	2
	480	1.6	4	2
508	120	1	5	3
	208	0.6	8	3
	240	0.6	8	3
	277	0.6	8	3
	480	1	8	3
510	120	0.6	5	3
	208	0.6	9.5	3
	240	0.6	11	3
	277	0.6	12	3
	480	1	15	3
512	120	0.6	5	3
	208	0.6	9.5	3
	240	0.6	11	3
	277	0.6	12	3
	480	0.6	23	3
514	120	0.6	5	3
	208	0.6	9.5	3
	240	0.6	11	3
	277	0.6	12	3
	480	0.6	23	3
516	120	1.4	5	3
	208	0.6	9.5	3
	240	0.6	11	3
	277	0.6	12	3
	480	0.6	23	3
520	120	0.6	5	3
	208	0.6	9.5	3
	240	0.6	11	3
	277	0.6	12	3
	480	0.6	23	3
524	120	0.6	5	3
	208	0.6	9.5	3
	240	0.6	11	3
	277	0.6	12	3
	480	0.6	23	3

Three Phase FCQ kW Limits				
Unit Size	**Heater Voltage**	**Min. kW Step**	**Max. kW**	**Max. Steps**
2	208	0.6	4	2
2	240	0.6	4	2
2	480	1.6	4	2
3	208	1.6	8	3
3	240	1.6	8	3
3	480	1.6	8	3
4	208	1.6	13	3
4	240	1.6	13	3
4	480	1.6	15	3
5	208	1.6	16	3
5	240	1.6	16	3
5	480	1.6	23	3
6	208	1.6	16	3
6	240	1.6	16	3
6	480	1.6	24	3
7	208	1.6	16	3
7	240	1.6	16	3
7	480	1.6	39	3
6	208	1.6	16	3
6	240	1.6	16	3
6	480	1.6	39	3
7	208	1.6	16	3
7	240	1.6	16	3
7	480	1.6	39	3

NOTES:

1. *Heaters less than 5 kW are specifiable to nearest 0.2 kW. Heaters greater than 5 kW and less than 10 kW are specifiable to nearest 0.5 kW. Heaters greater than 10 kW are specifiable to nearest 1 kW.*
2. *Minimum flow rate for electric heat is 70 CFM/kW. Lower CFM's can cause nuisance tripping, excessive discharge temperatures, rapid cycling, and rapid element failure. Electric Heat units running below 70 CFM/kW will void all warranties.*
3. *For optimum thermal comfort, the suggested discharge temperature should not exceed 20°F above room set point.*
4. *We do not recommend discharge temperatures in excess of 115°F to protect heater coils.*
5. *Maximum number of steps at minimum kW is one step.*
6. *If more than 1 heater is wired into a building's circuit breaker (multi-outlet branch circuit) each heater will require the addition of power side fusing.*

ELECTRIC HEAT SELECTION:

A. Specify electric duct heaters using voltage, kW, and number of steps.

B. Use above chart to select voltage. Calculate required kW using following equations:

$$kW = \frac{BTU / HR}{3413} \qquad kW = \frac{CFM \times \Delta \times 1.085}{3413} \qquad \Delta = \frac{kW \times 3413}{CFM \times 1.085}$$

$$CFM = \frac{kW \times 3413}{\Delta \times 1.085} \qquad CFM = \frac{kW \times 3413}{\Delta \times 1.085}$$

** air density at sea level—reduce by 0.036 for each 1000 feet of altitude above sea level*

Where: BTU / Hr = Required heating capacity

CFM = volume of air during heating. Typically 100% of maximum cooling air volume

Δ = desired air temperature rise across the electric heater

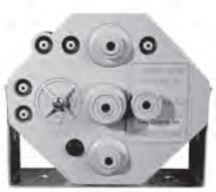
Inlet air temperature = primary air temperature, usually 55°F

METALAIRE™

TH-500
CONTROL SEQUENCE OFFERINGS

PPD–PNEUMATIC PRESSURE DEPENDENT

- 110 DA/NC Full Closed
- 112 RA/NO Full Open



PPI–PNEUMATIC PRESSURE INDEPENDENT

- 114 DA/NC
- 115 DA/NO
- 116 RA/NC
- 117 RA/NO
- 140 NO

ELECTRONIC–PRESSURE DEPENDENT

- 152 Cooling Only
- 153 Cooling with Reheat
- 156 Static Control
- 157 Actuator Only

ANALOG ELECTRIC

- 160 Cooling Only
- 161 Cooling with Heat
- 164 Night Setback/Morning Warm-up
- 165 Heating/Cooling Changeover
- 173 Static Pressure Control

DIRECT DIGITAL

LON WORKS

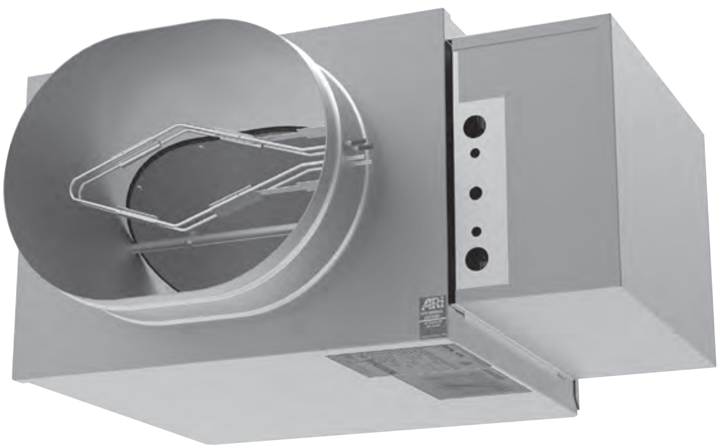
- 190 Cooling Only
- 191 Heating / Cooling Auto Changeover
- 192 Hot Water Reheat
- 193-1E 1 Stage Electric Heat
- 193-2E 2 Stage Electric Heat
- 193-3E 3 Stage Electric Heat

BACnet

- 180 Cooling Only
- 181 Cooling or Heating
- 182 Hot Water Reheat
- 183-1E 1 Stage Electric Heat
- 183-2E 2 Stage Electric Heat
- 183-3E 3 Stage Electric Heat

Refer to Reference Section for complete description.

METALAIRE™



TL-500
LOW PROFILE SINGLE DUCT AIR TERMINAL UNIT

SPECIFIABLE FEATURES

- Maximum height of units is 12 1/2".
- 22 ga. galvanized steel casing, mechanically sealed for low leakage construction.
- Damper construction of double layer 18 gauge equivalent with mechanically fastened integral blade seal.
- Metal inlet flow sensor with extra balancing taps.
- Butt welded round primary inlet duct to minimize leakage.

INDEX OF SECTIONS

METALAIRE™

TL-500
LOW PROFILE SINGLE DUCT AIR TERMINAL UNIT

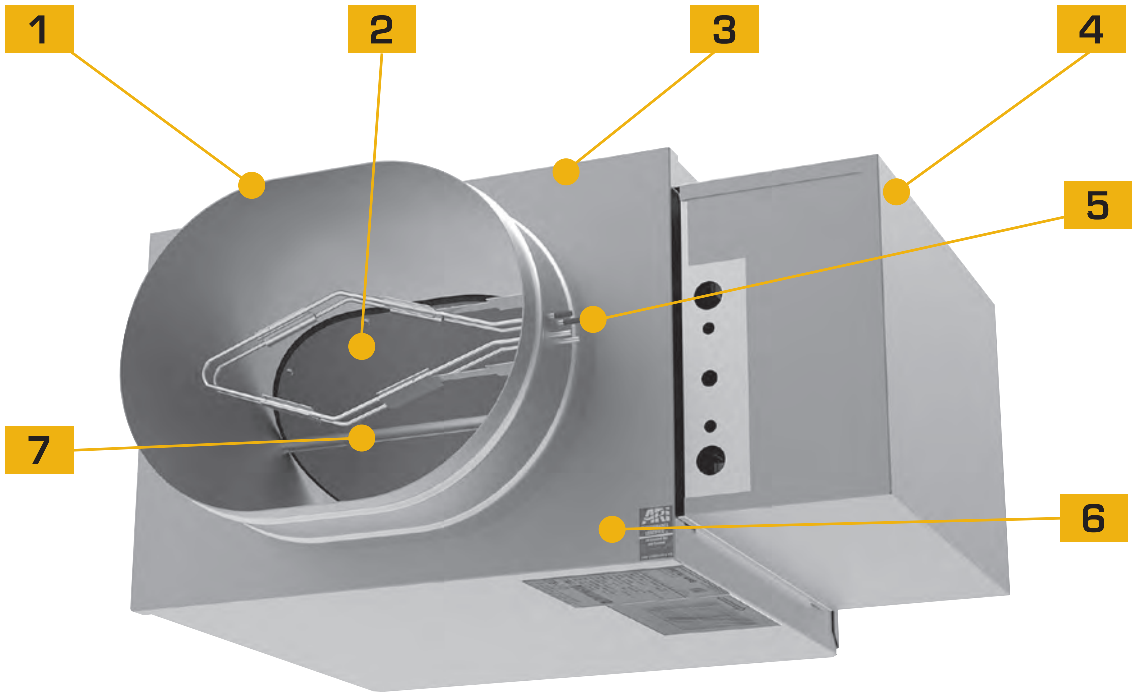
The METALAIRE TL-500 is the simplest and most widely used VAV terminal unit used for low profile applications. Its basic components are an insulated sheet metal box, round inlet damper, flow measuring device and rectangular outlet. The unit is served by a central air handler and modulates the amount of 'primary' cooling air to the space between a minimum set point and the design airflow.

When necessary, the METALAIRE TL-500 can be provided with a heating coil on the discharge of the unit to provide for reheat. The unit has a maximum height of 12 1/2".

STANDARD FEATURES

- TL-500 is available in 8 unit sizes to handle 80–4000 CFM.
- Variable or constant volume applications.
- 22 ga. galvanized steel casing, mechanically sealed for low leakage
- Damper construction of double layer, 18 gauge equivalent, galvanized steel with sandwiched flexible gasket, mechanically fastened to provide tight seal (<1% at 3.0" wg static pressure).
- Optional factory calibrated controls to meet all control strategies.
- Multi-quadrant, averaging flow sensor for highly accurate (+/-5%) flow readings with varying inlet duct configurations after certified balancer has balanced terminal
- Externally accessible, steel balancing taps.
- External control cabinet with offset mounting plate is standard.
- 3-beaded inlet connection tube for added rigidity and secure flex duct connections.
- 1/2" thick, dual density (1.5lb/ft^3 min.) fiberglass insulation with edges coated. Meets NFPA 90A and UL 181.
- Rectangular discharge with slip and drive cleat duct connection.
- Independently tested and certified laboratory performance data.
- Full range of options and accessories available (heating coils, disconnects, attenuators, etc.).
- Full range of liners/insulation available.

METALAIRE™



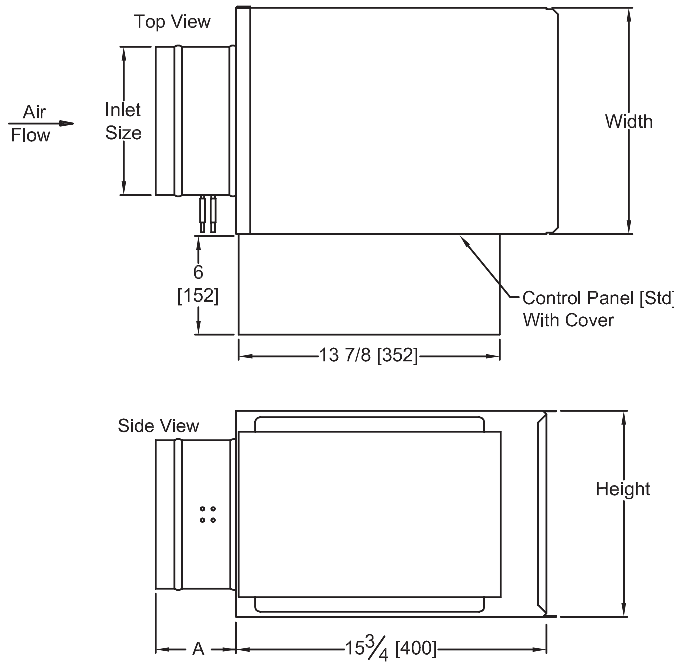
TL-500
LOW PROFILE SINGLE DUCT AIR TERMINAL UNIT

FEATURES AND BENEFITS

1. Continuous welded primary inlet duct to minimize leakage with three stiffening beads for added rigidity.
2. Damper construction of double layer 18 gauge equivalent with mechanically fastened integral blade seal.
3. Galvanized steel casing, mechanically sealed for low leakage construction.
4. NEMA 1 rated control enclosure with stand-off to prevent penetration of casing standard on all terminal units.
5. All TL-500 terminal units are AHRI certified and shipped with the AHRI seal.
6. All metal constructed inlet flow sensor with extra balancing taps.
7. Damper rotates in a self-lubricating, long life, low friction thermoplastic bearing.

METALAIRE™

TL-500
SINGLE DUCT AIR TERMINAL UNIT, COOLING ONLY



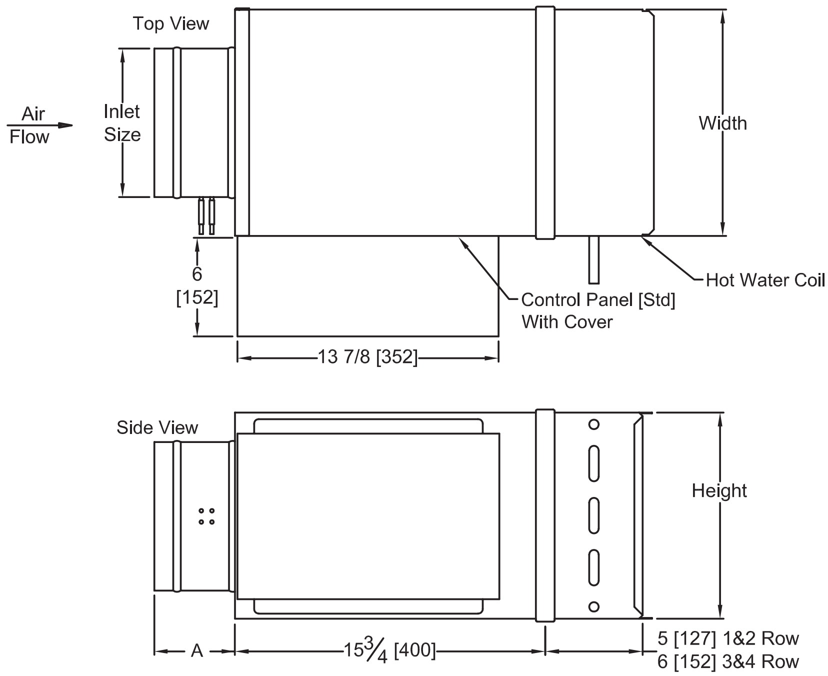
The standard location for control panel is Right Hand on Model TL.
Looking in the direction of airflow, the control panel is on the right.

The control panel will overhang the top and bottom of model TL506 1" (25.4 mm).
Control Panel Mounting Surface width by height is 13 7/8" x 9 3/4".

Models TL 512, 514 & 516 have flat oval inlet ducts.

Model Number	Inlet Size		A		Width		Height		Unit wt.	
	in.	mm.	in.	mm.	in.	mm.	in.	mm.	lb.	kg.
TL504	3 7/8	99	10	254	12	305	8	203	12	5
TL505	4 7/8	124	10	254	12	305	8	203	12	5
TL506	5 7/8	149	5	127	12	305	8	203	12	5
TL508	7 7/8	200	5	127	12	305	10	254	15	7
TL510	9 7/8	251	5	127	14	356	12 1/2	318	18	8
TL512	13 x 9 7/8	330 x 251	5	127	18	457	12 1/2	318	23	10
TL514	16 1/4 x 9 7/8	413 x 251	5	127	24	610	12 1/2	318	26	12

TL-500
SINGLE DUCT AIR TERMINAL UNIT WITH HOT WATER COIL



The standard location for control panel is Right Hand on Model TL.
Looking in the direction of airflow, the control panel is on the right.

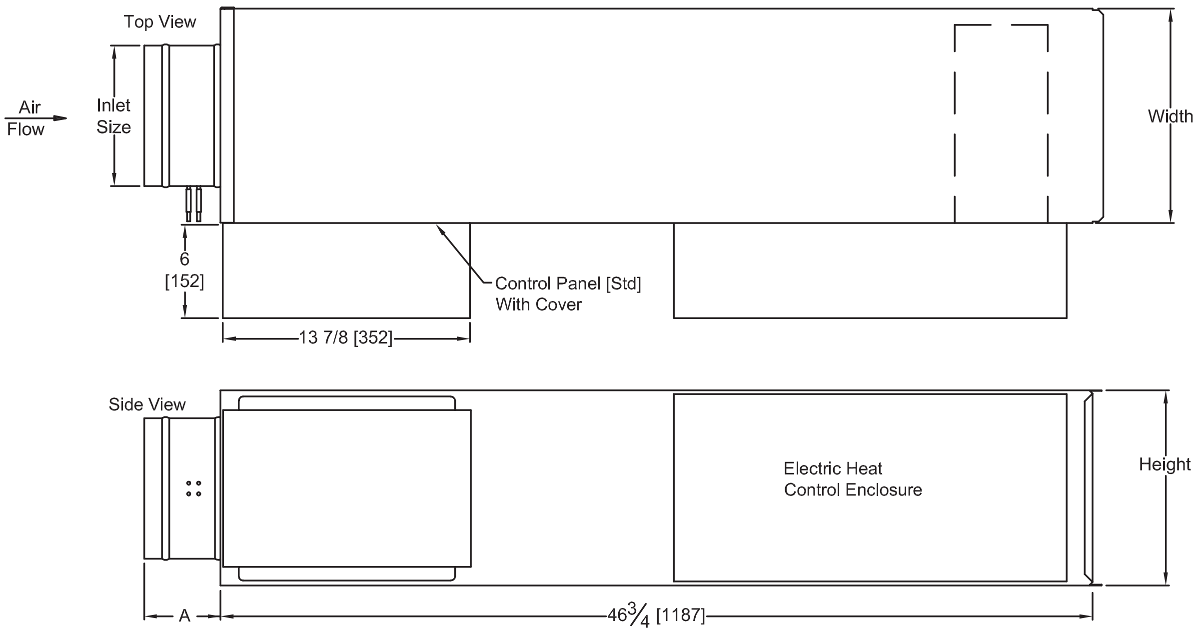
The control panel will overhang the top and bottom of model TL506 1" (25.4 mm).
Control Panel Mounting Surface width by height is 13 7/8" x 9 3/4".

Models TL 512, 514 & 516 have flat oval inlet ducts.

Model Number	Inlet Size		A		Width		Height		Unit wt.							
									1 Row		2 Row		3 Row		4 Row	
	in.	mm.	in.	mm.	in.	mm.	in.	mm.	lb.	kg.	lb.	kg.	lb.	kg.	lb.	kg.
TL504	3 7/8	99	10	254	12	305	8	203	16.5	8	17.5	8	20	9	20.25	9
TL505	4 7/8	124	10	254	12	305	8	203	16.5	8	17.5	8	20	9	20.25	9
TL506	5 7/8	149	5	127	12	305	8	203	16.5	8	17.5	8	20	9	20.25	9
TL508	7 7/8	200	5	127	12	305	10	254	20	9	22.75	10	26.25	12	26.5	12
TL510	9 7/8	251	5	127	14	356	12 1/2	318	24.5	11	27.5	13	33.75	15	34.75	16
TL512	13 x 9 7/8	300 x 251	5	127	18	457	12 1/2	318	31.5	14	35.5	16	42.25	19	44.5	20
TL514	16 1/4 x 9 7/8	413 x 251	5	127	24	610	12 1/2	318	35	16	41.5	19	50	23	51.75	24
TL516	19 3/8 x 9 7/8	492 x 251	5	127	28	711	12 1/2	318	41.5	19	47.25	21	55.25	25	58.5	27

METALAIRE™

TL-500
SINGLE DUCT AIR TERMINAL UNIT WITH INTEGRAL ATTENUATOR AND ELECTRIC HEAT



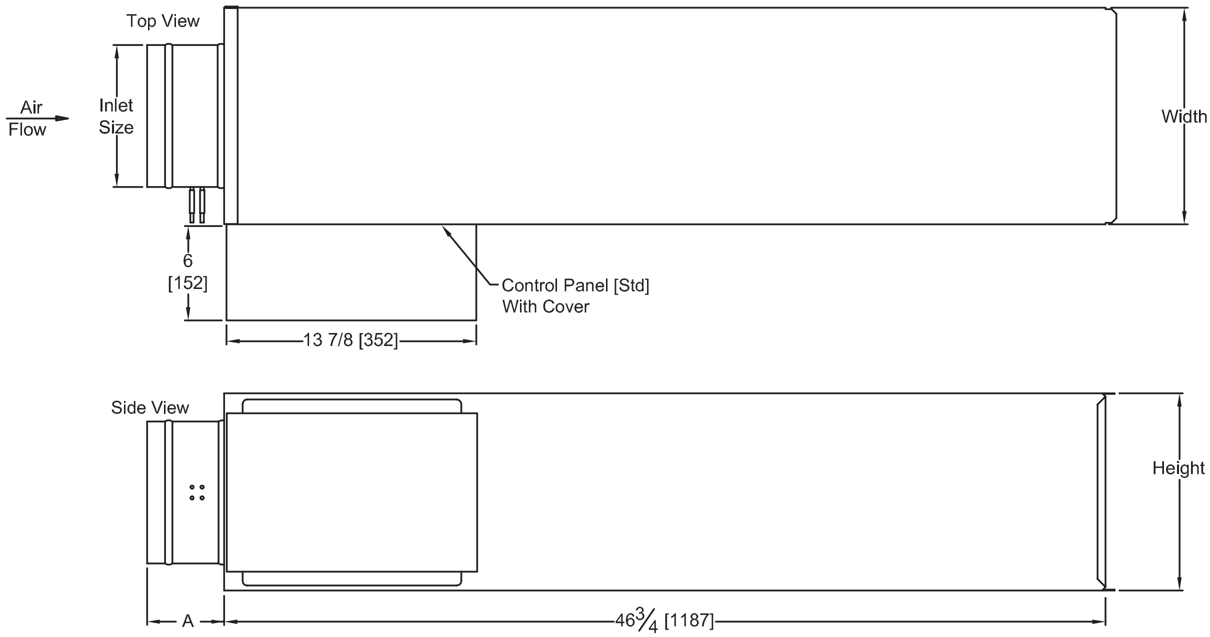
The standard location for control panel is Right Hand on Model TL.
Looking in the direction of airflow, the control panel is on the right.

The control panel will overhang the top and bottom of model TL506 1" (25.4 mm).
Control Panel Mounting Surface width by height is 13 7/8" x 9 3/4".

Models TL 512, 514 & 516 have flat oval inlet ducts.

Model Number	Inlet Size		A		Width		Height		Unit wt.	
	in.	mm.	in.	mm.	in.	mm.	in.	mm.	lb.	kg.
TL504	3 7/8	99	10	254	12	305	8	203	39	18
TL505	4 7/8	124	10	254	12	305	8	203	39	18
TL506	5 7/8	149	5	127	12	305	8	203	38	17
TL508	7 7/8	200	5	127	12	305	10	254	43	20
TL510	9 7/8	251	5	127	14	356	12 1/2	318	50	23
TL512	13 x 9 7/8	330 x 251	5	127	18	457	12 1/2	318	59	27
TL514	16 1/4 x 9 7/8	413 x 251	5	127	24	610	12 1/2	318	67	30

TL-500
SINGLE DUCT AIR TERMINAL UNIT WITH INTEGRAL ATTENUATOR



The standard location for control panel is Right Hand on Model TL.
Looking in the direction of airflow, the control panel is on the right.

The control panel will overhang the top and bottom of model TL506 1" (25.4 mm).
Control Panel Mounting Surface width by height is 13 7/8" x 9 3/4".

Models TL 512, 514 & 516 have flat oval inlet ducts.

Model Number	Inlet Size		A		Width		Height		Unit wt.	
	in.	mm.	in.	mm.	in.	mm.	in.	mm.	lb.	kg.
TL504	3 7/8	99	10	254	12	305	8	203	39	18
TL505	4 7/8	124	10	254	12	305	8	203	39	18
TL506	5 7/8	149	5	127	12	305	8	203	38	17
TL508	7 7/8	200	5	127	12	305	10	254	43	20
TL510	9 7/8	251	5	127	14	356	12 1/2	318	50	23
TL512	13 x 9 7/8	330 x 251	5	127	18	457	12 1/2	318	59	27
TL514	16 1/4 x 9 7/8	413 x 251	5	127	24	610	12 1/2	318	67	30

METALAIRE™

TL-500
AHRI CERTIFIED RATING POINTS

AHRI Certified Radiated Sound Power, ΔPs = 1.5 in.wg

Unit Size	Min Ps	CFM	Octave Band					
			2	3	4	5	6	7
504	0.04	200	52	44	38	32	26	22
505	0.04	200	52	44	38	32	26	22
506	0.10	400	58	53	49	44	41	36
508	0.01	700	62	57	52	44	39	34
510	0.04	1100	58	58	52	44	38	32
512	0.08	1400	63	59	55	47	41	36
514	0.11	1950	63	56	50	41	35	33
516	0.10	2600	66	63	58	52	49	46

AHRI Certified Discharge Sound Power, ΔPs = 1.5 in.wg.

Unit Size	Min Ps	Fan CFM	Octave Band					
			2	3	4	5	6	7
504	0.04	200	65	60	55	51	46	39
505	0.04	200	65	60	55	51	46	39
506	0.10	400	66	63	59	53	48	49
508	0.01	700	75	71	62	58	55	53
510	0.04	1100	74	70	65	60	56	53
512	0.08	1400	72	72	67	62	57	53
514	0.11	1950	72	68	62	58	59	58
516	0.10	2600	79	77	72	68	63	59

CERTIFICATIONS AND STANDARDS

- Units tested per ANSI/ASHRAE Standard 130.
- All model sizes certified in accordance with AHRI 880 certification program.
- ETL listed to meet requirements of UL 1995 and CSA 236.
- Dual-density fiberglass insulation meets UL 181 and NFPA 90A requirements.
- Insulation meets ASHRAE 62.1 requirements for resistance to mold growth and erosion.

AHRI CERTIFIED™
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VAV Terminals
AHRI Standard 880

TL-500
RADIATED SOUND POWER at ΔPS = 0.50, 0.75 and 1.0 in.wg.

Unit Size	CFM	(L/s)	Min Ps in.wg.	(Pa)	ΔPs = 0.50 in.wg. (125 Pa) Octave Band Sound Power, Lw, dB 2	3	4	5	6	7	NC	ΔPs = 0.75 in.wg. (187 Pa) Octave Band Sound Power, Lw, dB 2	3	4	5	6	7	NC	ΔPs = 1.0 in.wg. (500 Pa) Octave Band Sound Power, Lw, dB 2	3	4	5	6	7	NC
504/505 4 & 5 inch	50	(24)	0.005	(1.2)	41	32	19	19	15	7	<15	42	33	20	20	16	8	<15	43	34	21	21	17	9	<15
	100	(47)	0.015	(3.8)	43	34	23	22	19	13	<15	44	35	24	23	20	14	<15	45	36	25	24	21	15	<15
	150	(71)	0.027	(6.7)	46	38	29	26	21	16	<15	47	39	30	27	22	17	<15	48	40	31	28	23	18	<15
	200	(94)	0.038	(9.5)	49	41	35	29	23	18	<15	50	42	36	30	24	19	<15	51	43	37	31	25	20	<15
	250	(118)	0.059	(14.8)	51	43	39	32	28	26	<15	52	44	40	33	29	27	<15	53	45	41	34	30	28	<15
	300	(142)	0.071	(17.6)	53	46	43	35	32	30	17	54	47	44	36	33	31	18	55	48	45	37	34	32	19
506 6 inch	100	(47)	0.005	(1.2)	43	34	23	22	19	13	<15	44	35	24	23	20	14	<15	45	36	25	24	21	15	<15
	200	(94)	0.020	(5.0)	49	41	35	29	23	18	<15	50	42	36	30	24	19	<15	51	43	37	31	25	20	<15
	300	(142)	0.045	(11.2)	53	46	43	35	32	30	17	54	47	44	36	33	31	18	55	48	45	37	34	32	19
	400	(189)	0.100	(24.9)	55	50	46	41	38	32	20	56	51	47	42	39	33	21	57	52	48	43	40	34	22
	500	(236)	0.125	(31.1)	57	53	48	44	40	34	22	58	54	49	45	41	35	23	59	55	50	46	42	36	24
	600	(283)	0.180	(44.8)	58	55	50	46	42	36	24	59	56	51	47	43	37	25	60	57	52	48	44	38	26
508 8 inch	200	(94)	0.000	(0.0)	48	36	25	20	17	16	<15	50	39	30	26	20	19	<15	51	41	35	30	23	20	<15
	300	(142)	0.001	(0.2)	51	40	33	25	20	19	<15	53	43	37	31	24	21	<15	55	46	42	36	28	24	16
	600	(283)	0.003	(0.7)	54	44	37	33	25	20	<15	57	48	40	35	28	23	18	59	52	43	38	31	27	21
	700	(330)	0.005	(1.2)	56	46	40	35	27	21	17	58	50	42	37	30	25	20	61	53	45	40	33	28	23
	1000	(472)	0.008	(2.0)	60	52	46	42	34	27	22	62	54	48	44	36	30	25	65	57	50	45	39	33	29
	1100	(519)	0.009	(2.2)	61	53	48	44	37	30	23	63	55	50	45	38	32	26	66	58	51	47	40	35	30
510 10 inch	300	(142)	0.002	(0.5)	43	38	29	20	18	18	<15	45	40	32	23	19	19	<15	47	42	36	26	21	20	<15
	600	(283)	0.009	(2.2)	47	46	37	30	26	22	<15	50	48	42	33	28	24	15	52	51	46	36	31	25	20
	800	(378)	0.020	(5.0)	48	48	40	34	28	22	15	50	50	43	36	31	24	18	53	53	47	39	33	26	21
	1000	(472)	0.030	(7.5)	49	49	42	36	29	24	16	51	52	45	38	32	26	20	54	54	48	40	34	28	22
	1100	(519)	0.040	(10.0)	51	50	44	38	30	24	18	53	53	46	40	33	27	21	55	55	49	41	35	29	24
	1400	(661)	0.055	(13.7)	55	55	48	42	34	28	24	58	57	49	43	36	30	26	60	58	50	43	37	31	27
	1700	(802)	0.070	(17.4)	57	57	53	44	38	32	27	60	58	54	45	39	34	29	63	61	55	48	42	36	31

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4. *NC values are calculated using attenuation credits outlined in Appendix E of AHRI 885-2008.*
5. ***Discharge Sound power levels shown with End Reflection Corrections Included** in dB (ref: 10^{-12} watts).*
6. *Minimum Ps is the static pressure drop across the air terminal unit while the inlet damper is in the wide-open position at a given airflow rate.*

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TL-500
RADIATED SOUND POWER at ΔPS = 0.50, 0.75 and 1.0 in.wg. continued

Unit Size	CFM (L/s)		Min Ps in.wg. (Pa)		ΔPs = 0.50 in.wg. (125 Pa) Octave Band Sound Power, Lw, dB 2	3	4	5	6	7	NC	ΔPs = 0.75 in.wg. (187 Pa) Octave Band Sound Power, Lw, dB 2	3	4	5	6	7	NC	ΔPs = 1.0 in.wg. (500 Pa) Octave Band Sound Power, Lw, dB 2	3	4	5	6	7	NC
512 12 inch	350	(165)	0.005	(1.3)	52	39	28	21	17	15	<15	53	41	31	25	18	17	<15	54	44	38	30	24	18	<15
	750	(354)	0.025	(6.2)	56	46	38	31	27	21	17	57	49	42	34	29	24	18	59	52	46	37	31	26	21
	1000	(472)	0.039	(9.6)	56	48	40	33	29	23	17	58	50	44	36	31	25	20	59	53	48	39	32	27	22
	1150	(543)	0.056	(13.8)	57	49	42	35	31	24	18	58	51	45	38	33	27	20	60	54	49	40	34	29	23
	1400	(661)	0.083	(20.5)	58	50	44	38	34	27	20	59	52	47	40	36	29	21	61	54	50	42	37	31	24
	1600	(755)	0.112	(27.9)	59	51	47	40	37	29	21	61	53	49	42	38	31	23	62	56	52	44	40	34	26
	2000	(944)	0.163	(40.5)	61	54	51	44	40	34	25	62	56	52	45	41	36	26	63	58	54	47	43	38	29
514 14 inch	450	(212)	0.005	(1.3)	43	38	30	23	21	20	<15	45	40	32	25	23	22	<15	47	42	34	27	25	24	<15
	850	(401)	0.019	(4.8)	46	41	33	25	21	21	<15	48	43	35	27	23	23	<15	50	45	37	29	25	25	<15
	1200	(566)	0.038	(9.5)	49	44	36	28	22	23	<15	51	46	38	30	24	25	<15	53	48	40	32	26	27	15
	1500	(708)	0.057	(14.2)	51	46	38	30	24	24	<15	53	48	40	32	26	26	15	55	50	42	34	28	28	18
	1950	(920)	0.108	(26.9)	56	49	43	34	28	26	17	58	51	45	36	30	28	20	60	53	47	38	32	30	22
	2400	(1133)	0.151	(37.5)	57	51	45	36	30	27	19	59	53	47	38	32	29	21	61	55	49	40	34	31	24
	2600	(1227)	0.180	(44.7)	58	53	47	38	31	28	21	60	55	49	40	33	30	24	62	57	51	42	35	32	26
516 16 inch	550	(260)	0.005	(1.2)	53	38	29	23	18	16	<15	53	40	32	27	20	18	<15	54	42	34	29	23	19	<15
	950	(448)	0.015	(3.6)	56	45	36	29	24	20	17	56	47	39	32	26	22	17	57	49	41	34	29	24	18
	1300	(614)	0.027	(6.6)	58	51	41	35	31	26	20	58	53	44	38	33	28	21	59	55	46	40	36	30	24
	1500	(708)	0.038	(9.5)	59	52	42	36	33	29	21	59	54	45	39	35	30	22	60	56	47	41	37	32	25
	2000	(944)	0.068	(16.8)	60	53	44	40	37	33	22	60	55	47	42	38	34	24	60	57	49	43	40	35	26
	2600	(1227)	0.104	(25.9)	61	55	49	44	40	37	24	62	57	51	46	41	38	26	63	59	53	47	43	39	28
	3200	(1510)	0.161	(40.1)	62	58	53	47	43	40	27	63	59	54	48	44	40	29	64	60	56	50	45	41	31

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6. *Minimum Ps is the static pressure drop across the air terminal unit while the inlet damper is in the wide-open position at a given airflow rate.*

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TL-500
RADIATED SOUND POWER at ΔPS = 1.5, 2.0 and 3.0 in.wg.

Unit Size	CFM (L/s)		Min Ps in.wg. (Pa)		ΔPs = 1.5 in.wg. (250 Pa) Octave Band Sound Power, Lw, dB							ΔPs = 2.0 in.wg. (500 Pa) Octave Band Sound Power, Lw, dB							ΔPs = 3.0 in.wg. (750 Pa) Octave Band Sound Power, Lw, dB						
					2	3	4	5	6	7	NC	2	3	4	5	6	7	NC	2	3	4	5	6	7	NC
504/505 4 & 5 inch	50	(24)	0.005	(1.2)	44	35	22	22	18	11	<15	44	36	23	22	19	13	<15	45	38	25	24	23	18	<15
	100	(47)	0.015	(3.8)	46	37	26	25	22	17	<15	46	38	27	25	23	19	<15	47	40	29	27	27	24	<15
	150	(71)	0.027	(6.7)	49	41	32	29	24	20	<15	49	42	33	29	25	22	<15	50	44	35	31	29	27	<15
	200	(94)	0.038	(9.5)	52	44	38	32	26	22	<15	52	45	39	32	27	24	<15	53	47	41	34	31	29	<15
	250	(118)	0.059	(14.8)	54	46	42	35	31	30	15	54	47	43	35	32	32	17	55	49	45	37	36	37	19
	300	(142)	0.071	(17.6)	56	49	46	38	35	34	20	56	50	47	38	36	36	21	57	52	49	40	40	41	23
506 6 inch	100	(47)	0.005	(1.2)	46	37	26	25	22	17	<15	46	38	27	25	23	19	<15	47	40	29	27	27	24	<15
	200	(94)	0.020	(5.0)	52	44	38	32	26	22	<15	52	45	39	32	27	24	<15	53	47	41	34	31	29	<15
	300	(142)	0.045	(11.2)	56	49	46	38	35	34	20	56	50	47	38	36	36	21	57	52	49	40	40	41	23
	400	(189)	0.100	(24.9)	58	53	49	44	41	36	23	58	54	50	44	42	38	24	59	56	52	46	46	43	26
	500	(236)	0.125	(31.1)	60	56	51	47	43	38	25	61	57	52	47	44	40	26	61	59	54	49	48	45	29
	600	(283)	0.180	(44.8)	61	58	53	49	45	40	27	62	59	54	49	46	42	29	62	61	56	51	50	47	31
508 8 inch	200	(94)	0.000	(0.0)	52	42	37	33	26	22	<15	52	43	38	35	29	23	<15	53	45	39	36	32	27	<15
	300	(142)	0.001	(0.2)	55	46	43	38	32	29	17	55	46	43	40	35	33	17	56	47	45	42	40	38	19
	600	(283)	0.003	(0.7)	60	55	47	42	36	32	24	61	57	51	45	39	36	26	61	59	54	49	43	41	29
	700	(330)	0.005	(1.2)	62	57	52	44	39	34	26	63	60	53	47	40	37	29	64	61	56	51	44	41	31
	1000	(472)	0.008	(2.0)	67	60	53	48	42	36	31	68	63	56	50	44	39	33	70	66	60	54	47	42	37
	1100	(519)	0.009	(2.2)	68	61	54	50	43	38	32	69	64	57	52	45	40	34	71	67	61	56	49	44	38
510 10 inch	300	(142)	0.002	(0.5)	50	46	40	30	25	24	<15	54	47	40	32	26	25	<15	56	47	42	35	29	26	17
	600	(283)	0.009	(2.2)	55	55	50	40	35	29	24	59	55	51	43	39	35	25	60	56	51	45	42	40	25
	800	(378)	0.020	(5.0)	56	57	51	43	37	30	26	61	60	53	46	42	38	29	63	62	56	49	45	42	32
	1000	(472)	0.030	(7.5)	57	58	52	44	38	32	27	62	63	56	49	44	40	33	64	67	60	52	47	45	38
	1100	(519)	0.040	(10.0)	58	58	52	44	38	32	27	63	64	57	50	45	41	34	65	68	61	53	48	47	39
	1400	(661)	0.055	(13.7)	63	62	54	47	41	35	32	70	66	58	52	47	44	37	71	70	63	56	50	49	41
	1700	(802)	0.070	(17.4)	66	65	59	54	46	40	35	72	67	60	55	50	48	38	73	72	64	58	53	51	44

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TL-500
RADIATED SOUND POWER at ΔPS = 1.5, 2.0 and 3.0 in.wg. continued

Unit Size	CFM (L/s)		Min Ps in.wg. (Pa)		ΔPs = 1.5 in.wg. (250 Pa) Octave Band Sound Power, Lw, dB 2	3	4	5	6	7	NC	ΔPs = 2.0 in.wg. (500 Pa) Octave Band Sound Power, Lw, dB 2	3	4	5	6	7	NC	ΔPs = 3.0 in.wg. (750 Pa) Octave Band Sound Power, Lw, dB 2	3	4	5	6	7	NC
512 12 inch	350	(165)	0.005	(1.3)	56	46	39	33	27	21	17	57	48	40	35	29	23	18	58	48	43	39	34	28	20
	750	(354)	0.025	(6.2)	60	55	50	42	36	32	24	61	57	54	47	41	38	29	61	59	57	52	47	44	32
	1000	(472)	0.039	(9.6)	61	57	53	44	38	33	27	62	60	57	49	43	38	32	63	62	60	55	49	44	35
	1150	(543)	0.056	(13.8)	62	58	54	45	39	34	29	64	62	58	50	44	39	33	65	65	63	56	49	45	38
	1400	(661)	0.083	(20.5)	63	59	55	47	41	36	30	65	63	59	51	45	40	34	66	67	64	57	50	45	39
	1600	(755)	0.112	(27.9)	64	60	56	48	43	38	31	66	64	60	52	46	41	35	68	69	65	57	51	45	41
	2000	(944)	0.163	(40.5)	65	62	58	51	46	41	33	67	66	62	54	49	44	37	69	71	66	59	52	48	42
514 14 inch	450	(212)	0.005	(1.3)	50	45	37	30	28	27	<15	51	46	38	31	29	28	<15	52	47	39	32	30	29	<15
	850	(401)	0.019	(4.8)	53	48	40	32	28	28	15	54	49	41	33	29	29	16	55	50	42	34	30	30	18
	1200	(566)	0.038	(9.5)	56	51	43	35	29	30	19	57	52	44	36	30	31	20	58	53	45	37	31	32	21
	1500	(708)	0.057	(14.2)	58	53	45	37	31	31	21	59	54	46	38	32	32	22	60	55	47	39	33	33	24
	1950	(920)	0.108	(26.9)	63	56	50	41	35	33	26	64	57	51	42	36	34	27	65	58	52	43	37	35	29
	2400	(1133)	0.151	(37.5)	64	58	52	43	37	34	27	65	59	53	44	38	35	29	66	60	54	45	39	36	30
	2600	(1227)	0.180	(44.7)	65	60	54	45	38	35	29	66	61	55	46	39	36	31	67	62	56	47	40	37	32
516 16 inch	550	(260)	0.005	(1.2)	55	44	38	32	27	22	16	56	46	41	35	30	25	17	58	50	46	39	35	29	20
	950	(448)	0.015	(3.6)	58	51	45	39	34	28	20	59	53	49	44	38	32	23	61	56	51	49	40	35	25
	1300	(614)	0.027	(6.6)	60	57	51	45	41	36	26	61	59	55	50	45	42	30	63	61	57	53	49	45	32
	1500	(708)	0.038	(9.5)	62	59	52	47	42	38	27	63	61	57	52	47	44	32	65	64	60	56	52	49	35
	2000	(944)	0.068	(16.8)	63	61	55	49	46	42	31	65	65	60	54	51	48	35	68	67	64	60	58	56	39
	2600	(1227)	0.104	(25.9)	66	63	58	52	49	46	33	68	66	62	57	55	52	37	70	70	66	63	63	62	42
	3200	(1510)	0.161	(40.1)	67	64	61	55	51	47	35	69	67	65	59	57	53	41	71	70	69	65	64	63	45

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5. ***Discharge Sound power levels shown with End Reflection Corrections Included** in dB (ref: 10^{-12} watts).*
6. *Minimum Ps is the static pressure drop across the air terminal unit while the inlet damper is in the wide-open position at a given airflow rate.*

TL-500
DISCHARGE SOUND POWER at ΔPS = 0.50, 0.75 and 1.0 in.wg.

Unit Size	CFM (L/s)		Min Ps in.wg. (Pa)		ΔPs = 0.50 in.wg. (125 Pa)								ΔPs = 0.75 in.wg. (187 Pa)								ΔPs = 1.0 in.wg. (250 Pa)							
					Octave Band Sound Power, Lw, dB						NC	NC w/ SA	Octave Band Sound Power, Lw, dB						NC	NC w/ SA	Octave Band Sound Power, Lw, dB						NC	NC w/ SA
					2	3	4	5	6	7			2	3	4	5	6	7			2	3	4	5	6	7		
504/505 4 inch 5 inch	50	(24)	0.005	(1)	58	50	36	35	32	26	<15	<15	60	54	42	39	36	33	<15	<15	61	56	53	49	40	33	16	<15
	100	(47)	0.015	(4)	60	51	38	37	33	28	<15	<15	61	55	44	40	37	34	16	<15	62	57	54	49	41	36	17	<15
	150	(71)	0.027	(7)	62	52	40	39	34	30	17	<15	63	56	45	42	38	35	18	16	63	58	55	50	43	38	18	16
	200	(94)	0.038	(9)	63	53	41	41	35	31	18	16	64	57	46	44	39	36	20	17	64	59	55	51	45	39	20	17
	250	(118)	0.059	(15)	65	54	44	42	37	33	21	18	66	59	48	45	40	37	22	20	67	60	56	51	46	42	23	21
	300	(142)	0.071	(18)	67	56	46	45	38	35	20	17	67	60	50	47	41	38	20	17	68	62	58	52	47	45	21	18
506 6 inch	100	(47)	0.005	(1.2)	60	51	38	37	33	28	<15	<15	61	55	44	40	37	34	16	<15	62	57	54	49	41	36	17	<15
	200	(94)	0.020	(5.0)	63	53	41	41	35	31	18	16	64	57	46	44	39	36	20	17	64	59	55	51	45	39	20	17
	300	(142)	0.045	(11.2)	67	56	46	45	38	35	20	17	67	60	50	47	41	38	20	17	68	62	58	52	47	45	21	18
	400	(189)	0.100	(24.9)	68	61	51	50	42	40	21	18	70	64	54	52	45	42	23	21	71	64	59	53	48	49	25	22
	500	(236)	0.125	(31.1)	69	64	56	54	47	44	22	20	71	67	58	56	48	45	26	22	72	67	63	58	53	52	26	23
	600	(283)	0.180	(44.8)	71	68	60	58	51	48	27	22	73	70	62	59	52	49	29	25	74	70	65	62	56	53	29	26
508 8 inch	200	(94)	0.000	(0.0)	59	53	47	42	38	36	<15	<15	61	55	49	44	40	38	16	<15	63	57	51	46	42	40	18	16
	300	(142)	0.001	(0.2)	61	57	49	45	41	40	<15	<15	63	59	51	47	43	42	16	<15	65	61	53	49	45	44	19	<15
	600	(283)	0.003	(0.7)	66	61	52	48	45	44	19	16	68	63	54	50	47	46	21	18	70	65	56	52	49	48	24	21
	700	(330)	0.005	(1.2)	68	64	55	50	47	45	22	19	70	66	57	52	49	47	25	21	72	68	59	54	51	49	27	23
	1000	(472)	0.008	(2.0)	73	68	60	58	53	50	26	22	75	70	62	60	55	52	28	25	77	72	64	62	57	54	31	27
	1100	(519)	0.009	(2.2)	74	69	62	60	54	52	27	24	76	71	64	62	56	54	29	26	78	73	66	64	58	56	32	29
510 10 inch	300	(142)	0.002	(0.5)	59	55	46	43	36	31	<15	<15	60	58	50	46	39	35	15	<15	63	62	55	52	46	43	20	15
	600	(283)	0.009	(2.2)	63	59	50	46	38	36	16	<15	65	62	52	49	42	39	20	16	68	65	58	54	49	46	24	19
	800	(378)	0.020	(5.0)	66	62	53	49	41	39	19	15	68	64	55	51	44	42	21	18	70	68	60	56	51	48	26	21
	1000	(472)	0.030	(7.5)	69	63	55	52	41	40	20	18	70	65	57	53	44	43	22	20	72	68	62	58	55	52	26	21
	1100	(519)	0.040	(10.0)	69	64	57	53	45	43	21	18	71	66	59	55	48	45	24	21	73	69	63	58	55	52	27	22
	1400	(661)	0.055	(13.7)	73	70	62	59	52	50	28	25	75	71	64	62	54	52	29	26	77	74	67	64	58	56	33	28
	1700	(802)	0.070	(17.4)	77	74	65	64	59	55	33	29	79	75	67	66	59	56	34	31	81	78	70	69	63	59	38	33

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METALAIRE™

TL-500
DISCHARGE SOUND POWER at ΔPS = 0.50, 0.75 and 1.0 in.wg. continued

Unit Size	CFM	(L/s)	Min Ps in.wg.	(Pa)	ΔPs = 0.50 in.wg. (125 Pa)								ΔPs = 0.75 in.wg. (187 Pa)								ΔPs = 1.0 in.wg. (250 Pa)							
					Octave Band Sound Power, Lw, dB								Octave Band Sound Power, Lw, dB								Octave Band Sound Power, Lw, dB							
					2	3	4	5	6	7	NC	NC w/ SA	2	3	4	5	6	7	NC	NC w/ SA	2	3	4	5	6	7	NC	NC w/ SA
512 12 inch	350	(165)	0.005	(1.3)	61	51	46	39	30	28	<15	<15	63	54	49	43	34	31	<15	<15	64	56	52	47	39	35	16	<15
	750	(354)	0.025	(6.2)	64	61	51	45	35	33	18	<15	66	64	55	49	39	37	21	16	67	66	59	53	44	41	24	19
	1000	(472)	0.039	(9.6)	66	63	53	48	38	37	20	15	67	65	57	51	42	40	22	18	68	67	61	54	46	43	25	20
	1150	(543)	0.056	(13.8)	68	65	55	51	42	40	22	18	69	66	58	53	45	43	24	19	69	68	62	56	49	46	26	21
	1400	(661)	0.083	(20.5)	70	67	58	54	46	44	25	20	70	68	61	56	49	47	26	21	70	69	63	58	52	49	27	22
	1600	(755)	0.112	(27.9)	72	69	61	57	51	48	27	22	72	70	63	59	53	50	28	24	72	70	65	60	55	52	28	24
	2000	(944)	0.163	(40.5)	74	72	65	62	57	53	31	26	74	72	66	62	58	54	31	26	74	73	67	63	60	56	32	27
514 14 inch	450	(212)	0.005	(1.3)	51	38	33	31	26	27	<15	<15	54	41	36	35	30	31	<15	<15	57	44	39	39	34	35	<15	<15
	850	(401)	0.019	(4.8)	56	43	39	35	35	36	<15	<15	59	46	42	39	39	40	<15	<15	62	49	45	43	43	44	<15	<15
	1200	(566)	0.038	(9.5)	61	55	48	45	46	46	<15	<15	64	58	51	49	50	50	<15	<15	67	61	54	53	54	54	18	<15
	1500	(708)	0.057	(14.2)	61	57	50	47	48	48	<15	<15	64	60	53	51	52	52	16	<15	67	63	56	55	56	56	20	15
	1950	(920)	0.108	(26.9)	64	60	53	50	50	49	16	<15	67	63	56	54	54	53	20	16	70	66	59	58	58	57	24	19
	2400	(1133)	0.151	(37.5)	66	61	55	53	52	51	18	<15	69	64	58	57	56	55	21	18	72	67	61	61	60	59	25	21
	2600	(1227)	0.180	(44.7)	66	62	58	54	53	53	19	15	69	65	61	58	57	57	22	19	72	68	64	62	61	61	26	21
516 16 inch	550	(260)	0.005	(1.2)	63	58	52	51	45	41	15	<15	64	59	53	52	47	43	16	<15	65	60	55	53	49	45	18	<15
	950	(448)	0.015	(3.6)	66	63	58	54	48	43	20	16	67	65	59	55	50	45	22	19	68	66	61	57	52	48	24	19
	1300	(614)	0.027	(6.6)	70	67	61	55	49	44	25	21	71	69	64	58	52	46	27	24	72	71	67	61	54	49	29	25
	1500	(708)	0.038	(9.5)	72	69	62	57	52	46	27	24	73	71	66	59	54	48	29	26	74	72	69	62	56	50	31	26
	2000	(944)	0.068	(16.8)	76	72	65	60	55	51	31	27	76	73	67	62	56	52	32	28	76	74	69	63	58	53	33	28
	2600	(1227)	0.104	(25.9)	77	74	69	63	58	55	33	29	78	74	69	64	59	55	33	30	78	75	70	64	60	56	34	29
	3200	(1510)	0.161	(40.1)	77	75	70	65	60	57	34	31	78	76	71	66	61	57	35	32	78	77	72	66	62	58	37	32

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METALAIRE™

TL-500
DISCHARGE SOUND POWER at ΔPS = 1.5, 2.0 and 3.0 in.wg.

Unit Size	CFM (L/s)		Min Ps in.wg. (Pa)		ΔPs = 1.5 in.wg. (375 Pa)								ΔPs = 2.0 in.wg. (500 Pa)								ΔPs = 3.0 in.wg. (750 Pa)							
					Octave Band Sound Power, Lw, dB							NC w/ SA	Octave Band Sound Power, Lw, dB							NC w/ SA	Octave Band Sound Power, Lw, dB							NC w/ SA
					2	3	4	5	6	7	NC		2	3	4	5	6	7	NC		2	3	4	5	6	7	NC	
504/505 4 inch 5 inch	50	(24)	0.005	(1)	62	57	52	49	41	33	17	<15	62	57	52	49	41	33	17	<15	64	59	52	51	43	35	20	17
	100	(47)	0.015	(4)	63	58	54	49	42	36	18	16	63	58	54	49	42	36	18	16	65	60	54	51	44	38	21	18
	150	(71)	0.027	(7)	64	59	55	50	44	38	20	17	64	59	55	50	44	38	20	17	66	61	55	52	46	40	22	20
	200	(94)	0.038	(9)	65	60	55	51	46	39	21	18	65	60	55	51	46	39	21	18	67	62	55	53	48	41	23	21
	250	(118)	0.059	(15)	66	61	57	51	47	42	22	20	66	61	57	51	47	42	22	20	68	63	59	53	49	44	25	22
	300	(142)	0.071	(18)	66	63	59	52	48	45	21	16	66	63	59	52	48	45	21	16	68	65	61	54	50	47	24	19
506 6 inch	100	(47)	0.005	(1.2)	63	58	54	49	42	36	18	16	63	58	54	49	42	36	18	16	65	60	54	51	44	38	21	18
	200	(94)	0.020	(5.0)	65	60	55	51	46	39	21	18	65	60	55	51	46	39	21	18	67	62	55	53	48	41	23	21
	300	(142)	0.045	(11.2)	66	62	58	52	48	45	20	16	66	63	59	52	48	45	21	16	68	65	61	54	50	47	24	19
	400	(189)	0.100	(24.9)	66	63	59	53	48	49	21	16	67	64	60	53	49	49	22	18	69	67	62	55	51	51	26	21
	500	(236)	0.125	(31.1)	70	68	64	58	54	52	27	22	70	68	64	58	54	52	27	22	72	70	66	60	56	54	29	25
	600	(283)	0.180	(44.8)	71	70	66	62	57	53	29	25	71	70	66	62	57	53	29	25	73	72	68	64	59	55	32	27
508 8 inch	200	(94)	0.000	(0.0)	66	60	54	50	46	44	22	20	67	61	55	52	48	46	23	21	68	62	56	54	50	48	25	22
	300	(142)	0.001	(0.2)	68	64	56	53	49	48	22	18	69	65	57	55	51	50	24	20	70	66	58	57	53	52	25	21
	600	(283)	0.003	(0.7)	73	68	59	56	53	52	27	25	74	69	60	58	55	54	29	26	75	70	61	60	57	56	30	27
	700	(330)	0.005	(1.2)	75	71	62	58	55	53	31	27	76	72	63	60	57	55	32	29	77	73	64	62	59	57	33	30
	1000	(472)	0.008	(2.0)	80	75	67	66	61	58	34	31	81	76	68	68	63	60	35	32	82	77	69	70	65	62	37	34
	1100	(519)	0.009	(2.2)	81	76	69	68	62	60	35	32	82	77	70	70	64	62	37	34	83	78	71	72	66	64	38	35
510 10 inch	300	(142)	0.002	(0.5)	63	62	56	53	48	45	20	15	63	62	56	53	48	45	20	16	65	64	57	55	50	48	22	19
	600	(283)	0.009	(2.2)	69	66	61	57	52	49	25	20	69	66	61	57	52	49	25	21	71	68	63	59	55	53	27	24
	800	(378)	0.020	(5.0)	71	68	63	58	54	51	26	21	71	68	63	58	54	51	26	22	73	70	65	61	57	53	28	25
	1000	(472)	0.030	(7.5)	73	69	64	59	55	52	27	22	73	69	64	59	55	52	27	24	75	71	66	61	57	54	29	26
	1100	(519)	0.040	(10.0)	74	70	65	60	56	53	28	24	74	70	65	60	56	53	28	25	75	72	68	62	59	55	31	27
	1400	(661)	0.055	(13.7)	78	75	69	65	60	57	34	29	78	75	69	65	60	57	34	31	80	76	71	66	63	60	35	32
	1700	(802)	0.070	(17.4)	82	79	72	70	64	60	39	34	82	79	72	70	64	60	39	35	84	81	74	71	66	64	41	38

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METALAIRE™

TL-500
DISCHARGE SOUND POWER at ΔPS = 1.5, 2.0 and 3.0 continued

Unit Size	CFM	(L/s)	Min Ps in.wg.	(Pa)	ΔPs = 1.5 in.wg. (375 Pa) Octave Band Sound Power, Lw, dB 2	3	4	5	6	7	NC	NC w/ SA	ΔPs = 2.0 in.wg. (500 Pa) Octave Band Sound Power, Lw, dB 2	3	4	5	6	7	NC	NC w/ SA	ΔPs = 3.0 in.wg. (750 Pa) Octave Band Sound Power, Lw, dB 2	3	4	5	6	7	NC	NC w/ SA
512 12 inch	350	(165)	0.005	(1.3)	66	58	54	51	44	40	18	16	68	61	56	54	49	44	21	18	70	62	58	56	53	48	23	21
	750	(354)	0.025	(6.2)	69	68	62	58	51	47	26	21	71	71	65	62	57	52	29	25	72	72	66	65	62	57	31	26
	1000	(472)	0.039	(9.6)	70	70	65	59	52	49	28	24	72	73	68	64	58	54	32	27	73	74	70	68	63	58	33	28
	1150	(543)	0.056	(13.8)	71	71	66	61	54	51	29	25	74	74	70	65	59	55	33	28	74	76	72	70	64	59	35	31
	1400	(661)	0.083	(20.5)	72	72	67	62	57	53	31	26	75	75	71	66	61	57	34	29	76	77	74	71	65	61	37	32
	1600	(755)	0.112	(27.9)	74	73	69	64	59	55	32	27	77	76	72	67	62	58	35	31	78	78	75	72	66	62	38	33
	2000	(944)	0.163	(40.5)	76	75	70	66	63	59	34	29	79	78	73	69	65	61	38	33	81	80	77	74	69	64	40	35
514 14 inch	450	(212)	0.005	(1.3)	60	47	42	41	36	37	<15	<15	61	48	43	43	38	39	<15	<15	62	49	44	45	40	41	<15	<15
	850	(401)	0.019	(4.8)	65	52	48	45	45	46	<15	<15	66	53	49	47	47	48	16	<15	67	54	50	49	49	50	17	<15
	1200	(566)	0.038	(9.5)	70	64	57	55	56	56	21	18	71	65	58	57	58	58	22	20	72	66	59	59	60	60	24	21
	1500	(708)	0.057	(14.2)	70	66	59	57	58	58	24	19	71	67	60	59	60	60	25	21	72	68	61	61	62	62	26	22
	1950	(920)	0.108	(26.9)	72	68	62	58	59	58	26	21	74	70	63	62	62	61	28	25	75	71	64	64	64	63	29	26
	2400	(1133)	0.151	(37.5)	75	70	64	61	62	61	28	25	76	71	65	65	64	63	29	26	77	73	66	67	66	65	32	28
	2600	(1227)	0.180	(44.7)	75	71	67	64	63	63	29	25	76	72	68	66	65	65	31	27	77	72	69	68	67	67	31	27
516 16 inch	550	(260)	0.005	(1.2)	66	61	56	54	50	46	19	16	67	62	57	55	51	47	20	18	68	63	59	57	52	49	21	20
	950	(448)	0.015	(3.6)	69	67	63	59	55	50	25	20	70	68	65	61	58	52	26	22	71	69	66	63	60	55	27	24
	1300	(614)	0.027	(6.6)	73	73	69	66	59	54	32	27	74	75	70	70	64	58	34	31	74	76	73	72	69	63	35	32
	1500	(708)	0.038	(9.5)	75	74	70	67	60	55	33	28	76	76	71	71	64	59	35	32	76	78	74	75	70	64	38	34
	2000	(944)	0.068	(16.8)	77	76	71	67	62	57	35	31	79	77	73	71	65	60	37	33	81	79	75	76	70	65	39	35
	2600	(1227)	0.104	(25.9)	79	77	72	68	63	59	37	32	80	78	74	71	66	62	38	34	83	80	76	76	71	65	40	37
	3200	(1510)	0.161	(40.1)	79	79	74	70	65	61	39	34	81	81	76	73	68	64	41	38	84	82	79	77	73	67	42	39

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4. *NC values are calculated using attenuation credits outlined in Appendix E of AHRI 885-2008.*
5. ***Discharge Sound power levels shown with End Reflection Corrections Included** in dB (ref: 10^{-12} watts).*
6. *Minimum Ps is the static pressure drop across the air terminal unit while the inlet damper is in the wide-open position at a given airflow rate.*

METALAIRE™

TL-500 DAMPER LEAKAGE

Damper Leakage, CFM			
Inlet Size	1.5" ΔPs	3.0" ΔPs	6.0" ΔPs
6	3	4	7
8	3	4	7
10	4	5	7
12	4	5	7
14	4	6	8
16	4	6	8
20	N/A	N/A	N/A
24	N/A	N/A	N/A

LEAKAGE

Casing: Less than 1% of rated capacity at 1.0" downstream pressure

Damper: Less than 1% of rated capacity with 3.0" inlet pressure

METALAIRE™

TL-500
MINIMUM PRESSURES

Unit Size	CFM	Unit ΔPs (in.wg.)	Unit ΔPt (in.wg.)	Unit + 1R Coil, ΔPs (in.wg.)	Unit + 1R Coil, ΔPt (in.wg.)	Unit + 2R Coil, ΔPs (in.wg.)	Unit + 2R Coil, ΔPt (in.wg.)	Unit + 3R Coil, ΔPs (in.wg.)	Unit + 3R Coil, ΔPt (in.wg.)	Unit + 4R Coil, ΔPs (in.wg.)	Unit + 4R Coil, ΔPt (in.wg.)
504 / 505 4-inch 5-inch	100	0.005	0.02	0.02	0.03	0.04	0.05	0.05	0.06	0.05	0.06
	200	0.020	0.08	0.06	0.12	0.10	0.16	0.14	0.20	0.18	0.24
	300	0.045	0.18	0.12	0.25	0.21	0.34	0.29	0.42	0.37	0.50
	400	0.080	0.32	0.20	0.44	0.34	0.58	0.47	0.71	0.60	0.84
506 6-inch	500	0.125	0.49	0.31	0.67	0.51	0.87	0.69	1.05	0.88	1.24
	600	0.180	0.71	0.39	0.92	0.69	1.22	--	--	--	--
508 8-inch	300	0.001	0.04	0.05	0.09	0.10	0.14	0.16	0.20	0.20	0.24
	400	0.001	0.07	0.08	0.15	0.16	0.23	0.24	0.31	0.32	0.39
	500	0.002	0.11	0.11	0.22	0.23	0.34	0.35	0.46	0.46	0.57
	600	0.003	0.15	0.15	0.30	0.32	0.47	0.47	0.62	0.63	0.78
	700	0.004	0.21	0.19	0.40	0.41	0.62	0.61	0.82	0.82	1.03
	800	0.005	0.28	0.25	0.52	0.52	0.79	0.78	1.05	--	--
	900	0.007	0.35	0.31	0.65	0.63	0.97	--	--	--	--
	1000	0.008	0.43	0.37	0.79	0.75	1.17	--	--	--	--
510 10-inch	400	0.004	0.03	0.04	0.07	0.09	0.12	0.13	0.16	0.17	0.20
	600	0.009	0.07	0.09	0.15	0.18	0.24	0.25	0.31	0.35	0.41
	800	0.016	0.12	0.15	0.25	0.29	0.39	0.37	0.47	0.56	0.66
	1000	0.025	0.19	0.21	0.38	0.41	0.58	0.49	0.66	0.81	0.98
	1200	0.036	0.27	0.29	0.52	0.58	0.81	0.65	0.88	--	--
	1400	0.049	0.37	0.38	0.70	0.78	1.10	--	--	--	--
	1600	0.063	0.48	0.48	0.90	--	--	--	--	--	--
512 12-inch	800	0.020	0.07	0.10	0.15	0.20	0.25	0.29	0.34	0.38	0.43
	1000	0.031	0.11	0.15	0.23	0.29	0.37	0.42	0.50	0.55	0.63
	1200	0.045	0.15	0.21	0.31	0.40	0.50	0.58	0.68	0.75	0.85
	1400	0.061	0.21	0.27	0.42	0.52	0.67	0.74	0.89	0.97	1.12
	1600	0.080	0.27	0.35	0.54	0.65	0.84	0.93	1.12	--	--
	1800	0.101	0.35	0.43	0.68	0.79	1.04	--	--	--	--
	2000	0.125	0.43	0.53	0.83	0.96	1.26	--	--	--	--
	2200	0.151	0.52	0.62	0.99	--	--	--	--	--	--
514 14-inch	1000	0.000	0.04	0.07	0.11	0.16	0.20	0.24	0.28	0.32	0.36
	1300	0.000	0.07	0.11	0.18	0.25	0.32	0.37	0.44	0.50	0.57
	1600	0.001	0.10	0.16	0.26	0.35	0.45	0.53	0.63	0.70	0.80
	2000	0.001	0.16	0.24	0.40	0.51	0.67	0.77	0.93	--	--
	2300	0.001	0.21	0.31	0.52	0.65	0.86	0.97	1.18	--	--
	2600	0.002	0.27	0.38	0.65	0.79	1.06	--	--	--	--
	3000	0.002	0.36	0.49	0.85	--	--	--	--	--	--
	3300	0.003	0.44	0.58	1.02	--	--	--	--	--	--
516 16-inch	1600	0.030	0.08	0.16	0.21	0.30	0.35	0.44	0.49	0.57	0.62
	2000	0.044	0.13	0.23	0.32	0.43	0.52	0.63	0.72	0.83	0.92
	2300	0.052	0.17	0.29	0.41	0.55	0.67	0.80	0.92	--	--
	2600	0.070	0.21	0.36	0.50	0.68	0.82	0.98	1.12	--	--
	3000	0.085	0.28	0.46	0.65	0.87	1.06	--	--	--	--
	3300	0.100	0.33	0.54	0.77	--	--	--	--	--	--
	3600	0.113	0.39	0.62	0.90	--	--	--	--	--	--
	4000	0.131	0.47	0.75	1.09	--	--	--	--	--	--

1. *ΔPs = static pressure drop; ΔPt = total pressure drop.*
2. *Calculations of ΔPs and ΔPt were performed using standard air with a density of 0.075 lbm/cu.ft.*
3. *Data based on testing standard METALAIRE hot water coils per AHRI Standard 410.*
4. *Unit ΔPs and Unit ΔPt are pressure drops across the air terminal unit while the inlet damper is in the wide-open position*
5. *Data applies to air terminal units with hot water coil mounted on the discharge side.*
6. *" -- " is shown when the static pressure drop exceeds 0.50 in. wg.*

TL-500
HOT WATER COILS MBH SELECTION DATA – IMPERIAL UNITS

Unit Size	Rows	Connection OD (in)	GPM	Head Loss (ft-H_2O)	CFM 100	200	300	350	400	450	500	600
504 505 506	1	0.625	1	0.46	5.1	7.2	8.6	9.1	9.6	10.0	10.3	11.0
			2	1.76	5.4	7.8	9.5	10.1	10.7	11.2	11.7	12.5
			3	3.86	5.5	8.1	9.8	10.5	11.2	11.7	12.2	13.2
			4	6.73	5.6	8.2	10.0	10.7	11.4	12.0	12.6	13.5
			Airside Ps		0.01	0.04	0.07	0.10	0.12	0.15	0.18	0.24
504 505 506	2	0.875	1	0.12	7.5	11.1	13.4	14.3	15.0	15.7	16.3	17.3
			2	0.46	8.1	12.5	15.5	16.8	17.8	18.8	19.7	21.2
			4	1.75	8.4	13.4	17.0	18.4	19.8	21.0	22.1	24.1
			6	3.84	8.5	13.7	17.5	19.1	20.6	21.9	23.1	25.2
			Airside Ps		0.03	0.08	0.16	0.21	0.26	0.32	0.38	0.51
504 505 506	3	0.875	1	0.07	8.9	13.2	15.9	16.8	17.7	18.4	19.0	20.0
			2	0.28	9.6	15.2	19.1	20.6	21.9	23.1	24.1	25.9
			4	1.09	10.0	16.5	21.3	23.2	25.0	26.6	28.0	30.5
			6	2.44	10.2	17.0	22.2	24.3	26.3	28.0	29.7	32.5
			Airside Ps		0.04	0.12	0.24	0.31	0.39	0.47	0.56	0.77
504 505 506	4	0.875	1	0.05	9.7	14.5	17.4	18.4	19.3	20.1	20.7	21.7
			2	0.20	10.5	17.0	21.4	23.2	24.7	26.0	27.1	29.1
			4	0.79	10.9	18.6	24.2	26.6	28.7	30.6	32.3	35.3
			6	1.77	11.1	19.2	25.3	28.0	30.4	32.5	34.5	38.0
			Airside Ps		0.05	0.16	0.32	0.41	0.52	0.63	0.75	1.02

Unit Size	Rows	Connection OD (in)	GPM	Head Loss (ft-H_2O)	CFM 500	600	700	800	1000	1200	1400	1600
508	1	0.625	1	0.63	12.1	12.9	13.5	14.1	15.1	15.9	16.5	17.1
			2	2.39	13.7	14.7	15.6	16.4	17.7	18.8	19.7	20.5
			3	5.24	14.3	15.4	16.4	17.3	18.8	20.1	21.1	22.1
			4	9.14	14.7	15.9	16.9	17.9	19.5	20.8	21.9	22.9
			Airside Ps		0.11	0.15	0.19	0.24	0.36	0.49	0.64	0.81
508	2	0.625	1	0.17	18.6	19.8	20.9	21.7	22.5	23.1	25.1	--
			2	0.63	22.5	24.3	25.9	27.3	28.5	29.6	33.0	--
			4	2.39	25.1	27.5	29.6	31.5	33.1	34.6	39.4	--
			6	5.22	26.2	28.8	31.1	33.2	35.1	36.7	42.2	--
			Airside Ps		0.23	0.32	0.41	0.51	0.62	0.74	1.31	--
508	3	0.625	1	0.08	21.8	23.1	24.1	25.0	26.3	27.3	--	--
			2	0.31	27.5	29.8	31.6	33.2	35.8	37.8	--	--
			4	1.21	31.7	34.8	37.5	39.9	43.8	47.0	--	--
			8	4.78	34.3	38.1	41.5	44.4	49.5	53.8	--	--
			Airside Ps		0.35	0.47	0.61	0.77	1.11	1.51	--	--
508	4	0.875	2	0.21	30.9	33.4	35.4	37.1	39.9	--	--	--
			4	0.84	36.3	40.0	43.1	45.9	50.5	--	--	--
			6	1.87	38.5	42.8	46.5	49.8	55.4	--	--	--
			8	3.32	39.8	44.4	48.5	52.1	58.3	--	--	--
			Airside Ps		0.46	0.63	0.82	1.02	1.49	--	--	--

Heating capacity data in tables assume an entering water temperature (EWT) of 180°F, and an entering air temperature (EAT) of 65°F, which corresponds to a temperature difference of 115°F. Smaller temperature differences will result in a decrease of heating capacity. To obtain the heating capacity at another temperature difference, refer to the hot water coil notes located in the Reference Section.

METALAIRE™

TL-500
HOT WATER COILS MBH SELECTION DATA – IMPERIAL UNITS continued

Unit Size	Rows	Connection OD (in)	GPM	Head Loss (ft-H_2O)	CFM 500	600	700	800	1000	1200	1400	1600
510	1	0.625	1	0.11	13.4	14.3	15.0	15.6	16.7	17.5	18.2	18.7
			2	0.43	15.7	16.9	17.9	18.8	20.4	21.6	22.7	23.6
			4	1.63	17.2	18.6	19.9	21.1	23.0	24.7	26.0	27.3
			6	3.58	17.8	19.3	20.7	22.0	24.1	25.9	27.5	28.8
			Airside Ps		0.06	0.08	0.10	0.13	0.19	0.25	0.33	0.42
510	2	0.875	1	0.36	20.5	21.9	23.0	24.0	25.5	26.7	27.7	28.5
			2	1.43	25.2	27.4	29.3	30.9	33.6	35.8	37.6	39.1
			3	3.20	27.3	29.9	32.2	34.2	37.6	40.4	42.8	44.8
			4	5.68	28.5	31.4	34.0	36.2	40.0	43.2	46.0	48.3
			Airside Ps		0.12	0.17	0.22	0.27	0.39	0.54	0.69	0.87
510	3	0.875	1	0.24	23.7	25.1	26.2	27.1	28.6	29.6	30.4	31.1
			2	0.94	30.4	33.0	35.1	36.9	39.9	42.2	44.0	45.5
			4	3.79	35.3	39.0	42.2	45.0	49.8	53.6	56.8	59.6
			6	8.53	37.3	41.6	45.3	48.6	54.3	59.0	63.0	66.5
			Airside Ps		0.19	0.25	0.33	0.41	0.59	0.80	1.04	1.30
510	4	0.875	2	0.83	34.3	37.3	39.7	41.7	45.0	47.5	49.5	--
			4	3.35	40.3	44.7	48.6	51.9	57.5	62.0	65.8	--
			6	7.54	42.7	47.9	52.4	56.5	63.4	69.1	73.9	--
			8	13.41	44.0	49.6	54.6	59.0	66.8	73.2	78.8	--
			Airside Ps		0.25	0.34	0.43	0.54	0.79	1.07	1.39	--

Unit Size	Rows	Connection OD (in)	GPM	Head Loss (ft-H_2O)	CFM 600	800	1000	1200	1400	1600	1800	2000
512	1	0.5	0.5	0.27	13.8	14.9	15.7	16.3	16.9	17.3	17.6	17.9
			1	1.04	17.5	19.4	20.8	22.0	23.0	23.8	24.5	25.2
			2	3.93	20.1	22.7	24.8	26.5	28.0	29.3	30.4	31.4
			3	8.57	21.2	24.1	26.5	28.5	30.2	31.7	33.0	34.2
			Airside Ps		0.05	0.08	0.12	0.16	0.21	0.27	0.33	0.40
512	2	0.875	1	0.27	25.4	28.1	30.1	31.7	32.9	34.0	34.8	35.6
			2	1.02	31.3	35.8	39.3	42.1	44.5	46.5	48.2	49.7
			4	3.85	35.4	41.3	46.1	50.2	53.7	56.7	59.4	61.8
			6	8.40	37.1	43.6	49.0	53.6	57.7	61.2	64.4	67.2
			Airside Ps		0.11	0.18	0.26	0.35	0.46	0.57	0.69	0.83
512	3	0.875	2	0.39	38.5	43.7	44.7	50.8	53.4	55.5	57.2	58.8
			4	1.52	44.3	52.0	58.1	63.2	67.5	71.2	74.4	77.3
			6	3.37	46.6	55.3	62.6	68.6	73.9	78.5	82.5	86.2
			8	5.94	47.8	57.2	65.0	71.7	77.5	82.7	87.2	91.4
			Airside Ps		0.17	0.27	0.39	0.53	0.68	0.85	1.04	1.24
512	4	0.875	3	0.55	47.4	55.2	61.1	65.9	69.9	73.2	76.0	--
			5	1.51	51.7	61.6	69.6	76.2	81.9	86.7	91.0	--
			7	2.94	53.7	64.7	73.8	81.5	88.2	94.0	99.2	--
			10	5.95	55.3	67.2	77.3	86.0	93.6	100.3	106.4	--
			Airside Ps		0.22	0.36	0.52	0.70	0.91	1.14	1.39	--

Heating capacity data in tables assume an entering water temperature (EWT) of 180°F, and an entering air temperature (EAT) of 65°F, which corresponds to a temperature difference of 115°F. Smaller temperature differences will result in a decrease of heating capacity. To obtain the heating capacity at another temperature difference, refer to the hot water coil notes located in the Reference Section.

TL-500
HOT WATER COILS MBH SELECTION DATA – IMPERIAL UNITS continued

Unit Size	Rows	Connection OD (in)	GPM	Head Loss (ft-H_2O)	CFM 600	700	800	1000	1500	2000	2500	3000
514	1	0.625	0.5	0.33	15.4	16.1	16.6	17.6	19.1	20.0	20.6	21.1
			1	1.23	19.7	20.9	21.9	23.7	26.7	28.8	30.3	31.4
			2	4.65	22.8	24.5	26.0	28.5	33.1	36.4	39.0	41.1
			3	10.15	24.1	26.0	27.6	30.5	35.9	39.9	43.1	45.6
			Airside Ps		0.03	0.04	0.05	0.07	0.15	0.24	0.36	0.49
514	2	0.875	1	0.32	27.8	29.5	30.9	33.2	37.0	39.3	40.9	42.1
			2	1.22	34.5	37.2	39.7	43.7	51.1	56.0	59.7	62.5
			4	4.62	39.0	42.7	45.9	51.6	62.5	70.4	76.5	81.5
			6	10.09	40.8	44.8	48.5	54.9	67.4	76.8	84.3	90.4
			Airside Ps		0.07	0.09	0.11	0.16	0.32	0.51	0.74	1.01
514	3	0.875	2	0.43	42.4	45.7	48.6	53.3	61.2	66.2	69.7	72.3
			4	1.68	48.5	53.3	57.5	64.8	78.4	87.9	95.0	100.6
			6	3.72	50.8	56.2	61.0	69.6	86.1	98.1	107.4	114.9
			8	6.55	52.0	57.7	62.9	72.2	90.4	104.0	114.8	123.6
			Airside Ps		0.10	0.13	0.17	0.24	0.47	0.77	1.11	1.51
514	4	0.875	2	0.26	46.8	50.6	53.7	58.7	67.0	72.0	75.4	--
			6	2.30	57.0	63.4	69.2	79.4	98.9	113.0	123.7	--
			8	4.06	58.4	65.2	71.5	82.7	104.6	121.0	133.7	--
			10	6.32	59.3	66.4	73.0	84.8	108.3	126.3	140.5	--
			Airside Ps		0.14	0.18	0.22	0.32	0.63	1.02	1.49	--

Unit Size	Rows	Connection OD (in)	GPM	Head Loss (ft-H_2O)	CFM 600	700	800	1000	1500	2000	2500	3000
516	1	0.625	0.5	0.36	16.2	16.9	17.6	18.5	20.1	21.0	21.7	22.2
			1	1.37	20.9	22.2	23.4	25.2	28.5	30.7	32.3	33.6
			2	5.19	24.4	26.2	27.8	30.5	35.6	39.3	42.1	44.4
			3	11.33	25.7	27.8	29.6	32.7	38.8	43.2	46.7	49.5
			Airside Ps		0.02	0.03	0.04	0.06	0.11	0.19	0.27	0.37
516	2	0.875	2	1.36	36.1	39.1	41.7	46.1	54.0	59.3	63.3	66.3
			3	2.96	39.2	42.7	45.9	51.4	61.7	69.0	74.6	79.0
			4	5.15	40.9	44.8	48.4	54.5	66.4	75.0	81.8	87.2
			5	7.92	42.0	46.2	49.9	56.6	69.5	79.1	86.7	92.9
			Airside Ps		0.05	0.07	0.09	0.12	0.24	0.39	0.57	0.78
516	3	0.875	2	0.46	44.4	48.0	51.1	56.2	64.8	70.2	73.9	76.7
			4	1.79	50.7	55.8	60.4	68.4	83.2	93.6	101.4	107.5
			6	3.95	53.0	58.7	64.0	73.3	91.3	104.6	114.9	123.2
			8	6.95	54.1	60.3	65.9	76.0	95.9	110.9	122.9	132.7
			Airside Ps		0.08	0.10	0.13	0.19	0.37	0.59	0.86	1.17
516	4	0.875	2	0.27	49.0	53.0	56.4	61.8	70.7	76.1	79.7	82.3
			4	1.07	56.4	62.4	67.8	77.0	94.0	105.6	114.1	120.6
			8	4.22	60.4	67.7	74.4	86.5	110.5	128.5	142.6	154.1
			10	6.56	61.2	68.8	75.8	88.6	114.3	134.0	149.8	162.7
			Airside Ps		0.11	0.14	0.17	0.25	0.49	0.79	1.15	1.56

Heating capacity data in tables assume an entering water temperature (EWT) of 180°F, and an entering air temperature (EAT) of 65°F, which corresponds to a temperature difference of 115°F. Smaller temperature differences will result in a decrease of heating capacity. To obtain the heating capacity at another temperature difference, refer to the hot water coil notes located in the Reference Section.

METALAIRE™

TL-500
HOT WATER COILS kW SELECTION DATA – METRIC UNITS

Unit Size	Rows	Connection OD (mm)	Water Flow (L/s)	Head Loss (kPa)	Airflow (L/s)							
					47	94	142	165	189	212	236	283
504 505 506	1	15.9	0.06	1.37	1.5	2.1	2.5	2.7	2.8	2.9	3.0	3.2
			0.13	5.26	1.6	2.3	2.8	3.0	3.1	3.3	3.4	3.7
			0.19	11.54	1.6	2.4	2.9	3.1	3.3	3.4	3.6	3.9
			0.25	20.12	1.6	2.4	2.9	3.1	3.3	3.5	3.7	4.0
			Airside Ps (kPa)		0.00	0.01	0.02	0.02	0.03	0.04	0.04	0.06
504 505 506	2	22.2	0.06	0.36	2.2	3.3	3.9	4.2	4.4	4.6	4.8	5.1
			0.13	1.37	2.4	3.7	4.5	4.9	5.2	5.5	5.8	6.2
			0.25	5.23	2.5	3.9	5.0	5.4	5.8	6.1	6.5	7.1
			0.38	11.48	2.5	4.0	5.1	5.6	6.0	6.4	6.8	7.4
			Airside Ps (kPa)		0.01	0.02	0.04	0.05	0.06	0.08	0.09	0.13
504 505 506	3	22.2	0.06	0.21	2.6	3.9	4.7	4.9	5.2	5.4	5.6	5.9
			0.13	0.84	2.8	4.5	5.6	6.0	6.4	6.8	7.1	7.6
			0.25	3.26	2.9	4.8	6.2	6.8	7.3	7.8	8.2	8.9
			0.38	7.29	3.0	5.0	6.5	7.1	7.7	8.2	8.7	9.5
			Airside Ps (kPa)		0.01	0.03	0.06	0.08	0.10	0.12	0.14	0.19
504 505 506	4	22.2	0.06	0.15	2.8	4.2	5.1	5.4	5.7	5.9	6.1	6.4
			0.13	0.60	3.1	5.0	6.3	6.8	7.2	7.6	7.9	8.5
			0.25	2.36	3.2	5.4	7.1	7.8	8.4	9.0	9.5	10.3
			0.38	5.29	3.3	5.6	7.4	8.2	8.9	9.5	10.1	11.1
			Airside Ps (kPa)		0.01	0.04	0.08	0.10	0.13	0.16	0.19	0.25

Unit Size	Rows	Connection OD (mm)	Water Flow (L/s)	Head Loss (kPa)	Airflow (L/s)							
					236	283	330	378	472	566	661	755
508	1	15.9	0.06	1.88	3.5	3.8	4.0	4.1	4.4	4.7	4.8	5.0
			0.13	7.14	4.0	4.3	4.6	4.8	5.2	5.5	5.8	6.0
			0.19	15.66	4.2	4.5	4.8	5.1	5.5	5.9	6.2	6.5
			0.25	27.32	4.3	4.7	4.9	5.2	5.7	6.1	6.4	6.7
			Airside Ps (kPa)		0.03	0.04	0.05	0.06	0.09	0.12	0.16	0.20
508	2	15.9	0.06	0.51	5.4	5.8	6.1	6.4	6.6	6.8	7.3	--
			0.13	1.88	6.6	7.1	7.6	8.0	8.3	8.7	9.7	--
			0.25	7.14	7.3	8.1	8.7	9.2	9.7	10.1	11.5	--
			0.38	15.60	7.7	8.4	9.1	9.7	10.3	10.7	12.4	--
			Airside Ps (kPa)		0.06	0.08	0.10	0.13	0.15	0.18	0.33	--
508	3	15.9	0.06	0.24	6.4	6.8	7.1	7.3	7.7	8.0	--	--
			0.13	0.93	8.1	8.7	9.3	9.7	10.5	11.1	--	--
			0.25	3.62	9.3	10.2	11.0	11.7	12.8	13.8	--	--
			0.50	14.29	10.0	11.2	12.2	13.0	14.5	15.8	--	--
			Airside Ps (kPa)		0.09	0.12	0.15	0.19	0.28	0.38	--	--
508	4	22.2	0.13	0.63	9.0	9.8	10.4	10.9	11.7	--	--	--
			0.25	2.51	10.6	11.7	12.6	13.4	14.8	--	--	--
			0.38	5.59	11.3	12.5	13.6	14.6	16.2	--	--	--
			0.50	9.92	11.7	13.0	14.2	15.3	17.1	--	--	--
			Airside Ps (kPa)		0.11	0.16	0.20	0.25	0.37	--	--	--

Heating capacity data in tables assume an entering water temperature (EWT) of 82°C, and an entering air temperature (EAT) of 18°C, which corresponds to a temperature difference of 64°C. Smaller temperature differences will result in a decrease of heating capacity. To obtain the heating capacity at another temperature difference, refer to the hot water coil notes located in the Reference Section.

TL-500
HOT WATER COILS kW SELECTION DATA – METRIC UNITS continued

Unit Size	Rows	Connection OD (mm)	Water Flow (L/s)	Head Loss (kPa)	Airflow (L/s)							
					236	283	330	378	472	566	661	755
510	1	15.9	0.06	0.33	3.9	4.2	4.4	4.6	4.9	5.1	5.3	5.5
			0.13	1.29	4.6	4.9	5.2	5.5	6.0	6.3	6.6	6.9
			0.25	4.87	5.0	5.4	5.8	6.2	6.7	7.2	7.6	8.0
			0.38	10.70	5.2	5.7	6.1	6.4	7.1	7.6	8.1	8.4
			Airside Ps (kPa)		0.01	0.02	0.02	0.03	0.05	0.06	0.08	0.10
510	2	22.2	0.06	1.08	6.0	6.4	6.7	7.0	7.5	7.8	8.1	8.3
			0.13	4.27	7.4	8.0	8.6	9.0	9.8	10.5	11.0	11.4
			0.19	9.56	8.0	8.8	9.4	10.0	11.0	11.8	12.5	13.1
			0.25	16.98	8.3	9.2	10.0	10.6	11.7	12.6	13.5	14.1
			Airside Ps (kPa)		0.03	0.04	0.05	0.07	0.10	0.13	0.17	0.22
510	3	22.2	0.06	0.72	6.9	7.3	7.7	7.9	8.4	8.7	8.9	9.1
			0.13	2.81	8.9	9.7	10.3	10.8	11.7	12.4	12.9	13.3
			0.25	11.33	10.3	11.4	12.4	13.2	14.6	15.7	16.6	17.5
			0.38	25.50	10.9	12.2	13.3	14.2	15.9	17.3	18.4	19.5
			Airside Ps (kPa)		0.05	0.06	0.08	0.10	0.15	0.20	0.26	0.32
510	4	22.2	0.13	2.48	10.0	10.9	11.6	12.2	13.2	13.9	14.5	--
			0.25	10.01	11.8	13.1	14.2	15.2	16.8	18.2	19.3	--
			0.38	22.54	12.5	14.0	15.3	16.5	18.6	20.2	21.6	--
			0.50	40.08	12.9	14.5	16.0	17.3	19.6	21.4	23.1	--
			Airside Ps (kPa)		0.06	0.08	0.11	0.13	0.20	0.27	0.35	--

Unit Size	Rows	Connection OD (mm)	Water Flow (L/s)	Head Loss (kPa)	Airflow (L/s)							
					283	378	472	566	661	755	850	944
512	1	12.7	0.03	0.81	4.0	4.4	4.6	4.8	4.9	5.1	5.2	5.2
			0.06	3.11	5.1	5.7	6.1	6.4	6.7	7.0	7.2	7.4
			0.13	11.75	5.9	6.6	7.3	7.8	8.2	8.6	8.9	9.2
			0.19	25.62	6.2	7.1	7.8	8.3	8.8	9.3	9.7	10.0
			Airside Ps (kPa)		0.01	0.02	0.03	0.04	0.05	0.07	0.08	0.10
512	2	22.2	0.06	0.81	7.4	8.2	8.8	9.3	9.6	10.0	10.2	10.4
			0.13	3.05	9.2	10.5	11.5	12.3	13.0	13.6	14.1	14.6
			0.25	11.51	10.4	12.1	13.5	14.7	15.7	16.6	17.4	18.1
			0.38	25.11	10.9	12.8	14.3	15.7	16.9	17.9	18.9	19.7
			Airside Ps (kPa)		0.03	0.04	0.06	0.09	0.11	0.14	0.17	0.21
512	3	22.2	0.13	1.17	11.3	12.8	13.1	14.9	15.6	16.3	16.7	17.2
			0.25	4.54	13.0	15.2	17.0	18.5	19.8	20.8	21.8	22.6
			0.38	10.07	13.6	16.2	18.3	20.1	21.6	23.0	24.2	25.2
			0.50	17.75	14.0	16.7	19.0	21.0	22.7	24.2	25.5	26.8
			Airside Ps (kPa)		0.04	0.07	0.10	0.13	0.17	0.21	0.26	0.31
512	4	22.2	0.19	1.64	13.9	16.2	17.9	19.3	20.5	21.4	22.3	--
			0.32	4.51	15.1	18.0	20.4	22.3	24.0	25.4	26.6	--
			0.44	8.79	15.7	18.9	21.6	23.9	25.8	27.5	29.0	--
			0.63	17.78	16.2	19.7	22.6	25.2	27.4	29.4	31.2	--
			Airside Ps (kPa)		0.05	0.09	0.13	0.17	0.23	0.28	0.35	--

Heating capacity data in tables assume an entering water temperature (EWT) of 82°C, and an entering air temperature (EAT) of 18°C, which corresponds to a temperature difference of 64°C. Smaller temperature differences will result in a decrease of heating capacity. To obtain the heating capacity at another temperature difference, refer to the hot water coil notes located in the Reference Section.

METALAIRE™

TL-500
HOT WATER COILS kW SELECTION DATA – METRIC UNITS continued

Unit Size	Rows	Connection OD (mm)	Water Flow (L/s)	Head Loss (kPa)	Airflow (L/s) 283	330	378	472	708	944	1180	1416
514	1	15.9	0.03	0.99	4.5	4.7	4.9	5.2	5.6	5.9	6.0	6.2
			0.06	3.68	5.8	6.1	6.4	6.9	7.8	8.4	8.9	9.2
			0.13	13.90	6.7	7.2	7.6	8.3	9.7	10.7	11.4	12.0
			0.19	30.34	7.1	7.6	8.1	8.9	10.5	11.7	12.6	13.4
			Airside Ps (kPa)		0.01	0.01	0.01	0.02	0.04	0.06	0.09	0.12
514	2	22.2	0.06	0.96	8.1	8.6	9.0	9.7	10.8	11.5	12.0	12.3
			0.13	3.65	10.1	10.9	11.6	12.8	15.0	16.4	17.5	18.3
			0.25	13.81	11.4	12.5	13.4	15.1	18.3	20.6	22.4	23.9
			0.38	30.16	11.9	13.1	14.2	16.1	19.7	22.5	24.7	26.5
			Airside Ps (kPa)		0.02	0.02	0.03	0.04	0.08	0.13	0.18	0.25
514	3	22.2	0.13	1.29	12.4	13.4	14.2	15.6	17.9	19.4	20.4	21.2
			0.25	5.02	14.2	15.6	16.8	19.0	23.0	25.7	27.8	29.5
			0.38	11.12	14.9	16.5	17.9	20.4	25.2	28.7	31.4	33.6
			0.50	19.58	15.2	16.9	18.4	21.1	26.5	30.5	33.6	36.2
			Airside Ps (kPa)		0.02	0.03	0.04	0.06	0.12	0.19	0.28	0.38
514	4	22.2	0.13	0.78	13.7	14.8	15.7	17.2	19.6	21.1	22.1	--
			0.38	6.87	16.7	18.6	20.3	23.2	29.0	33.1	36.2	--
			0.50	12.14	17.1	19.1	20.9	24.2	30.6	35.4	39.1	--
			0.63	18.89	17.4	19.4	21.4	24.8	31.7	37.0	41.1	--
			Airside Ps (kPa)		0.03	0.04	0.05	0.08	0.16	0.25	0.37	--

Unit Size	Rows	Connection OD (mm)	Water Flow (L/s)	Head Loss (kPa)	Airflow (L/s) 283	330	378	472	708	944	1180	1416
516	1	15.9	0.03	1.08	4.7	4.9	5.2	5.4	5.9	6.1	6.4	6.5
			0.06	4.09	6.1	6.5	6.9	7.4	8.3	9.0	9.5	9.8
			0.13	15.51	7.1	7.7	8.1	8.9	10.4	11.5	12.3	13.0
			0.19	33.87	7.5	8.1	8.7	9.6	11.4	12.6	13.7	14.5
			Airside Ps (kPa)		0.00	0.01	0.01	0.01	0.03	0.05	0.07	0.09
516	2	22.2	0.13	4.07	10.6	11.4	12.2	13.5	15.8	17.4	18.5	19.4
			0.19	8.85	11.5	12.5	13.4	15.0	18.1	20.2	21.8	23.1
			0.25	15.39	12.0	13.1	14.2	16.0	19.4	22.0	24.0	25.5
			0.32	23.67	12.3	13.5	14.6	16.6	20.3	23.2	25.4	27.2
			Airside Ps (kPa)		0.01	0.02	0.02	0.03	0.06	0.10	0.14	0.19
516	3	22.2	0.13	1.37	13.0	14.1	15.0	16.5	19.0	20.6	21.6	22.5
			0.25	5.35	14.8	16.3	17.7	20.0	24.4	27.4	29.7	31.5
			0.38	11.81	15.5	17.2	18.7	21.5	26.7	30.6	33.6	36.1
			0.50	20.77	15.8	17.7	19.3	22.3	28.1	32.5	36.0	38.9
			Airside Ps (kPa)		0.02	0.02	0.03	0.05	0.09	0.15	0.21	0.29
516	4	22.2	0.13	0.81	14.3	15.5	16.5	18.1	20.7	22.3	23.3	24.1
			0.25	3.20	16.5	18.3	19.9	22.5	27.5	30.9	33.4	35.3
			0.50	12.61	17.7	19.8	21.8	25.3	32.4	37.6	41.8	45.1
			0.63	19.61	17.9	20.1	22.2	25.9	33.5	39.2	43.9	47.6
			Airside Ps (kPa)		0.03	0.03	0.04	0.06	0.12	0.20	0.29	0.39

Heating capacity data in tables assume an entering water temperature (EWT) of 82°C, and an entering air temperature (EAT) of 18°C, which corresponds to a temperature difference of 64°C. Smaller temperature differences will result in a decrease of heating capacity. To obtain the heating capacity at another temperature difference, refer to the hot water coil notes located in the Reference Section.

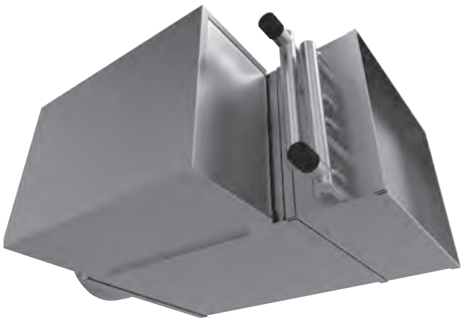
TL-500
ACCESSORIES AND COMPONENTS

When ordered with the air terminal, the hot water coil is shipped attached to the discharge of the terminal casing via slip and drive connections. The discharge end of the casing has slip and drive connections for easy connection to downstream ductwork. The hot water coil is constructed of aluminum fin and copper serpentine-type tubes with male sweat connections tested at 300 psig.

Coil selection may be made using METALAIRE Terminal Selection Software. Contact your METALAIRE representative for a copy. In the interest of energy conservation and due to the possibility of condensation, all hot water coils are marked, "Coil must be externally insulated after installation in the field." Hot water coils are tested in accordance to AHRI. Options, at an additional charge on hot water coils, include access doors for inspection and cleaning, and inlet/outlet on opposite sides of coils.

HOT WATER COIL CONSTRUCTION DETAILS

- Hot water coils are factory mounted on the discharge of the terminal and are available with an optional integral coil access door.
- Coils are enclosed in 20 gauge coated steel casing with slip and drive connection.
- Fins are rippled and sine wave type constructed from heavy gauge aluminum, mechanically bonded to the tubes.
- Tubes are copper with a minimum wall thickness of 0.016" with male solder header connections.
- Coils are leak tested to 300 psig with minimum burst of 2000 psig at ambient temperature.
- Coil performance data is based on tests run in accordance with AHRI standard 410; coils are AHRI certified and include AHRI label.



Coil Connection Size, Inches (mm)				
Inlet Size	1 Row	2 Row	3 Row	4 Row
6	5/8" (15.8)	7/8" (22.2)	7/8" (22.2)	7/8" (22.2)
8	5/8" (15.8)	7/8" (22.2)	7/8" (22.2)	7/8" (22.2)
10	5/8" (15.8)	7/8" (22.2)	7/8" (22.2)	7/8" (22.2)
12	5/8" (15.8)	5/8" (15.8)	7/8" (22.2)	7/8" (22.2)
14	5/8" (15.8)	5/8" (15.8)	7/8" (22.2)	7/8" (22.2)
16	5/8" (15.8)	5/8" (15.8)	7/8" (22.2)	7/8" (22.2)

All coils have 10 fins/inch

All accessories which can be attached to the Single Duct Boxes are not a part of the AHRI certification program but ratings can be affected by their use.

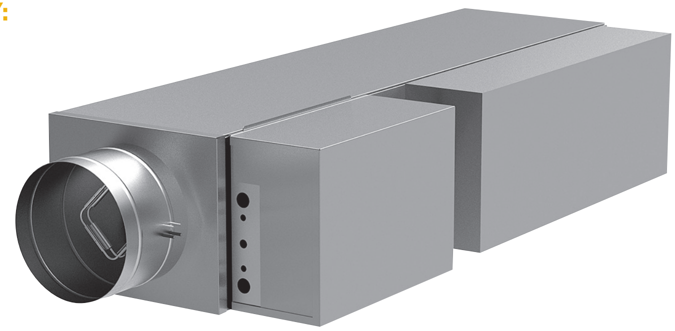
METALAIRE™

TL-500
ACCESSORIES AND COMPONENTS
ELECTRIC HEAT

Electric heater elements, as illustrated on this page, are integral to the air terminal. The discharge end has slip and drive connections for easy connection to downstream ductwork. ETL® listed heaters are provided with a fan interlock relay. Heaters that will be controlled electronically must include a 24 VAC control circuit to operate with the low voltage controls on the air terminal. Heater plenums are internally insulated. When an air terminal is ordered with clean room lining and electric heat, the heater plenum is either internally lined with optional foil backed insulation or closed cell foam or may require external insulation in field.

INCLUDED WITH EACH HEATER ASSEMBLY:

- Heater and cabinet mounted on the discharge of the TL-500
- Discharge plenum with 1/2" fiber face lining
- Air pressure switch
- De-energizing magnetic contactors per step and backup magnetic contactor
- Primary automatic reset high temperature limit (disc type)
- Backup manual reset high temperature limit (disc type)
- Non-isolated transformer
- Slip and drive connections
- Heater is shipped factory mounted and wired



ELECTRIC HEATER ASSEMBLY CONSTRUCTION DETAILS

- Electric reheat coils are factory mounted on the discharge of the air terminal. The heaters are ETL listed for zero clearance, and are tested in accordance with UL Standard 1995, CSA-C22.2 No. 236 and the National Electric Code (NEC). Heater casings are constructed of heavy-duty zinc-coated steel. Element wire is high grade nichrome alloy derated to 45 watts per square inch density. Element wire is supported by moisture-resistant steatite ceramics.
- Ceramics are enclosed in reinforcement brackets spaced across the heater element rack at 2" to 4" intervals. Controls are contained in a NEMA 1 control cabinet with a hinged, latching door. A permanent wiring diagram is affixed to the inside of the control cabinet door for field reference.

All accessories that can be attached to the Single Duct Boxes are not a part of the AHRI certification program but ratings can be affected by their use.

TL-500
ELECTRIC HEATER CAPACITIES

Single Phase				
Unit Size	**Heater Voltage**	**Min. kW Step**	**Max. kW**	**Max. Steps**
504 505 506	120	1	4	2
	208	0.6	4	2
	240	0.6	4	2
	277	0.6	4	2
	480	1.6	4	2
508	120	1	5	3
	208	0.6	8	3
	240	0.6	8	3
	277	0.6	8	3
	480	1	8	3
510	120	0.6	5	3
	208	0.6	9.5	3
	240	0.6	11	3
	277	0.6	12	3
	480	1	23	3
512	120	0.6	5	3
	208	0.6	9.5	3
	240	0.6	11	3
	277	0.6	12	3
	480	0.6	23	3
514	120	0.6	5	3
	208	0.6	9.5	3
	240	0.6	11	3
	277	0.6	12	3
	480	0.6	23	3
516	120	0.6	5	3
	208	0.6	9.5	3
	240	0.6	11	3
	277	0.6	12	3
	480	0.6	23	3

Three Phase FCQ kW Limits				
Unit Size	**Heater Voltage**	**Min. kW Step**	**Max. kW**	**Max. Steps**
504 505 506	208	0.6	4	2
	240	0.6	4	2
	480	1.6	4	2
508	208	1.6	8	3
	240	1.6	8	3
	480	1.6	8	3
510	208	1.6	13	3
	240	1.6	13	3
	480	1.6	15	3
512	208	1.6	16	3
	240	1.6	16	3
	480	1.6	23	3
514	208	1.6	16	3
	240	1.6	16	3
	480	1.6	24	3
516	208	1.6	16	3
	240	1.6	16	3
	480	1.6	39	3

NOTES:

1. *Heaters less than 5 kW are specifiable to the nearest 0.2 kW. Heaters greater than 5 kW and less than 10.0 kW are specifiable to nearest 0.5 kW. Heaters greater than 10.0 kW are specifiable to nearest 1.0 kW.*
2. *Minimum flow rate for electric heat is 70 CFM/kW. Lower CFM's can cause nuisance tripping, excessive discharge temperatures, rapid cycling, and rapid element failure. Electric Heat units running below 70 CFM/kW will void all warranties.*
3. *For optimum thermal comfort, the suggested discharge temperature should not exceed 20°F above room set point.*
4. *We do not recommend discharge temperatures in excess of 115°F to protect heater coils.*
5. *Maximum number of steps at minimum kW is one step.*
6. *If more than 1 heater is wired into a building's circuit breaker (multi-outlet branch circuit) each heater will require the addition of power side fusing.*

ELECTRIC HEAT SELECTION:

A. Specify electric duct heaters using voltage, kW, and number of steps.

B. Use above chart to select voltage. Calculate required kW using following equations:

$$kW = \frac{BTU / HR}{3413} \qquad kW = \frac{CFM \times \Delta \times 1.085}{3413} \qquad \Delta = \frac{kW \times 3413}{CFM \times 1.085}$$

$$CFM = \frac{kW \times 3413}{\Delta \times 1.085} \qquad CFM = \frac{kW \times 3413}{\Delta \times 1.085}$$

** air density at sea level—reduce by 0.036 for each 1000 feet of altitude above sea level*

Where: BTU / Hr = Required heating capacity

CFM = volume of air during heating. Typically 100% of maximum cooling air volume

Δ = desired air temperature rise across the electric heater

Inlet air temperature = primary air temperature, usually 55°F

TL-500
CONTROL SEQUENCE OFFERINGS

PPD–PNEUMATIC PRESSURE DEPENDENT

- 110 DA/NC Full Closed
- 112 RA/NO Full Open

PPI–PNEUMATIC PRESSURE INDEPENDENT

- 114 DA/NC
- 115 DA/NO
- 116 RA/NC
- 117 RA/NO
- 140 NO

ELECTRONIC–PRESSURE DEPENDENT

- 152 Cooling Only
- 153 Cooling with Reheat
- 156 Static Control
- 157 Actuator Only

ANALOG ELECTRIC

- 160 Cooling Only
- 161 Cooling with Heat
- 164 Night Setback/Morning Warm-up
- 165 Heating/Cooling Changeover
- 173 Static Pressure Control

DIRECT DIGITAL

LON WORKS

- 190 Cooling Only
- 191 Heating / Cooling Auto Changeover
- 192 Hot Water Reheat
- 193-1E 1 Stage Electric Heat
- 193-2E 2 Stage Electric Heat
- 193-3E 3 Stage Electric Heat

BACnet

- 180 Cooling Only
- 181 Cooling or Heating
- 182 Hot Water Reheat
- 183-1E 1 Stage Electric Heat
- 183-2E 2 Stage Electric Heat
- 183-3E 3 Stage Electric Heat

Refer to Reference Section for complete description.

BP-600
BYPASS
AIR TERMINAL UNIT

INDEX OF SECTIONS | **PAGE**

METALAIRE™

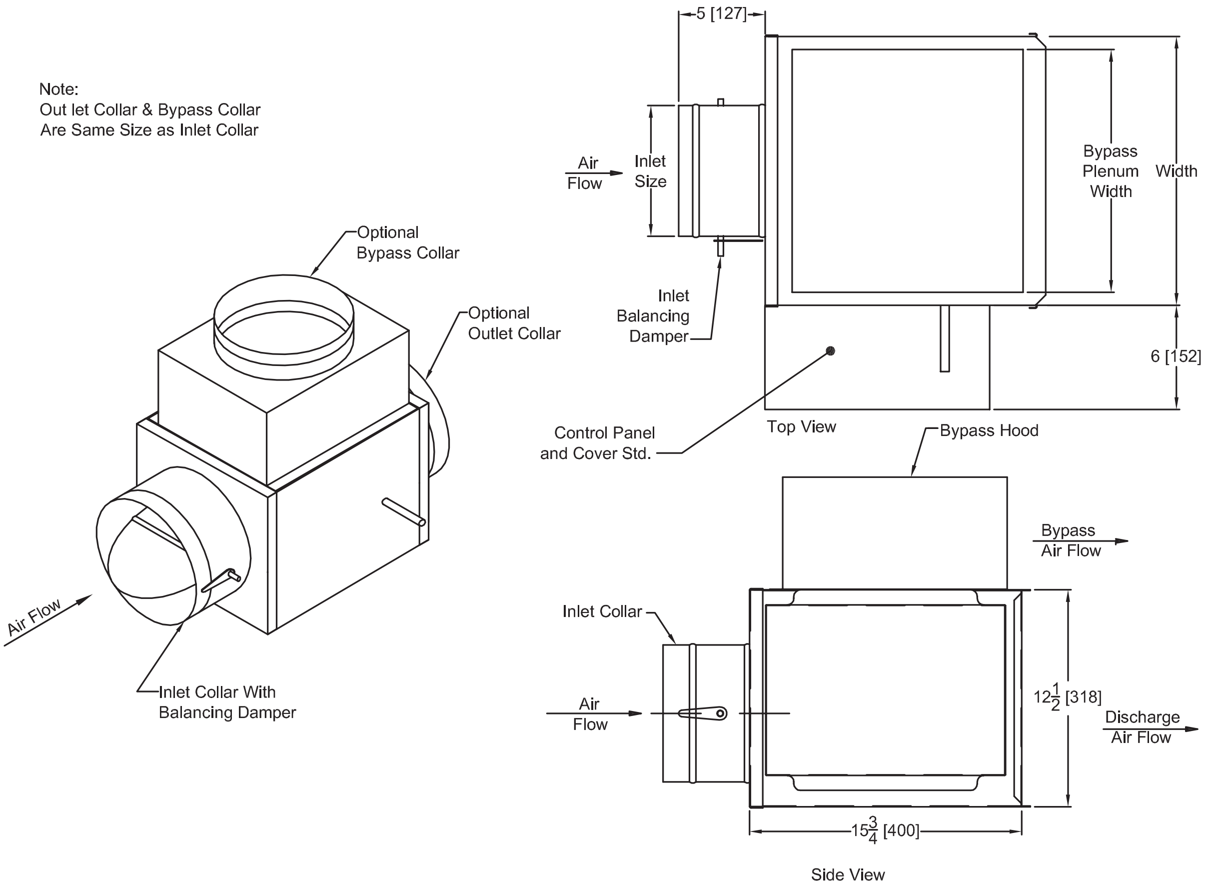
BP-600
BYPASS TERMINAL UNIT

The BP-600 Bypass Air Terminals are used to achieve variable air volume delivery of conditioned air to a space or zone where constant volume air handlers exist. Variable air volume control is achieved by directing air flow either to the space or to a bypass port in direct response to a signal from the room thermostat. The BP-600 Bypass Air Terminal uses a primary air damper working in concert with a bypass port damper. As the primary air damper closes, the bypass port damper opens, and vice versa. A constant volume of air is delivered by the air terminal, but varying amounts are delivered to the space and the bypass plenum. A locking quadrant on the inlet balancing damper determines the total air flow through the air terminal. The primary air valve is enclosed in an insulated sheet metal casing. Primary air damper blades have precision extruded aluminum shafts which rotate in self-lubricating thermoplastic bearings resulting in extremely low friction damper operation. Control components are shipped piped and wired, and a piping/wiring diagram is affixed to the bottom of the unit for field reference.

STANDARD FEATURES

- BP-600 available in 6 unit sizes to handle 200-4000 CFM
- Casing constructed of 22 ga. galvanized steel.
- Damper constructed of double layer 24 ga. galvanized steel with flexible gasket.
- Insulation is 1/2" thick, 1.5lb/ft^3 dual density coated fiberglass that complies with NFPA 90A, ASTM C-665, and UL-181 requirements.
- 3-beaded inlet connection tube for added rigidity and secure flex duct connections.
- All BP-600 terminal units are AHRI certified and shipped with the AHRI seal.

BP-600
BYPASS AIR TERMINAL UNIT

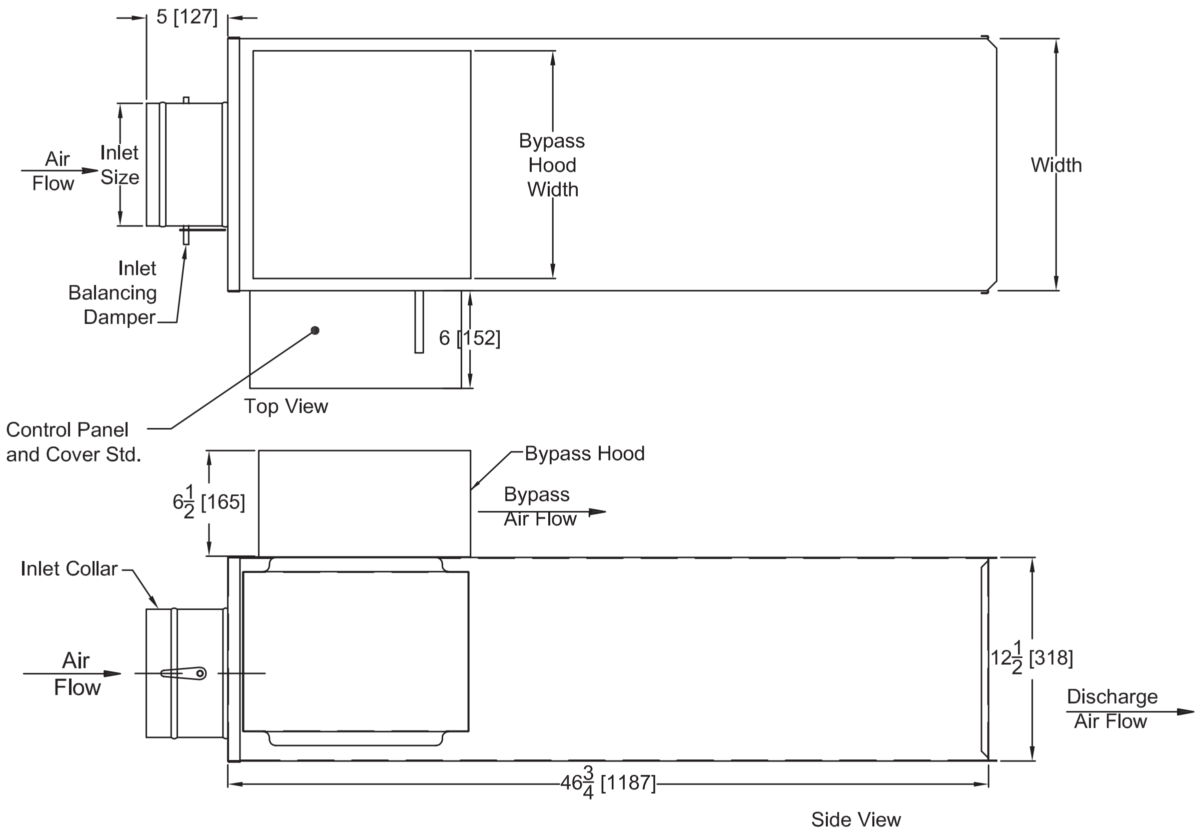


The standard location for control panel is Right Hand on Model BP. Looking in the direction of airflow, the control panel is on the right.

Model Number	Nominal Size	CFM Range	Width	Shipping Weight (lbs.)
BP606	6 (152) Round	0-600	12 (305)	23
BP608	8 (203) Round	0-1000	14 (356)	26
BP610	10 (254) Round	0-1600	16 (406)	29
BP612	12 (305) Oval	0-2200	18 (457)	31
BP614	14 (356) Oval	0-3000	24 (610)	34
BP616	6 (406) Oval	0-4000	28 (673)	38

METALAIRE™

BP-600
BYPASS AIR TERMINAL UNIT WITH INTEGRAL SOUND ATTENUTATOR



The standard location for control panel is Right Hand on Model BP.
Looking in the direction of airflow, the control panel is on the right.

Model Number	Nominal Size	CFM Range	Width	Shipping Weight (lbs.)
BP606	6 (152) Round	0-600	12 (305)	37
BP608	8 (203) Round	0-1000	14 (356)	42
BP610	10 (254) Round	0-1600	16 (406)	47
BP612	12 (305) Oval	0-2200	18 (457)	50
BP614	14 (356) Oval	0-3000	24 (610)	55
BP616	6 (406) Oval	0-4000	28 (673)	62

BP-600
AHRI CERTIFIED RATING POINTS

AHRI Certified Radiated Sound Power, Minimum Ps

Unit Size	Min Ps	CFM	Octave Band					
			2	3	4	5	6	7
4	0.05	200	35	35	29	29	20	20
5	0.05	200	35	35	29	29	20	20
6	0.13	400	50	46	45	43	36	29
8	0.05	700	60	53	45	40	31	27
10	0.05	1100	57	49	45	40	33	28
12	0.10	1600	59	53	47	42	35	29
14	0.10	2100	57	54	53	49	43	41
16	0.12	2800	60	62	61	57	50	43

AHRI Certified Discharge Sound Power, Minimum Ps

Unit Size	Min Ps	Fan CFM	Octave Band					
			2	3	4	5	6	7
4	0.05	200	35	35	29	29	20	20
5	0.05	200	35	35	29	29	20	20
6	0.13	400	61	57	52	51	44	39
8	0.05	700	65	59	56	53	45	38
10	0.05	1100	66	62	58	54	46	41
12	0.10	1600	64	60	59	56	49	43
14	0.10	2100	64	65	65	58	53	50
16	0.12	2800	66	63	64	63	56	51

CERTIFICATIONS AND STANDARDS

- Units tested per ANSI/ASHRAE Standard 130.
- All model sizes certified in accordance with AHRI 880 certification program.
- ETL listed to meet requirements of UL 1995 and CSA 236.
- Dual-density fiberglass insulation meets UL 181 and NFPA 90A requirements.
- Insulation meets ASHRAE 62.1 requirements for resistance to mold growth and erosion.

AHRI CERTIFIED™
www.ahridirectory.org
VAV Terminals
AHRI Standard 880

METALAIRE™

BP-600
RADIATED SOUND POWER at Minimum Pressures and ΔPS = 1.0 in. wg

Unit Size	CFM (L/s)		Min Ps in. wg (Pa)		Min Ps Octave Band Sound Power, Lw, dB 2	3	4	5	6	7	NC	ΔPs = 1.0 in. wg (250 Pa) Octave Band Sound Power, Lw, dB 2	3	4	5	6	7	NC
604 / 605 4 & 5 inch	100	(47)	0.005	(1.2)	35	29	26	22	19	17	<15	35	29	26	22	19	17	<15
	150	(71)	0.012	(3.0)	35	29	26	22	19	17	<15	44	39	37	31	29	25	<15
	200	(94)	0.050	(12.4)	35	35	29	29	20	20	<15	53	48	47	40	38	33	21
	250	(118)	0.055	(13.7)	40	37	36	32	24	20	<15	57	51	48	43	40	36	22
606 6 inch	200	(94)	0.050	(12.4)	35	35	29	29	20	20	<15	53	48	47	40	38	33	21
	300	(142)	0.080	(19.9)	45	39	42	35	27	20	15	60	54	48	45	42	38	22
	400	(189)	0.130	(32.4)	50	46	45	43	36	29	19	60	54	49	46	44	41	23
	600	(283)	0.300	(74.7)	54	49	46	47	41	39	20	62	56	50	51	46	45	25
608 8 inch	400	(189)	0.020	(5.0)	45	38	33	26	20	20	<15	61	56	50	46	42	36	25
	500	(236)	0.030	(7.5)	51	42	37	33	23	20	<15	63	57	53	48	46	38	27
	700	(330)	0.050	(12.4)	60	53	45	40	31	27	22	66	59	53	50	48	40	30
	1000	(472)	0.100	(24.9)	66	55	48	46	40	35	30	72	61	53	52	46	42	38
610 10 inch	600	(283)	0.020	(5.0)	56	35	30	23	20	20	17	65	59	49	43	38	34	29
	800	(378)	0.030	(7.5)	51	43	38	32	24	20	<15	67	60	55	50	41	37	31
	1100	(519)	0.050	(12.4)	57	49	45	40	33	28	19	69	63	61	51	44	41	35
	1600	(755)	0.100	(24.9)	59	51	52	46	40	35	26	72	65	63	54	48	45	38
612 12 inch	1100	(519)	0.040	(10.0)	50	48	45	37	28	20	19	71	65	56	51	46	42	36
	1200	(566)	0.050	(12.4)	50	46	46	40	31	23	20	70	67	58	52	48	44	38
	1500	(708)	0.082	(20.4)	55	51	47	41	33	26	21	72	68	59	54	49	45	40
	1600	(755)	0.099	(24.5)	59	53	47	42	35	29	21	74	70	60	55	50	46	41
	2200	(1038)	0.150	(37.3)	63	57	50	45	38	32	26	75	70	63	57	53	49	41
614 14 inch	1500	(708)	0.050	(12.4)	58	49	47	42	34	25	21	68	67	63	59	55	50	38
	1800	(850)	0.070	(17.4)	58	50	48	44	37	33	22	69	67	62	60	56	51	38
	2100	(991)	0.100	(24.9)	57	54	53	49	43	41	27	72	68	64	62	58	52	39
	2400	(1133)	0.130	(32.4)	56	58	58	53	48	49	33	74	69	65	63	59	53	41
	3000	(1416)	0.200	(49.8)	71	68	64	57	52	50	39	76	73	68	66	60	55	45
616 16 inch	2000	(944)	0.060	(14.9)	57	54	53	48	40	21	27	70	70	68	55	51	46	44
	2800	(1321)	0.120	(29.9)	60	62	61	57	50	43	36	74	73	71	58	52	49	47
	3200	(1510)	0.160	(39.8)	62	63	62	59	52	40	37	74	74	72	60	54	51	48
	3600	(1699)	0.210	(52.3)	67	68	67	64	58	53	43	75	75	73	62	57	57	49
	4000	(1888)	0.250	(62.2)	72	71	67	62	58	55	43	77	77	75	65	60	60	51

1. *Performance data contained within a bold border outline are AHRI certified data.*
2. *Performance data not contained within a bold border outline are application ratings. Application ratings are outside the scope of the Certification Program.*
3. *Performance data is obtained from laboratory testing in accordance with AHRI 880-2011 and ANSI / ASHRAE 130-2008.*
4. *NC values are calculated using attenuation credits outlined in Appendix E of AHRI 885-2008.*
5. ***Discharge Sound power levels shown with End Reflection Corrections Included** in dB (ref: 10^{-12} watts).*
6. *Minimum Ps is the static pressure drop across the air terminal unit while the inlet damper is in the wide-open position at a given airflow rate.*

BP-600
DISCHARGE SOUND POWER at Minimum Pressures and ΔPS = 1.0 in. wg

Unit Size	CFM	(L/s)	Min Ps in. wg	(Pa)	Min Ps Octave Band Sound Power, Lw, dB 2	3	4	5	6	7	NC	ΔPs = 1.0 in. wg (250 Pa) Octave Band Sound Power, Lw, dB 2	3	4	5	6	7	NC
604 / 605 4 & 5 inch	100	(47)	0.005	(1.2)	51	36	30	26	24	16	<15	60	55	51	48	43	41	<15
	150	(71)	0.012	(3.0)	54	39	33	29	27	19	<15	63	58	54	51	46	44	18
	200	(94)	0.050	(12.4)	57	42	36	32	30	22	<15	66	61	57	54	49	47	22
	250	(118)	0.055	(13.7)	57	46	40	38	33	24	<15	67	64	59	58	51	49	24
606 6 inch	200	(94)	0.050	(12.4)	57	42	36	32	30	22	<15	66	61	57	54	49	47	22
	300	(142)	0.080	(19.9)	56	50	45	43	35	25	<15	68	66	62	61	53	51	25
	400	(189)	0.130	(32.4)	61	57	52	51	44	39	<15	71	68	65	65	56	54	27
	600	(283)	0.300	(74.7)	72	68	64	62	55	52	27	77	76	72	73	63	60	37
608 8 inch	400	(189)	0.020	(5.0)	63	46	40	36	36	25	<15	68	66	64	64	55	52	25
	500	(236)	0.030	(7.5)	63	51	46	43	33	23	<15	71	67	65	66	57	53	26
	700	(330)	0.050	(12.4)	65	59	56	53	45	38	17	75	71	70	70	61	57	31
	1000	(472)	0.100	(24.9)	72	68	64	63	55	49	26	80	77	76	75	67	62	37
610 10 inch	600	(283)	0.020	(5.0)	62	48	43	37	28	24	<15	68	65	65	62	55	53	24
	800	(378)	0.030	(7.5)	63	56	50	46	37	27	<15	73	70	69	65	58	56	28
	1100	(519)	0.050	(12.4)	66	62	58	54	46	41	19	75	73	72	69	62	59	32
	1600	(755)	0.100	(24.9)	70	65	66	61	58	54	22	79	76	77	74	66	64	35
612 12 inch	1100	(519)	0.040	(10.0)	59	51	48	45	37	27	<15	71	69	68	61	66	56	27
	1200	(566)	0.050	(12.4)	63	53	51	48	40	32	<15	72	70	68	67	61	58	28
	1500	(708)	0.082	(20.4)	63	60	58	55	48	42	16	74	72	74	72	66	61	31
	1600	(755)	0.099	(24.5)	64	60	59	56	49	43	16	74	73	74	73	67	62	32
	2200	(1038)	0.150	(37.3)	67	62	62	61	55	51	19	77	76	77	76	70	65	35
614 14 inch	1500	(708)	0.050	(12.4)	58	59	54	47	41	36	15	74	73	71	65	61	58	32
	1800	(850)	0.070	(17.4)	58	62	61	54	49	46	19	75	74	75	67	63	59	33
	2100	(991)	0.100	(24.9)	64	65	65	58	53	50	22	77	76	77	70	65	61	35
	2400	(1133)	0.130	(32.4)	69	68	68	62	56	53	26	79	78	79	72	67	63	38
	3000	(1416)	0.200	(49.8)	77	74	74	68	63	60	33	82	81	84	76	70	67	41
616 16 inch	2000	(944)	0.060	(14.9)	59	54	55	53	45	38	<15	75	70	69	67	62	58	28
	2800	(1321)	0.120	(29.9)	66	63	64	63	56	51	20	77	77	76	74	68	64	37
	3200	(1510)	0.160	(39.8)	70	78	68	67	60	55	38	79	78	78	76	70	66	38
	3600	(1699)	0.210	(52.3)	73	71	73	72	65	60	29	79	80	81	78	72	66	40
	4000	(1888)	0.250	(62.2)	76	74	74	72	65	60	33	82	80	82	80	74	69	40

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4. *NC values are calculated using attenuation credits outlined in Appendix E of AHRI 885-2008.*
5. ***Discharge Sound power levels shown with End Reflection Corrections Included** in dB (ref: 10^{-12} watts).*
6. *Minimum Ps is the static pressure drop across the air terminal unit while the inlet damper is in the wide-open position at a given airflow rate.*

METALAIRE™

BP-600
CONTROL SEQUENCE OFFERINGS

PPD–PNEUMATIC PRESSURE DEPENDENT

- 310 DA/NC Full Closed
- 312 RA/NO Full Open

PPI–PNEUMATIC PRESSURE INDEPENDENT

- 314 DA/NC
- 315 DA/NO
- 316 RA/NC
- 317 RA/NO
- 340 NO

ELECTRONIC–PRESSURE DEPENDENT

- 352 Cooling Only
- 356 Static Control
- 357 Actuator Only

ANALOG ELECTRIC

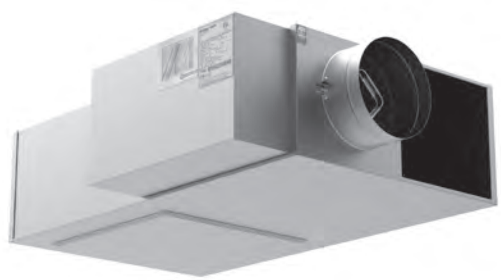
- 360 Cooling Only
- 365 Heating/Cooling Changeover
- 373 Static Pressure Control

Refer to Reference Section for complete description.

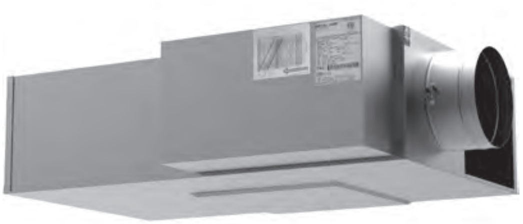
FAN POWERED TERMINAL UNITS

FCI-600
SERIES FAN TERMINAL
PAGE 5

FVI-500
PARALLEL FAN TERMINAL
PAGE 91



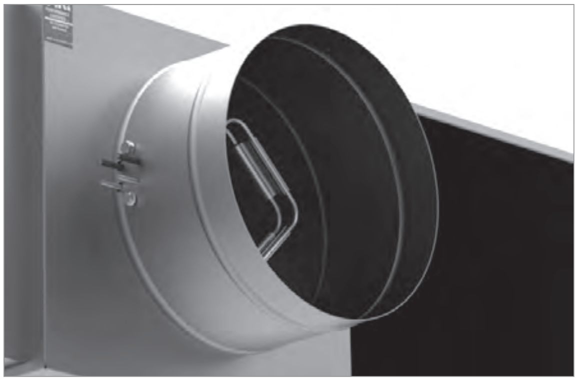
FCL-600
LOW-PROFILE SERIES FAN TERMINAL
PAGE 39



FVL-600
LOW-PROFILE PARALLEL FAN TERMINAL
PAGE 135

FCQ-700
ULTRA QUIET SERIES FAN TERMINAL
PAGE 61

METALAIRE™



FAN POWERED TERMINAL UNITS

BENEFITS:

Fan powered terminals are typically used for heating and cooling of perimeter zones. Operating cost savings can be achieved through the use of waste heat recovery from the ceiling plenum and from reduced central fan HP. This coupled with a relatively low impact on installation costs are reasons for the widespread application of fan powered terminal units.

Both parallel and series fan powered terminals have a damper to modulate primary cooling air and a fan/motor assembly that draws return air from the ceiling plenum. The difference in the configuration and operation of these terminals is illustrated on these pages.

	SERIES FAN POWERED TERMINAL UNITS	PARALLEL FAN POWERED TERMINAL UNITS
	In the series fan powered terminal, the primary air valve and fan are in the primary airstream, and are sized for the cooling load. The fan runs continuously during both heating and cooling modes. The volume of supply air remains constant at all times resulting in better diffuser performance and constant noise levels.	In the parallel fan powered terminal, the primary air valve is sized for the cooling airflow just as in single duct terminals. The fan section is outside of the primary airstream and typically runs only in the heating mode. It is typically sized for 50% of the maximum primary airflow which can result in lower noise levels, lower unit first costs, and reduced energy usage when compared to a series fan powered terminal due to the fan not being on at all times with fan being energized only during heating mode.
Function	Series Terminal Constant volume	Parallel Terminal Variable volume
Fan Operation	Continuous. Runs under heating and cooling in occupied and unoccupied modes.	Intermittent. Typically runs only under heating mode.
Operation of Terminal	Constant volume, variable temperature at all times. Supplemental heat raises supply temperature in stages.	Variable volume, constant temperature during cooling. Constant volume variable temperature during heating. Fan and supplemental heat raise supply temperature in stages.
Terminal Fan Sizing	For design airflow — heating or cooling, whichever is greater — at required downstream static pressure.	For design heating load at reduced downstream static pressure (typically 50% of cooling cfm).
Central Fan Sizing	Static pressure needed to overcome volume damper only.	Static pressure needed to overcome volume damper, heating coil, downstream duct, and diffusers.

MODEL NUMBER LEGEND

EXAMPLE: FCI C5 614C-900B

FXX XX XXXX -XXXX

C Series Unit
V Parallel Unit

I Improved
Q Ultra Quiet
L Low Profile

Case Size
(C1, C2, C3, etc.)

Generation
5, 6, 7

Inlet Size
(04, 05, 06, etc.)

Motor Voltage
A 120
C 277
F 208-240

Terminal Type:
8 FVI, FVL
9 FCI, FCL, FCQ

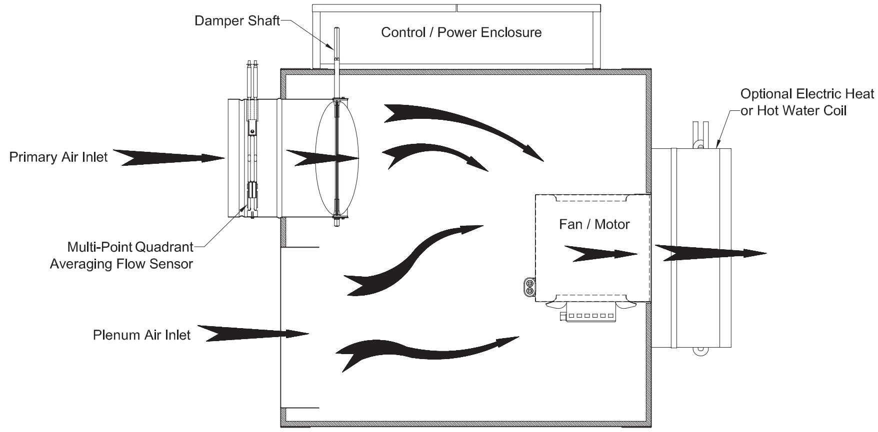
Control Sequence:
00B No Controls
05 DDC
6 Analog
1 Pneumatic

A 120/24 Transformer Voltage
C 277/24 Transformer Voltage
F 208/24 Transformer Voltage
N No Transformer
E Electric Heat

TYPES OF FAN POWERED TERMINAL UNITS

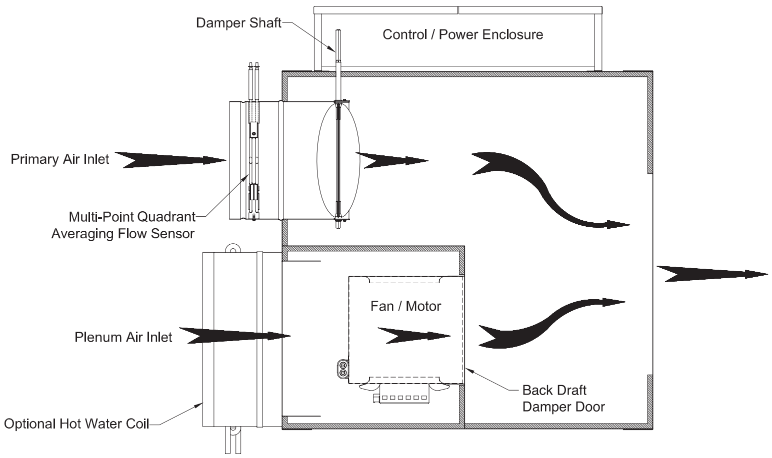
FCI-600 SERIES FAN POWERED UNIT

In a constant volume (or series) fan powered terminal, the fan runs continuously. Both primary and induced air are discharged through the fan.



FVI-500 PARALLEL FAN POWERED UNIT

In a variable volume (or parallel) terminal unit, the fan runs only when heating is required. In cooling, the unit functions the same as a single duct VAV terminal.



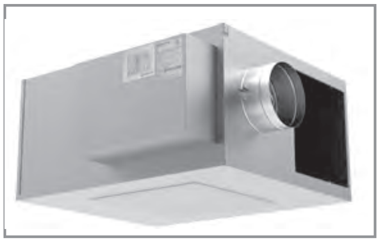
CERTIFICATION AND STANDARDS

- Units tested per ANSI/ASHRAE Standard 130.
- All model sizes certified in accordance with AHRI 880 certification program.
- ETL listed to meet requirements of UL 1995 and CSA 236.
- Dual-density fiberglass insulation meets UL 181 and NFPA 90A requirements.
- Insulation meets ASHRAE 62.1 requirements for resistance to mold growth and erosion.

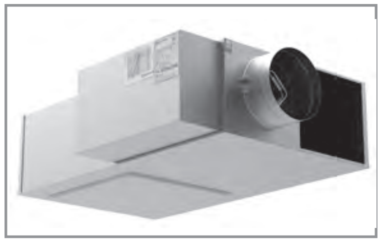
OPTIONS

- Energy-efficient electronically commutated motor (ECM).
- SSR controlled electric heater.
- Mercury contactors for quiet operation of the electric heater.
- Inlet attenuator for quiet applications.

METALAIRE™



FCI-600
CONSTANT VOLUME UNIT



FCL-600
LOW-PROFILE CONSTANT VOLUME UNIT

FCQ-700
ULTRA QUIET CONSTANT VOLUME UNIT

SERIES FAN POWERED TERMINAL UNITS

METALAIRE's series fan-powered terminal units are designed to provide superior comfort by supplying constant volume, variable temperature air into the occupied zone. Series fan-powered terminal units reduce central fan energy, allow for recovery of waste heat from the return plenum, lower operating costs, improve air circulation through better diffuser performance, and provide a constant sound level for maximum occupant comfort.

The primary function of the METALAIRE series fan-powered terminal unit is to deliver a constant volume of conditioned air into the occupied zone. The terminal unit mixes conditioned air from the primary duct and warm air from the return plenum in varying amounts in response to a control signal. Supplemental heating is available in both electric heat and hot water coils if plenum heat is insufficient. METALAIRE series fan-powered terminal units are available with a wide range of control options to suit any application. These include pneumatic, analog electronic, electric, and direct digital control (DDC). With the demands of today's building designs to reduce energy in smaller mechanical spaces, the METALAIRE series fan-powered terminal unit is the perfect choice.

FEATURES

- FCI-600 is available in 6 casing sizes to handle 200 – 4400 cfm.
- FCL-600 is available in 2 casing sizes to handle 350 – 1825 cfm.
- FCQ-700 is available in 6 casing sizes to handle 200 – 4000 cfm.
- 22 ga. galvanized steel casing, mechanically sealed, low leakage construction.
- Damper constructed of double layer, 18 ga. equivalent, galvanized steel with sandwiched flexible gasket, mechanically fastened to provide tight seal (<1% at 3.0" WG static pressure).
- Factory calibrated controls per each job requirement.
- METALAIRE multi-quadrant averaging flow sensor provides highly accurate +/- 5% flow readings after certified balancer has balanced terminal.
- Easy access external balancing taps.
- Energy efficient PSC motors with adjustable SCR solid state fan speed controllers are standard.
- Optional highly efficient Electronically Commutated Motors(ECM).
- External control cabinet with offset mounting plate as standard.
- Single point electrical connections.
- For added rigidity, the primary inlet incorporates 3 strengthening beads which also provide a stop for field attached flex duct, forms the seal where primary duct enters the casing and serves as the sealing surface for the damper assembly in closed position.
- Round inlets available in sizes 6" through 16".
- 1" thick, dual density (1.5lb/ft^3 min.) fiberglass insulation with edges coated. Meets NFPA 90A and UL 181. (1/2" thick insulation standard on FCL-600.)
- Flanged discharge with optional slip and drive cleat duct connection.
- Removable bottom access panel provides complete access to motor/blower.
- Independently tested and certified laboratory performance data.
- Full range of options and accessories available (heating coils, disconnects, attenuators, etc.).
- Full range of liners/insulation available.

FCI-600 CONSTANT VOLUME FAN TERMINAL UNIT

SPECIFIABLE FEATURES

- Galvanized steel casing, mechanically sealed for low leakage construction
- NEMA 1 rated hinged control enclosure with standoff to prevent penetration of casing
- Single speed high efficiency PSC motor with SCR motor speed control
- Butt welded round primary inlet duct to minimize leakage
- Damper constructed of double layer 18 gauge equivalent with integral blade seal
- Metal construction inlet flow sensor with extra balancing taps
- Single point electrical connection

METALAIRE™

FCI-600 CONSTANT VOLUME FAN TERMINAL UNIT

The METALAIRE FCI series fan-powered terminal unit has been engineered to provide a balance between quiet operation, minimal footprint, and a broad flow range.

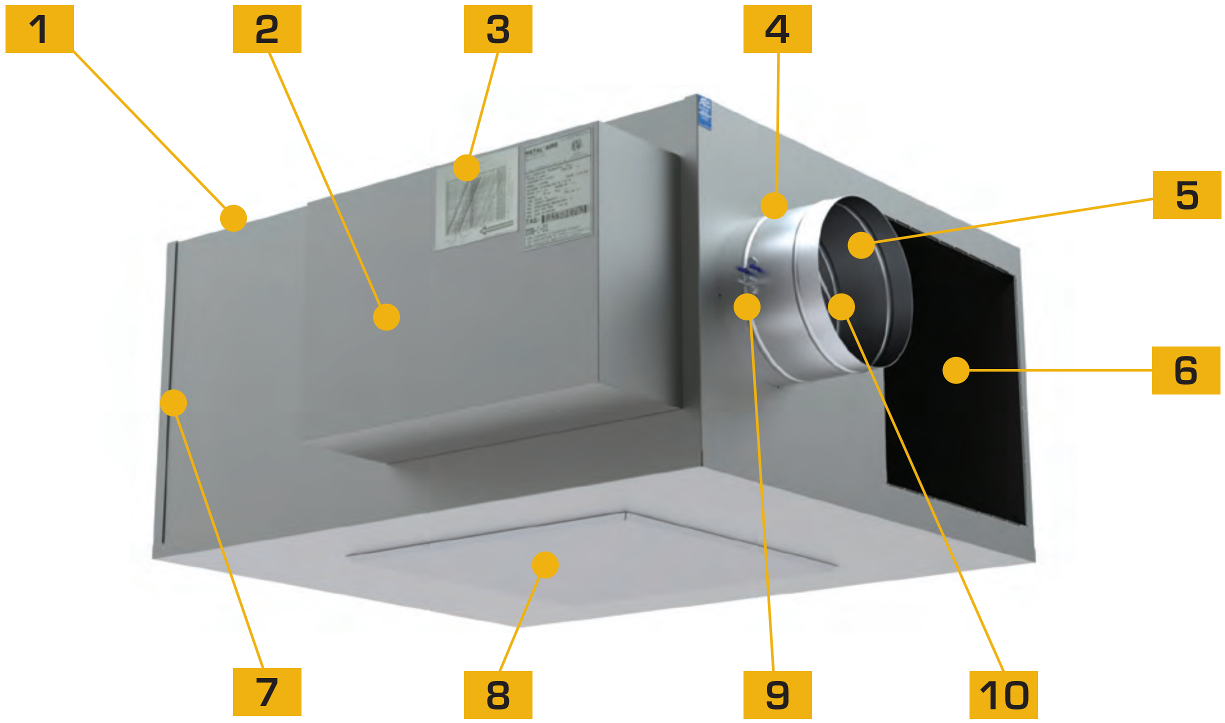
The FCI is constructed from 22 gauge metal designed to mitigate vibration and increase rigidity. The unique 4-piece case allows for fewer seams to minimize leakage. Every FCI includes bottom motor/blower access panel: These simple-to-remove panels provide access to allow trouble-free maintenance of the fan motor and blower assembly. The control enclosure for the FCI allows critical component access.

FCI units include 1" thick, matt-faced fiberglass insulation that complies with UL 181 horizontal burn test, NFPA 90A and UL 723/ASTM E 84 flame spread and smoke developed ratings of 25/50. Optional insulations include metal-foil-faced and fiber- and erosion-free ThermoPure (closed-cell foam), a polyolefin product with superior acoustical properties compared to solid metal duct liner.

Optional electronically commutated motors (ECM) are available to minimize energy usage. Up to 75% energy savings is typical with the ECM option.

STANDARD FEATURES

- Available in 6 casing sizes to handle 200–4400 cfm.
- 22 ga. galvanized steel casing.
- Low leakage construction.
- Low leakage inlet damper (< 1% at 3" static pressure).
- Optional factory calibrated controls per each job requirement.
- Metalaire inlet flow sensor provides +/- 5% accuracy even with 90 degree elbow at inlet.
- Easy access, steel balancing taps.
- Energy efficient PSC motors with adjustable SCR solid state fan speed controller.
- External control cabinet with offset mounting plate.
- Single point electrical connections.
- Beaded primary inlet connection tube for added rigidity and secure flex duct connections.
- Round inlets available in sizes 6" through 16".
- 1" thick, dual density (1.5lb/ft^3 min.) fiberglass insulation with edges coated.
- Rectangular discharge with optional slip and drive cleat duct connection.
- Large removable bottom access panel provides access to fan motor/blower assembly.
- Independently tested and certified laboratory performance data.
- Full range of options and accessories available (heating coils, disconnects, attenuators, etc.).
- Full range of liners/insulation available.
- Auto and manual thermal resets on every electric heater.
- High efficiency six-pole, single speed permanent split capacitor (PSC) motors.
- Available motor voltages of 120, 277, and 208-240 (50/60 Hz).

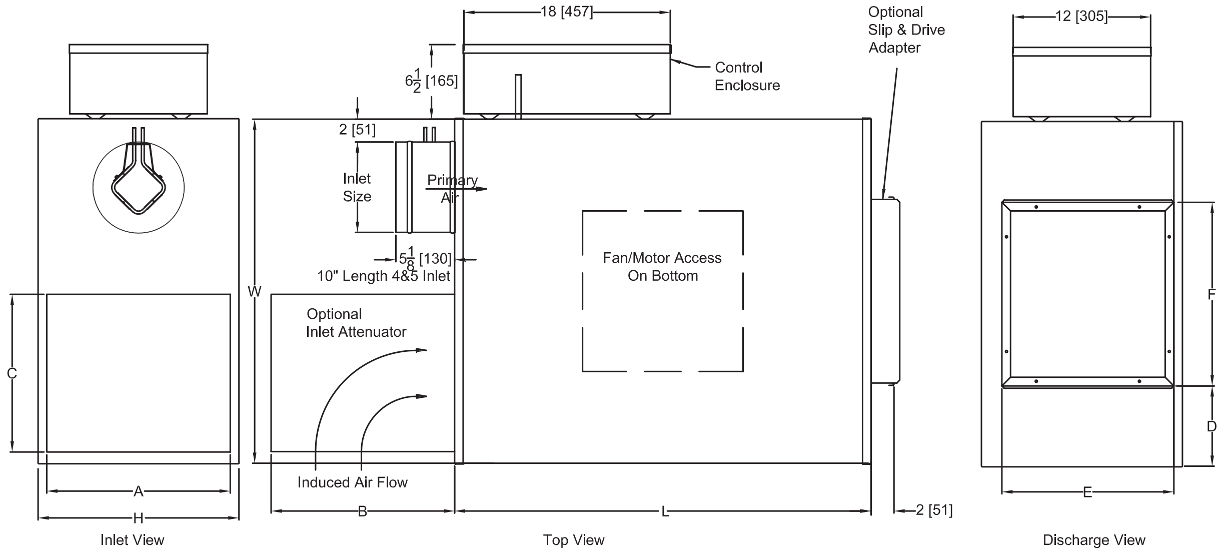


FCI-600 CONSTANT VOLUME FAN TERMINAL UNIT

FEATURES AND BENEFITS

1. Galvanized steel casing, mechanically sealed for low leakage construction.
2. NEMA 1 rated hinged control enclosure with standoff to prevent penetration of casing.
3. Single speed high efficiency PSC motor with SCR motor speed control.
4. Continuous welded primary inlet duct to minimize leakage with 3 stiffening beads for added rigidity.
5. Damper construction of double layer 18 gauge equivalent with mechanically fastened integral blade seal.
6. Field adjustable baffles, top and bottom, for balancing.
7. Discharge panel is manufactured with 18 gauge galvanized steel to mitigate vibration.
8. Bottom access panel provided for easy motor/blower servicing.
9. Metal constructed inlet flow sensor with extra balancing taps.
10. Damper assembly rotates in long life, low friction, self lubricating thermoplastic bearing.

FCI-600
SERIES FAN POWERED AIR TERMINAL UNIT
COOLING ONLY



The standard location for control enclosure is Left Hand on Model FCI.
Looking in the direction of airflow, the control enclosure is on the left.

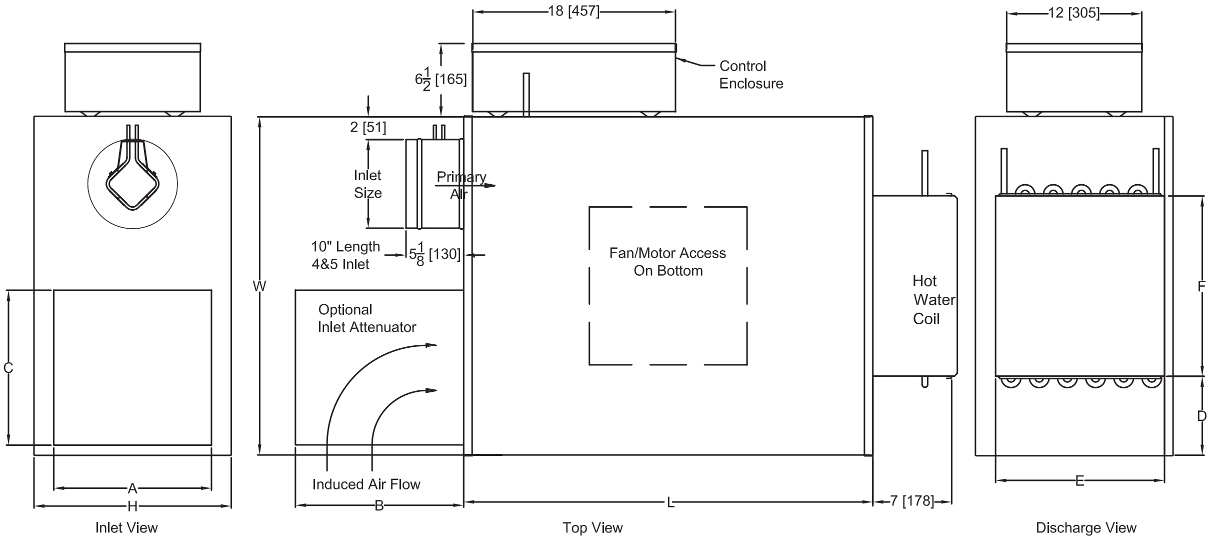
Case size	Inlet Size		Horse-power	Unit Dimensions			Induction Attenuator			Discharge		
	Standard	Optional		Height H	Width W	Length L	Height A	Width B	Length C	Loc. D	Height E	Width F
2	8 (203)	4,5,6,10,12	1/8	17 1/2 (445)	30 (718)	36 (914)	16 (406)	16 (406)	15 (381)	7 (178)	15 (381)	16 (406)
3	10 (254)	4,5,6,8,12,14	1/8	17 1/2 (445)	36 (914)	40 (1016)	16 (406)	20 (508)	19 (483)	8 (203)	17 1/2 (445)	20 (508)
4	12 (305)	8,10,14	1/4	17 1/2 (445)	36 (914)	40 (1016)	16 (406)	20 (508)	19 (483)	8 (203)	17 1/2 (445)	20 (508)
5	14 (356)	10,12,16	1/3	20 (508)	40 (1016)	40 (1016)	20 (508)	20 (508)	19 (483)	10 (254)	17 1/2 (445)	20 (508)
6	16 (406)	10,12,14	1	20 (508)	42 (1067)	42 (1067)	20 (508)	24 (610)	23 (584)	10 (254)	18 (457)	22 (559)
7	18x16 (457x406)	12,14,16	3/4 (2)	20 (508)	46 (1168)	46 (1168)	20 (508)	24 (610)	23 (584)	4 (102)	20 (508)	38 (965)

All filter sizes are equal to induction attenuator dimensions A & B.

Field connected induction duct dimensions should equal A-2" & B-2" with a 1" flange.

All dimensions are in inches; parentheses ( ) indicate millimeters.

FCI-600
SERIES FAN POWERED AIR TERMINAL UNIT WITH HOT WATER COIL

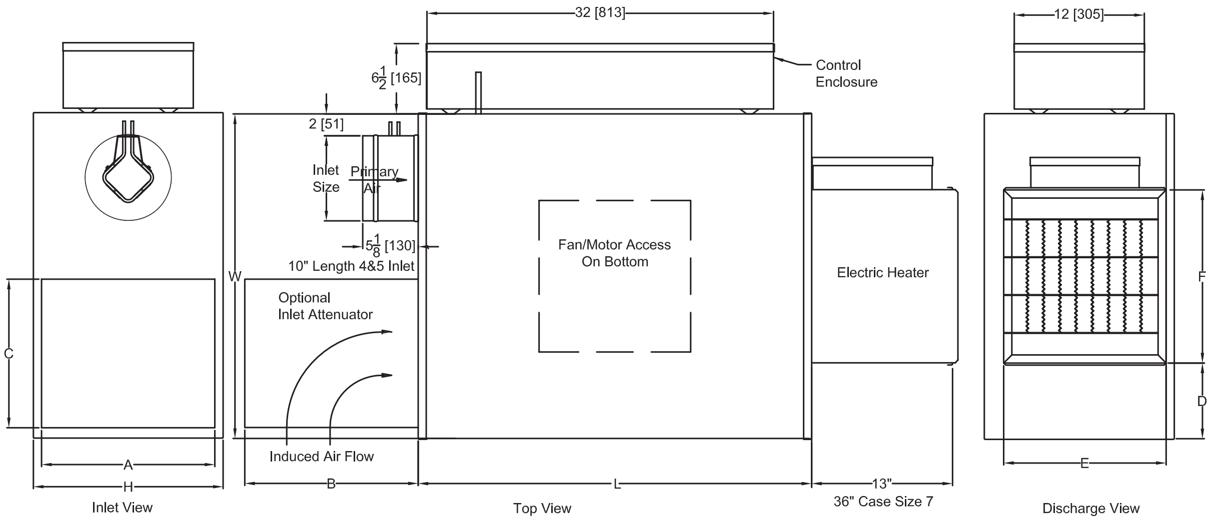


The standard location for control enclosure is Left Hand on Model FCI. Looking in the direction of airflow, the control enclosure is on the left.

Case size	Inlet Size		Horse-power	Unit Dimensions			Induction Attenuator			Discharge		
	Standard	Optional		Height H	Width W	Length L	Height A	Width B	Length C	Loc. D	Height E	Width F
2	8 (203)	4,5,6,10,12	1/8	17 1/2 (445)	30 (718)	36 (914)	16 (406)	16 (406)	15 (381)	7 (178)	15 (381)	16 (406)
3	10 (254)	4,5,6,8,12,14	1/8	17 1/2 (445)	36 (914)	40 (1016)	16 (406)	20 (508)	19 (483)	8 (203)	17 1/2 (445)	20 (508)
4	12 (305)	8,10,14	1/4	17 1/2 (445)	36 (914)	40 (1016)	16 (406)	20 (508)	19 (483)	8 (203)	17 1/2 (445)	20 (508)
5	14 (356)	10,12,16	1/3	20 (508)	40 (1016)	40 (1016)	20 (508)	20 (508)	19 (483)	10 (254)	17 1/2 (445)	20 (508)
6	16 (406)	10,12,14	1	20 (508)	42 (1067)	42 (1067)	20 (508)	24 (610)	23 (584)	10 (254)	18 (457)	22 (559)
7	18x16 (457x406)	12,14,16	3/4 (2)	20 (508)	46 (1168)	46 (1168)	20 (508)	24 (610)	23 (584)	4 (102)	20 (508)	38 (965)

All filter sizes are equal to induction attenuator dimensions A & B.
Field connected induction duct dimensions should equal A-2" & B-2" with a 1" flange.
All dimensions are in inches; parentheses ( ) indicate millimeters.

FCI-600
SERIES FAN POWERED AIR TERMINAL UNIT WITH ELECTRIC HEAT

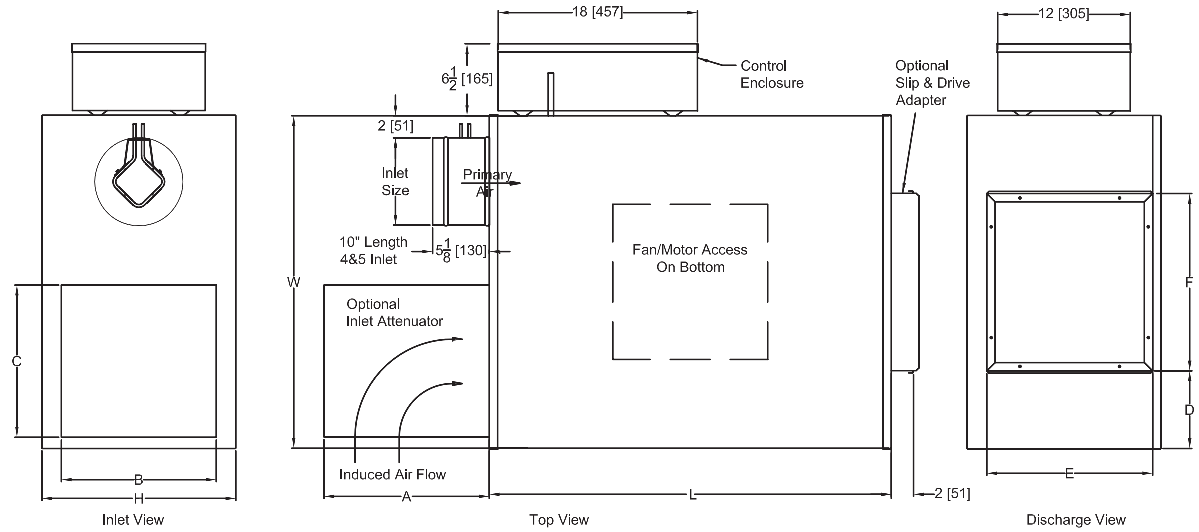


The standard location for control enclosure is Left Hand on Model FCI.
Looking in the direction of airflow, the control enclosure is on the left.

Case size	Inlet Size		Horse-power	Unit Dimensions			Induction Attenuator			Discharge		
	Standard	Optional		Height H	Width W	Length L	Height A	Width B	Length C	Loc. D	Height E	Width F
2	8 (203)	4,5,6,10,12	1/8	17 1/2 (445)	30 (718)	36 (914)	16 (406)	16 (406)	15 (381)	3 1/4 (83)	15 (381)	16 (406)
3	10 (254)	4,5,6,8,12,14	1/8	17 1/2 (445)	36 (914)	40 (1016)	16 (406)	20 (508)	19 (483)	9 1/2 (241)	15 (381)	20 (508)
4	12 (305)	8,10,14	1/4	17 1/2 (445)	36 (914)	40 (1016)	16 (406)	20 (508)	19 (483)	4 3/4 (121)	17 1/2 (445)	20 (508)
5	14 (356)	10,12,16	1/3	20 (508)	40 (1016)	40 (1016)	20 (508)	20 (508)	19 (483)	7 1/2 (190)	17 1/2 (445)	20 (508)
6	16 (406)	10,12,14	1	20 (508)	42 (1067)	42 (1067)	20 (508)	24 (610)	23 (584)	8 (203)	17 1/2 (445)	20 (508)
7	18x16 (457x406)	12,14,16	3/4 (2)	20 (508)	46 (1168)	46 (1168)	20 (508)	24 (610)	23 (584)	4 (102)	20 (508)	38 (965)

All filter sizes are equal to induction attenuator dimensions A & B.
Field connected induction duct dimensions should equal A-2" & B-2" with a 1" flange.
All dimensions are in inches; parentheses ( ) indicate millimeters.

FCI-600 ECM
SERIES FAN POWERED AIR TERMINAL UNIT
COOLING ONLY

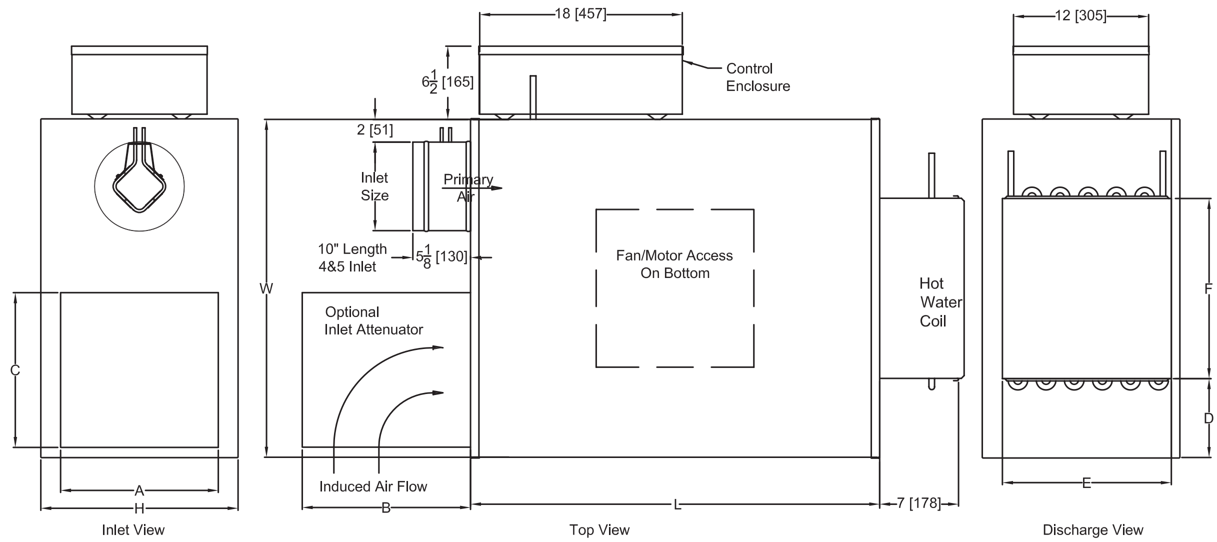


The standard location for control enclosure is Left Hand on Model FCI.
Looking in the direction of airflow, the control enclosure is on the left.

Case size	Inlet Size		Horse-power	Unit Dimensions			Induction Attenuator			Discharge		
	Standard	Optional		Height H	Width W	Length L	Height A	Width B	Length C	Loc. D	Height E	Width F
2	8 (203)	4,5,6,10,12	1/2	17 1/2 (445)	30 (718)	36 (914)	16 (406)	16 (406)	15 (381)	7 (178)	15 (381)	16 (406)
4	12 (305)	8,10,14	1/2	17 1/2 (445)	36 (914)	40 (1016)	16 (406)	20 (508)	19 (483)	8 (203)	17 1/2 (445)	20 (508)
6	16 (406)	10,12,14	1	20 (508)	42 (1067)	42 (1067)	20 (508)	24 (610)	23 (584)	10 (254)	18 (457)	22 (559)

All filter sizes are equal to induction attenuator dimensions A & B.
Field connected induction duct dimensions should equal A-2" & B-2" with a 1" flange.
All dimensions are in inches; parentheses ( ) indicate millimeters.

FCI-600 ECM
SERIES FAN POWERED AIR TERMINAL UNIT WITH HOT WATER COIL



The standard location for control enclosure is Left Hand on Model FCI. Looking in the direction of airflow, the control enclosure is on the left.

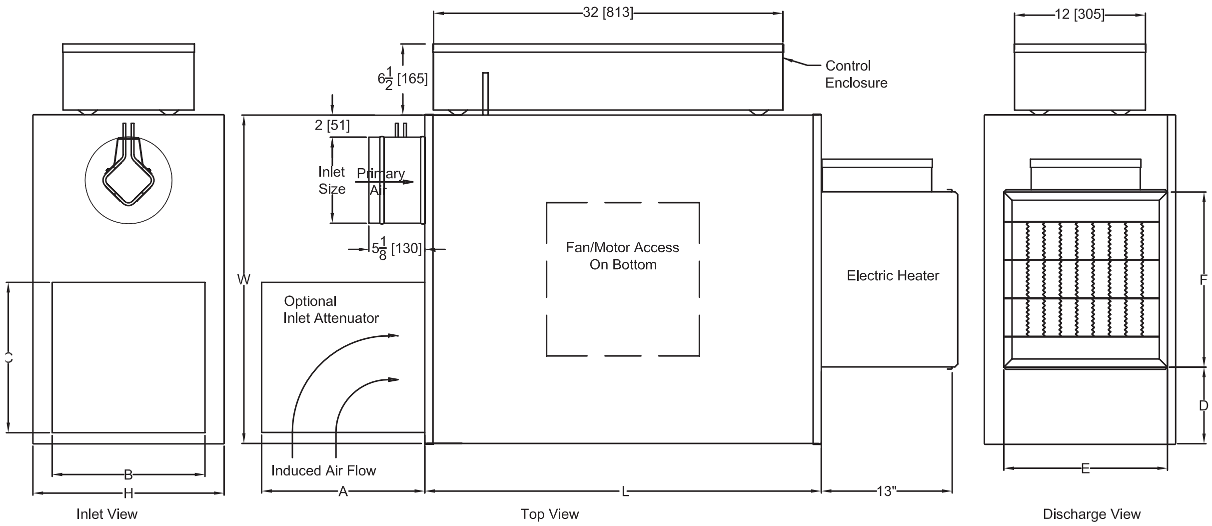
Case size	Inlet Size		Horse-power	Unit Dimensions			Induction Attenuator			Discharge		
	Standard	Optional		Height H	Width W	Length L	Height A	Width B	Length C	Loc. D	Height E	Width F
2	8 (203)	4,5,6,10,12	1/2	17 1/2 (445)	30 (718)	36 (914)	16 (406)	16 (406)	15 (381)	7 (178)	15 (381)	16 (406)
4	12 (305)	8,10,14	1/2	17 1/2 (445)	36 (914)	40 (1016)	16 (406)	20 (508)	19 (483)	8 (203)	17 1/2 (445)	20 (508)
6	16 (406)	10,12,14	1	20 (508)	42 (1067)	42 (1067)	20 (508)	24 (610)	23 (584)	10 (254)	18 (457)	22 (559)

All filter sizes are equal to induction attenuator dimensions A & B.

Field connected induction duct dimensions should equal A-2" & B-2" with a 1" flange.

All dimensions are in inches; parentheses ( ) indicate millimeters.

FCI-600 ECM
SERIES FAN POWERED AIR TERMINAL UNIT WITH ELECTRIC HEAT



The standard location for control enclosure is Left Hand on Model FCI.
Looking in the direction of airflow, the control enclosure is on the left.

Case size	Inlet Size		Horse-power	Unit Dimensions			Induction Attenuator			Discharge		
	Standard	Optional		Height H	Width W	Length L	Height A	Width B	Length C	Loc. D	Height E	Width F
2	8 (203)	4,5,6,10,12	1/2	17 1/2 (445)	30 (718)	36 (914)	16 (406)	16 (406)	15 (381)	3 1/4 (83)	15 (381)	16 (406)
4	12 (305)	8,10,14	1/2	17 1/2 (445)	36 (914)	40 (1016)	16 (406)	20 (508)	19 (483)	4 3/4 (121)	17 1/2 (445)	20 (508)
6	16 (406)	10,12,14	1	20 (508)	42 (1067)	42 (1067)	20 (508)	24 (610)	23 (584)	8 (203)	17 1/2 (445)	20 (508)

All filter sizes are equal to induction attenuator dimensions A & B.
Field connected induction duct dimensions should equal A-2" & B-2" with a 1" flange.
All dimensions are in inches; parentheses ( ) indicate millimeters.

FCI-600
AHRI CERTIFIED RATING POINTS

AHRI Certified Radiated Sound Power, Fan Only

Unit Size	Fan CFM	Octave Band						Electrical Power (Watts)
		2	3	4	5	6	7	
208	400	57	51	50	33	33	29	155
310	700	58	55	46	39	37	37	230
412	1200	65	64	50	47	45	42	430
514	1800	67	67	56	51	50	48	770
616	2400	67	67	56	51	50	48	1350
718	2700	74	66	60	54	54	53	1700

AHRI Certified Radiated Sound Power, Inlet Ps = 1.5 in. wg. Static Pressure

Unit Size	Fan CFM	Primary CFM	Min Ps	Octave Band					
				2	3	4	5	6	7
208	400	400	0.03	57	56	52	42	44	44
310	700	700	0.03	62	59	52	45	45	46
412	1200	1200	0.01	67	65	52	50	50	46
514	1800	1800	0.02	72	71	61	56	54	51
616	2400	2400	0.01	73	71	65	58	56	54
718	2700	2700	0.09	77	72	66	57	56	55

AHRI Certified Discharge Sound Power, Fan Only

Unit Size	Fan CFM	Octave Band						Electrical Power (Watts)
		2	3	4	5	6	7	
208	400	54	57	58	50	49	45	155
310	700	58	60	61	59	56	54	230
412	1200	62	68	65	64	64	63	430
514	1800	69	68	72	70	67	66	770
616	2400	73	73	75	74	74	74	1350
718	2700	79	71	70	69	68	67	1700

CERTIFICATIONS AND STANDARDS

- Units tested per ANSI/ASHRAE Standard 130.
- All model sizes certified in accordance with AHRI 880 certification program.
- ETL listed to meet requirements of UL 1995 and CSA 236.
- Dual-density fiberglass insulation meets UL 181 and NFPA 90A requirements.
- Insulation meets ASHRAE 62.1 requirements for resistance to mold growth and erosion.

AHRI CERTIFIED™
www.ahridirectory.org
VAV Terminals
AHRI Standard 880

FCI-600
RADIATED SOUND POWER LEVEL at Fan Only, Inlet Ps = 0.50 and 0.75 in. wg.

Case	Inlet	CFM (L/s)		Min Ps in. wg. (Pa)		Fan Only								Inlet Ps = 0.50 in. wg. (125 Pa)								Inlet Ps = 0.75 in. wg. (187 Pa)							
						Octave Band Sound Power, Lw, dB							NC w/ SA	Octave Band Sound Power, Lw, dB							NC w/ SA	Octave Band Sound Power, Lw, dB							NC w/ SA
						2	3	4	5	6	7	NC		2	3	4	5	6	7	NC		2	3	4	5	6	7	NC	
2	8	200	(94)	0.007	(1.6)	53	49	47	28	27	22	21	< 15	53	50	48	31	30	26	22	15	53	51	48	35	33	30	22	15
		300	(142)	0.017	(4.2)	55	50	49	31	30	26	23	17	55	52	49	33	33	29	23	17	55	53	50	37	36	33	24	18
		400	(189)	0.031	(7.7)	57	51	50	33	33	29	24	18	57	52	51	35	36	33	25	19	57	54	51	38	39	37	25	19
		500	(236)	0.045	(11.2)	58	52	51	34	34	30	25	19	58	53	51	36	37	34	25	19	58	55	52	38	39	38	26	20
		600	(283)	0.076	(18.9)	60	53	52	35	35	31	26	21	60	54	52	37	37	35	26	21	60	56	53	39	40	39	27	21
		750	(354)	0.110	(27.4)	62	55	53	36	36	33	27	23	62	56	54	38	39	37	29	23	62	58	54	41	42	41	29	23
3	10	300	(142)	0.006	(1.4)	56	52	43	35	32	32	20	16	56	53	44	38	36	35	21	16	57	53	45	40	38	37	21	17
		400	(189)	0.010	(2.6)	56	53	43	36	34	33	21	16	57	54	45	39	37	36	22	18	58	54	46	41	39	38	22	18
		500	(236)	0.016	(4.0)	57	53	44	37	35	34	21	17	58	55	46	40	37	37	24	19	58	55	47	42	40	39	24	19
		600	(283)	0.023	(5.8)	57	54	45	38	36	36	22	18	58	55	47	41	38	38	24	19	59	56	48	43	41	40	25	20
		700	(330)	0.032	(7.9)	58	55	46	39	37	37	24	19	59	56	47	41	39	39	25	20	60	57	48	44	42	41	26	21
		800	(378)	0.041	(10.3)	60	57	46	41	40	40	26	21	60	58	48	43	41	42	27	22	62	59	49	46	44	44	28	24
		900	(425)	0.052	(13.0)	61	58	47	43	42	42	27	22	62	59	49	45	43	44	28	24	63	61	50	47	45	46	31	26
4	12	400	(189)	0.001	(0.2)	56	54	45	39	36	31	22	18	58	56	46	41	38	33	25	20	60	58	47	43	39	35	27	22
		600	(283)	0.002	(0.4)	57	55	45	39	36	31	24	19	59	57	46	41	38	33	26	21	61	59	47	43	39	35	28	24
		800	(378)	0.002	(0.4)	58	56	46	40	38	33	25	20	60	58	47	42	40	35	27	22	62	60	48	44	41	37	29	25
		1000	(472)	0.004	(0.9)	61	60	48	44	42	38	29	25	61	60	49	46	44	40	29	25	63	62	50	47	45	42	32	27
		1200	(566)	0.010	(2.5)	65	64	50	47	45	42	34	29	65	64	51	49	47	44	34	29	66	64	52	50	48	46	34	29
		1400	(661)	0.016	(4.1)	65	65	53	50	49	46	35	31	65	65	53	52	51	48	35	31	66	66	53	52	52	50	37	32
		1600	(755)	0.026	(6.6)	66	66	57	52	52	48	37	32	67	67	57	54	54	50	38	33	69	69	57	54	55	52	40	35
5	14	1000	(472)	0.006	(1.5)	63	60	50	43	42	37	29	25	65	61	51	45	42	38	31	27	66	62	52	47	44	39	32	29
		1200	(566)	0.009	(2.2)	65	61	52	45	44	40	31	27	67	63	52	47	44	40	33	30	68	64	53	48	46	42	34	31
		1400	(661)	0.012	(3.0)	66	64	53	48	47	43	34	29	68	65	54	49	47	44	35	31	70	66	55	50	49	45	37	34
		1600	(755)	0.016	(3.9)	67	66	54	50	50	47	37	32	69	68	55	51	50	47	39	34	71	68	56	52	51	47	39	35
		1800	(849)	0.020	(5.0)	67	67	56	51	50	48	38	33	69	70	57	53	52	50	41	37	71	71	58	54	53	50	42	38
		2000	(944)	0.025	(6.1)	69	70	57	54	54	52	41	37	70	72	59	55	54	52	44	39	72	73	60	56	55	52	45	40
6	16	1600	(755)	0.003	(0.7)	60	60	53	45	42	41	29	25	63	62	56	48	45	43	32	27	64	63	58	49	46	44	33	28
		1800	(849)	0.005	(1.2)	62	62	53	48	44	43	32	27	65	64	57	50	46	45	34	29	66	65	58	51	47	46	35	31
		2000	(944)	0.007	(1.7)	64	64	54	49	46	44	34	29	66	66	57	51	48	46	37	32	67	66	59	52	49	47	37	32
		2200	(1038)	0.008	(2.0)	65	65	55	49	48	46	35	31	68	67	58	52	50	48	38	33	69	68	60	53	51	49	39	34
		2400	(1133)	0.010	(2.5)	67	67	56	51	50	48	38	33	69	69	59	54	52	50	40	35	70	69	61	55	53	51	40	35
		2600	(1227)	0.011	(2.7)	69	69	57	55	53	51	40	35	71	70	60	56	55	53	41	37	72	71	62	57	55	53	42	38
		2800	(1321)	0.012	(3.0)	72	72	58	59	56	54	44	39	74	73	62	59	57	55	45	40	74	73	63	59	57	55	45	40
7	18 x 16	2200	(1038)	0.068	(17.0)	69	62	57	52	52	51	34	32	70	63	58	53	52	52	35	34	72	64	59	53	53	53	38	36
		2500	(1180)	0.082	(20.5)	71	64	59	54	54	52	36	35	72	65	60	55	54	53	38	36	74	66	61	55	55	54	40	39
		2700	(1274)	0.091	(22.8)	74	66	60	54	54	53	40	39	75	68	62	55	55	54	41	40	76	69	63	56	55	54	43	41
		3000	(1416)	0.105	(26.1)	75	67	61	55	55	54	41	40	76	69	63	56	56	55	43	41	77	70	64	57	56	55	44	43
		4000	(1888)	0.151	(37.6)	78	71	65	59	60	57	45	44	79	72	66	59	60	57	46	45	79	73	67	60	60	58	46	45
		4400	(2076)	0.163	(40.5)	79	72	66	61	62	59	46	45	80	73	67	62	63	60	48	46	80	74	68	63	64	62	48	46

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4. *NC values are calculated using attenuation credits outlined in Appendix E of AHRI 885-2008.*
5. *Air terminal units were tested with an external static pressure of 0.25 in.wg.*
6. ***Discharge Sound power levels shown with End Reflection Corrections Included** in dB (ref: 10^{-12} watts).*
7. *Minimum Ps is the static pressure drop across the air terminal unit while the inlet damper is in the wide-open position at a given airflow rate, and the fan is on.*

FCI-600
RADIATED SOUND POWER LEVEL at Inlet Ps = 1.0, 1.5 and 2.0 in. wg.

Case	Inlet	CFM	(L/s)	Min Ps in. wg.	(Pa)	Inlet Ps = 1.0 in. wg. (250 Pa)								Inlet Ps = 1.5 in. wg. (375 Pa)								Inlet Ps = 2.0 in. wg. (500 Pa)							
						Octave Band Sound Power, Lw, dB						NC	NC w/ SA	Octave Band Sound Power, Lw, dB						NC	NC w/ SA	Octave Band Sound Power, Lw, dB						NC	NC w/ SA
						2	3	4	5	6	7			2	3	4	5	6	7			2	3	4	5	6	7		
2	8	200	(94)	0.007	(1.6)	53	52	49	35	35	34	23	17	53	54	49	38	38	37	23	18	55	56	50	42	40	39	25	20
		300	(142)	0.017	(4.2)	55	54	50	38	38	37	24	18	55	55	51	40	41	41	25	19	57	57	52	43	43	43	26	21
		400	(189)	0.031	(7.7)	57	55	52	40	41	40	26	20	57	56	52	42	44	44	26	20	59	58	53	44	46	46	27	22
		500	(236)	0.045	(11.2)	58	56	52	41	42	41	26	20	58	57	53	43	45	45	27	21	60	59	54	45	47	47	29	24
		600	(283)	0.076	(18.9)	60	57	53	41	43	42	27	21	60	58	54	44	46	46	29	22	62	60	55	46	48	48	30	25
		750	(354)	0.110	(27.4)	62	59	55	43	44	44	30	24	62	60	55	45	47	48	30	25	64	62	56	47	49	50	32	27
3	10	300	(142)	0.006	(1.4)	57	53	47	41	40	38	21	17	57	53	49	42	42	43	23	17	57	53	51	44	45	46	25	19
		400	(189)	0.010	(2.6)	58	54	47	42	41	39	22	18	58	54	50	43	43	43	24	18	58	55	51	45	46	47	25	19
		500	(236)	0.016	(4.0)	59	55	48	43	42	41	24	20	60	56	50	43	43	44	25	21	60	56	52	46	46	48	26	21
		600	(283)	0.023	(5.8)	60	56	48	44	43	42	25	21	61	57	51	44	44	45	26	22	61	58	53	47	47	48	27	22
		700	(330)	0.032	(7.9)	61	57	49	45	44	43	26	22	62	59	52	45	45	46	28	24	63	60	54	47	48	49	29	25
		800	(378)	0.041	(10.3)	62	60	50	47	45	45	29	25	64	61	53	47	46	47	31	26	64	62	55	48	48	50	32	27
		900	(425)	0.052	(13.0)	64	61	51	49	47	47	31	26	65	62	54	49	48	49	32	27	66	63	56	49	50	51	33	29
4	12	400	(189)	0.001	(0.3)	62	59	49	43	40	35	28	24	63	60	50	46	41	35	29	25	64	61	53	48	43	39	31	26
		600	(283)	0.002	(0.6)	63	60	49	43	40	35	29	25	64	61	50	46	41	35	31	26	65	62	53	48	43	39	32	27
		800	(378)	0.002	(1.2)	64	61	50	44	42	37	31	26	65	62	51	47	43	37	32	27	66	63	54	49	45	41	33	29
		1000	(472)	0.004	(2.0)	65	63	51	47	46	42	33	28	66	64	52	49	47	42	34	29	67	65	54	51	49	46	35	31
		1200	(566)	0.010	(3.5)	66	64	52	50	49	46	34	29	67	65	52	50	50	46	35	31	68	66	55	52	52	50	37	32
		1400	(661)	0.016	(5.7)	68	67	53	52	53	50	38	33	69	68	54	52	54	50	39	34	70	69	57	54	56	54	40	35
		1600	(755)	0.026	(9.2)	71	70	58	54	56	52	41	37	72	71	58	54	57	52	42	38	73	72	59	55	59	56	44	39
5	14	1000	(472)	0.006	(7.2)	67	62	54	48	45	40	32	30	67	62	55	49	45	40	32	30	67	62	56	50	45	40	32	30
		1200	(566)	0.009	(10.3)	69	64	55	49	47	43	34	32	69	64	56	50	47	43	34	32	69	64	57	51	47	43	34	32
		1400	(661)	0.012	(14.0)	71	66	57	51	50	46	37	35	71	66	58	52	50	46	37	35	71	66	59	53	50	46	37	35
		1600	(755)	0.016	(18.3)	72	68	58	53	52	48	39	36	72	68	59	54	52	48	39	36	72	68	60	55	52	48	39	36
		1800	(849)	0.020	(23.2)	72	71	60	55	54	51	42	38	72	71	61	56	54	51	42	38	72	71	62	57	54	51	42	38
		2000	(944)	0.025	(28.6)	73	73	62	57	56	53	45	40	73	73	63	58	56	53	45	40	73	73	64	59	56	53	45	40
6	16	1600	(755)	0.003	(7.5)	66	64	60	51	47	46	35	29	68	65	62	53	49	47	37	31	69	66	62	53	50	48	37	32
		1800	(849)	0.005	(9.7)	67	66	61	52	49	48	37	32	69	67	63	53	50	49	38	33	70	68	64	54	51	50	39	34
		2000	(944)	0.007	(11.9)	69	67	61	53	51	49	38	33	70	68	63	54	52	50	39	34	71	69	64	55	53	51	40	35
		2200	(1038)	0.008	(14.4)	70	69	62	54	53	51	40	35	72	70	64	56	54	52	41	37	73	71	65	57	54	53	42	38
		2400	(1133)	0.010	(17.2)	72	70	63	56	55	53	41	37	73	71	65	58	56	54	42	38	74	71	66	59	57	55	42	39
		2600	(1227)	0.011	(20.2)	74	71	64	57	56	54	42	39	75	72	66	58	57	55	44	40	76	72	66	59	57	56	44	41
		2800	(1321)	0.012	(23.8)	75	74	66	59	58	56	46	41	76	74	68	59	58	56	46	41	77	75	68	60	59	57	47	33
7	18 x 16	2200	(1038)	0.068	(17.0)	73	65	60	54	53	54	39	38	74	67	61	54	53	54	40	39	76	69	65	55	54	54	42	41
		2500	(1180)	0.082	(20.5)	75	67	62	56	55	55	41	40	76	69	63	56	55	55	43	41	78	71	67	57	56	55	45	44
		2700	(1274)	0.091	(22.8)	77	71	65	57	56	55	44	43	77	72	66	57	56	55	44	43	79	72	68	58	57	56	46	45
		3000	(1416)	0.105	(26.1)	78	72	66	58	57	56	45	44	78	73	67	58	57	56	45	44	81	74	70	60	59	58	49	48
		4000	(1888)	0.151	(37.6)	80	74	68	60	60	58	48	46	80	75	69	60	61	58	48	46	85	78	74	64	63	62	54	53
		4400	(2076)	0.163	(40.5)	81	75	69	64	65	63	49	48	81	76	70	65	65	64	49	48	86	79	76	67	66	66	55	54

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4. *NC values are calculated using attenuation credits outlined in Appendix E of AHRI 885-2008.*
5. *Air terminal units were tested with an external static pressure of 0.25 in.wg.*
6. ***Discharge Sound power levels shown with End Reflection Corrections Included** in dB (ref: 10^{-12} watts).*
7. *Minimum Ps is the static pressure drop across the air terminal unit while the inlet damper is in the wide-open position at a given airflow rate, and the fan is on.*

FCI-600
DISCHARGE SOUND POWER LEVEL at Fan Only, Inlet Ps = 0.50 and 0.75 in. wg.

Case	Inlet	CFM	(L/s)	Min Ps in. wg.	(Pa)	Fan Only: Octave Band Sound Power, Lw, dB 2	3	4	5	6	7	NC	Inlet Ps = 0.50 in. wg. (125 Pa): Octave Band Sound Power, Lw, dB 2	3	4	5	6	7	NC	Inlet Ps = 0.75 in. wg. (187 Pa): Octave Band Sound Power, Lw, dB 2	3	4	5	6	7	NC
2	8	200	(94)	0.007	(1.6)	54	57	55	45	43	38	15	54	57	55	46	43	38	15	55	58	56	47	44	39	16
		300	(142)	0.017	(4.2)	56	58	57	48	46	42	15	56	58	57	48	46	42	15	57	59	58	49	47	43	16
		400	(189)	0.031	(7.7)	58	59	58	50	49	45	16	58	59	58	50	49	45	16	59	60	59	51	50	46	18
		500	(236)	0.045	(11.2)	59	60	59	51	50	46	18	59	60	59	51	50	46	18	60	61	60	52	51	47	19
		600	(283)	0.076	(18.9)	61	61	60	52	51	47	19	61	61	60	52	51	47	19	62	62	61	53	52	48	20
		750	(354)	0.110	(27.4)	63	63	61	53	52	49	20	63	63	61	53	52	49	20	64	64	62	54	53	50	21
3	10	300	(142)	0.006	(1.4)	59	57	61	54	50	48	< 15	59	57	61	54	50	48	< 15	60	58	62	55	51	49	15
		400	(189)	0.010	(2.6)	60	59	61	56	53	50	16	60	59	61	56	53	50	16	61	60	62	57	54	51	18
		500	(236)	0.016	(4.0)	61	59	61	57	54	51	16	61	59	61	57	54	51	16	62	60	62	58	55	52	18
		600	(283)	0.023	(5.8)	61	60	61	58	55	53	18	61	60	61	58	55	53	18	62	61	62	59	56	54	19
		700	(330)	0.032	(7.9)	62	61	61	59	56	54	19	62	61	61	59	56	54	19	63	62	62	60	57	55	20
		800	(378)	0.041	(10.3)	64	63	61	61	59	57	21	64	63	61	61	59	57	21	65	64	62	62	60	58	22
		900	(425)	0.052	(13.0)	65	64	62	63	61	59	23	65	64	62	63	61	59	23	66	65	63	64	62	60	24
4	12	400	(189)	0.004	(1.1)	61	57	54	53	52	48	< 15	61	58	54	53	52	48	15	62	59	55	54	53	49	16
		600	(283)	0.010	(2.5)	63	59	58	56	55	52	16	63	60	58	56	55	52	18	64	61	59	57	56	53	19
		800	(378)	0.018	(4.4)	64	63	59	57	57	54	20	64	64	59	57	57	54	21	65	65	60	58	58	55	22
		1000	(472)	0.028	(6.9)	65	66	61	61	61	59	24	65	67	61	61	61	59	25	66	68	62	62	62	60	26
		1200	(566)	0.040	(10.0)	66	69	65	64	64	63	27	66	70	65	64	64	63	28	67	71	66	65	65	64	29
		1400	(661)	0.054	(13.6)	68	70	66	67	68	67	31	68	71	66	67	68	67	31	69	72	67	68	69	68	32
		1600	(755)	0.071	(17.7)	71	71	70	69	71	69	32	71	72	70	69	71	69	32	72	73	71	70	72	70	33
5	14	1000	(472)	0.015	(3.8)	69	61	64	61	59	54	20	69	61	64	61	59	54	20	70	62	65	62	60	55	21
		1200	(566)	0.022	(5.5)	71	63	68	64	61	58	22	71	63	68	64	61	58	22	72	64	69	65	62	59	23
		1400	(661)	0.030	(7.5)	72	66	69	67	64	61	25	72	66	69	67	64	61	25	73	67	70	68	65	62	26
		1600	(755)	0.040	(9.8)	73	68	70	69	67	65	29	73	68	70	69	67	65	29	74	69	71	70	68	66	30
		1800	(849)	0.050	(12.4)	73	69	72	70	67	66	30	73	69	72	70	67	66	30	74	70	73	71	68	67	31
		2000	(944)	0.062	(15.4)	75	72	73	73	71	70	33	75	72	73	73	71	70	33	76	73	74	74	72	71	34
6	16	1600	(755)	0.030	(7.5)	67	65	71	66	64	65	29	67	65	71	66	64	65	29	68	66	72	67	65	66	30
		1800	(849)	0.039	(9.7)	71	69	72	71	68	69	32	71	69	72	71	68	69	32	72	70	73	72	69	70	33
		2000	(944)	0.048	(11.9)	73	71	73	72	70	70	33	73	71	73	72	70	70	33	74	72	74	73	71	71	34
		2200	(1038)	0.058	(14.4)	74	72	74	72	72	72	35	74	72	74	72	72	72	35	75	73	75	73	73	73	36
		2400	(1133)	0.069	(17.2)	76	74	75	74	74	74	37	77	75	75	74	74	74	37	77	75	76	75	75	75	38
		2600	(1227)	0.081	(20.2)	78	76	76	78	77	77	40	78	76	76	78	77	77	40	79	77	77	79	78	78	41
		2800	(1321)	0.096	(23.8)	81	79	77	82	80	80	43	81	79	77	82	80	80	43	82	80	78	83	81	81	44
7	18 x 16	2200	(1038)	0.068	(17.0)	76	68	67	67	66	65	29	76	68	67	67	66	65	29	77	69	68	68	67	66	30
		2500	(1180)	0.082	(20.5)	78	70	69	69	68	66	31	78	70	69	69	68	66	31	79	71	70	70	69	67	32
		2700	(1274)	0.091	(22.8)	81	72	70	69	68	67	35	81	72	70	69	68	67	35	82	73	71	70	69	68	36
		3000	(1416)	0.105	(26.1)	82	73	71	70	69	68	36	82	73	71	70	69	68	36	83	74	72	71	70	69	38
		4000	(1888)	0.151	(37.6)	85	77	75	74	74	71	40	85	77	75	74	74	71	40	86	78	76	75	75	72	41
		4400	(2076)	0.163	(40.5)	86	78	76	76	76	73	41	86	78	76	76	76	73	41	87	79	77	77	77	74	43

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4. *NC values are calculated using attenuation credits outlined in Appendix E of AHRI 885-2008.*
5. *Air terminal units were tested with an external static pressure of 0.25 in.wg.*
6. ***Discharge Sound power levels shown with End Reflection Corrections Included** in dB (ref: 10^{-12} watts).*
7. *Minimum Ps is the static pressure drop across the air terminal unit while the inlet damper is in the wide-open position at a given airflow rate, and the fan is on.*

FCI-600
DISCHARGE SOUND POWER LEVEL at Inlet Ps = 1.0, 1.5 and 2.0 in. wg.

Case	Inlet	CFM (L/s)		Min Ps in. wg. (Pa)		Inlet Ps = 1.0 in. wg. (250 Pa) Octave Band Sound Power, Lw, dB 2	3	4	5	6	7	NC	Inlet Ps = 1.5 in. wg. (375 Pa) Octave Band Sound Power, Lw, dB 2	3	4	5	6	7	NC	Inlet Ps = 2.0 in. wg. (500 Pa) Octave Band Sound Power, Lw, dB 2	3	4	5	6	7	NC
2	8	200	(94)	0.007	(1.6)	55	58	56	47	44	39	16	56	59	57	48	45	40	18	56	59	57	49	45	40	18
		300	(142)	0.017	(4.2)	57	59	58	49	47	43	16	58	60	59	50	48	44	18	58	60	59	51	48	44	18
		400	(189)	0.031	(7.7)	59	60	59	51	50	46	18	60	61	60	52	51	47	19	60	61	60	52	51	47	19
		500	(236)	0.045	(11.2)	60	61	60	52	51	47	19	61	62	61	53	52	48	20	61	62	61	53	52	48	20
		600	(283)	0.076	(18.9)	62	62	61	53	52	48	20	63	63	62	54	53	49	21	63	63	62	54	53	49	21
		750	(354)	0.110	(27.4)	64	64	62	54	53	50	21	65	65	63	55	54	51	22	65	65	63	55	54	51	22
3	10	300	(142)	0.006	(1.4)	60	58	62	55	51	49	15	61	59	63	56	52	50	17	61	59	63	56	52	50	17
		400	(189)	0.010	(2.6)	61	60	62	57	54	51	18	62	61	63	58	55	52	19	62	61	63	58	55	52	19
		500	(236)	0.016	(4.0)	62	60	62	58	55	52	18	63	61	63	59	56	53	19	63	61	63	59	56	53	19
		600	(283)	0.023	(5.8)	62	61	62	59	56	54	19	63	62	63	60	57	55	20	63	62	63	60	57	55	20
		700	(330)	0.032	(7.9)	63	62	62	60	57	55	20	64	63	63	61	58	56	21	64	63	63	61	58	56	21
		800	(378)	0.041	(10.3)	65	64	62	62	60	58	22	66	65	63	63	61	59	23	66	65	63	63	61	59	23
		900	(425)	0.052	(13.0)	66	65	63	64	62	60	24	67	66	64	65	63	61	25	67	66	64	65	63	61	25
4	12	400	(189)	0.004	(0.3)	62	60	55	54	53	49	18	63	61	56	55	54	50	19	63	62	56	55	54	50	20
		600	(283)	0.010	(0.6)	64	62	59	57	56	53	20	65	63	60	58	57	54	21	65	64	60	58	57	54	22
		800	(378)	0.018	(1.2)	65	66	60	58	58	55	24	66	67	61	59	59	56	25	66	68	61	59	59	56	26
		1000	(472)	0.028	(2.0)	66	69	62	62	62	60	27	67	70	63	63	63	61	28	67	71	63	63	63	61	29
		1200	(566)	0.040	(3.5)	67	72	66	65	65	64	31	68	73	67	66	66	65	32	68	74	67	66	66	65	33
		1400	(661)	0.054	(5.7)	69	73	67	68	69	68	32	70	74	68	69	70	69	33	70	75	68	69	70	69	34
		1600	(755)	0.071	(9.2)	72	74	71	70	72	70	33	73	75	72	71	73	71	34	73	76	72	71	73	71	35
5	14	1000	(472)	0.015	(7.2)	70	62	65	62	60	55	21	71	63	66	63	61	56	22	71	63	66	63	61	56	22
		1200	(566)	0.022	(10.3)	72	64	69	65	62	59	23	73	65	70	66	63	60	25	73	65	70	66	63	60	25
		1400	(661)	0.030	(14.0)	73	67	70	68	65	62	26	74	68	71	69	66	63	27	74	68	71	69	66	63	27
		1600	(755)	0.040	(18.3)	74	69	71	70	68	66	30	75	70	72	71	69	67	31	75	70	72	71	69	67	31
		1800	(849)	0.050	(23.2)	74	70	73	71	68	67	31	75	71	74	72	69	68	32	75	71	74	72	69	68	32
		2000	(944)	0.062	(28.6)	76	73	74	74	72	71	34	77	74	75	75	73	72	35	77	74	75	75	73	72	35
6	16	1600	(755)	0.030	(7.5)	68	66	72	67	65	66	30	69	67	73	68	66	67	31	69	67	73	68	66	67	31
		1800	(849)	0.039	(9.7)	72	70	73	72	69	70	33	73	71	74	73	70	71	34	73	71	74	73	70	71	34
		2000	(944)	0.048	(11.9)	74	72	74	73	71	71	34	75	73	75	74	72	72	35	75	73	75	74	72	72	35
		2200	(1038)	0.058	(14.4)	75	73	75	73	73	73	36	76	74	76	74	74	74	37	76	74	76	74	74	74	37
		2400	(1133)	0.069	(17.2)	77	75	76	75	75	75	38	78	76	77	76	76	76	39	78	76	77	76	76	76	39
		2600	(1227)	0.081	(20.2)	79	77	77	79	78	78	41	80	78	78	80	79	79	42	80	78	78	80	79	79	42
		2800	(1321)	0.096	(23.8)	82	80	78	83	81	81	44	83	81	79	84	82	82	45	83	81	79	84	82	82	45
7	18 x 16	2200	(1038)	0.068	(17.0)	77	69	68	68	67	66	30	78	70	69	69	68	67	31	78	70	69	69	68	67	31
		2500	(1180)	0.082	(20.5)	79	71	70	70	69	67	32	80	72	71	71	70	68	34	80	72	71	71	70	68	34
		2700	(1274)	0.091	(22.8)	82	73	71	70	69	68	36	83	74	72	71	70	69	38	83	74	72	71	70	69	38
		3000	(1416)	0.105	(26.1)	83	74	72	71	70	69	38	84	75	73	72	71	70	39	84	75	73	72	71	70	39
		4000	(1888)	0.151	(37.6)	86	78	76	75	75	72	41	87	79	77	76	76	73	43	87	79	77	76	76	73	43
		4400	(2076)	0.163	(40.5)	87	79	77	77	77	74	43	88	80	78	78	78	75	44	88	80	78	78	78	75	44

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FCI-600 ECM
RADIATED SOUND POWER LEVEL at Fan Only, Inlet Ps = 0.50 and 0.75 in. wg.

Case	Inlet	CFM (L/s)		Min Ps in. wg. (Pa)		Fan Only								Inlet Ps = 0.50 in. wg. (125 Pa)								Inlet Ps = 0.75 in. wg. (187 Pa)							
						Octave Band Sound Power, Lw, dB							NC w/ SA	Octave Band Sound Power, Lw, dB							NC w/ SA	Octave Band Sound Power, Lw, dB							NC w/ SA
						2	3	4	5	6	7	NC	SA	2	3	4	5	6	7	NC	SA	2	3	4	5	6	7	NC	SA
2	8	200	(94)	0.010	(2.5)	51	49	43	33	24	20	17	< 15	54	51	44	36	28	23	19	< 15	55	52	46	39	31	29	20	15
		400	(189)	0.033	(8.2)	52	50	44	35	27	23	18	< 15	55	52	45	38	31	26	20	15	56	53	47	41	34	32	21	16
		500	(236)	0.051	(12.7)	54	52	46	38	30	26	20	15	57	53	46	41	34	29	21	17	58	54	48	44	37	35	22	18
		600	(283)	0.076	(18.9)	55	54	48	40	33	28	22	18	58	55	48	43	38	31	24	19	59	56	50	46	41	37	25	20
		700	(330)	0.112	(27.9)	56	55	49	42	36	30	24	19	59	57	50	45	40	35	26	21	60	58	52	47	42	39	27	22
		800	(378)	0.144	(35.9)	58	57	51	45	39	34	26	21	61	60	53	48	43	38	29	25	62	61	54	49	44	41	31	26
		900	(425)	0.175	(43.6)	59	59	53	47	42	38	28	24	62	62	56	51	46	41	32	27	63	63	56	51	46	43	33	28
4	12	400	(189)	0.008	(2.0)	50	49	43	34	28	23	17	< 15	51	49	46	35	30	24	20	< 15	52	49	46	37	31	26	20	< 15
		700	(330)	0.021	(5.2)	55	54	48	41	35	29	22	18	56	54	51	41	37	30	25	19	57	54	51	43	38	32	25	19
		1000	(472)	0.044	(11.0)	61	61	54	46	39	39	31	26	62	61	57	47	41	40	32	26	64	61	57	49	43	42	32	26
		1200	(566)	0.063	(15.7)	64	62	57	50	44	45	32	27	65	63	58	50	45	46	33	28	66	63	59	51	45	46	34	29
		1400	(661)	0.086	(21.4)	67	64	59	54	48	49	34	30	68	66	60	53	48	49	37	32	68	66	61	53	48	49	37	32
		1600	(755)	0.113	(28.1)	69	68	62	57	51	52	39	34	70	68	62	56	51	52	39	34	71	68	63	56	51	52	39	35
6	16	800	(378)	0.016	(4.0)	61	56	56	46	38	33	31	24	62	56	57	47	40	34	32	25	63	56	57	47	40	35	32	25
		1100	(519)	0.029	(7.2)	64	59	58	50	43	38	33	26	65	59	59	51	45	39	34	27	66	59	59	51	45	40	34	29
		1500	(708)	0.049	(12.2)	67	61	60	54	47	43	35	30	67	61	60	55	49	44	35	30	68	61	60	55	49	45	35	31
		1700	(802)	0.066	(16.4)	69	63	62	56	49	45	37	32	69	63	62	57	51	46	37	32	70	63	62	57	51	47	37	34
		1950	(920)	0.084	(20.9)	71	65	65	59	53	49	41	35	74	65	63	59	54	50	40	39	74	66	63	60	54	50	40	39
		2200	(1038)	0.103	(25.7)	72	66	65	61	55	52	41	36	74	67	63	61	56	53	40	39	75	67	64	61	56	53	41	40
		2400	(1133)	0.123	(30.6)	75	68	66	64	58	55	42	40	76	68	65	63	58	55	43	41	77	69	65	64	59	56	44	43

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7. *Minimum Ps is the static pressure drop across the air terminal unit while the inlet damper is in the wide-open position at a given airflow rate, and the fan is on.*

FCI-600 ECM
RADIATED SOUND POWER LEVEL at Inlet Ps = 1.0, 1.5 and 2.0 in. wg.

Case	Inlet	CFM (L/s)		Min Ps in. H_2O (Pa)		Inlet Ps = 1.0 in. wg. (250 Pa)								Inlet Ps = 1.5 in. wg. (375 Pa)								Inlet Ps = 2.0 in. wg. (500 Pa)							
						Octave Band Sound Power, Lw, dB							NC w/ SA	Octave Band Sound Power, Lw, dB							NC w/ SA	Octave Band Sound Power, Lw, dB							NC w/ SA
						2	3	4	5	6	7	NC	SA	2	3	4	5	6	7	NC	SA	2	3	4	5	6	7	NC	SA
2	8	200	(94)	0.010	(2.5)	55	53	47	41	34	35	21	16	56	54	49	43	36	36	23	18	58	56	52	46	38	41	26	20
		400	(189)	0.033	(8.2)	56	54	48	43	37	38	22	18	58	55	50	45	39	39	24	19	60	57	53	48	42	42	27	21
		500	(236)	0.051	(12.7)	58	55	49	46	40	39	24	19	60	56	51	48	42	40	25	21	61	58	55	50	44	46	30	23
		600	(283)	0.076	(18.9)	59	57	51	48	44	43	26	21	62	60	54	50	47	44	29	25	63	62	57	53	49	49	32	27
		700	(330)	0.112	(27.9)	61	60	53	49	45	44	29	25	62	61	55	51	47	45	31	26	65	64	58	54	50	50	34	29
		800	(378)	0.144	(35.9)	63	62	55	50	46	45	32	27	64	63	56	52	48	46	33	28	66	65	59	54	51	50	35	31
		900	(425)	0.175	(43.6)	64	64	56	52	47	46	34	29	65	65	58	54	49	47	35	31	67	66	60	55	51	50	37	32
4	12	400	(189)	0.008	(2.0)	53	50	46	38	32	27	20	< 15	54	51	47	39	34	29	21	< 15	55	52	48	41	36	32	22	15
		700	(330)	0.021	(5.2)	58	55	51	43	38	34	25	19	58	56	52	44	45	36	26	20	59	57	53	45	46	38	27	21
		1000	(472)	0.044	(11.0)	65	62	57	50	44	44	32	27	65	63	58	52	46	46	33	28	66	64	59	53	48	49	34	29
		1200	(566)	0.063	(15.7)	66	63	59	51	45	46	34	29	66	64	60	52	47	47	35	29	67	66	61	54	49	49	37	32
		1400	(661)	0.086	(21.4)	68	66	61	54	48	49	37	32	69	67	62	55	49	50	38	33	70	68	63	56	51	51	39	34
		1600	(755)	0.113	(28.1)	71	69	63	56	51	52	40	35	72	69	64	57	52	53	40	36	72	70	65	58	53	54	41	37
6	16	800	(378)	0.016	(4.0)	64	57	57	48	41	36	32	26	65	58	58	49	43	39	33	27	66	60	60	51	45	41	35	29
		1100	(519)	0.029	(7.2)	67	60	59	52	46	41	34	30	68	61	60	53	48	44	35	31	69	63	62	55	50	46	37	32
		1500	(708)	0.049	(12.2)	69	62	60	56	50	46	35	32	70	63	61	57	52	49	36	34	71	65	63	59	54	51	38	35
		1700	(802)	0.066	(16.4)	71	64	62	58	52	48	37	35	72	65	63	59	54	51	38	36	73	67	65	61	56	53	41	38
		1950	(920)	0.084	(20.9)	74	66	62	60	55	51	40	39	75	67	64	61	56	53	41	40	77	69	66	62	57	54	44	43
		2200	(1038)	0.103	(25.7)	76	68	64	62	57	53	43	41	77	69	66	63	58	55	44	43	78	71	67	65	60	57	45	44
		2400	(1133)	0.123	(30.6)	77	69	65	64	59	56	44	43	77	70	66	64	60	57	44	43	78	70	67	65	60	57	45	44

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FCI-600 ECM
DISCHARGE SOUND POWER LEVEL at Fan Only, Inlet Ps = 0.50 and 0.75 in. wg.

Case	Inlet	CFM (L/s)		Min Ps in. wg. (Pa)		Fan Only							Inlet Ps = 0.50 in. wg. 125 Pa)							Inlet Ps = 0.75 in. wg. (187 Pa)						
						Octave Band Sound Power, Lw, dB						NC	Octave Band Sound Power, Lw, dB						NC	Octave Band Sound Power, Lw, dB						NC
						2	3	4	5	6	7		2	3	4	5	6	7		2	3	4	5	6	7	
2	8	200	(94)	0.010	(2.5)	62	61	59	55	52	53	20	63	62	59	56	52	53	21	63	62	59	57	52	54	21
		400	(189)	0.033	(8.2)	63	62	60	57	54	54	20	64	63	60	58	54	55	21	65	63	60	58	54	55	21
		500	(236)	0.051	(12.7)	64	63	61	58	55	56	21	66	64	62	59	55	57	22	66	64	62	59	56	57	22
		600	(283)	0.076	(18.9)	65	64	62	60	57	58	22	67	65	62	61	57	59	24	67	65	62	61	57	59	24
		700	(330)	0.112	(27.9)	66	65	63	62	59	60	24	69	67	64	63	59	60	26	69	67	64	63	59	61	26
		800	(378)	0.144	(35.9)	67	66	64	63	60	61	25	71	69	65	64	61	62	27	71	69	65	64	61	62	27
		900	(425)	0.175	(43.6)	68	67	65	65	62	63	27	72	71	67	66	62	64	29	72	71	67	66	63	64	29
4	12	400	(189)	0.008	(2.0)	62	60	59	56	53	53	18	63	61	59	57	53	54	19	64	61	59	57	53	54	19
		700	(330)	0.021	(5.2)	65	63	62	61	58	59	23	68	65	63	62	58	59	24	68	65	63	62	58	60	24
		1000	(472)	0.044	(11.0)	68	67	64	63	60	63	27	70	69	63	62	60	63	27	70	69	63	62	60	63	27
		1200	(566)	0.063	(15.7)	71	70	67	66	63	66	30	72	71	66	65	63	66	30	72	71	66	65	63	66	30
		1400	(661)	0.086	(21.4)	73	73	69	69	66	69	32	74	73	69	68	66	69	32	74	73	69	68	66	69	32
		1600	(755)	0.113	(28.1)	75	74	70	71	68	71	34	76	76	71	71	69	72	35	76	76	71	71	69	72	35
6	16	800	(378)	0.016	(4.0)	62	65	63	62	61	61	25	59	58	54	50	51	51	15	59	58	54	50	51	51	15
		1100	(519)	0.029	(7.2)	65	68	66	65	64	64	28	62	61	57	53	54	54	18	62	61	58	53	54	54	18
		1500	(708)	0.049	(12.2)	68	72	70	71	68	69	32	65	64	61	59	58	59	23	65	64	61	59	58	58	22
		1700	(802)	0.066	(16.4)	69	73	71	72	69	70	33	67	66	63	61	60	61	25	67	66	63	61	60	60	24
		1950	(920)	0.084	(20.9)	69	74	73	73	70	70	33	68	68	65	63	62	63	27	69	68	65	63	62	63	27
		2200	(1038)	0.103	(25.7)	70	74	74	73	70	70	33	70	70	67	65	64	66	30	70	70	67	65	64	66	30
		2400	(1133)	0.123	(30.6)	71	76	75	74	71	71	35	72	72	69	67	67	68	32	72	72	70	68	67	68	32

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FCI-600 ECM
DISCHARGE SOUND POWER LEVEL at Inlet Ps = 1.0, 1.5 and 2.0 in. wg.

						Inlet Ps = 1.0 in. wg. (250 Pa)							Inlet Ps = 1.5 in. wg. (375 Pa)							Inlet Ps = 2.0 in. wg. (500 Pa)						
						Octave Band Sound Power, Lw, dB							Octave Band Sound Power, Lw, dB							Octave Band Sound Power, Lw, dB						
Case	Inlet	CFM (L/s)		Min Ps in. wg. (Pa)		2	3	4	5	6	7	NC	2	3	4	5	6	7	NC	2	3	4	5	6	7	NC
2	8	200	(94)	0.010	(2.5)	63	62	59	57	53	54	21	63	62	59	57	53	54	21	63	62	60	57	53	54	21
		400	(189)	0.033	(8.2)	65	63	60	58	54	55	21	65	63	60	58	55	55	21	65	63	61	58	55	55	21
		500	(236)	0.051	(12.7)	66	64	62	59	56	57	22	66	64	62	59	56	57	22	66	64	62	60	56	57	22
		600	(283)	0.076	(18.9)	67	65	62	61	57	59	24	67	65	62	61	57	59	24	67	66	62	61	58	59	25
		700	(330)	0.112	(27.9)	69	67	64	63	59	61	26	69	67	64	63	59	61	26	69	68	64	63	60	61	27
		800	(378)	0.144	(35.9)	71	69	66	64	61	62	27	70	69	66	64	61	63	27	70	70	66	65	62	63	28
		900	(425)	0.175	(43.6)	72	70	67	66	63	64	28	72	70	67	66	63	64	28	72	71	67	66	63	65	29
4	12	400	(189)	0.008	(2.0)	64	61	59	57	53	54	19	64	61	59	57	54	54	19	64	61	60	57	54	54	19
		700	(330)	0.021	(5.2)	68	65	63	62	58	60	24	68	65	63	62	58	60	24	68	66	63	62	59	60	25
		1000	(472)	0.044	(11.0)	70	69	63	62	60	63	27	70	69	63	62	61	64	28	70	69	64	63	61	64	28
		1200	(566)	0.063	(15.7)	72	71	66	66	64	67	31	72	72	67	66	64	67	31	73	71	67	66	64	67	31
		1400	(661)	0.086	(21.4)	74	74	69	69	67	70	33	74	74	70	69	67	70	33	74	74	69	68	67	70	33
		1600	(755)	0.113	(28.1)	77	76	71	71	69	72	35	77	76	71	71	69	72	35	76	75	71	70	68	71	34
6	16	800	(378)	0.016	(4.0)	60	59	54	51	52	52	16	61	60	55	51	52	52	16	61	61	55	52	52	53	18
		1100	(519)	0.029	(7.2)	63	61	58	54	54	55	19	64	61	59	54	54	55	19	64	61	59	55	54	56	20
		1500	(708)	0.049	(12.2)	66	64	61	59	58	58	22	67	64	62	59	58	58	22	67	65	62	60	58	59	23
		1700	(802)	0.066	(16.4)	68	66	63	61	60	60	24	69	66	64	61	60	60	24	69	67	64	62	60	61	25
		1950	(920)	0.084	(20.9)	69	68	65	63	62	63	27	70	69	66	63	63	63	27	70	69	66	64	63	63	27
		2200	(1038)	0.103	(25.7)	71	70	68	65	65	66	30	72	71	68	66	65	66	30	72	71	68	66	65	66	30
		2400	(1133)	0.123	(30.6)	73	73	70	68	67	69	32	74	73	70	68	67	69	32	74	73	70	68	67	69	32

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3. *Performance data is obtained from laboratory testing in accordance with AHRI 880-2011 and ANSI/ASHRAE 130-2008.*
4. *NC values are calculated using attenuation credits outlined in Appendix E of AHRI 885-2008.*
5. *Air terminal units were tested with an external static pressure of 0.25 in.wg.*
6. ***Discharge Sound power levels shown with End Reflection Corrections Included** in dB (ref: 10^{-12} watts).*
7. *Minimum Ps is the static pressure drop across the air terminal unit while the inlet damper is in the wide-open position at a given airflow rate, and the fan is on.*

METALAIRE™

FCI-600 MINIMUM PRESSURES

Unit Size	CFM	Unit ΔPs (in. wg) [no coil]	Unit ΔPt (in. wg) [no coil]	Unit + 1R Coil, ΔPs (in. wg)	Unit + 1R Coil, ΔPt (in. wg)	Unit + 2R Coil, ΔPs (in. wg)	Unit + 2R Coil, ΔPt (in. wg)
2	200	0.01	0.02	0.02	0.03	0.03	0.04
	300	0.02	0.05	0.03	0.06	0.05	0.08
	400	0.03	0.10	0.05	0.12	0.08	0.15
	500	0.05	0.15	0.08	0.18	0.12	0.22
	600	0.08	0.23	0.12	0.27	0.18	0.33
	750	0.11	0.35	0.16	0.40	0.24	0.48
3	300	0.01	0.05	0.02	0.06	0.03	0.07
	400	0.01	0.08	0.02	0.09	0.04	0.11
	500	0.02	0.06	0.04	0.08	0.06	0.10
	600	0.02	0.08	0.04	0.10	0.07	0.13
	700	0.03	0.11	0.07	0.15	0.12	0.20
	800	0.04	0.15	0.09	0.20	0.14	0.25
	900	0.05	0.19	0.11	0.24	0.16	0.30
4	600	0.00	0.07	0.02	0.09	0.05	0.12
	800	0.00	0.05	0.05	0.10	0.10	0.15
	1000	0.00	0.08	0.06	0.14	0.12	0.20
	1200	0.01	0.12	0.09	0.20	0.18	0.29
	1400	0.02	0.17	0.12	0.27	0.24	0.39
	1600	0.03	0.23	0.16	0.36	0.30	0.50
5	800	0.01	0.06	0.06	0.11	0.11	0.16
	1000	0.01	0.10	0.07	0.16	0.13	0.22
	1200	0.01	0.07	0.09	0.15	0.18	0.24
	1400	0.01	0.10	0.11	0.20	0.23	0.32
	1600	0.02	0.13	0.15	0.26	0.29	0.40
6	800	0.00	0.03	0.03	0.06	0.07	0.10
	1000	0.00	0.05	0.05	0.10	0.11	0.16
	1200	0.00	0.07	0.07	0.14	0.14	0.21
	1400	0.00	0.09	0.09	0.18	0.19	0.28
	1600	0.00	0.12	0.11	0.23	0.23	0.35
	1800	0.01	0.09	0.14	0.22	0.29	0.37
7	1600	0.04	0.12	0.07	0.15	0.11	0.19
	2000	0.06	0.18	0.11	0.23	0.17	0.29
	2400	0.08	0.25	0.15	0.32	0.23	0.40
	2800	0.10	0.33	0.19	0.42	0.29	0.52
	3200	0.12	0.42	0.23	0.53	0.36	0.66
	3600	0.13	0.52	0.26	0.65	0.42	0.81

FCI-600 ECM MINIMUM PRESSURES

Unit Size	CFM	Unit ΔPs (in. wg) [no coil]	Unit ΔPt (in. wg) [no coil]	Unit + 1R Coil, ΔPs (in. wg)	Unit + 1R Coil, ΔPt (in. wg)	Unit + 2R Coil, ΔPs (in. wg)	Unit + 2R Coil, ΔPt (in. wg)
2	200	0.01	0.03	0.02	0.04	0.03	0.05
	400	0.03	0.11	0.05	0.13	0.08	0.16
	500	0.05	0.17	0.08	0.20	0.12	0.24
	600	0.08	0.25	0.12	0.29	0.18	0.35
	700	0.11	0.35	0.17	0.41	0.24	0.48
	800	0.14	0.46	0.21	0.53	0.30	0.62
	900	0.18	0.57	0.27	0.66	0.37	0.76
4	400	0.01	0.02	0.02	0.03	0.04	0.05
	700	0.02	0.07	0.05	0.10	0.09	0.14
	1000	0.04	0.13	0.10	0.19	0.16	0.25
	1200	0.06	0.19	0.14	0.27	0.23	0.36
	1400	0.09	0.26	0.19	0.36	0.31	0.48
	1600	0.11	0.34	0.24	0.47	0.38	0.61
6	800	0.02	0.03	0.05	0.06	0.09	0.10
	1100	0.03	0.06	0.10	0.13	0.18	0.21
	1500	0.05	0.10	0.16	0.21	0.29	0.34
	1700	0.07	0.13	0.21	0.27	0.37	0.43
	1950	0.08	0.17	0.23	0.32	0.40	0.49
	2200	0.10	0.22	0.29	0.41	0.49	0.61
	2400	0.12	0.26	0.34	0.48	0.58	0.72

1. *ΔPs = static pressure drop; ΔPt = total pressure drop.*
2. *Calculations of ΔPs and ΔPt were performed using standard air with a density of 0.075 lbm / cu.ft.*
3. *Data based on testing standard METALAIRE hot water coils per AHRI Standard 410.*
4. *Unit ΔPs and Unit ΔPt are pressure drops across the air terminal unit while the inlet damper is in the wide-open position.*
5. *Data applies to air terminal units with hot water coil mounted on the discharge side.*

FCI-600
MOTOR AMPERAGE RATINGS

Case Size	Motor HP	Standard PSC Motor Amperage Ratings		
		115V-1 Phase 60 Hz Rated Amps	208-240V-1 Phase 60 Hz Rated Amps	277V-1 Phase 60 Hz Rated Amps
2	1/8	2.6	1.5	1.1
3	1/8	2.6	1.5	1.1
4	1/4	4.6	2.5	1.9
5	1/3	8.7	4.8	3.6
6	1	N/A	8.3	6.2
7	3/4 (Qty 2)	20.7 (2 motors)	11.5	8.6 (2 motors)

FCI-600 ECM
MOTOR AMPERAGE RATINGS

Case Size	Motor HP	ECM Motor Amperage Ratings		
		115V-1 Phase 60 Hz Rated Amps	208-240V-1 Phase 60 Hz Rated Amps	277V-1 Phase 60 Hz Rated Amps
2	1/2	4.3	2.4	1.8
4	1/2	7.5	4.1	3.1
6	1	11.1	6.1	4.6

FCI-600
DAMPER LEAKAGE

Inlet Size	Damper Leakage, CFM		
	1.5" ΔPs	3.0" ΔPs	6.0" ΔPs
6	3	4	7
8	2	4	7
10	4	5	7
12	4	5	7
14	4	6	8
16	4	6	8

FCI-600 ECM
DAMPER LEAKAGE

Inlet Size	Damper Leakage, CFM		
	1.5" ΔPs	3.0" ΔPs	6.0" ΔPs
6	3	4	7
8	2	4	7
10	4	5	7
12	4	5	7
14	4	6	8
16	4	6	8

FCI-600
HOT WATER COILS MBH SELECTION DATA – IMPERIAL UNITS

Unit Size	Rows	Connection (OD)	GPM	Head Loss (ft-H_2O)	CFM 300	350	400	450	500	550	600	700
2	One	0.875	1	0.14	12.7	13.5	14.3	15.0	15.6	16.2	16.7	17.6
			2	0.54	14.3	15.4	16.5	17.4	18.2	19.0	19.7	21.1
			4	2.06	15.3	16.6	17.8	18.9	20.0	20.9	21.8	23.4
			6	4.52	15.7	17.1	18.4	19.5	20.6	21.6	22.6	24.3
			Airside Ps		0.01	0.02	0.02	0.03	0.03	0.04	0.04	0.06
2	Two	0.875	1	0.09	17.8	19.1	20.3	21.3	22.2	23.0	23.7	25.0
			2	0.34	20.9	22.9	24.6	26.2	27.6	28.9	30.1	32.2
			4	1.32	23.0	25.4	27.6	29.6	31.5	33.2	34.8	37.8
			6	2.94	23.8	26.4	28.8	31.0	33.0	35.0	36.8	40.1
			Airside Ps		0.03	0.04	0.05	0.06	0.07	0.09	0.10	0.13

Unit Size	Rows	Connection (OD)	GPM	Head Loss (ft-H_2O)	CFM 400	450	500	550	600	700	800	900
3	One	0.625	1	0.20	16.8	17.6	18.4	19.1	19.8	20.9	21.9	22.7
			2	0.75	19.3	20.5	21.5	22.5	23.4	25.1	26.6	27.9
			4	2.88	20.9	22.3	23.5	24.8	25.9	27.9	29.8	31.4
			6	6.30	21.5	23.0	24.3	25.6	26.8	29.0	31.1	32.9
			Airside Ps		0.01	0.01	0.02	0.02	0.02	0.03	0.04	0.05
3	Two	0.875	1	0.10	22.9	24.1	25.3	26.2	27.1	28.7	30.0	31.1
			2	0.39	27.7	29.6	31.3	32.9	34.4	37.1	39.4	41.4
			4	1.52	30.9	33.3	35.6	37.7	39.7	43.3	46.6	49.6
			6	3.36	32.1	34.8	37.2	39.6	41.8	45.9	49.7	53.1
			Airside Ps		0.03	0.03	0.04	0.05	0.05	0.07	0.09	0.10

Unit Size	Rows	Connection (OD)	GPM	Head Loss (ft-H_2O)	CFM 800	900	1000	1100	1200	1300	1400	1500
4	One	0.625	1	0.20	21.9	22.7	23.5	24.2	24.8	25.3	25.9	26.3
			2	0.76	26.6	27.9	29.1	30.1	31.1	32.0	32.9	33.6
			4	2.88	29.8	31.4	33.0	34.4	35.7	36.9	38.0	39.1
			6	6.31	31.1	32.9	34.6	36.1	37.5	38.9	40.2	41.4
			Airside Ps		0.04	0.05	0.06	0.07	0.08	0.09	0.1	0.11
4	Two	0.875	1	0.10	30.0	31.1	32.1	32.9	33.6	34.3	34.9	35.4
			2	0.39	39.4	41.4	43.3	44.9	46.4	47.7	49.0	50.1
			4	1.52	46.6	49.6	52.3	54.8	57.1	59.2	61.2	63.0
			6	3.36	49.7	53.1	56.2	59.1	61.8	64.3	66.7	68.9
			Airside Ps		0.09	0.10	0.12	0.15	0.17	0.19	0.22	0.24

Heating capacity data in tables assume an entering water temperature (EWT) of 180°F, and an entering air temperature (EAT) of 65°F, which corresponds to a temperature difference of 115°F. Smaller temperature differences will result in a decrease of heating capacity. To obtain the heating capacity at another temperature difference, refer to the hot water coil notes located in the Reference Section.

FCI-600
HOT WATER COILS MBH SELECTION DATA – IMPERIAL UNITS

Unit Size	Rows	Connection (OD)	GPM	Head Loss (ft-H_2O)	CFM 1200	1350	1475	1600	1725	1850	1975	2000
5	One	0.625	1	0.20	24.8	25.6	26.2	26.7	27.2	27.7	28.1	28.2
			2	0.76	31.1	32.4	33.4	34.4	35.2	36.0	36.7	36.9
			4	2.89	35.7	37.5	38.8	40.1	41.3	42.4	43.4	43.6
			6	6.32	37.5	39.5	41.1	42.5	43.8	45.1	46.2	46.5
			Airside Ps		0.08	0.09	0.11	0.13	0.14	0.16	0.18	0.19
5	Two	0.875	1	0.10	33.6	34.6	35.3	35.9	36.5	37.0	37.4	37.5
			2	0.39	46.4	48.4	49.8	51.2	52.4	53.5	54.5	54.7
			4	1.52	57.1	60.2	62.5	64.7	66.8	68.6	70.4	70.7
			6	3.36	61.8	65.5	68.4	71.0	73.5	75.8	77.9	78.4
			Airside Ps		0.17	0.20	0.24	0.27	0.31	0.35	0.39	0.39

Unit Size	Rows	Connection (OD)	GPM	Head Loss (ft-H_2O)	CFM 1800	1900	2000	2100	2200	2300	2400	2600
6	One	0.625	1	0.21	28.7	29.1	29.4	29.7	30.0	30.3	30.6	31.1
			2	0.81	37.4	38.0	38.7	39.2	39.8	40.3	40.8	41.7
			4	3.08	44.0	45.0	45.8	46.6	47.4	48.2	48.9	50.3
			6	6.73	46.8	47.9	48.9	49.8	50.7	51.6	52.4	54.0
			Airside Ps		0.13	0.14	0.16	0.17	0.19	0.2	0.22	0.25
6	Two	0.875	1	0.10	38.0	38.4	38.8	39.0	39.4	39.7	40.0	40.4
			2	0.40	55.0	55.9	56.8	57.6	58.4	59.0	59.7	60.9
			4	1.57	70.6	72.2	73.7	75.1	76.4	77.6	78.8	81.1
			6	3.47	78.0	79.9	81.7	83.4	85.1	86.6	88.2	91.0
			Airside Ps		0.28	0.31	0.34	0.36	0.39	0.43	0.46	0.52

Unit Size	Rows	Connection (OD)	GPM	Head Loss (ft-H_2O)	CFM 2400	2600	2800	3000	3200	3400	3600	4000
7	One	0.875	2	0.37	51.4	52.6	53.6	54.6	55.5	56.3	57.1	58.5
			4	1.43	64.7	66.6	68.4	70.0	71.5	73.0	74.3	76.8
			6	3.18	70.8	73.1	75.2	77.2	79.1	80.9	82.6	85.7
			8	3.65	74.3	76.8	79.2	81.5	83.6	85.6	87.5	91.0
			Airside Ps		0.07	0.08	0.09	0.1	0.11	0.12	0.13	0.16
7	Two	0.875	2	0.27	71.9	73.4	74.7	75.9	77.0	78.0	78.9	80.5
			4	1.07	98.7	101.7	104.5	107.0	109.4	111.6	113.6	117.3
			6	2.39	112.2	116.2	119.9	123.3	126.6	129.6	132.4	137.6
			8	4.22	120.3	125.0	129.3	133.4	137.2	140.9	144.3	150.5
			Airside Ps		0.15	0.17	0.19	0.21	0.24	0.26	0.29	0.34

Heating capacity data in tables assume an entering water temperature (EWT) of 180°F, and an entering air temperature (EAT) of 65°F, which corresponds to a temperature difference of 115°F. Smaller temperature differences will result in a decrease of heating capacity. To obtain the heating capacity at another temperature difference, refer to the hot water coil notes located in the Reference Section.

FCI-600
HOT WATER COILS kW SELECTION DATA – METRIC UNITS

Unit Size	Rows	Connection OD (mm)	Water Flow (L/s)	Head Loss (kPa)	Airflow (L/s) 142	165	189	212	236	260	283	330
2	One	22.2	0.01	0.42	3.7	4.0	4.2	4.4	4.6	4.7	4.9	5.2
			0.03	1.61	4.2	4.5	4.8	5.1	5.3	5.6	5.8	6.2
			0.13	6.16	4.5	4.9	5.2	5.5	5.9	6.1	6.4	6.9
			0.29	13.51	4.6	5.0	5.4	5.7	6.0	6.3	6.6	7.1
			Airside Ps (kPa)		0.002	0.005	0.005	0.007	0.007	0.010	0.010	0.015
2	Two	22.2	0.01	0.27	5.2	5.6	5.9	6.2	6.5	6.7	6.9	7.3
			0.02	1.02	6.1	6.7	7.2	7.7	8.1	8.5	8.8	9.4
			0.08	3.95	6.7	7.4	8.1	8.7	9.2	9.7	10.2	11.1
			0.19	8.79	7.0	7.7	8.4	9.1	9.7	10.2	10.8	11.7
			Airside Ps (kPa)		0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.03

Unit Size	Rows	Connection OD (mm)	Water Flow (L/s)	Head Loss (kPa)	Airflow (L/s) 189	212	236	260	283	330	378	425
3	One	15.9	0.01	0.60	4.9	5.2	5.4	5.6	5.8	6.1	6.4	6.6
			0.05	2.24	5.6	6.0	6.3	6.6	6.9	7.3	7.8	8.2
			0.18	8.61	6.1	6.5	6.9	7.2	7.6	8.2	8.7	9.2
			0.40	18.83	6.3	6.7	7.1	7.5	7.8	8.5	9.1	9.6
			Airside Ps (kPa)		0.002	0.002	0.005	0.005	0.005	0.01	0.01	0.01
3	Two	22.2	0.01	0.30	6.7	7.1	7.4	7.7	7.9	8.4	8.8	9.1
			0.02	1.17	8.1	8.7	9.2	9.6	10.1	10.9	11.5	12.1
			0.10	4.54	9.0	9.7	10.4	11.0	11.6	12.7	13.6	14.5
			0.21	10.04	9.4	10.2	10.9	11.6	12.2	13.4	14.5	15.5
			Airside Ps (kPa)		0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02

Unit Size	Rows	Connection OD (mm)	Water Flow (L/s)	Head Loss (kPa)	Airflow (L/s) 378	425	472	519	566	614	661	708
4	One	15.9	0.01	0.60	6.4	6.7	6.9	7.1	7.3	7.4	7.6	7.7
			0.05	2.27	7.8	8.2	8.5	8.8	9.1	9.4	9.6	9.8
			0.18	8.61	8.7	9.2	9.7	10.1	10.5	10.8	11.1	11.4
			0.40	18.86	9.1	9.6	10.1	10.6	11.0	11.4	11.8	12.1
			Airside Ps (kPa)		0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.03
4	Two	22.2	0.01	0.30	8.8	9.1	9.4	9.6	9.8	10.0	10.2	10.4
			0.02	1.17	11.5	12.1	12.7	13.1	13.6	14.0	14.3	14.7
			0.10	4.54	13.6	14.5	15.3	16.0	16.7	17.3	17.9	18.4
			0.21	10.04	14.5	15.5	16.5	17.3	18.1	18.8	19.5	20.2
			Airside Ps (kPa)		0.02	0.02	0.03	0.04	0.04	0.05	0.05	0.06

Heating capacity data in tables assume an entering water temperature (EWT) of 82°C, and an entering air temperature (EAT) of 18°C, which corresponds to a temperature difference of 64°C. Smaller temperature differences will result in a decrease of heating capacity. To obtain the heating capacity at another temperature difference, refer to the hot water coil notes located in the Reference Section.

FCI-600
HOT WATER COILS kW SELECTION DATA – METRIC UNITS

Unit Size	Rows	Connection OD (mm)	Water Flow (L/s)	Head Loss (kPa)	Airflow (L/s) 566	637	696	755	814	873	932	944
5	One	15.9	0.01	0.60	7.3	7.5	7.7	7.8	8.0	8.1	8.2	8.3
			0.05	2.27	9.1	9.5	9.8	10.1	10.3	10.5	10.8	10.8
			0.18	8.64	10.5	11.0	11.4	11.7	12.1	12.4	12.7	12.8
			0.40	18.89	11.0	11.6	12.0	12.4	12.8	13.2	13.5	13.6
			Airside Ps (kPa)		0.02	0.02	0.03	0.03	0.03	0.04	0.04	0.1
5	Two	22.2	0.01	0.30	9.8	10.1	10.3	10.5	10.7	10.8	11.0	11.0
			0.02	1.17	13.6	14.2	14.6	15.0	15.3	15.7	16.0	16.0
			0.10	4.54	16.7	17.6	18.3	18.9	19.5	20.1	20.6	20.7
			0.21	10.04	18.1	19.2	20.0	20.8	21.5	22.2	22.8	22.9
			Airside Ps (kPa)		0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.1

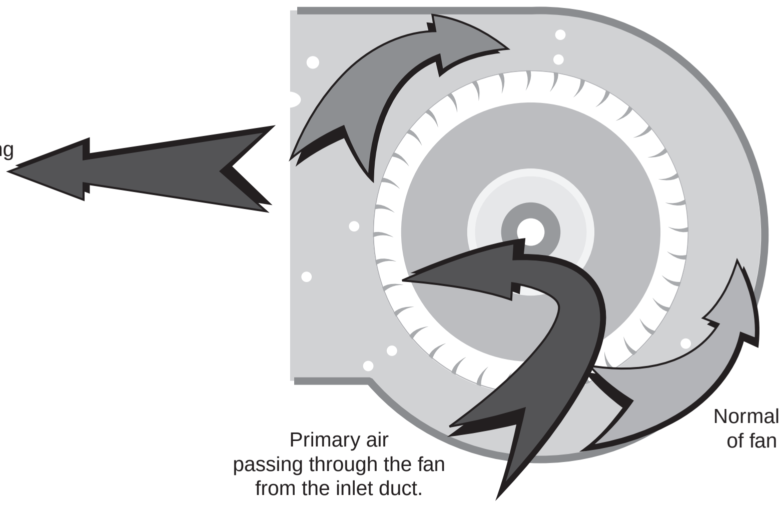
Unit Size	Rows	Connection OD (mm)	Water Flow (L/s)	Head Loss (kPa)	Airflow (L/s) 850	897	944	991	1038	1085	1133	1227
6	One	15.9	0.01	0.63	8.4	8.5	8.6	8.7	8.8	8.9	9.0	9.1
			0.05	2.42	11.0	11.1	11.3	11.5	11.7	11.8	11.9	12.2
			0.19	9.21	12.9	13.2	13.4	13.6	13.9	14.1	14.3	14.7
			0.42	20.12	13.7	14.0	14.3	14.6	14.8	15.1	15.3	15.8
			Airside Ps (kPa)		0.03	0.03	0.04	0.04	0.05	0.05	0.05	0.06
6	Two	22.2	0.01	0.30	11.1	11.2	11.3	11.4	11.5	11.6	9.94	10.06
			0.03	1.20	16.1	16.4	16.6	16.9	17.1	17.3	14.86	15.16
			0.10	4.69	20.7	21.1	21.6	22.0	22.4	22.7	19.62	20.17
			0.22	10.37	22.8	23.4	23.9	24.4	24.9	25.4	21.94	22.65
			Airside Ps (kPa)		0.07	0.08	0.08	0.09	0.10	0.11	0.11	0.13

Unit Size	Rows	Connection OD (mm)	Water Flow (L/s)	Head Loss (kPa)	Airflow (L/s) 1133	1227	1321	1416	1510	1605	1699	1888
7	One	22.2	0.02	1.11	15.0	15.4	15.7	16.0	16.3	16.5	16.7	17.1
			0.09	4.27	18.9	19.5	20.0	20.5	20.9	21.4	21.8	22.5
			0.20	9.51	20.7	21.4	22.0	22.6	23.2	23.7	24.2	25.1
			0.23	10.91	21.8	22.5	23.2	23.9	24.5	25.1	25.6	26.6
			Airside Ps (kPa)		0.02	0.02	0.02	0.02	0.03	0.03	0.03	0.04
7	Two	22.2	0.02	0.81	21.1	21.5	21.9	22.2	22.5	22.8	19.64	20.03
			0.07	3.20	28.9	29.8	30.6	31.3	32.0	32.7	28.28	29.19
			0.15	7.14	32.9	34.0	35.1	36.1	37.1	37.9	32.95	34.26
			0.27	12.61	35.2	36.6	37.9	39.1	40.2	41.2	35.92	37.46
			Airside Ps (kPa)		0.04	0.04	0.05	0.05	0.06	0.06	0.07	0.08

Heating capacity data in tables assume an entering water temperature (EWT) of 82°C, and an entering air temperature (EAT) of 18°C, which corresponds to a temperature difference of 64°C. Smaller temperature differences will result in a decrease of heating capacity. To obtain the heating capacity at another temperature difference, refer to the hot water coil notes located in the Reference Section.

FCI-600
AIR TERMINALS ACCESSORIES AND COMPONENTS
OPTIONAL ELECTRONIC ANTI-REVERSE ROTATION DEVICE

The fan wheel in a constant fan box may rotate backward whenever the fan motor is not running and primary air from the inlet duct is passing through the fan. In some cases the torque developed by the fan wheel when rotating backward cannot be overcome by the starting torque of the fan motor. In this condition the fan motor will run in reverse rotation, resulting in insufficient airflow delivery.



Constant fan boxes must have means to coordinate energizing the fan motor with start up of the Primary Fan System to prevent the reverse rotation or a positive method to create enough motor torque to reverse the rotation of the fan wheel.

Other manufacturers choose to deal with this issue by running their motors with larger capacitors than recommended by the motor manufacturer. The oversized capacitor will cause the motor to run less efficiently, run hotter than normal and draw more current than with a proper capacitor. All of this will result in reduced motor life and increased energy costs.

METALAIRE'S Model FCI-600 is available with an optional Electronic Anti-Reverse Rotation Device which will positively prevent the reverse rotation of any fan. This option does not draw additional current while running and will not cause the motor to run at higher temperatures.

The results are greater efficiency, quieter motors, longer motor life and happier building owners.

FCI-600 APPROXIMATE SHIPPING WEIGHTS

Case	FCI
2	124 lbs.
3	165 lbs.
4	165 lbs.
5	198 lbs.
6	220 lbs.
7	260 lbs.

FCI-600 FILTER SIZES PER CASE SIZE

Case Size	Filter Dimensions
2	16" x 16"
3	20" x 16"
4	20" x 16"
5	20" x 20"
6	24" x 20"
7	20" x 20"

Filters are mounted on the fan induction and are available in 1" or 2" thickness.

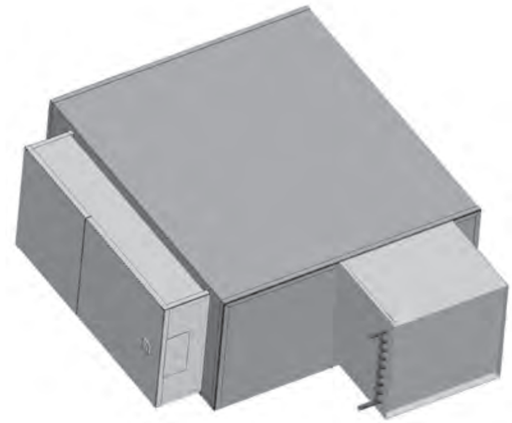
FCI-600
ACCESSORIES AND COMPONENTS
HOT WATER COILS

When ordered with the air terminal, the hot water coil is shipped attached to the discharge of the terminal casing. The discharge end of the casing has slip and drive connections for easy connection to downstream ductwork. The hot water coil is constructed of aluminum fin and copper serpentine-type tubes with male sweat connections tested at 300 psig.

Coil selection can be made using METALAIRE's Air Terminal Unit Selection Software. Contact your representative for a copy. In the interest of energy conservation and due to the possibility of condensation, all hot water coils are marked "Coil must be externally insulated after installation in the field." Hot water coils are tested in accordance with AHRI Standards 410. Hot water coils may be ordered with optional access doors for inspection and cleaning to meet requirements of ASHRAE Standard 62.1.

HOT WATER COIL CONSTRUCTION DETAILS

- Hot Water Coils are factory mounted to the discharge of the terminal and are available with an optional factory mounted discharge plenum section with access door.
- Hot water coils are enclosed in a 20 gauge coated steel casing allowing for attachment to metal ductwork with a slip and drive connection.
- Fins are rippled and sine wave type constructed from heavy gauge aluminum and are mechanically bonded to the tubes.
- Tubes are copper with a minimum wall thickness of 0.016" with male solder header connections.
- Coils are leak tested to 300 psi with minimum burst of 2000 psi at ambient temperature. Coil performance data is based on tests run in accordance with AHRI standard 410. Coils are AHRI certified and include an AHRI label.



Tubing Connections		
	Standard HW Coil Inches (mm)	
Case Size	1 Row	2 Row
2	7/8 (22.2)	7/8 (22.2)
3	5/8 (15.8)	7/8 (22.2)
4	5/8 (15.8)	7/8 (22.2)
5	5/8 (15.8)	7/8 (22.2)
6	5/8 (15.8)	7/8 (22.2)
7	7/8 (22.2)	7/8 (22.2)

All coils have 10 fins per inch

Outlet Dimensions		
	Standard HW Coil Inches (mm)	
Case Size	H	W
2	15 (381	16 (406)
3	17.5 (445)	20 (508)
4	17.5 (445)	20 (508)
5	17.5 (445)	20 (508)
6	18 (457)	22 (559)
7	20 (508)	38 (952)

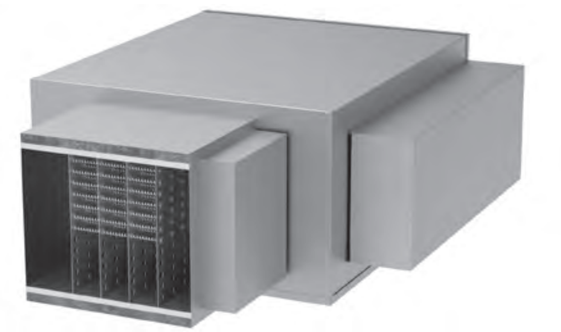
All accessories which can be attached to the Series Fan Boxes are not a part of the AHRI certification program but ratings can be affected by their use.

FCI-600
ACCESSORIES AND COMPONENTS
ELECTRIC HEAT

Electric heater elements, as illustrated on this page, are integral to the air terminal. The discharge end has slip and drive connections for easy connection to downstream ductwork. ETL® listed heaters are provided with a fan interlock relay. Heaters that will be controlled electronically must include a 24 VAC control circuit to operate with the low voltage controls on the air terminal. Heater plenums are internally insulated. When an air terminal is ordered with clean room lining and electric heat, the heater plenum is either internally lined with optional foil backed insulation or closed cell foam or may require external insulation in field.

INCLUDED WITH EACH HEATER ASSEMBLY:

- Heater and cabinet mounted on the discharge of the FCI-600
- Electric Heater is interlocked into fan control relay
- De-energizing magnetic contactors per step
- Primary automatic reset high temperature limit (disc type)
- Backup manual reset high temperature limit (disc type)
- Non-fused transformer with voltage to match Heater voltage
- Single point power wiring connection
- Heater is shipped factory mounted and wired



ELECTRIC HEATER ASSEMBLY CONSTRUCTION DETAILS

- Electric Reheat Coils are factory mounted on the discharge of the Air Terminal. The heaters are ETL® listed for zero clearance, are tested in accordance with UL® Standard 1995, CSA-C22.2 No. 236 and the National Electric Code (NEC). Heater casings are constructed of heavy-duty zinc-coated steel. Element wire is high grade nichrome alloy derated to 45 watts per square inch density. Element wire is supported by moisture-resistant steatite ceramics.
- Ceramics are enclosed in reinforcement brackets spaced across the heater element rack at 2" to 4" intervals. Controls are contained in a NEMA 1 control cabinet with a hinged, latching door. A permanent wiring diagram is affixed to the inside of the control cabinet door for field reference.
- The 208 and 480 volt units require a neutral connection for both single and three phase service. Our standard motors are 120 and 277 volt single phase. The 208-240 volt single phase motor is optional. 480 volt motors are not available for our units. See table for reference.

Heater Voltage	Motor Voltage	Separate Neutral Required
120 V 1PH	120 V 1PH	NO
208 V 1PH	120 V 1PH	YES
277 V 1PH	277 V 1PH	NO
480 V 1PH	277 V 1PH	YES
208 V 1PH	208 V 1PH	NO
208 V 3PH	120 V 1PH	YES
480 V 3PH	277 V 1PH	YES
208 V 3PH	208 V 1PH	NO

All accessories which can be attached to the Series Fan Boxes are not a part of the AHRI certification program but ratings can be affected by their use.

FCI-600
ELECTRIC HEATER CAPACITIES

Single Phase FCQ kW Limits				
Unit Size	Heater Voltage	Min. kW Step	Max. kW	Max. Steps
2	**120**	**0.5**	**5**	**3**
2	208	0.5	8.5	3
2	240	0.5	10	3
2	277	0.5	11.5	3
2	480	0.5	11.5	3
3	120	0.5	5	3
3	208	0.5	8.5	3
3	240	0.5	10	3
3	277	0.5	11.5	3
3	480	0.5	11.5	3
4	120	0.5	5	3
4	208	0.5	8.5	3
4	240	0.5	10	3
4	277	0.5	11.5	3
4	480	0.5	17	3
5	120	0.5	5	3
5	208	0.5	8.5	3
5	240	0.5	10	3
5	277	0.5	11.5	3
5	480	0.5	17	3
6	120	0.5	5	3
6	208	0.5	8.5	3
6	240	0.5	10	3
6	277	0.5	11.5	3
6	480	0.5	17	3
7	120	0.5	5	3
7	208	0.5	8.5	3
7	240	0.5	10	3
7	277	0.5	11.5	3
7	480	0.5	17	3

Three Phase FCQ kW Limits				
Unit Size	Heater Voltage	Min. kW Step	Max. kW	Max. Steps
2	**208**	**0.5**	**13**	**3**
2	240	0.5	14.5	3
2	480	1.5	17	3
3	208	0.5	13	3
3	240	0.5	14.5	3
3	480	1.5	17	3
4	208	0.5	13	3
4	240	1.5	15	3
4	480	1.5	25	3
5	208	0.5	13	3
5	240	1.5	15	3
5	480	1.5	25	3
6	208	0.5	13	3
6	240	1.5	15	3
6	480	1.5	25	3
7	208	0.5	13	3
7	240	1.5	15	3
7	480	1.5	25	3

NOTES:

1. *Heaters less than 5 kW are specifiable to the nearest 0.2 kW. Heaters greater than 5 kW and less than 10.0 kW are specifiable to nearest 0.5 kW. Heaters greater than 10.0 kW are specifiable to nearest 1.0 kW.*
2. *Minimum flow rate for electric heat is 70 CFM/kW. Lower CFM's can cause nuisance tripping, excessive discharge temperatures, rapid cycling, and rapid element failure. Electric Heat units running below 70 CFM/kW will void all warranties.*
3. *For optimum thermal comfort, the suggested discharge temperature should not exceed 20°F above room set point.*
4. *We do not recommend discharge temperatures in excess of 115°F to protect heater coils.*
5. *Maximum number of steps at minimum kW is one step.*
6. *If more than 1 heater is wired into a building's circuit breaker (multi-outlet branch circuit), each heater will require the addition of power side fusing.*

ELECTRIC HEAT SELECTION:

A. Specify electric duct heaters using voltage, kW, and number of steps.

B. Use above chart to select voltage. Calculate required kW using following equations:

$$kW = \frac{BTU / HR}{3413} \qquad kW = \frac{CFM \times \Delta \times 1.085}{3413} \qquad \Delta = \frac{kW \times 3413}{CFM \times 1.085}$$

$$CFM = \frac{kW \times 3413}{\Delta \times 1.085} \qquad CFM = \frac{kW \times 3413}{\Delta \times 1.085}$$

** air density at sea level—reduce by 0.036 for each 1000 feet of altitude above sea level*

Where: BTU / Hr = Required heating capacity

CFM = volume of air during heating. Typically 100% of maximum cooling air volume

Δ = desired air temperature rise across the electric heater

Inlet air temperature = primary air temperature, usually 55°F

FCI-600
CONTROL SEQUENCE OFFERINGS

PPD–PRESSURE DEPENDENT

- 910 DA/NC Full Closed
- 912 RA/NO Full Open

PPI–PNEUMATIC PRESSURE INDEPENDENT

- 914 DA/NC
- 915 DA/NO
- 916 RA/NC
- 917 RA/NO

ANALOG ELECTRONIC

- 960 Cooling Only
- 961 Cooling with Heat
- 964 Night Shutdown/Morning Warm-up
- 965 Heating/Cooling Changeover

DIRECT DIGITAL

LON WORKS

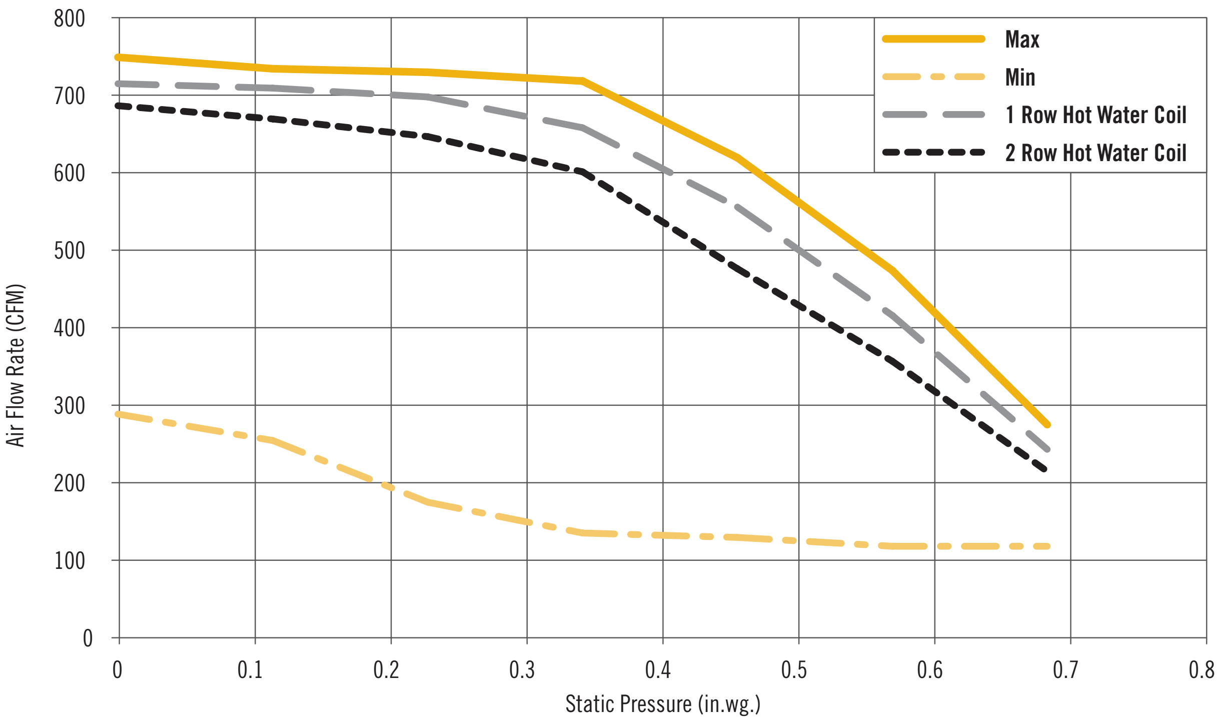
- 990 Constant Fan–No Auxiliary Heating
- 993-1 Constant Fan with 1 Stage of Electric Heat
- 994 Constant Fan–No Auxiliary Heating
- 996 Constant Fan–Modulating Floating Control–Hot Water Heat
- 997-1 Constant Fan with 1 Stage of Electric Heat
- 997-2 Constant Fan with 2 Stages of Electric Heat

BACnet

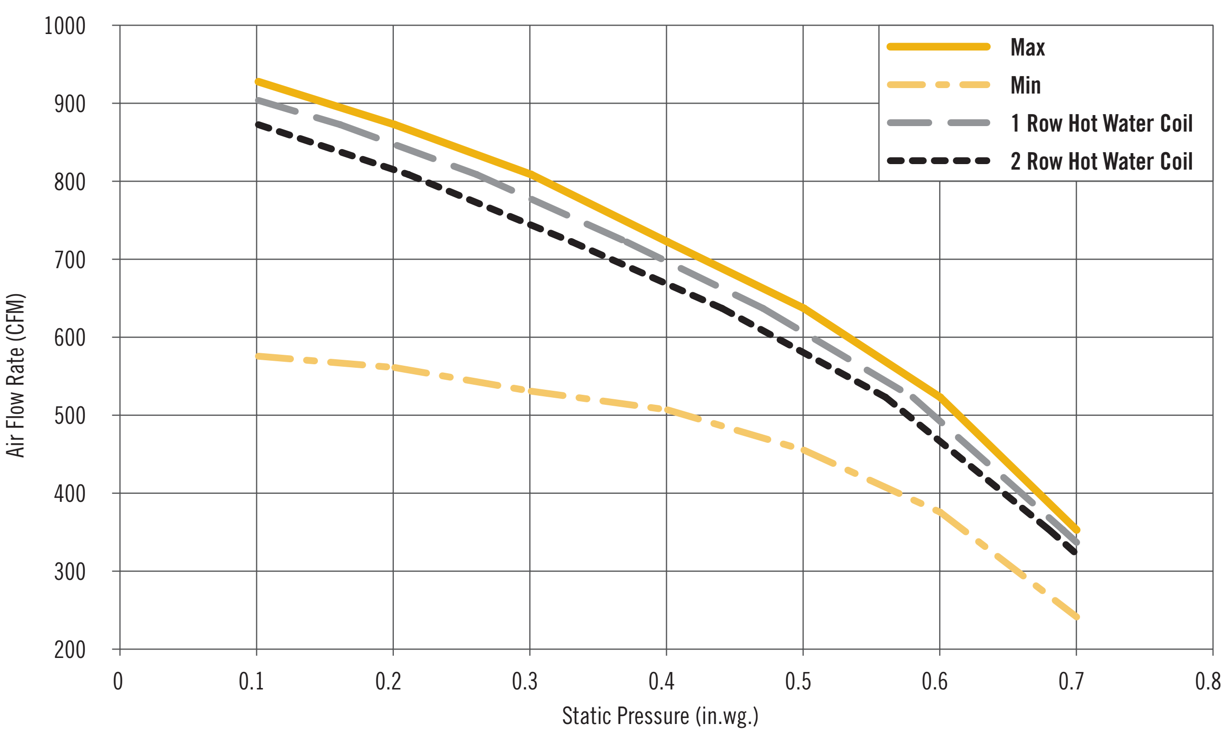
- 980 Constant Fan–No Auxiliary Heating
- 982 Constant Fan–Modulating Floating Control–Hot Water Heat
- 983-1 Constant Fan with 1 Stage of Electric Heat
- 983-2 Constant Fan with 2 Stages of Electric Heat
- 983-3 Constant Fan with 3 Stages of Electric Heat

Refer to Reference Section for complete description.

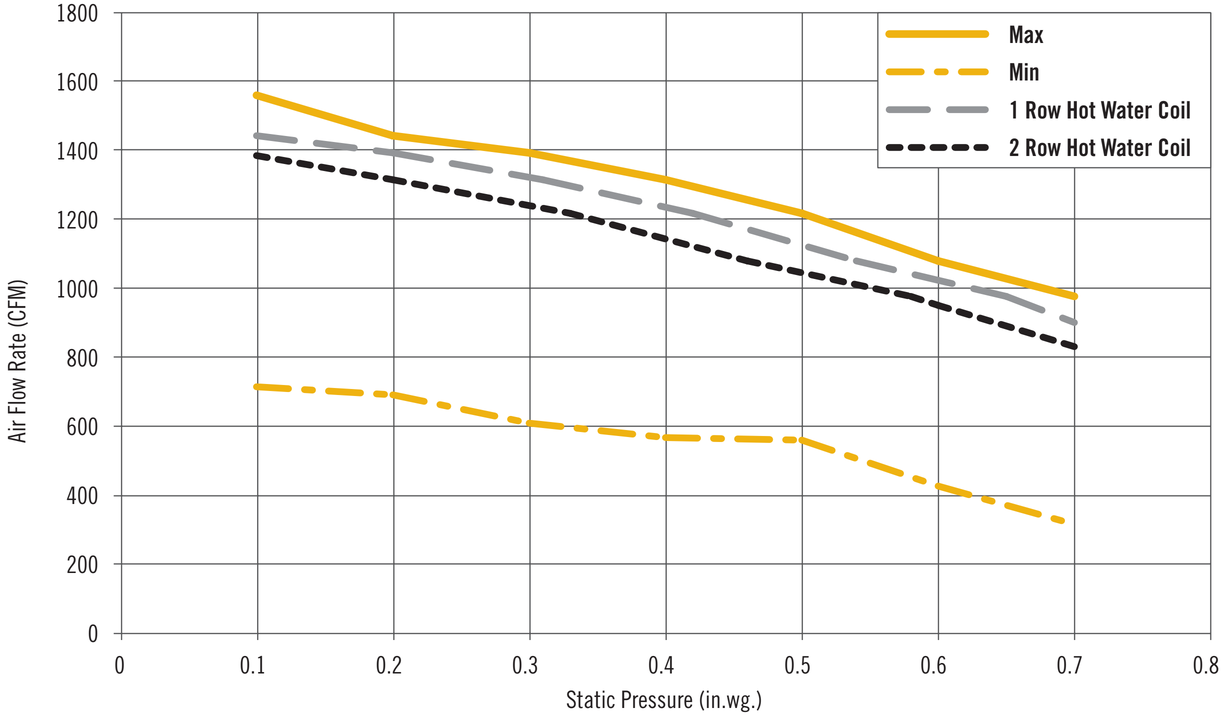
FCI-600 FAN PERFORMANCE CURVES
UNIT SIZE 2 - STANDARD HW COIL



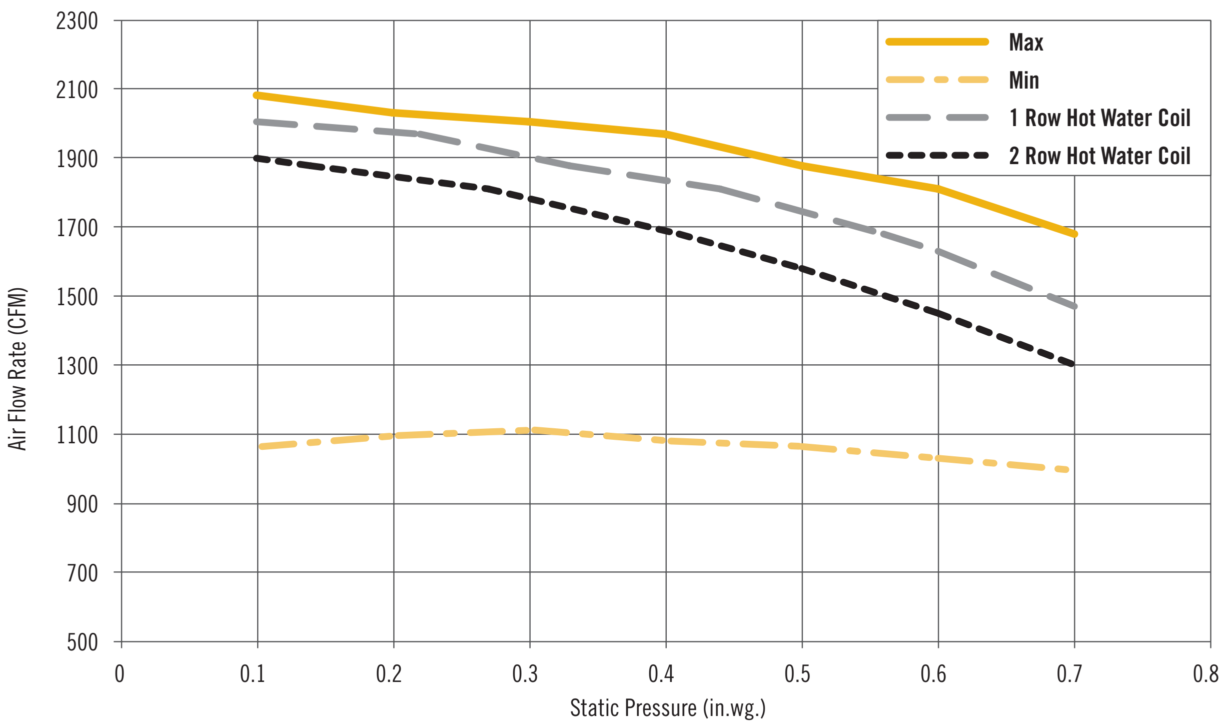
FCI-600 FAN PERFORMANCE CURVES
UNIT SIZE 3 - STANDARD HW COIL



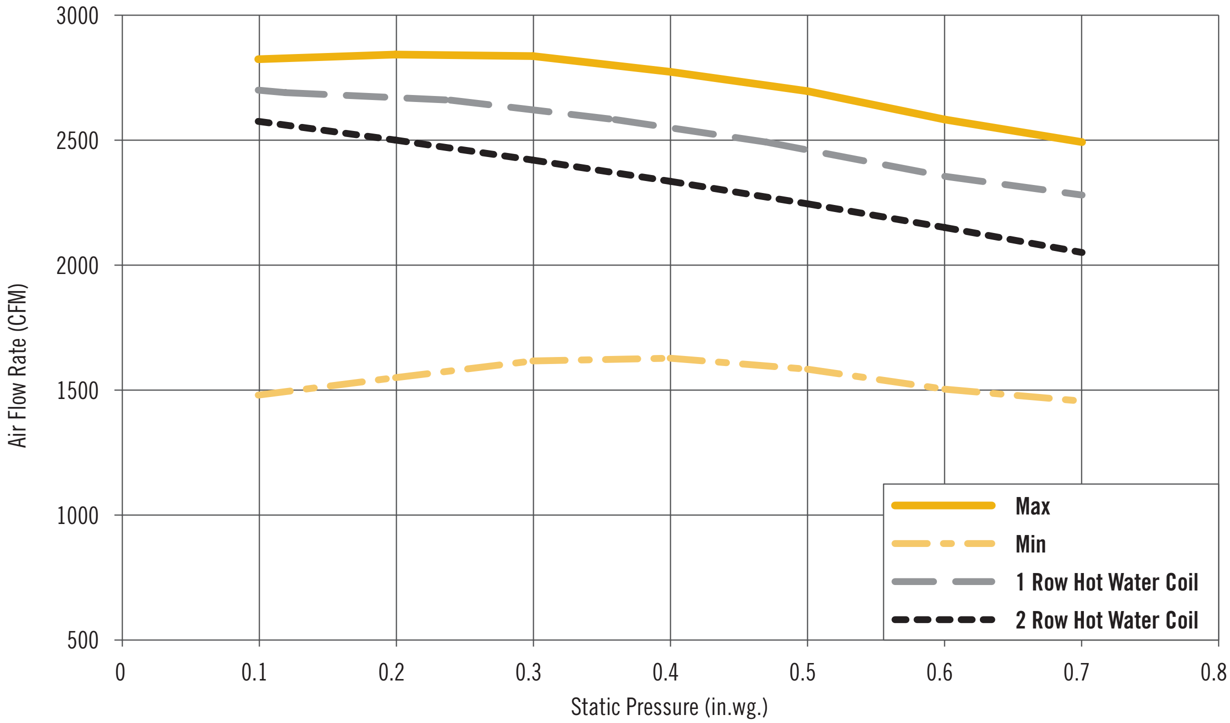
FCI-600 FAN PERFORMANCE CURVES
UNIT SIZE 4 - STANDARD HW COIL



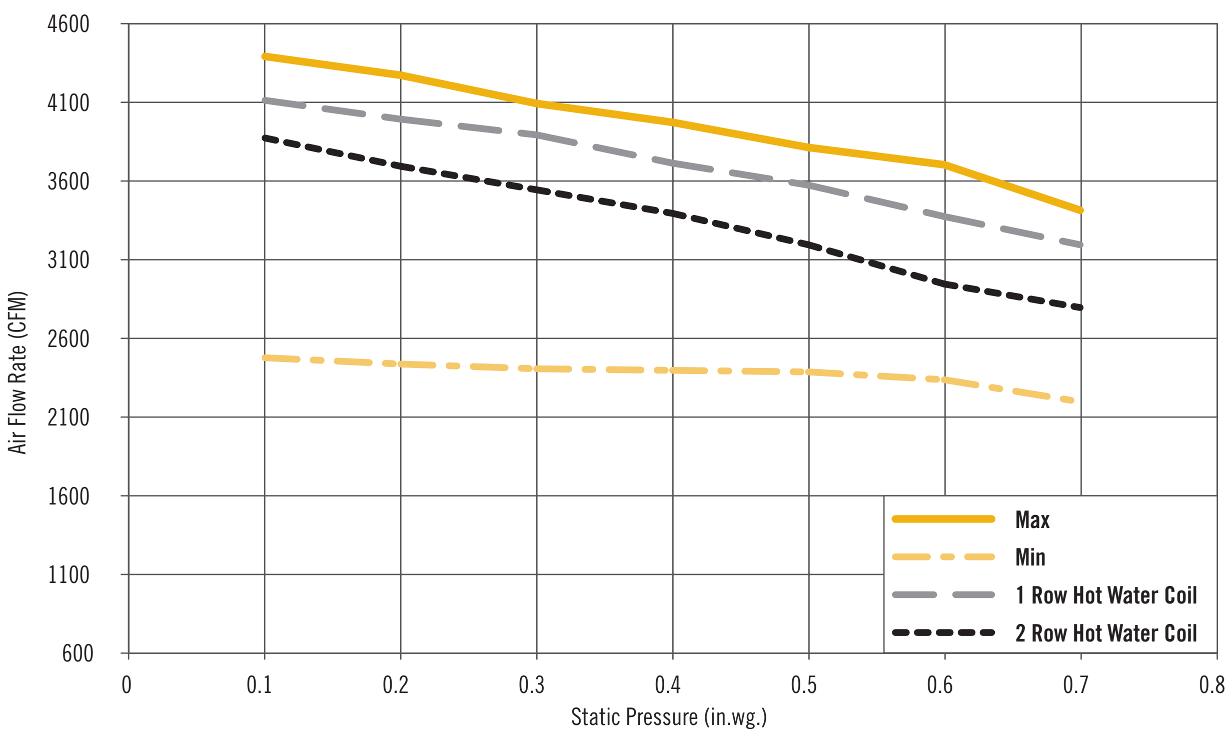
FCI-600 FAN PERFORMANCE CURVES
UNIT SIZE 5 - STANDARD HW COIL



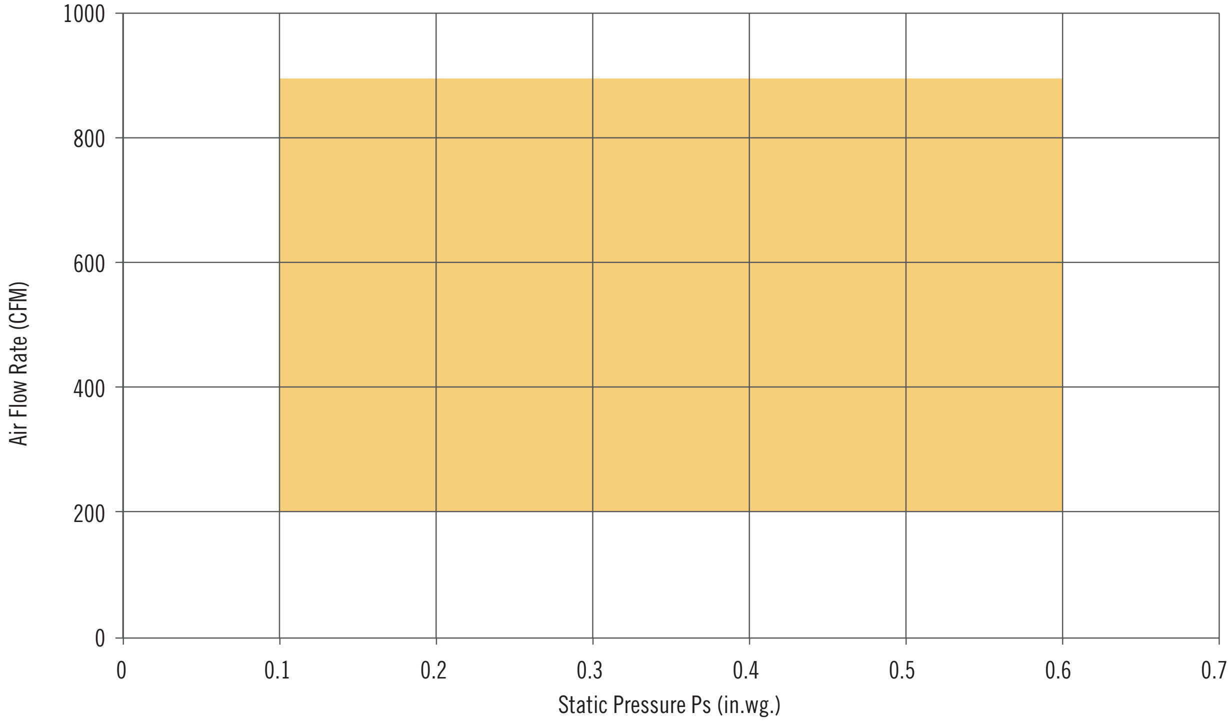
FCI-600 FAN PERFORMANCE CURVES
UNIT SIZE 6 - STANDARD HW COIL



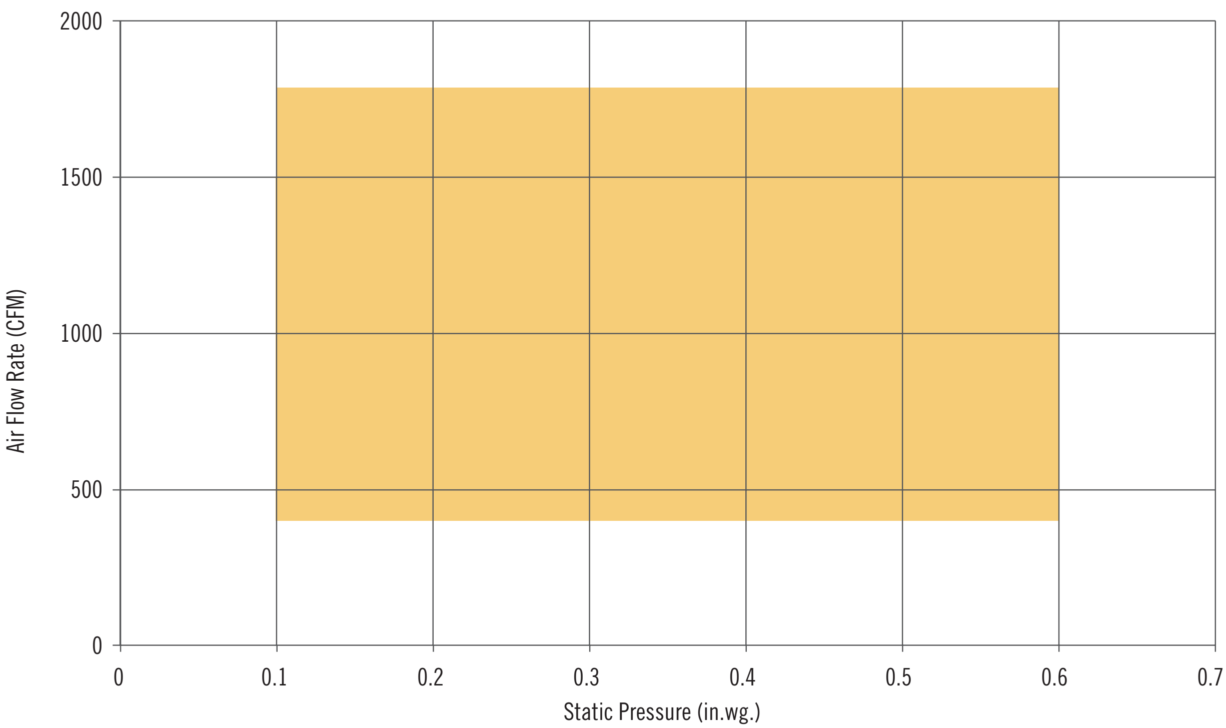
FCI-600 FAN PERFORMANCE CURVES
CASE 7 - STANDARD HW COIL



FCI-600 ECM FAN PERFORMANCE CURVES CASE 2

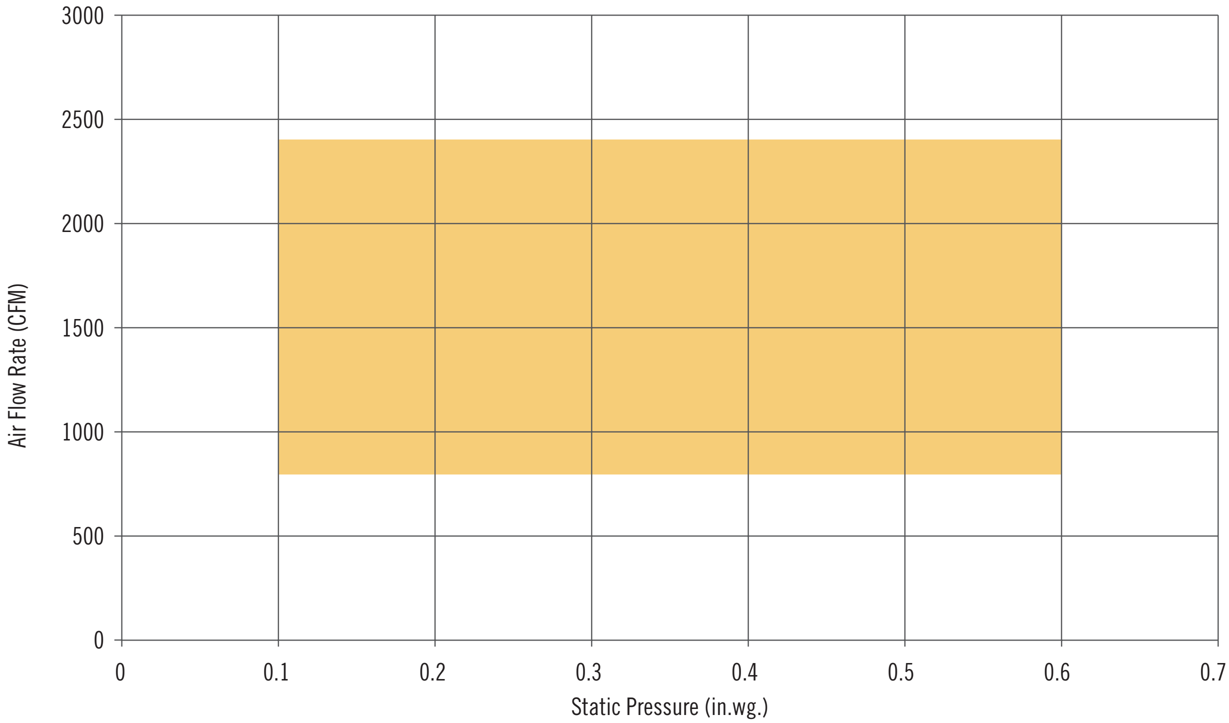


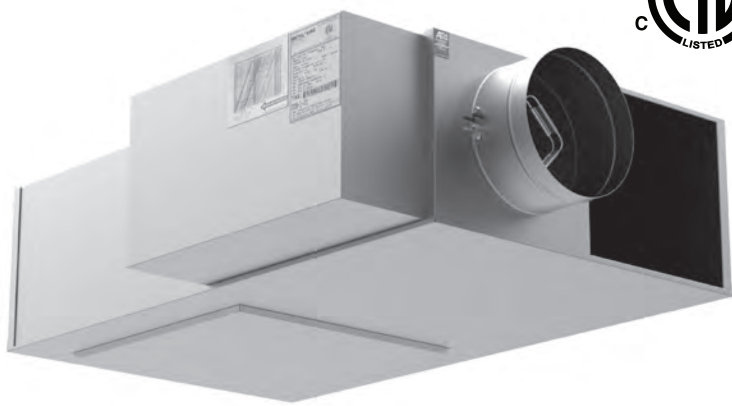
FCI-600 ECM FAN PERFORMANCE CURVES CASE 4



SERIES FAN POWERED
FCI-600 CONSTANT VOLUME

FCI-600 ECM FAN PERFORMANCE CURVES
CASE 6





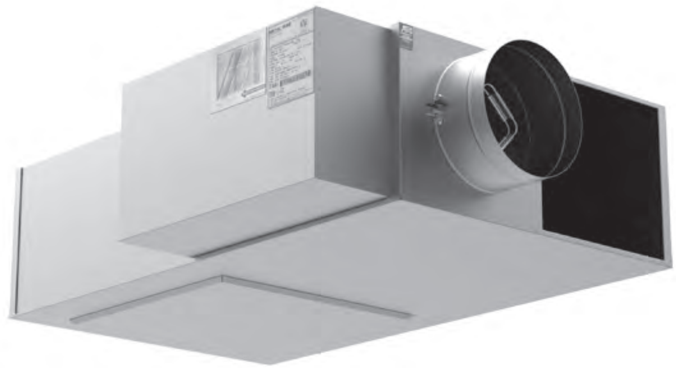
FCL-600

LOW PROFILE CONSTANT VOLUME FAN TERMINAL UNIT

SPECIFIABLE FEATURES

- Galvanized steel casing, mechanically sealed for low leakage construction
- NEMA 1 rated hinged control enclosure with stand off to prevent penetration of casing
- Single speed high efficiency PSC motor with SCR motor speed control
- Butt welded round primary inlet duct to minimize leakage
- Damper constructed of double layer 18 gauge equivalent with integral blade seal
- Metal construction inlet flow sensor with extra balancing taps
- Single point electrical connection

METALAIRE™



SERIES FAN POWERED

FCL-600 LOW PROFILE CONSTANT VOLUME

FCL-600
LOW PROFILE CONSTANT VOLUME FAN TERMINAL UNIT

The METALAIRE FCL low profile series fan-powered terminal unit has been engineered to provide a balance between quiet operation, minimal footprint, and a broad flow range with a reduced height for low clearance ceiling applications. The FCL is constructed from 22 gauge metal construction designed to mitigate vibration and increase rigidity. The unique 4-piece case allows for fewer seams and low leakage. Every FCL includes bottom rigid access panel. These simple-to-remove panels provide access to allow trouble-free maintenance of the fan motor and blower assembly. The control enclosure for the FCL allows critical component access.

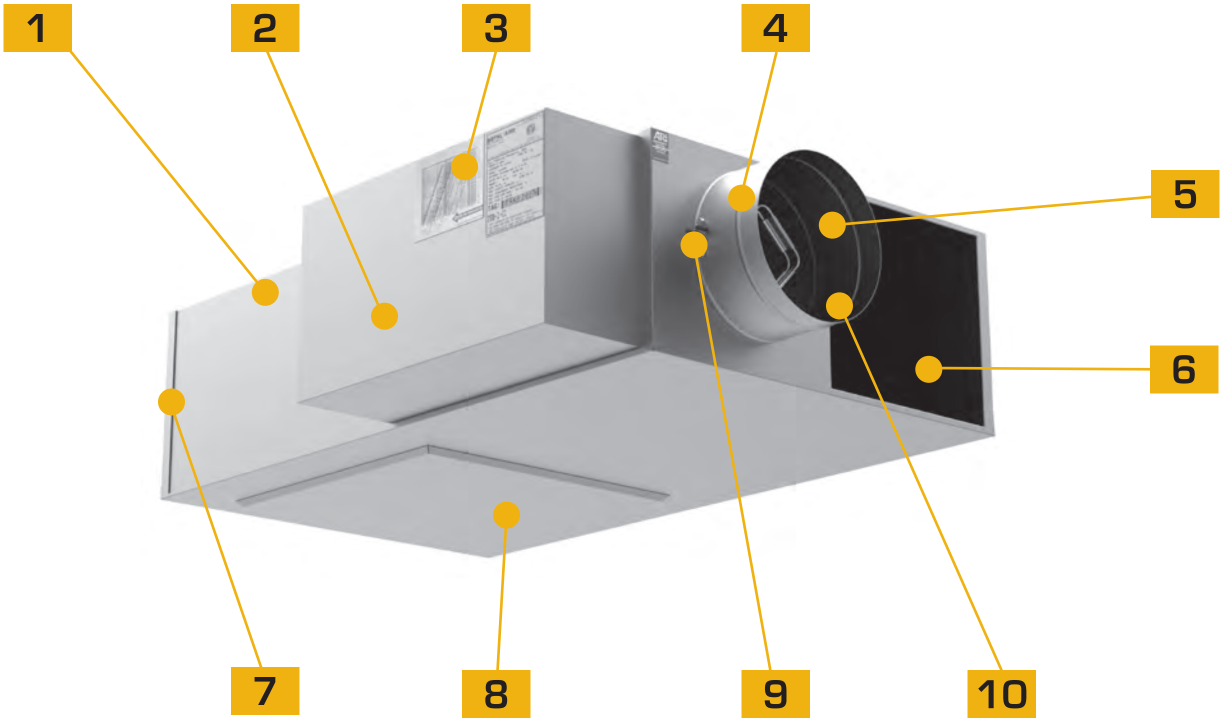
FCL units include 1/2" thick, matt-faced fiberglass insulation that complies with UL 181 horizontal burn test, NFPA 90 and UL 723/ASTM E 84 flame spread and smoke developed ratings of 25/50. Optional insulations include metal-foil-faced and fiber- and erosion-free ThermoPure (closed-cell foam), a polyolefin product with superior acoustical properties compared to solid metal duct liner.

Optional electronically commutated motors (ECM) are available to minimize energy usage. Up to 75% energy savings is typical with the ECM option. Refer to the fan curves for proper selection and to maximize energy savings.

STANDARD FEATURES

- Available in 2 casing sizes to handle 340-1800 cfm.
- 22 ga. galvanized steel casing.
- Low leakage construction.
- Low leakage inlet damper (< 1% at 3" static pressure).
- Optional factory calibrated controls per each job requirement.
- Metalaire inlet flow sensor provides +/- 5% flow readings after certified balancer has balanced terminal.
- Easy access, steel balancing taps.
- Energy efficient PSC motors with adjustable SCR solid state fan speed controller.
- External control cabinet with offset mounting plate.
- Single point electrical connections.
- Beaded primary inlet connection tube for added rigidity and secure flex duct connections.
- Inlets available in sizes 8" and rect. 8 x 16".
- 1/2" thick, dual density (1.5 lb min.) fiberglass insulation with edges coated.
- Rectangular discharge with optional slip and drive cleat duct connection.
- Large removable bottom access panel provides access to fan motor/blower assembly.
- Independently tested and certified laboratory performance data.
- Full range of options and accessories available (heating coils, disconnects, attenuators, etc.).
- Full range of liners/insulation available.
- Auto and manual thermal resets on every electric heater.
- High efficiency six-pole, single speed permanent split capacitor (PSC) motors.
- Available motor voltages of 120, 277, and 208-240 (50/60 Hz).

METALAIRE™

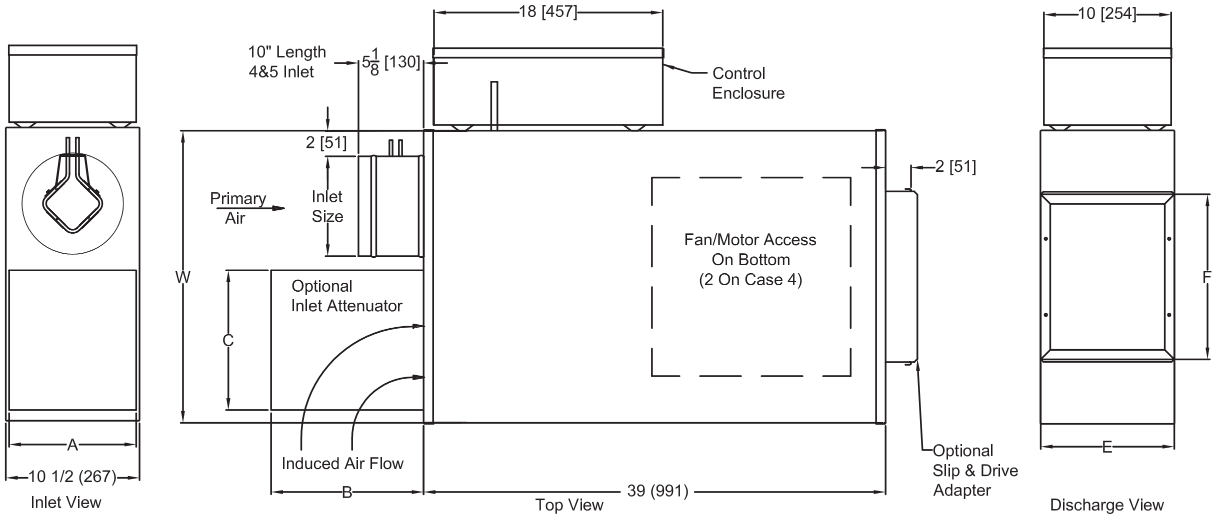


FCL-600
LOW PROFILE CONSTANT VOLUME FAN TERMINAL UNIT

FEATURES AND BENEFITS

1. Galvanized steel casing, mechanically sealed for low leakage construction.
2. NEMA 1 rated hinged control enclosure with stand off to prevent penetration of casing.
3. Single speed high efficiency PSC motor with SCR motor speed control.
4. Continuous welded primary inlet duct to minimize leakage with 3 stiffening beads for added rigidity.
5. Damper constructed of double layer 18 gauge equivalent with mechanically fastened integral blade seal.
6. Hand adjustable restrictor plates top and bottom for balancing.
7. Discharge panel is manufactured with 18 gauge galvanized steel to mitigate vibration.
8. Bottom access panel provided for easy motor/blower servicing.
9. Metal construction inlet flow sensor with extra balancing taps.
10. Damper assembly rotates in long life, low friction, self lubricating thermoplastic bearing.

FCL-600
SERIES FAN POWERED AIR TERMINAL UNIT
COOLING ONLY



The standard location for control enclosure is Left Hand on Model FCL. Looking in the direction of airflow, the control enclosure is on the left.

Case 4 has two induction ports located on either side of the primary inlet duct.

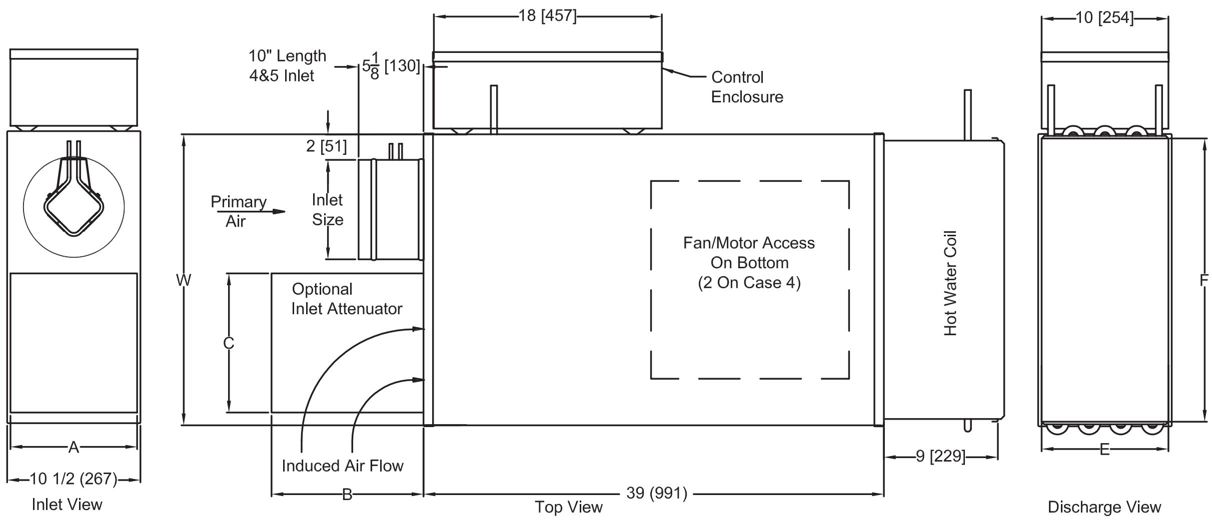
Case size	Inlet Size Standard	Horse-power PSC	Rated Motor Amps 120 V	Rated Motor Amps 277 V	Unit Dimensions Height H	Unit Dimensions Width W	Unit Dimensions Length L	Induction Attenuator Height A	Induction Attenuator Width B	Induction Attenuator Length C	Discharge Height E	Discharge Width F
2	8 (203) Round	1/4	5.8	1.8	10 1/2 (267)	23 (584)	39 (991)	10 (254)	12 (305)	11 (279)	10 1/2 (267)	13 (330)
4	8 (203) x16 (406) Rect.	1/4 (2)	11.6	3.6	10 1/2 (267)	42 (10.67)	39 (991)	10 (254)	12 (305)	11 (279)	10 1/2 (267)	24 1/2 (622)
		ECM										
2	8 (203) Round	1/3	6	2.6	10 1/2 (267)	23 (584)	39 (991)	10 (254)	12 (305)	11 (279)	10 1/2 (267)	13 (330)
4	8 (203) x16 (406) Rect.	1/3 (2)	11.3	4.9	10 1/2 (267)	42 (10.67)	39 (991)	10 (254)	12 (305)	11 (279)	10 1/2 (267)	24 1/2 (622)

Optional inlet sizes 4, 5 and 6 are available on Case Size 2 only.

All filter sizes are equal to induction attenuator dimensions A & B.

All dimensions are in inches; parentheses ( ) indicate millimeters.

FCL-600
SERIES FAN POWERED AIR TERMINAL UNIT WITH HOT WATER COIL



The standard location for control enclosure is Left Hand on Model FCL. Looking in the direction of airflow, the control enclosure is on the left.

Case 4 has two induction ports located on either side of the primary inlet duct.

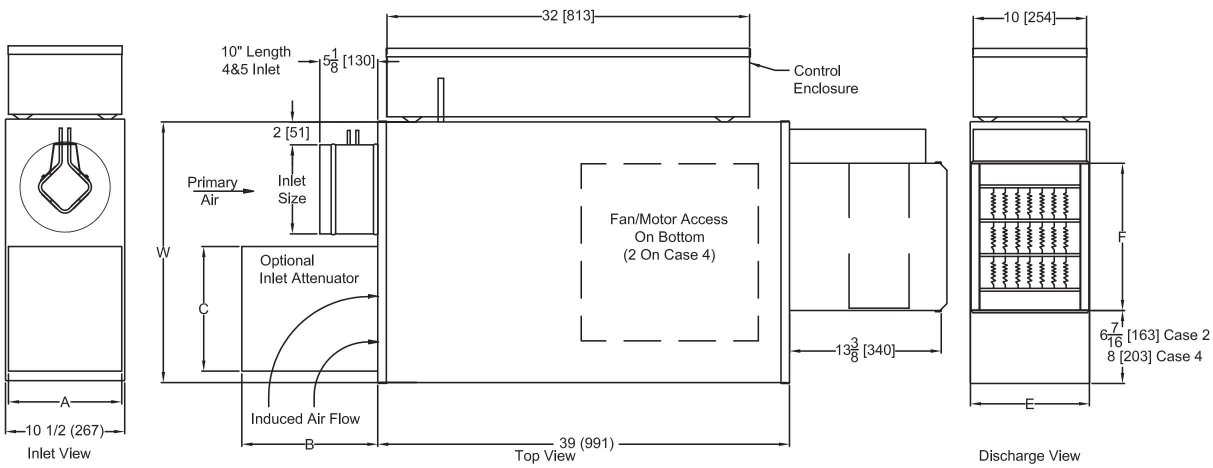
Case size	Inlet Size	Horse-power PSC	Rated Motor Amps		Unit Dimensions			Induction Attenuator			Discharge	
	Standard		120 V	277 V	Height H	Width W	Length L	Height A	Width B	Length C	Height E	Width F
2	8 (203) Round	1/4	5.8	1.8	10 1/2 (267)	23 (584)	39 (991)	10 (254)	12 (305)	11 (279)	10 (254)	22 (559)
4	8 (203) x16 (406) Rect.	1/4 (2)	11.6	3.6	10 1/2 (267)	42 (10.67)	39 (991)	10 (254)	12 (305)	11 (279)	10 (254)	32 (813)
		ECM										
2	8 (203) Round	1/3	6	2.6	10 1/2 (267)	23 (584)	39 (991)	10 (254)	12 (305)	11 (279)	10 (254)	22 (559)
4	8 (203) x16 (406) Rect.	1/3 (2)	11.3	4.9	10 1/2 (267)	42 (10.67)	39 (991)	10 (254)	12 (305)	11 (279)	10 (254)	32 (813)

Optional inlet sizes 4, 5 and 6 are available on Case Size 2 only.

All filter sizes are equal to induction attenuator dimensions A & B.

All dimensions are in inches; parentheses ( ) indicate millimeters.

FCL-600
SERIES FAN POWERED AIR TERMINAL UNIT WITH ELECTRIC HEAT



The standard location for control enclosure is Left Hand on Model FCL. Looking in the direction of airflow, the control enclosure is on the left.

Case 4 has two induction ports located on either side of the primary inlet duct.

Case size	Inlet Size Standard	Horse-power PSC	Rated Motor Amps 120 V	Rated Motor Amps 277 V	Unit Dimensions Height H	Unit Dimensions Width W	Unit Dimensions Length L	Induction Attenuator Height A	Induction Attenuator Width B	Induction Attenuator Length C	Discharge Height E	Discharge Width F
2	8 (203) Round	1/4	5.8	1.8	10 1/2 (267)	23 (584)	39 (991)	10 (254)	12 (305)	11 (279)	10 1/2 (267)	13 (330)
4	8 (203) x16 (406) Rect.	1/4 (2)	11.6	3.6	10 1/2 (267)	42 (10.67)	39 (991)	10 (254)	12 (305)	11 (279)	10 1/2 (267)	26 (660)
		ECM										
2	8 (203) Round	1/3	6	2.6	10 1/2 (267)	23 (584)	39 (991)	10 (254)	12 (305)	11 (279)	10 1/2 (267)	13 (330)
4	8 (203) x16 (406) Rect.	1/3 (2)	11.3	4.9	10 1/2 (267)	42 (10.67)	39 (991)	10 (254)	12 (305)	11 (279)	10 1/2 (267)	26 (660)

Optional inlet sizes 4, 5 and 6 are available on Case Size 2 only.

All filter sizes are equal to induction attenuator dimensions A & B.

All dimensions are in inches; parentheses ( ) indicate millimeters.

FCL-600
AHRI CERTIFIED RATING POINTS

AHRI Certified Radiated Sound Power, Fan Only

Unit Size	Fan CFM	Octave Band						Electrical Power (Watts)
		2	3	4	5	6	7	
208	400	53	48	50	46	38	33	210
416	1750	76	69	64	63	53	46	900

AHRI Certified Radiated Sound Power, Inlet Ps = 1.5 in. wg. Static Pressure

Unit Size	Fan CFM	Primary CFM	Min Ps	Octave Band					
				2	3	4	5	6	7
208	400	400	0.02	57	52	52	46	42	45
416	1750	1750	0.38	79	73	68	67	57	50

AHRI Certified Discharge Sound Power, Fan Only

Unit Size	Fan CFM	Octave Band						Electrical Power (Watts)
		2	3	4	5	6	7	
208	400	56	53	54	55	49	42	210
416	1750	74	73	72	74	72	70	900

CERTIFICATIONS AND STANDARDS

AHRI CERTIFIED™
www.ahridirectory.org
VAV Terminals
AHRI Standard 880

- Units tested per ANSI/ASHRAE Standard 130.
- All model sizes certified in accordance with AHRI 880 certification program.
- ETL listed to meet requirements of UL 1995 and CSA 236.
- Dual-density fiberglass insulation meets UL 181 and NFPA 90A requirements.
- Insulation meets ASHRAE 62.1 requirements for resistance to mold growth and erosion.

FCL-600
RADIATED SOUND POWER LEVEL at Fan Only, Inlet Ps = 0.50 and 0.75 in. wg.

Case	Inlet	CFM	(L/s)	Min Ps in. WC	(Pa)	Fan Only: Octave Band Sound Power, Lw, dB 2	3	4	5	6	7	NC	NC w/ SA	Inlet Ps = 0.50 in. wg. (125 Pa): Octave Band Sound Power, Lw, dB 2	3	4	5	6	7	NC	NC w/ SA	Inlet Ps = 0.75 in. wg. (187 Pa): Octave Band Sound Power, Lw, dB 2	3	4	5	6	7	NC	NC w/ SA
2	8	350	(165)	0.014	(3)	50	46	45	43	35	31	19	< 15	51	47	46	44	36	32	20	< 15	52	48	47	45	37	33	21	< 15
		400	(189)	0.022	(5)	53	48	50	46	38	33	24	18	54	49	50	45	39	38	24	18	55	50	50	44	40	43	24	18
		600	(283)	0.037	(9)	54	51	52	48	41	36	26	20	55	52	52	47	42	41	26	20	56	53	52	46	43	46	26	20
		800	(378)	0.090	(22)	57	55	56	50	44	38	31	24	58	56	56	49	45	43	31	24	59	57	56	48	46	48	31	24
		1000	(472)	0.126	(31)	60	58	59	52	47	39	34	27	61	59	59	51	48	44	34	27	62	60	59	50	49	49	34	27
4	16 x 8	625	(295)	0.031	(8)	64	56	55	51	37	29	30	26	65	59	57	54	43	36	32	27	66	61	59	56	48	43	34	29
		850	(401)	0.045	(11)	66	58	57	53	40	32	32	29	68	61	59	56	45	38	34	31	69	63	60	58	49	44	35	32
		1100	(519)	0.160	(40)	69	63	59	56	44	37	34	32	70	65	61	58	48	41	36	34	71	66	63	60	51	45	38	35
		1350	(637)	0.240	(60)	72	65	62	59	48	41	38	36	74	68	64	61	51	44	40	39	75	70	65	63	54	47	41	40
		1650	(779)	0.320	(80)	74	69	64	63	52	46	40	39	77	71	66	65	55	48	44	43	79	73	68	66	57	49	46	45
		1750	(826)	0.380	(95)	76	69	64	63	53	46	43	41	78	71	66	65	55	48	45	44	79	73	68	67	57	50	46	45
		1825	(861)	0.415	(103)	76	72	65	66	55	49	44	41	79	74	67	67	57	50	46	45	81	75	69	68	58	50	49	48

FCL-600
RADIATED SOUND POWER LEVEL at Inlet Ps = 1.0, 1.5 and 2.0 in. wg.

Case	Inlet	CFM	(L/s)	Min Ps in. WC	(Pa)	Inlet Ps = 1.0 in. wg. (250 Pa): Octave Band Sound Power, Lw, dB 2	3	4	5	6	7	NC	NC w/ SA	Inlet Ps = 1.5 in. wg. (375 Pa): Octave Band Sound Power, Lw, dB 2	3	4	5	6	7	NC	NC w/ SA	Inlet Ps = 2.0 in. wg. (500 Pa): Octave Band Sound Power, Lw, dB 2	3	4	5	6	7	NC	NC w/ SA
2	8	350	(165)	0.014	(3)	53	49	48	46	38	34	22	15	54	50	49	47	39	35	23	17	55	51	50	48	40	36	24	18
		400	(189)	0.022	(5)	56	51	51	45	41	44	25	19	57	52	52	46	42	45	26	20	58	53	55	51	43	38	30	23
		600	(283)	0.037	(9)	57	54	53	47	44	47	27	21	58	55	54	48	45	48	29	22	59	56	57	53	46	41	32	25
		800	(378)	0.090	(22)	60	58	57	49	47	49	32	25	61	59	58	50	48	50	33	26	62	60	61	55	49	43	36	30
		1000	(472)	0.126	(31)	63	61	60	51	50	50	35	29	64	62	61	52	51	51	36	30	65	63	64	57	52	44	39	33
4	16 x 8	625	(295)	0.031	(8)	66	61	59	56	48	43	34	29	66	61	59	56	48	43	34	29	67	62	60	57	49	44	35	30
		850	(401)	0.045	(11)	69	63	60	58	49	44	35	32	69	63	60	58	49	44	35	32	70	64	61	59	50	45	36	34
		1100	(519)	0.160	(40)	71	66	63	60	51	45	38	35	71	66	63	60	51	45	38	35	72	67	64	61	52	46	39	36
		1350	(637)	0.240	(60)	75	70	65	63	54	47	41	40	75	70	65	63	54	47	41	40	76	71	66	64	55	48	43	41
		1650	(779)	0.320	(80)	79	73	68	66	57	49	46	45	79	73	68	66	57	49	46	45	80	74	69	67	58	50	48	46
		1750	(826)	0.380	(95)	79	73	68	67	57	50	46	45	79	73	68	67	57	50	46	45	80	74	69	68	58	51	48	46
		1825	(861)	0.415	(103)	81	75	69	68	58	50	49	48	81	75	69	68	58	50	49	48	82	76	70	69	59	51	50	49

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2. *Performance data not contained within a bold border outline are application ratings. Application ratings are outside the scope of the Certification Program.*
3. *Performance data is obtained from laboratory testing in accordance with AHRI 880-2011 and ANSI/ASHRAE 130-2008.*
4. *NC values are calculated using attenuation credits outlined in Appendix E of AHRI 885-2008.*
5. *Air terminal units were tested with an external static pressure of 0.25 in.wg.*
6. ***Discharge Sound power levels shown with End Reflection Corrections Included** in dB (ref: 10^{-12} watts).*
7. *Minimum Ps is the static pressure drop across the air terminal unit while the inlet damper is in the wide-open position at a given airflow rate, and the fan is on.*

FCL-600
DISCHARGE SOUND POWER LEVEL at Fan Only, Inlet Ps = 0.25 and 0.50 in. wg.

Case	Inlet	CFM (L/s)		Min Ps in. WC (Pa)		Fan Only							Inlet Ps = 0.25 in. wg. (62 Pa)							Inlet Ps = 0.50 in. wg. (125 Pa)						
						Octave Band Sound Power, Lw, dB						NC	Octave Band Sound Power, Lw, dB						NC	Octave Band Sound Power, Lw, dB						NC
						2	3	4	5	6	7		2	3	4	5	6	7		2	3	4	5	6	7	
2	8	350	(165)	0.014	(3)	58	53	50	52	46	40	< 15	58	53	50	52	46	40	< 15	58	53	50	52	46	40	< 15
		400	(189)	0.022	(5)	62	56	55	55	49	42	< 15	62	56	55	55	49	42	< 15	62	56	55	55	49	42	< 15
		600	(283)	0.037	(9)	62	58	57	57	52	45	15	62	58	57	57	52	45	15	62	58	57	57	52	45	15
		800	(378)	0.090	(22)	65	62	61	59	55	47	19	65	62	61	59	55	47	19	65	62	61	59	55	47	19
		1000	(472)	0.126	(31)	68	65	64	61	58	48	22	68	65	64	61	58	48	22	68	65	64	61	58	48	22
4	16 x 8	625	(295)	0.031	(8)	63	59	59	56	52	48	16	63	59	59	56	52	48	16	63	59	59	56	52	48	16
		850	(401)	0.045	(11)	67	64	62	60	57	54	21	67	64	62	60	57	54	21	67	64	62	60	57	54	21
		1100	(519)	0.160	(40)	72	69	65	65	63	61	27	72	69	65	65	63	61	27	72	69	65	65	63	61	27
		1350	(637)	0.240	(60)	74	71	68	70	67	66	30	74	71	68	70	67	66	30	74	71	68	70	67	66	30
		1650	(779)	0.320	(80)	77	74	72	74	72	70	33	77	74	72	74	72	70	33	77	74	72	74	72	70	33
		1750	(826)	0.380	(95)	78	75	72	74	72	70	34	78	75	72	74	72	70	34	78	75	72	74	72	70	34
		1825	(861)	0.415	(103)	80	76	73	75	73	71	35	80	76	73	75	73	71	35	80	76	73	75	73	71	35

FCL-600
DISCHARGE SOUND POWER LEVEL at Inlet Ps = 1.0, 1.5 and 2.0 in. wg.

Case	Inlet	CFM (L/s)		Min Ps in. WC (Pa)		Inlet Ps = 1.0 in. wg. (250 Pa)							Inlet Ps = 1.5 in. wg. (375 Pa)							Inlet Ps = 2.0 in. wg. (500 Pa)						
						Octave Band Sound Power, Lw, dB						NC	Octave Band Sound Power, Lw, dB						NC	Octave Band Sound Power, Lw, dB						NC
						2	3	4	5	6	7		2	3	4	5	6	7		2	3	4	5	6	7	
2	8	350	(165)	0.014	(3)	59	54	51	53	47	41	< 15	60	55	52	54	48	42	< 15	60	55	52	54	48	42	< 15
		400	(189)	0.022	(5)	63	57	56	56	50	43	< 15	64	58	57	57	51	44	16	64	58	57	57	51	44	16
		600	(283)	0.037	(9)	63	59	58	58	53	46	16	64	60	59	59	54	47	18	64	60	59	59	54	47	18
		800	(378)	0.090	(22)	66	63	62	60	56	48	20	67	63	62	61	57	48	20	67	64	63	61	57	49	21
		1000	(472)	0.126	(31)	69	66	65	62	59	49	24	70	67	66	63	60	50	25	70	67	66	63	60	50	25
4	16 x 8	625	(295)	0.031	(8)	64	60	60	57	53	49	18	65	61	61	58	54	50	19	65	61	61	58	54	50	19
		850	(401)	0.045	(11)	68	65	63	61	58	55	22	69	66	64	62	59	56	24	69	66	64	62	59	56	24
		1100	(519)	0.160	(40)	73	70	66	66	64	62	28	74	71	67	67	65	63	29	74	71	67	67	65	63	29
		1350	(637)	0.240	(60)	75	72	69	71	68	67	31	76	73	70	72	69	68	32	76	73	70	72	69	68	32
		1650	(779)	0.320	(80)	78	75	73	75	73	71	34	79	76	74	76	74	72	35	79	76	74	76	74	72	35
		1750	(826)	0.380	(95)	79	76	73	75	73	71	35	80	77	74	76	74	72	37	80	77	74	76	74	72	37
		1825	(861)	0.415	(103)	81	77	74	76	74	72	37	82	78	75	77	75	73	38	82	78	75	77	75	73	38

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3. *Performance data is obtained from laboratory testing in accordance with AHRI 880-2011 and ANSI/ASHRAE 130-2008.*
4. *NC values are calculated using attenuation credits outlined in Appendix E of AHRI 885-2008.*
5. *Air terminal units were tested with an external static pressure of 0.25 in.wg.*
6. ***Discharge Sound power levels shown with End Reflection Corrections Included** in dB (ref: 10^{-12} watts).*
7. *Minimum Ps is the static pressure drop across the air terminal unit while the inlet damper is in the wide-open position at a given airflow rate, and the fan is on.*

FCL-600 ECM
RADIATED SOUND POWER LEVEL at Fan Only, Inlet Ps = 0.50 and 0.75 in. wg.

Case	Inlet	CFM (L/s)		Min Ps in. WC (Pa)		Fan Only								Inlet Ps = 0.50 in. wg. (125 Pa)								Inlet Ps = 0.75 in. wg. (187 Pa)							
						Octave Band Sound Power, Lw, dB						NC	NC w/ SA	Octave Band Sound Power, Lw, dB						NC	NC w/ SA	Octave Band Sound Power, Lw, dB						NC	NC w/ SA
						2	3	4	5	6	7			2	3	4	5	6	7			2	3	4	5	6	7		
2	8	150	(71)	0.017	(4)	48	43	44	42	33	30	18	< 15	49	44	45	43	34	31	19	< 15	50	45	46	44	35	32	20	< 15
		350	(165)	0.014	(3)	50	46	45	43	35	31	19	< 15	51	47	46	44	36	32	20	< 15	52	48	47	45	37	33	21	< 15
		400	(189)	0.022	(5)	53	48	50	46	38	33	24	< 15	54	49	51	47	39	34	25	< 15	55	50	52	48	40	35	26	< 15
		600	(283)	0.037	(9)	54	51	52	48	41	36	26	18	55	52	53	49	42	37	27	19	56	53	54	50	43	38	29	20
		800	(378)	0.090	(22)	57	55	56	50	44	38	31	20	58	56	57	51	45	39	32	21	59	57	58	52	46	40	33	22
		1000	(472)	0.126	(31)	60	58	59	52	47	39	34	24	61	59	60	53	48	40	35	25	62	60	61	54	49	41	36	26
4	16 x 8	550	(260)	0.008	(2)	62	54	53	49	36	28	27	23	64	57	55	52	41	34	30	26	65	59	56	54	45	40	31	27
		850	(401)	0.045	(11)	66	58	57	53	40	32	32	29	68	61	59	56	45	38	34	31	69	63	60	58	49	44	35	32
		1100	(519)	0.160	(40)	69	63	59	56	44	37	34	32	70	65	61	58	48	41	36	34	71	66	63	60	51	45	38	35
		1350	(637)	0.240	(60)	72	65	62	59	48	41	38	36	74	68	64	61	51	44	40	39	75	70	65	63	54	47	41	40
		1650	(779)	0.320	(80)	74	69	64	63	52	46	40	39	77	71	66	65	55	48	44	43	79	73	68	66	57	49	46	45
		1750	(826)	0.380	(95)	76	69	64	63	53	46	43	41	78	71	66	65	55	48	45	44	79	73	68	67	57	50	46	45
		1825	(861)	0.415	(103)	76	72	65	66	55	49	44	41	79	74	67	67	57	50	46	45	81	75	69	68	58	50	49	48
		1950	(920)	0.455	(113)	77	73	66	67	56	50	45	43	80	75	68	68	58	51	48	46	82	76	70	69	59	51	50	49

FCL-600 ECM
RADIATED SOUND POWER LEVEL at Inlet Ps = 1.0, 1.5 and 2.0 in. wg.

Case	Inlet	CFM (L/s)		Min Ps in. WC (Pa)		Inlet Ps = 1.0 in. wg. (250 Pa)								Inlet Ps = 1.5 in. wg. (375 Pa)								Inlet Ps = 2.0 in. wg. (500 Pa)							
						Octave Band Sound Power, Lw, dB						NC	NC w/ SA	Octave Band Sound Power, Lw, dB						NC	NC w/ SA	Octave Band Sound Power, Lw, dB						NC	NC w/ SA
						2	3	4	5	6	7			2	3	4	5	6	7			2	3	4	5	6	7		
2	8	150	(71)	0.017	(4)	50	46	45	43	35	31	19	< 15	51	47	46	44	36	32	20	< 15	52	48	47	45	37	33	21	< 15
		350	(165)	0.014	(3)	53	49	48	46	38	34	22	15	54	50	49	47	39	35	23	17	55	51	50	48	40	36	24	18
		400	(189)	0.022	(5)	56	51	53	49	41	36	27	21	57	52	54	50	42	37	29	22	58	53	55	51	43	38	30	23
		600	(283)	0.037	(9)	57	54	55	51	44	39	30	23	58	55	56	52	45	40	31	24	59	56	57	53	46	41	32	25
		800	(378)	0.090	(22)	60	58	59	53	47	41	34	27	61	59	60	54	48	42	35	29	62	60	61	55	49	43	36	30
		1000	(472)	0.126	(31)	63	61	62	55	50	42	37	31	64	62	63	56	51	43	38	32	65	63	64	57	52	44	39	33
4	16 x 8	550	(260)	0.008	(2)	65	60	58	55	46	42	33	27	65	60	58	55	46	42	33	27	66	61	59	56	47	43	34	29
		850	(401)	0.045	(11)	69	63	60	58	49	44	35	32	69	63	60	58	49	44	35	32	70	64	61	59	50	45	36	34
		1100	(519)	0.160	(40)	71	66	63	60	51	45	38	35	71	66	63	60	51	45	38	35	72	67	64	61	52	46	39	36
		1350	(637)	0.240	(60)	75	70	65	63	54	47	41	40	75	70	65	63	54	47	41	40	76	71	66	64	55	48	43	41
		1650	(779)	0.320	(80)	79	73	68	66	57	49	46	45	79	73	68	66	57	49	46	45	80	74	69	67	58	50	48	46
		1750	(826)	0.380	(95)	79	73	68	67	57	50	46	45	79	73	68	67	57	50	46	45	80	74	69	68	58	51	48	46
		1825	(861)	0.415	(103)	81	75	69	68	58	50	49	48	81	75	69	68	58	50	49	48	82	76	70	69	59	51	50	49
		1950	(920)	0.455	(113)	82	76	70	69	59	51	50	49	82	76	70	69	59	51	50	49	83	77	71	70	60	52	52	50

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4. *NC values are calculated using attenuation credits outlined in Appendix E of AHRI 885-2008.*
5. *Air terminal units were tested with an external static pressure of 0.25 in.wg.*
6. ***Discharge Sound power levels shown with End Reflection Corrections Included** in dB (ref: 10^{-12} watts).*
7. *Minimum Ps is the static pressure drop across the air terminal unit while the inlet damper is in the wide-open position at a given airflow rate, and the fan is on.*

FCL-600 ECM
DISCHARGE SOUND POWER LEVEL at Fan Only, Inlet Ps = 0.50 and 0.75 in. wg.

Case	Inlet	CFM (L/s)		Min Ps in. WC (Pa)		Fan Only							Inlet Ps = 0.50 in. wg. (125 Pa)							Inlet Ps = 0.75 in. wg. (187 Pa)						
						Octave Band Sound Power, Lw, dB							Octave Band Sound Power, Lw, dB							Octave Band Sound Power, Lw, dB						
						2	3	4	5	6	7	NC	2	3	4	5	6	7	NC	2	3	4	5	6	7	NC
2	8	150	(71)	0.017	(4)	52	49	49	52	45	40	< 15	52	50	50	53	46	41	< 15	52	51	51	54	47	42	< 15
		350	(165)	0.014	(3)	52	50	49	52	46	40	< 15	52	50	49	52	46	40	< 15	52	50	49	52	46	40	< 15
		400	(189)	0.022	(5)	56	53	54	55	49	42	< 15	56	53	54	55	49	42	< 15	56	53	54	55	49	42	< 15
		600	(283)	0.037	(9)	56	55	56	57	52	45	< 15	56	55	56	57	52	45	< 15	56	55	56	57	52	45	< 15
		800	(378)	0.090	(22)	59	59	60	59	55	47	15	59	59	60	59	55	47	15	59	59	60	59	55	47	15
		1000	(472)	0.126	(31)	62	62	63	61	58	48	19	62	62	63	61	58	48	19	62	62	63	61	58	48	19
4	16 x 8	550	(260)	0.008	(2)	60	60	59	57	54	51	18	60	60	59	57	54	51	18	60	60	59	57	54	51	18
		850	(401)	0.045	(11)	63	62	62	60	57	54	19	63	62	62	60	57	54	19	63	62	62	60	57	54	19
		1100	(519)	0.160	(40)	68	67	65	65	63	61	25	68	67	65	65	63	61	25	68	67	65	65	63	61	25
		1350	(637)	0.240	(60)	70	69	68	70	67	66	30	70	69	68	70	67	66	30	70	69	68	70	67	66	30
		1650	(779)	0.320	(80)	73	72	72	74	72	70	33	73	72	72	74	72	70	33	73	72	72	74	72	70	33
		1750	(826)	0.380	(95)	74	73	72	74	72	70	33	74	73	72	74	72	70	33	74	73	72	74	72	70	33
		1825	(861)	0.415	(103)	76	74	73	75	73	71	34	76	74	73	75	73	71	34	76	74	73	75	73	71	34
		1950	(920)	0.455	(113)	77	75	74	76	74	72	35	77	75	74	76	74	72	35	77	75	74	76	74	72	35

FCL-600 ECM
DISCHARGE SOUND POWER LEVEL at Inlet Ps = 1.0, 1.5 and 2.0 in. wg.

Case	Inlet	CFM (L/s)		Min Ps in. WC (Pa)		Inlet Ps = 1.0 in. wg. (250 Pa)							Inlet Ps = 1.5 in. wg. (375 Pa)							Inlet Ps = 2.0 in. wg. (500 Pa)						
						Octave Band Sound Power, Lw, dB							Octave Band Sound Power, Lw, dB							Octave Band Sound Power, Lw, dB						
						2	3	4	5	6	7	NC	2	3	4	5	6	7	NC	2	3	4	5	6	7	NC
2	8	150	(71)	0.017	(4)	51	50	50	52	46	40	< 15	52	51	51	53	47	41	< 15	53	52	52	54	48	42	< 15
		350	(165)	0.014	(3)	56	55	55	57	51	45	< 15	57	56	56	58	52	46	< 15	58	57	57	59	53	47	< 15
		400	(189)	0.022	(5)	58	58	59	60	55	48	15	59	59	60	61	56	49	16	60	60	61	62	57	50	18
		600	(283)	0.037	(9)	60	60	61	61	56	48	18	61	61	62	62	57	49	19	62	62	63	63	58	50	20
		800	(378)	0.090	(22)	61	62	63	62	58	50	19	62	63	64	63	59	51	20	63	64	65	64	60	52	21
		1000	(472)	0.126	(31)	64	65	66	64	61	51	22	65	66	67	65	62	52	24	66	67	68	66	63	53	25
4	16 x 8	550	(260)	0.008	(2)	61	61	60	58	55	52	19	62	62	61	59	56	53	20	62	62	61	59	56	53	20
		850	(401)	0.045	(11)	64	63	63	61	58	55	20	65	64	64	62	59	56	21	65	64	64	62	59	56	21
		1100	(519)	0.160	(40)	69	68	66	66	64	62	26	70	69	67	67	65	63	27	70	69	67	67	65	63	27
		1350	(637)	0.240	(60)	71	70	69	71	68	67	31	72	71	70	72	69	68	32	72	71	70	72	69	68	32
		1650	(779)	0.320	(80)	74	73	73	75	73	71	34	75	74	74	76	74	72	35	75	74	74	76	74	72	35
		1750	(826)	0.380	(95)	75	74	73	75	73	71	34	76	75	74	76	74	72	35	76	75	74	76	74	72	35
		1825	(861)	0.415	(103)	77	75	74	76	74	72	35	78	76	75	77	75	73	36	78	76	75	77	75	73	36
		1950	(920)	0.455	(113)	78	76	75	77	75	73	36	79	77	76	78	76	74	37	79	77	76	78	76	74	37

1. *Performance data contained within a bold border outline are AHRI certified data.*
2. *Performance data not contained within a bold border outline are application ratings. Application ratings are outside the scope of the Certification Program.*
3. *Performance data is obtained from laboratory testing in accordance with AHRI 880-2011 and ANSI/ASHRAE 130-2008.*
4. *NC values are calculated using attenuation credits outlined in Appendix E of AHRI 885-2008.*
5. *Air terminal units were tested with an external static pressure of 0.25 in.wg.*
6. ***Discharge Sound power levels shown with End Reflection Corrections Included** in dB (ref: 10^{-12} watts).*
7. *Minimum Ps is the static pressure drop across the air terminal unit while the inlet damper is in the wide-open position at a given airflow rate, and the fan is on.*

FCL-600 MOTOR AMPERAGE RATINGS

Case Size	Motor HP	Standard PSC Motor Amperage Ratings		
		115V-1 Phase 60 Hz Rated Amps	208-240V-1 Phase 60 Hz Rated Amps	277V-1 Phase 60 Hz Rated Amps
2	1/4	3.1	1.7	1.3
4	1/4 (two motors)	4.6	2.5	1.9

FCL-600 ECM MOTOR AMPERAGE RATINGS

Case Size	Motor HP	ECM Motor Amperage Ratings		
		115V-1 Phase 60 Hz Rated Amps	208-240V-1 Phase 60 Hz Rated Amps	277V-1 Phase 60 Hz Rated Amps
2	1/3	3.3	3.5	2.6
4	1/3 (two motors)	11.8	6.5	4.9

FCL-600 DAMPER LEAKAGE

Inlet Size	Damper Leakage, CFM		
	1.5" ΔPs	3.0" ΔPs	6.0" ΔPs
6	3	4	7
8	2	4	7
16 x 8	8	9	16

FCL-600 ECM DAMPER LEAKAGE

Inlet Size	Damper Leakage, CFM		
	1.5" ΔPs	3.0" ΔPs	6.0" ΔPs
6	3	4	7
8	2	4	7
16 x 8	8	9	16

FCL-600
HOT WATER COILS MBH SELECTION DATA – IMPERIAL UNITS

Unit Size	Rows	Connection (OD)	GPM	Head Loss (ft-H_2O)	CFM 350	400	500	600	700	800	900	1000
2	One	0.63	1	0.12	13.0	13.8	15.0	16.0	16.9	17.6	18.3	18.8
			2	0.45	14.8	15.8	17.5	18.9	20.2	21.2	22.2	23.1
			4	1.71	16.0	17.1	19.2	20.9	22.4	23.8	25.0	26.1
			6	5.05	16.5	17.7	19.8	21.7	23.3	24.8	26.1	27.3
			Airside Ps (in. wg.)		0.02	0.03	0.04	0.05	0.07	0.09	0.1	0.12
2	Two	0.875	1	0.29	18.5	19.7	21.5	22.9	24.1	25.1	26.0	26.7
			2	1.16	22.2	23.9	26.7	29.1	31.1	32.9	34.4	35.8
			4	4.65	24.7	26.8	30.5	33.7	36.5	39.0	41.2	43.2
			6	10.45	25.7	28.0	32.0	35.6	38.8	41.6	44.2	46.5
			Airside Ps (in. wg.)		0.05	0.06	0.08	0.11	0.15	0.19	0.23	0.27

Unit Size	Rows	Connection (OD)	GPM	Head Loss (ft-H_2O)	CFM 500	600	800	1000	1200	1400	1600	1800
4	One	0.875	1	0.15	17.7	19.0	21.0	22.6	23.8	24.8	25.7	26.4
			2	0.90	20.7	22.5	25.5	27.8	29.8	31.4	32.9	34.1
			4	2.24	22.7	24.9	28.6	31.6	34.1	36.3	38.3	40.0
			6	4.91	23.4	25.8	29.8	33.1	35.9	38.4	40.5	42.5
			Airside Ps (in. wg.)		0.02	0.03	0.04	0.07	0.09	0.12	0.15	0.18
4	Two	0.875	2	0.34	30.5	33.4	38.1	41.8	44.8	47.3	--	--
			4	1.33	34.6	38.5	45.1	50.5	55.1	58.9	--	--
			6	2.95	36.3	40.6	48.1	54.3	59.6	64.2	--	--
			8	5.20	37.2	41.8	49.8	56.5	62.2	67.3	--	--
			Airside Ps (in. wg.)		0.05	0.06	0.10	0.14	0.19	0.25	--	--

Heating capacity data in tables assume an entering water temperature (EWT) of 180°F, and an entering air temperature (EAT) of 65°F, which corresponds to a temperature difference of 115°F. Smaller temperature differences will result in a decrease of heating capacity. To obtain the heating capacity at another temperature difference, refer to the hot water coil notes located in the Reference Section.

FCL-600
HOT WATER COILS kW SELECTION DATA – METRIC UNITS

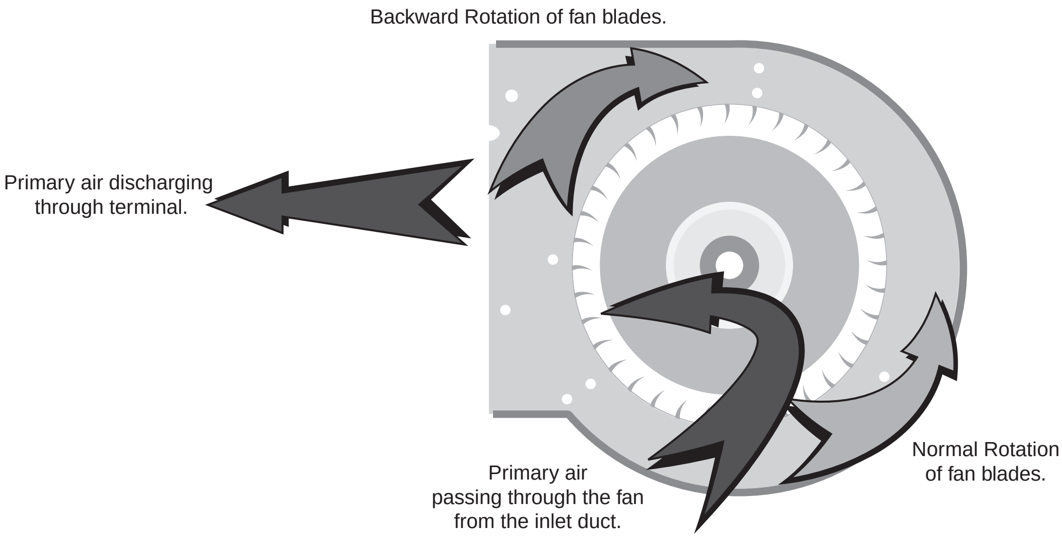
Unit Size	Rows	Connection OD (mm)	Water Flow (L/s)	Head Loss (kPa)	Airflow (L/s)							
					165	189	236	283	330	378	425	472
2	One	16.0	0.01	0.36	3.8	4.0	4.4	4.7	4.9	5.2	5.4	5.5
			0.03	1.35	4.3	4.6	5.1	5.5	5.9	6.2	6.5	6.8
			0.11	5.11	4.7	5.0	5.6	6.1	6.6	7.0	7.3	7.6
			0.32	15.09	4.8	5.2	5.8	6.4	6.8	7.3	7.6	8.0
			Airside Ps (kPa)		0.00	0.01	0.01	0.01	0.02	0.02	0.02	0.03
2	Two	22.2	0.02	0.87	5.4	5.8	6.3	6.7	7.1	7.3	7.6	7.8
			0.07	3.47	6.5	7.0	7.8	8.5	9.1	9.6	10.1	10.5
			0.29	13.90	7.2	7.8	8.9	9.9	10.7	11.4	12.1	12.6
			0.66	31.24	7.5	8.2	9.4	10.4	11.4	12.2	12.9	13.6
			Airside Ps (kPa)		0.01	0.01	0.02	0.03	0.04	0.05	0.06	0.07

Unit Size	Rows	Connection OD (mm)	Water Flow (L/s)	Head Loss (kPa)	Airflow (L/s)							
					236	283	378	472	566	661	755	850
4	One	22.2	0.01	0.45	5.2	5.6	6.1	6.6	7.0	7.3	7.5	7.7
			0.06	2.69	6.1	6.6	7.5	8.1	8.7	9.2	9.6	10.0
			0.14	6.70	6.6	7.3	8.4	9.3	10.0	10.6	11.2	11.7
			0.31	14.68	6.9	7.6	8.7	9.7	10.5	11.2	11.9	12.4
			Airside Ps (kPa)		0.00	0.01	0.01	0.02	0.02	0.03	0.04	0.04
4	Two	22.2	0.02	1.02	8.9	9.8	11.2	12.2	13.1	13.8	--	--
			0.08	3.98	10.1	11.3	13.2	14.8	16.1	17.2	--	--
			0.19	8.82	10.6	11.9	14.1	15.9	17.5	18.8	--	--
			0.33	15.54	10.9	12.2	14.6	16.5	18.2	19.7	--	--
			Airside Ps (kPa)		0.01	0.01	0.02	0.03	0.05	0.06	--	--

Heating capacity data in tables assume an entering water temperature (EWT) of 82°C, and an entering air temperature (EAT) of 18°C, which corresponds to a temperature difference of 64°C. Smaller temperature differences will result in a decrease of heating capacity. To obtain the heating capacity at another temperature difference, refer to the hot water coil notes located in the Reference Section.

FCL-600
AIR TERMINALS ACCESSORIES AND COMPONENTS
OPTIONAL ELECTRONIC ANTI-REVERSE ROTATION DEVICE

The fan wheel in a constant fan box may rotate backward whenever the fan motor is not running and primary air from the inlet duct is passing through the fan. In some cases the torque developed by the fan wheel when rotating backward cannot be overcome by the starting torque of the fan motor. In this condition the fan motor will run in reverse rotation, resulting in insufficient airflow delivery.



Constant fan boxes must have means to coordinate energizing the fan motor with start up of the Primary Fan System to prevent the reverse rotation or a positive method to create enough motor torque to reverse the rotation of the fan wheel.

Other manufacturers choose to deal with this issue by running their motors with larger capacitors than recommended by the motor manufacturer. The oversized capacitor will cause the motor to run less efficiently, run hotter than normal and draw more current than with a proper capacitor. All of this will result in reduced motor life and increased energy costs.

METALAIRE'S Model FCL-600 is available with an optional Electronic Anti-Reverse Rotation Device which will positively prevent the reverse rotation of any fan. This option does not draw additional current while running and will not cause the motor to run at higher temperatures.

The results are greater efficiency, quieter motors, longer motor life and happier building owners.

FCL-600 APPROXIMATE SHIPPING WEIGHTS

Case	FCL
2	118 lbs.
4	197 lbs.

FCL-600 FILTER SIZES PER CASE SIZE

Case Size	Filter Dimensions
2	10" x 12"
4	10" x 12" quantity 2

Filters are mounted on the fan induction and are available in 1" or 2" thickness.

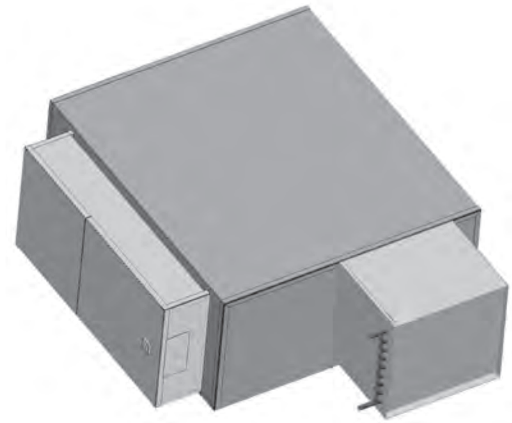
FCL-600
ACCESSORIES AND COMPONENTS
HOT WATER COILS

When ordered with the air terminal, the hot water coil is shipped attached to the discharge of the terminal casing. The discharge end of the casing has slip and drive connections for easy connection to downstream ductwork. The hot water coil is constructed of aluminum fin and copper serpentine-type tubes with male sweat connections tested at 300 psig.

Coil selection can be made using METALAIRE's Air Terminal Unit Selection Software. Contact your representative for a copy. In the interest of energy conservation and due to the possibility of condensation, all hot water coils are marked "Coil must be externally insulated after installation in the field." Hot water coils are tested in accordance with AHRI Standards 410. Hot water coils may be ordered with optional access doors for inspection and cleaning to meet requirements of ASHRAE Standard 62.1.

HOT WATER COIL CONSTRUCTION DETAILS

- Hot Water Coils are factory mounted to the discharge of the terminal and are available with an optional factory mounted discharge plenum section with access door.
- Hot water coils are enclosed in a 20 gauge coated steel casing allowing for attachment to metal ductwork with a slip and drive connection.
- Fins are rippled and sine wave type constructed from heavy gauge aluminum and are mechanically bonded to the tubes.
- Tubes are copper with a minimum wall thickness of 0.016" with male solder header connections.
- Coils are leak tested to 300 psi with minimum burst of 2000 psi at ambient temperature. Coil performance data is based on tests run in accordance with AHRI standard 410. Coils are AHRI certified and include an AHRI label.



Tubing Connections		
	Standard HW Coil Inches (mm)	
Case Size	1 Row	2 Row
2	7/8 (22)	7/8 (22)
4	7/8 (22)	7/8 (22)

All coils have 10 fins per inch

Outlet Dimensions		
	Standard HW Coil Inches (mm)	
Case Size	H	W
2	10.125 (233)	22 (550)
4	10.125 (233)	33 (825)

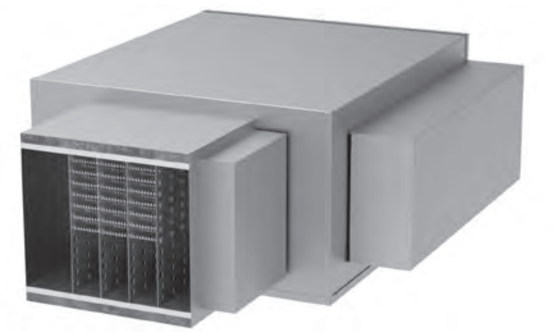
All accessories which can be attached to the Series Fan Boxes are not a part of the AHRI certification program but ratings can be affected by their use.

FCL-600
ACCESSORIES AND COMPONENTS
ELECTRIC HEAT

Electric heater elements, as illustrated on this page, are integral to the air terminal. The discharge end has slip and drive connections for easy connection to downstream ductwork. ETL® listed heaters are provided with a fan interlock relay. Heaters that will be controlled electronically must include a 24 VAC control circuit to operate with the low voltage controls on the air terminal. Heater plenums are internally insulated. When an air terminal is ordered with clean room lining and electric heat, the heater plenum is either internally lined with optional foil backed insulation or closed cell foam or may require external insulation in field.

INCLUDED WITH EACH HEATER ASSEMBLY:

- Heater and cabinet mounted on the discharge of the FCL-600
- Electric Heater is interlocked into fan control relay
- De-energizing magnetic contactors per step
- Primary automatic reset high temperature limit (disc type)
- Backup manual reset high temperature limit (disc type)
- Non-fused transformer with voltage to match Heater voltage
- Single point power wiring connection
- Heater is shipped factory mounted and wired



ELECTRIC HEATER ASSEMBLY CONSTRUCTION DETAILS

- Electric Reheat Coils are factory mounted on the discharge of the Air Terminal. The heaters are ETL® listed for zero clearance, are tested in accordance with UL® Standard 1995, CSA-C22.2 No. 236 and the National Electric Code (NEC). Heater casings are constructed of heavy-duty zinc-coated steel. Element wire is high grade nichrome alloy derated to 45 watts per square inch density. Element wire is supported by moisture-resistant steatite ceramics.
- Ceramics are enclosed in reinforcement brackets spaced across the heater element rack at 2" to 4" intervals. Controls are contained in a NEMA 1 control cabinet with a hinged, latching door. A permanent wiring diagram is affixed to the inside of the control cabinet door for field reference.
- The 208 and 480 volt units require a neutral connection for both single and three phase service. Our standard motors are 120 and 277 volt single phase. The 208-240 volt single phase motor is optional. 480 volt motors are not available for our units. See table for reference.

Heater Voltage	Motor Voltage	Separate Neutral Required
120 V 1PH	120 V 1PH	NO
208 V 1PH	120 V 1PH	YES
277 V 1PH	277 V 1PH	NO
480 V 1PH	277 V 1PH	YES
208 V 1PH	208 V 1PH	NO
208 V 3PH	120 V 1PH	YES
480 V 3PH	277 V 1PH	YES
208 V 3PH	208 V 1PH	NO

All accessories which can be attached to the Series Fan Boxes are not a part of the AHRI certification program but ratings can be affected by their use.

FCL-600
ELECTRIC HEATER CAPACITIES

Single Phase FCQ kW Limits				
Unit Size	Heater Voltage	Min. kW Step	Max. kW	Max. Steps
2	120	0.5	5.0	3
2	208	0.5	8.0	3
2	240	0.5	8.0	3
2	277	0.5	8.0	3
2	480	0.5	8.0	3
4	120	0.5	5.0	3
4	208	0.5	8.5	3
4	240	0.5	10.0	3
4	277	0.5	11.0	3
4	480	0.5	15.0	3

Three Phase FCQ kW Limits				
Unit Size	Heater Voltage	Min. kW Step	Max. kW	Max. Steps
2	208	0.5	8.0	3
2	240	0.5	8.0	3
2	480	0.5	8.0	3
4	208	1.5	13.0	3
4	240	1.5	15.0	3
4	480	1.5	15.0	3

NOTES:

1. *Heaters less than 5 kW are specifiable to the nearest 0.2 kW. Heaters greater than 5 kW and less than 10.0 kW are specifiable to nearest 0.5 kW. Heaters greater than 10.0 kW are specifiable to nearest 1.0 kW.*
2. *Minimum flow rate for electric heat is 70 CFM/kW. Lower CFM's can cause nuisance tripping, excessive discharge temperatures, rapid cycling, and rapid element failure. Electric Heat units running below 70 CFM/kW will void all warranties.*
3. *For optimum thermal comfort, the suggested discharge temperature should not exceed 20°F above room set point.*
4. *We do not recommend discharge temperatures in excess of 115°F to protect heater coils.*
5. *Maximum number of steps at minimum kW is one step.*
6. *If more than 1 heater is wired into a building's circuit breaker (multi-outlet branch circuit), each heater will require the addition of power side fusing.*

ELECTRIC HEAT SELECTION:

A. Specify electric duct heaters using voltage, kW, and number of steps.

B. Use above chart to select voltage. Calculate required kW using following equations:

$$kW = \frac{BTU / HR}{3413} \qquad kW = \frac{CFM \times \Delta \times 1.085}{3413} \qquad \Delta = \frac{kW \times 3413}{CFM \times 1.085}$$

$$CFM = \frac{kW \times 3413}{\Delta \times 1.085} \qquad CFM = \frac{kW \times 3413}{\Delta \times 1.085}$$

** air density at sea level—reduce by 0.036 for each 1000 feet of altitude above sea level*

Where: BTU / Hr = Required heating capacity

CFM = volume of air during heating. Typically 100% of maximum cooling air volume

Δ = desired air temperature rise across the electric heater

Inlet air temperature = primary air temperature, usually 55°F

FCL-600
CONTROL SEQUENCE OFFERINGS

PPD–PRESSURE DEPENDENT

- 910 DA/NC Full Closed
- 912 RA/NO Full Open

PPI–PNEUMATIC PRESSURE INDEPENDENT

- 914 DA/NC
- 915 DA/NO
- 916 RA/NC
- 917 RA/NO

ANALOG ELECTRONIC

- 960 Cooling Only
- 961 Cooling with Heat
- 964 Night Shutdown/Morning Warm-up
- 965 Heating/Cooling Changeover

DIRECT DIGITAL

LON WORKS

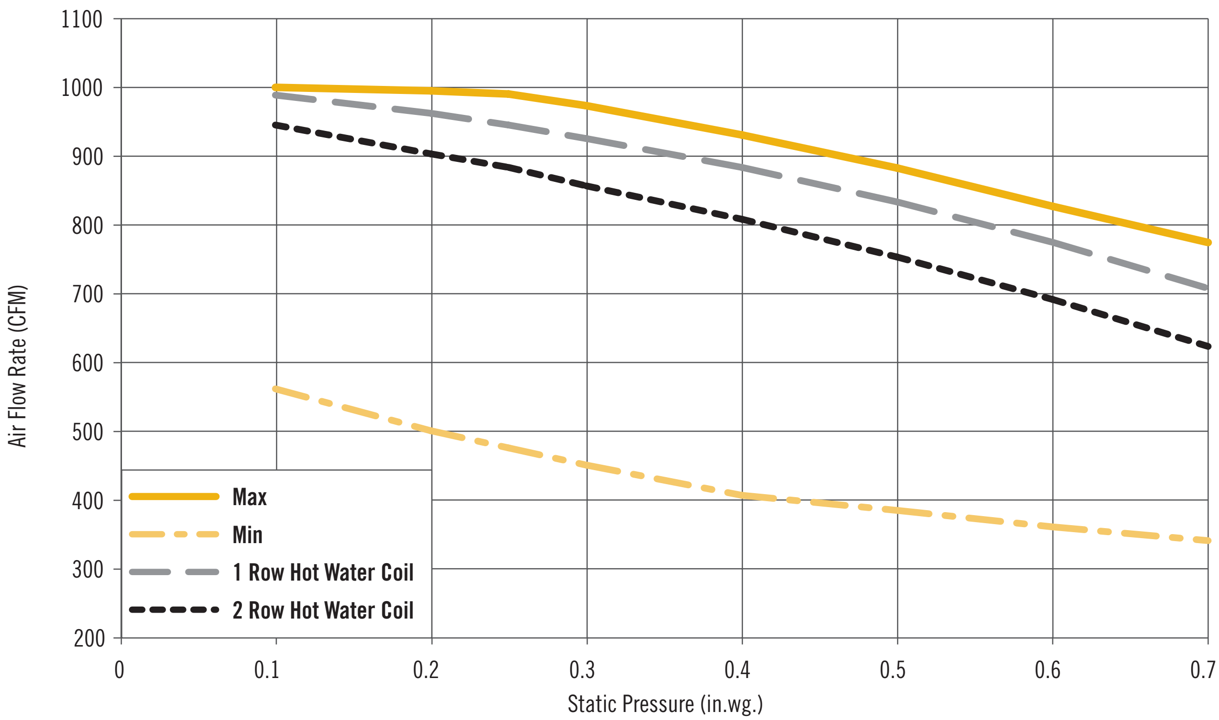
- 990 Constant Fan – No Auxiliary Heating
- 993-1 Constant Fan with 1 Stage of Electric Heat
- 994 Constant Fan–No Auxiliary Heating
- 996 Constant Fan–Modulating Floating Control–Hot Water Heat
- 997-1 Constant Fan with 1 Stage of Electric Heat
- 997-2 Constant Fan with 2 Stages of Electric Heat

BACnet

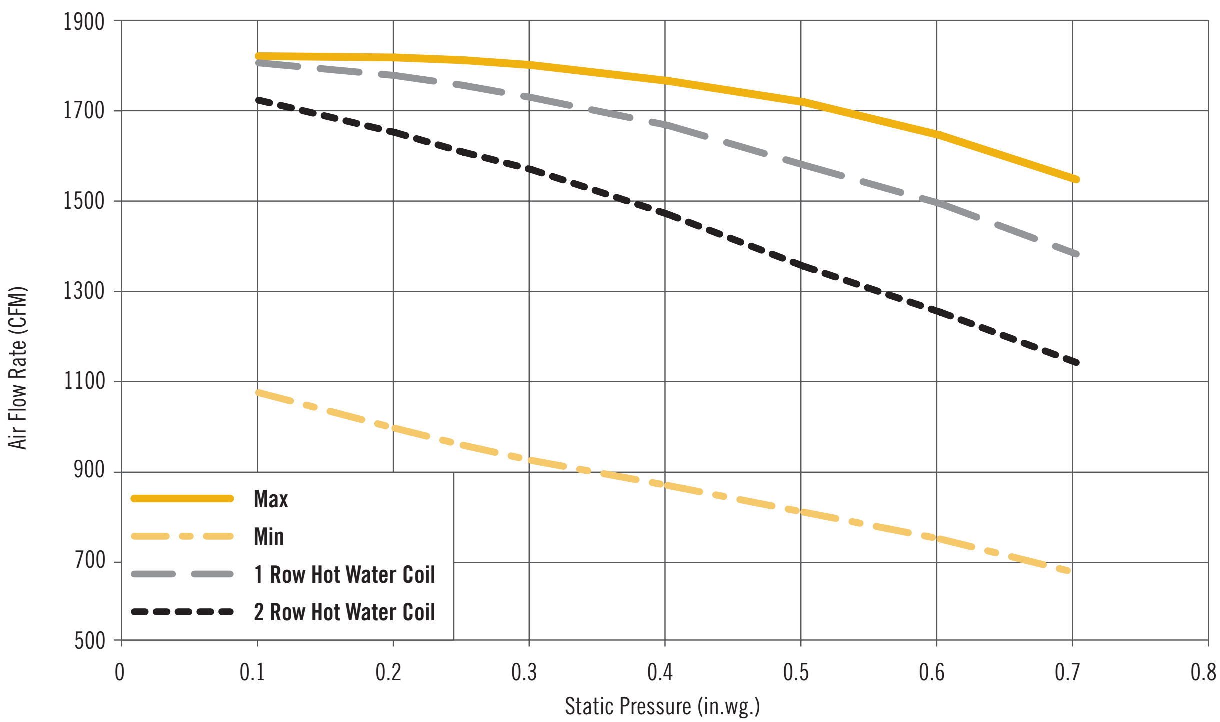
- 980 Constant Fan – No Auxiliary Heating
- 982 Constant Fan–Modulating Floating Control–Hot Water Heat
- 983-1 Constant Fan with 1 Stage of Electric Heat
- 983-2 Constant Fan with 2 Stages of Electric Heat
- 983-3 Constant Fan with 3 Stages of Electric Heat

Refer to Reference Section for complete description.

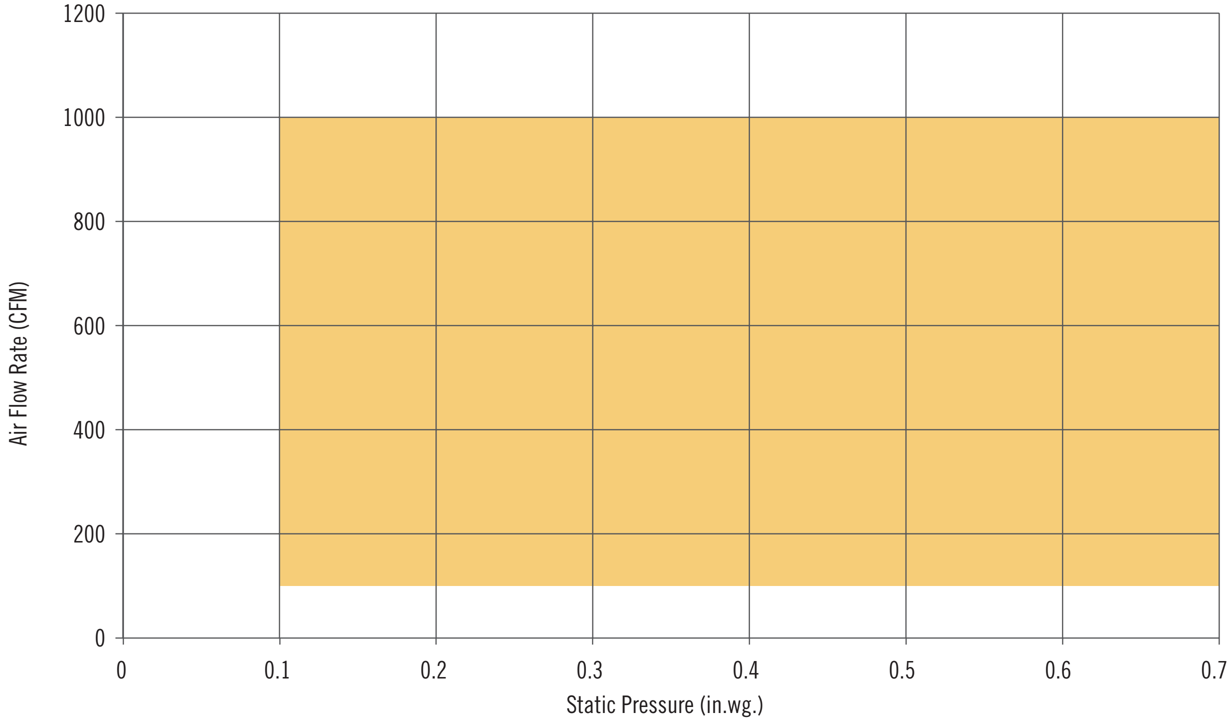
FCL-600 FAN PERFORMANCE CURVES
CASE 2



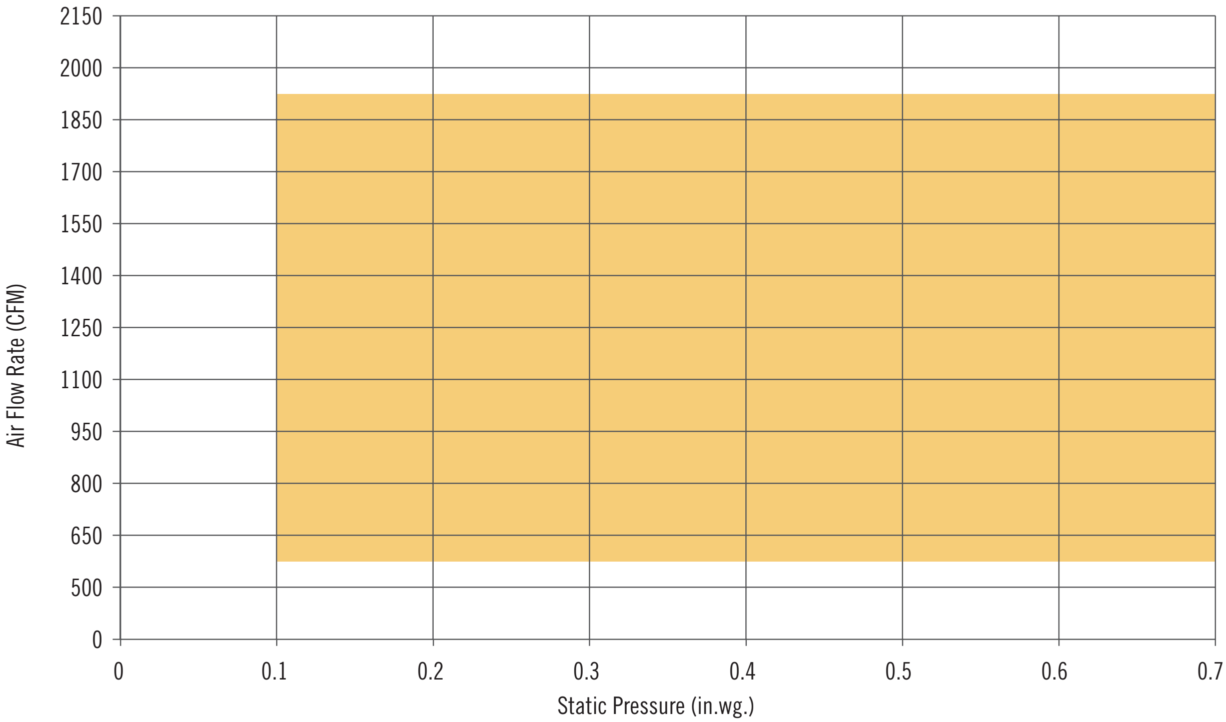
FCL-600 FAN PERFORMANCE CURVES
CASE 4



FCL-600 ECM FAN PERFORMANCE CURVES
CASE 2



FCL-600 ECM FAN PERFORMANCE CURVES
CASE 4



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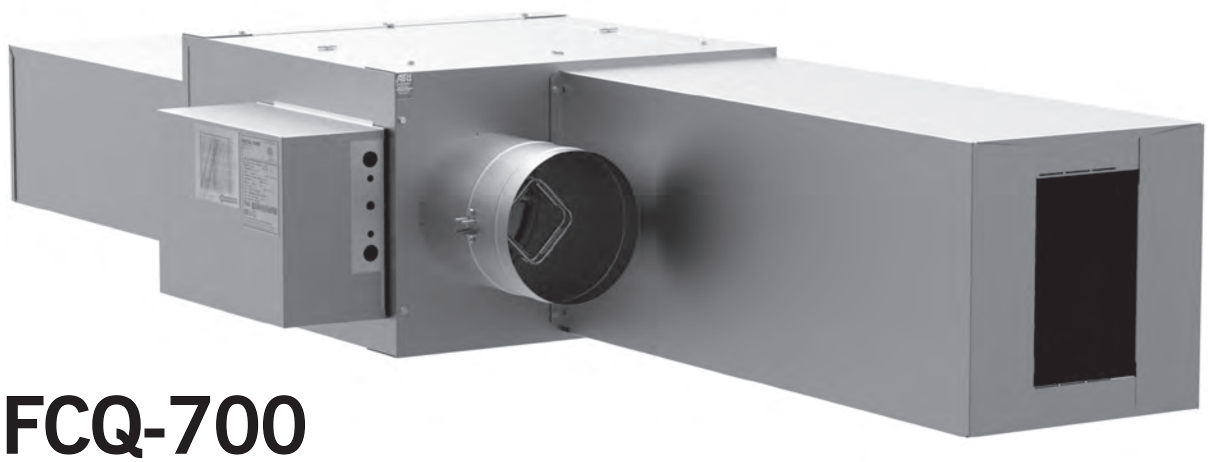
AHRI Standard 880

U.S. GREEN BUILDING COUNCIL MEMBER



FCQ-700
ULTRA QUIET FAN TERMINAL UNIT

SPECIFIABLE FEATURES

- Rigid construction to mitigate vibration
- Minimal clearance NEMA 1 rated control enclosure
- Units can be rotated in the field for left/right hand installation
- Single speed high efficiency PSC motor with SCR motor speed control
- Energy saving case design allows for less seams for very low leakage
- Tuned inlet and outlet attenuators
- The quietest box available

INDEX OF SECTIONS

ULTRA QUIET SERIES FAN TERMINAL UNIT

The new FCQ quiet series fan-powered ATU has been engineered to provide noise levels that are the best in the business. All six models of the FCQ product line include exclusively tuned inlet and outlet attenuators. The FCQ includes an internal flow-dispersion screen designed specifically to provide low-frequency acoustic conversion. The FCQ attenuators add to the overall length, not width, providing easier installation and access.

The FCQ is constructed from rigid galvanized steel designed to mitigate vibration and increase rigidity. The unique Energy Saving 4-piece case construction allows fewer seams for low leakage. Every FCQ includes top and bottom rigid access panels. This feature allows units to be rotated, eliminating left-hand/right-hand (LH/RH) issues in the field. These simple-to-remove panels use quarter-turn latches to allow trouble-free maintenance and access to the critical internal components.

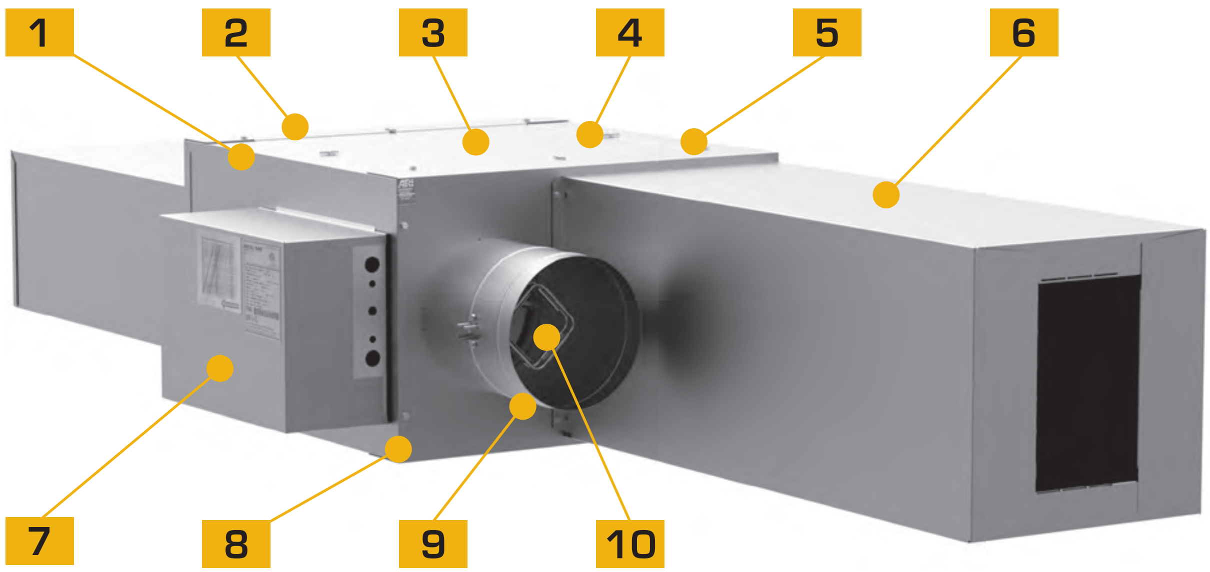
FCQ units include 1" thick, matte faced fiberglass insulation that complies with UL 181 horizontal burn test, NFPA 90 and UL 723/ASTM E 84 flame spread and smoke developed ratings of 25/50. Optional insulations include metal-foil-faced and fiber- and erosion-free ThermoPure (closed-cell foam),

High efficiency single phase, single speed permanent split capacitor (PSC) motors are standard in the FCQ product line. Available voltages of 120, 277, and 208-240 volts (50/60 Hz) allows for every possible situation, and all motors come with a solid state SCR motor speed controller to adjust fan speed.

Optional electronically commutated motors (ECM) are available to increase energy savings further. Up to 75% energy savings is typical with the ECM option.

No detail was overlooked. A new optional control panel was developed for the FCQ to allow critical component access with minimal clearance. This unique control panel utilizes a sliding door with integral backstop. Simply slide it open for maintenance or access.

METALAIRE™

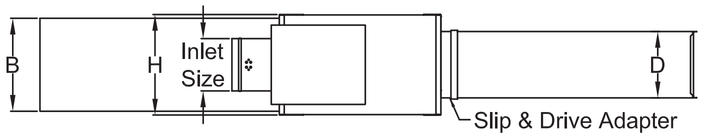


FCQ-700
ULTRA QUIET SERIES FAN TERMINAL UNIT

FEATURES AND BENEFITS

1. Energy saving case design allows fewer seams for very low leakage.
2. Single speed high efficiency PSC motor with SCR motor speed control.
3. Top and bottom motor/blower access panels with ¼ turn fasteners for easy removal and installation.
4. 1" thick matt faced fiberglass insulation that complies with UL 181, NFPA 90 and UL7 23/ASTME 84. Capped to prevent delaminating.
5. Unit can be rotated in field for left hand or right hand installation.
6. Unit includes exclusively tuned inlet and discharge attenuators.
7. Minimal clearance NEMA 1 rated control enclosure.
8. Constructed with galvanized steel casing to help mitigate vibration.
9. Continuous welded galvanized steel primary inlet valve for leak proof and rigid design.
10. Multi point quadrant averaging all metal inlet flow sensor capable of maintaining ±5% accuracy with varying inlet duct conditions.

FCQ-700
ULTRA QUIET SERIES FAN POWERED AIR TERMINAL UNIT
COOLING ONLY



Side View Typical For All Sizes

The standard location for control enclosure is Left Hand on Model FCQ. Looking in the direction of airflow, the control enclosure is on the left.

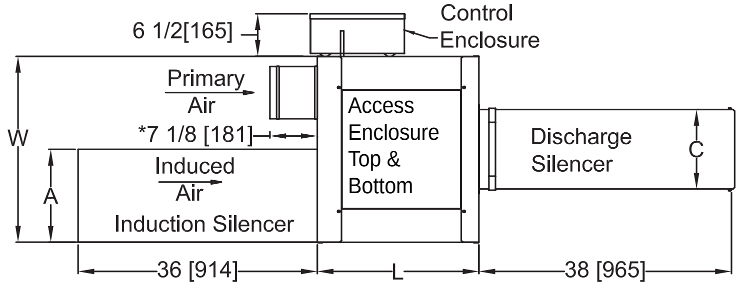
The Discharge Silencer is centered on H and W dimensions

*Inlet Duct extends 12" on sizes 4&5

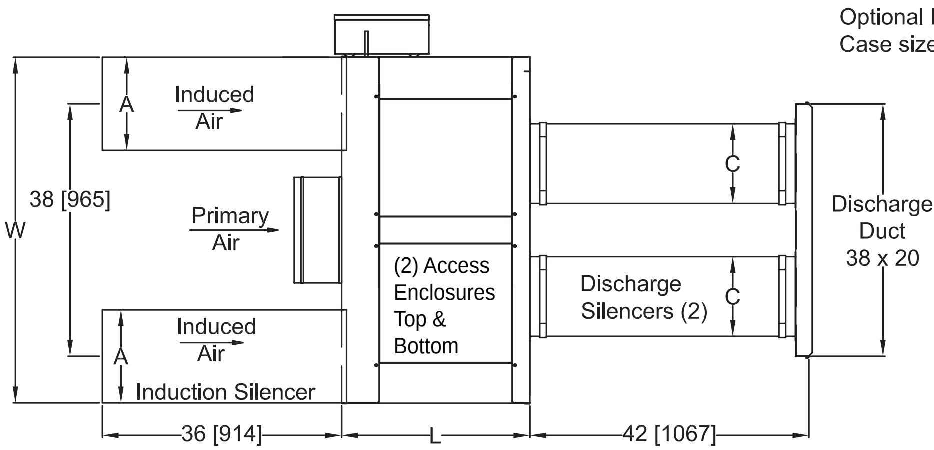
Top & Bottom Mounted Access Enclosures Allow Unit To Be Hung LH or RH

The Induction and Discharge Silencers are shipped loose. A Slip & Drive Adapter(s) is provided and mounted for field connection of the Discharge Silencer(s).

Optional ECM Motor available on Case sizes 2,3,4&6



Top View Typical For Case Sizes 2 - 5

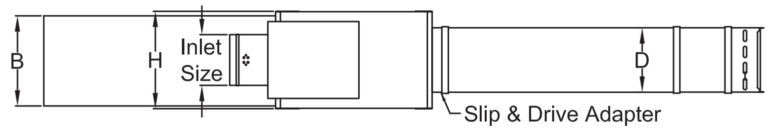


Top View Typical For Case Sizes 6&7

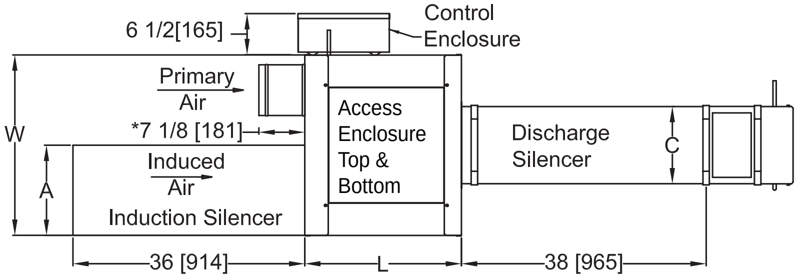
Case size	Inlet Size		Horsepower		Unit Dimensions			Induction Silencer		Discharge Silencer	
	Standard	Optional	Standard PSC	ECM	Height H	Width W	Length L	Width A	Height B	Width C	Height D
2	8 (203)	4,5,6	1/8	1/3	15	25	24	14	14	12	10
3	10 (254)	4,5,6,8	1/4	1/2	18	29	28	16	18	14	12 1/2
4	12 (305)	6,8,10	1/3	1	18	32 1/2	28	18	18	16	15
5	14 (356)	8,10,12	1/3	NA	18	32 1/2	28	18	18	16	15
6	16 (406)	10,12,14	1/3(2)	1/2(2)	18	52	30	16	18	16	15
7	18x16 (457x406)	12,14,16	3/4(2)	NA	20	52	30	16	20	16	15

METALAIRE™

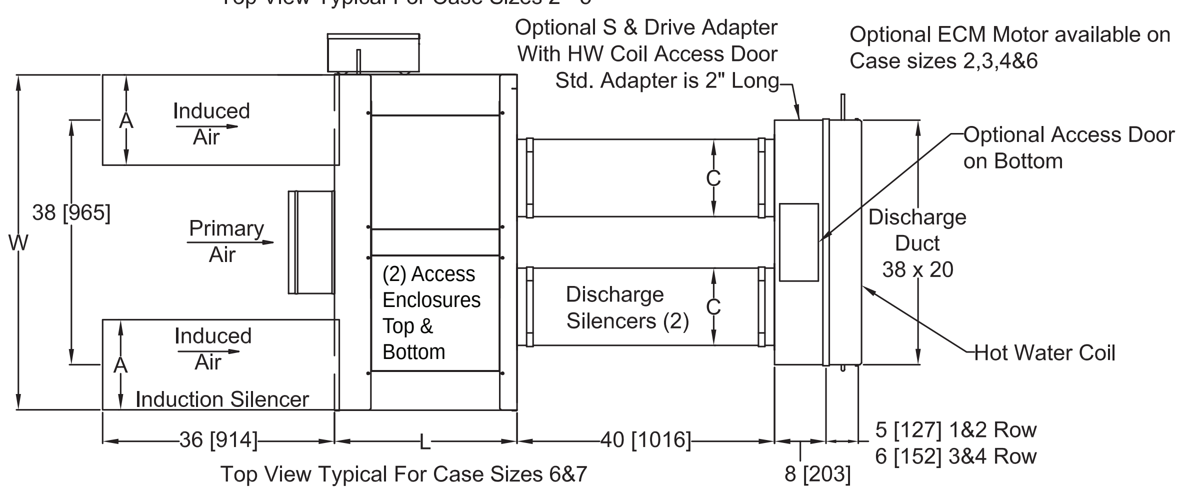
FCQ-700
ULTRA QUIET SERIES FAN POWERED AIR TERMINAL UNIT WITH HOT WATER COIL



Side View Typical For All Sizes



Top View Typical For Case Sizes 2 - 5



Top View Typical For Case Sizes 6&7

The standard location for control enclosure is Left Hand on Model FCQ. Looking in the direction of airflow, the control enclosure is on the left.

The Discharge Silencer is centered on H and W dimensions

*Inlet Duct extends 12" on sizes 4&5

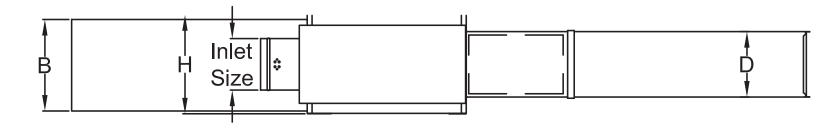
Top & Bottom Mounted Access Enclosures Allow Unit To Be Hung LH or RH

The Induction and Discharge Silencers are shipped loose. A Slip & Drive Adapter(s) is provided and mounted for field connection of the Discharge Silencer(s).

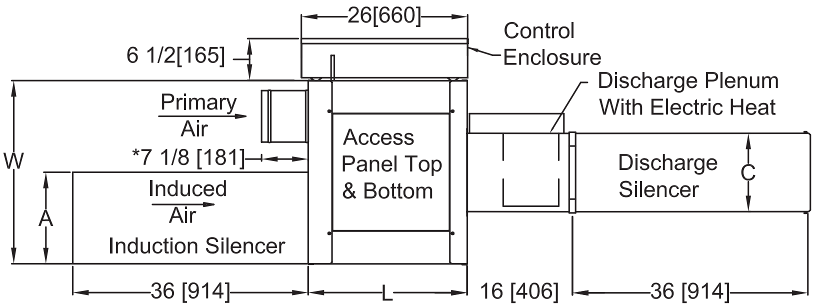
Optional ECM Motor available on Case sizes 2,3,4&6

Case size	Inlet Size		Horsepower		Unit Dimensions			Induction Silencer		Discharge Silencer	
	Standard	Optional	Standard PSC	ECM	Height H	Width W	Length L	Width A	Height B	Width C	Height D
2	8 (203)	4,5,6	1/8	1/3	15	25	24	14	14	12	10
3	10 (254)	4,5,6,8	1/4	1/2	18	29	28	16	18	14	12 1/2
4	12 (305)	6,8,10	1/3	1	18	32 1/2	28	18	18	16	15
5	14 (356)	8,10,12	1/3	NA	18	32 1/2	28	18	18	16	15
6	16 (406)	10,12,14	1/3(2)	1/2(2)	18	52	30	16	18	16	15
7	18x16 (457x406)	12,14,16	3/4(2)	NA	20	52	30	16	20	16	15

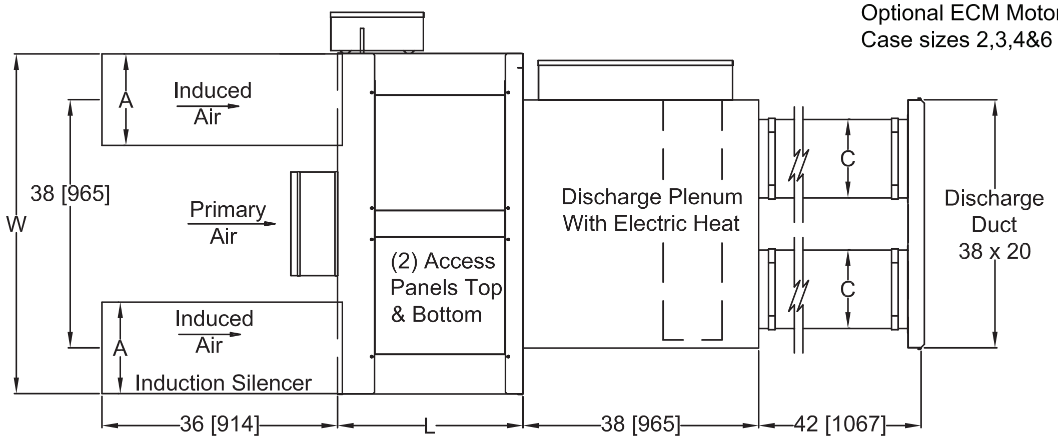
FCQ-700
ULTRA QUIET SERIES FAN POWERED AIR TERMINAL UNIT WITH ELECTRIC HEAT



Side View Typical For All Sizes



Top View Typical For Case Sizes 2 - 5



Top View Typical For Case Sizes 6&7

The standard location for control panel is Left Hand on Model FCQ. Looking in the direction of airflow, the control panel is on the left.

The Discharge Silencer is centered on H and W dimensions

*Inlet Duct is 12" on sizes 4&5

Top & Bottom Mounted Access Panels Allow Unit To Be Hung LH or RH

The Induction and Discharge Silencers are shipped loose. A Slip & Drive Adapter(s) is provided and mounted for field connection of the Discharge Silencer(s).

Optional ECM Motor available on Case sizes 2,3,4&6

Case size	Inlet Size		Horsepower		Unit Dimensions			Induction Silencer		Discharge Silencer	
	Standard	Optional	Standard PSC	ECM	Height W	Width W	Length L	Width A	Height B	Width C	Height D
2	8 (203)	4,5,6	1/8	1/3	15	25	24	14	14	12	10
3	10 (254)	4,5,6,8	1/4	1/2	18	29	28	16	18	14	12 1/2
4	12 (305)	6,8,10	1/3	1	18	32 1/2	28	18	18	16	15
5	14 (356)	8,10,12	1/3	NA	18	32 1/2	28	18	18	16	15
6	16 (406)	10,12,14	1/3(2)	1/2(2)	18	52	30	16	18	16	15
7	18x16 (457x406)	12,14,16	3/4(2)	NA	20	52	30	16	20	16	15

FCQ-700
AHRI CERTIFIED RATING POINTS

AHRI Certified Radiated Sound Power, Fan Only

Unit Size	Fan CFM	Octave Band						Electrical Power (Watts)
		2	3	4	5	6	7	
208	400	51	46	42	37	31	27	150
310	900	58	55	49	46	40	34	300
412	1400	62	55	48	46	42	40	680
514	1600	63	58	50	48	44	43	720
616	2500	67	60	54	53	50	48	1530
718	3000	69	63	57	53	49	47	1600

AHRI Certified Radiated Sound Power, Inlet Ps = 1.5 in.wg. Static Pressure

Unit Size	Fan CFM	Primary CFM	Min Ps	Octave Band					
				2	3	4	5	6	7
208	400	400	0.01	55	49	45	40	37	37
310	900	900	0.01	62	58	52	48	48	50
412	1400	1400	0.01	66	58	51	48	45	44
514	1600	1600	0.01	68	60	53	50	47	47
616	2500	2500	0.08	72	64	58	56	54	53
718	3000	3000	0.02	73	66	59	54	51	51

AHRI Certified Discharge Sound Power, Fan Only

Unit Size	Fan CFM	Octave Band						Electrical Power (Watts)
		2	3	4	5	6	7	
208	400	51	45	41	37	32	27	150
310	900	56	54	48	43	40	47	300
412	1400	61	58	53	49	47	54	680
514	1600	61	59	53	49	48	54	720
616	2500	64	61	49	48	45	51	1530
718	3000	62	62	53	48	47	55	1600

CERTIFICATIONS AND STANDARDS

- Units tested per ANSI/ASHRAE Standard 130.
- All model sizes certified in accordance with AHRI 880 certification program.
- ETL listed to meet requirements of UL 1995 and CSA 236.
- Dual-density fiberglass insulation meets UL 181 and NFPA 90A requirements.
- Insulation meets ASHRAE 62.1 requirements for resistance to mold growth and erosion.

AHRI CERTIFIED™
www.ahridirectory.org
VAV Terminals
AHRI Standard 880

FCQ-700
RADIATED SOUND POWER LEVEL at Fan Only, Inlet Ps = 0.50 and 0.75 in. wg.

Case	Inlet	CFM (L/s)		Min Ps in.wg. (Pa)		Fan Only Octave Band Sound Power, Lw, dB							Inlet Ps = 0.50 in. wg. (125 Pa) Octave Band Sound Power, Lw, dB							Inlet Ps = 0.75 in. wg. (187 Pa) Octave Band Sound Power, Lw, dB						
						2	3	4	5	6	7	NC	2	3	4	5	6	7	NC	2	3	4	5	6	7	NC
2	8	200	(94)	0.000	(0.0)	46	42	38	29	27	24	<15	47	43	39	30	29	27	<15	47	44	40	31	30	30	<15
		300	(142)	0.000	(0.0)	49	44	40	33	29	26	<15	50	45	41	34	30	28	<15	50	46	42	34	32	30	15
		400	(189)	0.005	(1.2)	51	46	42	37	31	27	15	52	47	43	38	33	30	17	53	48	44	39	34	32	18
		500	(236)	0.020	(5.0)	52	47	43	37	32	28	17	53	48	44	38	33	30	18	54	49	45	38	34	32	19
		600	(283)	0.040	(10.0)	53	49	44	37	33	30	18	54	50	45	37	34	32	19	55	50	46	38	35	33	20
		750	(354)	0.060	(14.9)	55	51	46	36	35	32	20	56	52	47	37	36	34	21	57	53	48	37	37	35	22
3	10	500	(236)	0.000	(0.0)	52	53	46	43	34	27	21	53	53	47	43	37	33	21	54	54	47	44	40	38	22
		700	(330)	0.005	(1.2)	55	54	48	44	37	31	22	56	55	49	45	40	36	24	57	55	49	45	42	41	24
		900	(425)	0.010	(2.5)	58	55	49	46	40	34	24	59	56	50	47	42	38	25	60	57	51	47	44	42	26
		1100	(519)	0.015	(3.7)	60	56	51	47	42	37	25	61	57	52	48	44	41	26	63	58	52	49	46	44	27
		1300	(614)	0.020	(5.0)	63	58	52	49	45	41	27	64	59	53	50	46	44	28	65	60	54	51	48	46	29
4	12	1000	(472)	0.000	(0.0)	60	51	44	43	39	37	22	60	52	45	44	40	38	22	61	54	47	45	41	40	23
		1200	(566)	0.005	(1.2)	61	53	46	44	40	38	23	62	54	47	45	41	39	25	63	55	48	46	42	41	26
		1400	(661)	0.010	(2.5)	62	55	48	46	42	40	25	63	56	49	47	43	41	26	64	57	50	47	44	42	27
		1600	(755)	0.015	(3.7)	63	58	50	48	44	43	27	64	59	51	49	45	44	28	66	59	52	49	46	45	30
		1800	(850)	0.020	(5.0)	65	60	52	50	46	45	29	66	61	53	51	47	46	31	67	61	54	52	48	48	31
5	14	1000	(472)	0.000	(0.0)	60	51	44	43	39	37	22	60	52	45	44	40	38	22	61	54	47	45	41	40	23
		1200	(566)	0.030	(7.5)	61	53	46	44	40	38	23	62	54	47	45	41	39	25	63	55	48	46	42	41	26
		1400	(661)	0.070	(17.4)	62	55	48	46	42	40	25	63	56	49	47	43	41	26	64	57	50	47	44	42	27
		1600	(755)	0.012	(3.0)	63	58	50	48	44	43	27	64	59	51	49	45	44	28	66	59	52	49	46	45	30
		1800	(850)	0.017	(4.2)	65	60	52	50	46	45	29	66	61	53	51	47	46	31	67	61	54	52	48	48	31
6	16	1500	(708)	0.039	(9.7)	64	55	47	44	39	35	27	65	57	49	45	40	37	29	65	58	50	47	42	39	29
		2000	(944)	0.061	(15.2)	67	58	50	47	44	40	31	68	59	51	48	45	42	32	69	61	53	49	46	43	34
		2500	(1180)	0.082	(20.5)	67	60	54	53	50	48	31	68	61	55	54	51	49	32	70	62	56	55	52	51	35
		3000	(1416)	0.105	(26.1)	70	63	57	56	53	51	35	71	64	58	57	54	52	36	73	65	59	58	55	54	39
		3300	(1557)	0.117	(29.1)	71	65	58	57	54	53	36	72	66	59	58	55	55	38	74	67	60	59	56	56	40
7	18 x 16	2000	(944)	0.005	(1.2)	69	58	52	47	42	38	34	69	59	53	48	43	41	34	69	60	53	48	45	44	34
		2500	(1180)	0.010	(2.5)	68	60	55	50	46	43	32	68	61	55	50	47	45	32	69	61	55	50	47	46	34
		3000	(1416)	0.015	(3.7)	69	63	57	53	49	47	34	70	64	58	53	50	48	35	71	65	58	54	50	49	36
		3500	(1652)	0.018	(4.5)	70	66	62	57	56	47	37	71	67	63	57	56	49	38	72	67	64	58	56	50	39
		4000	(1888)	0.020	(5.0)	72	68	65	59	57	48	41	73	69	66	59	57	50	42	75	70	66	60	58	51	42

1. *Performance data contained within a bold border outline are AHRI certified data.*
2. *Performance data not contained within a bold border outline are application ratings. Application ratings are outside the scope of the Certification Program.*
3. *Performance data is obtained from laboratory testing in accordance with AHRI 880-2011 and ANSI/ASHRAE 130-2008.*
4. *NC values are calculated using attenuation credits outlined in Appendix E of AHRI 885-2008.*
5. *Air terminal units were tested with an external static pressure of 0.25 in.wg.*
6. ***Discharge Sound power levels shown with End Reflection Corrections Included** in dB (ref: 10^{-12} watts).*
7. *Minimum Ps is the static pressure drop across the air terminal unit while the inlet damper is in the wide-open position at a given airflow rate, and the fan is on.*

FCQ-700
RADIATED SOUND POWER LEVEL at Fan Only, Inlet Ps = 1.0, 1.5 and 2.0 in. wg.

Case	Inlet	CFM (L/s)		Min Ps in.wg. (Pa)		Inlet Ps = 1.0 in. wg. (250 Pa) Octave Band Sound Power, Lw, dB 2	3	4	5	6	7	NC	Inlet Ps = 1.5 in. wg. (375 Pa) Octave Band Sound Power, Lw, dB 2	3	4	5	6	7	NC	Inlet Ps = 2.0 in. wg. (500 Pa) Octave Band Sound Power, Lw, dB 2	3	4	5	6	7	NC
2	8	200	(94)	0.000	(0.0)	48	45	41	32	32	33	<15	48	46	41	32	33	35	<15	50	48	43	34	35	37	17
		300	(142)	0.000	(0.0)	51	47	43	35	33	32	17	51	47	43	35	34	34	17	53	49	45	37	36	36	19
		400	(189)	0.005	(1.2)	54	49	45	40	36	35	19	55	49	45	40	37	37	19	57	51	47	42	39	39	21
		500	(236)	0.020	(5.0)	55	50	46	39	35	34	20	56	51	46	39	36	35	20	58	53	48	41	38	37	22
		600	(283)	0.040	(10.0)	56	51	47	38	36	35	21	57	51	47	38	36	36	21	59	53	49	40	38	38	23
		750	(354)	0.060	(14.9)	58	54	49	38	38	37	23	59	54	49	38	38	38	23	61	56	51	40	40	40	25
3	10	500	(236)	0.000	(0.0)	55	54	48	44	43	44	22	56	54	48	44	46	49	22	58	56	50	46	48	51	25
		700	(330)	0.005	(1.2)	58	56	50	46	45	46	25	59	56	50	46	47	50	25	61	58	52	48	49	52	27
		900	(425)	0.010	(2.5)	61	58	52	48	46	46	27	62	58	52	48	48	50	27	64	60	54	50	50	52	29
		1100	(519)	0.015	(3.7)	64	59	53	50	48	48	28	65	60	53	50	49	51	29	67	62	55	52	51	53	32
		1300	(614)	0.020	(5.0)	66	61	55	52	49	49	31	67	62	55	52	50	51	32	69	64	57	54	52	53	34
4	12	1000	(472)	0.000	(0.0)	61	55	48	46	42	41	24	61	56	49	47	43	42	25	61	56	49	47	45	43	25
		1200	(566)	0.005	(1.2)	64	56	49	47	43	42	27	64	57	50	47	44	43	27	64	58	50	48	46	45	27
		1400	(661)	0.010	(2.5)	65	58	51	48	45	43	29	66	58	51	48	45	44	30	68	60	51	50	46	46	32
		1600	(755)	0.015	(3.7)	67	60	53	50	47	46	31	68	60	53	50	47	47	32	69	62	53	52	48	48	34
		1800	(850)	0.020	(5.0)	68	62	55	53	49	49	32	69	62	55	53	49	50	34	70	64	55	54	50	51	35
5	14	1000	(472)	0.000	(0.0)	61	55	48	46	42	41	24	61	56	49	47	43	42	25	61	57	49	47	45	43	26
		1200	(566)	0.030	(7.5)	64	56	49	47	43	42	27	64	57	50	47	44	43	27	64	58	50	48	46	45	27
		1400	(661)	0.070	(17.4)	65	58	51	48	45	43	29	66	58	51	48	45	44	30	68	60	51	50	46	46	32
		1600	(755)	0.012	(3.0)	67	60	53	50	47	46	31	68	60	53	50	47	47	32	69	62	53	52	48	48	34
		1800	(850)	0.017	(4.2)	68	62	55	53	49	49	32	69	62	55	53	49	50	34	70	64	55	54	50	51	35
6	16	1500	(708)	0.039	(9.7)	66	60	52	48	43	41	30	66	61	53	49	44	42	31	67	62	54	50	45	43	25
		2000	(944)	0.061	(15.2)	70	62	54	50	47	45	35	70	63	55	51	48	46	35	72	64	56	52	50	47	38
		2500	(1180)	0.082	(20.5)	71	63	57	56	53	52	36	72	64	58	56	54	53	38	73	65	59	57	55	54	39
		3000	(1416)	0.105	(26.1)	74	66	60	59	56	55	40	75	67	61	59	57	56	41	76	68	62	60	58	58	43
		3300	(1557)	0.117	(29.1)	75	68	61	60	57	58	41	76	68	62	60	58	59	43	77	69	63	61	59	60	44
7	18 x 16	2000	(944)	0.005	(1.2)	69	61	54	49	46	47	34	70	61	54	49	47	49	35	70	62	55	50	49	50	35
		2500	(1180)	0.010	(2.5)	69	62	55	50	48	48	34	69	62	55	50	48	49	34	70	64	56	51	49	50	35
		3000	(1416)	0.015	(3.7)	72	66	59	54	51	50	38	73	66	59	54	51	51	39	74	67	60	55	52	52	40
		3500	(1652)	0.018	(4.5)	73	68	65	58	56	52	41	74	68	65	58	56	53	41	76	70	66	59	57	54	43
		4000	(1888)	0.020	(5.0)	76	71	67	60	58	53	43	77	71	67	60	58	54	44	78	72	69	62	59	56	45

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5. *Air terminal units were tested with an external static pressure of 0.25 in.wg.*
6. ***Discharge Sound power levels shown with End Reflection Corrections Included** in dB (ref: 10^{-12} watts).*
7. *Minimum Ps is the static pressure drop across the air terminal unit while the inlet damper is in the wide-open position at a given airflow rate, and the fan is on.*

FCQ-700
DISCHARGE SOUND POWER LEVEL at Fan Only, Inlet Ps = 0.50 and 0.75 in. wg.

						Fan Only							Inlet Ps = 0.50 in.wg. 125 Pa)							Inlet Ps = 0.75 in.wg. (187 Pa)						
						Octave Band Sound Power, Lw, dB							Octave Band Sound Power, Lw, dB							Octave Band Sound Power, Lw, dB						
Case	Inlet	CFM (L/s)		Min Ps in.wg. (Pa)		2	3	4	5	6	7	NC	2	3	4	5	6	7	NC	2	3	4	5	6	7	NC
2	8	200	(94)	0.000	(0.0)	46	41	37	33	28	23	<15	48	42	38	34	29	24	<15	49	43	38	34	30	25	<15
		300	(142)	0.000	(0.0)	49	43	39	35	30	25	<15	51	44	40	36	31	26	<15	52	45	40	36	32	27	<15
		400	(189)	0.005	(1.2)	51	45	41	37	32	27	<15	53	46	42	38	33	28	<15	54	47	42	38	34	29	<15
		500	(236)	0.020	(5.0)	52	46	42	38	34	28	<15	54	47	43	39	35	29	<15	55	48	44	40	36	30	<15
		600	(283)	0.040	(10.0)	54	48	43	40	35	30	<15	56	49	44	41	36	31	<15	57	50	45	42	37	32	<15
		750	(354)	0.060	(14.9)	56	50	45	42	38	32	<15	58	51	46	43	39	33	<15	59	52	47	44	40	34	<15
3	10	500	(236)	0.000	(0.0)	50	49	44	40	34	37	<15	52	51	45	41	35	38	<15	54	52	46	42	36	39	<15
		700	(330)	0.005	(1.2)	53	52	46	41	37	42	<15	55	54	47	42	38	43	<15	57	55	48	43	39	44	<15
		900	(425)	0.010	(2.5)	56	54	48	43	40	47	<15	58	56	49	44	41	48	<15	60	57	50	45	42	49	<15
		1100	(519)	0.015	(3.7)	58	56	51	44	42	51	15	60	58	52	45	43	52	16	62	59	53	46	44	53	17
		1300	(614)	0.020	(5.0)	61	58	53	45	45	55	19	63	60	54	46	46	56	20	65	61	55	47	47	57	21
4	12	1000	(472)	0.000	(0.0)	57	53	48	45	42	47	<15	58	53	48	45	42	47	<15	58	53	48	45	42	47	<15
		1200	(566)	0.005	(1.2)	59	56	50	47	44	50	<15	60	56	50	47	44	50	<15	60	56	50	47	44	50	<15
		1400	(661)	0.010	(2.5)	61	58	53	49	47	54	18	62	58	53	49	47	54	18	62	58	53	49	47	54	18
		1600	(755)	0.015	(3.7)	61	59	53	49	48	54	18	62	60	54	50	49	55	19	63	60	54	50	49	55	19
		1800	(850)	0.020	(5.0)	62	59	53	49	48	54	18	63	60	54	50	49	56	20	64	61	55	51	50	57	21
5	14	1000	(472)	0.000	(0.0)	57	53	48	45	42	47	<15	58	53	48	45	42	47	<15	58	53	48	45	42	47	<15
		1200	(566)	0.030	(7.5)	59	56	50	47	44	50	<15	60	56	50	47	44	50	<15	60	56	50	47	44	50	<15
		1400	(661)	0.070	(17.4)	61	58	53	49	47	54	18	62	58	53	49	47	54	18	62	58	53	49	47	54	18
		1600	(755)	0.012	(3.0)	61	59	53	49	48	54	18	62	60	54	50	49	55	19	63	60	54	50	49	55	19
		1800	(850)	0.017	(4.2)	62	59	53	49	48	54	18	63	60	54	50	49	56	20	64	61	55	51	50	57	21
6	16	1500	(708)	0.039	(9.7)	58	56	45	46	41	38	<15	60	58	46	47	42	39	<15	62	59	47	48	43	40	15
		2000	(944)	0.061	(15.2)	60	58	47	48	44	45	<15	62	60	48	49	45	46	16	64	61	49	50	46	47	18
		2500	(1180)	0.082	(20.5)	64	61	49	48	45	51	18	66	63	50	49	46	52	20	68	64	51	50	47	53	21
		3000	(1416)	0.105	(26.1)	65	63	53	50	49	56	20	67	65	54	51	50	57	22	69	66	55	52	51	58	24
		3300	(1557)	0.117	(29.1)	66	65	55	52	51	59	23	68	67	56	53	52	60	25	70	68	57	54	53	61	26
7	18 x 16	2000	(944)	0.005	(1.2)	56	57	47	44	41	47	<15	58	59	48	45	42	48	15	60	60	49	46	43	49	16
		2500	(1180)	0.010	(2.5)	60	60	50	46	45	52	16	62	62	51	47	46	53	19	64	63	52	48	47	54	20
		3000	(1416)	0.015	(3.7)	62	62	53	48	47	55	19	64	64	54	49	48	56	21	66	65	55	50	49	57	22
		3500	(1652)	0.018	(4.5)	64	62	54	50	50	58	22	66	64	55	51	51	59	23	68	65	56	52	52	60	24
		4000	(1888)	0.020	(5.0)	66	64	57	52	53	62	26	68	66	58	53	54	63	27	70	67	59	54	55	64	28

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5. *Air terminal units were tested with an external static pressure of 0.25 in.wg.*
6. ***Discharge Sound power levels shown with End Reflection Corrections Included** in dB (ref: 10^{-12} watts).*
7. *Minimum Ps is the static pressure drop across the air terminal unit while the inlet damper is in the wide-open position at a given airflow rate, and the fan is on.*

METALAIRE™

FCQ-700
DISCHARGE SOUND POWER LEVEL at Fan Only, Inlet Ps = 1.0, 1.50 and 2.0 in. wg.

Case	Inlet	CFM (L/s)		Min Ps in.wg. (Pa)		Inlet Ps = 1.0 in.wg. (250 Pa)							Inlet Ps = 1.5 in.wg. (275 Pa)							Inlet Ps = 2.0 in.wg. (500 Pa)						
						Octave Band Sound Power, Lw, dB							Octave Band Sound Power, Lw, dB							Octave Band Sound Power, Lw, dB						
						2	3	4	5	6	7	NC	2	3	4	5	6	7	NC	2	3	4	5	6	7	NC
2	8	200	(94)	0.000	(0.0)	51	44	39	35	31	26	<15	52	45	39	35	31	26	<15	54	47	41	37	33	28	<15
		300	(142)	0.000	(0.0)	53	46	41	37	33	28	<15	54	47	41	37	33	28	<15	56	49	43	39	35	30	<15
		400	(189)	0.005	(1.2)	56	48	43	39	35	30	<15	57	49	43	39	35	30	<15	59	51	45	41	37	32	<15
		500	(236)	0.020	(5.0)	57	49	45	41	37	31	<15	58	50	45	41	37	32	<15	60	52	47	43	39	34	<15
		600	(283)	0.040	(10.0)	59	51	46	43	38	33	<15	60	52	46	43	39	34	<15	62	54	48	45	41	36	<15
		750	(354)	0.060	(14.9)	61	53	48	45	41	35	<15	62	54	48	45	41	36	<15	64	56	50	47	43	38	<15
3	10	500	(236)	0.000	(0.0)	56	53	47	43	37	40	<15	57	54	47	43	38	41	<15	59	56	48	44	40	42	<15
		700	(330)	0.005	(1.2)	59	56	49	44	40	45	<15	60	57	49	44	41	46	<15	62	58	50	45	42	47	15
		900	(425)	0.010	(2.5)	62	58	51	46	43	50	<15	63	59	51	46	44	51	15	65	60	52	47	45	52	16
		1100	(519)	0.015	(3.7)	64	60	54	47	45	54	18	65	61	54	47	46	55	19	67	63	55	48	48	56	20
		1300	(614)	0.020	(5.0)	67	62	56	48	48	58	22	68	63	56	48	49	59	23	70	65	57	49	50	60	24
4	12	1000	(472)	0.000	(0.0)	58	53	48	45	42	47	<15	58	53	48	45	42	47	<15	58	53	48	45	43	47	<15
		1200	(566)	0.005	(1.2)	60	56	50	47	44	50	<15	60	56	50	47	45	50	<15	61	56	50	47	45	50	<15
		1400	(661)	0.010	(2.5)	63	58	54	49	47	54	18	63	58	54	49	47	54	18	64	59	55	49	47	54	18
		1600	(755)	0.015	(3.7)	64	60	54	50	49	56	20	64	60	54	50	49	56	20	65	61	55	51	50	57	21
		1800	(850)	0.020	(5.0)	65	62	56	52	51	58	22	65	62	57	53	52	59	23	67	63	58	53	53	60	24
5	14	1000	(472)	0.000	(0.0)	58	53	48	45	42	47	<15	58	53	48	45	42	47	<15	59	54	49	46	43	48	<15
		1200	(566)	0.030	(7.5)	60	56	50	47	44	50	<15	60	56	50	47	44	50	<15	61	56	50	47	44	52	16
		1400	(661)	0.070	(17.4)	63	58	53	49	47	54	18	63	58	54	49	47	54	18	64	59	55	49	47	54	18
		1600	(755)	0.012	(3.0)	64	60	54	50	49	56	20	64	60	54	50	49	56	20	65	61	55	51	50	57	21
		1800	(850)	0.017	(4.2)	65	62	56	52	51	58	22	65	62	57	53	52	59	23	67	63	58	53	53	60	24
6	16	1500	(708)	0.039	(9.7)	64	60	48	49	44	41	16	65	61	48	49	45	42	18	67	63	49	50	46	43	20
		2000	(944)	0.061	(15.2)	66	62	50	51	47	48	19	67	63	50	51	48	49	20	69	65	51	52	49	50	22
		2500	(1180)	0.082	(20.5)	70	65	52	51	48	54	22	71	66	52	51	49	55	24	73	68	53	52	50	56	26
		3000	(1416)	0.105	(26.1)	71	67	56	53	52	59	25	72	68	56	53	53	60	26	74	70	57	54	54	61	28
		3300	(1557)	0.117	(29.1)	72	69	58	55	54	62	27	73	70	58	55	55	63	28	75	72	59	56	56	64	31
7	18 x 16	2000	(944)	0.005	(1.2)	62	61	50	47	44	50	18	63	62	50	47	45	51	19	66	64	51	48	47	52	21
		2500	(1180)	0.010	(2.5)	66	64	53	49	48	55	21	67	65	53	49	49	56	22	69	66	54	50	50	58	24
		3000	(1416)	0.015	(3.7)	68	66	56	51	50	58	24	69	67	56	51	51	59	25	71	68	57	52	53	60	26
		3500	(1652)	0.018	(4.5)	70	66	57	53	53	61	25	71	67	57	53	54	62	26	73	69	58	54	55	63	27
		4000	(1888)	0.020	(5.0)	72	68	60	55	56	65	29	73	69	60	55	57	66	30	76	71	61	56	58	67	31

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5. *Air terminal units were tested with an external static pressure of 0.25 in.wg.*
6. ***Discharge Sound power levels shown with End Reflection Corrections Included** in dB (ref: 10^{-12} watts).*
7. *Minimum Ps is the static pressure drop across the air terminal unit while the inlet damper is in the wide-open position at a given airflow rate, and the fan is on.*

FCQ-700 ECM
RADIATED SOUND POWER LEVEL at Fan Only, Inlet Ps = 0.50 and 0.75 in. wg

Case	Inlet	CFM (L/s)		Min Ps in. wg (Pa)		Fan Only							Inlet Ps = 0.50 in. wg (125 Pa)							Inlet Ps = 0.75 in. wg (187 Pa)						
						Octave Band Sound Power, Lw, dB							Octave Band Sound Power, Lw, dB							Octave Band Sound Power, Lw, dB						
						2	3	4	5	6	7	NC	2	3	4	5	6	7	NC	2	3	4	5	6	7	NC
2	8	200	(94)	0.000	(0.0)	46	42	38	29	27	24	<15	46	43	39	30	29	27	<15	47	44	40	31	30	29	<15
		300	(142)	0.000	(0.0)	49	44	40	33	29	26	<15	49	45	41	34	30	28	<15	50	46	41	34	31	30	<15
		400	(189)	0.000	(0.0)	51	46	42	37	31	27	15	52	47	43	38	33	30	17	53	48	44	39	34	32	18
		500	(236)	0.020	(5.0)	52	47	43	37	32	28	17	53	48	44	37	33	30	18	54	49	45	38	34	32	19
		600	(283)	0.040	(10.0)	53	49	44	37	33	30	18	54	49	45	37	34	31	19	55	50	46	37	34	33	20
		750	(354)	0.060	(14.9)	55	51	46	36	35	32	20	56	52	47	37	36	34	21	57	52	48	37	36	35	22
		1000	(472)	0.100	(24.9)	57	53	47	40	36	33	21	58	53	48	40	37	34	22	59	53	50	40	37	36	24
3	10	200	(94)	0.000	(0.0)	50	50	45	41	32	24	19	51	51	45	42	35	30	19	52	51	45	42	38	36	19
		500	(236)	0.000	(0.0)	52	51	46	43	34	27	20	53	52	47	43	37	33	21	54	53	47	44	40	38	21
		700	(330)	0.005	(1.2)	55	53	48	44	37	31	22	56	54	48	45	39	35	22	57	55	49	45	42	40	24
		900	(425)	0.010	(2.5)	58	55	49	46	40	34	24	59	56	50	46	42	38	25	60	56	50	47	44	42	25
		1100	(519)	0.015	(3.7)	60	56	51	47	42	37	25	61	57	51	48	44	41	26	62	58	52	48	46	44	27
		1300	(614)	0.020	(5.0)	63	58	52	49	45	41	27	64	59	53	49	46	43	28	65	60	54	50	47	46	29
		1600	(755)	0.025	(6.2)	66	60	54	50	48	44	30	67	61	54	51	49	46	31	68	62	56	51	49	48	32
4	12	200	(94)	0.000	(0.0)	52	43	36	35	31	29	<15	53	44	38	36	32	30	<15	53	45	39	37	33	31	<15
		500	(236)	0.000	(0.0)	56	47	40	39	35	33	17	57	48	42	40	36	34	18	57	49	43	41	37	35	18
		1000	(472)	0.000	(0.0)	60	51	44	43	39	37	22	61	52	46	44	40	38	23	61	53	47	45	41	39	23
		1200	(566)	0.005	(1.2)	61	53	46	44	40	38	23	62	54	47	45	41	39	25	62	55	48	46	42	41	25
		1400	(661)	0.010	(2.5)	62	55	48	46	42	40	25	63	56	49	47	43	41	26	64	57	50	47	44	42	27
		1600	(755)	0.015	(3.7)	63	58	50	48	44	43	27	64	58	51	49	45	44	27	65	59	51	49	45	45	29
		1800	(850)	0.020	(5.0)	65	60	52	50	46	45	29	66	61	53	51	47	46	31	67	61	53	52	47	47	31
		2000	(944)	0.025	(6.2)	68	63	55	53	49	48	33	69	64	56	54	50	49	34	70	64	56	54	50	50	35
		2300	(1085)	0.030	(7.5)	71	66	58	56	52	51	37	72	67	59	57	53	52	38	73	67	59	57	53	53	39
6	16	500	(236)	0.004	(1.0)	61	50	42	37	32	27	23	61	51	43	38	33	29	23	61	53	45	39	34	30	23
		1000	(472)	0.021	(5.2)	63	53	45	41	36	31	26	63	54	46	42	37	33	26	64	56	47	43	38	34	27
		1500	(708)	0.039	(9.7)	64	55	47	44	39	35	27	64	56	48	45	40	37	27	65	58	50	46	41	38	29
		2000	(944)	0.061	(15.2)	67	58	50	47	44	40	31	68	59	51	48	45	41	32	69	60	52	49	46	43	34
		2500	(1180)	0.082	(20.5)	67	60	54	53	50	48	31	68	61	55	54	51	49	32	70	62	56	55	52	51	35
		3000	(1416)	0.105	(26.1)	70	63	57	56	53	51	35	71	64	58	57	54	52	36	73	65	59	58	55	54	39
		3300	(1557)	0.117	(29.1)	71	65	58	57	54	53	36	72	66	59	58	55	54	38	74	67	60	59	56	56	40

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6. ***Discharge Sound power levels shown with End Reflection Corrections Included** in dB (ref: 10^{-12} watts).*
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METALAIRE™

FCQ-700 ECM
RADIATED SOUND POWER LEVEL at Fan Only, Inlet Ps = 1.0, 1.5 and 2.0 in. wg.

Case	Inlet	CFM (L/s)		Min Ps in.wg. (Pa)		Inlet Ps = 1.0 in.wg. (250 Pa)							Inlet Ps = 1.5 in.wg. (375 Pa)							Inlet Ps = 2.0 in.wg. (500 Pa)						
						Octave Band Sound Power, Lw, dB						NC	Octave Band Sound Power, Lw, dB						NC	Octave Band Sound Power, Lw, dB						NC
						2	3	4	5	6	7		2	3	4	5	6	7		2	3	4	5	6	7	
2	8	200	(94)	0.000	(0.0)	47	45	40	31	32	32	<15	48	46	41	32	33	35	<15	50	48	43	34	35	37	17
		300	(142)	0.000	(0.0)	50	47	42	35	33	32	15	51	47	43	35	34	34	17	53	49	45	37	36	36	19
		400	(189)	0.000	(0.0)	54	48	44	39	36	35	18	55	49	45	40	37	37	19	57	51	47	42	39	39	21
		500	(236)	0.020	(5.0)	55	50	45	38	35	34	19	56	51	46	39	36	35	20	58	53	48	41	38	37	22
		600	(283)	0.040	(10.0)	56	51	46	38	35	34	20	57	51	47	38	36	36	21	59	53	49	40	38	38	23
		750	(354)	0.060	(14.9)	58	53	48	38	37	37	22	59	54	49	38	38	38	23	61	56	51	40	40	40	25
		1000	(472)	0.100	(24.9)	61	54	49	41	38	37	23	62	55	50	41	39	38	25	64	57	52	43	41	40	27
3	10	200	(94)	0.000	(0.0)	53	51	46	42	41	43	20	53	52	47	42	45	49	20	55	54	49	44	47	51	22
		500	(236)	0.000	(0.0)	55	53	48	44	43	44	22	56	54	48	44	46	49	22	58	56	50	46	48	51	25
		700	(330)	0.005	(1.2)	58	55	49	45	44	45	24	59	56	50	46	47	50	25	61	58	52	48	49	52	27
		900	(425)	0.010	(2.5)	61	57	51	47	46	46	26	62	58	52	48	48	50	27	64	60	54	50	50	52	29
		1100	(519)	0.015	(3.7)	63	59	53	49	47	47	28	65	60	53	50	49	51	29	67	62	55	52	51	53	32
		1300	(614)	0.020	(5.0)	66	61	54	51	49	49	31	67	62	55	52	50	51	32	69	64	57	54	52	53	34
		1600	(755)	0.025	(6.2)	69	63	56	53	50	50	34	70	64	57	54	51	52	35	72	66	59	56	53	54	38
4	12	200	(94)	0.000	(0.0)	53	47	40	38	34	33	<15	53	48	41	39	35	34	15	53	47	41	39	37	35	<15
		500	(236)	0.000	(0.0)	57	51	44	42	38	37	19	57	52	45	43	39	38	20	57	51	45	43	41	39	19
		1000	(472)	0.000	(0.0)	61	55	48	46	42	41	24	61	56	49	47	43	42	25	61	55	49	47	45	43	24
		1200	(566)	0.005	(1.2)	63	56	49	47	43	42	26	64	57	50	47	44	43	27	64	58	50	48	46	45	27
		1400	(661)	0.010	(2.5)	65	57	50	48	44	43	29	66	58	51	48	45	44	30	68	60	51	50	46	46	32
		1600	(755)	0.015	(3.7)	67	59	52	50	46	46	31	68	60	53	50	47	47	32	69	62	53	52	48	48	34
		1800	(850)	0.020	(5.0)	68	62	54	52	48	49	32	69	62	55	53	49	50	34	70	64	55	54	50	49	35
		2000	(944)	0.025	(6.2)	72	64	57	55	51	51	38	73	65	58	55	52	52	39	75	68	58	57	52	53	41
		2300	(1085)	0.030	(7.5)	75	67	60	58	54	54	41	76	68	61	58	55	55	43	78	71	61	60	55	56	45
6	16	500	(236)	0.004	(1.0)	61	55	46	42	36	32	24	62	57	48	43	37	34	26	63	58	49	44	39	34	27
		1000	(472)	0.021	(5.2)	64	57	49	45	40	36	27	64	59	51	46	41	38	28	66	60	52	47	43	39	30
		1500	(708)	0.039	(9.7)	65	59	51	48	43	40	29	66	61	53	49	44	42	31	67	62	54	50	45	43	24
		2000	(944)	0.061	(15.2)	70	62	54	50	47	44	35	70	63	55	51	48	46	35	72	64	56	52	50	47	38
		2500	(1180)	0.082	(20.5)	71	63	57	55	53	52	36	72	64	58	56	54	53	38	73	65	59	57	55	54	39
		3000	(1416)	0.105	(26.1)	74	66	60	58	56	55	40	75	67	61	59	57	56	41	76	68	62	60	58	58	43
		3300	(1557)	0.117	(29.1)	75	67	61	59	57	57	41	76	68	62	60	58	59	43	77	69	63	61	59	60	44

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4. *NC values are calculated using attenuation credits outlined in Appendix E of AHRI 885-2008.*
5. *Air terminal units were tested with an external static pressure of 0.25 in.wg.*
6. ***Discharge Sound power levels shown with End Reflection Corrections Included** in dB (ref: 10^{-12} watts).*
7. *Minimum Ps is the static pressure drop across the air terminal unit while the inlet damper is in the wide-open position at a given airflow rate, and the fan is on.*

FCQ-700 ECM
DISCHARGE SOUND POWER LEVEL at Fan Only, Inlet Ps = 0.50 and 0.75 in. wg.

Case	Inlet	CFM (L/s)		Min Ps in.wg. (Pa)		Fan Only: Octave Band Sound Power, Lw, dB							Inlet Ps = 0.50 in.wg. (125 Pa): Octave Band Sound Power, Lw, dB							Inlet Ps = 0.75 in.wg. (187 Pa): Octave Band Sound Power, Lw, dB						
						2	3	4	5	6	7	NC	2	3	4	5	6	7	NC	2	3	4	5	6	7	NC
2	8	200	(94)	0.000	(0.0)	53	44	38	33	28	23	<15	54	45	39	34	29	24	<15	56	46	39	34	30	25	<15
		300	(142)	0.000	(0.0)	56	46	40	35	30	25	<15	57	47	41	36	31	26	<15	58	48	41	36	31	27	<15
		400	(189)	0.000	(0.0)	58	48	42	37	32	27	<15	60	49	43	38	33	28	<15	61	50	43	38	33	29	<15
		500	(236)	0.020	(5.0)	59	49	43	38	34	28	<15	61	50	44	39	34	29	<15	62	51	44	40	35	30	<15
		600	(283)	0.040	(10.0)	61	51	44	40	35	30	<15	62	52	45	40	36	31	<15	64	53	46	41	37	32	16
		750	(354)	0.060	(14.9)	63	53	46	42	38	32	<15	64	53	46	42	38	32	<15	65	54	47	43	39	33	<15
		1000	(472)	0.100	(24.9)	65	54	47	44	40	34	<15	65	55	48	44	40	34	<15	66	55	48	44	40	34	16
3	10	200	(94)	0.000	(0.0)	53	49	42	39	32	35	<15	55	51	43	40	33	36	<15	56	52	44	41	34	36	<15
		500	(236)	0.000	(0.0)	55	51	45	40	34	37	<15	57	53	46	41	35	38	<15	58	54	46	42	36	39	<15
		700	(330)	0.005	(1.2)	58	54	47	41	37	42	<15	60	55	48	42	38	43	<15	61	56	49	43	39	44	<15
		900	(425)	0.010	(2.5)	61	56	49	43	40	47	<15	63	57	50	43	41	48	<15	65	58	51	44	42	49	<15
		1100	(519)	0.015	(3.7)	63	58	52	44	42	51	15	65	59	52	45	43	52	16	66	60	53	45	44	53	17
		1300	(614)	0.020	(5.0)	66	60	54	45	45	53	17	67	61	55	46	46	54	18	69	63	55	47	47	55	20
		1600	(755)	0.025	(6.2)	69	62	56	47	48	55	20	70	63	56	47	49	56	21	72	65	57	48	50	58	23
4	12	200	(94)	0.000	(0.0)	55	49	42	39	36	41	<15	54	47	40	38	34	39	<15	54	49	41	39	35	41	<15
		500	(236)	0.000	(0.0)	58	52	45	42	39	44	<15	57	50	43	41	37	42	<15	57	52	44	42	38	44	<15
		1000	(472)	0.000	(0.0)	61	55	48	45	42	47	<15	60	53	46	44	40	45	<15	60	55	47	45	41	47	<15
		1200	(566)	0.005	(1.2)	63	58	50	47	44	50	<15	63	58	50	47	44	50	<15	64	58	50	47	44	50	<15
		1400	(661)	0.010	(2.5)	65	60	53	49	47	54	18	66	59	51	48	46	53	17	66	60	52	48	47	54	18
		1600	(755)	0.015	(3.7)	65	61	53	49	48	54	18	66	61	53	50	48	55	19	67	61	53	50	48	55	19
		1800	(850)	0.020	(5.0)	66	61	53	49	48	54	18	67	62	56	52	51	58	22	67	62	55	51	50	57	21
		2000	(944)	0.025	(6.2)	69	65	57	53	52	55	22	71	66	59	55	54	59	24	71	66	58	54	53	59	24
		2300	(1085)	0.030	(7.5)	72	68	60	56	55	58	26	74	69	62	58	57	62	27	74	69	61	57	56	62	27
6	16	500	(236)	0.004	(1.0)	59	53	40	43	36	29	<15	60	54	41	44	37	30	<15	61	56	42	45	38	31	<15
		1000	(472)	0.021	(5.2)	61	55	42	45	39	34	<15	62	56	43	46	40	35	<15	63	58	44	47	41	36	<15
		1500	(708)	0.039	(9.7)	62	58	45	46	41	38	<15	63	59	46	47	42	39	15	64	61	47	48	43	40	18
		2000	(944)	0.061	(15.2)	64	60	47	48	44	45	16	66	61	48	49	45	46	18	68	63	49	50	46	47	20
		2500	(1180)	0.082	(20.5)	68	63	49	48	45	51	20	70	64	50	49	46	52	21	72	66	51	50	47	53	24
		3000	(1416)	0.105	(26.1)	69	65	53	50	49	56	22	71	66	54	51	50	57	24	73	68	55	52	51	58	26
		3300	(1557)	0.117	(29.1)	70	67	55	52	51	59	25	72	68	56	53	52	60	26	74	70	57	54	53	61	28

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5. *Air terminal units were tested with an external static pressure of 0.25 in.wg.*
6. ***Discharge Sound power levels shown with End Reflection Corrections Included** in dB (ref: 10^{-12} watts).*
7. *Minimum Ps is the static pressure drop across the air terminal unit while the inlet damper is in the wide-open position at a given airflow rate, and the fan is on.*

FCQ-700 ECM
DISCHARGE SOUND POWER LEVEL at Fan Only, Inlet Ps = 1.0, 1.5 and 2.0 in. wg.

Case	Inlet	CFM	(L/s)	Min Ps in.wg.	(Pa)	Inlet Ps = 1.0 in.wg. (250 Pa) Octave Band Sound Power, Lw, dB 2	3	4	5	6	7	NC	Inlet Ps = 1.5 in.wg. (375 Pa) Octave Band Sound Power, Lw, dB 2	3	4	5	6	7	NC	Inlet Ps = 2.0 in.wg. (500 Pa) Octave Band Sound Power, Lw, dB 2	3	4	5	6	7	NC
2	8	200	(94)	0.000	(0.0)	57	47	40	35	30	25	<15	59	48	40	35	31	26	<15	61	50	42	37	33	28	16
		300	(142)	0.000	(0.0)	60	49	42	37	32	27	<15	61	50	42	37	33	28	<15	63	52	44	39	35	30	<15
		400	(189)	0.000	(0.0)	63	51	44	39	34	29	<15	64	52	44	39	35	30	16	66	54	46	41	37	32	18
		500	(236)	0.020	(5.0)	64	52	45	40	36	31	16	65	53	46	41	37	32	17	67	55	48	43	39	34	20
		600	(283)	0.040	(10.0)	65	54	46	42	38	33	17	67	55	47	43	39	34	20	69	57	49	45	41	36	22
		750	(354)	0.060	(14.9)	66	55	47	43	39	34	16	67	55	48	44	40	35	17	69	57	50	46	42	37	20
		1000	(472)	0.100	(24.9)	66	55	48	45	41	35	16	67	56	49	45	41	35	17	69	58	51	47	43	37	20
3	10	200	(94)	0.100	(0.0)	58	53	44	41	35	36	<15	60	54	45	42	36	37	<15	62	56	46	43	37	38	17
		500	(236)	0.000	(0.0)	60	55	47	42	37	40	<15	62	56	48	43	38	41	<15	64	58	49	44	40	42	16
		700	(330)	0.000	(1.2)	63	57	49	44	40	45	<15	65	59	50	44	41	46	17	67	60	51	45	42	47	20
		900	(425)	0.005	(2.5)	66	59	52	45	43	50	16	68	61	52	46	44	51	18	70	62	53	47	45	52	21
		1100	(519)	0.010	(3.7)	68	62	54	46	45	54	19	70	63	55	47	46	55	21	72	65	56	48	48	56	23
		1300	(614)	0.015	(5.0)	71	64	56	47	48	58	22	73	65	57	48	49	59	25	75	67	58	49	50	60	27
		1600	(755)	0.020	(6.2)	74	66	58	49	51	63	27	76	67	59	50	52	64	29	78	69	60	51	53	65	31
4	12	200	(94)	0.000	(0.0)	59	51	43	41	36	42	<15	59	50	42	41	35	41	<15	58	49	41	39	33	40	<15
		500	(236)	0.000	(0.0)	61	53	45	43	39	44	<15	61	52	45	43	38	44	<15	60	52	44	42	37	44	<15
		1000	(472)	0.000	(0.0)	61	55	47	45	41	47	<15	62	55	47	45	41	47	<15	61	54	47	44	40	47	<15
		1200	(566)	0.005	(1.2)	64	57	49	46	44	50	<15	64	57	49	46	43	50	<15	65	58	49	46	43	50	<15
		1400	(661)	0.010	(2.5)	67	60	52	48	46	53	17	67	60	51	48	46	53	17	68	61	52	48	46	54	18
		1600	(755)	0.015	(3.7)	67	61	54	50	49	56	20	68	62	54	50	49	56	20	69	63	55	51	50	57	21
		1800	(850)	0.020	(5.0)	68	63	56	52	51	58	22	69	64	57	53	52	59	23	71	65	58	53	53	60	24
		2000	(944)	0.025	(6.2)	71	65	59	54	54	60	24	71	67	59	54	55	61	25	74	68	61	55	56	62	26
		2300	(1085)	0.030	(7.5)	74	68	62	57	57	63	27	74	70	62	57	58	64	28	77	71	64	58	59	65	30
6	16	500	(236)	0.004	(1.0)	64	57	42	45	39	32	16	66	58	43	46	40	33	18	68	60	44	47	41	34	21
		1000	(472)	0.021	(5.2)	66	59	44	47	42	37	16	68	60	45	48	43	38	18	70	62	46	49	44	39	21
		1500	(708)	0.039	(9.7)	67	62	47	48	44	41	19	69	63	48	49	45	42	20	71	65	49	50	46	43	22
		2000	(944)	0.061	(15.2)	69	64	49	50	47	48	21	71	65	50	51	48	49	22	73	67	51	52	49	50	25
		2500	(1180)	0.082	(20.5)	73	67	51	50	48	54	25	75	68	52	51	49	55	27	77	70	53	52	50	56	30
		3000	(1416)	0.105	(26.1)	74	69	55	52	52	59	27	76	70	56	53	53	60	29	78	72	57	54	54	61	31
		3300	(1557)	0.117	(29.1)	75	71	57	54	54	62	29	77	72	58	55	55	63	31	79	74	59	56	56	64	33

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FCQ-700
MOTOR AMPERAGE RATINGS

Case Size	Motor HP	Standard PSC Motor Amperage Ratings		
		115V-1 Phase 60 Hz Rated Amps	208-240V-1 Phase 60 Hz Rated Amps	277V-1 Phase 60 Hz Rated Amps
2	1/8	2.6	1.5	1.1
3	1/4	4.6	2.5	1.9
4	1/3	8.7	4.8	3.6
5	1/3	8.7	4.8	3.6
6	1/3 (Qty 2)	17.3	9.6	7.2
7	3/4 (Qty 2)	20.7	11.5	8.6

FCQ-700 ECM
MOTOR AMPERAGE RATINGS

Case Size	Motor HP	ECM Motor Amperage Ratings		
		115V-1 Phase 60 Hz Rated Amps	208-240V-1 Phase 60 Hz Rated Amps	277V-1 Phase 60 Hz Rated Amps
2	1/3	7.2	4.0	3.0
3	1/2	6.8	3.7	2.8
4	1	12.4	9.1	6.7
6	1/2 (Qty 2)	15.9	8.8	6.6

DAMPER LEAKAGE

Inlet Size	Damper Leakage, CFM		
	1.5" ΔPs	3.0" ΔPs	6.0" ΔPs
6	3	4	7
8	2	4	7
10	4	5	7
12	4	5	7
16	4	6	8

FCQ-700 MINIMUM PRESSURES

Unit Size	CFM	Unit ∆Ps (in. wg) [no coil]	Unit ∆Pt (in. wg) [no coil]	Unit + 1R Coil, ∆Ps (in. wg)	Unit + 1R Coil, ∆Pt (in. wg)	Unit + 2R Coil, ∆Ps (in. wg)	Unit + 2R Coil, ∆Pt (in. wg)
2	200	0.00	0.02	0.02	0.04	0.05	0.07
	300	0.00	0.04	0.04	0.08	0.10	0.14
	400	0.01	0.07	0.08	0.14	0.17	0.23
	500	0.02	0.13	0.13	0.24	0.25	0.36
	600	0.04	0.19	0.19	0.34	0.36	0.51
	750	0.06	0.30	0.28	0.52	0.52	0.76
3	500	0.00	0.04	0.06	0.10	0.12	0.16
	700	0.01	0.09	0.11	0.19	0.23	0.31
	900	0.01	0.15	0.16	0.30	0.34	0.48
	1100	0.02	0.22	0.24	0.44	0.48	0.68
	1300	0.02	0.30	0.31	0.59	0.63	0.91
4	1000	0.00	0.08	0.11	0.19	0.23	0.31
	1200	0.01	0.12	0.16	0.27	0.33	0.44
	1400	0.01	0.16	0.20	0.35	0.42	0.57
	1600	0.02	0.22	0.26	0.46	0.53	0.73
	1800	0.02	0.27	0.32	0.57	0.64	0.89
5	1400	0.01	0.09	0.11	0.19	0.23	0.31
	1600	0.01	0.12	0.14	0.25	0.28	0.39
	1800	0.03	0.17	0.18	0.32	0.36	0.50
	2000	0.04	0.22	0.23	0.41	0.43	0.61
	2200	0.08	0.29	0.30	0.51	0.54	0.75
6	1500	0.04	0.11	0.07	0.14	0.11	0.18
	2000	0.06	0.18	0.11	0.23	0.17	0.29
	2500	0.08	0.27	0.15	0.34	0.24	0.43
	3000	0.11	0.37	0.21	0.47	0.32	0.58
	3300	0.12	0.44	0.24	0.56	0.37	0.69
7	2000	0.01	0.12	0.06	0.17	0.12	0.23
	2500	0.01	0.20	0.08	0.27	0.17	0.36
	3000	0.02	0.28	0.12	0.38	0.23	0.49
	3500	0.02	0.38	0.15	0.51	0.29	0.65
	4000	0.02	0.50	0.18	0.66	0.36	0.84

FCQ-700 ECM MINIMUM PRESSURES

Unit Size	CFM	Unit ∆Ps (in. wg) [no coil]	Unit ∆Pt (in. wg) [no coil]	Unit + 1R Coil, ∆Ps (in. wg)	Unit + 1R Coil, ∆Pt (in. wg)	Unit + 2R Coil, ∆Ps (in. wg)	Unit + 2R Coil, ∆Pt (in. wg)
2	200	0.00	0.02	0.02	0.04	0.05	0.07
	300	0.00	0.04	0.04	0.08	0.10	0.14
	400	0.00	0.07	0.07	0.14	0.16	0.23
	500	0.02	0.13	0.13	0.24	0.25	0.36
	600	0.04	0.19	0.19	0.34	0.36	0.51
	1000	0.10	0.52	0.32	0.74	0.56	0.98
3	500	0.00	0.04	0.06	0.10	0.12	0.16
	700	0.01	0.09	0.11	0.19	0.23	0.31
	900	0.01	0.15	0.16	0.30	0.34	0.48
	1100	0.02	0.22	0.24	0.44	0.48	0.68
	1300	0.02	0.30	0.31	0.59	0.63	0.91
4	1000	0.00	0.08	0.11	0.19	0.23	0.31
	1200	0.01	0.12	0.16	0.27	0.33	0.44
	1400	0.01	0.16	0.20	0.35	0.42	0.57
	1600	0.02	0.22	0.26	0.46	0.53	0.73
	1800	0.02	0.27	0.32	0.57	0.64	0.89
6	1500	0.04	0.11	0.07	0.14	0.11	0.18
	2000	0.06	0.18	0.11	0.23	0.17	0.29
	2500	0.08	0.27	0.15	0.34	0.24	0.43
	3000	0.11	0.37	0.21	0.47	0.32	0.58
	3300	0.12	0.44	0.24	0.56	0.37	0.69

1. *∆Ps = static pressure drop; ∆Pt = total pressure drop.*
2. *Calculations of ∆Ps and ∆Pt were performed using standard air with a density of 0.075 lbm / cu.ft.*
3. *Data based on testing standard METALAIRE hot water coils per AHRI Standard 410.*
4. *Unit ∆Ps and Unit ∆Pt are pressure drops across the air terminal unit while the inlet damper is in the wide-open position*
5. *Data applies to air terminal units with hot water coil mounted on the discharge side.*

FCQ-700
HOT WATER COILS MBH SELECTION DATA – IMPERIAL UNITS

Imperial Units				MBH				
				CFM				
Unit Size	Rows	GPM	Head Loss (ft-H_2O)	200	400	500	600	750
2	One	1	0.64	8.9	12.1	13.1	14.0	15.0
		2	2.46	9.7	13.5	14.8	16.0	17.4
		4	9.40	10.1	14.4	15.9	17.2	18.9
		Airside Ps		0.02	0.07	0.11	0.15	0.22
2	Two	2	0.62	15.0	22.0	24.4	26.4	28.9
		4	2.38	16.0	24.3	27.3	29.9	33.2
		8	9.10	16.6	25.7	29.1	32.1	36.0
		Airside Ps		0.05	0.16	0.23	0.32	0.46

Imperial Units				MBH				
				CFM				
Unit Size	Rows	GPM	Head Loss (ft-H_2O)	1000	1200	1400	1600	1800
5	One	3	1.19	28.4	30.5	32.2	33.8	35.1
		6	4.54	31.1	33.6	35.7	37.6	39.4
		9	9.93	32.1	34.8	37.1	39.2	41.1
		Airside Ps		0.11	0.15	0.19	0.24	0.30
5	Two	4	1.32	48.8	52.9	56.3	59.3	62.0
		8	5.19	54.6	59.8	64.4	68.4	72.0
		10	8.06	56.0	61.5	66.3	70.6	74.4
		Airside Ps		0.23	0.32	0.41	0.51	0.62

				CFM				
Unit Size	Rows	GPM	Head Loss (ft-H_2O)	500	700	900	1100	1300
3	One	4	1.64	18.6	21.6	24.0	25.9	27.6
		8	6.27	19.7	23.0	25.7	28.0	29.9
		10	9.66	19.9	23.3	26.1	28.4	30.4
		Airside Ps		0.06	0.10	0.15	0.22	0.29
3	Two	4	1.84	31.0	36.9	41.5	45.3	48.5
		6	4.09	32.5	39.1	44.3	48.7	52.4
		8	7.19	33.3	40.3	45.9	50.6	54.6
		Airside Ps		0.12	0.22	0.33	0.46	0.61

				CFM				
Unit Size	Rows	GPM	Head Loss (ft-H_2O)	1500	2000	2500	3000	3300
6	One	4	1.43	58.3	65.6	71.3	76.0	78.5
		8	5.61	65.1	74.5	82.1	88.5	91.9
		10	8.71	66.7	76.6	84.7	91.6	95.2
		Airside Ps		0.03	0.05	0.07	0.10	0.12
6	Two	4	1.07	87.6	99.6	108.8	116.2	120.0
		8	4.22	102.2	119.4	133.3	145.0	151.1
		12	9.42	108.2	127.7	144.0	157.8	165.2
		Airside Ps		0.07	0.11	0.16	0.21	0.25

				CFM				
Unit Size	Rows	GPM	Head Loss (ft-H_2O)	1000	1200	1400	1600	1800
4	One	3	1.19	28.4	30.5	32.2	33.8	35.1
		6	4.54	31.1	33.6	35.7	37.6	39.4
		9	9.93	32.1	34.8	37.1	39.2	41.1
		Airside Ps		0.11	0.15	0.19	0.24	0.30
4	Two	4	1.32	48.8	52.9	56.3	59.3	62.0
		8	5.19	54.6	59.8	64.4	68.4	72.0
		10	8.06	56.0	61.5	66.3	70.6	74.4
		Airside Ps		0.23	0.32	0.41	0.51	0.62

				CFM				
Unit Size	Rows	GPM	Head Loss (ft-H_2O)	2000	2500	3000	3500	4000
7	One	4	1.43	65.6	71.3	76.0	80.0	83.4
		8	5.61	74.5	82.1	88.5	94.1	98.9
		10	8.71	76.6	84.7	91.6	97.5	102.7
		Airside Ps		0.05	0.07	0.10	0.13	0.16
7	Two	4	1.07	99.6	108.8	116.2	122.2	127.3
		8	4.22	119.4	133.3	145.0	154.9	163.5
		12	9.42	127.7	144.0	157.8	169.8	180.3
		Airside Ps		0.11	0.16	0.21	0.27	0.34

Heating capacity data in tables assume an entering water temperature (EWT) of 180°F, and an entering air temperature (EAT) of 65°F, which corresponds to a temperature difference of 115°F. Smaller temperature differences will result in a decrease of heating capacity. To obtain the heating capacity at another temperature difference, refer to the hot water coil notes located in the Reference Section.

FCQ-700
HOT WATER COILS kW SELECTION DATA – METRIC UNITS

Metric Units				kW				
				L/s				
Unit Size	Rows	L/s	Head Loss (kPa)	94	189	236	283	354
2	One	0.06	1.91	2.6	3.5	3.8	4.1	4.4
		0.13	7.35	2.8	4.0	4.3	4.7	5.1
		0.25	28.10	3.0	4.2	4.7	5.0	5.5
		Airside Ps (kPa)		0.00	0.02	0.03	0.04	0.05
2	Two	0.13	1.85	4.4	6.5	7.2	7.7	8.5
		0.25	7.11	4.7	7.1	8.0	8.8	9.7
		0.50	27.20	4.9	7.5	8.5	9.4	10.6
		Airside Ps (kPa)		0.01	0.04	0.06	0.08	0.11

Metric Units				kW				
				L/s				
Unit Size	Rows	L/s	Head Loss (kPa)	472	566	661	755	849
5	One	0.19	3.56	8.3	8.9	9.4	9.9	10.3
		0.38	13.57	9.1	9.9	10.5	11.0	11.6
		0.57	29.68	9.4	10.2	10.9	11.5	12.1
		Airside Ps (kPa)		0.03	0.04	0.05	0.06	0.07
5	Two	0.25	3.95	14.3	15.5	16.5	17.4	18.2
		0.50	15.51	16.0	17.5	18.9	20.1	21.1
		0.63	24.09	16.4	18.0	19.4	20.7	21.8
		Airside Ps (kPa)		0.06	0.08	0.10	0.13	0.15

				L/s				
Unit Size	Rows	L/s	Head Loss (kPa)	236	330	425	519	613
3	One	0.25	4.90	5.5	6.3	7.0	7.6	8.1
		0.50	18.74	5.8	6.7	7.5	8.2	8.8
		0.63	28.87	5.8	6.8	7.7	8.3	8.9
		Airside Ps (kPa)		0.01	0.02	0.04	0.05	0.07
3	Two	0.25	5.50	9.1	10.8	12.2	13.3	14.2
		0.38	12.23	9.5	11.5	13.0	14.3	15.4
		0.50	21.49	9.8	11.8	13.5	14.8	16.0
		Airside Ps (kPa)		0.03	0.05	0.08	0.11	0.15

				L/s				
Unit Size	Rows	L/s	Head Loss (kPa)	708	944	1180	1416	1557
6	One	0.25	4.27	17.1	19.2	20.9	22.3	23.0
		0.50	16.77	19.1	21.8	24.1	26.0	27.0
		0.63	26.03	19.6	22.5	24.8	26.9	27.9
		Airside Ps (kPa)		0.01	0.01	0.02	0.02	0.03
6	Two	0.25	3.20	25.7	29.2	31.9	34.1	35.2
		0.50	12.61	30.0	35.0	39.1	42.5	44.3
		0.76	28.16	31.7	37.4	42.2	46.3	48.4
		Airside Ps (kPa)		0.02	0.03	0.04	0.05	0.06

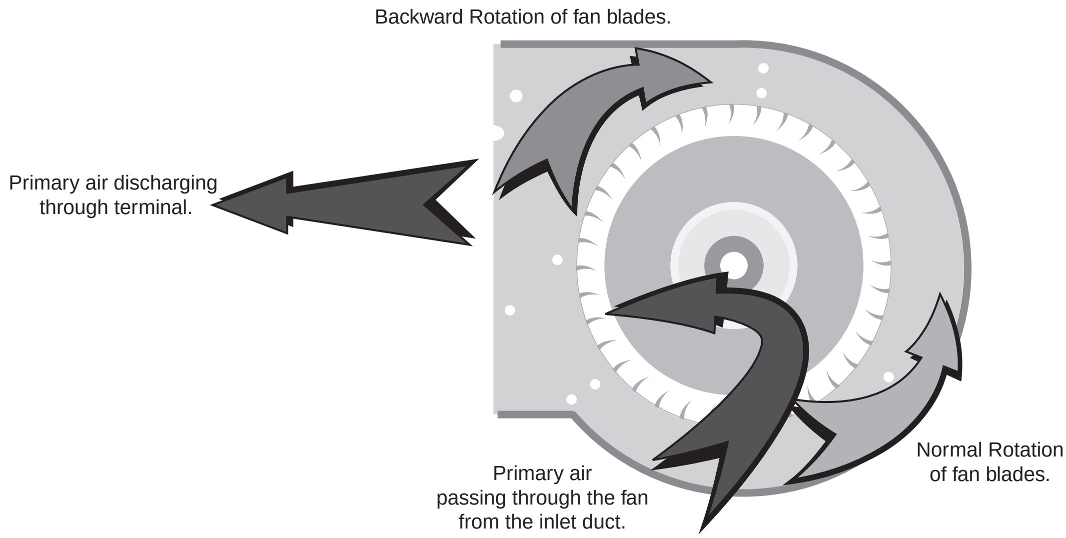
				L/s				
Unit Size	Rows	L/s	Head Loss (kPa)	472	566	661	755	849
4	One	0.19	3.56	8.3	8.9	9.4	9.9	10.3
		0.38	13.57	9.1	9.9	10.5	11.0	11.6
		0.57	29.68	9.4	10.2	10.9	11.5	12.1
		Airside Ps (kPa)		0.03	0.04	0.05	0.06	0.07
4	Two	0.25	3.95	14.3	15.5	16.5	17.4	18.2
		0.50	15.51	16.0	17.5	18.9	20.1	21.1
		0.63	24.09	16.4	18.0	19.4	20.7	21.8
		Airside Ps (kPa)		0.06	0.08	0.10	0.13	0.15

				L/s				
Unit Size	Rows	L/s	Head Loss (kPa)	944	1180	1416	1652	1888
7	One	0.25	4.27	19.2	20.9	22.3	23.5	24.5
		0.50	16.77	21.8	24.1	26.0	27.6	29.0
		0.63	26.03	22.5	24.8	26.9	28.6	30.1
		Airside Ps (kPa)		0.01	0.02	0.02	0.03	0.04
7	Two	0.25	3.20	29.2	31.9	34.1	35.8	37.3
		0.50	12.61	35.0	39.1	42.5	45.4	47.9
		0.76	28.16	37.4	42.2	46.3	49.8	52.9
		Airside Ps (kPa)		0.03	0.04	0.05	0.07	0.08

Heating capacity data in tables assume an entering water temperature (EWT) of 82°C, and an entering air temperature (EAT) of 18°C, which corresponds to a temperature difference of 64°C. Smaller temperature differences will result in a decrease of heating capacity. To obtain the heating capacity at another temperature difference, refer to the hot water coil notes located in the Reference Section.

FCQ-700
AIR TERMINALS ACCESSORIES AND COMPONENTS
OPTIONAL ELECTRONIC ANTI-REVERSE ROTATION DEVICE

The fan wheel in a constant fan box may rotate backward whenever the fan motor is not running and primary air from the inlet duct is passing through the fan. In some cases the torque developed by the fan wheel when rotating backward cannot be overcome by the starting torque of the fan motor. In this condition the fan motor will run in reverse rotation, resulting in insufficient airflow delivery.



Constant fan boxes must have means to coordinate energizing the fan motor with start up of the Primary Fan System to prevent the reverse rotation or a positive method to create enough motor torque to reverse the rotation of the fan wheel.

Other manufacturers choose to deal with this issue by running their motors with larger capacitors than recommended by the motor manufacturer. The oversized capacitor will cause the motor to run less efficiently, run hotter than normal and draw more current than with a proper capacitor. All of this will result in reduced motor life and increased energy costs.

METALAIRE'S Model FCQ-700 is available with an optional Electronic Anti-Reverse Rotation Device which will positively prevent the reverse rotation of any fan. This option does not draw additional current while running and will not cause the motor to run at higher temperatures.

The results are greater efficiency, quieter motors, longer motor life and happier building owners.

FCQ-700 APPROXIMATE SHIPPING WEIGHTS

Case	FCI
2	170 lbs.
3	190 lbs.
4	210 lbs.
5	210 lbs.
6	310 lbs.
7	330 lbs.

FCQ-700 FILTER SIZES PER CASE SIZE

Case Size	Filter Dimensions
2	14" x 14"
3	16" x 18"
4	18" x 18"
5	18" x 18"
6	16" x 18"
7	16" x 20"

Filters are mounted on the fan induction and are available in 1" or 2" thickness.

FCQ-700
ACCESSORIES AND COMPONENTS
HOT WATER COILS

When ordered with the air terminal, the hot water coil is shipped attached with slip and drive connections to the air terminal casing. The discharge end of the casing has slip and drive connections for easy connection to downstream ductwork.

Coil selection can be made using METALAIRE's Air Terminal Unit Selection Software. Contact your representative for a copy. In the interest of energy conservation and due to the possibility of condensation, all hot water coils are marked "Coil must be externally insulated after installation in the field." Hot water coils are tested in accordance with AHRI Standards 410. Hot water coils may be ordered with optional access doors for inspection and cleaning to meet requirements of ASHRAE Standard 62.1.

HOT WATER COIL CONSTRUCTION DETAILS

- Hot Water Coils are factory mounted to the discharge of the terminal and are available with an optional factory mounted discharge plenum section with access door.
- Hot water coils are enclosed in a 20 gauge coated steel casing allowing for attachment to metal ductwork with a slip and drive connection.
- Fins are rippled and sine wave type constructed from heavy gauge aluminum and are mechanically bonded to the tubes.
- Tubes are copper with a minimum wall thickness of 0.016" with male solder header connections.
- Coils are leak tested to 300 psi with minimum burst of 2000 psi at ambient temperature. Coil performance data is based on tests run in accordance with AHRI standard 410. Coils are AHRI certified and include an AHRI label.

Tubing Connections		
	Standard HW Coil Inches (mm)	
Case Size	1 Row	2 Row
2	5/8 (15.8)	7/8 (22.2)
3	5/8 (15.8)	7/8 (22.2)
4	7/8 (22.2)	7/8 (22.2)
5	7/8 (22.2)	7/8 (22.2)
6	7/8 (22.2)	7/8 (22.2)
7	7/8 (22.2)	7/8 (22.2)

All coils have 10 fins per inch

All accessories which can be attached to the Series Fan Boxes are not a part of the AHRI certification program but ratings can be affected by their use.

FCQ-700
ACCESSORIES AND COMPONENTS
ELECTRIC HEAT

Electric heater elements, as illustrated on this page, are integral to the air terminal. The discharge end has slip and drive connections for easy connection to downstream ductwork. ETL® listed heaters are provided with a fan interlock relay. Heaters that will be controlled electronically must include a 24 VAC control circuit to operate with the low voltage controls on the air terminal. Heater plenums are internally insulated. When an air terminal is ordered with clean room lining and electric heat, the heater plenum is either internally lined with optional foil backed insulation or closed cell foam or may require external insulation in field.

INCLUDED WITH EACH HEATER ASSEMBLY:

- Heater and cabinet mounted on the discharge of the FCQ-700
- Electric Heater is interlocked into fan control relay
- De-energizing magnetic contactors per step
- Primary automatic reset high temperature limit (disc type)
- Backup manual reset high temperature limit (disc type)
- Non-fused transformer with voltage to match Heater voltage
- Single point power wiring connection
- Heater is shipped factory mounted and wired

ELECTRIC HEATER ASSEMBLY CONSTRUCTION DETAILS

- Electric Reheat Coils are factory mounted on the discharge of the Air Terminal. The heaters are ETL® listed for zero clearance, are tested in accordance with UL® Standard 1995, CSA-C22.2 No. 236 and the National Electric Code (NEC). Heater casings are constructed of heavy-duty zinc-coated steel. Element wire is high grade nichrome alloy derated to 50 watts per square inch density. Element wire is supported by moisture-resistant steatite ceramics.
- Ceramics are enclosed in reinforcement brackets spaced across the heater element rack at 2" to 4" intervals. Controls are contained in a NEMA 1 control cabinet with a hinged, latching door. A permanent wiring diagram is affixed to the inside of the control cabinet door for field reference.
- The 208 and 480 volt units require a neutral connection for both single and three phase service. Our standard motors are 120 and 277 volt single phase. The 208-240 volt single phase motor is optional. 480 volt motors are not available for our units. See table for reference.

Heater Voltage	Motor Voltage	Separate Neutral Required
120 V 1PH	120 V 1PH	NO
208 V 1PH	120 V 1PH	YES
277 V 1PH	277 V 1PH	NO
480 V 1PH	277 V 1PH	YES
208 V 1PH	208 V 1PH	NO
208 V 3PH	120 V 1PH	YES
480 V 3PH	277 V 1PH	YES
208 V 3PH	208 V 1PH	NO

All accessories which can be attached to the Series Fan Boxes are not a part of the AHRI certification program but ratings can be affected by their use.

FCL-600
CONTROL SEQUENCE OFFERINGS

PPD–PRESSURE DEPENDENT

- 910 DA/NC Full Closed
- 912 RA/NO Full Open

PPI–PNEUMATIC PRESSURE INDEPENDENT

- 914 DA/NC
- 915 DA/NO
- 916 RA/NC
- 917 RA/NO

ANALOG ELECTRONIC

- 960 Cooling Only
- 961 Cooling with Heat
- 964 Night Shutdown/Morning Warm-up
- 965 Heating/Cooling Changeover

DIRECT DIGITAL

LON WORKS

- 990 Constant Fan – No Auxiliary Heating
- 993-1 Constant Fan with 1 Stage of Electric Heat
- 994 Constant Fan–No Auxiliary Heating
- 996 Constant Fan–Modulating Floating Control–Hot Water Heat
- 997-1 Constant Fan with 1 Stage of Electric Heat
- 997-2 Constant Fan with 2 Stages of Electric Heat

BACnet

- 980 Constant Fan – No Auxiliary Heating
- 982 Constant Fan–Modulating Floating Control–Hot Water Heat
- 983-1 Constant Fan with 1 Stage of Electric Heat
- 983-2 Constant Fan with 2 Stages of Electric Heat
- 983-3 Constant Fan with 3 Stages of Electric Heat

Refer to Reference Section for complete description.

FCQ-700
ELECTRIC HEATER CAPACITIES

Single Phase FCQ kW Limits				
Unit Size	Heater Voltage	Min. kW Step	Max. kW	Max. Steps
2	120	0.6	5	2
2	208	0.6	9	2
2	240	0.6	9	2
2	277	0.8	9	2
2	480	2.2	9	2
3	120	0.6	5	3
3	208	0.6	9.5	3
3	240	0.6	11	3
3	277	0.6	13	3
3	480	1.2	13	3
4	120	0.6	5	3
4	208	0.6	9.5	3
4	240	0.6	11	3
4	277	0.6	13	3
4	480	0.8	19	3
5	120	0.6	5	3
5	208	0.6	9.5	3
5	240	0.6	11	3
5	277	0.6	13	3
5	480	0.8	23	3
6	120	0.6	5	3
6	208	0.6	9.5	3
6	240	0.6	11	3
6	277	0.6	13	3
6	480	0.6	23	3
7	120	0.6	5	3
7	208	0.6	9.5	3
7	240	0.6	11	3
7	277	0.6	13	3
7	480	0.6	23	3

Three Phase FCQ kW Limits				
Unit Size	Heater Voltage	Min. kW Step	Max. kW	Max. Steps
2	208	0.6	9	2
2	240	0.6	9	2
2	480	2.4	9	2
3	208	0.6	13	3
3	240	0.6	13	3
3	480	1.2	13	3
4	208	0.6	17	3
4	240	0.6	19	3
4	480	0.8	19	3
5	208	0.6	17	3
5	240	0.6	19	3
5	480	0.6	24	3
6	208	0.6	17	3
6	240	0.6	19	3
6	480	0.6	39	3
7	208	0.6	17	3
7	240	0.6	19	3
7	480	0.6	39	3

NOTES:

1. *Heaters less than 5 kW are specifiable to the nearest 0.2 kW. Heaters greater than 5 kW and less than 10.0 kW are specifiable to nearest 0.5 kW. Heaters greater than 10.0 kW are specifiable to nearest 1.0 kW.*
2. *Minimum flow rate for electric heat is 70 CFM/kW. Lower CFM's can cause nuisance tripping, excessive discharge temperatures, rapid cycling, and rapid element failure. Electric Heat units running below 70 CFM/kW will void all warranties.*
3. *For optimum thermal comfort, the suggested discharge temperature should not exceed 20°F above room set point.*
4. *We do not recommend discharge temperatures in excess of 115°F to protect heater coils.*
5. *Maximum number of steps at minimum kW is one step.*
6. *If more than 1 heater is wired into a building's circuit breaker (multi-outlet branch circuit) each heater will require the addition of power side fusing.*

ELECTRIC HEAT SELECTION:

A. Specify electric duct heaters using voltage, kW, and number of steps.

B. Use above chart to select voltage. Calculate required kW using following equations:

$$kW = \frac{BTU / HR}{3413} \qquad kW = \frac{CFM \times \Delta \times 1.085}{3413} \qquad \Delta = \frac{kW \times 3413}{CFM \times 1.085}$$

$$CFM = \frac{kW \times 3413}{\Delta \times 1.085} \qquad CFM = \frac{kW \times 3413}{\Delta \times 1.085}$$

** air density at sea level—reduce by 0.036 for each 1000 feet of altitude above sea level*

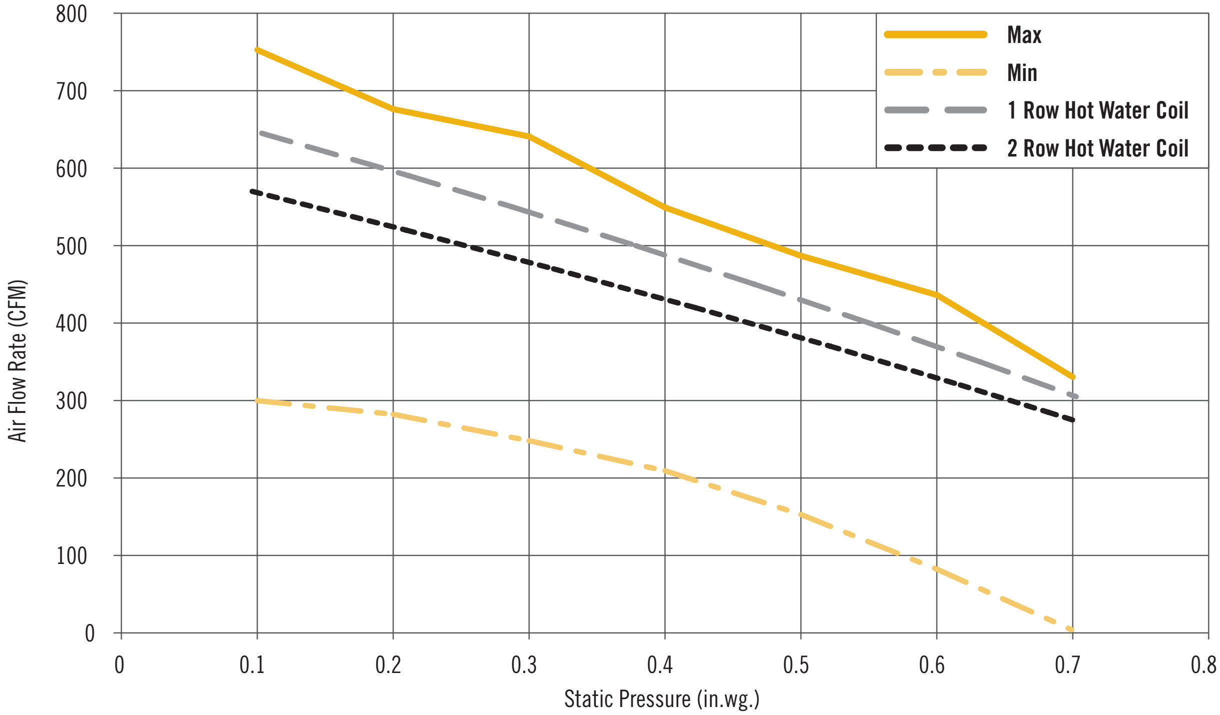
Where: BTU / Hr = Required heating capacity

CFM = volume of air during heating. Typically 100% of maximum cooling air volume

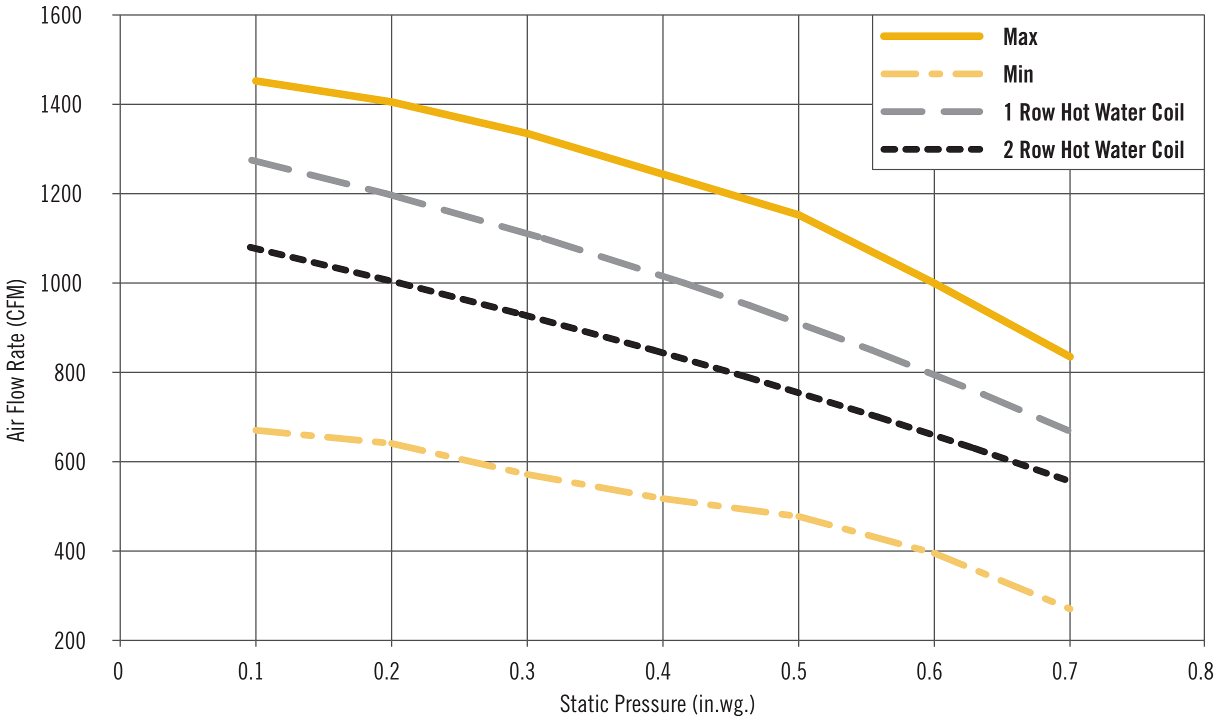
Δ = desired air temperature rise across the electric heater

Inlet air temperature = primary air temperature, usually 55°F

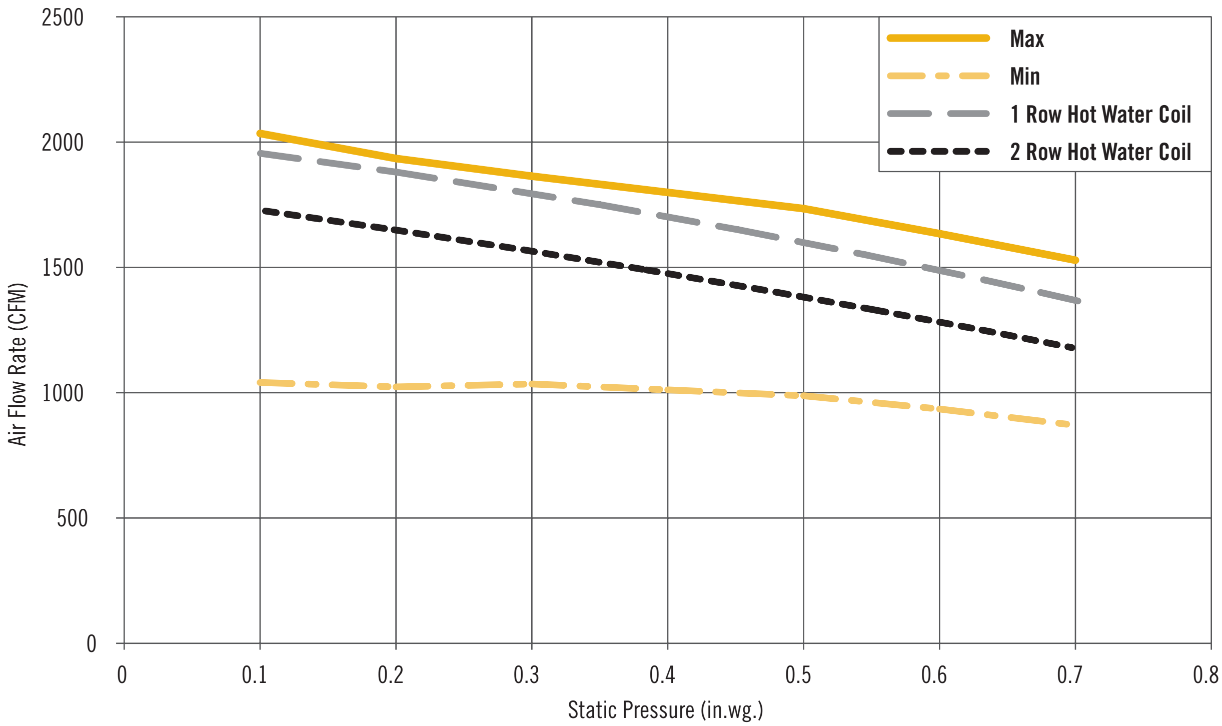
FCQ-700 FAN PERFORMANCE CURVES
CASE 2 - PSC MOTOR



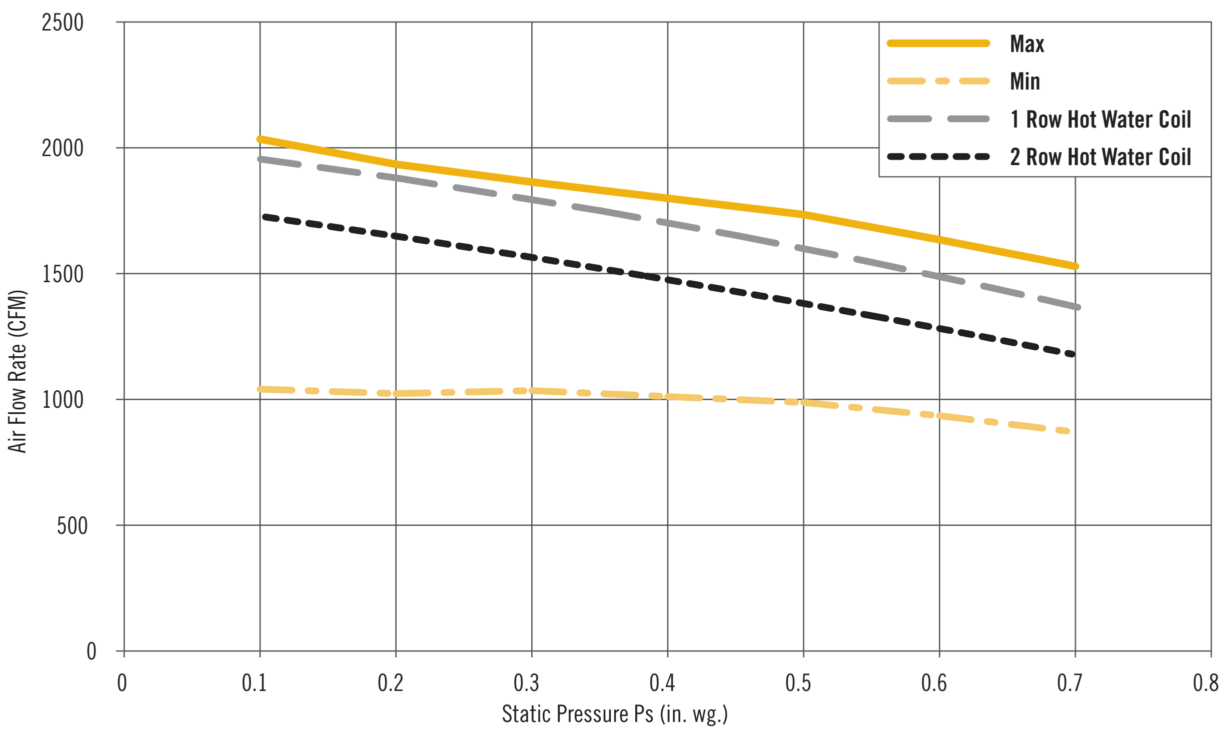
FCQ-700 FAN PERFORMANCE CURVES
CASE 3 - PSC MOTOR



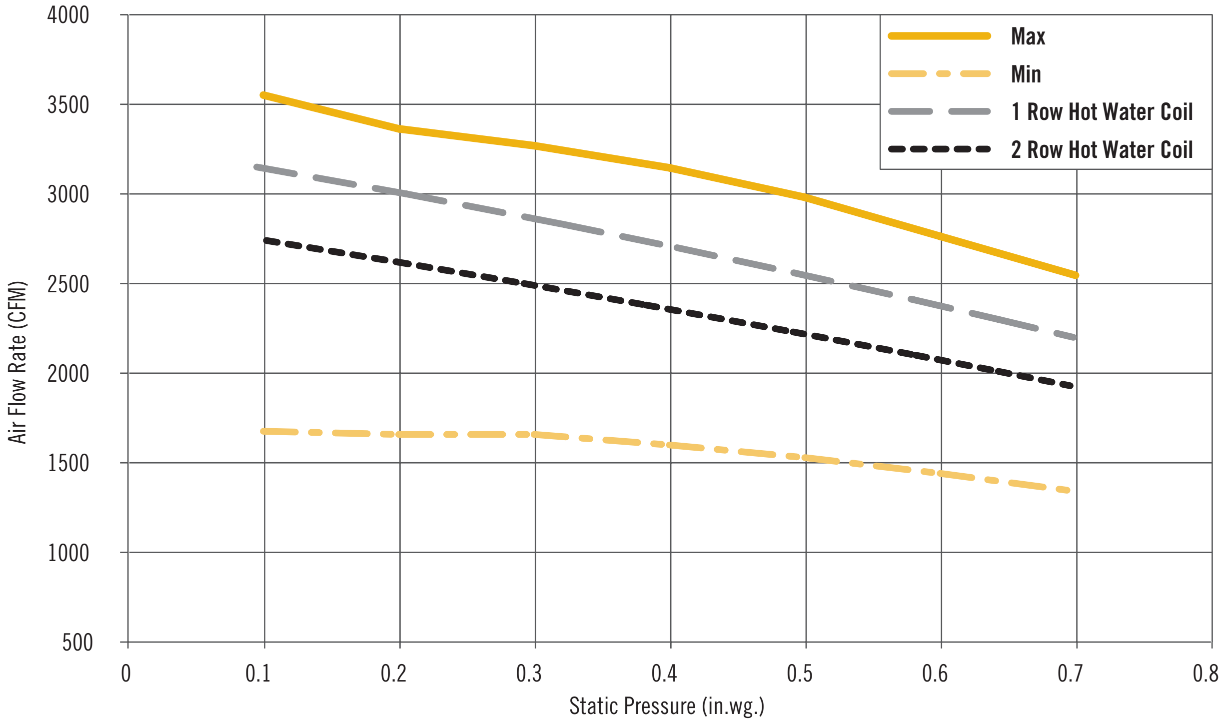
FCQ-700 FAN PERFORMANCE CURVES
CASE 4 - PSC MOTOR



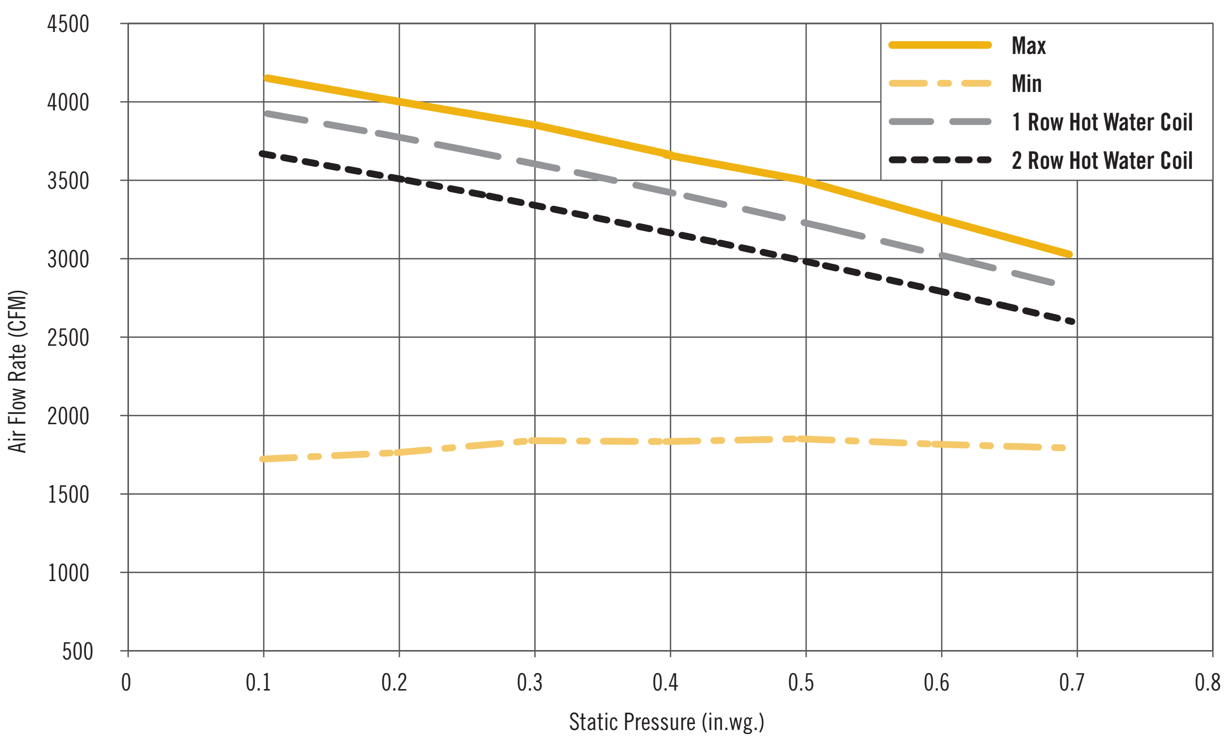
FCQ-700 FAN PERFORMANCE CURVES
CASE 5 - PSC MOTOR



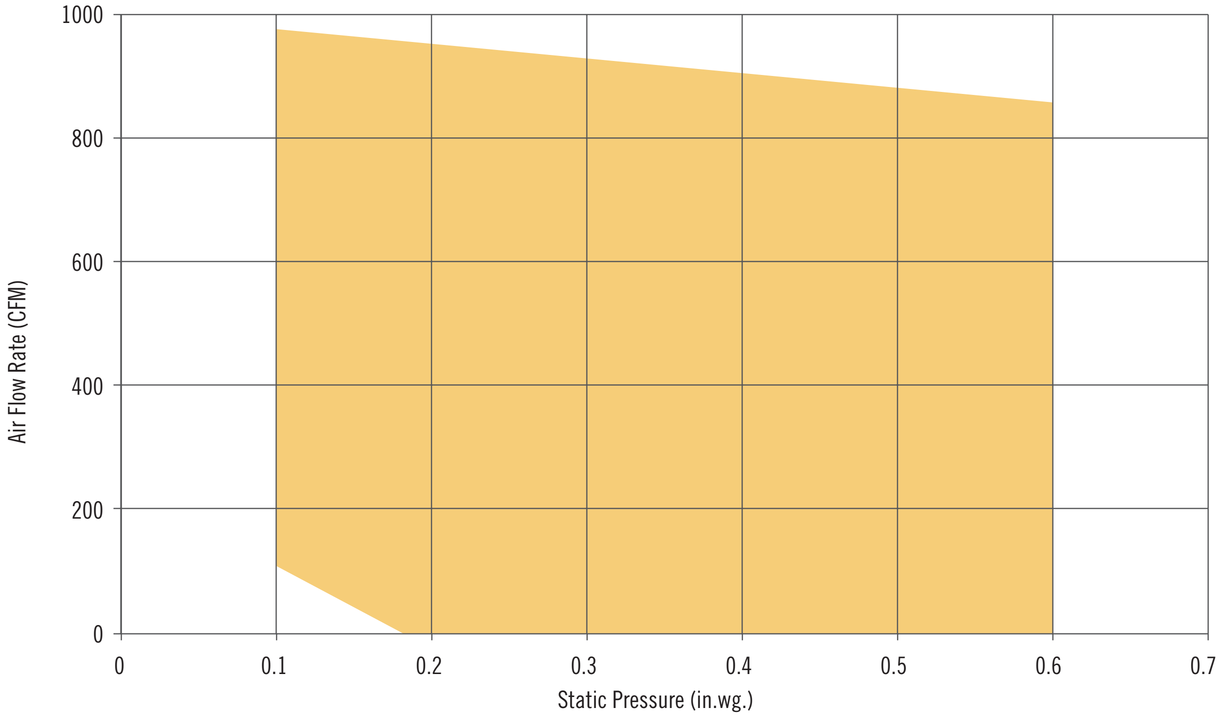
FCQ-700 FAN PERFORMANCE CURVES
CASE 6 - PSC MOTOR



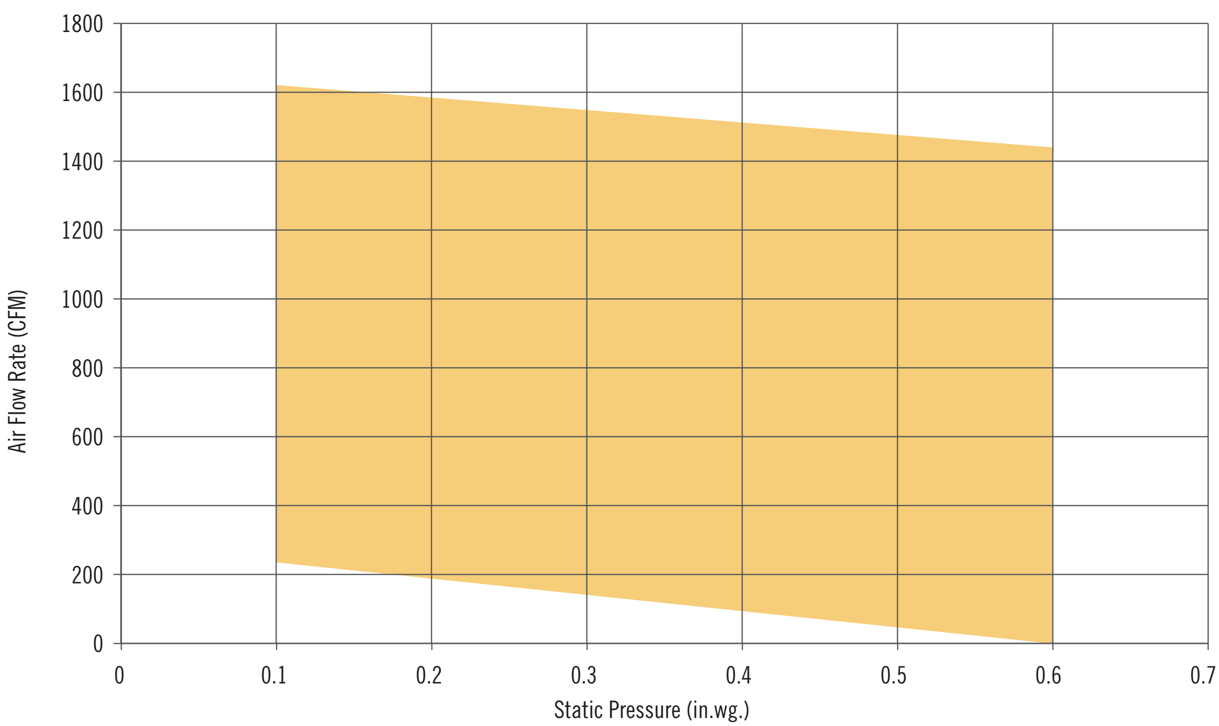
FCQ-700 FAN PERFORMANCE CURVES
CASE 7 - PSC MOTOR



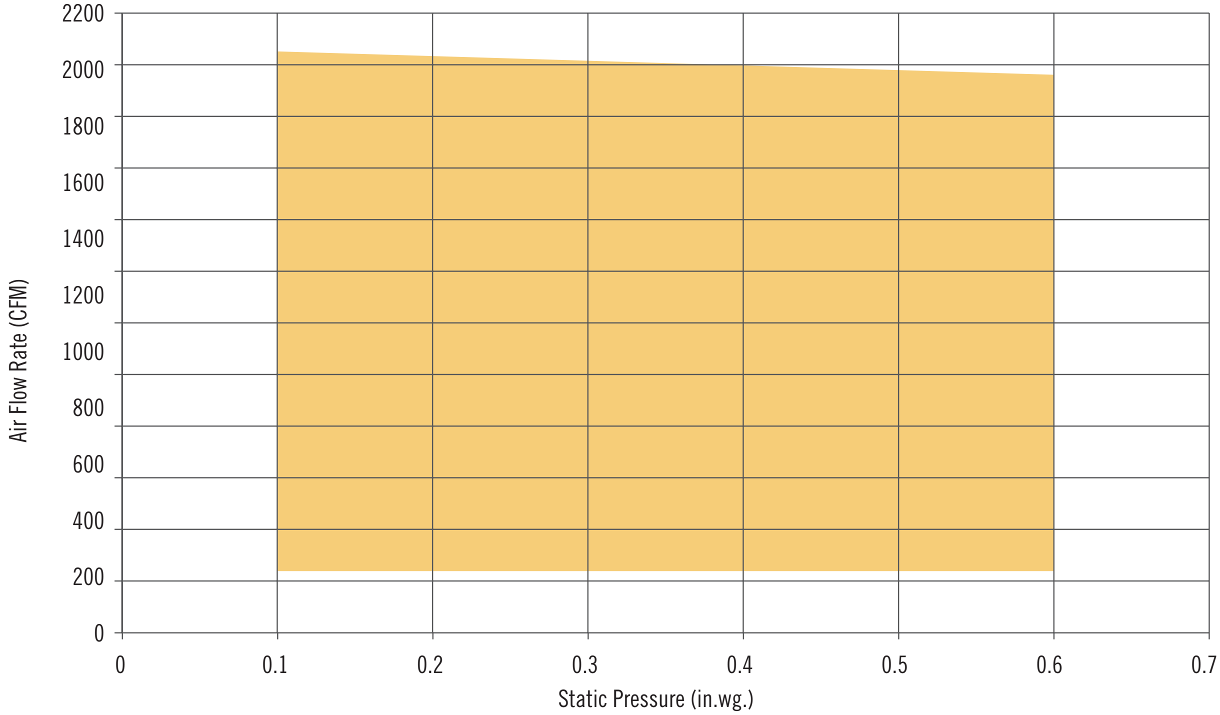
FCQ 700 ECM FAN PERFORMANCE CURVES
CASE 2



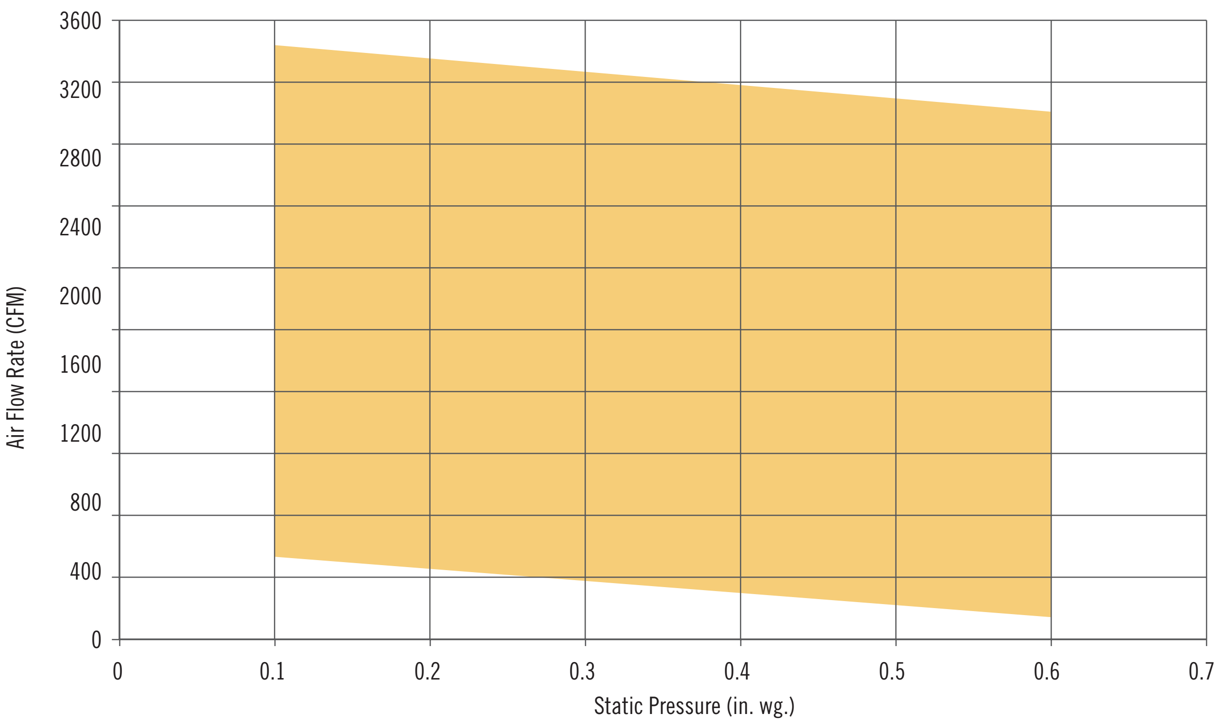
FCQ 700 ECM FAN PERFORMANCE CURVES
CASE 3



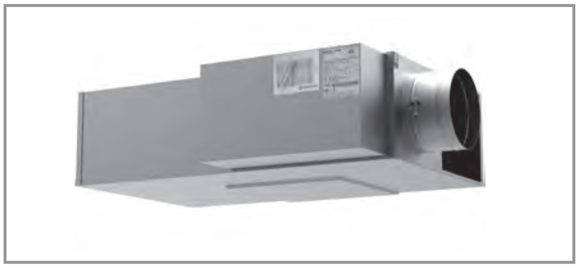
FCQ 700 ECM FAN PERFORMANCE CURVES
CASE 4



FCQ 700 ECM FAN PERFORMANCE CURVES
CASE 6



FVI-500
VARIABLE VOLUME UNIT



FVL-600
LOW-PROFILE VARIABLE VOLUME UNIT

PARALLEL FAN POWERED TERMINAL UNITS

METALAIRE's parallel fan-powered terminal units are designed to provide superior comfort by intermittent parallel fan operation. Conditioned primary air is varied during cooling while the fan cycles on during heating. Parallel fan-powered terminal units allow for recovery of waste heat from the return plenum and a potential reduction in central fan energy, thereby lowering operating costs. In the heating mode with the fan energized, parallel fan-powered terminal units improve air circulation through better diffuser performance.

The primary function of the METALAIRE parallel fan-powered terminal unit is to deliver variable volume, constant temperature primary air to the space in the cooling mode. The volume of supply air is varied in response to a control signal. In the heating mode, with the fan energized, the terminal unit mixes conditioned air and plenum air in response to a control signal to supply constant volume, variable temperature supply air into the space. Supplemental heating is available in both electric heat and hot water coils if plenum heat is insufficient. METALAIRE parallel fan-powered terminal units are available with a wide range of control options to suit any application. These include pneumatic, analog electronic, electric, and direct digital control (DDC). With the demands of today's building designs to reduce energy in smaller mechanical spaces, the METALAIRE parallel fan-powered terminal unit is the perfect choice.

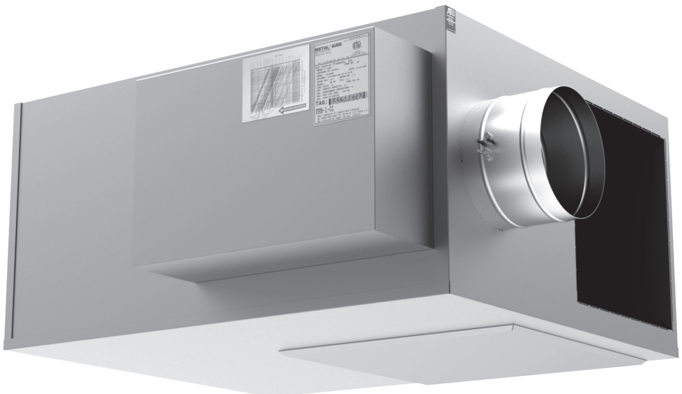
FEATURES

- FVI-500 is available in 7 casing sizes to handle 150 – 5600 cfm.
- FVL-600 is available in 2 casing sizes to handle 150 – 1825 cfm.
- 22 ga. galvanized steel casing, mechanically sealed, low leakage construction.
- Damper constructed of double layer of 24 ga. galvanized steel with sandwiched flexible gasket to provide tight seal (<1% at 3" static pressure).
- Factory calibrated controls per each job requirement.
- METALAIRE multi-quadrant averaging flow sensor provides highly accurate +/- 5% flow readings after certified balancer has balanced terminal.
- Easy access, steel balancing taps.
- Energy efficient PSC motors with adjustable SCR solid state fan speed controllers are standard.
- Electronically Commutated Motors (ECM) available as an option.
- External control cabinet with offset mounting plate as standard.
- Single point electrical connections.
- 3-beaded primary inlet connection tube for added rigidity and secure flex duct connections.
- Round inlets available in sizes 6" through 16".
- 1" thick, dual density (1.5lb/ft^3 min.) fiberglass insulation with edges coated. Meets NFPA 90A and UL 181. (1/2" thick insulation standard on FVL-600.)
- Rectangular discharge with optional slip and drive duct connection.
- Large removable bottom access panel provides complete access to interior of unit.
- Independently tested and certified laboratory performance data.
- Full range of options and accessories available (heating coils, disconnects, attenuators, etc.).
- Full range of liners/insulation available.

C ETL LISTED US

AHRI CERTIFIED™ www.ahridirectory.org
VAV Terminals
AHRI Standard 880

U.S. GREEN BUILDING COUNCIL MEMBER®



FVI-500 VARIABLE VOLUME FAN TERMINAL UNIT

SPECIFIABLE FEATURES

- Galvanized steel casing, mechanically sealed for low leakage construction
- NEMA 1 rated hinged control enclosure with standoff to prevent penetration of casing
- Single speed high efficiency PSC motor with SCR motor speed control
- Continuous welded primary inlet duct to minimize leakage with 3 stiffening beads for added rigidity
- Damper construction of double layer 18 gauge equivalent with integral blade seal
- All metal constructed inlet flow sensor with extra balancing taps
- Single point electrical connection
- Gasketed back draft damper door to minimize leakage in cooling mode

METALAIRE™

FVI-500 VARIABLE VOLUME FAN TERMINAL UNIT

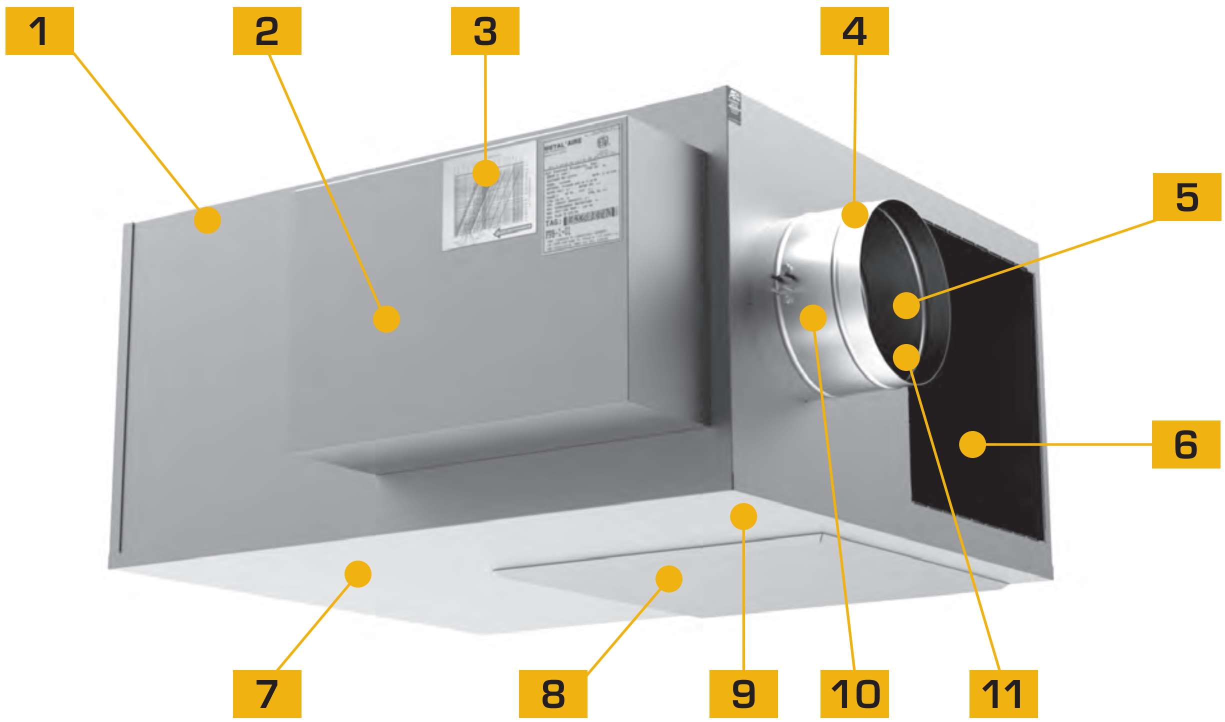
METALAIRE's model FVI-500 parallel fan-powered terminal unit is designed to provide superior comfort to zones by intermittent parallel fan operation. Conditioned primary air is varied during cooling while the fan cycles on during heating. Parallel fan-powered terminal units allow for recovery of waste heat from the return plenum and a potential reduction in central fan energy, thereby lowering operating costs. In the heating mode with the fan energized, parallel fan-powered terminal units improve air circulation through better diffuser performance. The primary air does not pass through the fan.

The primary function of the METALAIRE model FVI-500 parallel fan-powered terminal unit is to deliver variable volume, constant temperature primary air to the space in the cooling mode. The volume of supply air is varied in response to a control signal. In the heating mode, with the fan energized, the terminal unit mixes conditioned air and plenum air in response to a control signal to supply constant volume, variable temperature supply air into the space. Supplemental heating is available in both electric heat and hot water coils if plenum heat is insufficient. METALAIRE model FVI-500 parallel fan-powered terminal units are available with a wide range of control options to suit any application. These include pneumatic, analog electronic, electric, factory provided commissioned direct digital control (DDC) or factory mounted field supplied (DDC) controls. With the demands of today's building designs to reduce energy in smaller mechanical spaces, the METALAIRE model FVI-500 parallel fan-powered terminal unit is the perfect choice.

STANDARD FEATURES

- Available in 7 casing sizes to handle 150–5600 cfm.
- 22 ga. galvanized steel casing, mechanically sealed, low leakage construction.
- Damper constructed of double layer of 24 ga. galvanized steel with sandwiched flexible gasket to provide tight seal (<1% at 3" static pressure).
- Factory calibrated controls per each job requirement.
- METALAIRE multi-quadrant averaging flow sensor provides highly accurate +/- 5% flow readings after certified balancer has balanced terminal.
- Easy access, steel balancing taps.
- Energy efficient six pole single speed PSC motors with adjustable SCR solid state fan speed controllers are standard.
- Electronically Commutated Motors (ECM) available as an option.
- Available motor voltages of 120,277 and 208-240 (50/60 HZ)
- External control cabinet with offset mounting plate as standard.
- Single point electrical connections.
- 3-beaded primary inlet connection tube for added rigidity and secure flex duct connections.
- Round inlets available in sizes 6" through 16".
- 1" thick, dual density (1.5lb/ft^3 min.) fiberglass insulation with edges coated. Meets NFPA 90A and UL 181. (1/2" thick insulation standard on FVL-600.)
- Rectangular flanged discharge with optional slip and drive cleat duct connection.
- Large Bottom access panel provides access to fan motor/blower assembly.
- Independently tested and certified laboratory performance data.
- Full range of options and accessories available (heating coils, disconnects, attenuators, etc.).
- Full range of liners/insulation available.
- Auto and manual thermal resets on every electric heater.

METALAIRE™

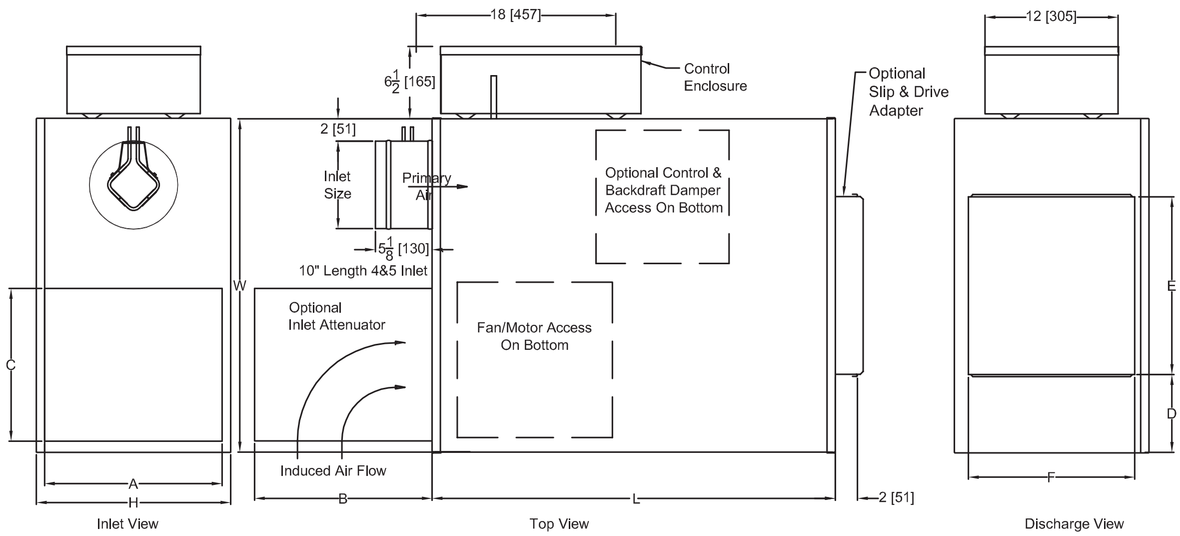


FVI-500 VARIABLE VOLUME FAN TERMINAL UNIT

FEATURES AND BENEFITS

1. Galvanized steel casing, mechanically sealed for low leakage construction.
2. NEMA 1 rated hinged control enclosure with standoff to prevent penetration of casing.
3. Single speed high efficiency PSC motor with SCR motor speed control.
4. Continuous welded primary inlet duct to minimize leakage with 3 stiffening beads for added rigidity.
5. Damper construction of double layer 18 gauge equivalent with mechanically fastened integral blade seal.
6. Hand adjustable restrictor plates top and bottom for balancing.
7. Motor/blower assembly assembled to 18 gauge bulkhead to mitigate vibration.
8. Bottom access panel provided for easy motor/blower servicing.
9. Gasketed back draft damper door to minimize leakage in cooling mode.
10. All metal constructed inlet flow sensor with extra balancing taps.
11. Damper assembly rotates in long life, low friction, self lubricating thermoplastic bearing.

FVI-500
PARALLEL FAN POWERED AIR TERMINAL UNIT
COOLING ONLY



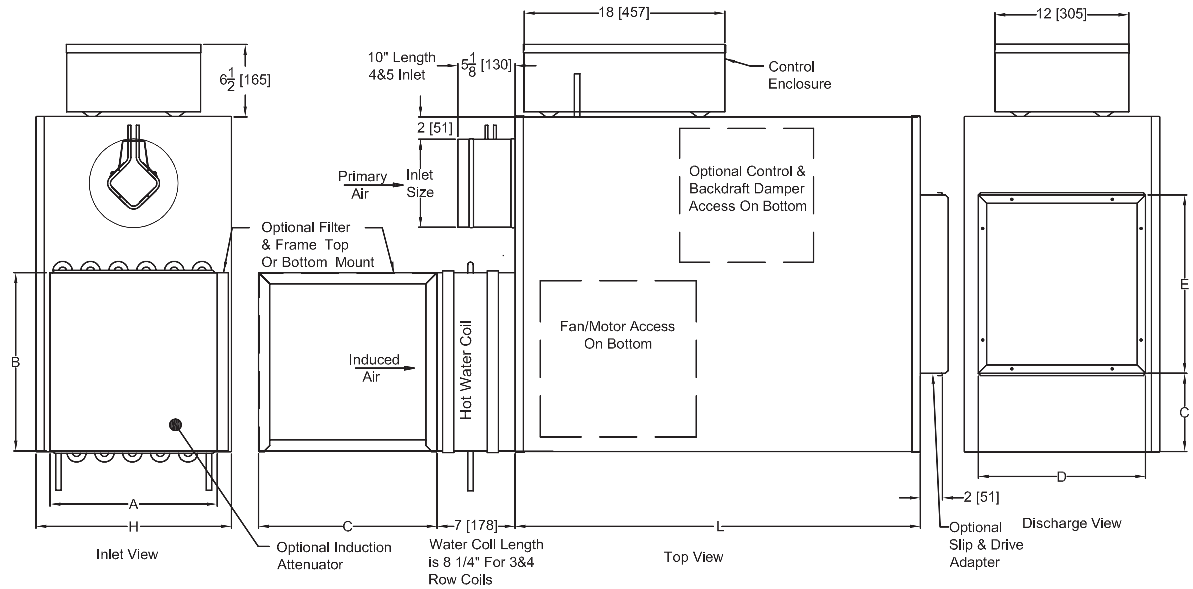
The standard location for control enclosure is Left Hand on Model FVI.
Looking in the direction of airflow, the control enclosure is on the left.

Case size	Inlet Size		Horsepower	Unit Dimensions			Induction Attenuator			Loc.	Discharge	
	Standard	Optional		Height H	Width W	Length L	Height A	Width B	Length C	Loc. D	Height E	Width F
1	6 (152)	4,5,8,10	1/8	17 1/2 (445)	30 (718)	36 (914)	16 (406)	16 (406)	15 (381)	7 (178)	15 (381)	16 (406)
2	8 (203)	4,5,6,10,12	1/6	17 1/2 (445)	30 (718)	36 (914)	16 (406)	16 (406)	15 (381)	7 (178)	15 (381)	16 (406)
3	10 (254)	4,5,6,8,12	1/4	17 1/2 (445)	36 (914)	40 (1016)	16 (406)	20 (508)	19 (483)	8 (203)	17 1/2 (445)	20 (508)
4	12 (305)	8,10,14	1/4	17 1/2 (445)	36 (914)	40 (1016)	16 (406)	20 (508)	19 (483)	8 (203)	17 1/2 (445)	20 (508)
5	14 (356)	10,12,16	1/3	20 (508)	40 (1016)	40 (1016)	20 (508)	20 (508)	19 (483)	10 (254)	17 1/2 (445)	20 (508)
6	16 (406)	10,12,14	1/2	20 (508)	42 (1067)	42 (1067)	20 (508)	24 (610)	21 (533)	10 (254)	18 (457)	22 (559)
7	16 (406)	12,14	1	20 (508)	42 (1067)	42 (1067)	20 (508)	24 (610)	23 (584)	6 (152)	20 (508)	30 (762)

** "A" dimension will increase or decrease 1" as the inlet diameter increases or decreases 2" from the standard inlet diameter.*

All dimensions are in inches; parentheses ( ) indicate millimeters.

FVI-500
PARALLEL FAN POWERED AIR TERMINAL UNIT WITH INDUCTION MOUNTED HOT WATER COIL



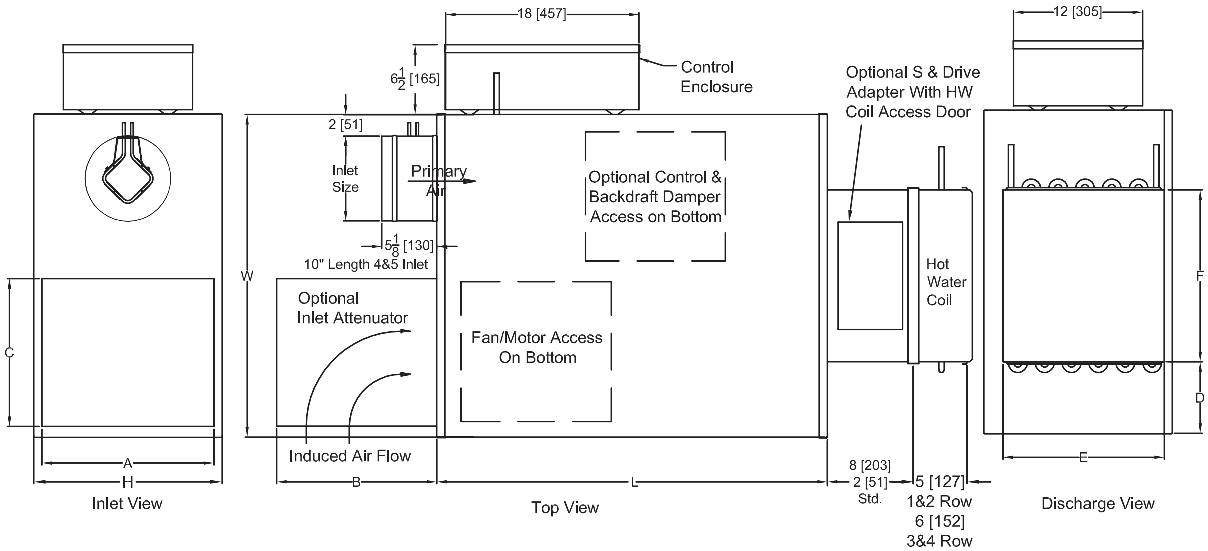
The standard location for control enclosure is Left Hand on Model FVI.
Looking in the direction of airflow, the control enclosure is on the left.

Case size	Inlet Size		Horsepower	Unit Dimensions			Induction Attenuator			Discharge		
	Standard	Optional		Height H	Width W	Length L	Height A	Width B	Length C	Loc. D	Height E	Width F
1	6 (152)	4,5,8,10	1/8	17 1/2 (445)	30 (718)	36 (914)	15 (381)	16 (406)	16 (406)	7 (178)	15 (381)	16 (406)
2	8 (203)	4,5,6,10	1/6	17 1/2 (445)	30 (718)	36 (914)	15 (381)	16 (406)	16 (406)	7 (178)	15 (381)	16 (406)
3	10 (254)	4,5,6,8,12	1/4	17 1/2 (445)	36 (914)	40 (1016)	17 1/2 (445)	20 (508)	16 (406)	8 (203)	17 1/2 (445)	20 (508)
4	12 (305)	8,10	1/4	17 1/2 (445)	36 (914)	40 (1016)	17 1/2 (445)	20 (508)	16 (406)	8 (203)	17 1/2 (445)	20 (508)
5	14 (356)	10,12,16	1/3	20 (508)	40 (1016)	40 (1016)	17 1/2 (445)	20 (508)	20 (508)	10 (254)	17 1/2 (445)	20 (508)
6	16 (406)	10,12,14	1/2	20 (508)	42 (1067)	42 (1067)	18 (457)	22 (559)	24 (610)	10 (254)	18 (457)	22 (559)

** "A" dimension will increase or decrease 1" as the inlet diameter increases or decreases 2" from the standard inlet diameter.*

All dimensions are in inches; parentheses ( ) indicate millimeters.

FVI-500
PARALLEL FAN POWERED AIR TERMINAL UNIT WITH HOT WATER COIL MOUNTED ON DISCHARGE



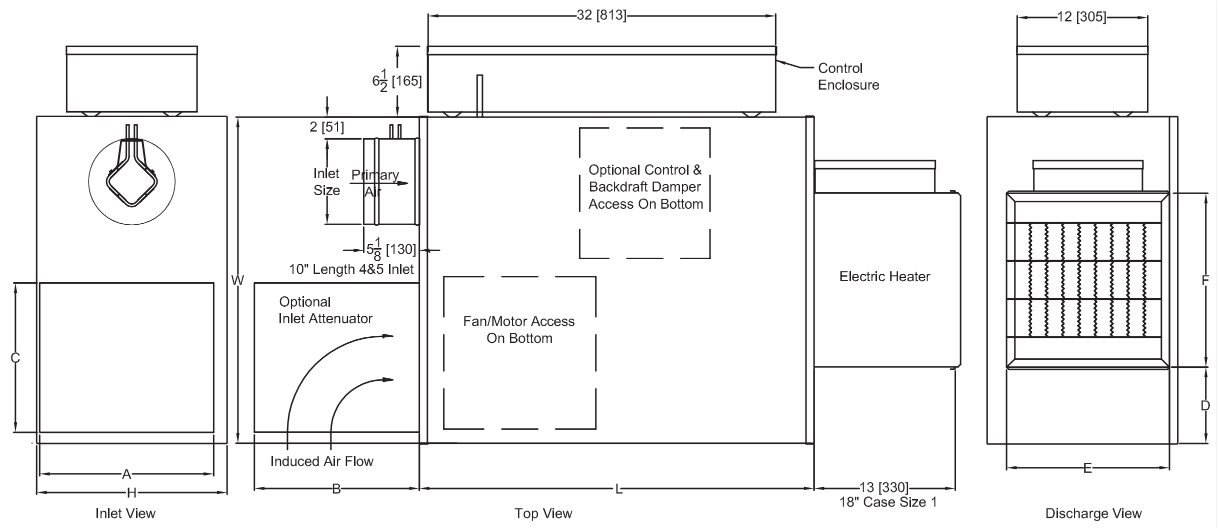
The standard location for control enclosure is Left Hand on Model FVI.
Looking in the direction of airflow, the control enclosure is on the left.

Case size	Inlet Size		Horsepower	Unit Dimensions			Induction Attenuator			Loc.	Discharge	
	Standard	Optional		Height H	Width W	Length L	Height A	Width B	Length C	D	Height E	Width F
1	6 (152)	4,5,8,10	1/8	17 1/2 (445)	30 (718)	36 (914)	16 (406)	16 (406)	15 (381)	7 (178)	15 (381)	16 (406)
2	8 (203)	4,5,6,10,12	1/6	17 1/2 (445)	30 (718)	36 (914)	16 (406)	16 (406)	15 (381)	7 (178)	15 (381)	16 (406)
3	10 (254)	4,5,6,8,12	1/4	17 1/2 (445)	36 (914)	40 (1016)	16 (406)	20 (508)	19 (483)	8 (203)	17 1/2 (445)	20 (508)
4	12 (305)	8,10,14	1/4	17 1/2 (445)	36 (914)	40 (1016)	16 (406)	20 (508)	19 (483)	8 (203)	17 1/2 (445)	20 (508)
5	14 (356)	10,12,16	1/3	20 (508)	40 (1016)	40 (1016)	20 (508)	20 (508)	19 (483)	10 (254)	17 1/2 (445)	20 (508)
6	16 (406)	10,12,14	1/2	20 (508)	42 (1067)	42 (1067)	20 (508)	24 (610)	21 (533)	10 (254)	18 (457)	22 (559)
7	16 (406)	12,14	1	20 (508)	42 (1067)	42 (1067)	20 (508)	24 (610)	23 (584)	6 (152)	20 (508)	30 (762)

** “A” dimension will increase or decrease 1" as the inlet diameter increases or decreases 2" from the standard inlet diameter.*

All dimensions are in inches; parentheses ( ) indicate millimeters.

FVI-500
PARALLEL FAN POWERED AIR TERMINAL UNIT WITH ELECTRIC HEAT



The standard location for control enclosure is Left Hand on Model FVI.
Looking in the direction of airflow, the control enclosure is on the left.

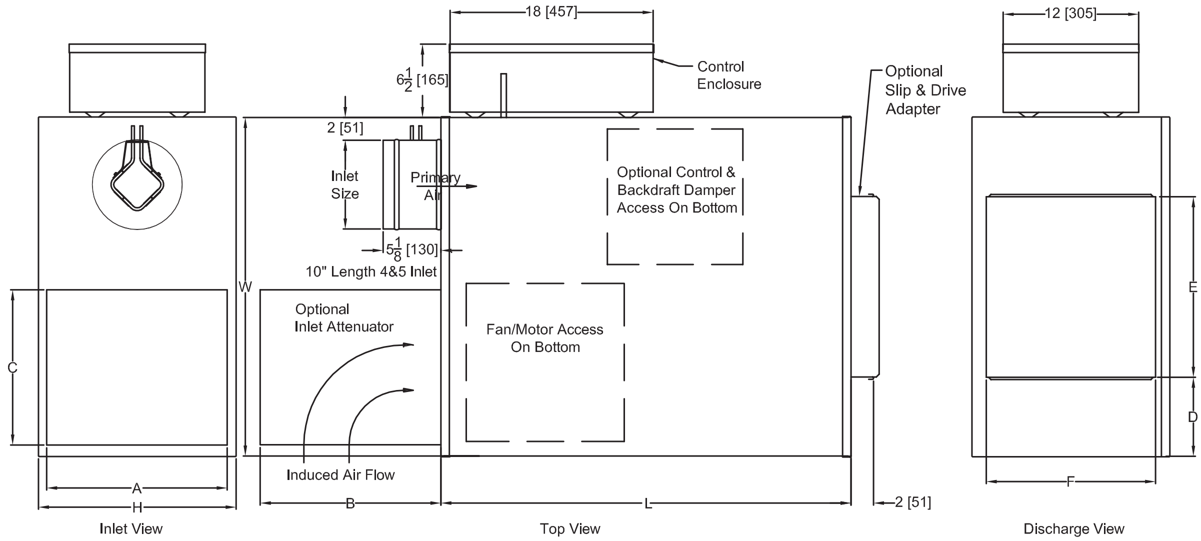
Case size	Inlet Size		Horsepower	Unit Dimensions			Induction Attenuator			Discharge		
	Standard	Optional		Height H	Width W	Length L	Height A	Width B	Length C	Loc. D	Height E	Width F
1	6 (152)	4,5,8,10	1/8	17 1/2 (445)	30 (718)	36 (914)	16 (406)	16 (406)	15 (381)	2 1/2 (64)	15 (381)	16 (406)
2	8 (203)	4,5,6,10,12	1/6	17 1/2 (445)	30 (718)	36 (914)	16 (406)	16 (406)	15 (381)	2 1/2 (64)	15 (381)	16 (406)
3	10 (254)	4,5,6,8,12	1/4	17 1/2 (445)	36 (914)	40 (1016)	16 (406)	20 (508)	19 (483)	6 1/4 (159)	15 (381)	16 (406)
4	12 (305)	8,10,12,14	1/4	17 1/2 (445)	36 (914)	40 (1016)	16 (406)	20 (508)	19 (483)	4 1/4 (108)	17 1/2 (445)	20 (508)
5	14 (356)	10,12,16	1/3	20 (508)	40 (1016)	40 (1016)	20 (508)	20 (508)	19 (483)	5 (127)	17 1/2 (445)	20 (508)
6	16 (406)	10,12,14	1/2	20 (508)	42 (1067)	42 (1067)	20 (508)	24 (610)	21 (533)	5 1/5 (140)	17 1/2 (445)	20 (508)
7	16 (406)	12,14	1	20 (508)	42 (1067)	42 (1067)	20 (508)	24 (610)	23 (584)	5 1/5 (140)	17 1/2 (445)	20 (508)

** "A" dimension will increase or decrease 1" as the inlet diameter increases or decreases 2" from the standard inlet diameter.*
All dimensions are in inches; parentheses ( ) indicate millimeters.

PARALLEL FAN POWERED

FVI-500 VARIABLE VOLUME

FVI-500 ECM
PARALLEL FAN POWERED AIR TERMINAL UNIT
COOLING ONLY



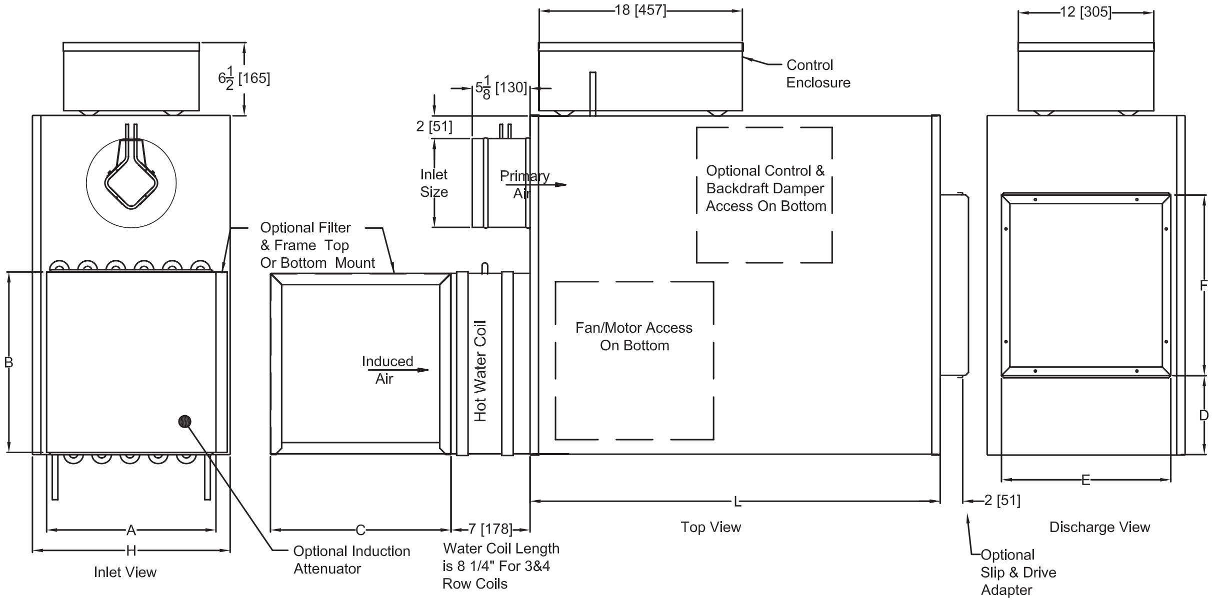
The standard location for control enclosure is Left Hand on Model FVI.
Looking in the direction of airflow, the control enclosure is on the left.

Case size	Inlet Size		Horsepower	Unit Dimensions			Induction Attenuator			Loc.	Discharge	
	Standard	Optional		Height H	Width W	Length L	Height A	Width B	Length C	D	Height E	Width F
3	10 (254)	4,5,6,8,12	1/2	17 1/2 (445)	36 (914)	40 (1016)	16 (406)	20 (508)	19 (483)	8 (203)	17 1/2 (445)	20 (508)
6	16 (406)	10,12,14	1	20 (508)	42 (1067)	42 (1067)	20 (508)	24 (610)	21 (533)	10 (254)	18 (457)	22 (559)

** "A" dimension will increase or decrease 1" as the inlet diameter increases or decreases 2" from the standard inlet diameter.*

All dimensions are in inches; parentheses ( ) indicate millimeters.

FVI-500 ECM
PARALLEL FAN POWERED AIR TERMINAL UNIT WITH HOT WATER COIL MOUNTED ON INDUCTION



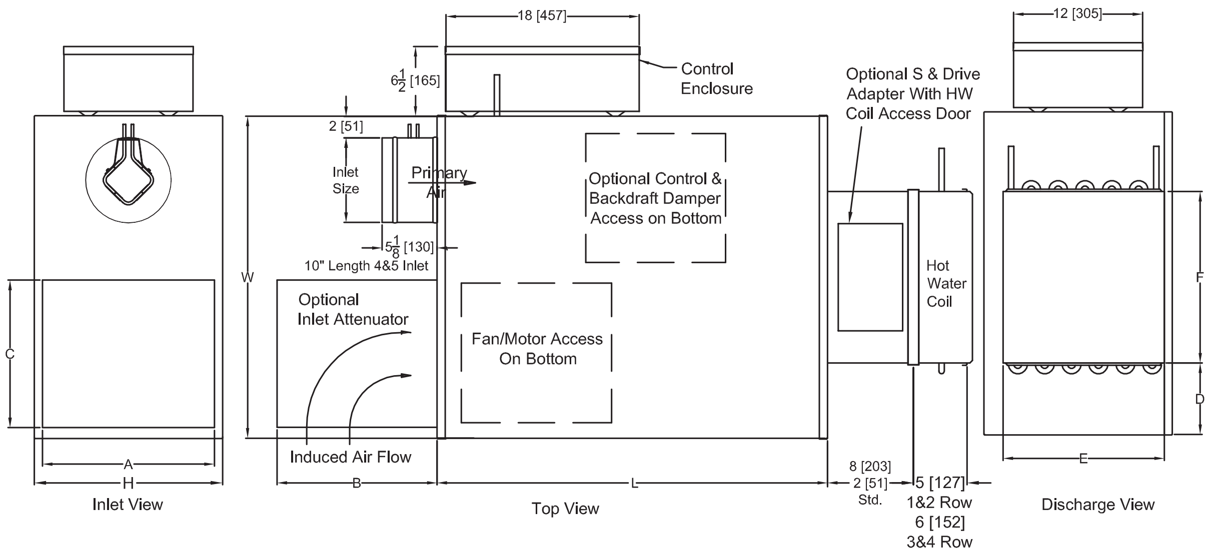
The standard location for control enclosure is Left Hand on Model FVI.
Looking in the direction of airflow, the control enclosure is on the left.

	Inlet Size			Unit Dimensions			Induction Attenuator			Discharge		
Case size	Standard	Optional	Horsepower	Height H	Width W	Length L	Height A	Width B	Length C	Loc. D	Height E	Width F
3	10 (254)	4,5,6,8,12	1/2	17 1/2 (445)	36 (914)	40 (1016)	17 1/2 (445)	20 (508)	16 (406)	8 (203)	17 1/2 (445)	20 (508)
6	16 (406)	10,12,14	1	20 (508)	42 (1067)	42 (1067)	18 (457)	22 (559)	24 (610)	10 (254)	18 (457)	22 (559)

** "A" dimension will increase or decrease 1" as the inlet diameter increases or decreases 2" from the standard inlet diameter.*

All dimensions are in inches; parentheses ( ) indicate millimeters.

FVI-500 ECM
PARALLEL FAN POWERED AIR TERMINAL UNIT
WITH HOT WATER COIL MOUNTED ON DISCHARGE



The standard location for control enclosure is Left Hand on Model FVI.
Looking in the direction of airflow, the control enclosure is on the left.

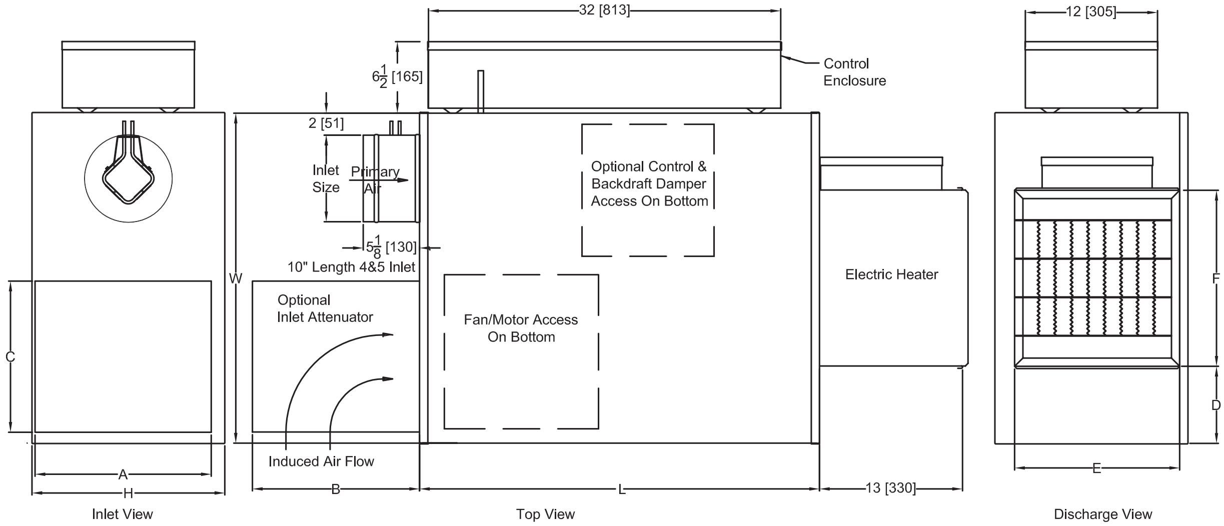
Case size	Inlet Size		Horsepower	Unit Dimensions			Induction Attenuator			Loc. D	Discharge	
	Standard	Optional		Height H	Width W	Length L	Height A	Width B	Length C		Height E	Width F
3	10 (254)	4,5,6,8,12	1/2	17 1/2 (445)	36 (914)	40 (1016)	16 (406)	20 (508)	19 (483)	8 (203)	17 1/2 (445)	20 (508)
6	16 (406)	10,12,14	1	20 (508)	42 (1067)	42 (1067)	20 (508)	24 (610)	21 (533)	10 (254)	18 (457)	22 (559)

** "A" dimension will increase or decrease 1" as the inlet diameter increases or decreases 2" from the standard inlet diameter.*

All dimensions are in inches; parentheses ( ) indicate millimeters.

METALAIRE™

FVI-500 ECM
PARALLEL FAN POWERED AIR TERMINAL UNIT WITH ELECTRIC HEAT



The standard location for control enclosure is Left Hand on Model FVI.
Looking in the direction of airflow, the control enclosure is on the left.

	Inlet Size			Unit Dimensions			Optional Induction Attenuator				Discharge	
Case size	Standard	Optional	Horsepower	Height H	Width W	Length L	Height A	Width B	Length C	Loc. D	Height E	Width F
3	10 (254)	4,5,6,8,12,14	1/2	17 1/2 (445)	36 (914)	40 (1016)	16 (406)	20 (508)	19 (483)	6 1/4 (159)	15 (381)	16 (406)
6	16 (406)	10,12,14	1	20 (508)	42 (1067)	42 (1067)	20 (508)	24 (610)	23 (584)	5 1/2 (140)	17 1/2 (445)	20 (508)

** "A" dimension will increase or decrease 1" as the inlet diameter increases or decreases 2" from the standard inlet diameter.*

All dimensions are in inches; parentheses ( ) indicate millimeters.

FVI-500
AHRI CERTIFIED RATING POINTS

AHRI Certified Radiated Sound Power, Fan Only

Unit Size	Fan CFM	Octave Band						Electrical Power (Watts)
		2	3	4	5	6	7	
106	270	65	60	52	45	42	41	140
208	440	63	58	48	41	37	35	170
310	780	66	62	55	49	43	44	300
412	1000	69	67	61	61	52	52	490
514	1200	68	61	58	50	49	48	630
616	1800	76	73	67	63	57	56	760
718	2600	77	74	71	69	62	61	1430

AHRI Certified Radiated Sound Power, Inlet Ps = 1.5 in. wg. Static Pressure

Unit Size	Primary CFM	Min Ps	Octave Band					
			2	3	4	5	6	7
106	400	0.16	56	50	43	38	34	34
208	700	0.15	59	52	43	39	34	29
310	1100	0.16	63	54	50	47	41	35
412	1600	0.13	70	62	55	51	48	45
514	2100	0.14	66	61	52	48	43	36
616	2800	0.16	73	67	62	58	54	50
718	3750	0.13	77	71	68	65	61	56

AHRI Certified Discharge Sound Power, Fan Only

Unit Size	Fan CFM	Octave Band						Electrical Power (Watts)
		2	3	4	5	6	7	
106	270	63	58	52	50	46	41	140
208	440	62	56	52	53	47	40	170
310	780	69	62	58	57	54	50	300
412	1000	72	67	59	60	58	55	490
514	1200	64	63	59	57	54	53	630
616	1800	76	71	67	69	63	64	760
718	2600	81	77	75	73	70	73	1430

AHRI Certified Radiated Sound Power, Inlet Ps = 1.5 in. wg. Static Pressure

Unit Size	Primary CFM	Min Ps	Octave Band					
			2	3	4	5	6	7
106	400	0.16	62	54	51	48	45	45
208	700	0.15	67	59	52	53	49	45
310	1100	0.16	69	62	57	56	53	50
412	1600	0.13	77	69	63	62	56	54
514	2100	0.14	73	67	61	61	58	52
616	2800	0.16	80	74	68	63	61	60
718	3750	0.13	85	82	77	76	74	74

CERTIFICATIONS AND STANDARDS

- Units tested per ANSI/ASHRAE Standard 130.
- All model sizes certified in accordance with AHRI 880 certification program.
- ETL listed to meet requirements of UL 1995 and CSA 236.
- Dual-density fiberglass insulation meets UL 181 and NFPA 90A requirements.
- Insulation meets ASHRAE 62.1 requirements for resistance to mold growth and erosion.

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VAV Terminals
AHRI Standard 880

FVI-500
RADIATED SOUND POWER LEVEL at Fan Only (Heating)

Case	Inlet	CFM	(L/s)	Fan Only – Octave Band Sound Power, Lw, dB 2	3	4	5	6	7	NC	NC w/SA
1	6	150	(71)	59	44	48	43	36	35	22	20
		200	(94)	64	57	49	42	39	40	27	26
		250	(118)	65	59	52	44	41	41	29	27
		270	(127)	65	60	52	45	42	41	29	27
		300	(142)	66	61	53	46	43	42	31	29
		400	(189)	68	64	58	59	51	49	34	31
		450	(212)	70	66	64	64	55	53	39	34
		550	(260)	72	68	64	64	55	53	39	36
2	8	250	(118)	56	51	42	37	33	32	19	16
		300	(142)	57	53	43	38	34	32	21	17
		350	(165)	60	56	46	40	36	34	25	21
		400	(189)	62	57	47	41	37	35	26	23
		440	(208)	63	58	48	41	37	35	27	25
		500	(236)	64	59	49	42	38	36	28	26
		600	(283)	66	61	50	44	39	37	31	29
		775	(366)	70	64	53	46	42	40	35	34
3	10	125	(59)	49	46	41	36	32	33	<15	<15
		300	(142)	52	50	44	39	34	35	18	<15
		425	(201)	56	53	47	42	36	37	21	16
		675	(319)	63	61	53	47	40	41	31	26
		780	(368)	66	62	55	49	43	44	32	29
		925	(437)	67	64	56	50	44	45	34	30
		1175	(555)	71	68	59	53	45	46	39	35
		1225	(578)	72	70	61	54	46	47	41	37
4	12	500	(236)	61	60	56	53	45	42	31	25
		700	(330)	64	63	58	56	48	46	33	28
		900	(425)	67	66	60	59	50	50	37	32
		1000	(472)	69	67	61	61	52	52	38	33
		1100	(519)	70	68	62	62	53	53	39	34
		1300	(614)	72	71	64	66	56	57	42	38
		1500	(708)	75	74	66	69	58	61	46	41
		1575	(743)	76	74	66	69	58	62	46	41

Case	Inlet	CFM	(L/s)	Fan Only – Octave Band Sound Power, Lw, dB 2	3	4	5	6	7	NC	NC w/SA
5	14	800	(378)	58	54	47	38	35	36	22	18
		950	(448)	62	56	51	43	40	40	25	23
		1100	(519)	67	60	57	49	48	47	32	30
		1200	(566)	68	61	58	50	49	48	33	31
		1300	(614)	69	62	59	51	50	49	34	32
		1500	(708)	71	66	63	53	52	51	38	35
		1700	(802)	72	68	65	54	53	52	41	36
		1800	(850)	75	69	66	55	53	53	42	40
6	16	800	(378)	62	58	52	46	42	40	27	23
		1000	(472)	66	63	60	55	47	45	35	29
		1250	(590)	72	69	64	59	52	50	40	36
		1400	(661)	73	71	65	61	54	53	42	38
		1650	(779)	74	72	66	62	56	55	44	39
		1800	(850)	76	73	67	63	57	56	45	41
		2160	(1020)	78	75	68	65	59	58	47	44
7	18 x 16	1875	(885)	72	67	61	56	47	46	38	36
		2100	(991)	73	68	63	57	49	48	39	38
		2400	(1133)	75	71	67	62	54	53	43	40
		2600	(1227)	77	74	71	69	62	61	47	43
		2800	(1322)	78	75	73	72	66	64	49	44
		3000	(1416)	80	76	75	73	67	66	51	46
		3125	(1475)	81	77	76	74	68	66	53	48

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3. *Performance data is obtained from laboratory testing in accordance with AHRI 880-2011 and ANSI/ASHRAE 130-2008.*
4. *NC values are calculated using attenuation credits outlined in Appendix E of AHRI 885-2008.*
5. *Air terminal units were tested with an external static pressure of 0.25 in.wg.*
6. ***Discharge Sound power levels shown with End Reflection Corrections Included** in dB (ref: 10^{-12} watts).*
7. *Minimum Ps is the static pressure drop across the air terminal unit while the inlet damper is in the wide-open position at a given airflow rate, and the fan is off.*

FVI-500
RADIATED SOUND POWER LEVEL at Inlet Ps = 0.25, 0.50 and 0.75 in. wg. (Cooling)

Case	Inlet	CFM	(L/s)	Min Ps in. wg.	(Pa)	Inlet Ps = 0.25 in. wg. (62 Pa)								Inlet Ps = 0.50 in. wg. (125 Pa)								Inlet Ps = 0.75 in. wg. (187 Pa)							
						Octave Band Sound Power, Lw, dB								Octave Band Sound Power, Lw, dB								Octave Band Sound Power, Lw, dB							
						2	3	4	5	6	7	NC	NC w/ SA	2	3	4	5	6	7	NC	NC w/ SA	2	3	4	5	6	7	NC	NC w/ SA
1	6	100	(47)	0.080	(20.0)	45	34	28	23	19	20	<15	<15	46	35	29	24	20	21	<15	<15	46	36	30	25	21	21	<15	<15
		200	(94)	0.100	(24.9)	46	37	31	26	21	22	<15	<15	47	38	32	27	23	23	<15	<15	48	39	32	28	23	24	<15	<15
		250	(118)	0.110	(27.5)	48	39	33	28	22	24	<15	<15	48	40	35	29	25	27	<15	<15	49	41	38	30	28	30	<15	<15
		300	(142)	0.127	(31.6)	48	40	33	29	24	24	<15	<15	49	41	36	30	26	27	<15	<15	50	42	38	32	28	31	<15	<15
		400	(189)	0.160	(39.7)	50	44	36	31	26	27	<15	<15	51	44	38	32	28	29	<15	<15	52	45	41	34	30	31	<15	<15
		450	(212)	0.176	(43.8)	51	45	38	32	27	28	<15	<15	52	46	40	33	29	30	<15	<15	53	46	42	35	31	31	<15	<15
		500	(236)	0.192	(47.9)	53	47	39	33	28	29	<15	<15	53	47	41	35	30	30	<15	<15	53	47	42	36	32	32	15	<15
		600	(283)	0.241	(60.1)	55	49	43	38	31	31	17	<15	56	50	44	40	34	33	18	16	57	50	45	41	34	33	19	17
2	8	200	(94)	0.084	(20.9)	46	35	27	21	17	18	<15	<15	47	36	27	22	18	19	<15	<15	49	37	29	23	19	21	<15	<15
		300	(142)	0.094	(23.5)	48	39	31	25	20	22	<15	<15	49	40	32	26	20	23	<15	<15	50	42	33	28	22	24	<15	<15
		400	(189)	0.105	(26.2)	50	41	34	28	22	23	<15	<15	51	42	34	28	23	25	<15	<15	52	43	35	30	24	27	<15	<15
		500	(236)	0.116	(28.8)	51	43	36	30	23	25	<15	<15	53	45	37	32	26	29	<15	<15	54	47	39	33	28	32	<15	<15
		650	(307)	0.138	(34.4)	52	47	41	34	26	27	<15	<15	54	48	41	35	27	30	15	<15	56	49	41	35	29	33	17	16
		700	(330)	0.146	(36.3)	53	48	42	35	27	28	15	<15	55	49	42	36	28	31	16	16	57	50	42	36	30	33	18	18
		800	(378)	0.161	(40.1)	54	50	44	38	29	30	18	<15	56	51	44	38	30	32	19	16	58	52	44	38	31	34	20	18
		875	(413)	0.175	(43.5)	55	52	47	40	30	32	21	15	57	53	47	40	31	34	21	17	59	53	47	41	32	35	21	20
		950	(448)	0.188	(46.9)	56	53	48	42	32	33	22	16	57	54	48	42	32	35	22	18	58	55	48	42	33	37	24	19
		1100	(519)	0.227	(56.6)	58	56	49	45	34	36	25	20	58	56	50	46	34	37	25	20	59	56	50	47	35	39	25	20
3	10	300	(142)	0.088	(21.9)	49	41	38	35	27	20	<15	<15	50	40	38	35	27	20	<15	<15	52	41	39	36	28	22	<15	<15
		500	(236)	0.103	(25.7)	51	43	40	37	29	21	<15	<15	53	43	40	37	30	22	<15	<15	54	44	42	39	32	24	15	<15
		775	(366)	0.125	(31.1)	53	45	41	38	30	22	<15	<15	56	46	42	39	32	27	17	16	59	49	44	41	35	31	21	20
		925	(437)	0.136	(33.9)	54	46	42	39	31	23	15	<15	57	48	43	41	33	27	18	17	60	50	46	42	36	32	22	21
		1100	(519)	0.158	(39.3)	55	48	45	42	31	23	19	<15	57	50	45	42	34	29	19	17	62	52	47	43	37	32	25	23
		1325	(625)	0.190	(47.2)	62	51	48	44	32	24	25	23	62	52	48	45	36	31	25	23	62	55	50	47	40	33	25	23
		1450	(684)	0.204	(50.9)	63	53	49	46	32	26	26	25	63	53	50	46	37	32	26	25	63	55	51	48	41	34	26	25
		1625	(767)	0.254	(63.2)	64	55	51	47	33	27	27	26	66	55	52	48	37	32	30	29	66	56	52	49	42	35	30	29
		1700	(802)	0.270	(67.2)	65	56	53	49	34	28	29	27	67	57	54	50	38	33	31	30	67	58	55	51	43	35	31	30
4	12	450	(212)	0.076	(18.9)	48	40	36	33	25	20	<15	<15	49	40	37	34	27	23	<15	<15	51	42	39	36	30	29	<15	<15
		650	(307)	0.084	(20.9)	51	43	38	37	28	25	<15	<15	52	44	39	38	29	27	<15	<15	54	46	42	39	35	32	15	<15
		900	(425)	0.094	(23.4)	54	47	41	40	29	27	<15	<15	56	49	43	42	32	31	17	16	61	53	45	42	41	36	23	22
		1100	(519)	0.100	(25.0)	56	53	47	43	35	27	21	16	59	54	47	44	37	32	22	20	63	54	47	44	42	37	26	25
		1300	(614)	0.107	(26.6)	57	55	49	45	36	28	24	19	60	56	49	45	38	32	25	21	64	55	49	45	43	38	27	26
		1500	(708)	0.118	(29.4)	64	56	50	45	39	35	27	26	64	56	50	46	43	39	27	26	65	56	51	47	44	40	29	27
		1600	(755)	0.126	(31.5)	65	56	51	45	39	35	29	30	65	56	51	47	43	39	29	31	66	57	52	48	45	40	30	31
		1800	(850)	0.143	(35.5)	67	57	52	45	40	36	31	30	68	57	54	48	44	40	32	31	68	58	54	49	46	41	32	31
		2200	(1038)	0.182	(45.3)	70	60	54	47	42	37	35	34	71	60	55	49	45	41	36	35	72	61	56	51	47	42	38	36
		2500	(1180)	0.212	(52.7)	72	62	60	48	44	38	38	36	72	63	60	50	46	42	38	36	73	64	61	52	48	43	39	38

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4. *NC values are calculated using attenuation credits outlined in Appendix E of AHRI 885-2008.*
5. *Air terminal units were tested with an external static pressure of 0.25 in.wg.*
6. ***Discharge Sound power levels shown with End Reflection Corrections Included** in dB (ref: 10^{-12} watts).*
7. *Minimum Ps is the static pressure drop across the air terminal unit while the inlet damper is in the wide-open position at a given airflow rate, and the fan is off.*

FVI-500
RADIATED SOUND POWER LEVEL at Inlet Ps = 0.25, 0.50 and 0.75 in. wg. (Cooling)

Case	Inlet	CFM (L/s)		Min Ps in. wg. (Pa)		Inlet Ps = 0.25 in. wg. (62 Pa)								Inlet Ps = 0.50 in. wg. (125 Pa)								Inlet Ps = 0.75 in. wg. (187 Pa)							
						Octave Band Sound Power, Lw, dB						NC	NC w/ SA	Octave Band Sound Power, Lw, dB						NC	NC w/ SA	Octave Band Sound Power, Lw, dB						NC	NC w/ SA
						2	3	4	5	6	7			2	3	4	5	6	7			2	3	4	5	6	7		
5	14	550	(260)	0.072	(18.0)	41	41	32	28	16	20	<15	<15	44	43	34	30	22	22	<15	<15	46	45	36	32	25	21	<15	<15
		800	(378)	0.081	(20.1)	44	43	34	30	19	23	<15	<15	47	45	36	31	25	24	<15	<15	49	47	38	34	28	23	<15	<15
		1000	(472)	0.090	(22.5)	48	45	36	32	22	25	<15	<15	50	47	39	34	27	27	<15	<15	52	49	41	38	31	27	16	<15
		1500	(708)	0.106	(26.5)	55	49	40	35	28	29	16	<15	58	51	42	38	32	30	20	18	59	54	45	41	36	31	22	20
		2000	(944)	0.134	(33.3)	58	50	42	37	30	31	20	18	59	53	44	40	34	32	21	20	61	55	47	43	38	33	24	22
		2100	(991)	0.141	(35.1)	59	50	42	37	30	31	21	21	59	53	45	40	34	32	21	21	61	55	47	43	38	33	24	23
		2200	(1038)	0.149	(37.0)	60	51	43	38	31	32	22	21	60	54	46	41	35	33	22	21	62	56	48	43	38	34	25	23
		2600	(1227)	0.209	(52.0)	63	53	45	39	32	34	26	25	64	56	48	43	36	35	27	26	65	58	50	45	39	35	29	27
		3000	(1416)	0.246	(61.2)	64	54	47	40	33	36	27	26	65	57	50	44	37	35	29	27	67	59	51	46	40	36	31	30
		3250	(1534)	0.278	(69.3)	65	55	48	41	34	36	29	27	66	58	51	45	39	36	30	29	68	60	52	47	40	37	32	31
6	16	750	(354)	0.083	(20.6)	49	44	35	30	26	24	<15	<15	51	46	37	33	29	28	<15	<15	53	48	39	36	32	31	15	<15
		950	(448)	0.088	(21.8)	52	45	37	33	29	26	<15	<15	54	47	39	35	32	30	<15	<15	56	50	42	38	35	32	18	16
		1525	(720)	0.104	(25.9)	57	47	40	36	32	28	18	17	59	49	42	38	35	32	21	20	61	53	47	42	38	33	23	22
		1800	(850)	0.115	(28.7)	60	48	44	42	37	30	22	21	62	54	48	47	41	36	25	23	64	59	53	49	45	41	28	26
		2400	(1133)	0.138	(34.3)	65	58	52	48	43	37	29	27	67	60	54	49	45	40	31	30	68	62	56	51	47	42	32	31
		2800	(1322)	0.156	(38.9)	68	61	55	50	46	40	32	32	69	63	56	51	47	42	34	34	70	64	57	52	48	43	35	35
		3000	(1416)	0.165	(41.2)	69	63	57	51	47	41	34	32	70	64	57	52	48	43	35	34	71	65	58	53	49	44	36	35
		3500	(1652)	0.188	(46.9)	73	66	60	55	49	45	39	38	74	67	61	56	50	46	40	39	74	68	62	57	52	47	40	39
		4000	(1888)	0.218	(54.3)	75	68	62	57	51	47	41	40	75	69	63	58	52	49	41	40	76	69	64	59	53	50	43	41
		4400	(2077)	0.247	(61.4)	77	71	65	59	53	49	44	43	78	72	65	59	54	51	45	44	78	72	66	60	56	52	45	44
7	18 x 16	975	(460)	0.178	(44.4)	54	40	38	36	34	31	<15	<15	56	43	39	37	35	33	17	16	58	45	42	39	37	35	20	18
		1200	(566)	0.021	(5.2)	56	43	41	39	37	32	17	16	58	46	44	42	39	35	20	18	60	48	46	44	41	37	22	21
		1600	(755)	0.028	(6.9)	59	47	45	44	40	34	21	20	60	49	48	47	42	37	22	21	61	52	50	49	45	41	24	22
		2000	(944)	0.036	(9.0)	62	52	50	51	43	37	25	23	64	56	53	53	46	41	27	26	66	60	57	55	50	46	32	29
		2500	(1180)	0.056	(14.0)	66	59	56	54	48	42	31	29	67	60	57	55	49	44	32	30	69	62	59	56	51	47	34	32
		3300	(1558)	0.098	(24.4)	70	64	61	57	52	46	36	34	71	65	62	58	53	48	37	35	73	66	63	59	54	49	39	38
		3750	(1770)	0.134	(33.4)	73	67	63	59	54	48	39	40	74	68	64	60	55	49	40	41	75	69	65	61	56	50	41	41
		4200	(1982)	0.170	(42.4)	75	70	64	60	55	50	41	40	76	70	65	62	56	50	43	41	76	71	66	63	58	51	43	41
		5000	(2360)	0.298	(74.2)	79	73	67	63	58	53	46	45	79	74	68	65	59	55	46	45	80	75	69	66	60	57	48	46
		5600	(2643)	0.454	(113.0)	81	75	70	65	62	57	49	48	81	76	71	66	62	58	49	48	82	77	72	68	63	59	50	49

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3. *Performance data is obtained from laboratory testing in accordance with AHRI 880-2011 and ANSI/ASHRAE 130-2008.*
4. *NC values are calculated using attenuation credits outlined in Appendix E of AHRI 885-2008.*
5. *Air terminal units were tested with an external static pressure of 0.25 in.wg.*
6. ***Discharge Sound power levels shown with End Reflection Corrections Included** in dB (ref: 10^{-12} watts).*
7. *Minimum Ps is the static pressure drop across the air terminal unit while the inlet damper is in the wide-open position at a given airflow rate, and the fan is off.*

FVI-500
RADIATED SOUND POWER LEVEL at Inlet Ps = 1.25, 1.50 and 1.75 in. wg. (Cooling)

Case	Inlet	CFM (L/s)	Min Ps in. wg. (Pa)	Inlet Ps = 1.25 in. wg. (310 Pa)								Inlet Ps = 1.50 in. wg. (375 Pa)								Inlet Ps = 1.75 in. wg. (435 Pa)							
				Octave Band Sound Power, Lw, dB						NC	NC w/ SA	Octave Band Sound Power, Lw, dB						NC	NC w/ SA	Octave Band Sound Power, Lw, dB						NC	NC w/ SA
				2	3	4	5	6	7			2	3	4	5	6	7			2	3	4	5	6	7		
1	6	100 (47)	0.080 (20.0)	50	39	33	30	25	22	<15	<15	50	40	33	30	26	23	<15	<15	51	41	33	30	26	24	<15	<15
		200 (94)	0.100 (24.9)	52	43	34	31	28	25	<15	<15	53	44	34	31	28	26	<15	<15	53	44	35	31	29	27	<15	<15
		250 (118)	0.110 (27.5)	54	47	39	35	31	30	<15	<15	55	48	40	36	32	33	16	<15	55	49	41	37	32	35	16	<15
		300 (142)	0.127 (31.6)	54	48	39	36	32	30	15	<15	55	49	41	37	32	33	16	<15	55	49	42	37	33	35	16	<15
		400 (189)	0.160 (39.7)	55	50	42	37	34	32	18	<15	56	50	43	38	34	34	18	<15	56	50	43	39	34	36	18	16
		450 (212)	0.176 (43.8)	56	51	46	41	35	33	20	16	56	51	45	41	35	34	19	17	57	52	45	41	35	36	20	17
		500 (236)	0.192 (47.9)	57	52	46	43	36	33	20	17	57	52	46	42	36	34	20	17	58	53	46	41	36	36	21	18
		600 (283)	0.241 (60.1)	58	53	47	43	36	34	21	18	58	53	47	43	37	34	21	20	59	54	47	43	37	35	22	20
2	8	200 (94)	0.084 (20.9)	50	39	30	25	22	18	<15	<15	51	39	31	26	23	19	<15	<15	51	39	31	26	23	20	<15	<15
		300 (142)	0.094 (23.5)	51	44	35	30	24	20	<15	<15	52	44	35	31	25	21	<15	<15	52	43	35	31	26	21	<15	<15
		400 (189)	0.105 (26.2)	53	45	37	32	27	22	<15	<15	54	45	37	33	28	23	<15	<15	54	45	37	33	29	24	<15	<15
		500 (236)	0.116 (28.8)	55	49	40	35	30	27	16	<15	56	49	41	36	31	29	17	<15	56	49	41	37	32	30	17	16
		650 (307)	0.138 (34.4)	57	51	42	37	32	28	19	17	58	51	43	38	33	29	20	18	59	51	43	39	34	30	21	20
		700 (330)	0.146 (36.3)	58	52	43	38	33	28	20	20	59	52	43	39	34	29	21	21	60	52	44	40	35	30	22	22
		800 (378)	0.161 (40.1)	59	54	45	39	34	29	22	20	60	54	45	40	35	30	22	21	61	54	45	41	36	31	23	22
		875 (413)	0.175 (43.5)	59	55	47	41	34	29	24	20	61	55	47	42	35	30	24	22	62	55	46	43	36	31	25	23
		950 (448)	0.188 (46.9)	59	56	49	43	35	29	25	20	60	56	49	44	36	31	25	21	61	55	49	44	37	32	24	22
		1100 (519)	0.227 (56.6)	60	57	50	49	37	29	26	21	61	57	50	50	38	31	26	22	62	56	49	50	38	33	25	23
3	10	300 (142)	0.088 (21.9)	54	42	40	39	31	23	<15	<15	55	43	41	40	32	25	16	<15	56	44	42	40	33	26	17	16
		500 (236)	0.103 (25.7)	56	45	43	41	34	25	17	16	57	46	44	42	35	27	18	17	57	47	44	43	36	28	18	17
		775 (366)	0.125 (31.1)	60	50	45	43	37	32	22	21	61	52	47	45	39	34	23	22	61	53	48	46	40	35	23	22
		925 (437)	0.136 (33.9)	62	51	46	45	38	33	25	23	62	53	48	46	39	34	25	23	62	55	50	47	40	35	25	23
		1100 (519)	0.158 (39.3)	63	52	47	46	40	34	26	25	63	54	50	47	41	35	26	25	63	56	52	48	41	36	26	25
		1325 (625)	0.190 (47.2)	64	55	54	49	43	35	29	26	64	56	55	49	43	36	30	26	64	56	55	49	43	36	30	26
		1450 (684)	0.204 (50.9)	64	55	53	50	44	36	27	26	65	56	55	50	44	36	30	27	65	57	56	50	44	36	31	27
		1625 (767)	0.254 (63.2)	67	57	54	50	44	36	31	30	68	58	55	51	45	37	32	30	68	59	56	52	45	38	32	31
		1700 (802)	0.270 (67.2)	68	59	56	52	45	38	32	31	69	60	57	53	46	39	34	32	69	60	57	54	46	39	34	32
4	12	450 (212)	0.076 (18.9)	53	45	40	38	35	32	<15	<15	55	47	42	39	37	34	16	<15	56	49	43	40	39	35	17	16
		650 (307)	0.084 (20.9)	57	50	44	42	39	36	18	17	59	53	46	44	41	38	21	20	60	55	48	45	42	40	24	21
		900 (425)	0.094 (23.4)	63	56	49	45	43	41	26	25	65	58	51	47	45	43	29	27	66	59	53	49	47	45	30	29
		1100 (519)	0.100 (25.0)	65	57	50	47	44	42	29	27	67	59	52	49	46	44	31	30	68	61	54	50	48	46	32	31
		1300 (614)	0.107 (26.6)	66	58	52	48	45	42	30	29	68	60	54	50	47	44	32	30	69	62	55	51	49	46	34	32
		1500 (708)	0.118 (29.4)	67	59	53	49	46	43	31	30	69	61	55	51	48	45	34	32	71	63	56	52	49	47	36	35
		1600 (755)	0.126 (31.5)	68	60	54	50	47	43	32	34	70	62	55	51	48	45	35	35	71	63	56	52	49	47	36	36
		1800 (850)	0.143 (35.5)	70	61	55	51	48	44	35	34	71	63	56	52	49	46	36	35	72	64	57	53	50	47	38	36
		2200 (1038)	0.182 (45.3)	74	62	57	52	49	43	40	39	75	64	58	54	50	46	41	40	76	65	58	55	51	48	43	41
		2500 (1180)	0.212 (52.7)	75	65	62	53	50	45	41	40	76	66	63	55	51	47	43	41	77	67	63	57	52	49	44	43

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4. *NC values are calculated using attenuation credits outlined in Appendix E of AHRI 885-2008.*
5. *Air terminal units were tested with an external static pressure of 0.25 in.wg.*
6. ***Discharge Sound power levels shown with End Reflection Corrections Included** in dB (ref: 10^{-12} watts).*
7. *Minimum Ps is the static pressure drop across the air terminal unit while the inlet damper is in the wide-open position at a given airflow rate, and the fan is off.*

METALAIRE™

FVI-500
RADIATED SOUND POWER LEVEL at Inlet Ps = 1.25, 1.50 and 1.75 in. wg. (Cooling)

Case	Inlet	CFM	(L/s)	Min Ps in. wg.	(Pa)	Inlet Ps = 1.25 in. wg. (310 Pa) Octave Band Sound Power, Lw, dB 2	3	4	5	6	7	NC	NC w/ SA	Inlet Ps = 1.50 in. wg. (375 Pa) Octave Band Sound Power, Lw, dB 2	3	4	5	6	7	NC	NC w/ SA	Inlet Ps = 1.75 in. wg. (435 Pa) Octave Band Sound Power, Lw, dB 2	3	4	5	6	7	NC	NC w/ SA
5	14	550	(260)	0.072	(18.0)	49	47	38	34	28	21	<15	<15	51	48	41	36	30	22	15	<15	52	48	43	37	32	23	17	<15
		800	(378)	0.081	(20.1)	52	49	41	36	32	24	16	<15	53	52	43	38	33	25	20	15	54	54	45	40	34	26	22	18
		1000	(472)	0.090	(22.5)	55	54	45	42	35	28	22	18	57	56	47	44	36	29	25	20	59	57	49	45	37	30	26	21
		1500	(708)	0.106	(26.5)	62	58	49	45	40	33	27	23	64	59	51	47	42	35	28	25	65	60	52	48	43	37	29	27
		2000	(944)	0.134	(33.3)	64	59	50	46	41	34	28	26	66	61	52	48	43	36	31	29	68	62	54	50	45	38	32	31
		2100	(991)	0.141	(35.1)	64	59	50	46	41	34	28	27	66	61	52	48	43	36	31	30	68	62	54	50	45	38	32	32
		2200	(1038)	0.149	(37.0)	65	60	51	47	42	34	29	27	67	61	53	48	44	36	31	30	69	63	55	50	46	38	34	32
		2600	(1227)	0.209	(52.0)	68	62	53	49	44	36	32	31	69	63	55	51	46	37	34	32	71	64	58	53	48	39	36	35
		3000	(1416)	0.246	(61.2)	69	64	54	50	44	38	34	32	71	65	57	52	47	39	36	35	72	66	59	54	49	40	38	36
		3250	(1534)	0.278	(69.3)	70	65	55	51	46	38	35	34	71	66	58	53	48	40	37	35	73	67	60	55	51	42	39	38
6	16	750	(354)	0.083	(20.6)	56	50	43	39	35	33	18	16	57	51	45	41	36	34	19	17	58	52	46	42	37	35	20	18
		950	(448)	0.088	(21.8)	58	52	50	42	37	39	24	18	59	54	51	45	41	41	25	20	60	56	52	48	45	43	26	21
		1525	(720)	0.104	(25.9)	64	56	53	46	44	43	27	26	65	59	55	48	47	46	30	27	66	62	57	50	49	48	32	29
		1800	(850)	0.115	(28.7)	67	62	57	53	49	46	32	30	68	64	59	56	52	49	34	30	68	65	60	58	55	51	35	31
		2400	(1133)	0.138	(34.3)	70	64	59	54	50	47	35	34	71	66	61	57	53	49	37	35	72	67	62	59	55	51	38	36
		2800	(1322)	0.156	(38.9)	72	66	60	55	51	47	38	38	73	67	62	58	54	50	39	39	74	68	63	60	56	52	40	40
		3000	(1416)	0.165	(41.2)	73	67	61	56	51	47	39	38	74	68	63	58	54	50	40	39	75	69	64	60	57	53	41	40
		3500	(1652)	0.188	(46.9)	76	69	64	59	53	49	43	41	77	70	65	60	56	52	44	43	78	71	66	61	58	54	45	44
		4000	(1888)	0.218	(54.3)	78	71	66	61	55	52	45	44	80	72	67	62	57	55	48	45	81	73	68	63	59	57	49	48
		4400	(2077)	0.247	(61.4)	80	73	68	62	58	54	48	46	82	74	69	64	60	57	50	48	83	75	70	65	62	60	52	50
7	18 x 16	975	(460)	0.178	(44.4)	60	48	45	42	40	39	22	21	61	50	47	44	42	40	23	22	61	52	48	46	43	41	23	22
		1200	(566)	0.021	(5.2)	62	50	48	47	44	41	25	23	63	53	50	48	46	42	26	25	63	56	51	49	48	43	26	25
		1600	(755)	0.028	(6.9)	63	57	53	52	48	45	27	25	64	59	55	54	50	47	30	26	65	61	56	55	52	48	31	27
		2000	(944)	0.036	(9.0)	68	63	60	58	53	50	35	31	69	65	62	61	56	53	37	32	70	66	64	63	59	55	39	34
		2500	(1180)	0.056	(14.0)	70	65	62	59	54	51	37	34	72	67	64	62	57	54	39	35	73	68	66	64	59	56	42	38
		3300	(1558)	0.098	(24.4)	74	68	65	62	56	52	41	39	75	69	67	64	59	55	43	40	76	70	68	66	62	57	44	41
		3750	(1770)	0.134	(33.4)	76	70	67	64	58	53	43	44	77	71	68	65	61	56	44	45	78	73	69	67	63	58	45	46
		4200	(1982)	0.170	(42.4)	78	72	68	65	60	54	45	44	79	74	69	66	62	57	46	45	80	75	70	67	64	59	48	46
		5000	(2360)	0.298	(74.2)	81	76	70	67	63	59	49	48	82	77	71	68	64	61	50	49	83	78	72	69	65	62	52	50
		5600	(2643)	0.454	(113.0)	82	78	74	69	65	62	51	49	83	79	75	71	66	64	52	50	84	80	76	72	67	65	53	52

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4. *NC values are calculated using attenuation credits outlined in Appendix E of AHRI 885-2008.*
5. *Air terminal units were tested with an external static pressure of 0.25 in.wg.*
6. ***Discharge Sound power levels shown with End Reflection Corrections Included** in dB (ref: 10^{-12} watts).*
7. *Minimum Ps is the static pressure drop across the air terminal unit while the inlet damper is in the wide-open position at a given airflow rate, and the fan is off.*

FVI-500
DISCHARGE SOUND POWER LEVEL at Fan Only (Heating)

Case	Inlet	CFM	(L/s)	Fan Only – Octave Band Sound Power, Lw, dB: 2	3	4	5	6	7	NC
1	6	150	(71)	42	40	37	36	33	29	<15
		200	(94)	50	47	44	43	39	35	<15
		250	(118)	58	55	51	50	45	40	<15
		270	(127)	59	56	52	50	46	41	<15
		300	(142)	60	57	53	51	47	42	<15
		400	(189)	65	61	57	55	51	45	19
		450	(212)	67	63	59	57	53	47	21
		550	(260)	69	66	61	59	55	48	25
2	8	250	(118)	55	49	47	47	42	36	<15
		300	(142)	56	50	48	48	43	37	<15
		350	(165)	57	52	50	50	44	38	<15
		400	(189)	57	53	52	52	46	39	<15
		440	(208)	58	54	52	53	47	40	<15
		500	(236)	59	55	53	54	48	42	<15
		600	(283)	65	60	55	56	50	49	18
		775	(366)	67	66	58	59	53	57	24
3	10	125	(59)	43	41	36	28	36	27	<15
		300	(142)	48	47	42	35	41	35	<15
		425	(201)	54	51	45	39	46	36	<15
		675	(319)	63	60	57	55	50	46	18
		780	(368)	65	61	58	57	54	50	18
		925	(437)	70	63	60	61	58	57	21
		1175	(555)	72	67	62	62	60	59	25
		1225	(578)	73	71	64	63	62	60	29
4	12	500	(236)	60	58	54	52	50	46	15
		700	(330)	64	62	56	55	54	50	20
		900	(425)	66	65	58	57	56	53	22
		1000	(472)	68	66	59	60	58	55	24
		1100	(519)	69	67	59	63	59	56	25
		1300	(614)	71	70	61	62	62	59	28
		1500	(708)	73	72	63	64	63	61	31
		1575	(743)	74	72	64	65	64	63	31

Case	Inlet	CFM	(L/s)	Fan Only – Octave Band Sound Power, Lw, dB: 2	3	4	5	6	7	NC
5	14	800	(378)	60	56	50	46	43	40	<15
		950	(448)	63	58	58	55	52	49	<15
		1100	(519)	59	61	58	56	53	52	18
		1200	(566)	60	62	59	57	54	53	19
		1300	(614)	61	62	60	58	55	54	19
		1500	(708)	73	71	63	62	60	60	29
		1700	(802)	74	73	64	64	61	63	32
		1800	(850)	75	73	65	65	62	65	32
6	16	800	(378)	58	55	55	52	48	44	<15
		1000	(472)	61	58	57	56	51	48	<15
		1250	(590)	64	61	60	55	54	52	18
		1400	(661)	66	63	62	60	56	54	20
		1650	(779)	70	67	65	61	60	60	25
		1800	(850)	73	70	67	69	63	64	28
		2160	(1020)	75	72	68	67	66	65	31
7	18 x 16	1875	(885)	71	68	70	65	64	67	31
		2100	(991)	74	71	72	68	66	69	32
		2400	(1133)	77	74	74	71	69	71	34
		2600	(1227)	79	76	75	73	70	73	36
		2800	(1322)	81	78	76	75	72	74	38
		3000	(1416)	82	79	77	76	74	74	39
		3125	(1475)	83	80	77	77	76	75	40

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4. *NC values are calculated using attenuation credits outlined in Appendix E of AHRI 885-2008.*
5. *Air terminal units were tested with an external static pressure of 0.25 in.wg.*
6. ***Discharge Sound power levels shown with End Reflection Corrections Included** in dB (ref: 10^{-12} watts).*
7. *Minimum Ps is the static pressure drop across the air terminal unit while the inlet damper is in the wide-open position at a given airflow rate, and the fan is off.*

FVI-500
DISCHARGE SOUND POWER LEVEL at Inlet Ps = 0.25, 0.50 and 0.75 in. wg. (Cooling)

Case	Inlet	CFM	(L/s)	Min Ps in. wg.	(Pa)	Inlet Ps = 0.25 in. wg. (62 Pa) Octave Band Sound Power, Lw, dB 2	3	4	5	6	7	NC	Inlet Ps = 0.50 in. wg. (125 Pa) Octave Band Sound Power, Lw, dB 2	3	4	5	6	7	NC	Inlet Ps = 0.75 in. wg. (187 Pa) Octave Band Sound Power, Lw, dB 2	3	4	5	6	7	NC
1	6	100	(47)	0.080	(20.0)	52	38	33	28	27	26	<15	53	39	33	29	28	27	<15	53	40	33	30	29	26	<15
		200	(94)	0.100	(24.9)	54	41	36	31	30	28	<15	53	42	37	32	31	29	<15	54	43	36	33	31	29	<15
		250	(118)	0.110	(27.5)	55	43	38	33	31	30	<15	55	45	40	34	34	34	<15	56	45	42	35	38	37	<15
		300	(142)	0.127	(31.6)	55	44	39	34	33	31	<15	56	46	42	36	37	34	<15	57	46	43	37	39	38	<15
		400	(189)	0.160	(39.7)	57	48	42	37	37	34	<15	58	49	44	38	39	37	<15	59	49	46	40	41	38	<15
		450	(212)	0.176	(43.8)	58	49	44	38	38	36	<15	59	51	46	39	40	38	<15	60	50	47	41	42	38	<15
		500	(236)	0.192	(47.9)	60	51	46	39	40	37	<15	60	52	47	41	41	38	<15	60	51	47	42	43	39	<15
		600	(283)	0.241	(60.1)	63	53	50	45	44	40	<15	63	55	50	45	45	41	<15	64	54	50	46	45	40	16
2	8	200	(94)	0.084	(20.9)	56	42	34	32	29	25	<15	56	43	34	32	29	25	<15	58	43	36	34	31	26	<15
		300	(142)	0.094	(23.5)	58	46	39	38	34	30	<15	59	47	40	38	34	30	<15	60	48	41	42	34	29	<15
		400	(189)	0.105	(26.2)	60	49	43	42	37	33	<15	61	50	43	41	38	32	<15	62	50	44	45	38	33	<15
		500	(236)	0.116	(28.8)	61	51	45	45	40	35	<15	63	53	46	46	42	39	<15	64	54	48	48	44	40	16
		650	(307)	0.138	(34.4)	62	55	51	51	45	38	<15	64	56	51	51	45	40	16	66	56	51	52	46	41	18
		700	(330)	0.146	(36.3)	62	55	51	51	45	38	<15	64	56	51	51	45	40	16	66	56	51	52	46	41	18
		800	(378)	0.161	(40.1)	62	55	51	51	45	38	<15	64	56	51	51	45	40	<15	66	56	51	52	46	41	16
		875	(413)	0.175	(43.5)	63	57	54	53	47	40	<15	65	58	54	53	46	42	<15	67	57	54	55	47	42	17
		950	(448)	0.188	(46.9)	64	58	55	56	49	42	<15	65	59	56	56	48	43	15	66	59	56	58	49	44	16
		1100	(519)	0.227	(56.6)	66	62	57	61	53	46	19	66	62	58	62	51	47	19	67	61	58	64	51	46	18
3	10	300	(142)	0.088	(21.9)	59	48	45	44	34	29	<15	59	51	45	44	37	33	<15	59	52	45	46	39	32	<15
		500	(236)	0.103	(25.7)	61	54	47	47	38	30	<15	61	54	48	47	41	35	<15	61	55	48	50	44	35	<15
		775	(366)	0.125	(31.1)	66	56	48	48	39	33	16	66	56	50	49	43	42	16	66	60	50	52	48	43	16
		925	(437)	0.136	(33.9)	67	58	50	50	40	34	17	67	58	51	51	44	42	17	67	61	51	53	49	44	18
		1100	(519)	0.158	(39.3)	67	58	50	50	40	34	17	67	58	51	51	44	42	17	67	61	51	53	49	44	18
		1325	(625)	0.190	(47.2)	75	62	53	52	41	35	27	72	60	54	54	47	44	23	67	64	54	57	52	46	21
		1450	(684)	0.204	(50.9)	76	64	55	55	41	39	29	73	62	56	56	48	46	25	68	65	56	59	55	47	22
		1625	(767)	0.254	(63.2)	78	66	57	56	42	40	31	77	64	58	58	49	47	30	71	66	57	61	56	48	24
		1700	(802)	0.270	(67.2)	79	68	59	58	43	41	32	78	66	60	61	50	48	31	72	68	60	63	57	49	26
4	12	450	(212)	0.076	(18.9)	59	52	43	41	37	32	<15	62	55	47	44	40	35	<15	65	58	51	45	39	35	17
		650	(307)	0.084	(20.9)	62	54	46	44	40	36	<15	64	57	49	46	43	38	16	67	60	53	48	42	39	20
		900	(425)	0.094	(23.4)	65	56	50	47	43	38	<15	67	59	52	49	45	42	17	69	61	55	51	45	42	20
		1100	(519)	0.100	(25.0)	67	58	52	50	46	44	17	69	60	54	52	48	44	20	70	62	56	52	48	45	21
		1300	(614)	0.107	(26.6)	69	60	54	55	49	47	20	70	62	56	55	50	47	21	72	64	58	56	50	48	23
		1500	(708)	0.118	(29.4)	72	61	57	57	53	50	23	73	63	58	57	53	51	25	73	65	60	57	53	51	25
		1600	(755)	0.126	(31.5)	73	62	58	58	54	51	25	74	64	60	58	54	52	26	75	66	61	59	54	52	27
		1800	(850)	0.143	(35.5)	76	64	61	60	55	53	29	76	65	62	61	56	54	29	77	67	63	62	57	55	30
		2200	(1038)	0.182	(45.3)	79	66	64	67	62	61	32	80	67	64	68	62	62	34	80	69	66	66	62	61	34
		2500	(1180)	0.212	(52.7)	80	66	65	68	64	63	34	81	67	66	68	65	64	35	81	71	68	69	65	64	35

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3. *Performance data is obtained from laboratory testing in accordance with AHRI 880-2011 and ANSI/ASHRAE 130-2008.*
4. *NC values are calculated using attenuation credits outlined in Appendix E of AHRI 885-2008.*
5. *Air terminal units were tested with an external static pressure of 0.25 in.wg.*
6. ***Discharge Sound power levels shown with End Reflection Corrections Included** in dB (ref: 10^{-12} watts).*
7. *Minimum Ps is the static pressure drop across the air terminal unit while the inlet damper is in the wide-open position at a given airflow rate, and the fan is off.*

PARALLEL FAN POWERED

FVI-500 VARIABLE VOLUME

FVI-500
DISCHARGE SOUND POWER LEVEL at Inlet Ps = 0.25, 0.50 and 0.75 in. wg. (Cooling)

Case	Inlet	CFM (L/s)		Min Ps in. wg. (Pa)		Inlet Ps = 0.25 in. wg. (62 Pa)							Inlet Ps = 0.50 in. wg. (125 Pa)							Inlet Ps = 0.75 in. wg. (187 Pa)						
						Octave Band Sound Power, Lw, dB							Octave Band Sound Power, Lw, dB							Octave Band Sound Power, Lw, dB						
						2	3	4	5	6	7	NC	2	3	4	5	6	7	NC	2	3	4	5	6	7	NC
5	14	550	(260)	0.072	(18.0)	49	47	41	38	27	25	<15	53	49	43	41	33	31	<15	54	51	44	43	36	33	<15
		800	(378)	0.081	(20.1)	52	49	43	40	31	29	<15	56	51	45	42	36	33	<15	57	53	46	45	40	35	<15
		1000	(472)	0.090	(22.5)	56	51	45	42	34	31	<15	59	53	48	45	39	36	<15	60	55	49	49	43	39	<15
		1500	(708)	0.106	(26.5)	63	55	49	45	41	35	<15	66	57	51	49	44	39	16	66	60	53	53	48	44	16
		2000	(944)	0.134	(33.3)	65	56	51	47	43	37	<15	67	59	53	52	46	42	17	68	61	55	55	51	46	18
		2100	(991)	0.141	(35.1)	66	57	52	48	44	38	16	68	60	54	53	47	43	18	69	62	56	55	51	47	20
		2200	(1038)	0.149	(37.0)	67	57	52	48	44	39	17	68	60	55	53	47	43	18	69	62	56	55	51	47	20
		2600	(1227)	0.209	(52.0)	70	60	53	51	45	40	21	71	60	54	53	48	44	22	70	63	53	55	51	47	21
		3000	(1416)	0.246	(61.2)	72	61	55	52	45	41	23	73	61	56	55	48	45	25	73	64	55	57	51	47	25
		3250	(1534)	0.278	(69.3)	73	62	56	54	46	42	25	74	62	57	56	49	45	26	73	65	56	58	52	48	25
6	16	750	(354)	0.083	(20.6)	61	52	47	42	32	30	<15	64	54	49	43	38	32	<15	65	56	50	43	39	33	<15
		950	(448)	0.088	(21.8)	63	54	48	43	35	32	<15	66	56	50	45	40	35	16	67	57	52	45	41	39	17
		1525	(720)	0.104	(25.9)	67	61	53	47	41	35	18	68	61	54	49	45	41	18	70	61	56	49	46	45	21
		1800	(850)	0.115	(28.7)	70	62	54	49	43	38	21	71	63	56	50	47	45	22	72	63	58	51	49	47	23
		2400	(1133)	0.138	(34.3)	75	67	59	52	50	48	27	76	67	60	54	52	51	29	76	68	61	56	55	54	29
		2800	(1322)	0.156	(38.9)	77	69	60	55	54	53	30	77	69	62	57	56	55	30	78	70	64	59	58	57	31
		3000	(1416)	0.165	(41.2)	78	70	61	56	56	55	31	78	70	63	58	58	57	31	79	71	65	60	59	59	32
		3500	(1652)	0.188	(46.9)	80	71	63	58	60	58	34	80	72	64	60	61	60	34	80	73	65	61	61	60	34
		4000	(1888)	0.218	(54.3)	81	72	64	62	61	60	35	82	73	65	63	61	61	36	83	74	67	64	62	61	38
		4400	(2077)	0.247	(61.4)	83	73	65	65	64	62	38	84	74	66	65	64	63	39	85	75	68	66	65	63	40
7	18 x 16	975	(460)	0.178	(44.4)	61	56	48	42	34	31	<15	62	57	48	43	36	32	<15	62	57	49	44	36	33	<15
		1200	(566)	0.021	(5.2)	66	63	54	52	47	46	20	67	63	55	53	48	47	20	67	63	56	54	49	48	20
		1600	(755)	0.028	(6.9)	69	64	56	55	51	50	21	70	65	57	56	53	51	22	71	66	58	57	54	51	24
		2000	(944)	0.036	(9.0)	73	67	58	57	54	53	25	74	68	59	58	56	54	26	75	69	59	59	57	55	27
		2500	(1180)	0.056	(14.0)	77	70	61	59	59	58	30	78	71	61	60	59	59	31	79	73	62	61	60	59	32
		3300	(1558)	0.098	(24.4)	78	75	65	65	63	62	34	79	76	66	66	64	62	35	80	77	66	67	65	63	37
		3750	(1770)	0.134	(33.4)	80	77	67	67	65	64	37	81	78	68	67	66	64	38	82	79	68	68	67	65	39
		4200	(1982)	0.170	(42.4)	82	79	68	68	66	65	39	83	80	69	68	67	65	40	84	81	70	69	68	66	41
		5000	(2360)	0.298	(74.2)	84	80	73	71	70	68	40	85	82	75	72	70	69	42	86	83	76	72	71	69	44
		5600	(2643)	0.454	(113.0)	86	82	75	73	72	70	42	86	83	77	74	73	71	44	87	84	78	74	73	72	45

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4. *NC values are calculated using attenuation credits outlined in Appendix E of AHRI 885-2008.*
5. *Air terminal units were tested with an external static pressure of 0.25 in.wg.*
6. ***Discharge Sound power levels shown with End Reflection Corrections Included** in dB (ref: 10^{-12} watts).*
7. *Minimum Ps is the static pressure drop across the air terminal unit while the inlet damper is in the wide-open position at a given airflow rate, and the fan is off.*

FVI-500
DISCHARGE SOUND POWER LEVEL at Inlet Ps = 1.25, 1.50 and 1.75 in. wg. (Cooling)

Case	Inlet	CFM	(L/s)	Min Ps in. wg.	(Pa)	Inlet Ps = 1.25 in. wg. (310 Pa) Octave Band Sound Power, Lw, dB 2	3	4	5	6	7	NC	Inlet Ps = 1.50 in. wg. (375 Pa) Octave Band Sound Power, Lw, dB 2	3	4	5	6	7	NC	Inlet Ps = 1.75 in. wg. (435 Pa) Octave Band Sound Power, Lw, dB 2	3	4	5	6	7	NC
1	6	100	(47)	0.080	(20.0)	56	42	40	37	33	30	<15	57	43	40	37	34	31	<15	57	44	40	38	34	32	<15
		200	(94)	0.100	(24.9)	59	46	41	39	36	33	<15	60	47	42	39	38	34	<15	60	48	43	40	39	35	<15
		250	(118)	0.110	(27.5)	61	51	46	43	41	41	16	62	52	48	45	42	43	17	62	53	51	47	43	46	17
		300	(142)	0.127	(31.6)	61	52	47	45	42	41	<15	62	53	49	47	43	43	17	62	53	52	49	44	46	<15
		400	(189)	0.160	(39.7)	62	54	50	46	45	43	<15	62	54	51	48	45	45	17	63	54	53	50	45	47	<15
		450	(212)	0.176	(43.8)	63	55	54	51	46	44	<15	63	55	55	51	46	46	18	64	56	55	52	46	47	16
		500	(236)	0.192	(47.9)	64	56	55	53	47	44	16	64	56	56	53	47	46	20	65	57	56	53	47	47	17
		600	(283)	0.241	(60.1)	65	57	56	53	48	45	17	65	57	57	54	49	46	21	66	58	58	55	49	46	18
2	8	200	(94)	0.084	(20.9)	58	45	37	35	33	28	<15	58	46	38	35	34	29	<15	59	47	38	36	34	31	<15
		300	(142)	0.094	(23.5)	60	50	42	42	37	31	<15	60	50	43	42	38	32	<15	61	51	43	43	39	33	<15
		400	(189)	0.105	(26.2)	62	52	45	45	40	34	<15	62	52	45	46	41	35	17	63	53	46	46	42	36	<15
		500	(236)	0.116	(28.8)	64	56	48	49	46	43	16	64	57	49	50	47	44	20	65	58	50	52	48	46	17
		650	(307)	0.138	(34.4)	66	58	51	52	48	44	18	67	59	52	53	49	45	20	68	60	53	54	50	46	15
		700	(330)	0.146	(36.3)	66	58	51	52	48	44	18	67	59	52	53	49	45	20	68	60	53	54	50	46	15
		800	(378)	0.161	(40.1)	66	58	51	52	48	44	16	67	59	52	53	49	45	20	68	60	53	54	50	46	15
		875	(413)	0.175	(43.5)	66	59	53	54	49	44	16	67	60	53	55	50	46	20	69	61	54	56	51	47	20
		950	(448)	0.188	(46.9)	66	60	56	56	50	45	16	67	61	56	57	51	47	20	68	62	56	57	52	48	19
		1100	(519)	0.227	(56.6)	67	62	57	64	52	45	19	68	62	57	64	53	47	21	69	63	57	65	53	49	20
3	10	300	(142)	0.088	(21.9)	61	52	50	49	44	37	<15	62	52	50	49	45	38	17	63	52	49	49	45	39	<15
		500	(236)	0.103	(25.7)	63	55	53	51	47	39	<15	64	55	52	52	48	41	20	64	55	51	52	48	42	16
		775	(366)	0.125	(31.1)	67	60	55	53	51	48	17	68	61	55	54	52	49	21	68	61	55	55	53	50	18
		925	(437)	0.136	(33.9)	69	61	56	55	52	49	20	69	62	57	56	53	50	22	69	63	57	56	53	50	20
		1100	(519)	0.158	(39.3)	69	61	56	55	52	49	20	69	62	57	56	53	50	22	69	63	57	56	53	50	20
		1325	(625)	0.190	(47.2)	70	64	64	58	55	50	21	70	64	63	58	56	50	23	70	64	61	58	57	50	21
		1450	(684)	0.204	(50.9)	70	65	63	59	57	51	22	71	65	62	59	57	51	25	71	64	61	58	57	50	22
		1625	(767)	0.254	(63.2)	73	67	64	60	58	53	25	74	67	63	60	59	53	26	74	66	62	60	59	52	26
		1700	(802)	0.270	(67.2)	74	69	66	62	59	55	27	75	69	65	63	60	55	27	75	68	63	63	60	55	27
4	12	450	(212)	0.076	(18.9)	66	59	53	47	41	37	18	67	60	54	48	43	40	23	67	60	54	49	45	42	20
		650	(307)	0.084	(20.9)	68	61	55	49	44	40	21	69	62	56	51	45	43	22	70	62	56	52	46	45	23
		900	(425)	0.094	(23.4)	70	62	57	52	47	43	21	71	63	57	53	48	45	25	71	63	58	54	50	47	22
		1100	(519)	0.100	(25.0)	71	64	58	54	49	46	22	72	65	59	55	51	48	26	72	65	60	57	52	50	23
		1300	(614)	0.107	(26.6)	73	66	59	57	51	49	25	74	67	60	58	53	51	29	75	67	62	60	55	54	27
		1500	(708)	0.118	(29.4)	75	68	61	58	53	51	27	76	68	62	61	55	53	29	77	69	64	63	56	55	30
		1600	(755)	0.126	(31.5)	76	69	62	60	55	53	29	77	69	63	62	56	54	30	78	70	65	63	57	56	31
		1800	(850)	0.143	(35.5)	78	71	64	63	58	56	31	79	71	65	63	58	57	32	80	71	66	64	59	57	34
		2200	(1038)	0.182	(45.3)	81	72	68	67	64	62	35	82	73	69	68	65	63	36	83	74	69	68	65	63	38
		2500	(1180)	0.212	(52.7)	82	73	70	69	67	65	36	83	75	71	70	68	66	38	84	76	71	70	68	66	39

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6. ***Discharge Sound power levels shown with End Reflection Corrections Included** in dB (ref: 10^{-12} watts).*
7. *Minimum Ps is the static pressure drop across the air terminal unit while the inlet damper is in the wide-open position at a given airflow rate, and the fan is off.*

FVI-500
DISCHARGE SOUND POWER LEVEL at Inlet Ps = 1.25, 1.50 and 1.75 in. wg. (Cooling)

Case	Inlet	CFM (L/s)		Min Ps in. wg. (Pa)		Inlet Ps = 1.25 in. wg. (310 Pa)							Inlet Ps = 1.50 in. wg. (375 Pa)							Inlet Ps = 1.75 in. wg. (435 Pa)						
						Octave Band Sound Power, Lw, dB							Octave Band Sound Power, Lw, dB							Octave Band Sound Power, Lw, dB						
						2	3	4	5	6	7	NC	2	3	4	5	6	7	NC	2	3	4	5	6	7	NC
5	14	550	(260)	0.072	(18.0)	57	53	46	45	40	37	<15	58	53	49	47	42	37	<15	59	53	51	49	44	37	<15
		800	(378)	0.081	(20.1)	60	55	49	47	45	40	<15	61	57	51	50	46	40	<15	61	59	53	52	47	40	15
		1000	(472)	0.090	(22.5)	62	60	53	54	48	44	16	64	61	55	56	49	45	19	65	62	57	57	50	45	19
		1500	(708)	0.106	(26.5)	69	64	57	57	54	50	21	70	65	59	59	56	51	22	71	65	60	61	57	52	22
		2000	(944)	0.134	(33.3)	71	65	58	58	55	51	22	73	66	61	61	57	52	25	74	67	63	63	59	53	26
		2100	(991)	0.141	(35.1)	72	66	59	59	56	51	24	73	67	61	61	58	52	25	75	68	64	63	60	53	27
		2200	(1038)	0.149	(37.0)	72	66	59	59	56	51	24	74	67	62	61	58	52	26	75	68	64	63	60	53	27
		2600	(1227)	0.209	(52.0)	72	67	60	60	57	52	25	74	68	63	62	59	53	26	75	69	65	64	61	54	27
		3000	(1416)	0.246	(61.2)	74	68	61	61	57	52	26	76	69	64	63	59	53	29	77	70	66	65	61	54	30
		3250	(1534)	0.278	(69.3)	74	68	62	62	58	53	26	76	69	65	64	60	54	29	77	70	67	66	62	55	30
6	16	750	(354)	0.083	(20.6)	66	57	51	45	41	40	16	67	58	52	51	42	41	20	67	59	53	57	43	42	17
		950	(448)	0.088	(21.8)	68	59	54	47	43	42	18	69	60	55	49	44	43	22	69	60	56	50	45	44	20
		1525	(720)	0.104	(25.9)	71	62	57	50	47	46	22	72	63	58	52	49	48	23	72	63	59	53	51	50	23
		1800	(850)	0.115	(28.7)	73	65	59	53	52	51	25	74	66	61	55	53	52	26	74	67	63	57	53	52	26
		2400	(1133)	0.138	(34.3)	78	69	62	58	57	56	31	79	70	64	59	58	57	32	80	71	66	60	58	57	34
		2800	(1322)	0.156	(38.9)	79	73	67	63	61	59	32	80	74	68	63	61	60	34	81	76	69	63	61	60	35
		3000	(1416)	0.165	(41.2)	80	75	69	65	63	61	34	81	77	70	65	63	61	37	82	78	70	64	62	61	38
		3500	(1652)	0.188	(46.9)	81	76	70	65	65	62	35	83	78	71	66	66	63	38	84	79	72	67	66	63	39
		4000	(1888)	0.218	(54.3)	84	77	71	67	66	63	39	86	80	72	68	67	64	41	87	82	73	68	67	64	43
		4400	(2077)	0.247	(61.4)	86	78	72	68	67	65	41	87	81	73	69	68	66	43	88	83	74	69	68	66	44
7	18 x 16	975	(460)	0.178	(44.4)	64	58	50	48	41	35	<15	64	58	50	48	41	35	16	64	58	50	48	41	35	<15
		1200	(566)	0.021	(5.2)	68	64	57	56	51	49	21	68	64	57	56	51	49	22	68	64	57	56	51	49	21
		1600	(755)	0.028	(6.9)	72	67	59	58	56	52	25	72	67	59	58	56	52	25	72	67	59	58	56	52	25
		2000	(944)	0.036	(9.0)	77	72	61	60	58	57	31	77	72	61	60	58	57	31	77	72	61	60	58	57	31
		2500	(1180)	0.056	(14.0)	80	75	63	61	60	59	34	80	75	63	61	60	59	34	80	75	63	61	60	59	34
		3300	(1558)	0.098	(24.4)	83	80	75	73	71	70	40	83	80	75	73	71	70	40	83	80	75	73	71	70	40
		3750	(1770)	0.134	(33.4)	85	82	77	76	74	74	42	85	82	77	76	74	74	42	85	82	77	76	74	74	42
		4200	(1982)	0.170	(42.4)	86	83	78	78	77	77	44	86	83	78	78	77	77	44	86	83	78	78	77	77	44
		5000	(2360)	0.298	(74.2)	87	84	81	79	78	77	45	87	84	81	79	78	77	45	87	84	81	79	78	77	45
		5600	(2643)	0.454	(113.0)	88	85	82	80	79	78	46	88	85	82	80	79	78	46	88	85	82	80	79	78	46

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4. *NC values are calculated using attenuation credits outlined in Appendix E of AHRI 885-2008.*
5. *Air terminal units were tested with an external static pressure of 0.25 in.wg.*
6. ***Discharge Sound power levels shown with End Reflection Corrections Included** in dB (ref: 10^{-12} watts).*
7. *Minimum Ps is the static pressure drop across the air terminal unit while the inlet damper is in the wide-open position at a given airflow rate, and the fan is off.*

FVI-500 ECM
RADIATED SOUND POWER LEVEL at Fan Only

Case	Inlet	CFM (L/s)		Fan Only						
				Octave Band Sound Power, Lw, dB						NC
				2	3	4	5	6	7	
3	10	375	(177)	55	51	49	44	41	34	23
		425	(201)	58	54	53	46	43	37	27
		500	(236)	60	57	55	50	46	41	30
		675	(319)	64	61	57	53	48	45	32
		800	(378)	66	64	59	57	52	49	34
		925	(437)	69	67	62	60	54	53	38
		1100	(519)	76	73	67	67	60	61	45
6	16	625	(295)	58	53	47	40	38	36	21
		800	(378)	62	58	52	46	42	40	27
		1000	(472)	66	63	60	55	47	45	35
		1250	(590)	72	69	64	59	52	50	40
		1400	(661)	73	71	65	61	54	53	42
		1650	(779)	74	72	66	62	56	55	44
		2000	(944)	77	74	68	64	59	58	48
		2400	(1133)	80	76	71	67	64	62	48

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5. *Air terminal units were tested with an external static pressure of 0.25 in.wg.*
6. ***Discharge Sound power levels shown with End Reflection Corrections Included** in dB (ref: 10^{-12} watts).*
7. *Minimum Ps is the static pressure drop across the air terminal unit while the inlet damper is in the wide-open position at a given airflow rate, and the fan is off.*

FVI-500 ECM
RADIATED SOUND POWER LEVEL at Inlet Ps = 0.25, 0.50, 0.75, 1.25 and 1.75 in. wg.

Case	Inlet	CFM (L/s)		Min Ps in. wg. (Pa)		Inlet Ps = 0.25 in. wg. (62 Pa)							Inlet Ps = 0.50 in. wg. (125 Pa)							Inlet Ps = 0.75 in. wg. (187 Pa)						
						Octave Band Sound Power, Lw, dB						NC	Octave Band Sound Power, Lw, dB						NC	Octave Band Sound Power, Lw, dB						NC
						2	3	4	5	6	7		2	3	4	5	6	7		2	3	4	5	6	7	
3	10	300	(142)	0.088	(21.9)	52	49	44	40	31	24	18	53	49	45	41	32	25	19	55	50	46	42	33	27	20
		500	(236)	0.103	(25.7)	54	51	46	42	34	25	20	56	52	47	43	35	27	21	57	53	49	45	37	29	23
		775	(366)	0.125	(31.1)	56	53	47	43	35	27	21	59	55	49	45	37	32	24	62	58	51	47	40	36	27
		925	(437)	0.136	(33.9)	57	55	49	45	36	28	24	60	57	50	47	38	32	26	63	59	53	48	41	37	28
		1075	(507)	0.158	(39.3)	58	57	52	48	36	28	26	60	59	52	48	39	34	28	65	61	54	49	42	37	31
		1325	(625)	0.190	(47.2)	65	61	55	50	37	29	31	65	61	56	51	41	36	31	65	64	57	53	45	38	34
		1450	(684)	0.204	(50.9)	66	63	57	53	37	32	33	66	63	58	53	42	37	33	66	65	59	55	47	39	35
		1625	(767)	0.254	(63.2)	68	65	59	54	38	33	35	69	65	60	55	43	38	35	69	66	60	56	48	40	37
		1700	(802)	0.270	(67.2)	69	67	61	56	39	34	38	70	67	62	57	44	39	38	70	68	63	58	49	41	39
6	16	750	(354)	0.083	(20.6)	49	44	35	30	26	24	<15	51	46	37	33	29	28	<15	53	48	39	36	32	31	15
		950	(448)	0.088	(21.8)	52	45	37	33	29	26	<15	54	47	39	35	32	30	<15	56	50	42	38	35	32	18
		1525	(720)	0.104	(25.9)	57	47	40	36	32	28	18	59	49	42	38	35	32	21	61	53	47	42	38	33	23
		1800	(850)	0.115	(28.7)	60	48	44	42	37	30	22	62	54	48	47	41	36	25	64	59	53	49	45	41	28
		2400	(1133)	0.138	(34.3)	65	58	52	48	43	37	29	67	60	54	49	45	40	31	68	62	56	51	47	42	32
		3000	(1416)	0.165	(41.2)	69	63	57	51	47	41	34	70	64	57	52	48	43	35	71	65	58	53	49	44	36
		3500	(1652)	0.188	(46.9)	73	66	60	55	49	45	39	74	67	61	56	50	46	40	74	68	62	57	52	47	40
		4000	(1888)	0.218	(54.3)	75	68	62	57	51	47	41	75	69	63	58	52	49	41	76	69	64	59	53	50	43
		4400	(2077)	0.247	(61.4)	77	71	65	59	53	49	44	78	72	65	59	54	51	45	78	72	66	60	56	52	45

Case	Inlet	CFM (L/s)		Min Ps in. wg. (Pa)		Inlet Ps = 1.25 in. wg. (310 Pa)							Inlet Ps = 1.75 in. wg. (435 Pa)						
						Octave Band Sound Power, Lw, dB						NC	Octave Band Sound Power, Lw, dB						NC
						2	3	4	5	6	7		2	3	4	5	6	7	
3	10	300	(142)	0.088	(21.9)	57	51	47	45	36	30	21	59	53	49	46	38	33	23
		500	(236)	0.103	(25.7)	59	54	50	47	39	32	24	60	56	51	49	41	35	25
		775	(366)	0.125	(31.1)	63	59	52	49	42	39	28	64	62	55	52	45	42	32
		925	(437)	0.136	(33.9)	65	60	53	51	43	40	29	65	64	57	53	45	42	34
		1075	(507)	0.158	(39.3)	66	60	54	52	45	41	30	66	65	59	54	46	43	35
		1325	(625)	0.190	(47.2)	67	64	62	55	48	42	37	67	65	62	55	48	43	37
		1450	(684)	0.204	(50.9)	67	65	61	56	49	43	36	68	66	63	56	49	43	38
		1625	(767)	0.254	(63.2)	70	67	62	57	50	44	38	71	68	64	58	51	45	39
		1700	(802)	0.270	(67.2)	71	69	64	59	51	46	40	72	70	65	61	52	47	41
6	16	750	(354)	0.083	(20.6)	56	50	43	39	35	33	18	58	52	46	42	37	35	20
		950	(448)	0.088	(21.8)	58	52	50	42	37	39	24	60	56	52	48	45	43	26
		1525	(720)	0.104	(25.9)	64	56	53	46	44	43	27	66	62	57	50	49	48	32
		1800	(850)	0.115	(28.7)	67	62	57	53	49	46	32	68	65	60	58	55	51	35
		2400	(1133)	0.138	(34.3)	70	64	59	54	50	47	35	72	67	62	59	55	51	38
		3000	(1416)	0.165	(41.2)	73	67	61	56	51	47	39	75	69	64	60	57	53	41
		3500	(1652)	0.188	(46.9)	76	69	64	59	53	49	43	78	71	66	61	58	54	45
		4000	(1888)	0.218	(54.3)	78	71	66	61	55	52	45	81	73	68	63	59	57	49
		4400	(2077)	0.247	(61.4)	80	73	68	62	58	54	48	83	75	70	65	62	60	52

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4. *NC values are calculated using attenuation credits outlined in Appendix E of AHRI 885-2008.*
5. *Air terminal units were tested with an external static pressure of 0.25 in.wg.*
6. ***Discharge Sound power levels shown with End Reflection Corrections Included** in dB (ref: 10^{-12} watts).*
7. *Minimum Ps is the static pressure drop across the air terminal unit while the inlet damper is in the wide-open position at a given airflow rate, and the fan is off.*

FVI-500 ECM
DISCHARGE SOUND POWER LEVEL at Fan Only

Case	Inlet	CFM (L/s)		Fan Only						
				Octave Band Sound Power, Lw, dB						NC
				2	3	4	5	6	7	
3	10	375	(177)	54	50	42	37	36	35	<15
		425	(201)	58	52	45	39	37	36	<15
		500	(236)	61	55	48	44	41	40	<15
		675	(319)	67	62	53	50	47	46	20
		800	(378)	70	67	58	57	55	54	25
		925	(437)	74	69	60	61	58	57	27
		1100	(519)	76	71	62	62	60	59	29
6	16	625	(295)	60	54	52	48	45	41	<15
		800	(378)	61	56	55	52	48	44	<15
		1000	(472)	65	60	58	56	51	48	16
		1250	(590)	68	62	60	55	54	52	19
		1400	(661)	70	64	62	60	56	54	21
		1650	(779)	74	68	65	61	60	60	26
		2000	(944)	78	72	67	64	64	62	31
		2400	(1133)	83	77	71	69	68	66	38

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7. *Minimum Ps is the static pressure drop across the air terminal unit while the inlet damper is in the wide-open position at a given airflow rate, and the fan is off.*

FVI-500 ECM
DISCHARGE SOUND POWER LEVEL at Inlet Ps = 0.25, 0.50, 0.75, 1.25 and 1.75 in. wg.

Case	Inlet	CFM	(L/s)	Min Ps in. wg.	(Pa)	Inlet Ps = 0.25 in. wg. (62 Pa) Octave Band Sound Power, Lw, dB							Inlet Ps = 0.50 in. wg. (125 Pa) Octave Band Sound Power, Lw, dB							Inlet Ps = 0.75 in. wg. (187 Pa) Octave Band Sound Power, Lw, dB						
						2	3	4	5	6	7	NC	2	3	4	5	6	7	NC	2	3	4	5	6	7	NC
		300	(142)	0.088	(21.9)	56	51	41	38	35	30	<15	58	53	42	41	37	31	<15	62	55	46	43	39	33	<15
		500	(236)	0.103	(25.7)	59	53	44	40	38	34	<15	62	55	46	43	40	35	<15	64	57	50	45	42	37	16
		775	(366)	0.125	(31.1)	64	56	49	44	43	38	<15	66	58	51	46	44	40	16	68	60	54	48	45	41	18
		925	(437)	0.136	(33.9)	66	58	50	47	45	43	16	68	60	53	49	47	44	18	70	62	55	50	47	45	21
3	10	1075	(507)	0.158	(39.3)	68	59	52	50	47	47	18	70	61	54	52	48	48	21	71	63	56	52	49	48	22
		1325	(625)	0.190	(47.2)	72	61	56	52	48	47	23	73	63	58	53	49	48	25	74	65	59	53	50	49	26
		1450	(684)	0.204	(50.9)	75	63	58	54	53	51	27	75	64	60	54	53	52	27	75	66	61	55	54	53	27
		1625	(767)	0.254	(63.2)	77	64	61	57	56	55	30	77	66	62	57	56	56	30	77	67	62	58	57	57	30
		1700	(802)	0.270	(67.2)	78	65	62	58	57	56	31	78	65	63	59	57	57	31	79	67	63	59	58	57	32
		750	(354)	0.083	(20.6)	62	52	47	42	32	30	<15	65	54	49	43	38	32	<15	66	56	50	43	39	33	16
		950	(448)	0.088	(21.8)	64	54	48	44	35	32	<15	66	56	50	45	40	35	16	68	57	52	45	41	39	18
		1525	(720)	0.104	(25.9)	68	61	53	47	41	35	18	69	62	55	49	45	41	20	71	62	56	50	47	45	22
		1800	(850)	0.115	(28.7)	71	63	55	49	43	38	22	72	63	56	51	47	45	23	73	64	58	51	49	47	25
6	16	2400	(1133)	0.138	(34.3)	76	67	59	52	50	48	29	77	67	60	54	52	51	30	77	68	61	56	55	54	30
		3000	(1416)	0.165	(41.2)	79	70	61	56	56	55	32	79	71	63	58	58	57	32	80	72	65	60	59	59	34
		3500	(1652)	0.188	(46.9)	81	71	63	58	60	58	35	81	72	64	60	61	60	35	81	73	65	61	61	60	35
		4000	(1888)	0.218	(54.3)	82	72	64	62	61	60	36	83	73	65	63	61	61	38	84	74	67	64	62	61	39
		4400	(2077)	0.247	(61.4)	84	73	65	65	64	62	39	85	74	66	65	64	63	40	86	75	68	66	65	63	41

Case	Inlet	CFM	(L/s)	Min Ps in. wg.	(Pa)	Inlet Ps = 1.25 in. wg. (310 Pa) Octave Band Sound Power, Lw, dB							Inlet Ps = 1.75 in. wg. (435 Pa) Octave Band Sound Power, Lw, dB						
						2	3	4	5	6	7	NC	2	3	4	5	6	7	NC
		300	(142)	0.088	(21.9)	64	57	48	44	41	35	16	65	59	50	47	43	38	17
		500	(236)	0.103	(25.7)	66	59	52	46	45	39	18	67	60	55	48	46	44	20
		775	(366)	0.125	(31.1)	69	61	55	49	47	44	20	70	62	59	51	49	46	21
		925	(437)	0.136	(33.9)	71	62	57	51	48	46	22	72	64	59	53	52	48	23
3	10	1075	(507)	0.158	(39.3)	72	64	59	52	49	48	23	73	66	61	56	54	49	25
		1325	(625)	0.190	(47.2)	75	66	60	53	50	49	27	76	67	62	57	55	54	29
		1450	(684)	0.204	(50.9)	77	67	62	56	55	51	30	78	69	63	58	56	56	31
		1625	(767)	0.254	(63.2)	78	68	63	59	58	57	31	79	70	64	60	58	57	32
		1700	(802)	0.270	(67.2)	80	69	64	60	59	58	34	80	72	65	61	60	59	34
		750	(354)	0.083	(20.6)	67	57	51	45	41	40	17	68	59	53	57	43	42	18
		950	(448)	0.088	(21.8)	69	59	54	47	43	42	20	70	60	56	50	45	44	21
		1525	(720)	0.104	(25.9)	72	62	57	50	47	46	23	73	63	59	53	51	50	25
		1800	(850)	0.115	(28.7)	74	65	59	53	52	51	26	75	67	63	57	53	52	27
6	16	2400	(1133)	0.138	(34.3)	79	69	62	58	57	56	32	81	71	67	61	58	57	35
		3000	(1416)	0.165	(41.2)	81	75	69	65	63	61	35	83	78	70	64	62	61	38
		3500	(1652)	0.188	(46.9)	82	76	70	65	65	62	36	85	79	72	67	66	63	40
		4000	(1888)	0.218	(54.3)	85	77	71	67	66	63	40	88	82	73	68	67	64	44
		4400	(2077)	0.247	(61.4)	87	78	72	68	67	65	43	89	83	74	69	68	66	45

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5. *Air terminal units were tested with an external static pressure of 0.25 in.wg.*
6. ***Discharge Sound power levels shown with End Reflection Corrections Included** in dB (ref: 10^{-12} watts).*
7. *Minimum Ps is the static pressure drop across the air terminal unit while the inlet damper is in the wide-open position at a given airflow rate, and the fan is off.*

FVI-500 MOTOR AMPERAGE RATINGS

Case Size	Motor HP	Standard PSC Motor Amperage Ratings		
		115V-1 Phase 60 Hz Rated Amps	208-240V-1 Phase 60 Hz Rated Amps	277V-1 Phase 60 Hz Rated Amps
1	1/8	1.9	1.1	0.8
2	1/6	2.6	1.5	1.1
3	1/4	3.9	2.1	1.6
4	1/4	4.1	2.3	1.7
5	1/3	8.4	4.7	3.5
6	1/2	8.7	4.8	3.6
7	1	N/A	8.3	6.2

FVI-500 ECM MOTOR AMPERAGE RATINGS

Case Size	Motor HP	ECM Motor Amperage Ratings		
		115V-1 Phase 60 Hz Rated Amps	208-240V-1 Phase 60 Hz Rated Amps	277V-1 Phase 60 Hz Rated Amps
3	1/2	6.0	3.3	2.5
6	1	14.5	8.0	6.0

FVI-500 DAMPER LEAKAGE

Inlet Size	Damper Leakage, CFM		
	1.5" ΔPs	3.0" ΔPs	6.0" ΔPs
6	3	4	7
8	2	4	7
10	4	5	7
12	4	5	7
14	4	6	8
16	4	6	8

FVI-500 ECM DAMPER LEAKAGE

Inlet Size	Damper Leakage, CFM		
	1.5" ΔPs	3.0" ΔPs	6.0" ΔPs
6	3	4	7
8	2	4	7
10	4	5	7
12	4	5	7
14	4	6	8
16	4	6	8

METALAIRE™

FVI-500
MINIMUM PRESSURES

Unit Size	CFM	Min PS	Unit ΔPs (in. wg) [no coil]	Unit ΔPt (in. wg) [no coil]	Unit + 1R Coil, ΔPs (in. wg)	Unit + 1R Coil, ΔPt (in. wg)	Unit + 2R Coil, ΔPt (in. wg)
1	100	0.08	0.10	0.08	0.10	0.09	0.11
	200	0.10	0.16	0.11	0.17	0.12	0.18
	300	0.13	0.27	0.14	0.28	0.16	0.30
	400	0.16	0.42	0.18	0.44	0.21	0.47
	500	0.19	0.59	0.22	0.62	0.26	0.66
	600	0.24	0.82	0.28	0.86	0.34	0.92
2	300	0.09	0.14	0.10	0.15	0.12	0.17
	400	0.11	0.18	0.13	0.20	0.16	0.23
	500	0.12	0.24	0.15	0.27	0.19	0.31
	600	0.13	0.31	0.17	0.35	0.23	0.41
	700	0.14	0.38	0.20	0.44	0.27	0.51
	800	0.16	0.47	0.23	0.54	0.32	0.63
3	600	0.12	0.30	0.14	0.32	0.17	0.35
	800	0.13	0.45	0.17	0.49	0.22	0.54
	1000	0.15	0.35	0.21	0.41	0.27	0.47
	1200	0.17	0.45	0.25	0.53	0.34	0.62
	1400	0.19	0.58	0.29	0.68	0.41	0.80
	1600	0.24	0.75	0.37	0.88	—	—
4	600	0.08	0.15	0.10	0.17	0.13	0.20
	800	0.09	0.22	0.13	0.26	0.18	0.31
	1000	0.10	0.19	0.16	0.25	0.22	0.31
	1200	0.11	0.24	0.19	0.32	0.28	0.41
	1400	0.12	0.30	0.22	0.40	0.34	0.52
	1600	0.13	0.36	0.26	0.49	0.40	0.63
5	600	0.07	0.10	0.09	0.12	0.12	0.15
	800	0.08	0.14	0.12	0.18	0.17	0.23
	1000	0.09	0.18	0.15	0.24	0.21	0.30
	1200	0.10	0.16	0.18	0.24	0.27	0.33
	1400	0.10	0.19	0.20	0.29	0.32	0.41
	1600	0.11	0.22	0.24	0.35	0.38	0.49
6	1000	0.09	0.14	0.14	0.19	0.20	0.25
	1200	0.10	0.17	0.17	0.24	0.24	0.31
	1400	0.10	0.19	0.19	0.28	0.29	0.38
	1600	0.11	0.23	0.22	0.34	0.34	0.46
	1800	0.11	0.26	0.24	0.39	0.39	0.54
	2000	0.12	0.31	0.28	0.47	0.46	0.65
	2200	0.13	0.35	0.32	0.54	—	—
	2400	0.14	0.28	0.36	0.50	—	—
7	1000	0.01	0.04	0.03	0.06	0.06	0.09
	1400	0.02	0.08	0.06	0.12	0.11	0.17
	1800	0.03	0.12	0.09	0.18	0.16	0.25
	2200	0.05	0.19	0.14	0.28	0.24	0.38
	2600	0.06	0.25	0.17	0.36	0.31	0.50
	3000	0.08	0.34	0.23	0.49	0.40	0.66
	3400	0.10	0.43	0.28	0.61	0.49	0.82

1. *ΔPs = static pressure drop; ΔPt = total pressure drop.*
2. *Calculations of ΔPs and ΔPt were performed using standard air with a density of 0.075 lbm / cu.ft.*
3. *Data based on testing standard METALAIRE hot water coils per AHRI Standard 410.*
4. *Unit ΔPs and Unit ΔPt are pressure drops across the air terminal unit while the inlet damper is in the wide-open position*
5. *Data applies to air terminal units with hot water coil mounted on the discharge side.*
6. *'—' is shown when the static pressure drop exceeds 0.50 in. wg.*

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HOT WATER COILS MBH SELECTION DATA – IMPERIAL UNITS

Imperial Units					MBH							
					CFM							
Unit Size	Rows	Connection OD	GPM	Head Loss ($ft\text{-}H_2O$)	200	250	300	350	400	450	500	550
1	One	0.875	1	0.14	10.4	11.6	12.7	13.5	14.3	15.0	15.6	16.2
			2	0.54	11.5	13.0	14.3	15.4	16.5	17.4	18.2	19.0
			4	2.06	12.1	13.8	15.3	16.6	17.8	18.9	20.0	20.9
			6	4.52	12.3	14.1	15.6	17.1	18.4	19.5	20.6	21.6
			Airside Ps		0.01	0.01	0.01	0.02	0.02	0.03	0.03	0.04
1	Two	0.875	1	0.09	14.3	16.2	17.8	19.1	20.3	21.3	22.2	--
			2	0.34	16.2	18.7	20.9	22.9	24.6	26.2	27.6	--
			4	1.32	17.4	20.3	23.0	25.4	27.6	29.6	31.5	--
			6	2.94	17.8	21.0	23.8	26.4	28.8	31.0	33.0	--
			Airside Ps		0.02	0.02	0.03	0.04	0.05	0.06	0.07	--

Unit Size	Rows	Connection OD	GPM	Head Loss ($ft\text{-}H_2O$)	CFM							
					300	350	400	450	500	600	650	700
2	One	0.875	1	0.14	12.7	13.5	14.3	15.0	15.6	16.7	17.2	17.6
			2	0.54	14.3	15.4	16.5	17.4	18.2	19.7	20.4	21.1
			4	2.06	15.3	16.6	17.8	18.9	20.0	21.8	22.6	23.4
			6	4.52	15.7	17.1	18.4	19.5	20.6	22.6	23.5	24.3
			Airside Ps		0.01	0.02	0.02	0.03	0.03	0.04	0.05	0.06
2	Two	0.875	1	0.09	17.8	19.1	20.3	21.3	22.2	23.7	24.4	--
			2	0.34	20.9	22.9	24.6	26.2	27.6	30.1	31.2	--
			4	1.32	23.0	25.4	27.6	29.6	31.5	34.8	36.3	--
			6	2.94	23.8	26.4	28.8	31.0	33.0	36.8	38.5	--
			Airside Ps		0.03	0.04	0.05	0.06	0.07	0.10	0.11	--

Unit Size	Rows	Connection OD	GPM	Head Loss ($ft\text{-}H_2O$)	CFM							
					400	500	600	700	800	900	1000	1200
3	One	0.625	1	0.20	16.8	18.4	19.8	20.9	21.9	22.7	23.5	24.8
			2	0.76	19.3	21.5	23.4	25.1	26.6	27.9	29.1	31.1
			4	2.88	20.9	23.5	25.9	27.9	29.8	31.4	33.0	35.7
			6	6.30	21.5	24.3	26.8	29.0	31.1	32.9	34.6	37.5
			Airside Ps		0.01	0.02	0.02	0.03	0.04	0.05	0.06	0.08
3	Two	0.875	1	0.10	22.9	25.3	27.1	28.7	30.0	31.1	32.1	--
			2	0.39	27.7	31.3	34.4	37.1	39.4	41.4	43.3	--
			4	1.51	30.9	35.6	39.7	43.3	46.6	49.6	52.3	--
			6	3.36	32.1	37.2	41.8	45.9	49.7	53.1	56.2	--
			Airside Ps		0.03	0.04	0.05	0.07	0.09	0.10	0.12	--

Unit Size	Rows	Connection OD	GPM	Head Loss ($ft\text{-}H_2O$)	CFM							
					800	900	1000	1100	1200	1300	1400	1600
4	One	0.625	1	0.20	21.9	22.7	23.5	24.2	24.8	25.3	25.9	26.7
			2	0.76	26.6	27.9	29.1	30.1	31.1	32.0	32.9	34.4
			4	2.88	29.8	31.4	33.0	34.4	35.7	36.9	38.0	40.1
			6	6.31	31.1	32.9	34.6	36.1	37.5	38.9	40.2	42.5
			Airside Ps		0.04	0.05	0.06	0.07	0.08	0.09	0.1	0.13
4	Two	0.875	1	0.10	30.0	31.1	32.1	32.9	33.6	34.3	34.9	--
			2	0.39	39.4	41.4	43.3	44.9	46.4	47.7	49.0	--
			4	1.52	46.6	49.6	52.3	54.8	57.1	59.2	61.2	--
			6	3.36	49.7	53.1	56.2	59.1	61.8	64.3	66.7	--
			Airside Ps		0.09	0.10	0.12	0.15	0.17	0.19	0.22	--

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HOT WATER COILS MBH SELECTION DATA – IMPERIAL UNITS

Unit Size	Rows	Connection OD	GPM	Head Loss (ft-H_2O)	CFM 1000	1100	1200	1300	1400	1500	1600	1700
5	One	0.625	1	0.20	23.5	24.2	24.8	25.3	25.9	26.3	26.7	27.1
			2	0.76	29.1	30.1	31.1	32.0	32.9	33.6	34.4	35.0
			4	2.89	33.0	34.4	35.7	36.9	38.0	39.1	40.1	41.0
			6	6.32	34.6	36.1	37.5	38.9	40.2	41.4	42.5	43.6
			Airside Ps		0.06	0.07	0.08	0.09	0.1	0.11	0.13	0.14
5	Two	0.875	1	0.10	32.1	32.9	33.6	34.3	34.9	35.4	35.9	--
			2	0.39	43.3	44.9	46.4	47.7	49.0	50.1	51.2	--
			4	1.52	52.3	54.7	57.1	59.2	61.2	63.0	64.7	--
			6	3.36	56.2	59.1	61.8	64.3	66.7	68.9	71.0	--
			Airside Ps		0.12	0.15	0.17	0.19	0.22	0.24	0.27	--

Unit Size	Rows	Connection OD	GPM	Head Loss (ft-H_2O)	CFM 1000	1100	1200	1300	1400	1600	1800	2000
6	One	0.625	1	0.21	24.5	25.2	25.9	26.4	27.0	27.9	28.7	29.4
			2	0.81	30.4	31.5	32.5	33.5	34.4	36.0	37.4	38.7
			4	3.07	34.5	36.0	37.4	38.7	39.9	42.1	44.0	45.8
			6	6.72	36.2	37.8	39.3	40.8	42.1	44.6	46.8	48.9
			Airside Ps		0.05	0.06	0.07	0.07	0.09	0.11	0.13	0.16
6	Two	0.875	1	0.10	33.1	34.0	34.8	35.4	36.1	37.1	38.0	--
			2	0.40	44.8	46.5	48.1	49.5	50.8	53.1	55.1	--
			4	1.57	54.1	56.7	59.2	61.4	63.5	67.3	70.7	--
			6	3.47	58.2	61.3	64.1	66.8	69.3	73.9	78.0	--
			Airside Ps		0.11	0.12	0.14	0.16	0.19	0.23	0.28	--

Unit Size	Rows	Connection OD	GPM	Head Loss (ft-H_2O)	CFM 2000	2100	2200	2300	2400	2600	2800	3000
7	One	0.875	2	0.34	43.8	44.5	45.1	45.7	46.2	47.2	48.1	49.0
			4	1.32	54.0	55.0	55.9	56.8	57.7	59.3	60.9	62.3
			6	2.94	58.6	59.7	60.9	61.9	63.0	65.0	66.8	68.5
			8	5.19	61.2	62.5	63.7	64.9	66.0	68.2	70.3	72.2
			Airside Ps		0.07	0.08	0.09	0.09	0.1	0.11	0.13	0.15
7	Two	0.875	2	0.26	63.3	64.2	65.0	65.8	66.5	67.9	69.1	--
			4	1.01	84.3	86.0	87.5	89.0	90.4	93.1	95.5	--
			6	2.24	94.6	96.7	98.8	100.7	102.5	106.0	109.3	--
			8	3.97	100.7	103.2	105.5	107.7	109.9	113.9	117.7	--
			Airside Ps		0.16	0.17	0.19	0.20	0.22	0.25	0.28	--

Heating capacity data in tables assume an entering water temperature (EWT) of 180°F, and an entering air temperature (EAT) of 65°F, which corresponds to a temperature difference of 115°F. Smaller temperature differences will result in a decrease of heating capacity. To obtain the heating capacity at another temperature difference, refer to the hot water coil notes located in the Reference Section.

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HOT WATER COILS kW SELECTION DATA – METRIC UNITS

Unit Size	Rows	Connection OD (mm)	Water Flow (L/s)	Head Loss (kPa)	Airflow (L/s)							
					94	118	142	165	189	212	236	260
1	One	22.2	0.01	0.42	3.0	3.4	3.7	4.0	4.2	4.4	4.6	4.7
			0.03	1.61	3.4	3.8	4.2	4.5	4.8	5.1	5.3	5.6
			0.13	6.16	3.5	4.0	4.5	4.9	5.2	5.5	5.9	6.1
			0.29	13.51	3.6	4.1	4.6	5.0	5.4	5.7	6.0	6.3
			Airside Ps (kPa)		0.002	0.002	0.002	0.005	0.005	0.01	0.01	0.01
1	Two	22.2	0.01	0.27	4.2	4.7	5.2	5.6	5.9	6.2	6.5	--
			0.02	1.02	4.7	5.5	6.1	6.7	7.2	7.7	8.1	--
			0.08	3.95	5.1	5.9	6.7	7.4	8.1	8.7	9.2	--
			0.19	8.79	5.2	6.1	7.0	7.7	8.4	9.1	9.7	--
			Airside Ps (kPa)		0.005	0.005	0.01	0.01	0.01	0.01	0.02	--

Unit Size	Rows	Connection OD (mm)	Water Flow (L/s)	Head Loss (kPa)	Airflow (L/s)							
					142	165	189	212	236	283	307	330
2	One	22.2	0.01	0.42	3.7	4.0	4.2	4.4	4.6	4.9	5.0	5.2
			0.03	1.61	4.2	4.5	4.8	5.1	5.3	5.8	6.0	6.2
			0.13	6.16	4.5	4.9	5.2	5.5	5.9	6.4	6.6	6.9
			0.29	13.51	4.6	5.0	5.4	5.7	6.0	6.6	6.9	7.1
			Airside Ps (kPa)		0.002	0.005	0.005	0.01	0.01	0.01	0.01	0.01
2	Two	22.2	0.01	0.27	5.2	5.6	5.9	6.2	6.5	6.9	7.1	--
			0.02	1.02	6.1	6.7	7.2	7.7	8.1	8.8	9.1	--
			0.08	3.95	6.7	7.4	8.1	8.7	9.2	10.2	10.6	--
			0.19	8.79	7.0	7.7	8.4	9.1	9.7	10.8	11.3	--
			Airside Ps (kPa)		0.01	0.01	0.01	0.01	0.02	0.02	0.03	--

Unit Size	Rows	Connection OD (mm)	Water Flow (L/s)	Head Loss (kPa)	Airflow (L/s)							
					189	236	283	330	378	425	472	566
3	One	15.9	0.01	0.60	4.9	5.4	5.8	6.1	6.4	6.7	6.9	7.3
			0.05	2.27	5.6	6.3	6.9	7.3	7.8	8.2	8.5	9.1
			0.18	8.61	6.1	6.9	7.6	8.2	8.7	9.2	9.7	10.5
			0.40	18.83	6.3	7.1	7.8	8.5	9.1	9.6	10.1	11.0
			Airside Ps (kPa)		0.002	0.005	0.005	0.01	0.01	0.01	0.01	0.02
3	Two	22.2	0.01	0.30	6.7	7.4	7.9	8.4	8.8	9.1	9.4	--
			0.02	1.17	8.1	9.2	10.1	10.9	11.5	12.1	12.7	--
			0.10	4.51	9.0	10.4	11.6	12.7	13.6	14.5	15.3	--
			0.21	10.04	9.4	10.9	12.2	13.4	14.5	15.5	16.5	--
			Airside Ps (kPa)		0.01	0.01	0.01	0.02	0.02	0.02	0.03	--

Unit Size	Rows	Connection OD (mm)	Water Flow (L/s)	Head Loss (kPa)	Airflow (L/s)							
					378	425	472	519	566	614	661	755
4	One	15.9	0.01	0.60	6.4	6.7	6.9	7.1	7.3	7.4	7.6	7.8
			0.05	2.27	7.8	8.2	8.5	8.8	9.1	9.4	9.6	10.1
			0.18	8.61	8.7	9.2	9.7	10.1	10.5	10.8	11.1	11.7
			0.40	18.86	9.1	9.6	10.1	10.6	11.0	11.4	11.8	12.4
			Airside Ps (kPa)		0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.03
4	Two	22.2	0.01	0.30	8.8	9.1	9.4	9.6	9.8	10.0	10.2	--
			0.02	1.17	11.5	12.1	12.7	13.1	13.6	14.0	14.3	--
			0.10	4.54	13.6	14.5	15.3	16.0	16.7	17.3	17.9	--
			0.21	10.04	14.5	15.5	16.5	17.3	18.1	18.8	19.5	--
			Airside Ps (kPa)		0.02	0.02	0.03	0.04	0.04	0.05	0.05	--

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HOT WATER COILS kW SELECTION DATA – METRIC UNITS

Unit Size	Rows	Connection OD (mm)	Water Flow (L/s)	Head Loss (kPa)	Airflow (L/s) 472	519	566	614	661	708	755	802
5	One	15.9	0.01	0.60	6.9	7.1	7.3	7.4	7.6	7.7	7.8	7.9
			0.05	2.27	8.5	8.8	9.1	9.4	9.6	9.8	10.1	10.3
			0.18	8.64	9.7	10.1	10.5	10.8	11.1	11.4	11.7	12.0
			0.40	18.89	10.1	10.6	11.0	11.4	11.8	12.1	12.4	12.8
			Airside Ps (kPa)		0.01	0.02	0.02	0.02	0.02	0.03	0.03	0.03
5	Two	22.2	0.01	0.30	9.4	9.6	9.8	10.0	10.2	10.4	10.5	--
			0.02	1.17	12.7	13.1	13.6	14.0	14.3	14.7	15.0	--
			0.10	4.54	15.3	16.0	16.7	17.3	17.9	18.4	18.9	--
			0.21	10.04	16.5	17.3	18.1	18.8	19.5	20.2	20.8	--
			Airside Ps (kPa)		0.03	0.04	0.04	0.05	0.05	0.06	0.07	--

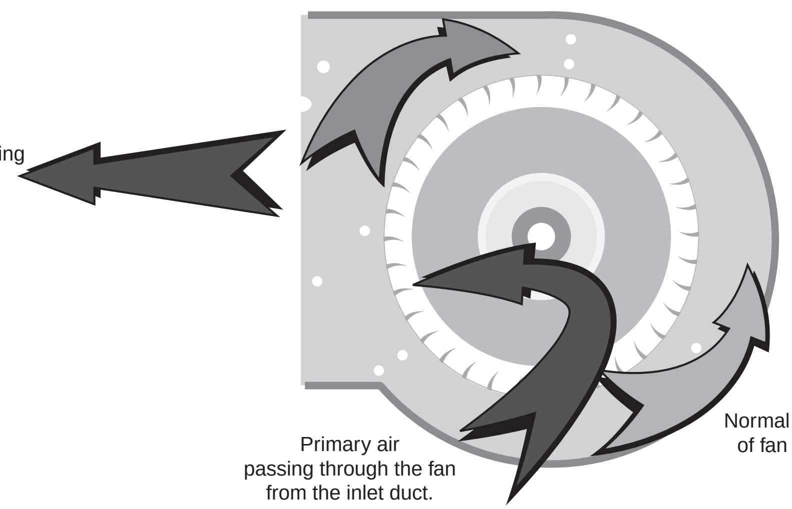
Unit Size	Rows	Connection OD (mm)	Water Flow (L/s)	Head Loss (kPa)	Airflow (L/s) 472	519	566	614	661	755	850	944
6	One	15.9	0.01	0.63	7.2	7.4	7.6	7.7	7.9	8.2	8.4	8.6
			0.05	2.42	8.9	9.2	9.5	9.8	10.1	10.5	11.0	11.3
			0.19	9.18	10.1	10.5	11.0	11.3	11.7	12.3	12.9	13.4
			0.42	20.09	10.6	11.1	11.5	11.9	12.3	13.1	13.7	14.3
			Airside Ps (kPa)		0.01	0.01	0.02	0.02	0.02	0.03	0.03	0.04
6	Two	22.2	0.01	0.30	9.7	9.9	10.2	10.4	10.6	10.9	11.1	--
			0.03	1.20	13.1	13.6	14.1	14.5	14.9	15.5	16.1	--
			0.10	4.69	15.8	16.6	17.3	18.0	18.6	19.7	20.7	--
			0.22	10.37	17.0	17.9	18.8	19.6	20.3	21.6	22.8	--
			Airside Ps (kPa)		0.03	0.03	0.03	0.04	0.05	0.06	0.07	--

Unit Size	Rows	Connection OD (mm)	Water Flow (L/s)	Head Loss (kPa)	Airflow (L/s) 944	991	1038	1085	1133	1227	1321	1416
7	One	22.2	0.02	1.02	12.8	13.0	13.2	13.4	13.5	13.8	14.1	14.3
			0.08	3.95	15.8	16.1	16.4	16.6	16.9	17.4	17.8	18.2
			0.19	8.79	17.2	17.5	17.8	18.1	18.4	19.0	19.6	20.1
			0.33	15.51	17.9	18.3	18.7	19.0	19.3	20.0	20.6	21.1
			Airside Ps (kPa)		0.02	0.02	0.02	0.02	0.02	0.03	0.03	0.04
7	Two	22.2	0.02	0.78	18.5	18.8	19.0	19.3	19.5	19.9	20.2	--
			0.06	3.02	24.7	25.2	25.6	26.1	26.5	27.3	28.0	--
			0.14	6.70	27.7	28.3	28.9	29.5	30.0	31.0	32.0	--
			0.25	11.87	29.5	30.2	30.9	31.5	32.2	33.3	34.5	--
			Airside Ps (kPa)		0.04	0.04	0.05	0.05	0.05	0.06	0.07	--

Heating capacity data in tables assume an entering water temperature (EWT) of 82°C, and an entering air temperature (EAT) of 18°C, which corresponds to a temperature difference of 64°C. Smaller temperature differences will result in a decrease of heating capacity. To obtain the heating capacity at another temperature difference, refer to the hot water coil notes located in the Reference Section.

FVI-500
AIR TERMINALS ACCESSORIES AND COMPONENTS
OPTIONAL ELECTRONIC ANTI-REVERSE ROTATION DEVICE

The fan wheel in a constant fan box may rotate backward whenever the fan motor is not running and primary air from the inlet duct is passing through the fan. In some cases the torque developed by the fan wheel when rotating backward cannot be overcome by the starting torque of the fan motor. In this condition the fan motor will run in reverse rotation, resulting in insufficient airflow delivery.



Constant fan boxes must have means to coordinate energizing the fan motor with start up of the Primary Fan System to prevent the reverse rotation or a positive method to create enough motor torque to reverse the rotation of the fan wheel.

Other manufacturers choose to deal with this issue by running their motors with larger capacitors than recommended by the motor manufacturer. The oversized capacitor will cause the motor to run less efficiently, run hotter than normal and draw more current than with a proper capacitor. All of this will result in reduced motor life and increased energy costs.

METALAIRE'S Model FVI-500 is available with an optional Electronic Anti-Reverse Rotation Device which will positively prevent the reverse rotation of any fan. This option does not draw additional current while running and will not cause the motor to run at higher temperatures.

The results are greater efficiency, quieter motors, longer motor life and happier building owners.

FVI-500 APPROXIMATE SHIPPING WEIGHTS

Case	FVI
1	120 lbs.
2	124 lbs.
3	165 lbs.
4	165 lbs.
5	198 lbs.
6	220 lbs.
7	220 lbs.

FVI-500 FILTER SIZES PER CASE SIZE

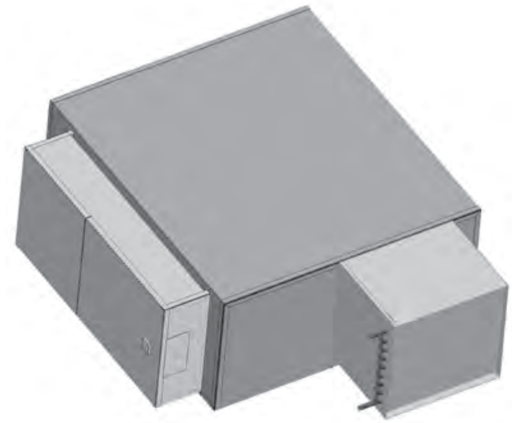
Case Size	Filter Dimensions
1	16" x 16"
2	16" x 16"
3	20" x 16"
4	20" x 16"
5	20" x 20"
6	24" x 20"
7	24" x 20"

Filters are mounted on the fan induction and are available in 1" or 2" thickness.

FVI-500
ACCESSORIES AND COMPONENTS
HOT WATER COILS

When ordered with the air terminal, the hot water coil is shipped attached to the discharge of the terminal casing. The discharge end of the casing has slip and drive connections for easy connection to downstream ductwork. The hot water coil is constructed of aluminum fin and copper serpentine-type tubes with male sweat connections tested at 300 psig.

Coil selection may be made using METALAIRE Terminal Selection Software. Contact your METALAIRE representative for a copy. In the interest of energy conservation and due to the possibility of condensation, all hot water coils are marked, "Coil must be externally insulated after installation in the field." Hot water coils are tested in accordance to AHRI. Options, at an additional charge on hot water coils, include access doors for inspection and cleaning, and inlet/outlet on opposite sides of coils.



HOT WATER COIL CONSTRUCTION DETAILS

- Hot Water Coils are factory mounted to the discharge of the terminal and are available with an optional factory mounted discharge plenum section with access door.
- Hot water coils are enclosed in a 20 gauge coated steel casing allowing for attachment to metal ductwork with a slip and drive connection.
- Fins are rippled and sine wave type constructed from heavy gauge aluminum and are mechanically bonded to the tubes.
- Tubes are copper with a minimum wall thickness of 0.016" with male solder header connections.
- Coils are leak tested to 300 psi with minimum burst of 2000 psi at ambient temperature. Coil performance data is based on tests run in accordance with AHRI standard 410. Coils are AHRI certified and include an AHRI label.

Tubing Connections		
	Standard HW Coil Inches (mm)	
Case Size	1 Row	2 Row
1	7/8 (22.2)	7/8 (22.2)
2	7/8 (22.2)	7/8 (22.2)
3	5/8 (15.8)	7/8 (22.2)
4	5/8 (15.8)	7/8 (22.2)
5	7/8 (15.8)	7/8 (22.2)
6	7/8 (15.8)	7/8 (22.2)
7	7/8 (22.2)	7/8 (22.2)

All coils have 10 fins per inch

Outlet Dimensions		
	Standard HW Coil Inches (mm)	
Case Size	H	W
1	15 (381)	16 (406)
2	15 (381)	16 (406)
3	17.5 (445)	20 (508)
4	17.5 (445)	20 (508)
5	17.5 (445)	20 (508)
6	18 (457)	22 (559)
7	20 (508)	30 (718)

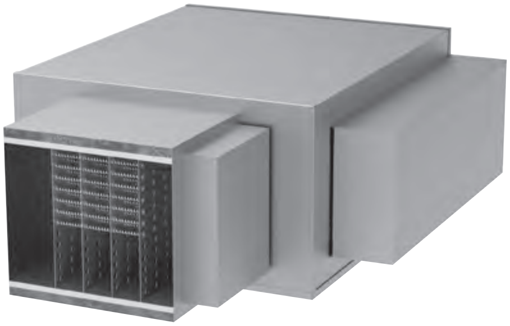
All accessories which can be attached to the Parallel Fan Boxes are not a part of the AHRI certification program but ratings can be affected by their use.

FVI-500
ACCESSORIES AND COMPONENTS
ELECTRIC HEAT

Electric heater elements, as illustrated on this page, are integral to the air terminal. The discharge end has slip and drive connections for easy connection to downstream ductwork. ETL® listed heaters are provided with a fan interlock relay. Heaters that will be controlled electronically must include a 24 VAC control circuit to operate with the low voltage controls on the air terminal. Heater plenums are internally insulated. When an air terminal is ordered with clean room lining and electric heat, the heater plenum is either internally lined with optional foil backed insulation or closed cell foam or may require external insulation in field.

INCLUDED WITH EACH HEATER ASSEMBLY:

- Heater and cabinet mounted on the discharge of the FVI-500
- Electric Heater is interlocked into fan control relay
- De-energizing magnetic contactors per step
- Primary automatic reset high temperature limit (disc type)
- Backup manual reset high temperature limit (disc type)
- Non-fused transformer with voltage to match Heater voltage
- Single point power wiring connection
- Heater is shipped factory mounted and wired



ELECTRIC HEATER ASSEMBLY CONSTRUCTION DETAILS

- Electric Reheat Coils are factory mounted on the discharge of the Air Terminal. The heaters are ETL® listed for zero clearance, are tested in accordance with UL® Standard 1995, CSA-C22.2 No. 236 and the National Electric Code (NEC). Heater casings are constructed of heavy-duty zinc-coated steel. Element wire is high grade nichrome alloy derated to 45 watts per square inch density. Element wire is supported by moisture-resistant steatite ceramics.
- Ceramics are enclosed in reinforcement brackets spaced across the heater element rack at 2" to 4" intervals. Controls are contained in a NEMA 1 control cabinet with a hinged, latching door. A permanent wiring diagram is affixed to the inside of the control cabinet door for field reference.
- The 208 and 480 volt units require a neutral connection for both single and three phase service. Our standard motors are 120 and 277 volt single phase. The 208-240 volt single phase motor is optional. 480 volt motors are not available for our units. See table for reference.

Heater Voltage	Motor Voltage	Separate Neutral Required
120 V 1PH	120 V 1PH	NO
208 V 1PH	120 V 1PH	YES
277 V 1PH	277 V 1PH	NO
480 V 1PH	277 V 1PH	YES
208 V 1PH	208 V 1PH	NO
208 V 3PH	120 V 1PH	YES
480 V 3PH	277 V 1PH	YES
208 V 3PH	208 V 1PH	NO

All accessories which can be attached to the Parallel Fan Boxes are not a part of the AHRI certification program but ratings can be affected by their use.

FVI-500
ELECTRIC HEATER CAPACITIES

Single Phase FVI kW Limits				
Unit Size	Heater Voltage	Min. kW Step	Max. kW	Max. Steps
1	120	0.5	5	2
1	208	0.5	8.5	2
1	240	0.5	10	2
1	277	0.5	11.5	2
1	480	0.5	11.5	2
2	120	0.5	5	2
2	208	0.5	8.5	2
2	240	0.5	10	2
2	277	0.5	11.5	2
2	480	0.5	11.5	2
3	120	0.5	5	3
3	208	0.5	8.5	3
3	240	0.5	10	3
3	277	0.5	11.5	3
3	480	0.5	11.5	3
4	120	0.5	5	3
4	208	0.5	8.5	3
4	240	0.5	10	3
4	277	0.5	11.5	3
4	480	0.5	17	3

Single Phase FVI kW Limits				
Unit Size	Heater Voltage	Min. kW Step	Max. kW	Max. Steps
5	120	0.5	5	3
5	208	0.5	8.5	3
5	240	0.5	10	3
5	277	0.5	11.5	3
5	480	0.5	17	3
6	120	0.5	5	3
6	208	0.5	8.5	3
6	240	0.5	10	3
6	277	0.5	11.5	3
6	480	0.5	17	3
7	120	0.5	5	3
7	208	0.5	8.5	3
7	240	0.5	10	3
7	277	0.5	11.5	3
7	480	0.5	17	3

NOTES:

1. *Heaters equal to or less than 5 kW are specifiable to the nearest 0.2 kW. Heaters greater than 5 kW and less than 10 kW are specifiable to the nearest 0.5 kW.*
2. *Minimum flow rate for electric heat is 70 CFM/kW.*
   Lower CFM's can cause nuisance tripping, excessive discharge temperatures, rapid cycling, and rapid element failure.
   Electric Heat units running below 70 CFM/kW will void all warranties.
3. *For optimum thermal comfort, the suggested discharge temperature should not exceed 20°F above room set point.*
4. *We do not recommend discharge temperatures in excess of 115°F to protect heater coils.*
5. *Maximum number of steps at minimum kW is one step.*
6. *If more than 1 heater is wired into a building's circuit breaker (multi-outlet branch circuit) each heater will require the addition of power side fusing.*

ELECTRIC HEAT SELECTION:

A. Specify electric duct heaters using voltage, kW, and number of steps.

B. Use above chart to select voltage. Calculate required kW using following equations:

$$kW = \frac{BTU / HR}{3413} \qquad kW = \frac{CFM \times \Delta \times 1.085}{3413} \qquad \Delta = \frac{kW \times 3413}{CFM \times 1.085}$$

$$CFM = \frac{kW \times 3413}{\Delta \times 1.085} \qquad CFM = \frac{kW \times 3413}{\Delta \times 1.085}$$

** air density at sea level—reduce by 0.036 for each 1000 feet of altitude above sea level*

Where: BTU / Hr = Required heating capacity

CFM = volume of air during heating. Typically 100% of maximum cooling air volume

Δ = desired air temperature rise across the electric heater

Inlet air temperature = primary air temperature, usually 55°F

FVI-500
ELECTRIC HEATER CAPACITIES

Three Phase FVI kW Limits				
Unit Size	Heater Voltage	Min. kW Step	Max. kW	Max. Steps
1	208	0.5	13	2
1	240	0.5	14.5	2
1	480	10.5	17	2
2	208	0.5	13	2
2	240	0.5	14.5	2
2	480	1.5	17	2
3	208	0.5	13	3
3	240	0.5	14.5	3
3	480	1.5	17	3
4	208	0.5	13	3
4	240	1.5	15	3
4	480	1.5	25	3

Three Phase FVI kW Limits				
Unit Size	Heater Voltage	Min. kW Step	Max. kW	Max. Steps
5	208	0.5	13	3
5	240	1.5	15	3
5	480	1.5	25	3
6	208	0.5	13	3
6	240	1.5	15	3
6	480	1.5	25	3
7	208	0.5	13	3
7	240	1.5	15	3
7	480	1.5	25	3

NOTES:

1. *Heaters less than 5 kW are specifiable to the nearest 0.2 kW. Heaters greater than 5 kW and less than 10.0 kW are specifiable to nearest 0.5 kW. Heaters greater than 10.0 kW are specifiable to nearest 1.0 kW.*
2. *Minimum flow rate for electric heat is 70 CFM/kW.*
   Lower CFM's can cause nuisance tripping, excessive discharge temperatures, rapid cycling, and rapid element failure.
   Electric Heat units running below 70 CFM/kW will void all warranties.
3. *For optimum thermal comfort, the suggested discharge temperature should not exceed 20°F above room set point.*
4. *We do not recommend discharge temperatures in excess of 115°F to protect heater coils.*
5. *Maximum number of steps at minimum kW is one step.*
6. *If more than 1 heater is wired into a building's circuit breaker (multi-outlet branch circuit) each heater will require the addition of power side fusing.*

ELECTRIC HEAT SELECTION:

A. Specify electric duct heaters using voltage, kW, and number of steps.

B. Use above chart to select voltage. Calculate required kW using following equations:

$$kW = \frac{BTU / HR}{3413} \qquad kW = \frac{CFM \times \Delta \times 1.085}{3413} \qquad \Delta = \frac{kW \times 3413}{CFM \times 1.085}$$

$$CFM = \frac{kW \times 3413}{\Delta \times 1.085} \qquad CFM = \frac{kW \times 3413}{\Delta \times 1.085}$$

** air density at sea level—reduce by 0.036 for each 1000 feet of altitude above sea level*

Where: BTU / Hr = Required heating capacity

CFM = volume of air during heating. Typically 100% of maximum cooling air volume

Δ = desired air temperature rise across the electric heater

Inlet air temperature = primary air temperature, usually 55°F

FVI-500
CONTROL SEQUENCE OFFERINGS

PPD–PRESSURE DEPENDENT

- 810 DA/NC Full Closed
- 812 RA/NO Full Open

PPI–PNEUMATIC PRESSURE INDEPENDENT

- 814 DA/NC
- 815 DA/NO
- 816 RA/NC
- 817 RA/NO

ANALOG ELECTRONIC

- 860 Cooling Only
- 861 Cooling with Heat
- 864 Night Shutdown/Morning Warm-up
- 865 Heating/Cooling Changeover

DIRECT DIGITAL

LON WORKS

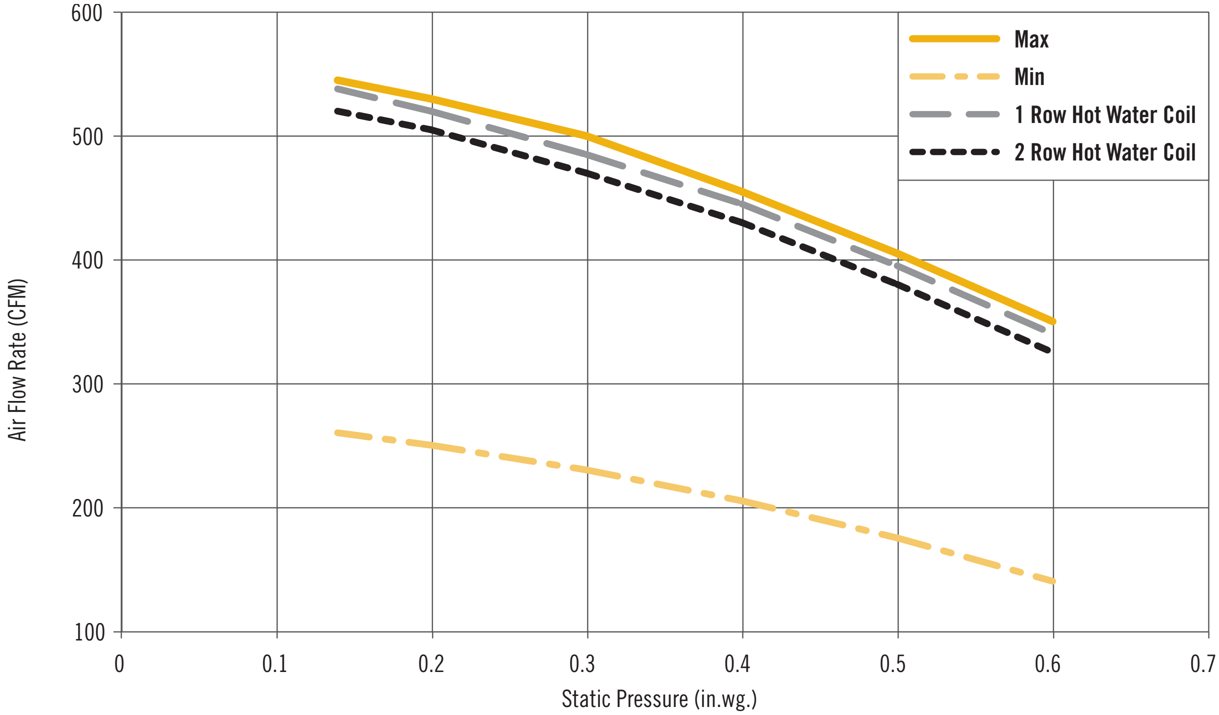
- 890 Constant Fan–No Auxiliary Heating
- 893-1 Constant Fan with 1 Stage of Electric Heat
- 894 Constant Fan–No Auxiliary Heating
- 896 Constant Fan–Modulating Floating Control–Hot Water Heat
- 897-1 Constant Fan with 1 Stage of Electric Heat
- 897-2 Constant Fan with 2 Stages of Electric Heat

BACnet

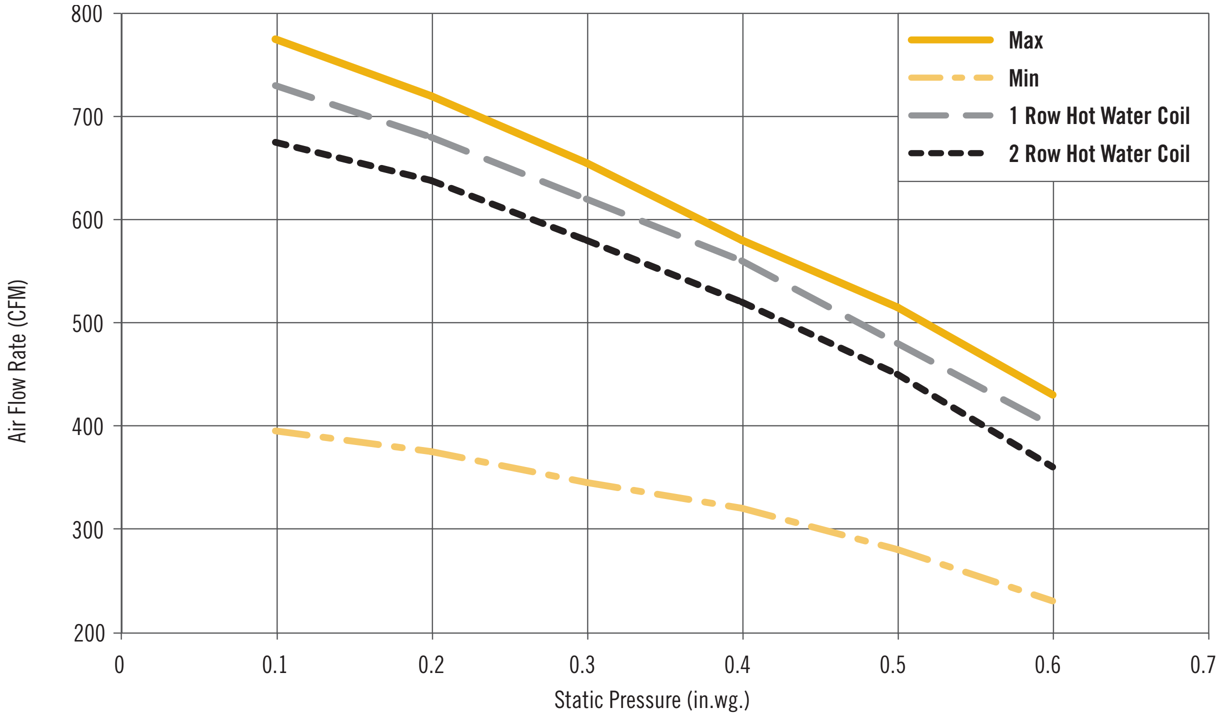
- 880 Constant Fan–No Auxiliary Heating
- 882 Constant Fan–Modulating Floating Control–Hot Water Heat
- 883-1 Constant Fan with 1 Stage of Electric Heat
- 883-2 Constant Fan with 2 Stages of Electric Heat
- 883-3 Constant Fan with 3 Stages of Electric Heat

Refer to Reference Section for complete description.

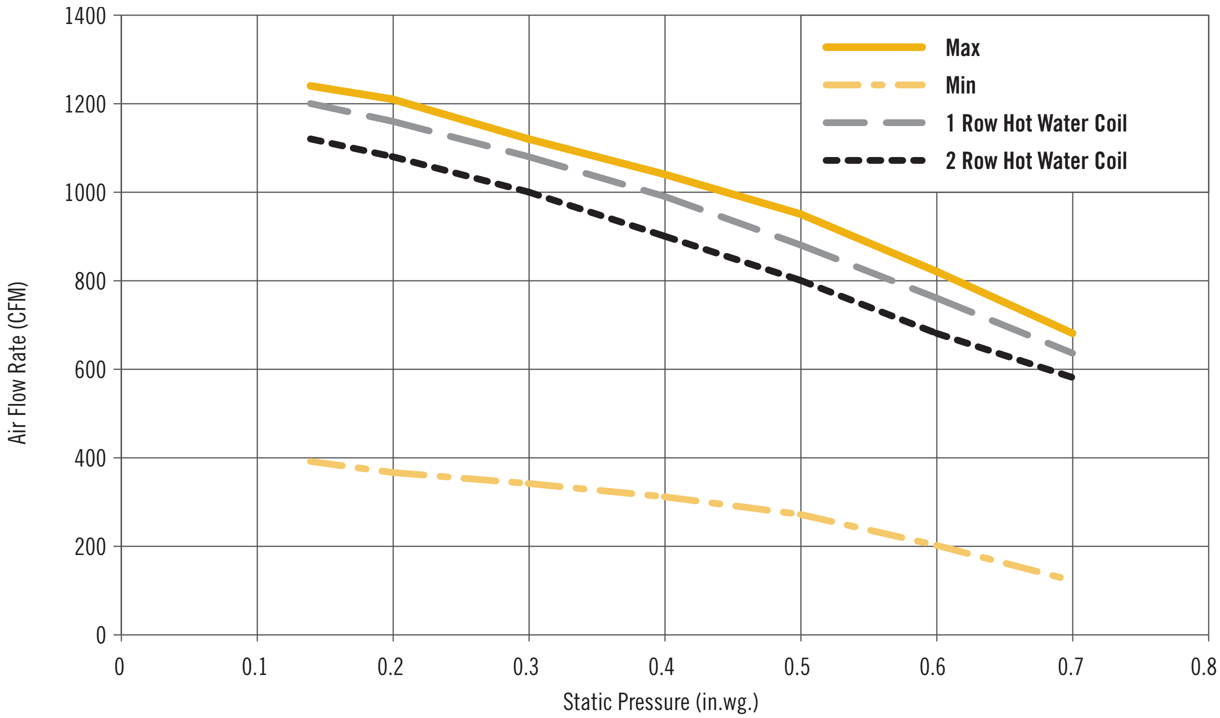
FVI-500 FAN PERFORMANCE CURVES
UNIT SIZE 1 - STANDARD HW COIL



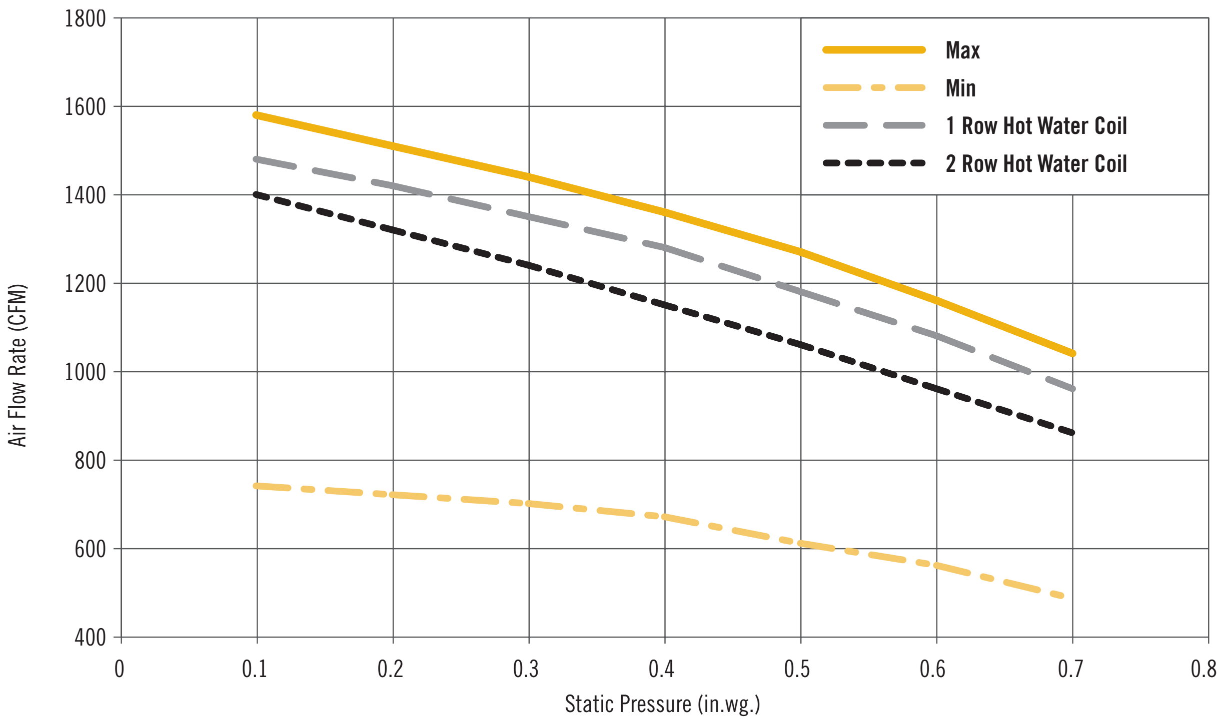
FVI-500 FAN PERFORMANCE CURVES
UNIT SIZE 2 - STANDARD HW COIL



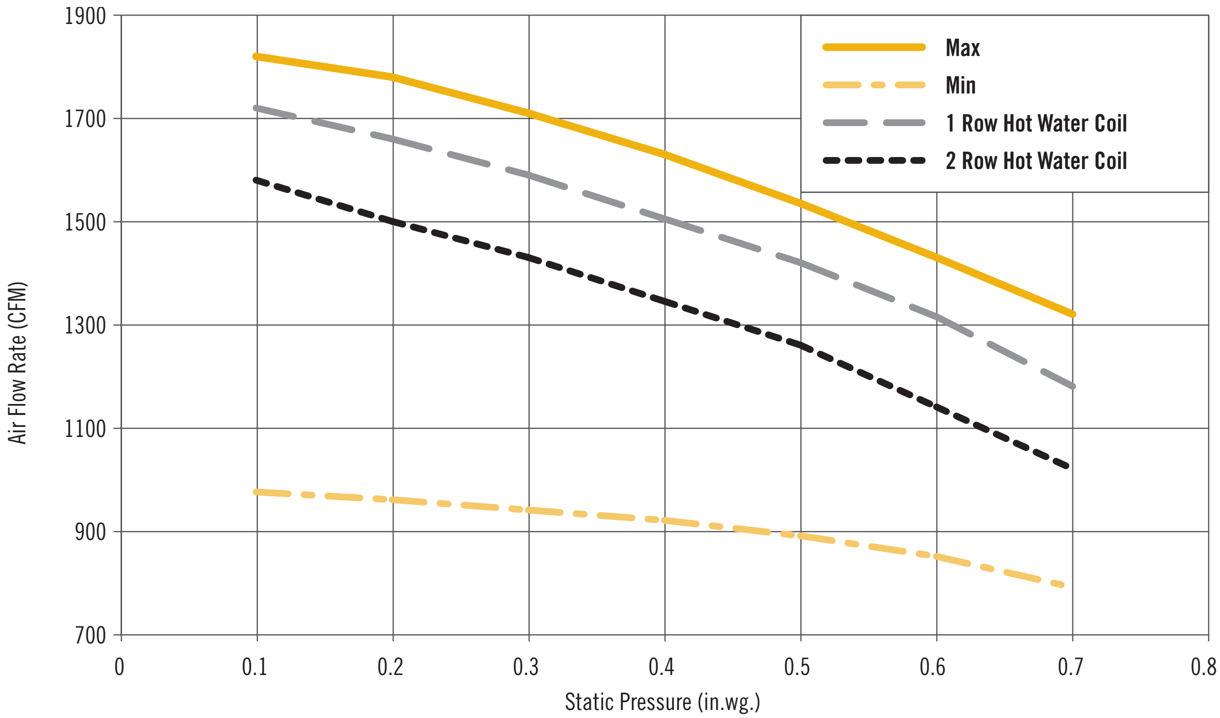
FVI-500 FAN PERFORMANCE CURVES
UNIT SIZE 3 - STANDARD HW COIL



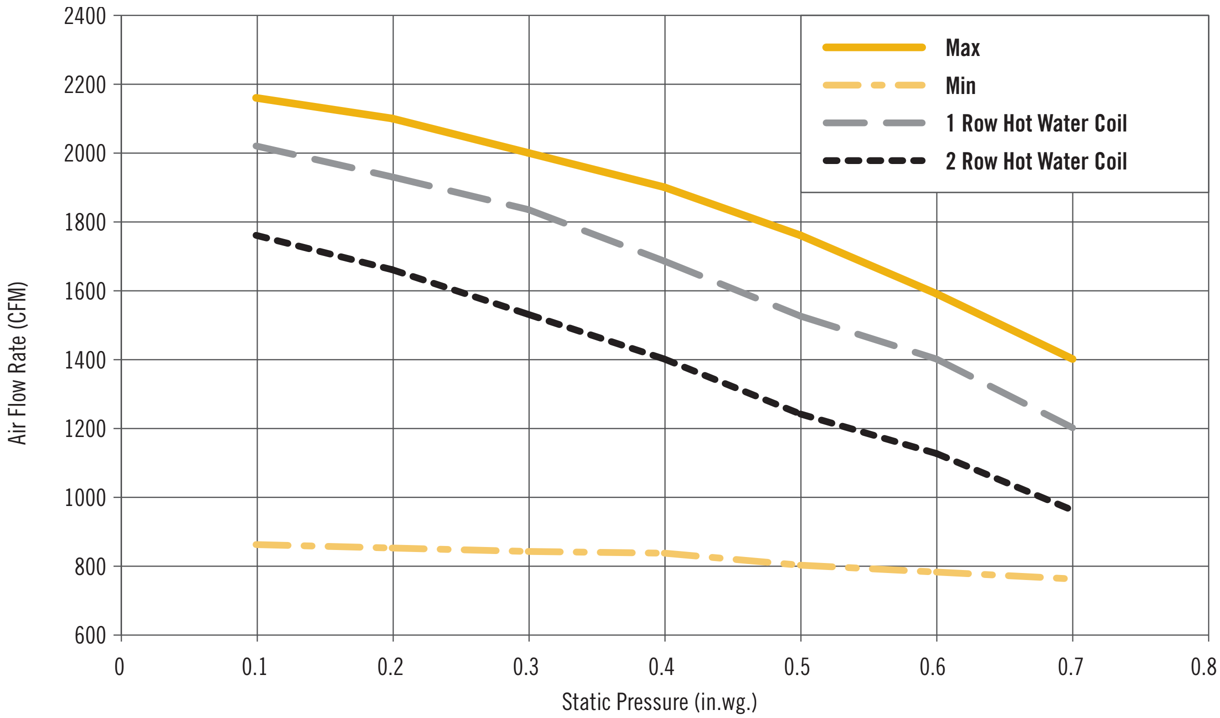
FVI-500 FAN PERFORMANCE CURVES
UNIT SIZE 4 - STANDARD HW COIL



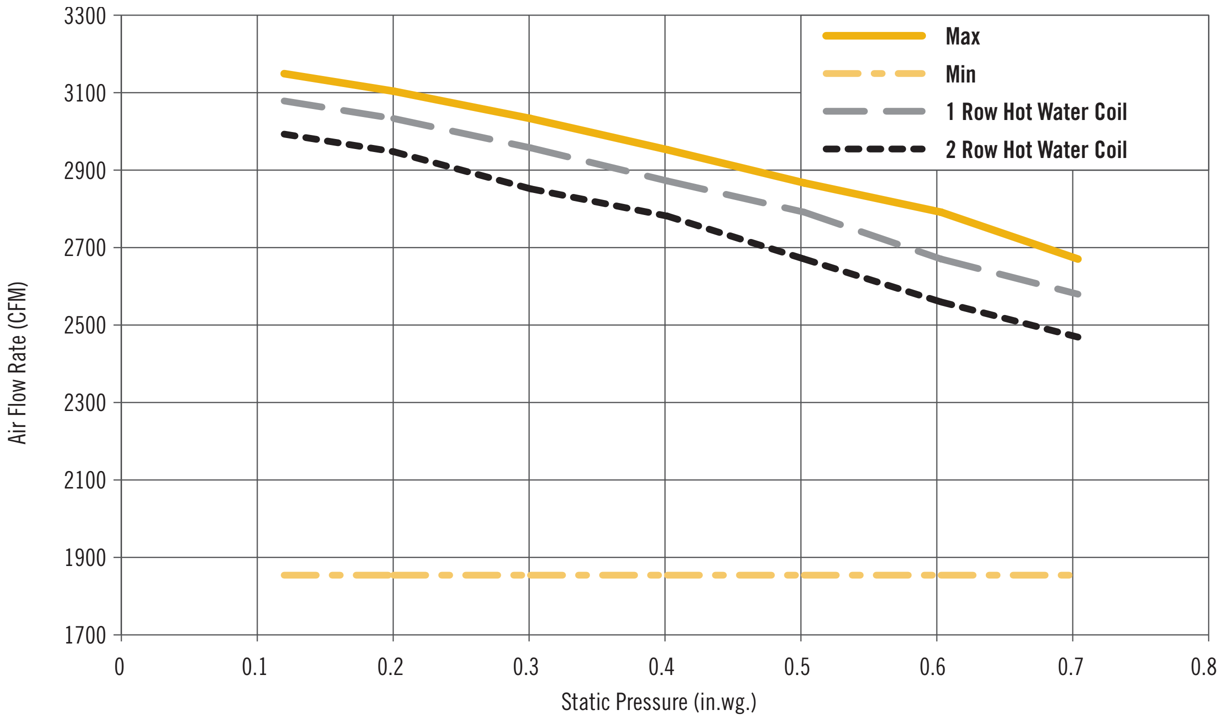
FVI-500 FAN PERFORMANCE CURVES
UNIT SIZE 5 - STANDARD HW COIL



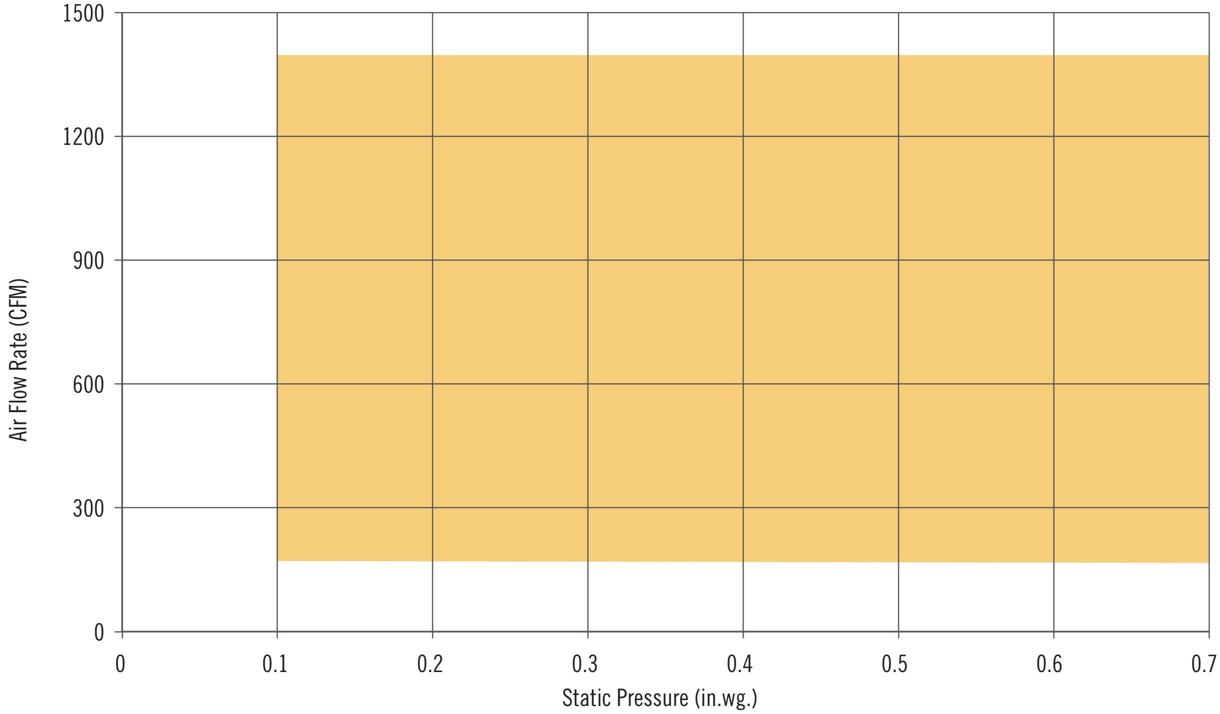
FVI-500 FAN PERFORMANCE CURVES
UNIT SIZE 6 - STANDARD HW COIL



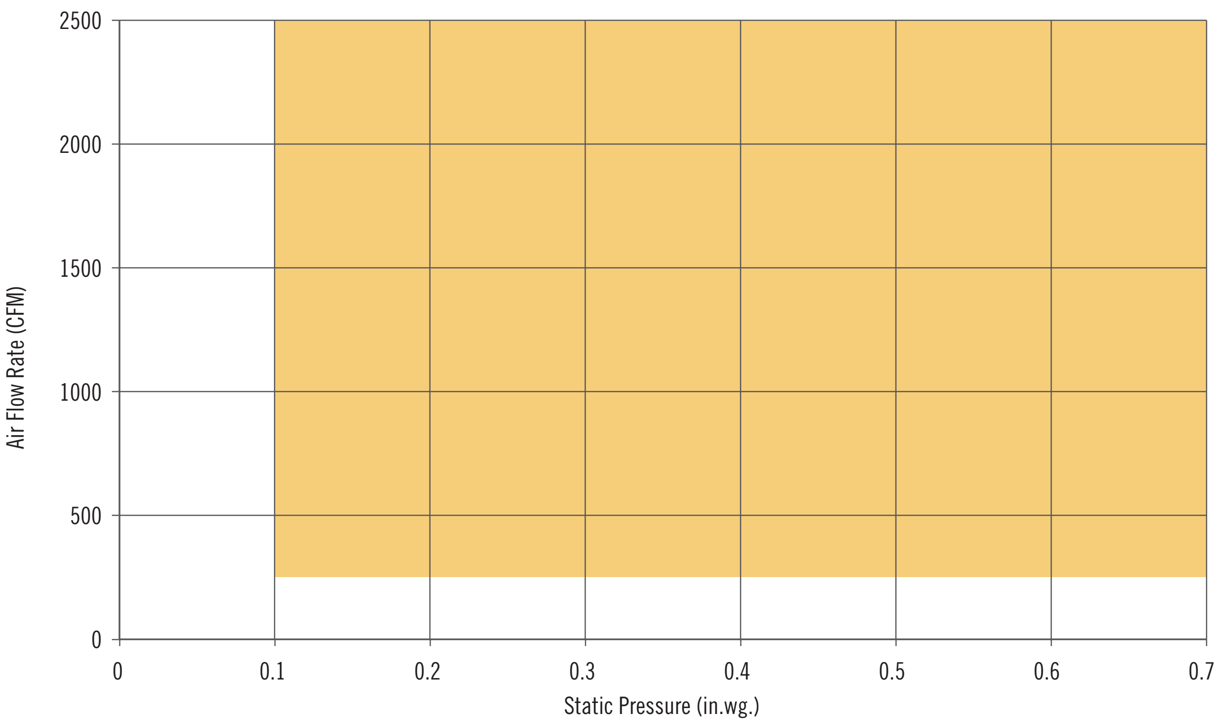
FVI-500 FAN PERFORMANCE CURVES
UNIT SIZE 7 - STANDARD HW COIL

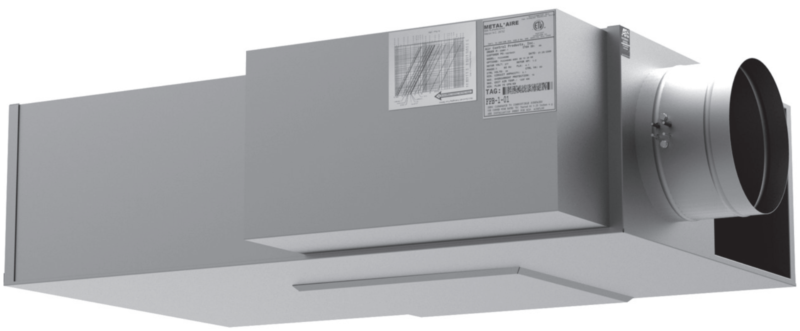


FVI-500 ECM FAN PERFORMANCE CURVES
UNIT SIZE 3



FVI-500 ECM FAN PERFORMANCE CURVES
UNIT SIZE 6 - STANDARD HW COIL



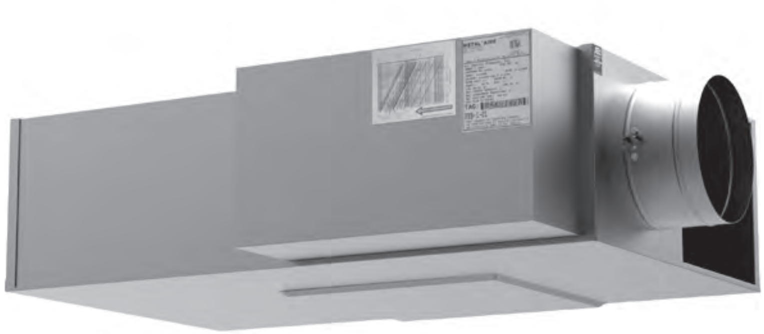


FVL-600 LOW PROFILE VARIABLE VOLUME FAN TERMINAL UNIT

SPECIFIABLE FEATURES

- Galvanized steel casing, mechanically sealed for low leakage construction
- NEMA 1 rated hinged control enclosure with standoff to prevent penetration of casing
- Single speed high efficiency PSC motor with SCR motor speed control
- Continuous welded primary inlet duct to minimize leakage with 3 stiffening beads for added rigidity
- Damper construction of double layer 18 gauge equivalent with integral blade seal
- All metal constructed inlet flow sensor with extra balancing taps
- Single point electrical connection
- Gasketed back draft damper door to minimize leakage in cooling mode

METALAIRE™



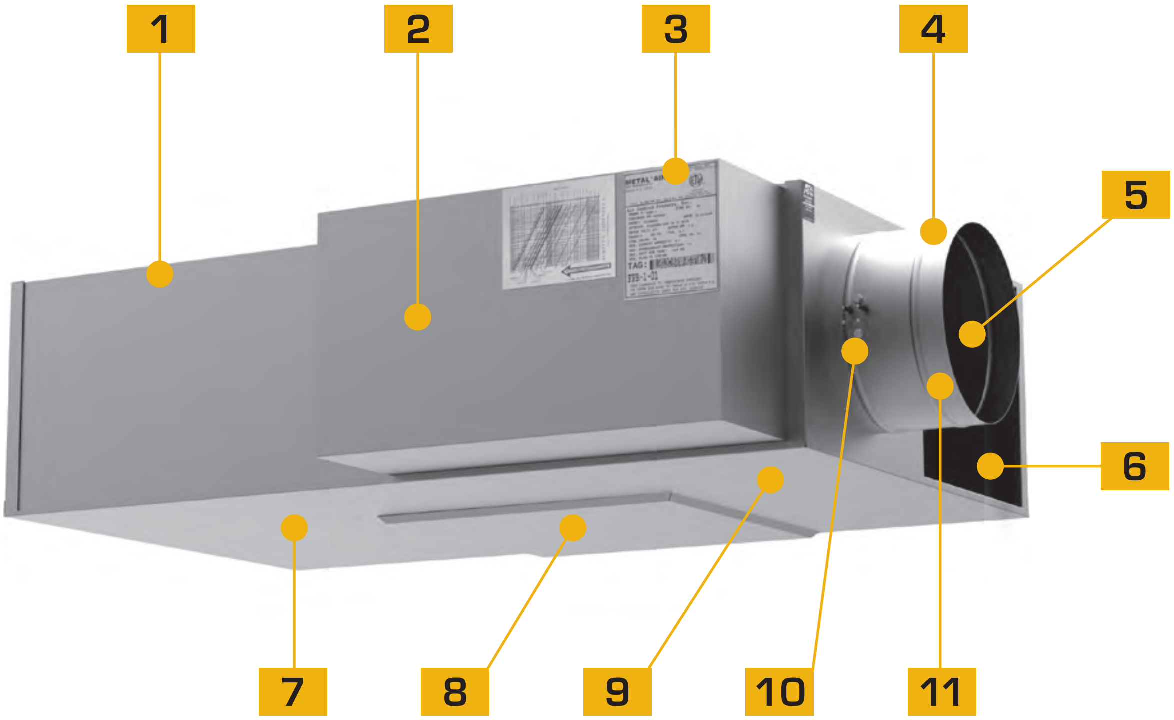
FVL-600 LOW PROFILE VARIABLE VOLUME FAN TERMINAL UNIT

METALAIRE's model FVL-600 parallel fan-powered terminal unit is designed to provide superior comfort to zones by intermittent parallel fan operation. Conditioned primary air is varied during cooling while the fan cycles on during heating. Parallel fan-powered terminal units allow for recovery of waste heat from the return plenum and a potential reduction in central fan energy, thereby lowering operating costs. In the heating mode with the fan energized, parallel fan-powered terminal units improve air circulation through better diffuser performance. The primary air does not pass through the fan.

The primary function of the METALAIRE model FVL-600 parallel fan-powered terminal unit is to deliver variable volume, constant temperature primary air to the space in the cooling mode. The volume of supply air is varied in response to a control signal. In the heating mode, with the fan energized, the terminal unit mixes conditioned air and plenum air in response to a control signal to supply constant volume, variable temperature supply air into the space. Supplemental heating is available in both electric heat and hot water coils if plenum heat is insufficient. METALAIRE model FVL-600 parallel fan-powered terminal units are available with a wide range of control options to suit any application. These include pneumatic, analog electronic, electric, factory provided commissioned direct digital control (DDC) or factory mounted field supplied (DDC) controls. With the demands of today's building designs to reduce energy in smaller mechanical spaces, the METALAIRE model FVL-600 parallel fan-powered terminal unit is the perfect choice.

STANDARD FEATURES

- Available in 3 casing sizes to handle 200 – 2500 cfm.
- 22 ga. galvanized steel casing, mechanically sealed, low leakage construction.
- Damper constructed of double layer of 24 ga. galvanized steel with sandwiched flexible gasket to provide tight seal (<1% at 3" static pressure).
- Factory calibrated controls per each job requirement.
- METALAIRE multi-quadrant averaging flow sensor provides highly accurate +/- 5% flow readings after certified balancer has balanced terminal.
- Easy access, steel balancing taps on inlet flow sensor.
- Energy efficient six pole single speed PSC motors with adjustable SCR solid state fan speed controllers are standard
- Available motor voltages of 120,277 and 208-240 (50/60 HZ)
- External control cabinet with offset mounting plate as standard.
- Single point electrical connections.
- 3-beaded primary inlet connection tube for added rigidity and secure flex duct connections.
- Round inlets available in sizes 4" through 8" round, 12" and 14" flat oval and 14 x 8" rectangular.
- 1/2" thick, dual density (1.5lb/ft^3 min.) fiberglass insulation with edges coated. Meets NFPA 90A and UL 181
- Rectangular flanged discharge with optional slip and drive cleat duct connection.
- Large Bottom access panel provides access to fan motor/blower assembly.
- Independently tested and certified laboratory performance data.
- Full range of options and accessories available (heating coils, disconnects, attenuators, etc.)
- Full range of liners/insulation available.
- Auto and manual thermal resets on every electric heater

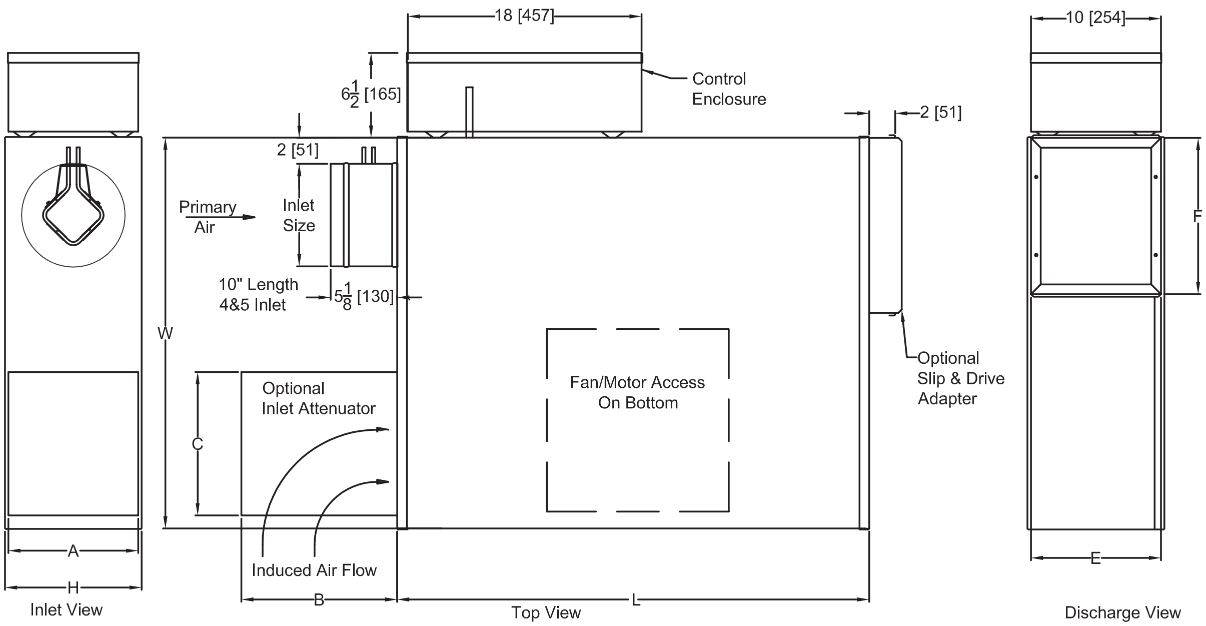


FVL-600 LOW PROFILE VARIABLE VOLUME FAN TERMINAL UNIT

FEATURES AND BENEFITS

1. Galvanized steel casing, mechanically sealed for low leakage construction.
2. NEMA 1 rated hinged control enclosure with standoff to prevent penetration of casing.
3. Single speed high efficiency PSC motor with SCR motor speed control.
4. Continuous welded primary inlet duct to minimize leakage with 3 stiffening beads for added rigidity.
5. Damper construction of double layer 18 gauge equivalent with integral blade seal.
6. Hand adjustable restrictor plates top and bottom for balancing.
7. Motor/blower assembly assembled to 18 gauge bulkhead to mitigate vibration.
8. Bottom access panel provided for easy motor/blower servicing.
9. Gasketed back draft damper door to minimize leakage in cooling mode.
10. All metal constructed inlet flow sensor with extra balancing taps.
11. Damper assembly rotates in long life, low friction, self lubricating thermoplastic bearing.

FVL-600
LOW PROFILE PARALLEL FAN POWERED AIR TERMINAL UNIT
COOLING ONLY



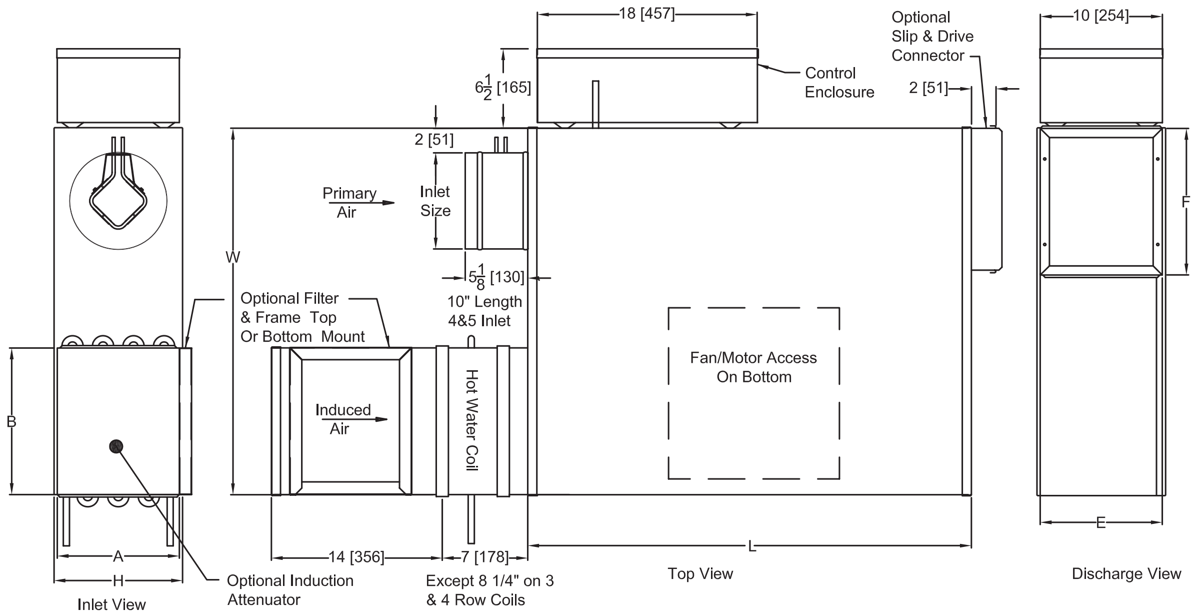
The standard location for control enclosure is Left Hand on Model FVL.
Looking in the direction of airflow, the control enclosure is on the left.

Case size	Inlet Size		Horsepower	Rated Motor Amps		Unit Dimensions			Induction Attenuator			Discharge	
	Standard	Optional		120 V	277 V	Height H	Width W	Length L	Height A	Width B	Length C	Height E	Width F
2	6 (152)	4,5	1/8	2.6	1.1	10 1/2 (267)	30 (718)	32 (813)	10 (254)	12 (305)	11 (279)	10 (254)	12 (305)
4	8 (203)	14 x 8	1/4	3.1	1.3	10 1/2 (267)	36 (914)	36 (914)	10 (254)	18 (457)	18 (457)	10 (254)	16 1/2 (419)
6	10 (254)	12,14 Flat Oval	1/3	8.8	2.9	12 1/2 (318)	38 (965)	36 (914)	12 (305)	18 (457)	18 (457)	12 1/2 (318)	18 (457)

** “A” dimension will increase or decrease 1" as the inlet diameter increases or decreases 2" from the standard inlet diameter.*

All dimensions are in inches; parentheses ( ) indicate millimeters.

FVL-600
LOW PROFILE PARALLEL FAN POWERED AIR TERMINAL UNIT WITH INDUCTION MOUNTED HOT WATER COIL



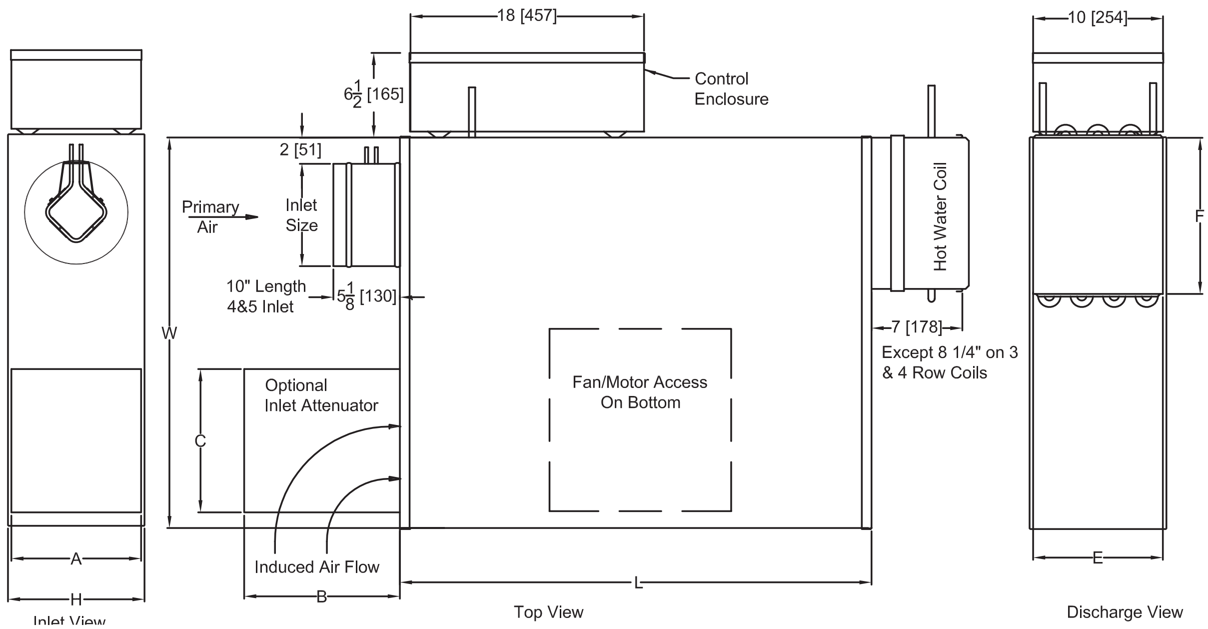
The standard location for control enclosure is Left Hand on Model FVL. Looking in the direction of airflow, the control enclosure is on the left.

Case size	Inlet Size		Horsepower	Rated Motor Amps		Unit Dimensions			Induction Attenuator			Discharge	
	Standard	Optional		120 V	277 V	Height H	Width W	Length L	Height A	Width B	Length C	Height E	Width F
2	6 (152)	4,5	1/8	2.6	1.1	10 1/2 (267)	30 (718)	32 (813)	10 (254)	12 (305)	11 (279)	10 (254)	12 (305)
4	8 (203)	–	1/4	3.1	1.3	10 1/2 (267)	36 (914)	36 (914)	10 (254)	22 (419)	18 (457)	10 (254)	16 1/2 (419)
6	10 (254)	12,14 Flat Oval	1/3	8.8	2.9	12 1/2 (318)	38 (965)	36 (914)	12 1/2 (318)	18 (457)	18 (457)	12 1/2 (318)	18 (457)

** "A" dimension will increase or decrease 1" as the inlet diameter increases or decreases 2" from the standard inlet diameter.*

All dimensions are in inches; parentheses ( ) indicate millimeters.

FVL-600
LOW PROFILE PARALLEL FAN POWERED AIR TERMINAL UNIT WITH DISCHARGE MOUNTED HOT WATER COIL



The standard location for control enclosure is Left Hand on Model FVL. Looking in the direction of airflow, the control enclosure is on the left.

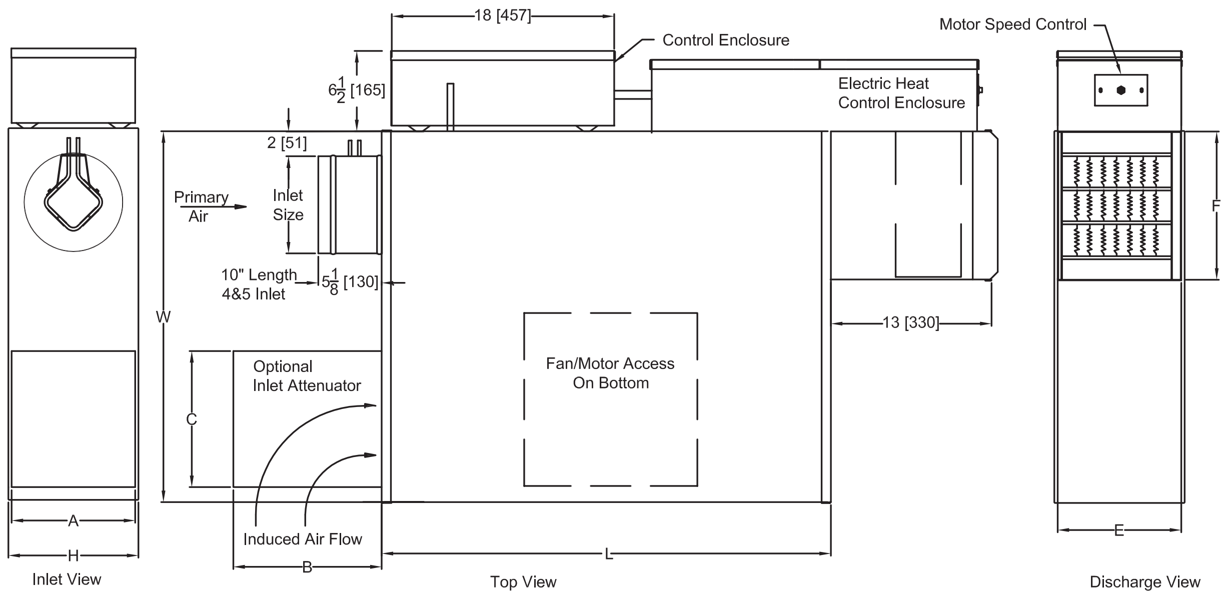
Case size	Inlet Size		Horsepower	Rated Motor Amps		Unit Dimensions			Induction Attenuator			Discharge	
	Standard	Optional		120 V	277 V	Height H	Width W	Length L	Height A	Width B	Length C	Height E	Width F
2	6 (152)	4,5	1/8	2.6	1.1	10 1/2 (267)	30 (718)	32 (813)	10 (254)	12 (305)	11 (279)	10 (254)	12 (305)
4	8 (203)	14 x 8	1/4	3.1	1.3	10 1/2 (267)	36 (914)	36 (914)	10 (254)	18 (457)	18 (457)	10 (254)	16 1/2 (419)
6	10 (254)	12,14 Flat Oval	1/3	8.8	2.9	12 1/2 (318)	38 (965)	36 (914)	12 (305)	18 (457)	18 (457)	12 1/2 (318)	18 (457)

** “A” dimension will increase or decrease 1" as the inlet diameter increases or decreases 2" from the standard inlet diameter.*

All dimensions are in inches; parentheses ( ) indicate millimeters.

METALAIRE™

FVL-600
LOW PROFILE PARALLEL FAN POWERED AIR TERMINAL UNIT WITH ELECTRIC HEAT



The standard location for control enclosure is Left Hand on Model FVL.
Looking in the direction of airflow, the control enclosure is on the left.

Case size	Inlet Size		Horsepower	Rated Motor Amps		Unit Dimensions			Induction Attenuator			Discharge	
	Standard	Optional		120 V	277 V	Height H	Width W	Length L	Height A	Width B	Length C	Height E	Width F
2	6 (152)	4,5	1/8	2.6	1.1	10 1/2 (267)	30 (718)	32 (813)	10 (254)	12 (305)	11 (279)	8 (203)	12 (305)
4	8 (203)	14 x 8	1/4	3.1	1.3	10 1/2 (267)	36 (914)	36 (914)	10 (254)	18 (457)	18 (457)	10 (254)	18 (457)
6	10 (254)	12,14 Flat Oval	1/3	8.8	2.9	12 1/2 (318)	38 (965)	36 (914)	12 1/2 (318)	18 (457)	18 (457)	12 1/2 (318)	18 (457)

** "A" dimension will increase or decrease 1" as the inlet diameter increases or decreases 2" from the standard inlet diameter.*

All dimensions are in inches; parentheses ( ) indicate millimeters.

FVL-600
AHRI CERTIFIED RATING POINTS

AHRI Certified Radiated Sound Power, Fan Only

Unit Size	Fan CFM	Octave Band						Electrical Power (Watts)
		2	3	4	5	6	7	
206	400	60	55	56	51	41	33	210
408	600	64	59	62	57	47	41	290
614	1000	73	70	66	61	54	48	530

AHRI Certified Radiated Sound Power, Inlet Ps = 1.5 in. wg. Static Pressure

Unit Size	Primary CFM	Min Ps	Octave Band					
			2	3	4	5	6	7
206	400	0.10	60	54	51	45	41	39
408	700	0.11	65	54	50	45	43	42
614	2000	0.20	74	65	58	54	47	44

AHRI Certified Discharge Sound Power, Fan Only

Unit Size	Fan CFM	Octave Band						Electrical Power (Watts)
		2	3	4	5	6	7	
206	400	58	51	49	46	36	33	210
408	600	67	61	58	58	49	48	290
614	1000	65	62	61	60	52	52	530

AHRI Certified Radiated Sound Power, Inlet Ps = 1.5 in. wg. Static Pressure

Unit Size	Primary CFM	Min Ps	Octave Band					
			2	3	4	5	6	7
206	400	0.10	63	59	57	51	45	41
408	700	0.11	65	60	55	50	49	45
614	2000	0.20	78	70	66	63	63	59

CERTIFICATIONS AND STANDARDS

- Units tested per ANSI/ASHRAE Standard 130.
- All model sizes certified in accordance with AHRI 880 certification program.
- ETL listed to meet requirements of UL 1995 and CSA 236.
- Dual-density fiberglass insulation meets UL 181 and NFPA 90A requirements.
- Insulation meets ASHRAE 62.1 requirements for resistance to mold growth and erosion.

AHRI CERTIFIED™
www.ahridirectory.org
VAV Terminals
AHRI Standard 880

FVL-600
RADIATED SOUND POWER LEVEL at Fan Only

Case	Inlet	CFM (L/s)		Fan Only: Octave Band Sound Power, Lw, dB 2	3	4	5	6	7	NC	NC w/SA
2	6	200	(94)	56	51	53	50	38	29	27	21
		350	(165)	59	53	55	51	40	32	30	23
		400	(189)	60	55	56	51	41	33	31	24
		450	(212)	61	55	57	54	43	35	32	25
		550	(260)	62	57	60	56	45	38	35	29
		650	(307)	64	59	62	59	48	41	37	31
4	12	200	(94)	58	55	56	48	37	28	31	24
		400	(189)	60	56	59	52	42	35	34	27
		600	(283)	64	59	62	57	47	41	37	31
		800	(378)	69	63	65	61	54	48	41	34
6	16 x 10	400	(189)	62	64	59	52	45	38	34	29
		600	(283)	67	67	62	56	50	43	38	33
		800	(378)	71	71	65	60	54	49	42	38
		1000	(472)	73	70	66	61	54	48	42	38
		1200	(566)	74	70	67	62	54	46	43	39

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4. *NC values are calculated using attenuation credits outlined in Appendix E of AHRI 885-2008.*
5. *Air terminal units were tested with an external static pressure of 0.25 in.wg.*
6. ***Discharge Sound power levels shown with End Reflection Corrections Included** in dB (ref: 10^{-12} watts).*
7. *Minimum Ps is the static pressure drop across the air terminal unit while the inlet damper is in the wide-open position at a given airflow rate, and the fan is off.*

FVL-600
RADIATED SOUND POWER LEVEL at Inlet Ps = 0.25 and 0.75 in. wg.

Case	Inlet	CFM	(L/s)	Min Ps in. wg.	(Pa)	Inlet Ps = 0.25 in. wg. (62 Pa) Octave Band Sound Power, Lw, dB 2	3	4	5	6	7	NC	NC w/ SA	Inlet Ps = 0.75 in. wg. (185 Pa) Octave Band Sound Power, Lw, dB 2	3	4	5	6	7	NC w/ SA	NC
2	6	200	(94)	0.010	(2)	51	46	44	42	40	38	18	<15	53	48	46	44	42	40	20	<15
		300	(142)	0.054	(13)	55	48	45	43	40	39	19	<15	57	50	47	45	42	41	21	17
		400	(189)	$\boxed{0.097}$	(24)	55	49	46	40	36	34	20	<15	57	51	48	42	38	36	22	17
		500	(236)	0.154	(38)	57	52	47	41	39	40	21	17	59	54	49	43	41	42	23	20
		600	(283)	0.210	(52)	59	53	47	44	40	39	21	20	61	55	49	46	42	41	24	22
4	8	300	(142)	0.013	(3)	44	34	32	23	24	25	<15	<15	48	40	38	35	32	31	<15	<15
		500	(236)	0.035	(9)	50	38	35	29	26	25	<15	<15	56	46	42	38	35	34	17	16
		700	(330)	$\boxed{0.110}$	(21)	55	43	38	33	29	26	16	<15	61	49	44	40	36	34	23	22
		900	(425)	0.143	(36)	58	47	42	39	34	31	20	18	65	53	47	43	38	36	29	27
		1100	(519)	0.206	(51)	60	51	46	44	39	35	22	21	65	56	50	46	41	39	29	27
6	16 x 10	500	(236)	0.006	(1)	44	40	38	36	30	24	<15	<15	43	41	41	40	37	36	<15	<15
		1000	(472)	0.040	(10)	48	45	43	40	33	28	17	<15	55	51	47	44	39	37	21	<15
		1500	(708)	0.110	(27)	52	47	44	41	34	28	18	<15	60	54	50	46	41	37	24	21
		2000	(944)	$\boxed{0.200}$	(50)	55	49	46	42	35	29	20	<15	63	56	52	48	41	37	26	25
		2500	(1180)	0.298	(74)	59	51	49	45	38	33	23	20	66	57	55	50	44	39	30	29

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7. *Minimum Ps is the static pressure drop across the air terminal unit while the inlet damper is in the wide-open position at a given airflow rate, and the fan is off.*

METALAIRE™

FVL-600
RADIATED SOUND POWER LEVEL at Inlet Ps = 1.25, 1.50 and 1.75 in. wg.

Case	Inlet	CFM (L/s)		Min Ps in. wg. (Pa)		Inlet Ps = 1.25 in. wg. (310 Pa)								Inlet Ps = 1.50 in. wg. (375 Pa)								Inlet Ps = 1.75 in. wg. (435 Pa)							
						Octave Band Sound Power, Lw, dB								Octave Band Sound Power, Lw, dB								Octave Band Sound Power, Lw, dB							
						2	3	4	5	6	7	NC	NC w/ SA	2	3	4	5	6	7	NC w/ SA	NC	2	3	4	5	6	7	NC w/ SA	NC
2	6	200	(94)	0.010	(2.5)	55	50	48	46	44	42	22	15	56	51	49	47	45	43	23	17	57	52	50	48	46	44	24	18
		300	(142)	0.054	(13.3)	59	52	49	47	44	43	23	20	60	53	50	48	45	44	24	21	61	54	51	49	46	45	25	22
		400	(189)	0.097	(24.1)	59	53	50	44	40	38	24	20	60	54	51	45	41	39	25	21	61	55	52	46	42	40	26	22
		500	(236)	0.154	(38.2)	61	56	51	45	43	44	25	22	62	57	52	46	44	45	26	23	63	58	53	47	45	46	27	25
		600	(283)	0.210	(52.3)	63	57	51	48	44	43	26	25	64	58	52	49	45	44	27	26	65	59	53	50	46	45	29	27
4	8	300	(142)	0.013	(3)	51	44	44	42	42	43	18	<15	51	44	44	43	42	43	18	<15	52	45	45	44	43	44	19	<15
		500	(236)	0.035	(9)	59	50	46	42	40	40	21	20	59	51	48	44	42	43	22	20	60	52	49	45	43	44	23	21
		700	(330)	0.086	(21)	64	53	48	44	41	40	27	26	65	54	50	45	43	42	29	27	66	55	51	46	44	43	30	29
		900	(425)	0.143	(36)	68	56	51	46	43	42	32	31	69	58	52	48	44	43	34	32	70	59	53	49	45	44	35	34
		1100	(519)	0.206	(51)	69	60	53	49	44	43	34	32	70	61	55	50	46	45	35	34	71	62	56	51	47	46	36	35
6	16 x 10	500	(236)	0.006	(1)	46	45	44	44	42	43	18	<15	49	47	47	44	43	44	21	<15	50	48	48	45	44	45	22	15
		1000	(472)	0.040	(10)	59	55	51	47	44	44	25	20	60	55	52	48	46	46	26	21	61	56	53	49	47	47	27	22
		1500	(708)	0.110	(27)	67	60	54	50	46	43	31	30	70	62	56	52	47	45	35	34	71	63	57	53	48	46	36	35
		2000	(944)	0.200	(50)	70	62	57	52	46	43	35	34	74	65	58	54	47	44	40	39	75	66	59	55	48	45	41	40
		2500	(1180)	0.298	(74)	72	64	59	54	48	44	38	36	75	67	60	56	50	46	41	40	76	68	61	57	51	47	43	41

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7. *Minimum Ps is the static pressure drop across the air terminal unit while the inlet damper is in the wide-open position at a given airflow rate, and the fan is off.*

FVL-600
DISCHARGE SOUND POWER LEVEL at Fan Only

Case	Inlet	CFM	(L/s)	Fan Only: Octave Band Sound Power, Lw, dB 2	3	4	5	6	7	NC
2	6	200	(94)	55	48	46	44	33	29	< 15
		350	(165)	57	50	48	46	35	31	< 15
		400	(189)	58	51	49	46	36	33	< 15
		450	(212)	59	52	50	49	37	34	< 15
		550	(260)	60	54	53	51	40	37	< 15
		650	(307)	62	56	57	53	43	39	< 15
4	8	200	(94)	61	55	51	49	41	36	16
		400	(189)	64	58	55	54	45	43	16
		600	(283)	67	61	58	58	49	48	20
		800	(378)	69	65	61	61	53	52	22
6	16 x 10	400	(189)	54	53	50	47	38	35	< 15
		600	(283)	57	56	53	49	40	38	< 15
		800	(378)	68	65	64	63	55	57	22
		1000	(472)	65	62	61	60	52	52	19
		1200	(566)	63	63	64	64	55	57	21

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FVL-600
DISCHARGE SOUND POWER LEVEL at Inlet Ps = 0.25 and 0.75 in. wg.

Case	Inlet	CFM (L/s)		Min Ps in. wg. (Pa)		Inlet Ps = 0.25 in. wg. (63 Pa)							Inlet Ps = 0.75 in. wg. (185 Pa)						
						Octave Band Sound Power, Lw, dB						NC	Octave Band Sound Power, Lw, dB						NC
						2	3	4	5	6	7		2	3	4	5	6	7	
2	6	200	(94)	0.010	(2)	52	48	47	44	39	33	< 15	54	50	49	46	41	35	< 15
		300	(142)	0.054	(13)	55	51	48	45	39	35	< 15	57	53	50	47	41	37	< 15
		400	(189)	0.097	(24)	58	54	52	46	40	36	< 15	60	56	54	48	42	38	< 15
		500	(236)	0.154	(38)	60	56	53	48	42	38	< 15	62	58	55	50	44	40	15
		600	(283)	0.210	(52)	61	57	55	50	44	40	< 15	63	59	57	52	46	42	16
4	8	300	(142)	0.013	(3)	53	46	43	40	37	33	< 15	56	50	46	42	39	36	< 15
		500	(236)	0.035	(9)	56	48	44	41	39	34	< 15	58	51	47	43	41	37	< 15
		700	(330)	0.110	(21)	59	52	48	45	42	36	< 15	62	56	51	47	45	40	< 15
		900	(425)	0.143	(36)	63	60	56	53	50	44	16	66	64	58	55	54	48	21
		1100	(519)	0.206	(51)	66	63	58	56	53	46	20	69	67	60	58	57	50	25
6	16 x 10	500	(236)	0.006	(1)	52	45	43	40	37	31	< 15	55	50	49	44	42	36	< 15
		1000	(472)	0.040	(10)	57	50	46	43	42	34	< 15	62	55	52	49	48	42	< 15
		1500	(708)	0.110	(27)	61	54	50	46	44	37	< 15	68	60	56	53	52	47	18
		2000	(944)	0.200	(50)	64	58	55	49	48	42	< 15	72	64	61	56	56	51	23
		2500	(1180)	0.298	(74)	66	60	58	52	50	45	16	74	66	64	58	58	53	26

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FVL-600
DISCHARGE SOUND POWER LEVEL at Inlet Ps = 1.25, 1.50 and 1.75 in. wg.

Case	Inlet	CFM (L/s)		Min Ps in. wg. (Pa)		Inlet Ps = 1.25 in. wg. (310 Pa) Octave Band Sound Power, Lw, dB							Inlet Ps = 1.50 in. wg. (375 Pa) Octave Band Sound Power, Lw, dB							Inlet Ps = 1.75 in. wg. (435 Pa) Octave Band Sound Power, Lw, dB						
						2	3	4	5	6	7	NC	2	3	4	5	6	7	NC	2	3	4	5	6	7	NC
2	6	200	(94)	0.010	(2.5)	56	52	51	48	43	37	< 15	57	53	52	49	44	38	< 15	58	54	53	50	45	39	< 15
		300	(236)	0.054	(13.3)	59	55	52	49	43	39	< 15	60	56	53	50	44	40	< 15	61	57	54	51	45	41	< 15
		400	(330)	0.097	(24.1)	62	58	56	50	44	40	15	63	59	57	51	45	41	16	64	60	58	52	46	42	18
		500	(425)	0.154	(38.2)	64	60	57	52	46	42	18	65	61	58	53	47	43	19	66	62	59	54	48	44	20
		600	(519)	0.210	(52.3)	65	61	59	54	48	44	19	66	62	60	55	49	45	20	67	63	61	56	50	46	21
4	8	300	(142)	0.013	(3)	57	53	49	44	41	39	< 15	58	54	51	44	41	40	< 15	58	56	53	45	42	42	< 15
		500	(236)	0.022	(5)	60	55	50	46	43	40	< 15	61	56	52	46	44	41	< 15	61	57	53	48	45	43	< 15
		700	(330)	0.033	(8)	64	59	54	50	48	43	16	65	60	55	50	49	45	18	65	61	56	51	49	46	19
		900	(425)	0.072	(18)	68	67	60	57	57	51	25	69	67	62	58	57	52	25	69	68	62	59	58	53	26
		1100	(519)	0.082	(20)	71	70	63	61	60	54	28	73	70	64	61	61	54	28	73	70	64	62	62	55	28
6	16 x 10	500	(189)	0.009	(2)	57	53	53	48	47	41	< 15	58	54	53	49	48	43	< 15	59	55	54	50	49	44	< 15
		1000	(283)	0.026	(6)	66	61	60	54	54	49	18	67	62	61	55	55	50	19	68	63	64	56	56	52	20
		1500	(708)	0.060	(15)	74	65	62	58	59	54	26	76	67	63	59	60	55	29	77	68	65	61	61	57	30
		2000	(944)	0.112	(28)	77	69	66	62	62	58	30	78	70	66	63	63	59	31	79	70	67	64	64	60	32
		2500	(1180)	0.200	(50)	79	71	69	64	64	60	32	81	72	70	65	65	61	35	81	73	71	66	67	63	35

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FVL-600
MOTOR AMPERAGE RATINGS

Case Size	Motor HP	Standard PSC Motor Amperage Ratings		
		115V-1 Phase 60 Hz Rated Amps	208-240V-1 Phase 60 Hz Rated Amps	277V-1 Phase 60 Hz Rated Amps
2	1/8	2.6	1.5	1.1
4	1/4	3.1	2.0	1.3
6	1/3	7.0	3.9	2.9

Motors also available: 208-240 V, 50/60 Hz.

Contact your METALAIRE Representative for details.

FVL-600
DAMPER LEAKAGE

Inlet Size	Damper Leakage, CFM		
	1.5" ∆Ps	3.0" ∆Ps	6.0" ∆Ps
4,5,6	3	4	7
8	2	4	7
10	4	5	7
14 x 8	5	7	10
12" Flat Oval	4	5	7
14" Flat Oval	4	6	8

FVL-600
HOT WATER COILS MBH SELECTION DATA – IMPERIAL UNITS

Imperial Units					MBH							
					CFM							
Unit Size	Rows	Connection OD	GPM	Head Loss (ft-H_2O)	200	250	300	350	400	450	500	550
2	One	0.625	1	0.63	8.2	9.1	9.9	10.5	11.1	11.6	12.1	12.5
			2	2.40	8.9	10.0	10.9	11.7	12.4	13.1	13.7	14.2
			3	5.25	9.3	10.3	11.3	12.2	12.9	13.7	14.3	14.9
			4	9.15	9.5	10.5	11.5	12.4	13.2	14.0	14.7	15.3
			Airside Ps (in. wg.)		0.02	0.03	0.04	0.06	0.07	0.09	0.11	0.13
2	Two	0.875	1	0.17	12.3	13.8	15.1	16.1	17.1	17.9	18.6	19.2
			2	0.63	13.8	15.7	17.4	18.9	20.2	21.4	22.5	23.4
			4	2.39	14.7	17.0	18.9	20.7	22.3	23.8	24.2	26.4
			6	5.22	15.1	17.4	19.5	21.4	23.2	24.7	25.1	27.6
			Airside Ps (in. wg.)		0.05	0.07	0.10	0.13	0.16	0.19	0.23	0.27

Unit Size	Rows	Connection OD	GPM	Head Loss (ft-H_2O)	CFM							
					500	600	700	800	1000	1200	1400	1600
4	One	0.500	0.5	0.24	12.5	12.9	13.3	13.7	14.3	14.8	15.2	15.6
			1	0.93	15.4	16.1	16.7	17.3	18.3	19.2	19.9	20.6
			2	3.52	17.4	18.3	19.1	19.9	21.3	22.5	23.5	24.5
			3	7.71	18.3	19.2	20.1	21.0	22.5	23.8	25.1	26.2
			Airside Ps (in. wg.)		0.03	0.04	0.04	0.05	0.07	0.09	0.10	0.12
4	Two	0.875	1	0.24	22.4	23.4	24.4	25.2	26.7	27.9	29.0	29.9
			2	0.91	26.8	28.4	29.8	31.1	33.4	35.5	37.3	38.9
			4	3.45	29.7	31.7	33.5	35.1	38.2	40.9	43.5	45.7
			6	7.53	30.9	33.0	34.9	36.8	40.2	43.2	46.0	48.6
			Airside Ps (in. wg.)		0.07	0.08	0.10	0.11	0.15	0.19	0.23	0.27

Unit Size	Rows	Connection OD	GPM	Head Loss (ft-H_2O)	CFM							
					500	600	700	800	1000	1200	1400	1600
6	One	0.500	0.5	0.27	13.1	13.8	14.4	14.9	15.7	16.3	16.9	17.3
			1	1.03	16.3	17.5	18.5	19.4	20.8	22.0	23.0	23.8
			2	3.91	18.5	20.1	21.5	22.7	24.8	26.5	28.0	29.3
			3	8.54	19.4	21.2	22.7	24.1	26.5	28.5	30.2	31.7
			Airside Ps (in. wg.)		0.04	0.05	0.07	0.08	0.12	0.16	0.21	0.27
6	Two	0.875	1	0.27	23.6	25.4	26.9	28.1	30.1	--	--	--
			2	1.01	28.6	31.3	33.7	35.8	39.2	--	--	--
			4	3.83	31.9	35.4	38.5	41.3	46.1	--	--	--
			6	8.37	33.2	37.1	40.5	43.6	49.0	--	--	--
			Airside Ps (in. wg.)		0.08	0.11	0.14	0.18	0.26	--	--	--

Heating capacity data in tables assume an entering water temperature (EWT) of 180°F, and an entering air temperature (EAT) of 65°F, which corresponds to a temperature difference of 115°F. Smaller temperature differences will result in a decrease of heating capacity. To obtain the heating capacity at another temperature difference, refer to the hot water coil notes located in the Reference Section.

FVL-600
HOT WATER COILS kW SELECTION DATA – METRIC UNITS

Unit Size	Rows	Connection OD (mm)	Water Flow (L/s)	Head Loss (kPa)	Airflow (L/s)							
					94	118	142	165	189	212	236	260
2	One	15.9	0.04	1.88	2.4	2.7	2.9	3.1	3.3	3.4	3.5	3.7
			0.15	7.17	2.6	2.9	3.2	3.4	3.6	3.8	4.0	4.2
			0.33	15.69	2.7	3.0	3.3	3.6	3.8	4.0	4.2	4.4
			0.58	27.35	2.8	3.1	3.4	3.6	3.9	4.1	4.3	4.5
			Airside Ps (kPa)		0.00	0.01	0.01	0.01	0.02	0.02	0.03	0.03
2	Two	22.2	0.01	0.51	3.6	4.0	4.4	4.7	5.0	5.2	5.4	5.6
			0.04	1.88	4.0	4.6	5.1	5.5	5.9	6.3	6.6	6.9
			0.15	7.14	4.3	5.0	5.5	6.1	6.5	7.0	7.1	7.7
			0.33	15.60	4.4	5.1	5.7	6.3	6.8	7.2	7.3	8.1
			Airside Ps (kPa)		0.01	0.02	0.02	0.03	0.04	0.05	0.06	0.07

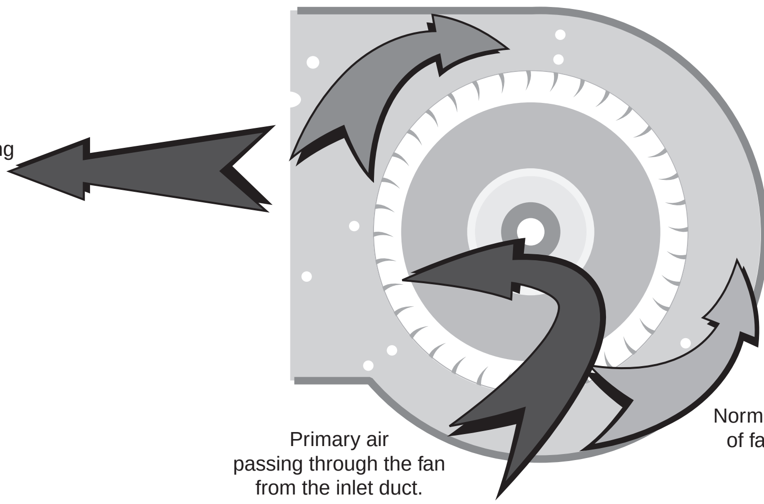
Unit Size	Rows	Connection OD (mm)	Water Flow (L/s)	Head Loss (kPa)	Airflow (L/s)							
					212	236	260	283	330	378	425	472
4	One	12.7	0.02	0.72	3.7	3.8	3.9	4.0	4.2	4.3	4.5	4.6
			0.06	2.78	4.5	4.7	4.9	5.1	5.4	5.6	5.8	6.0
			0.22	10.52	5.1	5.4	5.6	5.8	6.2	6.6	6.9	7.2
			0.49	23.05	5.4	5.6	5.9	6.1	6.6	7.0	7.3	7.7
			Airside Ps (kPa)		0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.03
4	Two	22.2	0.02	0.72	6.6	6.9	7.1	7.4	7.8	8.2	8.5	8.8
			0.06	2.72	7.8	8.3	8.7	9.1	9.8	10.4	10.9	11.4
			0.22	10.31	8.7	9.3	9.8	10.3	11.2	12.0	12.7	13.4
			0.48	22.51	9.0	9.7	10.2	10.8	11.8	12.6	13.5	14.2
			Airside Ps (kPa)		0.02	0.02	0.02	0.03	0.04	0.05	0.06	0.07

Unit Size	Rows	Connection OD (mm)	Water Flow (L/s)	Head Loss (kPa)	Airflow (L/s)							
					236	283	330	378	472	566	661	755
6	One	12.7	0.02	0.81	3.8	4.0	4.2	4.4	4.6	4.8	4.9	5.1
			0.06	3.08	4.8	5.1	5.4	5.7	6.1	6.4	6.7	7.0
			0.25	11.69	5.4	5.9	6.3	6.6	7.3	7.8	8.2	8.6
			0.54	25.53	5.7	6.2	6.6	7.1	7.8	8.3	8.8	9.3
			Airside Ps (kPa)		0.01	0.01	0.02	0.02	0.03	0.04	0.05	0.07
6	Two	22.2	0.02	0.81	6.9	7.4	7.9	8.2	8.8	--	--	--
			0.06	3.02	8.4	9.2	9.9	10.5	11.5	--	--	--
			0.24	11.45	9.3	10.4	11.3	12.1	13.5	--	--	--
			0.53	25.02	9.7	10.9	11.9	12.8	14.3	--	--	--
			Airside Ps (kPa)		0.02	0.03	0.03	0.04	0.06	--	--	--

Heating capacity data in tables assume an entering water temperature (EWT) of 82°C, and an entering air temperature (EAT) of 18°C, which corresponds to a temperature difference of 64°C. Smaller temperature differences will result in a decrease of heating capacity. To obtain the heating capacity at another temperature difference, refer to the hot water coil notes located in the Reference Section.

FVL-600
AIR TERMINALS ACCESSORIES AND COMPONENTS
OPTIONAL ELECTRONIC ANTI-REVERSE ROTATION DEVICE

The fan wheel in a constant fan box may rotate backward whenever the fan motor is not running and primary air from the inlet duct is passing through the fan. In some cases the torque developed by the fan wheel when rotating backward cannot be overcome by the starting torque of the fan motor. In this condition the fan motor will run in reverse rotation, resulting in insufficient airflow delivery.



Constant fan boxes must have means to coordinate energizing the fan motor with start up of the Primary Fan System to prevent the reverse rotation or a positive method to create enough motor torque to reverse the rotation of the fan wheel.

Other manufacturers choose to deal with this issue by running their motors with larger capacitors than recommended by the motor manufacturer. The oversized capacitor will cause the motor to run less efficiently, run hotter than normal and draw more current than with a proper capacitor. All of this will result in reduced motor life and increased energy costs.

METALAIRE'S Model FVL-600 is available with an optional Electronic Anti-Reverse Rotation Device which will positively prevent the reverse rotation of any fan. This option does not draw additional current while running and will not cause the motor to run at higher temperatures.

The results are greater efficiency, quieter motors, longer motor life and happier building owners.

FVL-600 APPROXIMATE SHIPPING WEIGHTS

Case	FVL
2	130 lbs.
4	170 lbs.
6	190 lbs.

FVL-600 FILTER SIZES PER CASE SIZE

Case Size	Filter Dimensions	
	With HW Coil	No HW Coil
2	12" x 10"	18" x 10"
4	12" x 10"	18" x 10"
6	18" x 12"	18" x 12"

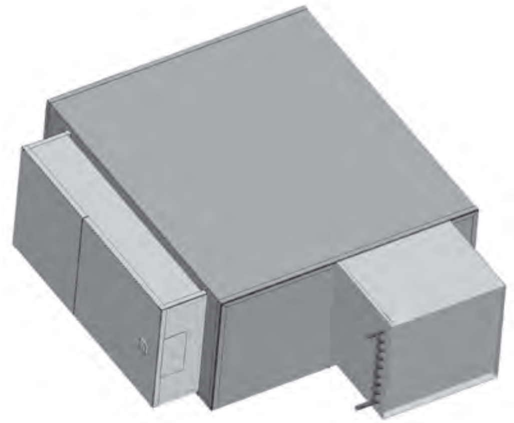
Filters are mounted on the fan induction and are available in 1" or 2" thickness.

METALAIRE™

FVL-600
ACCESSORIES AND COMPONENTS
HOT WATER COILS

When ordered with the air terminal, the hot water coil is shipped attached to the discharge of the terminal casing. The discharge end of the casing has slip and drive connections for easy connection to downstream ductwork. The hot water coil is constructed of aluminum fin and copper serpentine-type tubes with male sweat connections tested at 300 psig.

Coil selection may be made using METALAIRE Terminal Selection Software. Contact your METALAIRE representative for a copy. In the interest of energy conservation and due to the possibility of condensation, all hot water coils are marked, "Coil must be externally insulated after installation in the field." Hot water coils are tested in accordance to AHRI. Options, at an additional charge on hot water coils, include access doors for inspection and cleaning, and inlet/outlet on opposite sides of coils.



HOT WATER COIL CONSTRUCTION DETAILS

- Hot Water Coils are factory mounted to the discharge of the terminal and are available with an optional factory mounted discharge plenum section with access door.
- Hot water coils are enclosed in a 20 gauge coated steel casing allowing for attachment to metal ductwork with a slip and drive connection.
- Fins are rippled and sine wave type constructed from heavy gauge aluminum and are mechanically bonded to the tubes.
- Tubes are copper with a minimum wall thickness of 0.016" with male solder header connections.
- Coils are leak tested to 300 psi with minimum burst of 2000 psi at ambient temperature. Coil performance data is based on tests run in accordance with AHRI standard 410. Coils are AHRI certified and include an AHRI label.

Tubing Connections		
	Standard HW Coil Inches (mm)	
Case Size	1 Row	2 Row
2	5/8 (16)	7/8 (22)
4	5/8 (16)	7/8 (22)
6	5/8 (16)	5/8 (16)

All coils have 10 fins per inch

Outlet Dimensions		
	Standard HW Coil Inches (mm)	
Case Size	H	W
2	10 (254)	12 (304)
4	10 (254)	22 (558)
6	12.5 (317)	15.5 (393)

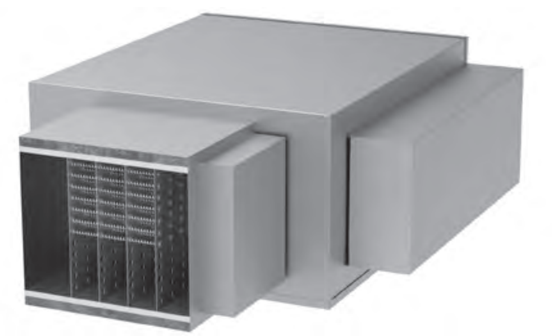
All accessories which can be attached to the Parallel Fan Boxes are not a part of the AHRI certification program but ratings can be affected by their use.

FVL-600
ACCESSORIES AND COMPONENTS
ELECTRIC HEAT

Electric heater elements, as illustrated on this page, are integral to the air terminal. The discharge end has slip and drive connections for easy connection to downstream ductwork. ETL® listed heaters are provided with a fan interlock relay. Heaters that will be controlled electronically must include a 24 VAC control circuit to operate with the low voltage controls on the air terminal. Heater plenums are internally insulated. When an air terminal is ordered with clean room lining and electric heat, the heater plenum is either internally lined with optional foil backed insulation or closed cell foam or may require external insulation in field.

INCLUDED WITH EACH HEATER ASSEMBLY:

- Heater and cabinet mounted on the discharge of the FVI-500
- Electric Heater is interlocked into fan control relay
- De-energizing magnetic contactors per step
- Primary automatic reset high temperature limit (disc type)
- Backup manual reset high temperature limit (disc type)
- Non-fused transformer with voltage to match Heater voltage
- Single point power wiring connection
- Heater is shipped factory mounted and wired



ELECTRIC HEATER ASSEMBLY CONSTRUCTION DETAILS

- Electric Reheat Coils are factory mounted on the discharge of the Air Terminal. The heaters are ETL® listed for zero clearance, are tested in accordance with UL® Standard 1995, CSA-C22.2 No. 236 and the National Electric Code (NEC). Heater casings are constructed of heavy-duty zinc-coated steel. Element wire is high grade nichrome alloy derated to 45 watts per square inch density. Element wire is supported by moisture-resistant steatite ceramics.
- Ceramics are enclosed in reinforcement brackets spaced across the heater element rack at 2" to 4" intervals. Controls are contained in a NEMA 1 control cabinet with a hinged, latching door. A permanent wiring diagram is affixed to the inside of the control cabinet door for field reference.
- The 208 and 480 volt units require a neutral connection for both single and three phase service. Our standard motors are 120 and 277 volt single phase. The 208-240 volt single phase motor is optional. 480 volt motors are not available for our units. See table for reference.

Heater Voltage	Motor Voltage	Separate Neutral Required
120 V 1PH	120 V 1PH	NO
208 V 1PH	120 V 1PH	YES
277 V 1PH	277 V 1PH	NO
480 V 1PH	277 V 1PH	YES
208 V 1PH	208 V 1PH	NO
208 V 3PH	120 V 1PH	YES
480 V 3PH	277 V 1PH	YES
208 V 3PH	208 V 1PH	NO

All accessories which can be attached to the Parallel Fan Boxes are not a part of the AHRI certification program but ratings can be affected by their use.

FVL-600
ELECTRIC HEATER CAPACITIES

Single Phase FVL kW Limits				
Unit Size	Heater Voltage	Min. kW Step	Max. kW	Max. Steps
2	120	1	4	2
2	208	0.5	4	2
2	240	0.5	4	2
2	277	0.5	4	2
2	480	1.6	4	2
4	120	1	5	2
4	208	0.5	8	3
4	240	0.5	8	3
4	277	0.5	8	3
4	480	1	8	3
6	120	0.5	5	3
6	208	0.5	9.5	3
6	240	0.5	12	3
6	277	1	12	3
6	480	1	15	3

Three Phase FVL kW Limits				
Unit Size	Heater Voltage	Min. kW Step	Max. kW	Max. Steps
2	208	0.5	4	2
2	240	0.5	4	2
2	480	1.6	4	2
4	208	1.5	8	3
4	240	1.5	8	3
4	480	1.5	8	3
6	208	1.5	13	3
6	240	1.5	13	3
6	480	1.5	13	3

NOTES:
1. *Heaters less than 5 kW are specifiable to the nearest 0.2 kW. Heaters greater than 5 kW and less than 10.0 kW are specifiable to nearest 0.5 kW. Heaters greater than 10.0 kW are specifiable to nearest 1.0 kW.*
2. *Minimum flow rate for electric heat is 70 CFM/kW.*
   Lower CFM's can cause nuisance tripping, excessive discharge temperatures, rapid cycling, and rapid element failure.
   Electric Heat units running below 70 CFM/kW will void all warranties.
3. *For optimum thermal comfort, the suggested discharge temperature should not exceed 20°F above room set point.*
4. *We do not recommend discharge temperatures in excess of 115°F to protect heater coils.*
5. *Maximum number of steps at minimum kW is one step.*
6. *If more than 1 heater is wired into a building's circuit breaker (multi-outlet branch circuit) each heater will require the addition of power side fusing.*

ELECTRIC HEAT SELECTION:

A. Specify electric duct heaters using voltage, kW, and number of steps.

B. Use above chart to select voltage. Calculate required kW using following equations:

$$kW = \frac{BTU / HR}{3413} \qquad kW = \frac{CFM \times \Delta \times 1.085}{3413} \qquad \Delta = \frac{kW \times 3413}{CFM \times 1.085}$$

$$CFM = \frac{kW \times 3413}{\Delta \times 1.085} \qquad CFM = \frac{kW \times 3413}{\Delta \times 1.085}$$

** air density at sea level—reduce by 0.036 for each 1000 feet of altitude above sea level*

Where: BTU / Hr = Required heating capacity

CFM = volume of air during heating. Typically 100% of maximum cooling air volume

Δ = desired air temperature rise across the electric heater

Inlet air temperature = primary air temperature, usually 55°F

FVL-600
CONTROL SEQUENCE OFFERINGS

PPD–PRESSURE DEPENDENT

- 910 DA/NC Full Closed
- 912 RA/NO Full Open

PPI–PNEUMATIC PRESSURE INDEPENDENT

- 914 DA/NC
- 915 DA/NO
- 916 RA/NC
- 917 RA/NO

ANALOG ELECTRONIC

- 960 Cooling Only
- 961 Cooling with Heat
- 964 Night Shutdown/Morning Warm-up
- 965 Heating/Cooling Changeover

DIRECT DIGITAL

LON WORKS

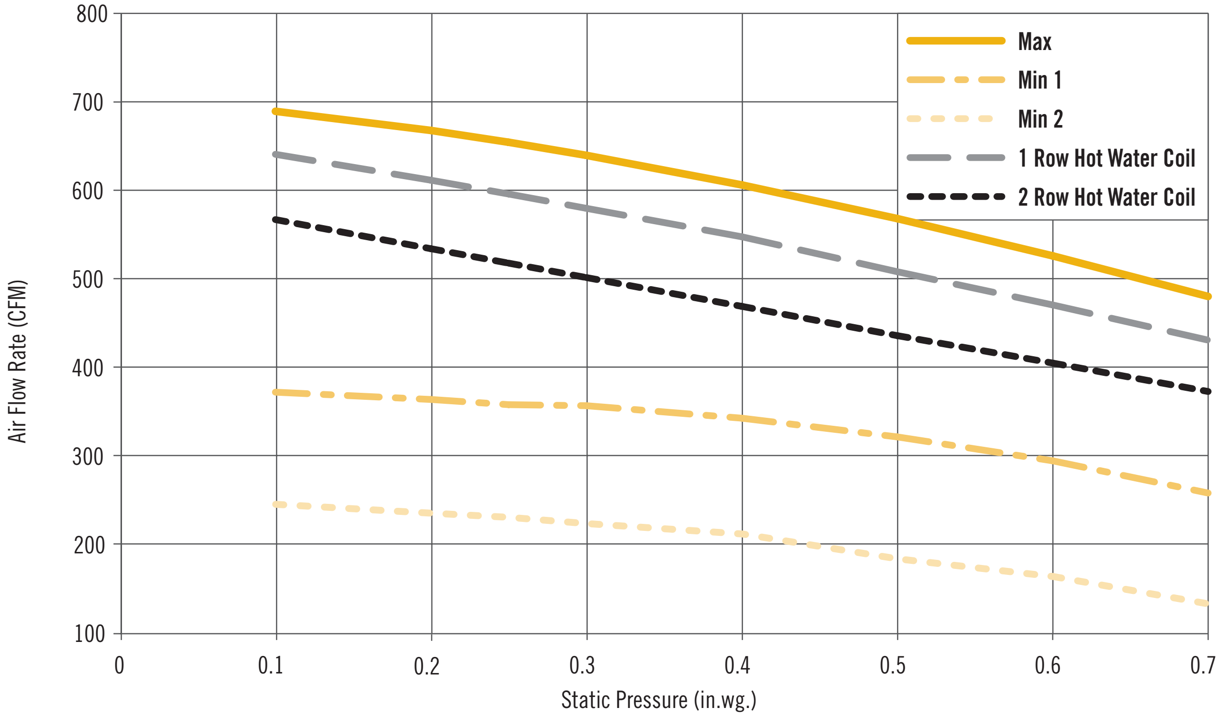
- 990 Constant Fan–No Auxiliary Heating
- 993-1 Constant Fan with 1 Stage of Electric Heat
- 994 Constant Fan–No Auxiliary Heating
- 996 Constant Fan–Modulating Floating Control–Hot Water Heat
- 997-1 Constant Fan with 1 Stage of Electric Heat
- 997-2 Constant Fan with 2 Stages of Electric Heat

BACnet

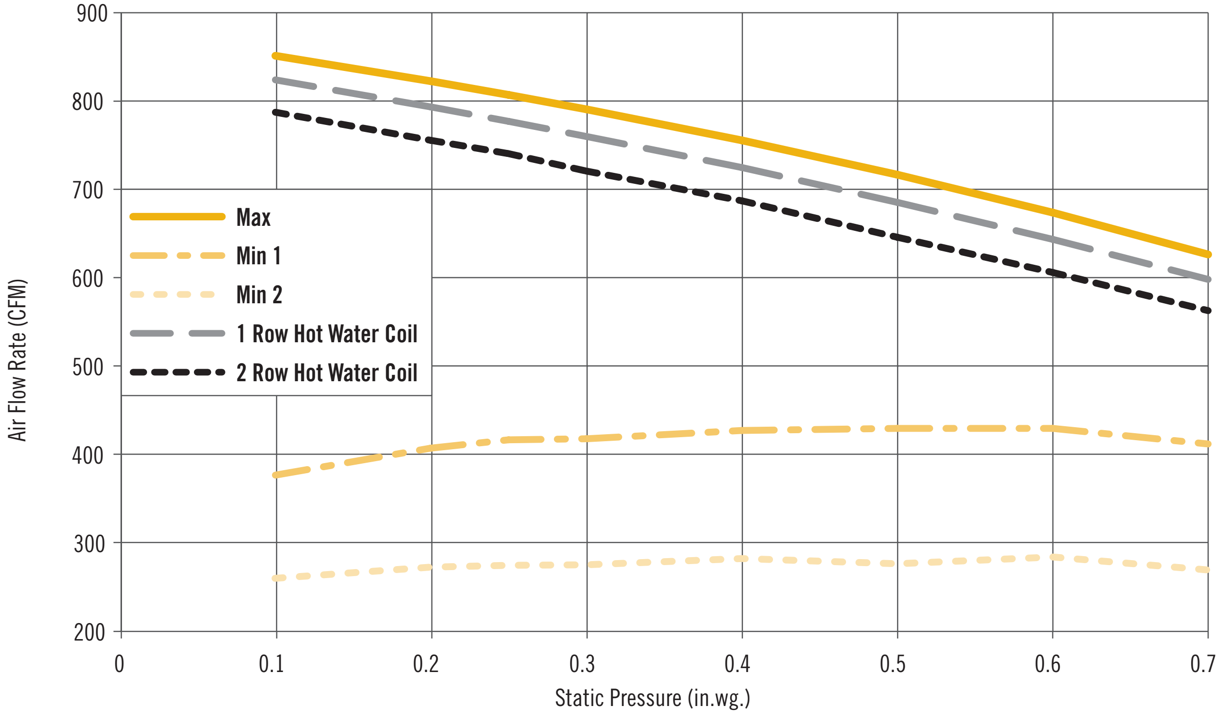
- 980 Constant Fan–No Auxiliary Heating
- 982 Constant Fan–Modulating Floating Control–Hot Water Heat
- 983-1 Constant Fan with 1 Stage of Electric Heat
- 983-2 Constant Fan with 2 Stages of Electric Heat
- 983-3 Constant Fan with 3 Stages of Electric Heat

Refer to Reference Section for complete description.

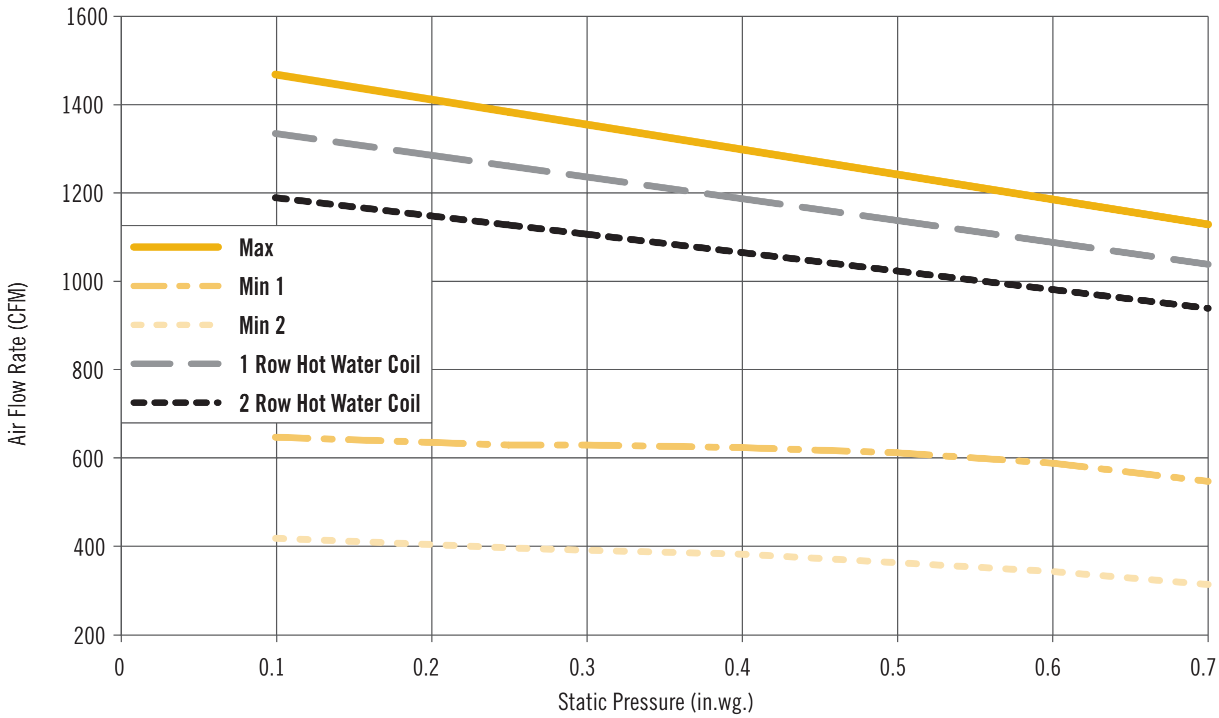
FVL-600 FAN PERFORMANCE CURVES
UNIT SIZE 2 - STANDARD HW COIL



FVL-600 FAN PERFORMANCE CURVES
UNIT SIZE 4 - STANDARD HW COIL



FVL-600 FAN PERFORMANCE CURVES
UNIT SIZE 6 - STANDARD HW COIL



DUAL DUCT AIR TERMINAL UNITS

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DUAL DUCT
AIR TERMINAL UNIT
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DH-500
HIGH PERFORMANCE
MIXING DUAL DUCT
AIR TERMINAL UNIT
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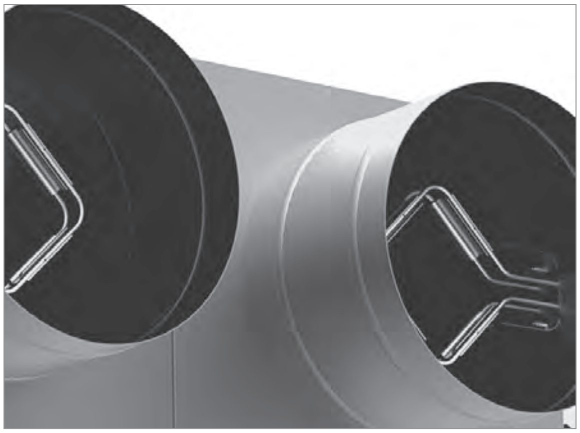
METALAIRE™



DUAL DUCT AIR TERMINAL UNITS

METALAIRE's dual duct terminal units are a complete line of dual duct units that meet any design criteria in a dual duct variable air volume (VAV) system. The dual duct terminal unit varies the air flow of the hot and cold decks as well as the discharge temperature of the terminal unit in order to maintain optimum conditions in the occupied zone.

METALAIRE dual duct terminal units are available in two models. The DD-500 varies the airflow in the hot and cold air streams and provides no mixing in the terminal unit. The DH-500 includes a high efficiency mixing section and integral sound attenuator which provide an industry leading 1:30 mixing ratio, with less than 1°F temperature variation at the discharge with a 30°F inlet temperature difference. METALAIRE dual duct terminal units are available with a wide range of control options to suit any application. These include pneumatic, analog electronic, electric, and direct digital control (DDC) by others. METALAIRE dual duct terminal units can be applied in duct systems with static pressures up to 3" w.g.

With the demands of today's building designs to reduce energy in smaller mechanical spaces, without sacrificing performance or value, the METALAIRE dual duct terminal unit is the perfect choice.

MODEL NUMBER LEGEND

EXAMPLE: **DD 506 04 205C**

DX 5XX XX -2XXX

- **DX**
  - D Dual Duct
  - H High Performance
- **5XX** – Inlet Size (Cold) (04, 05, 06, etc.)
- **XX** – Inlet Size (Hot) (04, 05, 06, etc.)
- **-2XXX**
  - Control Sequence:
    - 00B No Controls
    - 05 DDC
    - 6 Analog
    - 1 Pneumatic
  - A 120/24 Transformer Voltage
  - C 277/24 Transformer Voltage
  - F 208/24 Transformer Voltage
  - E Electric Heat

METALAIRE™

DD-500
DUAL DUCT AIR TERMINAL UNIT

SPECIFIABLE FEATURES

- 22 ga. galvanized steel casing, mechanically sealed, low leakage construction.
- Damper construction of double layer 18 gauge equivalent with mechanically fastened integral blade seal.
- Butt welded round primary inlet ducts to minimize leakage.
- Metal inlet flow sensors with extra balancing taps.

INDEX OF SECTIONS

DUAL DUCT

DD-500 DUAL DUCT

METALAIRE™

DD-500
DUAL DUCT AIR TERMINAL UNIT

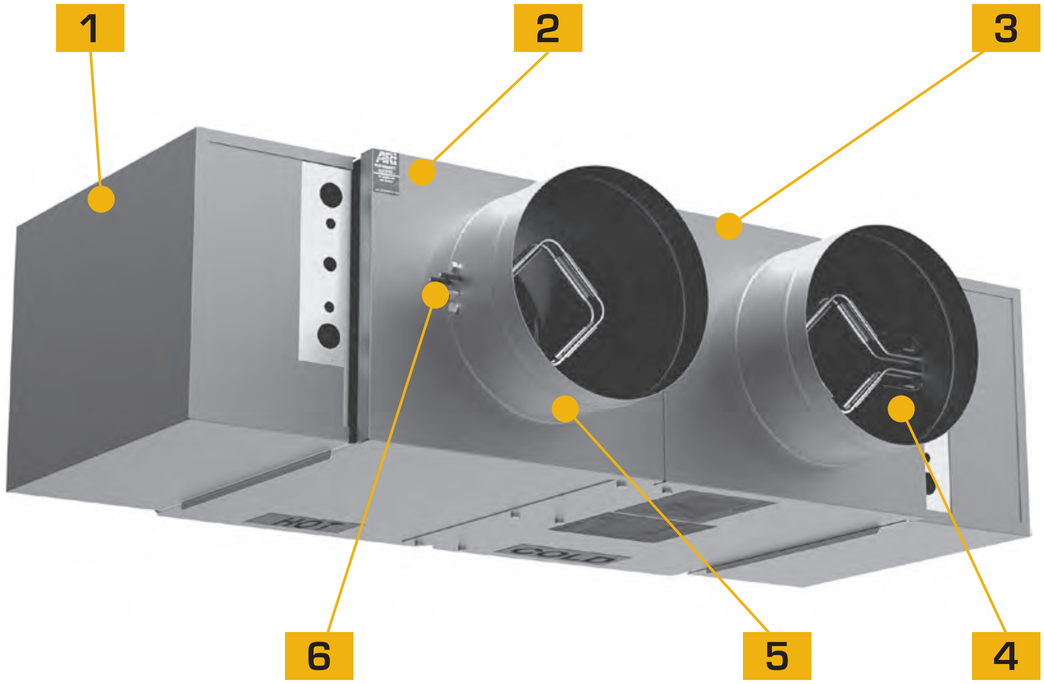
DUAL DUCT

DD-500 DUAL DUCT

The METALAIRE DD-500 air terminal units are designed to regulate the flow of conditioned air in a dual duct air distribution system. Both heated and cooled air are provided to the air terminal and mixed in a plenum provided by others to reach the desired discharge temperature.

STANDARD FEATURES

- Available in multiple unit sizes to handle 80–4400 CFM.
- Unequal inlet sizes are available as an option.
- Variable or constant volume applications.
- 22 ga. galvanized steel casing, mechanically sealed, low leakage construction.
- Damper construction of double layer, 18 gauge equivalent, galvanized steel with sandwiched flexible gasket, mechanically fastened to provide tight seal (<1% at 3.0" wg static pressure).
- Optional factory calibrated controls per each job requirement.
- Multi-quadrant, averaging flow sensor for highly accurate (+/-5%) flow readings with varying inlet duct configurations after certified balancer has balanced terminal.
- Externally accessible, steel balancing taps.
- External control cabinets for hot and cold deck with offset mounting plate.
- 3-beaded inlet connection tube for added rigidity and secure flex duct connections.
- 1/2" thick, dual density (1.5lb/ft^3 min.) fiberglass insulation with edges coated. Meets NFPA 90A and UL 181.
- Rectangular discharge with slip and drive cleat duct connection.
- Independently tested and certified laboratory performance data.
- Full range of liners/insulation available.

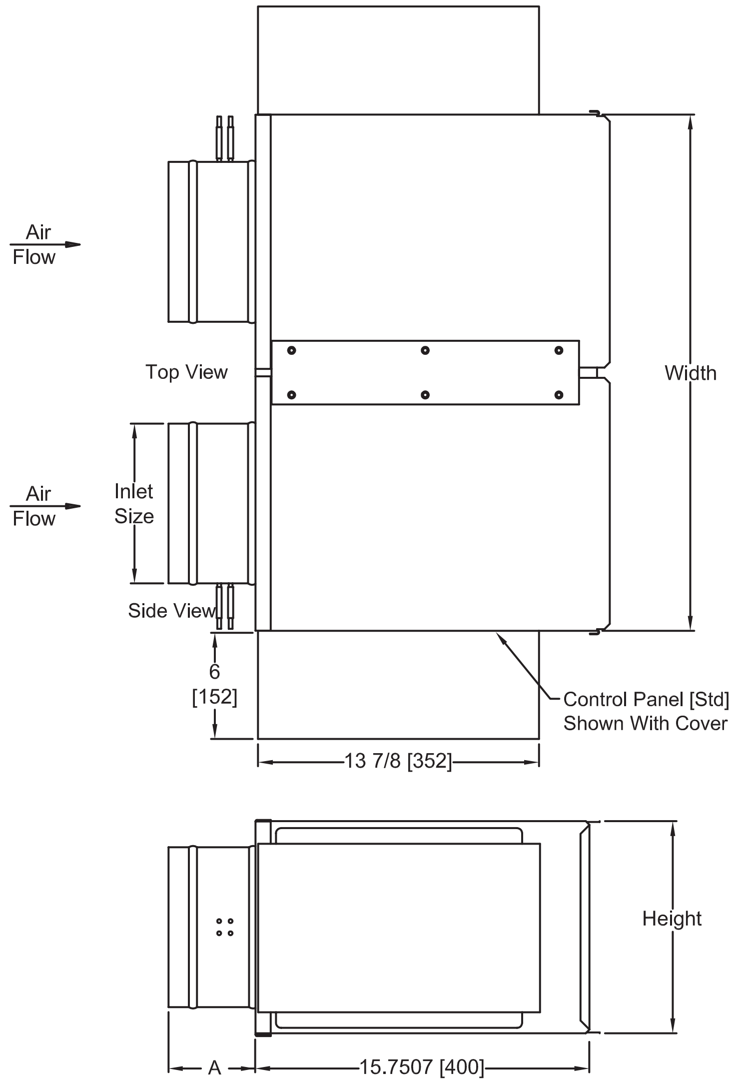


DD-500
DUAL DUCT AIR TERMINAL UNIT

FEATURES AND BENEFITS

1. NEMA 1 rated control enclosures for both hot and cold decks with stand-off to prevent penetration of casing are standard on all terminal units.
2. All DD-500 terminal units are AHRI certified and shipped with the AHRI seal.
3. Galvanized steel casing, mechanically sealed for low leakage construction.
4. Damper rotates in a self-lubricating, long life, low friction thermoplastic bearing.
5. Continuous welded primary inlet duct to minimize leakage with three stiffening beads for added rigidity.
6. All metal constructed inlet flow sensor with extra balancing taps.

DD-500
DUAL DUCT AIR TERMINAL UNIT



The control panels will overhang the top and bottom of Models DD504–DD506 1 13/16" (46 mm) or 13/16" (20 mm) on DD508   Control Panel Mounting Surface width by height is 13 7/8" x 9 3/4".

Model Number	Inlet Size		A		Width		Height		Unit wt.	
	in.	mm.	in.	mm.	in.	mm.	in.	mm.	lb.	kg.
DD504	3 7/8	99	10	254	24 1/4	305	8	203	24	11
DD505	4 7/8	124	10	254	24 1/4	305	8	203	24	11
DD506	5 7/8	149	5	127	24 1/4	305	8	203	24	11
DD508	7 7/8	200	5	127	24 1/4	305	10	254	30	14
DD510	9 7/8	251	5	127	28 1/4	356	12 1/2	318	36	16
DD512	11 7/8	302	5	127	32 1/4	406	15	381	44	20
DD514	13 7/8	353	5	127	40 1/4	508	17 1/2	445	48	22
DD516	15 7/8	403	5	127	48 1/4	610	18	457	58	26

DD-500
AHRI CERTIFIED RATING POINTS

AHRI Certified Radiated Sound Power, ΔPs = 1.5 in.wg

Unit Size	CFM	Min Ps	Octave Band					
			2	3	4	5	6	7
504	200	0.04	52	44	38	32	26	22
505	200	0.04	52	44	38	32	26	22
506	400	0.08	57	52	44	40	37	36
508	700	0.01	62	57	49	44	37	33
510	1100	0.02	58	58	52	44	38	32
512	1600	0.01	64	59	55	47	42	37
514	2100	0.01	62	53	50	43	39	38
516	2800	0.03	64	62	56	50	47	44

AHRI Certified Discharge Sound Power, ΔPs = 1.5 in.wg.

Unit Size	CFM	Min Ps	Octave Band					
			2	3	4	5	6	7
504	200	0.04	63	59	55	51	46	39
505	200	0.04	63	59	55	51	46	39
506	400	0.08	68	60	55	46	42	44
508	700	0.01	71	69	62	59	54	49
510	1100	0.02	72	69	64	60	56	53
512	1600	0.01	72	72	62	63	58	54
514	2100	0.01	68	65	63	58	56	54
516	2800	0.03	78	78	74	71	66	61

CERTIFICATIONS AND STANDARDS

- Units tested per ANSI/ASHRAE Standard 130.
- All model sizes certified in accordance with AHRI 880 certification program.
- ETL listed to meet requirements of UL 1995 and CSA 236.
- Dual-density fiberglass insulation meets UL 181 and NFPA 90A requirements.
- Insulation meets ASHRAE 62.1 requirements for resistance to mold growth and erosion.

AHRI CERTIFIED™
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VAV Terminals
AHRI Standard 880

DD-500
RADIATED SOUND POWER at Minimum Pressures, ΔPS = 0.50 and 1.0 in.wg.

Unit Size	CFM (L/s)		Min Ps in.wg. (Pa)		Min Ps Octave Band Sound Power, Lw, dB 2	3	4	5	6	7	Min Ps NC	ΔPs = 0.50 in.wg. (125 Pa) Octave Band Sound Power, Lw, dB 2	3	4	5	6	7	ΔPs = 0.50 in.wg. (125 Pa) NC	ΔPs = 1.0 in.wg. (500 Pa) Octave Band Sound Power, Lw, dB 2	3	4	5	6	7	ΔPs = 1.0 in.wg. (500 Pa) NC
504/505 4 & 5 inch	50	(24)	0.005	(1.2)	36	27	20	19	15	15	<15	38	29	20	19	15	15	<15	42	33	20	19	15	15	<15
	100	(47)	0.015	(3.8)	38	29	18	13	10	7	<15	40	31	20	16	13	10	<15	44	35	24	22	19	16	<15
	200	(94)	0.038	(9.5)	44	36	30	20	14	10	<15	46	38	32	23	17	13	<15	50	42	36	29	23	19	<15
	250	(118)	0.059	(14.8)	46	38	34	23	19	18	<15	48	40	36	26	22	21	<15	52	44	40	32	28	27	<15
	300	(142)	0.071	(17.6)	48	41	38	26	23	22	<15	50	43	40	29	26	25	<15	54	47	44	35	32	31	<15
506 6 inch	100	(47)	0.005	(1.2)	38	29	20	19	15	15	<15	40	31	20	19	15	15	<15	44	35	28	22	19	15	<15
	200	(94)	0.020	(5.0)	44	36	29	20	14	10	<15	46	38	31	23	17	13	<15	50	42	35	29	23	19	<15
	300	(142)	0.045	(11.2)	48	41	34	26	23	22	<15	50	43	36	29	26	25	<15	54	47	40	35	32	31	<15
	400	(189)	0.080	(19.9)	49	44	36	28	25	24	<15	51	46	38	31	28	27	<15	55	50	42	37	34	33	18
	500	(236)	0.125	(31.1)	52	48	39	32	27	26	15	54	50	41	35	30	29	18	58	54	45	41	36	35	22
	600	(283)	0.180	(44.8)	53	50	41	34	30	28	18	55	52	43	37	33	31	20	59	56	47	43	39	37	25
508 8 inch	200	(94)	0.000	(0.0)	44	34	29	21	14	10	<15	46	36	31	24	17	13	<15	50	40	35	30	23	19	<15
	300	(142)	0.001	(0.2)	47	38	35	26	20	17	<15	49	40	37	29	23	20	<15	53	44	41	35	29	26	<15
	600	(283)	0.003	(0.7)	52	47	39	30	23	20	<15	54	49	41	33	26	23	16	58	53	45	39	32	29	21
	700	(330)	0.005	(1.2)	54	49	41	32	25	21	16	56	51	43	35	28	24	19	60	55	47	41	34	30	24
	1000	(472)	0.008	(2.0)	59	52	45	36	30	24	21	61	54	47	39	33	27	23	65	58	51	45	39	33	29
	1100	(519)	0.009	(2.2)	60	53	46	38	31	26	22	62	55	48	41	34	29	25	66	59	52	47	40	35	30
510 10 inch	300	(142)	0.002	(0.5)	42	38	32	18	13	12	<15	44	40	34	21	16	15	<15	48	44	38	27	22	21	<15
	600	(283)	0.009	(2.2)	47	47	42	28	23	17	15	49	49	44	31	26	20	18	53	53	48	37	32	26	22
	800	(378)	0.013	(3.2)	48	49	43	31	25	18	17	50	51	45	34	28	21	19	54	55	49	40	34	27	24
	1100	(519)	0.021	(5.2)	50	50	44	32	26	20	18	52	52	46	35	29	23	20	56	56	50	41	35	29	25
	1400	(661)	0.028	(7.0)	55	54	46	35	29	23	22	57	56	48	38	32	26	25	61	60	52	44	38	32	29
	1700	(802)	0.036	(9.0)	58	57	51	42	34	28	26	60	59	53	45	37	31	28	64	63	57	51	43	37	33

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4. *NC values are calculated using attenuation credits outlined in Appendix E of AHRI 885-2008.*
5. ***Discharge Sound power levels shown with End Reflection Corrections Included** in dB (ref: 10^{-12} watts).*
6. *Minimum Ps is the static pressure drop across the air terminal unit while the inlet damper is in the wide-open position at a given airflow rate.*

DD-500
RADIATED SOUND POWER at Minimum Pressures, ΔPS = 0.50 and 1.0 in.wg. continued

Unit Size	CFM	(L/s)	Min Ps in.wg.	(Pa)	Min Ps Octave Band Sound Power, Lw, dB 2	3	4	5	6	7	Min Ps NC	ΔPs = 0.50 in.wg. (125 Pa) Octave Band Sound Power, Lw, dB 2	3	4	5	6	7	NC	ΔPs = 1.0 in.wg. (500 Pa) Octave Band Sound Power, Lw, dB 2	3	4	5	6	7	NC
512 12 inch	430	(203)	0.000	(0.1)	46	37	32	19	14	14	<15	48	39	34	22	17	17	<15	52	43	38	28	23	23	<15
	800	(378)	0.001	(0.2)	49	43	41	28	23	23	<15	51	45	43	31	26	26	17	55	49	47	37	32	32	21
	1450	(684)	0.008	(2.0)	52	47	45	32	28	27	19	54	49	47	35	31	30	21	58	53	51	41	37	36	25
	1600	(755)	0.010	(2.5)	56	51	47	35	30	25	21	58	53	49	38	33	28	23	62	57	53	44	39	34	27
	1950	(920)	0.015	(3.7)	54	50	48	35	32	30	22	56	52	50	38	35	33	24	60	56	54	44	41	39	29
	2200	(1038)	0.022	(5.5)	56	51	49	37	33	32	23	58	53	51	40	36	35	25	62	57	55	46	42	41	30
	2500	(1180)	0.025	(6.2)	57	53	51	39	36	34	25	59	55	53	42	39	37	27	63	59	57	48	45	43	32
514 14 inch	550	(260)	0.000	(0.0)	47	33	31	19	16	11	<15	49	35	33	22	19	14	<15	53	39	37	28	25	20	<15
	925	(437)	0.000	(0.1)	48	35	33	21	18	12	<15	50	37	35	24	21	15	<15	54	41	39	30	27	21	<15
	1600	(755)	0.002	(0.5)	50	41	38	26	21	16	<15	52	43	40	29	24	19	<15	56	47	44	35	30	25	18
	1900	(897)	0.003	(0.7)	52	45	44	29	24	19	18	54	47	46	32	27	22	20	58	51	50	38	33	28	24
	2100	(991)	0.005	(1.2)	54	45	42	31	27	26	15	56	47	44	34	30	29	18	60	51	48	40	36	35	22
	2600	(1227)	0.007	(1.7)	57	51	49	34	31	27	23	59	53	51	37	34	30	25	63	57	55	43	40	36	30
	3250	(1534)	0.108	(26.9)	59	55	52	37	35	31	26	61	57	54	40	38	34	29	65	61	58	46	44	40	33
516 16 inch	750	(354)	0.001	(0.4)	48	37	31	21	16	11	<15	50	39	33	24	19	14	<15	54	43	37	30	25	20	<15
	1100	(519)	0.006	(1.5)	50	43	37	27	22	16	<15	52	45	39	30	25	19	<15	56	49	43	36	31	25	17
	1500	(708)	0.010	(2.6)	52	49	43	33	29	24	17	54	51	45	36	32	27	19	58	55	49	42	38	33	24
	2400	(1133)	0.023	(5.7)	55	53	47	37	34	30	21	57	55	49	40	37	33	24	61	59	53	46	43	39	28
	2800	(1321)	0.030	(7.5)	56	54	48	38	35	32	22	58	56	50	41	38	35	25	62	60	54	47	44	41	29
	3600	(1699)	0.045	(11.1)	59	56	51	42	38	35	25	61	58	53	45	41	38	27	65	62	57	51	47	44	32
	4400	(2076)	0.060	(15.0)	61	58	54	44	42	39	29	63	60	56	47	45	42	31	67	64	60	53	51	48	35

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5. ***Discharge Sound power levels shown with End Reflection Corrections Included** in dB (ref: 10^{-12} watts).*
6. *Minimum Ps is the static pressure drop across the air terminal unit while the inlet damper is in the wide-open position at a given airflow rate.*

DD-500
RADIATED SOUND POWER at ΔPS = 1.50, 2.0 and 3.0 in.wg.

Unit Size	CFM (L/s)		Min Ps in.wg. (Pa)		ΔPs = 1.5 in.wg. (375 Pa)							ΔPs = 2.0 in.wg. (500 Pa)							ΔPs = 3.0 in.wg. (750 Pa)						
					Octave Band Sound Power, Lw, dB							Octave Band Sound Power, Lw, dB							Octave Band Sound Power, Lw, dB						
					2	3	4	5	6	7	NC	2	3	4	5	6	7	NC	2	3	4	5	6	7	NC
504/505 4 & 5 inch	50	(24)	0.005	(1)	44	35	22	22	18	17	<15	44	36	23	22	19	18	<15	45	38	25	24	23	18	<15
	100	(47)	0.015	(4)	46	37	26	25	22	17	<15	46	38	27	25	23	19	<15	47	40	29	27	27	24	<15
	200	(94)	0.038	(9)	52	44	38	32	26	22	<15	52	45	39	32	27	24	<15	53	47	41	34	31	29	<15
	250	(118)	0.059	(15)	54	46	42	35	31	30	15	54	47	43	35	32	32	17	55	49	45	37	36	37	19
	300	(142)	0.071	(18)	56	49	46	38	35	34	20	56	50	47	38	36	36	21	57	52	49	40	40	41	23
506 6 inch	100	(47)	0.005	(1.2)	46	37	30	25	22	17	<15	46	38	27	25	23	19	<15	47	40	29	27	27	24	<15
	200	(94)	0.020	(5.0)	52	44	37	32	26	22	<15	52	45	39	32	27	24	<15	53	47	41	34	31	29	<15
	300	(142)	0.045	(11.2)	56	49	42	38	35	34	17	56	50	47	38	36	36	21	57	52	49	40	40	41	23
	400	(189)	0.080	(19.9)	57	52	44	40	37	36	20	58	54	50	44	42	38	24	59	56	52	46	46	43	26
	500	(236)	0.125	(31.1)	60	56	47	44	39	38	25	61	57	52	47	44	40	26	61	59	54	49	48	45	29
	600	(283)	0.180	(44.8)	61	58	49	46	42	40	27	62	59	54	49	46	42	29	62	61	56	51	50	47	31
508 8 inch	200	(94)	0.000	(0.0)	52	42	37	33	26	22	<15	53	43	38	35	28	24	<15	54	44	39	37	30	26	<15
	300	(142)	0.001	(0.2)	55	46	43	38	32	29	17	56	48	44	40	34	31	18	57	49	45	42	36	33	19
	600	(283)	0.003	(0.7)	60	55	47	42	35	32	24	61	56	48	44	37	34	25	62	57	49	46	39	36	26
	700	(330)	0.005	(1.2)	62	57	49	44	37	33	26	63	58	50	46	39	35	27	64	60	51	48	42	37	29
	1000	(472)	0.008	(2.0)	67	60	53	48	42	36	31	68	61	54	50	44	38	32	69	62	55	52	46	40	34
	1100	(519)	0.009	(2.2)	68	61	54	50	43	38	32	69	62	55	52	45	40	34	70	63	56	54	47	42	35
510 10 inch	300	(142)	0.002	(0.5)	50	46	40	30	25	24	<15	51	47	41	32	27	26	<15	52	48	42	34	29	28	15
	600	(283)	0.009	(2.2)	55	55	50	40	35	29	24	56	56	51	42	37	31	25	57	57	52	44	39	33	26
	800	(378)	0.013	(3.2)	56	57	51	43	37	30	26	57	58	52	45	39	32	27	58	59	53	47	41	34	28
	1100	(519)	0.021	(5.2)	58	58	52	44	38	32	27	59	59	53	46	40	34	28	60	60	54	48	42	36	29
	1400	(661)	0.028	(7.0)	63	62	54	47	41	35	32	64	63	55	49	43	37	33	65	64	56	51	45	39	34
	1700	(802)	0.036	(9.0)	66	65	59	54	46	40	35	67	66	60	56	48	42	37	68	67	61	58	50	44	38

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5. ***Discharge Sound power levels shown with End Reflection Corrections Included** in dB (ref: 10^{-12} watts).*
6. *Minimum Ps is the static pressure drop across the air terminal unit while the inlet damper is in the wide-open position at a given airflow rate.*

DD-500
RADIATED SOUND POWER at ΔPS = 1.50, 2.0 and 3.0 in.wg. continued

Unit Size	CFM	(L/s)	Min Ps in.wg.	(Pa)	ΔPs = 1.5 in.wg. (375 Pa) Octave Band Sound Power, Lw, dB 2	3	4	5	6	7	NC	ΔPs = 2.0 in.wg. (500 Pa) Octave Band Sound Power, Lw, dB 2	3	4	5	6	7	NC	ΔPs = 3.0 in.wg. (750 Pa) Octave Band Sound Power, Lw, dB 2	3	4	5	6	7	NC
512 12 inch	430	(203)	0.000	(0.1)	54	45	40	31	26	26	<15	55	46	41	33	28	28	16	56	47	42	35	30	30	17
	800	(378)	0.001	(0.2)	57	51	49	40	35	35	23	58	52	50	42	37	37	24	59	53	51	44	39	39	25
	1450	(684)	0.008	(2.0)	60	55	53	44	40	39	27	61	56	54	46	42	41	29	62	57	55	48	44	43	30
	1600	(755)	0.010	(2.5)	64	59	55	47	42	37	30	65	60	56	49	44	39	31	66	61	57	51	46	41	32
	1950	(920)	0.015	(3.7)	62	58	56	47	44	42	31	63	59	57	49	46	44	32	64	60	58	51	48	46	33
	2200	(1038)	0.022	(5.5)	64	59	57	49	45	44	32	65	60	58	51	47	46	33	66	61	59	53	49	48	34
	2500	(1180)	0.025	(6.2)	65	61	59	51	48	46	34	66	62	60	53	50	48	35	67	63	61	55	52	50	36
514 14 inch	550	(260)	0.000	(0.0)	55	41	39	31	28	23	16	56	42	40	33	30	25	17	57	43	41	35	32	27	18
	925	(437)	0.000	(0.1)	56	43	41	33	30	24	17	57	44	42	35	32	26	18	58	45	43	37	34	28	20
	1600	(755)	0.002	(0.5)	58	49	46	38	33	28	20	59	50	47	40	35	30	21	60	51	48	42	37	32	22
	1900	(897)	0.003	(0.7)	60	53	52	41	36	31	26	61	54	53	43	38	33	27	62	55	54	45	40	35	29
	2100	(991)	0.005	(1.2)	62	53	50	43	39	38	25	63	54	51	45	41	40	26	64	55	52	47	43	42	27
	2600	(1227)	0.007	(1.7)	65	59	57	46	43	39	32	66	60	58	48	45	41	33	67	61	59	50	47	43	34
	3250	(1534)	0.108	(26.9)	67	63	60	49	47	43	35	68	64	61	51	49	45	36	69	65	62	53	51	47	37
516 16 inch	750	(354)	0.001	(0.4)	56	45	39	33	28	23	17	57	47	42	36	31	26	18	59	51	47	40	36	30	21
	1100	(519)	0.006	(1.5)	58	51	45	39	34	28	20	59	53	49	44	38	32	23	61	56	51	49	40	35	25
	1500	(708)	0.010	(2.6)	60	57	51	45	41	36	26	61	59	55	50	45	42	30	63	61	57	53	49	47	32
	2400	(1133)	0.023	(5.7)	63	61	55	49	46	42	31	65	65	60	54	51	48	35	68	67	64	60	58	56	39
	2800	(1321)	0.030	(7.5)	64	62	56	50	47	44	32	67	66	61	56	53	50	37	69	69	65	62	61	59	41
	3600	(1699)	0.045	(11.1)	67	64	59	54	50	47	34	69	67	63	58	56	53	38	71	70	67	64	63	62	43
	4400	(2076)	0.060	(15.0)	69	66	62	56	54	51	37	71	69	65	60	59	56	41	73	72	69	66	65	64	45

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4. *NC values are calculated using attenuation credits outlined in Appendix E of AHRI 885-2008.*
5. ***Discharge Sound power levels shown with End Reflection Corrections Included** in dB (ref: 10^{-12} watts).*
6. *Minimum Ps is the static pressure drop across the air terminal unit while the inlet damper is in the wide-open position at a given airflow rate.*

DD-500
DISCHARGE SOUND POWER at Minimum Pressures, ΔPS = 0.50 and 1.0 in.wg.

Unit Size	CFM (L/s)		Min Ps in.wg. (Pa)		Min Ps							ΔPs = 0.50 in.wg. (125 Pa)							ΔPs = 1.0 in.wg. (250 Pa)						
					Octave Band Sound Power, Lw, dB						NC	Octave Band Sound Power, Lw, dB						NC	Octave Band Sound Power, Lw, dB						NC
					2	3	4	5	6	7		2	3	4	5	6	7		2	3	4	5	6	7	
504/505 4 & 5 inch	50	(24)	0.005	(1)	52	48	44	41	33	25	<15	54	50	46	43	35	27	<15	58	54	50	47	39	31	<15
	100	(47)	0.015	(4)	53	49	46	41	34	28	<15	55	51	48	43	36	30	<15	59	55	52	47	40	34	<15
	200	(94)	0.038	(9)	55	51	47	43	38	31	<15	57	53	49	45	40	33	<15	61	57	53	49	44	37	16
	250	(118)	0.059	(15)	56	52	49	43	39	34	<15	58	54	51	45	41	36	<15	62	58	55	49	45	40	17
	300	(142)	0.071	(18)	56	54	51	44	40	37	<15	58	56	53	46	42	39	<15	62	60	57	50	46	43	18
506 6 inch	100	(47)	0.005	(1.2)	55	47	41	34	22	24	<15	52	47	42	36	24	26	<15	56	51	46	40	28	30	<15
	200	(94)	0.020	(5.0)	57	49	42	36	27	28	<15	54	49	43	38	29	30	<15	58	53	47	42	33	34	<15
	300	(142)	0.045	(11.2)	58	52	46	37	32	34	<15	55	52	47	39	34	36	<15	59	56	51	43	38	40	<15
	400	(189)	0.080	(19.9)	60	52	47	38	34	36	<15	57	52	48	40	36	38	<15	61	56	52	44	40	42	16
	500	(236)	0.125	(31.1)	62	56	51	43	37	39	<15	59	56	52	45	39	41	<15	63	60	56	49	43	45	19
	600	(283)	0.180	(44.8)	63	58	53	47	39	41	15	60	58	54	49	41	43	15	64	62	58	53	45	47	21
508 8 inch	200	(94)	0.000	(0.0)	55	51	47	42	38	34	<15	57	53	49	44	40	36	<15	61	57	53	48	44	40	16
	300	(142)	0.001	(0.2)	57	55	49	45	40	35	<15	59	57	51	47	42	37	<15	63	61	55	51	46	41	20
	600	(283)	0.003	(0.7)	62	60	52	50	44	39	18	64	62	54	52	46	41	20	68	66	58	56	50	45	26
	700	(330)	0.005	(1.2)	63	61	54	51	46	41	19	65	63	56	53	48	43	21	69	67	60	57	52	47	27
	1000	(472)	0.008	(2.0)	69	66	60	58	52	46	24	71	68	62	60	54	48	26	75	72	66	64	58	52	34
	1100	(519)	0.009	(2.2)	70	67	62	60	53	47	25	72	69	64	62	55	49	27	76	73	68	66	59	53	35
510 10 inch	300	(142)	0.002	(0.5)	53	53	47	45	40	37	<15	55	55	49	47	42	39	<15	59	59	53	51	46	43	16
	600	(283)	0.009	(2.2)	59	57	52	49	44	41	<15	61	59	54	51	46	43	16	65	63	58	55	50	47	21
	800	(378)	0.013	(3.2)	61	59	54	50	46	43	15	63	61	56	52	48	45	18	67	65	60	56	52	49	22
	1100	(519)	0.021	(5.2)	64	61	56	52	48	45	18	66	63	58	54	50	47	20	70	67	62	58	54	51	25
	1400	(661)	0.028	(7.0)	68	66	60	57	52	49	24	70	68	62	59	54	51	26	74	72	66	63	58	55	31
	1700	(802)	0.036	(9.0)	72	70	63	62	56	52	28	74	72	65	64	58	54	31	78	76	69	68	62	58	35

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5. ***Discharge Sound power levels shown with End Reflection Corrections Included** in dB (ref: 10^{-12} watts).*
6. *Minimum Ps is the static pressure drop across the air terminal unit while the inlet damper is in the wide-open position at a given airflow rate.*

DD-500
DISCHARGE SOUND POWER at Minimum Pressures, ΔPS = 0.50 and 1.0 in.wg. continued

Unit Size	CFM (L/s)		Min Ps in.wg. (Pa)		Min Ps							ΔPs = 0.50 in.wg. (125 Pa)							ΔPs = 1.0 in.wg. (250 Pa)						
					Octave Band Sound Power, Lw, dB						NC	Octave Band Sound Power, Lw, dB						NC	Octave Band Sound Power, Lw, dB						NC
					2	3	4	5	6	7		2	3	4	5	6	7		2	3	4	5	6	7	
512 12 inch	430	(203)	0.000	(0.1)	53	48	41	46	39	37	<15	55	50	43	48	41	39	<15	59	54	47	52	45	43	<15
	800	(378)	0.001	(0.2)	57	53	45	49	43	40	<15	59	55	47	51	45	42	<15	63	59	51	55	49	46	15
	1450	(684)	0.008	(2.0)	62	62	52	53	48	44	19	64	64	54	55	50	46	21	68	68	58	59	54	50	26
	1600	(755)	0.010	(2.5)	64	64	54	55	50	46	21	66	66	56	57	52	48	24	70	70	60	61	56	52	28
	1950	(920)	0.015	(3.7)	66	66	58	57	55	52	24	68	68	60	59	57	54	26	72	72	64	63	61	58	31
	2200	(1038)	0.022	(5.5)	67	66	59	58	57	55	24	69	68	61	60	59	57	26	73	72	65	64	63	61	31
	2500	(1180)	0.025	(6.2)	68	67	61	59	59	58	25	70	69	63	61	61	60	27	74	73	67	65	65	64	32
514 14 inch	550	(260)	0.000	(0.0)	45	46	43	39	30	32	<15	47	48	45	41	32	34	<15	51	52	49	45	36	38	<15
	925	(437)	0.000	(0.1)	49	49	46	42	35	36	<15	51	51	48	44	37	38	<15	55	55	52	48	41	42	<15
	1600	(755)	0.002	(0.5)	56	53	50	47	42	42	<15	58	55	52	49	44	44	<15	62	59	56	53	48	48	15
	1900	(897)	0.003	(0.7)	58	55	53	48	45	44	<15	60	57	55	50	47	46	<15	64	61	59	54	51	50	18
	2100	(991)	0.005	(1.2)	60	57	55	50	48	46	<15	62	59	57	52	50	48	15	66	63	61	56	54	52	20
	2600	(1227)	0.007	(1.7)	65	63	58	58	55	51	20	67	65	60	60	57	53	22	71	69	64	64	61	57	27
	3250	(1534)	0.108	(26.9)	70	68	61	66	61	55	26	72	70	63	68	63	57	28	76	74	67	72	67	61	33
516 16 inch	750	(354)	0.001	(0.4)	58	55	50	48	44	40	<15	60	57	52	50	46	42	<15	64	61	56	54	50	46	18
	1100	(519)	0.006	(1.5)	60	60	57	53	50	44	16	62	62	59	55	52	46	19	66	66	63	59	56	50	24
	1500	(708)	0.010	(2.6)	64	67	62	62	56	50	25	66	69	64	64	58	52	27	70	73	68	68	62	56	32
	2400	(1133)	0.023	(5.7)	69	69	65	63	57	52	27	71	71	67	65	59	54	29	75	75	71	69	63	58	34
	2800	(1321)	0.030	(7.5)	70	70	66	63	58	53	28	72	72	68	65	60	55	31	76	76	72	69	64	59	35
	3600	(1699)	0.045	(11.1)	71	71	67	64	59	55	29	73	73	69	66	61	57	32	77	77	73	70	65	61	37
	4400	(2076)	0.060	(15.0)	74	72	69	68	62	58	31	76	74	71	70	64	60	33	80	78	75	74	68	64	38

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5. ***Discharge Sound power levels shown with End Reflection Corrections Included** in dB (ref: 10^{-12} watts).*
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DD-500
DISCHARGE SOUND POWER at ΔPS = 1.50, 2.0 and 3.0 in.wg.

Unit Size	CFM (L/s)		Min Ps in.wg. (Pa)		ΔPs = 1.5 in.wg. (375 Pa) Octave Band Sound Power, Lw, dB							ΔPs = 2.0 in.wg. (500 Pa) Octave Band Sound Power, Lw, dB							ΔPs = 3.0 in.wg. (750 Pa) Octave Band Sound Power, Lw, dB						
					2	3	4	5	6	7	NC	2	3	4	5	6	7	NC	2	3	4	5	6	7	NC
504/505 4 & 5 inch	50	(24)	0.005	(1)	60	56	52	49	41	33	<15	60	56	52	49	41	33	<15	62	58	51	51	43	35	17
	100	(47)	0.015	(4)	61	57	54	49	42	36	16	61	57	54	49	42	36	16	63	59	54	51	44	38	18
	200	(94)	0.038	(9)	63	59	55	51	46	39	18	63	59	55	51	46	39	18	65	61	55	53	48	41	21
	250	(118)	0.059	(15)	64	60	57	51	47	42	20	64	60	57	51	47	42	20	66	62	59	53	49	44	22
	300	(142)	0.071	(18)	64	62	59	52	48	45	20	64	62	59	52	48	45	20	66	64	61	54	50	47	22
506 6 inch	100	(47)	0.005	(1.2)	63	55	49	42	30	32	18	59	54	49	44	32	34	<15	60	55	50	46	34	36	<15
	200	(94)	0.020	(5.0)	65	57	50	44	35	36	21	61	56	50	46	37	38	16	62	57	51	48	39	40	17
	300	(142)	0.045	(11.2)	66	60	54	45	40	42	18	62	59	54	47	42	44	16	63	60	55	49	44	46	18
	400	(189)	0.080	(19.9)	68	60	55	46	42	44	21	64	59	55	48	44	46	16	65	60	56	50	46	48	18
	500	(236)	0.125	(31.1)	70	64	59	51	45	47	23	66	63	59	53	47	49	21	67	64	60	55	49	51	22
	600	(283)	0.180	(44.8)	71	66	61	55	47	49	25	67	65	61	57	49	51	24	68	66	62	59	51	53	25
508 8 inch	200	(94)	0.000	(0.0)	63	59	55	50	46	42	18	63	59	55	50	46	44	18	65	61	56	52	48	47	21
	300	(142)	0.001	(0.2)	65	63	57	53	48	43	21	65	63	59	55	53	48	21	68	64	60	57	57	52	22
	600	(283)	0.003	(0.7)	70	68	60	58	52	47	27	71	68	63	60	56	51	27	73	70	66	63	59	54	29
	700	(330)	0.005	(1.2)	71	69	62	59	54	49	28	72	70	64	61	59	56	29	74	72	66	63	61	57	32
	1000	(472)	0.008	(2.0)	77	74	68	66	60	54	33	77	74	68	66	60	54	33	79	75	70	67	63	57	34
	1100	(519)	0.009	(2.2)	78	75	70	68	61	55	34	78	75	70	68	61	55	34	80	77	72	69	63	59	37
510 10 inch	300	(142)	0.002	(0.5)	61	61	55	53	48	45	19	61	61	55	53	48	45	19	63	63	56	55	50	48	21
	600	(283)	0.009	(2.2)	67	65	60	57	52	49	24	67	65	60	57	52	49	24	69	67	62	59	55	53	26
	800	(378)	0.013	(3.2)	69	67	62	58	54	51	25	69	67	62	58	54	51	25	71	69	64	61	57	54	27
	1100	(519)	0.021	(5.2)	72	69	64	60	56	53	27	72	69	64	60	56	53	27	73	71	67	62	59	55	29
	1400	(661)	0.028	(7.0)	76	74	68	65	60	57	33	76	74	68	65	60	57	33	78	75	70	66	63	60	34
	1700	(802)	0.036	(9.0)	80	78	71	70	64	60	38	80	78	71	70	64	60	38	82	80	73	71	66	64	40

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METALAIRE™

DD-500
DISCHARGE SOUND POWER at ΔPS = 1.50, 2.0 and 3.0 in.wg. continued

Unit Size	CFM (L/s)		Min Ps in.wg. (Pa)		ΔPs = 1.5 in.wg. (375 Pa)							ΔPs = 2.0 in.wg. (500 Pa)							ΔPs = 3.0 in.wg. (750 Pa)						
					Octave Band Sound Power, Lw, dB						NC	Octave Band Sound Power, Lw, dB						NC	Octave Band Sound Power, Lw, dB						NC
					2	3	4	5	6	7		2	3	4	5	6	7		2	3	4	5	6	7	
512 12 inch	430	(203)	0.000	(0.1)	61	56	49	54	47	45	<15	62	57	50	56	49	47	<15	63	58	51	58	51	49	15
	800	(378)	0.001	(0.2)	65	61	53	57	51	48	18	66	62	54	59	53	50	19	67	63	55	61	55	52	20
	1450	(684)	0.008	(2.0)	70	70	60	61	56	52	28	71	71	61	63	58	54	29	72	72	62	65	60	56	31
	1600	(755)	0.010	(2.5)	72	72	62	63	58	54	31	73	73	63	65	60	56	32	74	74	64	67	62	58	33
	1950	(920)	0.015	(3.7)	74	74	66	65	63	60	33	75	75	67	67	65	62	34	76	76	68	69	67	64	35
	2200	(1038)	0.022	(5.5)	75	74	67	66	65	63	33	76	75	68	68	67	65	34	77	76	69	70	69	67	35
	2500	(1180)	0.025	(6.2)	76	75	69	67	67	66	34	77	76	70	69	69	68	35	78	77	71	71	71	70	37
514 14 inch	550	(260)	0.000	(0.0)	53	54	51	47	38	40	<15	54	55	52	49	40	42	<15	55	56	53	51	42	44	<15
	925	(437)	0.000	(0.1)	57	57	54	50	43	44	<15	58	58	55	52	45	46	<15	59	59	56	54	47	48	15
	1600	(755)	0.002	(0.5)	64	61	58	55	50	50	18	65	62	59	57	52	52	19	66	63	60	59	54	54	20
	1900	(897)	0.003	(0.7)	66	63	61	56	53	52	20	67	64	62	58	55	54	21	68	65	63	60	57	56	22
	2100	(991)	0.005	(1.2)	68	65	63	58	56	54	22	69	66	64	60	58	56	24	70	67	65	62	60	58	25
	2600	(1227)	0.007	(1.7)	73	71	66	66	63	59	29	74	72	67	68	65	61	31	75	73	68	70	67	63	32
	3250	(1534)	0.108	(26.9)	78	76	69	74	69	63	35	79	77	70	76	71	65	37	80	78	71	78	73	67	38
516 16 inch	750	(354)	0.001	(0.4)	66	63	58	56	52	48	20	66	63	58	56	52	48	20	67	64	60	58	53	50	21
	1100	(519)	0.006	(1.5)	68	68	65	61	58	52	26	68	68	65	61	58	52	26	69	69	66	63	60	55	27
	1500	(708)	0.010	(2.6)	72	75	70	70	64	58	34	72	75	70	70	64	58	34	72	76	73	72	69	63	35
	2400	(1133)	0.023	(5.7)	77	77	73	71	65	60	37	77	77	73	71	65	60	37	79	79	75	76	70	65	39
	2800	(1321)	0.030	(7.5)	78	78	74	71	66	61	38	78	78	74	71	66	61	38	80	80	76	76	71	65	40
	3600	(1699)	0.045	(11.1)	79	79	75	72	67	63	39	79	79	75	72	67	63	39	81	81	78	76	72	66	41
	4400	(2076)	0.060	(15.0)	82	80	77	76	70	66	40	82	80	77	76	70	66	40	83	83	80	78	74	69	44

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METALAIRE™

DD-500
CASING LEAKAGE

Casing Leakage, CFM						
Inlet Size	0.25" ΔPs	0.50" ΔPs	1.00" ΔPs	1.50" ΔPs	2.0" ΔPs	3.0" ΔPs
6	2	3	4	5	6	7
8	2	3	5	6	6	8
10	3	4	6	8	9	10
12	3	5	7	9	10	12
14	4	6	9	11	12	15
16	5	7	10	12	14	17

DD-500
DAMPER LEAKAGE

Damper Leakage, CFM			
Inlet Size	1.5" ΔPs	3.0" ΔPs	6.0" ΔPs
6	3	4	7
8	3	4	7
10	4	5	7
12	4	5	7
14	4	6	8
16	4	6	8

DD-500
MINIMUM PRESSURES

Unit Size	CFM	Velocity in Inlet	Pv in Inlet	Velocity in Outlet	Pv in Outlet	Unit ΔPs (in.wg.)	Unit ΔPt (in.wg.)
504 4-inch	100	1146	0.08	74	0.00	0.015	0.097
	200	2292	0.33	148	0.00	0.038	0.364
	250	2865	0.51	186	0.00	0.059	0.569
	300	3438	0.74	223	0.00	0.071	0.805
505 5-inch	100	733	0.03	74	0.00	0.015	0.049
	200	1467	0.13	148	0.00	0.038	0.171
	250	1833	0.21	186	0.00	0.059	0.267
	300	2200	0.30	223	0.00	0.071	0.370
506 6-inch	250	1273	0.10	186	0.00	0.033	0.132
	300	1528	0.15	223	0.00	0.045	0.187
	400	2037	0.26	297	0.01	0.080	0.333
	450	2292	0.33	334	0.01	0.125	0.445
	500	2546	0.40	371	0.01	0.125	0.521
	600	3056	0.58	445	0.01	0.180	0.750
508 8-inch	300	859	0.05	178	0.00	0.001	0.045
	500	1432	0.13	297	0.01	0.002	0.124
	600	1719	0.18	356	0.01	0.003	0.179
	700	2005	0.25	416	0.01	0.005	0.245
	800	2292	0.33	475	0.01	0.006	0.319
	900	2578	0.41	534	0.02	0.007	0.403
	1000	2865	0.51	594	0.02	0.008	0.498
510 10-inch	1100	3151	0.62	653	0.03	0.009	0.602
	800	1467	0.13	326	0.01	0.013	0.140
	1000	1833	0.21	408	0.01	0.018	0.217
	1100	2017	0.25	449	0.01	0.021	0.262
	1200	2200	0.30	489	0.01	0.023	0.310
	1400	2567	0.41	571	0.02	0.028	0.418
	1600	2934	0.54	652	0.03	0.033	0.543
	1700	3117	0.61	693	0.03	0.036	0.612

Unit Size	CFM	Velocity in Inlet	Pv in Inlet	Velocity in Outlet	Pv in Outlet	Unit ΔPs (in.wg.)	Unit ΔPt (in.wg.)
512 12-inch	800	1019	0.06	238	0.00	0.001	0.062
	1000	1273	0.10	298	0.01	0.002	0.098
	1200	1528	0.15	357	0.01	0.002	0.140
	1450	1846	0.21	432	0.01	0.008	0.209
	1600	2037	0.26	476	0.01	0.010	0.255
	1950	2483	0.38	580	0.02	0.015	0.378
	2200	2801	0.49	655	0.03	0.022	0.484
	2500	3183	0.63	744	0.03	0.025	0.622
514 14-inch	925	865	0.05	189	0.00	0.000	0.045
	1300	1216	0.09	266	0.00	0.001	0.089
	1600	1497	0.14	327	0.01	0.002	0.135
	1900	1777	0.20	388	0.01	0.003	0.191
	2100	1964	0.24	429	0.01	0.005	0.234
	2600	2432	0.37	532	0.02	0.007	0.358
	3000	2806	0.49	613	0.02	0.100	0.568
	3250	3040	0.58	664	0.03	0.108	0.657
516 16-inch	1100	788	0.04	182	0.00	0.006	0.043
	1500	1074	0.07	249	0.00	0.010	0.078
	1800	1289	0.10	298	0.01	0.014	0.112
	2400	1719	0.18	398	0.01	0.023	0.197
	2800	2005	0.25	464	0.01	0.030	0.267
	3600	2578	0.41	597	0.02	0.045	0.437
	4000	2865	0.51	663	0.03	0.052	0.536
	4400	3151	0.62	730	0.03	0.060	0.646

1. *ΔPs = static pressure drop; ΔPt = total pressure drop.*
2. *Calculations of ΔPs and ΔPt were performed using standard air with a density of 0.075 lbm/cu.ft.*
3. *Data based on testing standard METALAIRE hot water coils per AHRI Standard 410.*
4. *Unit ΔPs and Unit ΔPt are pressure drops across the air terminal unit while the inlet damper is in the wide-open position.*
5. *Data applies to air terminal units with hot water coil mounted on the discharge side.*
6. *"--" is shown when the static pressure drop exceeds 0.50 in. wg.*

METALAIRE™

DD-500
CONTROL SEQUENCE OFFERINGS

PPD–PNEUMATIC PRESSURE DEPENDENT

- 210 DA/NC Full Closed
- 212 RA/NO Full Open

PPI–PNEUMATIC PRESSURE INDEPENDENT

- 238 NO Cold Duct – NC Hot Duct – DA Thermostat
- 239 NO Cold Duct – NC Hot Duct – RA Thermostat
- 240 NC Cold Duct – NO Hot Duct – DA Thermostat
- 241 NC Cold Duct – NO Hot Duct – RA Thermostat

ELECTRONIC–PRESSURE DEPENDENT

- 257 Actuator Only
- 258 Sensors in Hot / Cold Inlets and Actuator

ANALOG ELECTRIC

- 263 Hot and Cold Actuators Operate in Sequence

Refer to Reference Section for complete description.

METALAIRE™

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AHRI CERTIFIED™ www.ahridirectory.org VAV Terminals AHRI Standard 880

U.S. GREEN BUILDING COUNCIL MEMBER

DH-500
HIGH PERFORMANCE DUAL DUCT AIR TERMINAL UNIT

SPECIFIABLE FEATURES

- 22 ga. galvanized steel casing, mechanically sealed, low leakage construction.
- Damper construction of double layer 18 gauge equivalent with mechanically fastened integral blade seal.
- Butt welded round primary inlet ducts to minimize leakage.
- Metal inlet flow sensors with extra balancing taps.
- Mixing section with 1:30 mixing ratio.
- Integral mixing sound attenuator.

INDEX OF SECTIONS

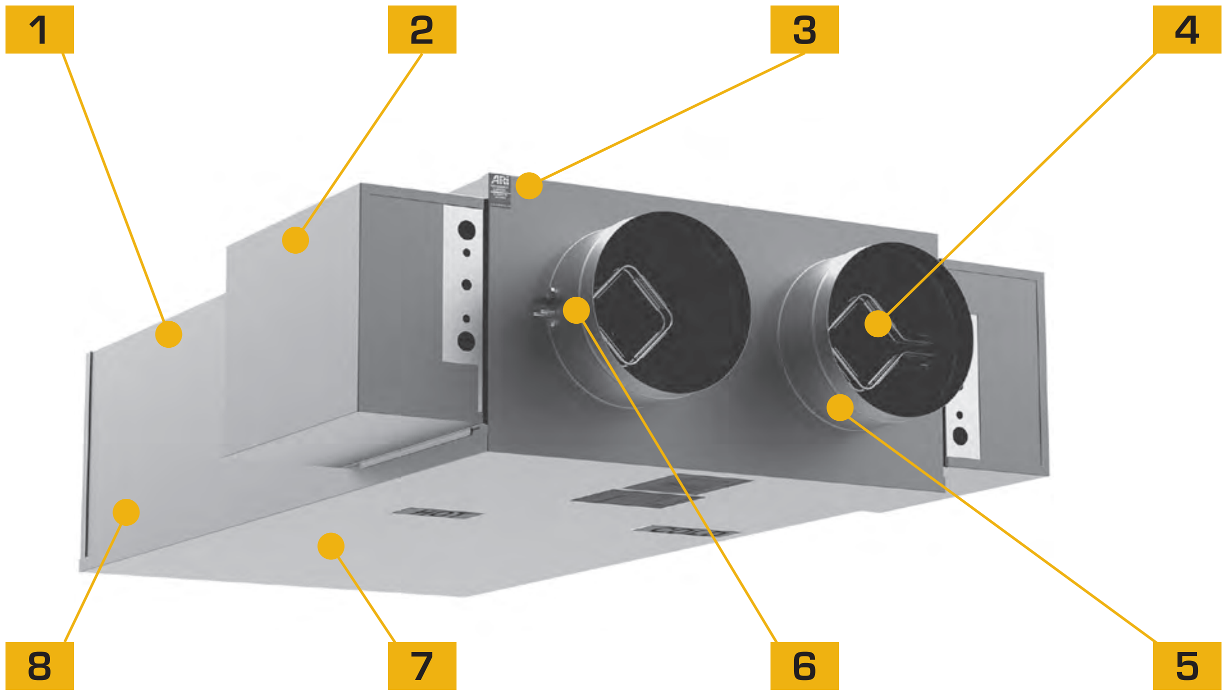
METALAIRE™

DH-500
HIGH PERFORMANCE DUAL DUCT AIR TERMINAL UNIT

The METALAIRE DH-500 high performance air terminal units are designed to regulate the flow of conditioned air in dual duct air distribution systems. Both heated and cooled air are provided to the air terminal and mixed in an integral plenum to reach the desired discharge temperature. The DH-500 has been engineered to provide a 1:30 mixing ratio.

STANDARD FEATURES

- Available in multiple unit sizes to handle 80–4400 CFM.
- Unequal inlet sizes are available as an option.
- Variable or constant volume applications.
- 22 ga. galvanized steel casing, mechanically sealed, low leakage construction.
- Damper construction of double layer, 18 gauge equivalent, galvanized steel with sandwiched flexible gasket, mechanically fastened to provide tight seal (<1% at 3.0" wg static pressure).
- Optional factory calibrated controls per each job requirement.
- Multi-quadrant, averaging flow sensor for highly accurate (+/-5%) flow readings with varying inlet duct configurations after certified balancer has balanced terminal.
- Externally accessible, steel balancing taps.
- External control cabinets for hot and cold deck with offset mounting plate.
- 3-beaded inlet connection tube for added rigidity and secure flex duct connections.
- 1/2" thick, dual density (1.5lb/ft^3 min.) fiberglass insulation with edges coated. Meets NFPA 90A and UL 181.
- Rectangular discharge with optional slip and drive cleat duct connection.
- Independently tested and certified laboratory performance data.
- Integral mixing box with 1:30 mixing ratio.
- Full range of liners/insulation available.

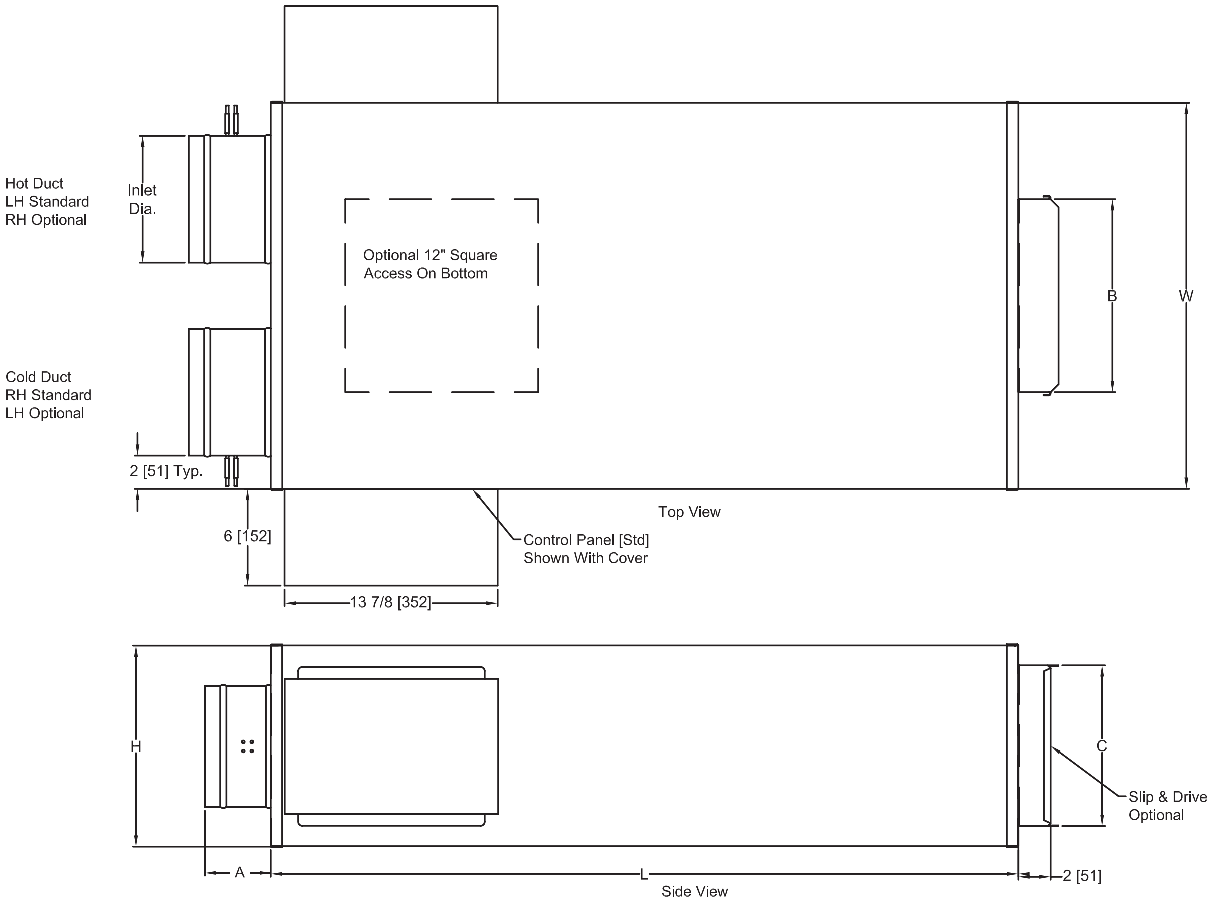


DH-500
HIGH PERFORMANCE DUAL DUCT AIR TERMINAL UNIT

FEATURES AND BENEFITS

1. Galvanized steel casing, mechanically sealed for low leakage construction.
2. NEMA 1 rated control enclosures for both hot and cold decks with stand-off to prevent penetration of casing are standard on all terminal units.
3. All DH-500 terminal units are AHRI certified and shipped with the AHRI seal.
4. Damper rotates in a self-lubricating, long life, low friction thermoplastic bearing.
5. Continuous welded primary inlet duct to minimize leakage with three stiffening beads for added rigidity.
6. All metal constructed inlet flow sensors with extra balancing taps.
7. DH-500 includes mixing section designed to provide a 1:30 mixing ratio.
8. Integral mixing sound attenuator to help reduce discharge sound.

DH-500
DUAL DUCT AIR TERMINAL UNIT
HIGH EFFICIENCY MIXING



The standard location for control panel is Right Hand on Model DH.
Looking in the direction of airflow, the control panel is on the right.

The control panel will overhang the top and bottom of Models DH504–DH506 1 13 x 16" (46 mm) or 13 x 16" (20 mm) on DH508. Control Panel Mounting Surface width by height is 13 7/8" x 9 3/4".

Model Number	Inlet Diameter: Standard Both Ducts	Inlet Diameter: Optional Hot Duct	Inlet Duct Length A in.	Inlet Duct Length A mm.	Unit Width W in.	Unit Width W mm.	Unit Height H in.	Unit Height H mm.	Unit Length L in.	Unit Length L mm.	Discharge Width B in.	Discharge Width B mm.	Discharge Height C in.	Discharge Height C mm.
DH504	4	–	10	254	20	508	10	254	40	1016	12	305	8	203
DH505	5	–	10	254	20	508	10	254	40	1016	12	305	8	203
DH506	6	–	5	127	20	508	10	254	40	1016	12	305	8	203
DH508	8	6	5	127	24	610	12 1/2	318	48	1219	12	305	10	254
DH510	10	6,8	5	127	28	711	12 1/2	318	58	1473	14	356	12 1/2	318
DH512	12	6,8,10	5	127	32	813	15	381	72	1829	16	406	15	381
DH514	14	6,8,10,12	5	127	36	914	17 1/2	445	72	1829	20	508	17 1/2	445
DH516	16	6,8,10,12,14	5	127	40	1016	18	457	72	1829	24	610	18	457

DH-500
AHRI CERTIFIED RATING POINTS

AHRI Certified Radiated Sound Power, ΔPs = 1.5 in.wg

Unit Size	Min Ps	CFM	Octave Band					
			2	3	4	5	6	7
4	0.18	200	57	50	39	35	34	26
5	0.18	200	57	50	39	35	34	26
6	0.33	400	62	55	48	44	37	32
8	0.42	700	64	57	46	42	41	36
10	0.37	1100	69	60	51	45	38	34
12	0.49	1600	68	61	52	50	45	43
14	0.27	2100	69	64	58	52	47	42
16	0.41	2800	72	65	60	50	44	40

AHRI Certified Discharge Sound Power, ΔPs = 1.5 in.wg.

Unit Size	Min Ps	CFM	Octave Band					
			2	3	4	5	6	7
4	0.18	200	71	66	56	48	39	37
5	0.18	200	71	66	56	48	39	37
6	0.33	400	74	68	56	51	43	39
8	0.42	700	77	66	45	42	36	34
10	0.37	1100	77	68	47	44	40	38
12	0.49	1600	70	55	53	52	48	44
14	0.27	2100	77	69	54	56	54	52
16	0.41	2800	77	66	61	58	54	50

CERTIFICATIONS AND STANDARDS

- Units tested per ANSI/ASHRAE Standard 130.
- All model sizes certified in accordance with AHRI 880 certification program.
- ETL listed to meet requirements of UL 1995 and CSA 236.
- Dual-density fiberglass insulation meets UL 181 and NFPA 90A requirements.
- Insulation meets ASHRAE 62.1 requirements for resistance to mold growth and erosion.

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METALAIRE™

DH-500
RADIATED SOUND POWER at Minimum Pressures, ΔPS = 0.50 and 1.0 in.wg.

Unit Size	CFM (L/s)		Min Ps in.wg. (Pa)		Min Ps							ΔPs = 0.50 in.wg. (125 Pa)							ΔPs = 1.0 in.wg. (250 Pa)						
					Octave Band Sound Power, Lw, dB							Octave Band Sound Power, Lw, dB							Octave Band Sound Power, Lw, dB						
					2	3	4	5	6	7	NC	2	3	4	5	6	7	NC	2	3	4	5	6	7	NC
504/505 4 & 5 inch	100	(47)	0.096	(5.1)	46	41	30	26	26	19	<15	48	43	32	28	28	21	<15	50	45	34	30	30	22	<15
	200	(94)	0.178	(20.7)	52	43	32	28	28	21	<15	54	45	34	30	30	23	<15	56	47	36	32	32	24	17
	250	(118)	0.213	(32.4)	53	45	34	30	30	23	<15	55	47	36	32	32	25	16	57	49	38	34	34	26	18
	300	(142)	0.280	(46.4)	54	47	36	39	32	25	<15	56	49	38	41	34	27	17	58	51	40	43	36	28	20
506 6 inch	100	(47)	0.096	(5.1)	46	41	30	26	26	19	<15	48	43	32	28	28	21	<15	50	45	34	30	30	22	<15
	200	(94)	0.178	(20.7)	52	43	32	28	28	21	<15	54	45	34	30	30	23	<15	56	47	36	32	32	24	17
	300	(142)	0.280	(46.4)	54	47	36	39	32	25	<15	56	49	38	41	34	27	17	58	51	40	43	36	28	20
	400	(189)	0.333	(82.9)	57	50	40	39	33	28	18	59	52	42	41	35	30	21	61	54	43	42	36	31	23
	500	(236)	0.519	(129.3)	59	55	43	42	37	30	24	61	57	45	44	39	32	26	63	59	46	45	40	33	28
	600	(283)	0.749	(186.6)	60	57	45	45	40	34	26	62	59	47	47	42	36	28	64	61	48	48	44	37	31
508 8 inch	200	(94)	0.034	(8.5)	51	41	30	25	26	18	<15	54	44	33	28	29	21	<15	57	47	36	31	32	24	18
	300	(142)	0.077	(19.2)	52	42	31	26	27	19	<15	55	46	35	30	31	23	16	58	49	38	33	34	26	20
	600	(283)	0.306	(76.2)	56	49	38	33	34	26	17	58	51	40	35	36	28	20	60	53	42	37	38	30	22
	700	(330)	0.421	(104.9)	59	53	41	37	37	30	21	61	55	43	39	39	32	24	62	56	44	40	40	33	25
	1000	(472)	0.858	(213.7)	66	63	52	47	49	42	33	67	64	53	48	50	43	34	67	64	53	48	50	43	34
	1100	(519)	1.023	(254.7)	68	66	55	50	53	45	37	69	67	56	51	54	46	38	69	67	56	51	54	46	38
510 10 inch	300	(142)	0.027	(6.8)	55	44	33	28	28	20	16	58	47	36	31	31	23	20	61	50	39	34	34	26	23
	500	(236)	0.075	(18.8)	55	45	34	29	29	21	16	59	49	38	33	33	25	21	62	52	41	36	36	28	25
	900	(425)	0.244	(60.8)	58	49	38	33	33	25	20	61	53	42	37	37	29	23	64	56	45	40	40	32	27
	1100	(519)	0.365	(90.9)	61	54	44	38	36	30	23	65	57	47	41	37	32	29	68	59	50	43	37	33	32
	1300	(614)	0.509	(126.8)	63	58	46	41	41	35	27	65	60	48	43	43	37	29	67	62	50	45	45	39	32
	1700	(802)	0.871	(216.9)	69	66	55	50	52	44	37	70	67	56	51	53	45	38	71	68	57	52	54	46	39

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3. *Performance data is obtained from laboratory testing in accordance with AHRI 880-2011 and ANSI/ASHRAE 130-2008.*
4. *NC values are calculated using attenuation credits outlined in Appendix E of AHRI 885-2008.*
5. ***Discharge Sound power levels shown with End Reflection Corrections Included** in dB (ref: 10^{-12} watts).*
6. *Minimum Ps is the static pressure drop across the air terminal unit while the inlet damper is in the wide-open position at a given airflow rate.*

METALAIRE™

DH-500
RADIATED SOUND POWER at Minimum Pressures, ΔPS = 0.50 and 1.0 in.wg. continued

Unit Size	CFM (L/s)		Min Ps in.wg. (Pa)		Min Ps							ΔPs = 0.50 in.wg. (125 Pa)							ΔPs = 1.0 in.wg. (250 Pa)						
					Octave Band Sound Power, Lw, dB						NC	Octave Band Sound Power, Lw, dB						NC	Octave Band Sound Power, Lw, dB						NC
					2	3	4	5	6	7		2	3	4	5	6	7		2	3	4	5	6	7	
512 12 inch	450	(212)	0.039	(9.7)	56	43	34	27	28	20	17	59	46	37	30	31	23	21	62	49	40	33	34	26	25
	800	(378)	0.123	(30.6)	56	44	35	28	29	21	17	60	48	39	32	33	25	22	63	51	42	35	36	29	26
	1450	(684)	0.403	(100.3)	64	55	45	39	39	32	27	66	57	47	41	41	35	30	67	58	48	42	43	38	31
	1600	(755)	0.491	(122.3)	67	59	48	43	42	36	31	68	60	50	46	44	40	32	68	61	52	48	46	43	32
	1950	(920)	0.727	(181.0)	69	63	52	46	46	41	34	70	64	53	47	47	43	35	70	64	53	47	47	44	35
	2200	(1038)	0.929	(231.4)	70	64	54	48	48	43	35	71	65	55	49	49	44	36	72	66	56	50	50	45	38
	2500	(1180)	1.193	(297.1)	72	66	56	50	51	45	38	73	67	57	51	52	46	39	74	68	58	52	53	47	40
514 14 inch	550	(260)	0.018	(7.7)	58	44	37	28	29	22	20	61	47	40	31	32	25	23	64	50	43	34	35	28	27
	925	(437)	0.052	(21.7)	60	47	40	31	32	25	22	63	50	43	34	35	28	26	65	52	45	36	37	30	29
	1600	(755)	0.157	(65.3)	63	52	45	36	37	30	26	65	54	47	38	39	32	29	67	56	49	40	41	34	31
	1900	(897)	0.222	(92.2)	66	56	48	40	40	34	30	68	58	50	42	42	36	32	69	59	51	43	43	37	34
	2100	(991)	0.270	(112.6)	67	60	51	44	43	38	31	68	62	54	48	45	40	32	68	63	57	51	46	41	33
	2600	(1227)	0.415	(172.4)	70	62	53	45	44	40	35	71	64	55	47	46	42	36	72	65	56	48	48	44	38
	3250	(1534)	0.649	(269.6)	73	66	58	50	50	45	39	74	68	60	52	52	47	40	75	69	61	53	54	49	41
516 16 inch	750	(354)	0.029	(8.6)	54	43	39	30	24	18	<15	56	45	40	31	26	20	17	57	46	40	31	27	21	18
	1100	(519)	0.063	(18.6)	57	47	43	34	28	22	18	59	49	44	35	30	24	21	60	50	44	35	31	25	22
	1500	(708)	0.118	(34.9)	60	51	47	38	32	26	22	62	53	48	39	34	28	25	63	54	48	39	35	29	26
	2400	(1133)	0.300	(88.8)	65	58	53	45	38	33	29	67	60	54	46	40	35	31	68	61	54	46	41	36	32
	2800	(1322)	0.410	(121.3)	68	62	56	49	41	37	32	70	64	57	50	43	39	35	71	65	57	50	44	40	36
	3600	(1699)	0.676	(200.1)	70	66	60	52	45	42	37	72	68	61	53	47	44	39	73	69	61	53	48	45	40
	4400	(2077)	1.011	(299.2)	75	72	67	59	53	49	44	77	74	68	60	55	51	46	78	75	68	60	56	52	47

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4. *NC values are calculated using attenuation credits outlined in Appendix E of AHRI 885-2008.*
5. ***Discharge Sound power levels shown with End Reflection Corrections Included** in dB (ref: 10^{-12} watts).*
6. *Minimum Ps is the static pressure drop across the air terminal unit while the inlet damper is in the wide-open position at a given airflow rate.*

DH-500
RADIATED SOUND POWER at ΔPS = 1.50, 2.0 and 3.0 in.wg.

Unit Size	CFM	(L/s)	Min Ps in.wg.	(Pa)	ΔPs = 1.5 in.wg. (375 Pa) Octave Band Sound Power, Lw, dB							ΔPs = 2.0 in.wg. (500 Pa) Octave Band Sound Power, Lw, dB							ΔPs = 3.0 in.wg. (750 Pa) Octave Band Sound Power, Lw, dB						
					2	3	4	5	6	7	NC	2	3	4	5	6	7	NC	2	3	4	5	6	7	NC
504/505 4 & 5 inch	100	(47)	0.096	(5.1)	53	48	37	33	32	25	15	55	51	40	35	34	27	19	60	56	45	40	39	32	25
	200	(94)	0.178	(20.7)	57	50	39	35	34	26	18	58	52	41	37	35	28	20	63	57	46	42	40	33	26
	250	(118)	0.213	(32.4)	58	51	41	37	35	28	20	59	53	44	40	36	29	21	64	58	49	45	41	34	27
	300	(142)	0.280	(46.4)	60	53	45	44	37	30	22	61	55	50	44	37	31	24	66	60	55	49	42	36	30
506 6 inch	100	(47)	0.096	(5.1)	53	48	37	33	32	25	15	55	51	40	35	34	27	19	60	56	45	40	39	32	25
	200	(94)	0.178	(20.7)	57	50	39	35	34	26	18	58	52	41	37	35	28	20	63	57	46	42	40	33	26
	300	(142)	0.280	(46.4)	60	53	45	44	37	30	22	61	55	50	44	37	31	24	66	60	55	49	42	36	30
	400	(189)	0.333	(82.9)	62	55	48	44	37	32	25	62	56	53	46	38	32	27	67	61	58	51	43	37	33
	500	(236)	0.519	(129.3)	64	60	51	47	41	34	29	66	61	56	49	42	35	31	71	66	61	54	47	40	37
	600	(283)	0.749	(186.6)	66	62	53	50	44	38	32	67	63	57	51	45	40	33	72	68	62	56	50	45	39
508 8 inch	200	(94)	0.034	(8.5)	58	50	40	35	34	29	20	59	53	43	39	36	34	21	64	58	48	44	41	39	27
	300	(142)	0.077	(19.2)	60	52	41	37	36	31	22	61	54	44	40	37	35	23	66	59	49	45	42	40	30
	600	(283)	0.306	(76.2)	62	55	44	40	39	33	25	63	57	46	42	39	36	26	68	62	51	47	44	41	32
	700	(330)	0.421	(104.9)	64	57	46	42	41	36	27	65	58	48	44	42	39	29	70	63	53	49	47	44	35
	1000	(472)	0.858	(213.7)	68	65	54	49	51	45	35	69	65	54	50	51	47	35	74	70	59	55	56	52	41
	1100	(519)	1.023	(254.7)	70	68	57	52	55	47	39	71	69	58	53	56	48	40	76	74	63	58	61	53	46
510 10 inch	300	(142)	0.027	(6.8)	62	53	43	38	36	31	25	63	56	46	42	38	36	26	68	61	51	47	43	41	32
	500	(236)	0.075	(18.8)	64	55	44	40	38	33	27	65	57	47	43	39	37	29	70	62	52	48	44	42	35
	900	(425)	0.244	(60.8)	66	58	47	43	41	35	30	67	60	49	45	41	38	31	72	65	54	50	46	43	38
	1100	(519)	0.365	(90.9)	69	60	51	45	38	34	34	69	61	51	47	39	35	34	74	66	56	52	44	40	40
	1300	(614)	0.509	(126.8)	69	63	52	47	46	42	34	70	64	54	49	47	44	35	75	69	59	54	52	49	41
	1700	(802)	0.871	(216.9)	73	69	58	54	55	49	40	74	70	59	55	56	51	41	79	75	64	60	61	56	47

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5. ***Discharge Sound power levels shown with End Reflection Corrections Included** in dB (ref: 10^{-12} watts).*
6. *Minimum Ps is the static pressure drop across the air terminal unit while the inlet damper is in the wide-open position at a given airflow rate.*

METALAIRE™

DH-500
RADIATED SOUND POWER at ΔPS = 1.50, 2.0 and 3.0 in.wg. continued

Unit Size	CFM	(L/s)	Min Ps in.wg.	(Pa)	ΔPs = 1.5 in.wg. (375 Pa) Octave Band Sound Power, Lw, dB 2	3	4	5	6	7	NC	ΔPs = 2.0 in.wg. (500 Pa) Octave Band Sound Power, Lw, dB 2	3	4	5	6	7	NC	ΔPs = 3.0 in.wg. (750 Pa) Octave Band Sound Power, Lw, dB 2	3	4	5	6	7	NC
512 12 inch	450	(212)	0.039	(9.7)	63	52	44	37	36	31	26	64	55	47	41	38	36	27	69	60	52	46	43	41	34
	800	(378)	0.123	(30.6)	65	54	45	39	38	33	29	66	56	48	42	39	37	30	71	61	53	47	44	42	36
	1450	(684)	0.403	(100.3)	69	60	50	45	44	40	34	70	62	52	47	45	41	35	75	67	57	52	50	46	41
	1600	(755)	0.491	(122.3)	68	61	52	50	45	43	32	69	63	53	50	47	44	34	74	68	58	55	52	49	40
	1950	(920)	0.727	(181.0)	72	65	55	51	48	46	38	73	66	57	51	49	47	39	78	71	62	56	54	52	45
	2200	(1038)	0.929	(231.4)	74	67	58	52	51	48	40	75	68	59	54	52	50	41	80	73	64	59	57	55	48
	2500	(1180)	1.193	(297.1)	75	69	59	54	54	50	41	76	70	60	55	55	52	43	81	75	65	60	60	57	49
514 14 inch	550	(260)	0.018	(7.7)	65	53	47	38	37	33	29	66	56	50	42	39	38	30	71	61	55	47	44	43	36
	925	(437)	0.052	(21.7)	67	55	48	40	39	35	31	68	57	51	43	40	39	32	73	62	56	48	45	44	39
	1600	(755)	0.157	(65.3)	69	58	51	43	42	37	34	70	60	53	45	42	40	35	75	65	58	50	47	45	41
	1900	(897)	0.222	(92.2)	71	61	53	46	44	40	36	72	63	55	48	44	43	38	77	68	60	53	49	48	44
	2100	(991)	0.270	(112.6)	69	64	58	52	47	42	34	69	65	58	52	48	42	35	74	70	63	57	53	47	41
	2600	(1227)	0.415	(172.4)	74	66	58	50	49	47	40	75	67	60	52	50	49	41	80	72	65	57	55	54	48
	3250	(1534)	0.649	(269.6)	77	70	62	55	55	52	44	78	71	63	56	56	54	45	83	76	68	61	61	59	52
516 16 inch	750	(354)	0.029	(8.6)	58	47	42	33	28	22	20	60	49	44	35	30	24	22	64	53	49	40	34	28	27
	1100	(519)	0.063	(18.6)	61	51	46	37	32	26	23	63	53	48	39	34	28	26	67	57	53	44	38	32	31
	1500	(708)	0.118	(34.9)	64	55	50	41	36	30	27	66	57	52	43	38	32	30	70	61	57	48	42	36	35
	2400	(1133)	0.300	(88.8)	69	62	56	48	42	37	34	71	64	58	50	44	39	36	75	68	63	55	48	43	41
	2800	(1322)	0.410	(121.3)	72	65	60	50	44	40	38	74	68	61	54	47	43	40	78	72	66	59	51	47	45
	3600	(1699)	0.676	(200.1)	74	70	63	55	49	46	41	76	72	65	57	51	48	44	80	76	70	62	55	52	48
	4400	(2077)	1.011	(299.2)	79	76	70	62	57	53	48	81	78	72	64	59	55	51	85	82	77	69	63	59	55

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6. *Minimum Ps is the static pressure drop across the air terminal unit while the inlet damper is in the wide-open position at a given airflow rate.*

DH-500
DISCHARGE SOUND POWER at Minimum Pressures, ΔPS = 0.50 and 1.0 in.wg.

Unit Size	CFM (L/s)		Min Ps in.wg. (Pa)		Min. Ps Octave Band Sound Power, Lw, dB							ΔPs = 0.50 in.wg. (125 Pa) Octave Band Sound Power, Lw, dB							ΔPs = 1.0 in.wg. (250 Pa) Octave Band Sound Power, Lw, dB						
					2	3	4	5	6	7	NC	2	3	4	5	6	7	NC	2	3	4	5	6	7	NC
504/505 4 & 5 inch	100	(47)	0.096	(5.1)	61	56	47	39	30	28	16	64	59	50	42	33	31	20	67	62	53	45	35	33	23
	200	(94)	0.178	(20.7)	63	58	48	40	31	29	18	66	61	51	43	34	32	22	69	64	54	46	36	34	26
	250	(118)	0.213	(32.4)	64	59	49	41	32	29	20	67	62	52	44	35	32	23	70	65	55	47	37	34	27
	300	(142)	0.280	(46.4)	65	60	50	42	33	30	18	68	63	53	45	36	33	21	71	66	56	48	38	35	25
506 6 inch	100	(47)	0.096	(5.1)	61	56	47	39	30	28	16	64	59	50	42	33	31	20	67	62	53	45	35	33	23
	200	(94)	0.178	(20.7)	63	58	48	40	31	29	18	66	61	51	43	34	32	22	69	64	54	46	36	34	26
	300	(142)	0.280	(46.4)	65	60	50	42	33	30	18	68	63	53	45	36	33	21	71	66	56	48	38	35	25
	400	(189)	0.333	(82.9)	66	60	48	43	35	31	18	69	64	50	46	38	34	22	72	67	52	49	41	37	26
	500	(236)	0.519	(129.3)	69	65	55	48	42	38	24	72	68	57	50	45	41	27	74	70	60	53	47	43	29
	600	(283)	0.749	(186.6)	71	68	58	50	45	41	27	74	71	60	52	48	44	31	76	73	63	55	50	46	33
508 8 inch	200	(94)	0.034	(8.5)	67	53	32	26	22	17	23	69	54	34	29	25	20	26	70	56	35	31	27	22	27
	300	(142)	0.077	(19.2)	68	55	34	28	24	19	21	70	56	36	31	27	22	23	71	58	37	33	29	24	25
	600	(283)	0.306	(76.2)	70	59	38	32	28	23	23	72	60	40	35	31	26	26	73	62	41	37	33	28	27
	700	(330)	0.421	(104.9)	72	62	40	35	30	26	26	74	63	42	38	33	29	29	75	65	43	40	35	31	30
	1000	(472)	0.858	(213.7)	76	69	48	42	39	35	29	78	70	50	45	42	38	31	79	72	51	47	44	40	32
	1100	(519)	1.023	(254.7)	77	71	50	44	42	37	30	79	72	52	47	45	40	32	80	74	53	49	47	42	34
510 10 inch	300	(142)	0.027	(6.8)	66	54	33	28	26	21	18	68	56	35	31	29	24	21	70	58	37	33	31	26	23
	500	(236)	0.075	(18.8)	67	56	35	30	28	23	20	69	58	37	33	31	26	22	71	60	39	35	33	28	25
	900	(425)	0.244	(60.8)	69	60	39	34	32	27	20	71	62	41	37	35	30	22	73	64	43	39	37	32	25
	1100	(519)	0.365	(90.9)	70	62	42	36	33	30	21	72	64	43	39	36	33	23	75	67	45	42	39	35	27
	1300	(614)	0.509	(126.8)	72	66	44	39	37	34	24	74	68	46	42	40	37	26	76	70	48	44	42	39	29
	1700	(802)	0.871	(216.9)	77	73	52	46	46	41	32	78	74	53	49	49	44	33	80	76	55	51	51	46	35

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DH-500
DISCHARGE SOUND POWER at Minimum Pressures, ΔPS = 0.50 and 1.0 in.wg. continued

Unit Size	CFM (L/s)		Min Ps in.wg. (Pa)		Min. Ps Octave Band Sound Power, Lw, dB 2	3	4	5	6	7	Min. Ps NC	ΔPs = 0.50 in.wg. (125 Pa) Octave Band Sound Power, Lw, dB 2	3	4	5	6	7	ΔPs = 0.50 in.wg. (125 Pa) NC	ΔPs = 1.0 in.wg. (250 Pa) Octave Band Sound Power, Lw, dB 2	3	4	5	6	7	ΔPs = 1.0 in.wg. (250 Pa) NC
512 12 inch	450	(212)	0.039	(9.7)	49	29	29	26	24	18	<15	50	31	30	28	26	20	<15	52	32	32	29	27	21	<15
	800	(378)	0.123	(30.6)	52	33	33	30	28	22	<15	53	35	34	32	30	24	<15	55	36	36	33	31	25	<15
	1450	(684)	0.403	(100.3)	60	44	43	41	38	33	<15	61	46	44	43	40	35	<15	63	47	46	44	41	36	<15
	1600	(755)	0.491	(122.3)	63	48	46	45	41	37	<15	64	50	47	47	43	39	<15	66	51	49	48	44	40	16
	1950	(920)	0.727	(181.0)	65	52	50	48	45	42	<15	66	54	51	50	47	44	16	68	55	53	51	48	45	18
	2200	(1038)	0.929	(231.4)	68	55	54	52	49	46	18	69	57	55	54	51	48	20	71	58	57	55	52	49	22
	2500	(1180)	1.193	(297.1)	70	58	57	55	53	49	21	71	60	58	57	55	51	22	73	61	60	58	56	52	25
514 14 inch	550	(260)	0.018	(7.7)	63	53	39	39	40	34	<15	64	54	41	41	42	36	16	66	56	42	42	43	37	18
	925	(437)	0.052	(21.7)	65	55	41	41	42	36	<15	66	56	43	43	44	38	16	68	58	44	44	45	39	18
	1600	(755)	0.157	(65.3)	67	59	45	45	46	40	17	68	60	47	47	48	42	18	70	62	48	48	49	43	21
	1900	(897)	0.222	(92.2)	69	62	47	48	48	43	20	70	63	49	50	50	45	21	72	65	50	51	51	46	23
	2100	(991)	0.270	(112.6)	70	64	48	49	49	45	21	72	66	51	51	51	47	24	73	67	52	52	52	48	25
	2600	(1227)	0.415	(172.4)	72	68	52	53	53	50	26	73	69	54	55	55	52	27	75	71	55	56	56	53	29
	3250	(1534)	0.649	(269.6)	75	72	57	58	59	55	31	76	73	59	60	61	57	32	78	75	60	61	62	58	34
516 16 inch	750	(354)	0.029	(8.6)	63	52	48	38	34	30	<15	65	54	50	42	38	34	<15	67	56	52	46	42	38	17
	1100	(519)	0.063	(18.6)	65	53	49	39	35	31	<15	67	55	51	43	39	35	17	69	57	53	47	43	39	20
	1500	(708)	0.118	(34.9)	65	54	50	39	36	31	<15	67	56	52	43	40	35	17	69	58	54	47	44	39	20
	2400	(1133)	0.300	(88.8)	69	59	53	44	39	35	20	71	61	55	48	43	39	22	73	63	57	52	47	43	25
	2800	(1322)	0.410	(121.3)	71	60	55	46	42	38	22	73	62	57	50	46	42	25	75	64	59	54	50	46	27
	3600	(1699)	0.676	(200.1)	73	63	57	48	45	40	25	75	65	59	52	49	44	27	77	67	61	56	53	48	30
	4400	(2077)	1.011	(299.2)	77	69	62	53	49	46	30	79	71	64	57	53	50	32	81	73	66	61	57	54	35

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6. *Minimum Ps is the static pressure drop across the air terminal unit while the inlet damper is in the wide-open position at a given airflow rate.*

DH-500
DISCHARGE SOUND POWER at ΔPS = 1.50, 2.0 and 3.0 in.wg.

Unit Size	CFM (L/s)		Min Ps in.wg. (Pa)		ΔPs = 1.5 in.wg. (375 Pa) Octave Band Sound Power, Lw, dB 2	3	4	5	6	7	NC	ΔPs = 2.0 in.wg. (500 Pa) Octave Band Sound Power, Lw, dB 2	3	4	5	6	7	NC	ΔPs = 3.0 in.wg. (750 Pa) Octave Band Sound Power, Lw, dB 2	3	4	5	6	7	NC
504/505 4 & 5 inch	100	(47)	0.096	(5.1)	69	64	55	47	38	36	26	72	67	58	50	40	38	30	77	72	63	55	45	43	36
	200	(94)	0.178	(20.7)	71	66	56	48	39	37	29	74	69	59	51	41	39	32	79	74	64	56	46	44	39
	250	(118)	0.213	(32.4)	72	67	57	49	40	37	30	75	70	60	52	42	39	34	80	75	65	57	47	44	40
	300	(142)	0.280	(46.4)	73	68	58	50	41	38	27	76	71	61	53	43	40	31	81	76	66	58	48	45	38
506 6 inch	100	(47)	0.096	(5.1)	69	64	55	47	38	36	26	72	67	58	50	40	38	30	77	72	63	55	45	43	36
	200	(94)	0.178	(20.7)	71	66	56	48	39	37	29	74	69	59	51	41	39	32	79	74	64	56	46	44	39
	300	(142)	0.280	(46.4)	73	68	58	50	41	38	27	76	71	61	53	43	40	31	81	76	66	58	48	45	38
	400	(189)	0.333	(82.9)	74	68	56	51	43	39	29	77	71	59	54	45	41	32	82	76	64	59	50	46	39
	500	(236)	0.519	(129.3)	77	73	63	56	50	46	33	79	75	65	58	52	48	35	84	80	70	63	57	53	41
	600	(283)	0.749	(186.6)	79	76	66	58	53	49	37	81	78	68	60	55	51	39	86	83	73	65	60	56	45
508 8 inch	200	(94)	0.034	(8.5)	71	59	39	35	29	27	29	72	62	42	39	31	32	30	77	67	47	44	36	37	36
	300	(142)	0.077	(19.2)	73	61	40	37	31	29	27	74	63	43	40	32	33	29	79	68	48	45	37	38	35
	600	(283)	0.306	(76.2)	75	64	43	40	34	31	30	76	66	45	42	34	34	31	81	71	50	47	39	39	38
	700	(330)	0.421	(104.9)	77	66	45	42	36	34	32	78	67	47	44	37	37	34	83	72	52	49	42	42	40
	1000	(472)	0.858	(213.7)	81	73	52	49	45	43	35	82	74	53	50	46	45	36	87	79	58	55	51	50	43
	1100	(519)	1.023	(254.7)	82	75	54	51	48	45	36	83	76	55	52	49	47	38	88	81	60	57	54	52	44
510 10 inch	300	(142)	0.027	(6.8)	71	61	41	37	33	31	25	72	64	44	41	35	36	26	77	69	49	46	40	41	32
	500	(236)	0.075	(18.8)	73	63	42	39	35	33	27	74	65	45	42	36	37	29	79	70	50	47	41	42	35
	900	(425)	0.244	(60.8)	75	66	45	42	38	35	27	76	68	47	44	38	38	29	81	73	52	49	43	43	35
	1100	(519)	0.365	(90.9)	77	68	47	44	40	38	30	78	69	49	46	41	41	31	83	74	54	51	46	46	38
	1300	(614)	0.509	(126.8)	78	71	50	46	43	42	31	79	72	52	48	44	44	32	84	77	57	53	49	49	39
	1700	(802)	0.871	(216.9)	82	77	56	53	52	49	37	83	78	57	54	53	51	38	88	83	62	59	58	56	44

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DH-500
DISCHARGE SOUND POWER at ΔPS = 1.50, 2.0 and 3.0 in.wg. continued

Unit Size	CFM (L/s)		Min Ps in.wg. (Pa)		ΔPs = 1.5 in.wg. (375 Pa) Octave Band Sound Power, Lw, dB							ΔPs = 2.0 in.wg. (500 Pa) Octave Band Sound Power, Lw, dB							ΔPs = 3.0 in.wg. (750 Pa) Octave Band Sound Power, Lw, dB						
					2	3	4	5	6	7	NC	2	3	4	5	6	7	NC	2	3	4	5	6	7	NC
512 12 inch	450	(212)	0.039	(9.7)	56	36	36	33	31	25	<15	58	38	38	35	33	27	<15	63	43	43	40	38	32	<15
	800	(378)	0.123	(30.6)	59	40	40	37	35	29	<15	61	42	42	39	37	31	<15	66	47	47	44	42	36	16
	1450	(684)	0.403	(100.3)	67	51	50	48	45	40	17	69	53	52	50	47	42	20	74	58	57	55	52	47	26
	1600	(755)	0.491	(122.3)	70	55	53	52	48	44	21	72	57	55	54	50	46	23	77	62	60	59	55	51	30
	1950	(920)	0.727	(181.0)	72	59	57	55	52	49	23	74	61	59	57	54	51	26	79	66	64	62	59	56	32
	2200	(1038)	0.929	(231.4)	75	62	61	59	56	53	27	77	64	63	61	58	55	30	82	69	68	66	63	60	36
	2500	(1180)	1.193	(297.1)	77	65	64	62	60	56	30	79	67	66	64	62	58	32	84	72	71	69	67	63	39
514 14 inch	550	(260)	0.018	(7.7)	68	59	46	46	45	42	21	69	62	49	50	47	47	22	74	67	54	55	52	52	29
	925	(437)	0.052	(21.7)	70	61	47	48	47	44	21	71	63	50	51	48	48	22	76	68	55	56	53	53	29
	1600	(755)	0.157	(65.3)	72	64	50	51	50	46	23	73	66	52	53	50	49	25	78	71	57	58	55	54	31
	1900	(897)	0.222	(92.2)	74	67	52	54	52	49	26	75	69	54	56	52	52	27	80	74	59	61	57	57	34
	2100	(991)	0.270	(112.6)	77	69	54	56	54	52	30	77	70	55	57	55	54	30	81	75	61	62	59	59	35
	2600	(1227)	0.415	(172.4)	77	72	57	58	57	56	31	78	73	59	60	58	58	32	83	78	64	65	63	63	38
	3250	(1534)	0.649	(269.6)	80	76	61	63	63	61	35	81	77	62	64	64	63	37	86	82	67	69	69	68	42
516 16 inch	750	(354)	0.029	(8.6)	69	58	54	50	46	42	20	71	60	56	54	50	46	22	73	62	58	58	54	50	25
	1100	(519)	0.063	(18.6)	71	59	55	51	47	43	22	73	61	57	55	51	47	25	75	63	59	59	55	51	27
	1500	(708)	0.118	(34.9)	71	60	56	51	48	43	22	73	62	58	55	52	47	25	75	64	60	59	56	51	27
	2400	(1133)	0.300	(88.8)	75	65	59	56	51	47	27	77	67	61	60	55	51	30	79	69	63	64	59	55	32
	2800	(1322)	0.410	(121.3)	77	66	61	58	54	50	30	79	68	63	62	58	54	32	81	70	65	66	62	58	35
	3600	(1699)	0.676	(200.1)	79	69	63	60	57	52	32	81	71	65	64	61	56	35	83	73	67	68	65	60	38
	4400	(2077)	1.011	(299.2)	83	75	68	65	61	58	38	85	77	70	69	65	62	40	87	79	72	73	69	66	43

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DH-500 CASING LEAKAGE

Casing Leakage, CFM						
Inlet Size	0.25" ΔPs	0.50" ΔPs	1.00" ΔPs	1.50" ΔPs	2.0" ΔPs	3.0" ΔPs
6	2	3	4	5	6	7
8	2	3	5	6	6	8
10	3	4	6	8	9	10
12	3	5	7	9	10	12
14	4	6	9	11	12	15
16	5	7	10	12	14	17

DH-500 DAMPER LEAKAGE

Damper Leakage, CFM			
Inlet Size	1.5" ΔPs	3.0" ΔPs	6.0" ΔPs
6	3	4	7
8	3	4	7
10	4	5	7
12	4	5	7
14	4	6	8
16	4	6	8

DH-500
MINIMUM PRESSURES

Unit Size	CFM	Velocity in Inlet	Pv in Inlet	Velocity in Outlet	Pv in Outlet	Unit ΔPs (in.wg.)	Unit ΔPt (in.wg.)
504 4-inch	100	1146	0.08	300	0.01	0.021	0.097
	200	2292	0.33	600	0.02	0.083	0.388
	250	2865	0.51	750	0.04	0.130	0.607
	300	3438	0.74	900	0.05	0.186	0.873
505 5-inch	100	733	0.03	300	0.01	0.021	0.049
	200	1467	0.13	600	0.02	0.083	0.195
	250	1833	0.21	750	0.04	0.130	0.305
	300	2200	0.30	900	0.05	0.186	0.438
506 6-inch	250	1273	0.10	750	0.04	0.130	0.196
	300	1528	0.15	900	0.05	0.186	0.281
	400	2037	0.26	1200	0.09	0.333	0.502
	450	2292	0.33	1350	0.11	0.420	0.634
	500	2546	0.40	1500	0.14	0.519	0.783
	600	3056	0.58	1800	0.20	0.749	1.129
508 8-inch	300	859	0.05	540	0.02	0.077	0.105
	500	1432	0.13	900	0.05	0.215	0.292
	600	1719	0.18	1080	0.07	0.306	0.417
	700	2005	0.25	1260	0.10	0.421	0.573
	800	2292	0.33	1440	0.13	0.542	0.741
	900	2578	0.41	1620	0.16	0.686	0.937
	1000	2865	0.51	1800	0.20	0.858	1.168
	1100	3151	0.62	1980	0.24	1.023	1.397
510 10-inch	700	1283	0.10	840	0.04	0.148	0.206
	900	1650	0.17	1080	0.07	0.244	0.341
	1100	2017	0.25	1320	0.11	0.365	0.510
	1300	2384	0.35	1560	0.15	0.509	0.712
	1400	2567	0.41	1680	0.18	0.590	0.825
	1500	2750	0.47	1800	0.20	0.678	0.948
	1700	3117	0.61	2040	0.26	0.871	1.217

Unit Size	CFM	Velocity in Inlet	Pv in Inlet	Velocity in Outlet	Pv in Outlet	Unit ΔPs (in.wg.)	Unit ΔPt (in.wg.)
512 12-inch	800	1019	0.06	686	0.03	0.123	0.158
	1000	1273	0.10	857	0.05	0.192	0.247
	1200	1528	0.15	1029	0.07	0.276	0.356
	1450	1846	0.21	1243	0.10	0.403	0.519
	1600	2037	0.26	1371	0.12	0.491	0.632
	1950	2483	0.38	1671	0.17	0.727	0.937
	2200	2801	0.49	1886	0.22	0.929	1.196
	2500	3183	0.63	2143	0.29	1.193	1.538
514 14-inch	925	865	0.05	560	0.02	0.052	0.080
	1300	1216	0.09	787	0.04	0.104	0.157
	1600	1497	0.14	968	0.06	0.157	0.238
	1900	1777	0.20	1150	0.08	0.222	0.337
	2100	1964	0.24	1271	0.10	0.270	0.410
	2600	2432	0.37	1573	0.15	0.415	0.630
	3000	2806	0.49	1815	0.21	0.553	0.839
	3250	3040	0.58	1966	0.24	0.649	0.984
516 16-inch	1100	788	0.04	528	0.02	0.063	0.084
	1500	1074	0.07	720	0.03	0.118	0.157
	1800	1289	0.10	864	0.05	0.169	0.226
	2400	1719	0.18	1152	0.08	0.300	0.402
	2800	2005	0.25	1344	0.11	0.410	0.548
	3600	2578	0.41	1728	0.19	0.676	0.905
	4000	2865	0.51	1920	0.23	0.837	1.119
	4400	3151	0.62	2112	0.28	1.011	1.352

1. *ΔPs = static pressure drop; ΔPt = total pressure drop.*
2. *Calculations of ΔPs and ΔPt were performed using standard air with a density of 0.075 lbm/cu.ft.*
3. *Data based on testing standard METALAIRE hot water coils per AHRI Standard 410.*
4. *Unit ΔPs and Unit ΔPt are pressure drops across the air terminal unit while the inlet damper is in the wide-open position.*
5. *Data applies to air terminal units with hot water coil mounted on the discharge side.*
6. *"--" is shown when the static pressure drop exceeds 0.50 in. wg.*

DH-500
CONTROL SEQUENCE OFFERINGS

PPD–PNEUMATIC PRESSURE DEPENDENT

- 210 DA/NC Full Closed
- 212 RA/NO Full Open

PPI–PNEUMATIC PRESSURE INDEPENDENT

- 238 NO Cold Duct – NC Hot Duct – DA Thermostat
- 239 NO Cold Duct – NC Hot Duct – RA Thermostat
- 240 NC Cold Duct – NO Hot Duct – DA Thermostat
- 241 NC Cold Duct – NO Hot Duct – RA Thermostat
- 242 NO Cold Duct – NC Hot Duct – DA Thermostat
- 243 NO Cold Duct – NC Hot Duct – RA Thermostat
- 244 NO Cold Duct – NC Hot Duct – DA Thermostat
- 245 NO Cold Duct – NC Hot Duct – RA Thermostat

ELECTRONIC–PRESSURE DEPENDENT

- 257 Actuator Only
- 258 Sensors in Hot / Cold inlets and actuator

ANALOG ELECTRIC

- 263 Hot and Cold actuators operate in sequence

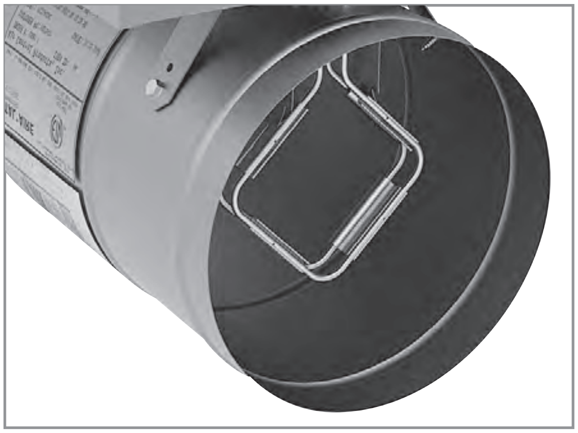
Refer to Reference Section for complete description.

RETROFIT AIR TERMINAL UNITS

SR-500
SQUARE RETROFIT
AIR TERMINAL
PAGE 3

RT-500
ROUND RETROFIT
AIR TERMINAL
PAGE 9

RA-500
RETROFIT
AIR TERMINAL UNIT
PAGE 21



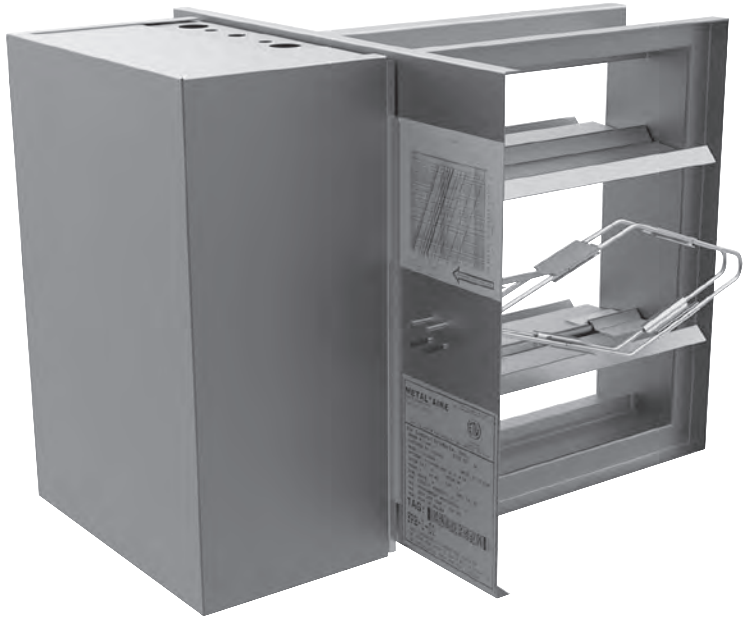
RETROFIT AIR TERMINAL UNITS

METALAIRE's series of retrofit terminal units enable the conversion of existing constant volume systems to more energy efficient variable air volume (VAV) systems. By converting to a VAV system, owners can take advantage of the inherent diversity of their buildings. This diversity allows the reduction of total system air volume which reduces central fan energy and refrigeration energy. In existing dual duct and reheat systems, wasted energy can be saved by conversion to VAV.

The primary function of the METALAIRE series of retrofit terminal unit is to regulate the flow of conditioned air into an occupied zone in response to a control signal. Retrofit terminals are available with a wide range of control options to suit any application. These include pneumatic, analog electronic, electric, and direct digital control (DDC). METALAIRE retrofit terminals can be applied in constant volume single duct, dual duct, and multi-zone systems.

With the demands of today's building designs to reduce energy in smaller mechanical spaces with little downtime, the METALAIRE retrofit terminal unit is the perfect choice.

Retrofit units are not certified by AHRI and do not currently fall in the scope of the AHRI Standard 880 Certification program.



SR-500
SQUARE RETROFIT AIR TERMINAL UNIT

SPECIFIABLE FEATURES

- Minimum 20 gauge galvanized steel frame and opposed damper blades
- Metal inlet flow sensor with extra balancing taps
- Standard 20 gauge control mounting panel and cover
- Available in sizes 10"W x 6"H to 36"W x 24"H (1" increments) handling capacities from 100 CFM – 18,000 CFM
- Available with optional factory provided pneumatic, electric, DDC, or electronic controls

SR-502B

SR-502D

SR-502EX

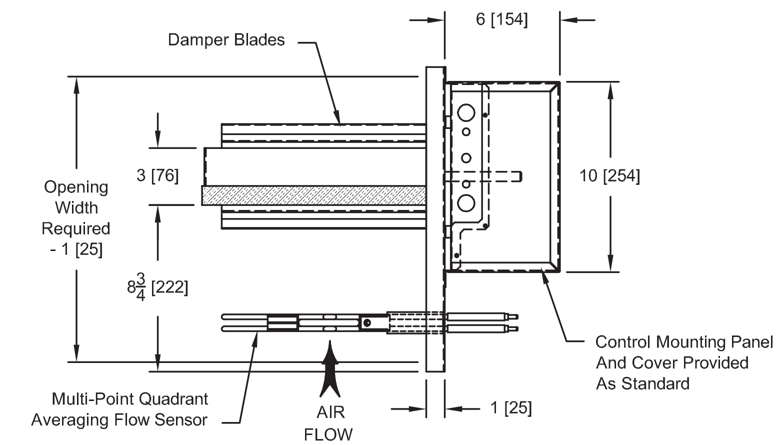
SR-500
SQUARE RETROFIT AIR TERMINAL UNITS

The METALAIRE series SR-500 products are designed to fit into existing low pressure square or rectangular duct systems. The SR-500 is available in three versions: Model 502B is a slip-in unit for existing ductwork. Model 502D is designed for use in 24" duct sections as a basic VAV terminal. Model 502EX is a 46" exhaust unit with inlet sound attenuator and flow sensor.

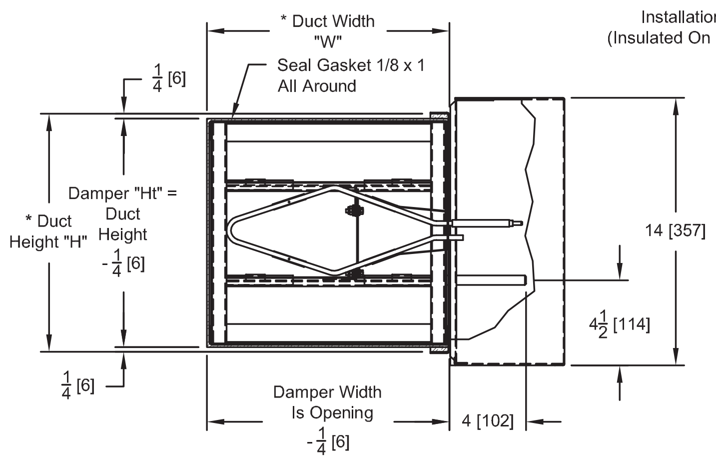
STANDARD FEATURES

- SR-500 is available in multiple sizes up to 24" x 36" to handle 100–18,000 CFM.
- Minimum 20 ga. galvanized steel casing, mechanically sealed, low leakage construction on the 502D and 502EX models.
- Galvanized steel damper with minimum 20 ga. 3V style opposed blades.
- Optional blade seals and jamb seals available.
- Optional factory calibrated controls per each job requirement.
- Multi-quadrant, averaging flow sensor for highly accurate (+/-5%) flow readings with varying inlet duct configurations after certified balancer has balanced terminal.
- Externally accessible, steel balancing taps.
- External control cabinet with offset mounting plate as standard.

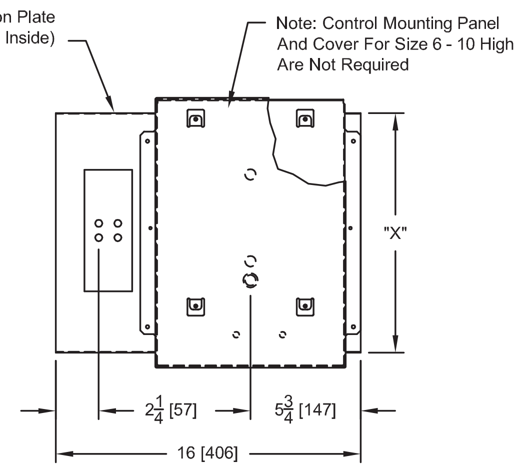
SR-500
SQUARE RETROFIT



PLAN VIEW



FRONT VIEW

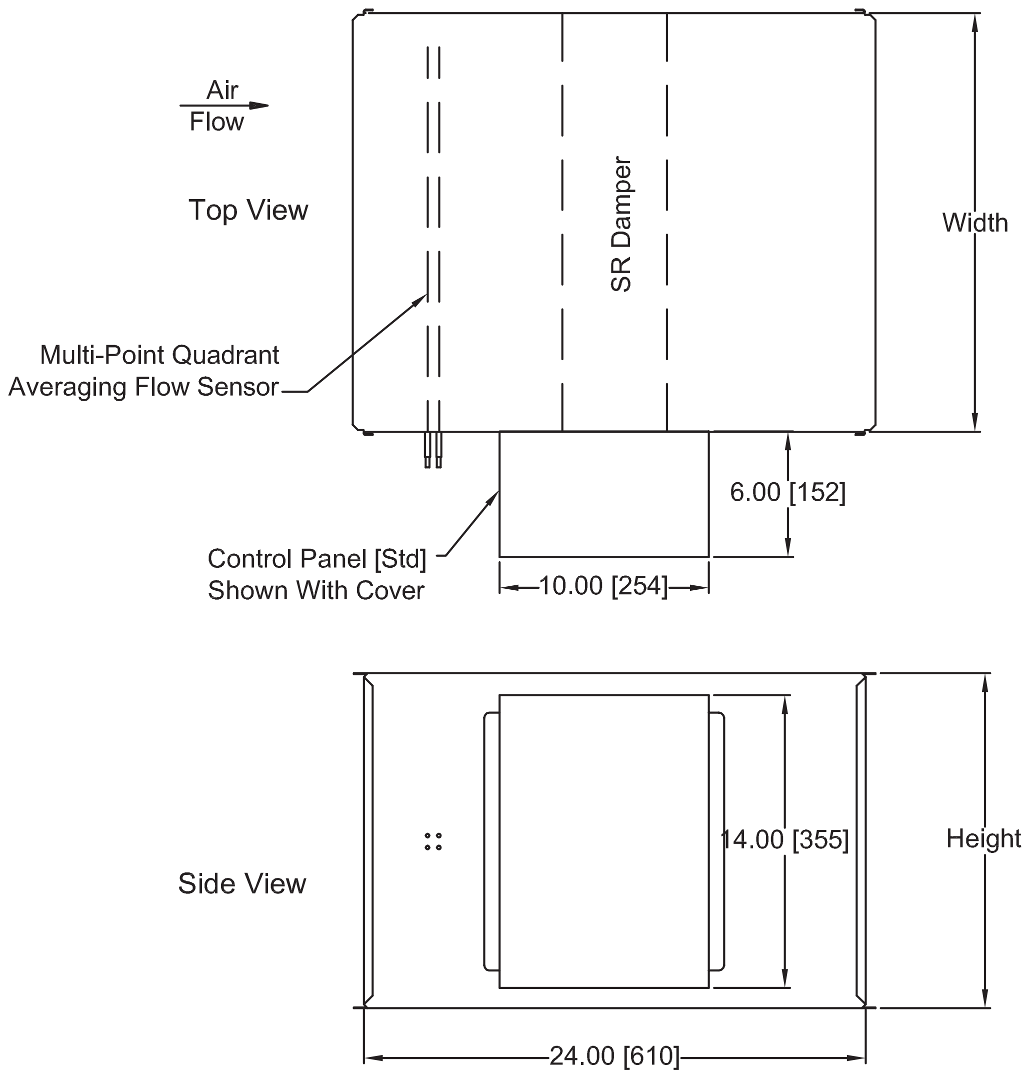


SIDE VIEW

Duct Height "H"		Duct Width "W"	
Min.	Max.	Min.	Max.
6 (152)	24 (610)	10 (254)	36 (914)

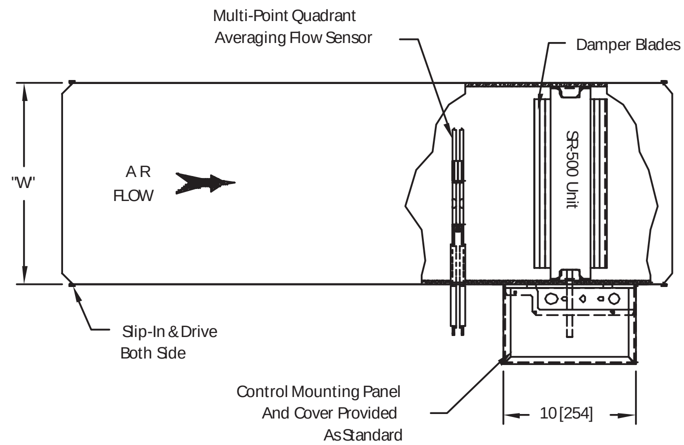
1. *X = Nominal duct height + 1/2 (8" Minimum)*
2. *Installation plate material – 20 ga. steel*
3. *Dampers available in 1" increments between minimum/maximum limits.*
4. *When ordering, specify nominal duct width (W) first, then height (H).*
   Example: Series SR-500 20" x 12" = 20" wide x 12" high unit.

SR-502-D
RECTANGULAR RETROFIT

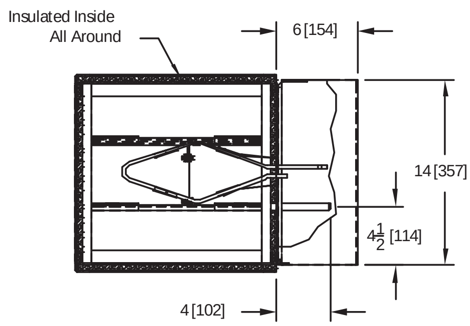


The standard location for control panel is Right Hand on Model SR-502-D.
Looking in the direction of airflow, the control panel is on the right.

SR-502-EX
SQUARE RETROFIT
WITH INLET SOUND ATTENUATOR FOR EXHAUST APPLICATIONS



PLAN VIEW

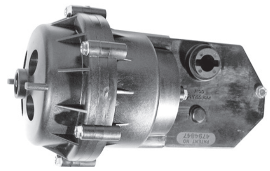


FRONT VIEW

SIDE VIEW

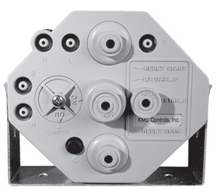
Duct Height "H"		Duct Width "W"	
Min.	Max.	Min.	Max.
6 (152)	24 (610)	10 (254)	36 (914)

SR-500
CONTROL SEQUENCE OFFERINGS



PPD–PNEUMATIC PRESSURE DEPENDENT

- 410 DA / NC Full Closed
- 412 RA / NO Full Open



PPI–PNEUMATIC PRESSURE INDEPENDENT

- 414 DA / NC
- 415 DA / NO
- 416 RA / NC
- 417 RA / NO
- 440 NO

ELECTRONIC–PRESSURE DEPENDENT

- 452 Cooling Only
- 453 Cooling with Reheat
- 456 Static Control
- 457 Actuator Only

ANALOG ELECTRIC

- 460 Cooling Only
- 461 Cooling with Heat
- 464 Night Setback / Morning Warm-up
- 465 Heating / Cooling Changeover
- 473 Static Pressure Control

DIRECT DIGITAL

LON WORKS

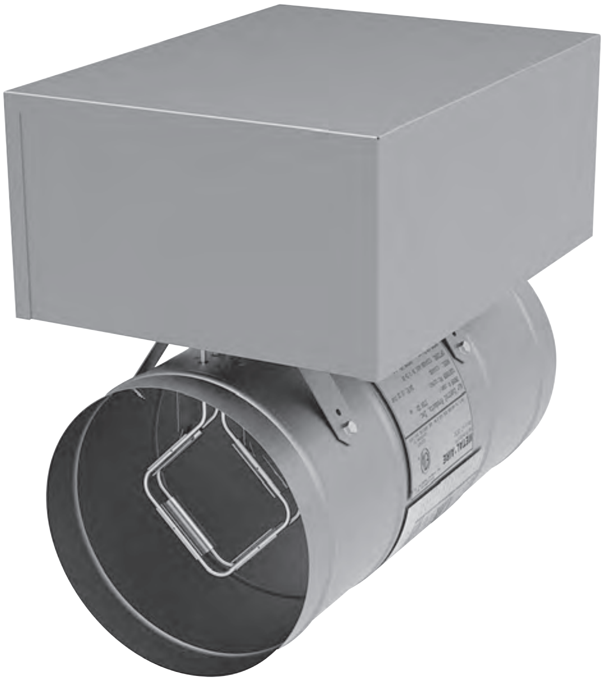
- 490 Cooling Only
- 491 Heating / Cooling Auto Changeover
- 492 Hot Water Reheat

BACnet

- 480 Cooling Only
- 481 Cooling or Heating
- 482 Hot Water Reheat

Refer to Reference Section for complete description.

METALAIRE™



RT-500
ROUND RETROFIT AIR TERMINAL UNIT

SPECIFIABLE FEATURES

- 22 ga. galvanized steel casing, mechanically sealed, low leakage construction.
- Readily installed into existing ductwork with minimal ductwork modifications.
- 3-beaded inlet connection tube for added rigidity and secure flex duct connections.
- Metal inlet flow sensor with extra balancing taps.
- Available with optional factory provided pneumatic, electric, DDC, or electronic controls.
- Externally accessible balancing taps.
- 20 ga. control mounting plate and enclosure are standard.

INDEX OF SECTIONS

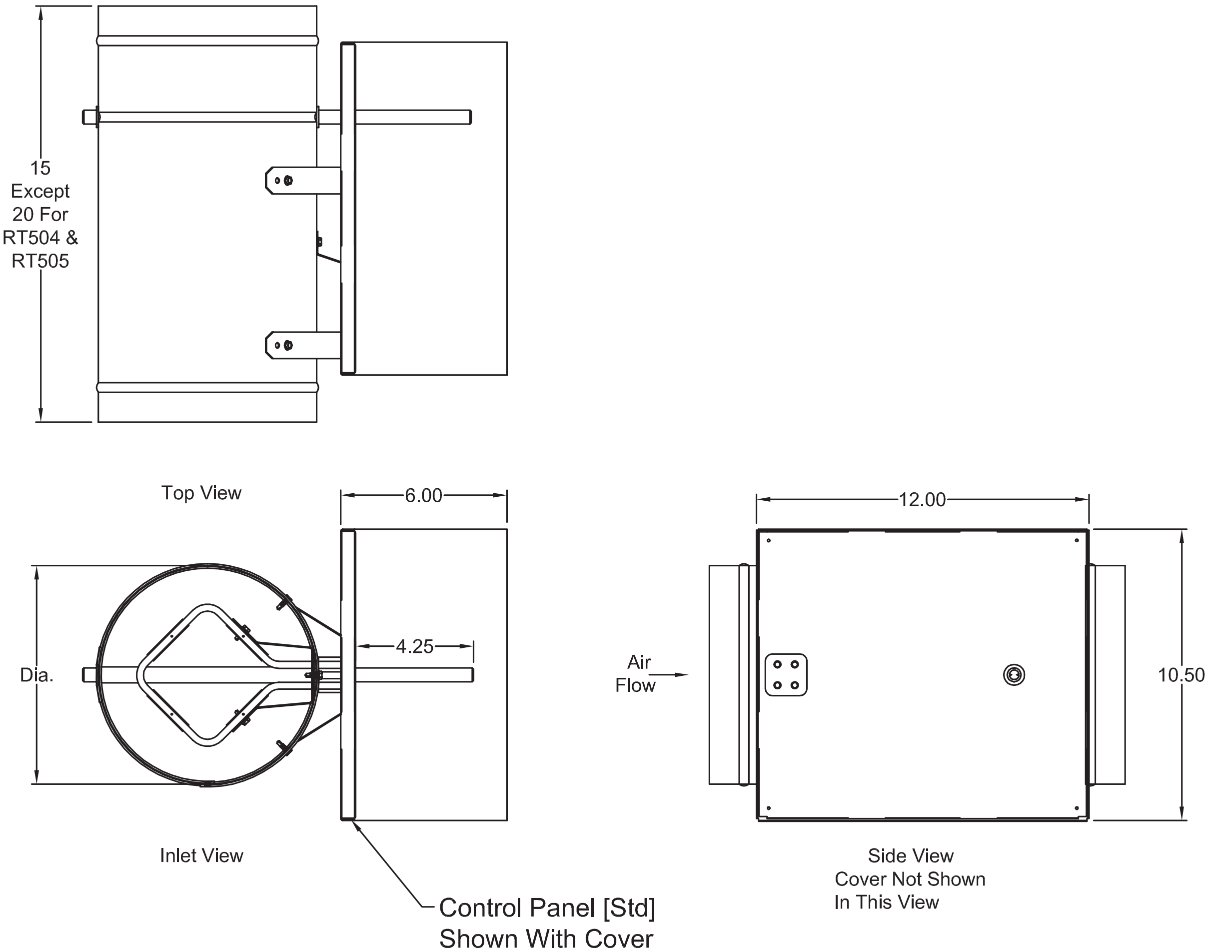
METALAIRE™

RT-500
ROUND RETROFIT AIR TERMINAL UNIT

STANDARD FEATURES

- RT-500 is available in six sizes from 6" to 16" to handle 80 CFM – 4,200 CFM.
- 22 ga. galvanized steel casing, mechanically sealed, low leakage construction.
- Damper constructed of double layer, 18 ga. equivalent, galvanized steel with sandwiched flexible gasket, mechanically fastened to provide tight seal (<1% at 3.0" wg static pressure).
- Optional factory calibrated job-specific controls.
- Multi-quadrant, averaging flow sensor for highly accurate (+/-5%) flow readings with varying inlet duct configurations after certified balancer has balanced terminal.
- Easily accessible, steel balancing taps.
- External control cabinet with offset mounting plate as standard.
- RT-500 has beaded inlet and discharge for added rigidity and aids in secure flex duct connections.

RT-500
ROUND RETROFIT



Model Number	Inlet Diameter	
	In.	mm
RT504	3.88	99
RT505	4.88	124
RT506	5.88	149
RT508	7.88	200
RT510	9.88	251
RT512	11.88	302
RT514	13.88	353

RT504 & RT505 have round 4" and 5" to 6" transitions respectively on the inlet of an RT506 unit with low flow sensors. An optional transition is available for the discharge end.

RT-500
RADIATED SOUND POWER at ΔPS = 0.50, 0.75 and 1.0 in.wg.

Unit Size	CFM (L/s)		Min Ps in.wg. (Pa)		ΔPs = 0.50 in.wg. (125 Pa)							ΔPs = 0.75 in.wg. (187 Pa)							ΔPs = 1.0 in.wg. (500 Pa)						
					Octave Band Sound Power, Lw, dB							Octave Band Sound Power, Lw, dB							Octave Band Sound Power, Lw, dB						
					2	3	4	5	6	7	NC	2	3	4	5	6	7	NC	2	3	4	5	6	7	NC
504/505 4 & 5 inch	50	(24)	0.005	(1)	41	32	19	19	15	7	< 15	42	33	20	20	16	8	< 15	43	34	21	21	17	9	< 15
	100	(47)	0.015	(4)	43	34	23	22	19	13	< 15	44	35	24	23	20	14	< 15	45	36	25	24	21	15	< 15
	150	(71)	0.027	(7)	46	38	29	26	21	16	< 15	47	39	30	27	22	17	< 15	48	40	31	28	23	18	< 15
	200	(94)	0.038	(9)	49	41	35	29	23	18	< 15	50	42	36	30	24	19	< 15	51	43	37	31	25	20	< 15
	250	(118)	0.059	(15)	51	43	39	32	28	26	< 15	52	44	40	33	29	27	< 15	53	45	41	34	30	28	< 15
	300	(142)	0.071	(18)	53	46	43	35	32	30	17	54	47	44	36	33	31	18	55	48	45	37	34	32	19
506 6 inch	100	(47)	0.005	(1.2)	43	34	23	22	19	13	< 15	44	35	24	23	20	14	< 15	45	36	25	24	21	15	< 15
	200	(94)	0.020	(5.0)	49	41	35	29	23	18	< 15	50	42	36	30	24	19	< 15	51	43	37	31	25	20	< 15
	300	(142)	0.045	(11.2)	53	46	43	35	32	30	17	54	47	44	36	33	31	18	55	48	45	37	34	32	19
	400	(189)	0.080	(19.9)	55	50	46	41	38	32	20	56	51	47	42	39	33	21	57	52	48	43	40	34	22
	500	(236)	0.125	(31.1)	57	53	48	44	40	34	22	58	54	49	45	41	35	23	59	55	50	46	42	36	24
	600	(283)	0.180	(44.8)	58	55	50	46	42	36	24	59	56	51	47	43	37	25	60	57	52	48	44	38	26
508 8 inch	200	(94)	0.000	(0.0)	48	36	25	20	17	16	< 15	50	39	30	26	20	19	< 15	51	41	35	30	23	20	< 15
	300	(142)	0.001	(0.2)	51	40	33	25	20	19	< 15	53	43	37	31	24	21	< 15	55	46	42	36	28	24	16
	600	(283)	0.003	(0.7)	54	44	37	33	25	20	< 15	57	48	40	35	28	23	18	59	52	43	38	31	27	21
	700	(330)	0.004	(1.0)	56	46	40	35	27	21	17	58	50	42	37	30	25	20	61	53	45	40	33	28	23
	1000	(472)	0.008	(2.0)	60	52	46	42	34	27	22	62	54	48	44	36	30	25	65	57	50	45	39	33	29
	1100	(519)	0.009	(2.2)	61	53	48	44	37	30	23	63	55	50	45	38	32	26	66	58	51	47	40	35	30
510 10 inch	300	(142)	0.002	(0.5)	43	38	29	20	18	18	< 15	45	40	32	23	19	19	< 15	47	42	36	26	21	20	< 15
	600	(283)	0.009	(2.2)	47	46	37	30	26	22	< 15	50	48	42	33	28	24	15	52	51	46	36	31	25	20
	800	(378)	0.013	(3.2)	48	48	40	34	28	22	15	50	50	43	36	31	24	18	53	53	47	39	33	26	21
	1000	(472)	0.018	(4.5)	49	49	42	36	29	24	16	51	52	45	38	32	26	20	54	54	48	40	34	28	22
	1100	(519)	0.021	(5.2)	51	50	44	38	30	24	18	53	53	46	40	33	27	21	55	55	49	41	35	29	24
	1400	(661)	0.028	(7.0)	55	55	48	42	34	28	24	58	57	49	43	36	30	26	60	58	50	43	37	31	27
	1700	(802)	0.036	(9.0)	57	55	43	39	35	32	24	60	58	49	44	39	34	27	63	61	55	50	42	36	31

1. *Performance data contained within a bold border outline are AHRI certified data.*
2. *Performance data not contained within a bold border outline are application ratings. Application ratings are outside the scope of the Certification Program.*
3. *Performance data is obtained from laboratory testing in accordance with AHRI 880-2011 and ANSI/ASHRAE 130-2008.*
4. *NC values are calculated using attenuation credits outlined in Appendix E of AHRI 885-2008.*
5. ***Discharge Sound power levels shown with End Reflection Corrections Included** in dB (ref: 10^{-12} watts).*
6. *Minimum Ps is the static pressure drop across the air terminal unit while the inlet damper is in the wide-open position at a given airflow rate.*

RT-500
RADIATED SOUND POWER at ΔPS = 0.50, 0.75 and 1.0 in.wg. continued

Unit Size	CFM (L/s)		Min Ps in.wg. (Pa)		ΔPs = 0.50 in.wg. (125 Pa)							ΔPs = 0.75 in.wg. (187 Pa)							ΔPs = 1.0 in.wg. (500 Pa)						
					Octave Band Sound Power, Lw, dB						NC	Octave Band Sound Power, Lw, dB						NC	Octave Band Sound Power, Lw, dB						NC
					2	3	4	5	6	7		2	3	4	5	6	7		2	3	4	5	6	7	
512 12 inch	430	(203)	0.000	(0.1)	46	37	29	22	19	20	< 15	49	39	32	25	21	21	< 15	51	41	36	28	23	23	< 15
	800	(378)	0.001	(0.2)	50	42	35	28	26	29	< 15	52	45	40	32	29	31	< 15	54	48	45	36	32	32	19
	1450	(684)	0.008	(2.0)	52	47	43	36	31	31	17	55	49	47	39	34	33	21	57	52	50	41	37	36	24
	1600	(755)	0.010	(2.5)	54	48	46	39	33	32	20	56	50	48	40	35	35	22	58	53	51	42	38	37	25
	1950	(920)	0.015	(3.7)	55	51	50	42	37	36	24	57	53	51	43	39	37	25	59	54	52	44	41	39	26
	2200	(1038)	0.022	(5.5)	56	52	51	43	39	37	25	58	53	52	44	40	39	26	61	55	53	45	42	40	27
	2500	(1180)	0.025	(6.2)	57	52	44	36	38	38	20	59	55	50	42	41	41	24	62	58	56	48	45	43	31
514 14 inch	550	(260)	0.000	(0.0)	52	38	36	28	25	20	< 15	53	39	37	29	26	21	< 15	54	40	38	30	27	22	< 15
	925	(437)	0.000	(0.1)	53	41	39	31	27	22	< 15	54	42	40	32	28	23	< 15	55	43	41	33	29	24	16
	1600	(755)	0.001	(0.2)	56	46	44	35	31	26	18	57	47	45	36	32	27	19	58	48	46	37	33	28	20
	1900	(897)	0.001	(0.2)	57	50	49	39	33	28	23	58	51	50	40	34	29	24	59	52	51	41	35	30	25
	2100	(991)	0.001	(0.3)	59	54	51	42	36	31	25	60	55	52	43	37	32	26	61	56	53	44	38	33	27
	2600	(1227)	0.002	(0.4)	62	56	54	43	40	36	29	63	57	55	44	41	37	30	64	58	56	45	42	38	31
	3250	(1534)	0.003	(0.7)	64	60	57	46	44	40	32	65	61	58	47	45	41	33	66	62	59	48	46	42	34
516 16 inch	750	(354)	0.001	(0.4)	54	39	30	24	19	17	< 15	54	41	33	28	21	19	< 15	55	43	35	30	24	20	16
	1100	(519)	0.006	(1.5)	56	45	36	29	24	20	17	56	47	39	32	26	22	17	57	49	41	34	29	24	18
	1500	(708)	0.010	(2.6)	58	51	41	35	31	26	20	58	53	44	38	33	28	21	59	55	46	40	36	30	24
	2400	(1133)	0.023	(5.7)	60	53	44	40	37	33	22	60	55	47	42	38	34	24	60	57	49	43	40	35	26
	2800	(1321)	0.030	(7.5)	61	54	47	42	39	35	23	61	56	49	44	40	36	25	62	58	51	45	42	37	27
	3600	(1699)	0.045	(11.1)	62	57	52	46	42	39	26	63	59	53	48	43	40	28	64	60	55	49	44	41	30
	4400	(2076)	0.060	(15.0)	65	61	57	50	46	43	32	66	62	58	51	47	44	33	67	63	58	52	48	45	33

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5. ***Discharge Sound power levels shown with End Reflection Corrections Included** in dB (ref: 10^{-12} watts).*
6. *Minimum Ps is the static pressure drop across the air terminal unit while the inlet damper is in the wide-open position at a given airflow rate.*

RT-500
RADIATED SOUND POWER at ΔPS = 1.50, 2.0 and 3.0 in.wg.

Unit Size	CFM (L/s)		Min Ps in.wg. (Pa)		ΔPs = 1.5 in.wg. (375 Pa)							ΔPs = 2.0 in.wg. (500 Pa)							ΔPs = 3.0 in.wg. (750 Pa)						
					Octave Band Sound Power, Lw, dB							Octave Band Sound Power, Lw, dB							Octave Band Sound Power, Lw, dB						
					2	3	4	5	6	7	NC	2	3	4	5	6	7	NC	2	3	4	5	6	7	NC
504/505 4 & 5 inch	50	(24)	0.005	(1)	44	35	22	22	18	11	< 15	44	36	23	22	19	13	< 15	45	38	25	24	23	18	< 15
	100	(47)	0.015	(4)	46	37	26	25	22	17	< 15	46	38	27	25	23	19	< 15	47	40	29	27	27	24	< 15
	150	(71)	0.027	(7)	49	41	32	29	24	20	< 15	49	42	33	29	25	22	< 15	50	44	35	31	29	27	< 15
	200	(94)	0.038	(9)	52	44	38	32	26	22	< 15	52	45	39	32	27	24	< 15	53	47	41	34	31	29	< 15
	250	(118)	0.059	(15)	54	46	42	35	31	30	15	54	47	43	35	32	32	17	55	49	45	37	36	37	19
	300	(142)	0.071	(18)	56	49	46	38	35	34	20	56	50	47	38	36	36	21	57	52	49	40	40	41	23
506 6 inch	100	(47)	0.005	(1.2)	46	37	26	25	22	17	< 15	46	38	27	25	23	19	< 15	47	40	29	27	27	24	< 15
	200	(94)	0.020	(5.0)	52	44	38	32	26	22	< 15	52	45	39	32	27	24	< 15	53	47	41	34	31	29	< 15
	300	(142)	0.045	(11.2)	56	49	46	38	35	34	20	56	50	47	38	36	36	21	57	52	49	40	40	41	23
	400	(189)	0.080	(19.9)	58	53	49	44	41	36	23	58	54	50	44	42	38	24	59	56	52	46	46	43	26
	500	(236)	0.125	(31.1)	60	56	51	47	43	38	25	61	57	52	47	44	40	26	61	59	54	49	48	45	29
	600	(283)	0.180	(44.8)	61	58	53	49	45	40	27	62	59	54	49	46	42	29	62	61	56	51	50	47	31
508 8 inch	200	(94)	0.000	(0.0)	52	42	37	33	26	22	< 15	52	43	38	35	29	23	< 15	53	45	39	36	32	27	< 15
	300	(142)	0.001	(0.2)	55	46	43	38	32	29	17	55	46	43	40	35	33	17	56	47	45	42	40	38	19
	600	(283)	0.003	(0.7)	60	55	47	42	35	32	24	61	57	51	45	39	36	26	61	59	54	49	43	41	29
	700	(330)	0.004	(1.0)	62	57	49	44	37	33	26	63	60	53	47	40	37	29	64	61	56	51	44	41	31
	1000	(472)	0.008	(2.0)	67	60	53	48	42	36	31	68	63	56	50	44	39	33	70	66	60	54	47	42	37
	1100	(519)	0.009	(2.2)	68	61	54	50	43	38	32	69	64	57	52	45	40	34	71	67	61	56	49	44	38
510 10 inch	300	(142)	0.002	(0.5)	50	46	40	30	25	24	< 15	54	45	40	32	26	22	< 15	56	47	42	35	29	26	17
	600	(283)	0.009	(2.2)	55	55	50	40	35	29	24	59	55	49	43	39	35	24	60	56	50	45	42	40	25
	800	(378)	0.013	(3.2)	56	57	51	43	37	30	26	61	60	53	46	42	38	29	63	62	56	49	45	42	32
	1000	(472)	0.018	(4.5)	57	58	52	44	38	32	27	62	63	56	49	44	40	33	64	67	60	52	47	45	38
	1100	(519)	0.021	(5.2)	58	58	52	44	38	32	27	63	64	57	50	45	41	34	65	68	61	53	48	47	39
	1400	(661)	0.028	(7.0)	63	62	54	47	41	35	32	70	66	58	52	47	44	37	71	70	63	56	50	49	41
	1700	(802)	0.036	(9.0)	66	65	59	54	46	40	35	72	67	60	55	50	48	38	73	72	64	58	53	51	44

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RT-500
RADIATED SOUND POWER at ΔPS = 1.50, 2.0 and 3.0 in.wg. continued

Unit Size	CFM	(L/s)	Min Ps in.wg.	(Pa)	ΔPs = 1.5 in.wg. (375 Pa) Octave Band Sound Power, Lw, dB 2	3	4	5	6	7	NC	ΔPs = 2.0 in.wg. (500 Pa) Octave Band Sound Power, Lw, dB 2	3	4	5	6	7	NC	ΔPs = 3.0 in.wg. (750 Pa) Octave Band Sound Power, Lw, dB 2	3	4	5	6	7	NC
512 12 inch	430	(203)	0.000	(0.1)	54	45	40	31	26	26	< 15	55	47	41	34	29	28	16	56	47	44	38	34	33	18
	800	(378)	0.001	(0.2)	57	51	49	40	35	35	23	58	54	53	45	40	41	27	58	56	56	50	46	47	31
	1450	(684)	0.008	(2.0)	60	55	53	44	40	39	27	62	60	58	49	44	43	33	63	64	63	55	49	48	38
	1600	(755)	0.010	(2.5)	61	56	54	45	41	40	29	63	60	58	49	44	44	33	65	65	63	55	49	48	38
	1950	(920)	0.015	(3.7)	62	58	56	47	44	42	31	64	62	60	51	47	45	35	66	67	64	56	50	49	39
	2200	(1038)	0.022	(5.5)	64	59	57	49	45	44	32	66	62	60	52	48	47	35	68	66	64	56	51	50	39
	2500	(1180)	0.025	(6.2)	65	61	59	51	48	46	34	67	65	63	55	51	49	38	69	68	67	60	54	51	43
514 14 inch	550	(260)	0.000	(0.0)	55	41	39	31	28	23	16	55	41	39	31	28	23	16	56	42	40	32	29	24	17
	925	(437)	0.000	(0.1)	56	43	41	33	30	24	17	56	44	42	34	30	25	17	57	45	43	35	31	26	18
	1600	(755)	0.001	(0.2)	58	49	46	38	33	28	20	59	49	47	38	34	29	21	60	50	48	39	35	30	22
	1900	(897)	0.001	(0.2)	60	53	52	41	36	31	26	60	53	52	42	36	31	26	61	54	53	43	37	32	27
	2100	(991)	0.001	(0.3)	62	57	54	45	39	34	29	62	57	54	45	39	34	29	63	58	55	46	40	35	30
	2600	(1227)	0.002	(0.4)	65	59	57	46	43	39	32	65	59	57	46	43	39	32	66	60	58	47	44	40	33
	3250	(1534)	0.003	(0.7)	67	63	60	49	47	43	35	67	63	60	49	47	43	35	68	64	61	50	48	44	36
516 16 inch	750	(354)	0.001	(0.4)	56	45	39	33	28	23	17	57	47	42	36	31	26	18	59	51	47	40	36	30	21
	1100	(519)	0.006	(1.5)	58	51	45	39	34	28	20	59	53	49	44	38	32	23	61	56	51	49	40	35	25
	1500	(708)	0.010	(2.6)	60	57	51	45	41	36	26	61	59	55	50	45	42	30	63	61	57	53	49	47	32
	2400	(1133)	0.023	(5.7)	63	61	55	49	46	42	31	65	65	60	54	51	48	35	68	67	64	60	58	56	39
	2800	(1321)	0.030	(7.5)	64	62	56	50	47	44	32	67	66	61	56	53	50	37	69	69	65	62	61	59	41
	3600	(1699)	0.045	(11.1)	67	64	59	54	50	47	34	69	67	63	58	56	53	38	71	70	67	64	63	62	43
	4400	(2076)	0.060	(15.0)	69	66	62	56	54	51	37	71	69	65	60	59	56	41	73	72	69	66	65	64	45

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RT-500
DISCHARGE SOUND POWER at ΔPS = 0.50, 0.75 and 1.0 in.wg.

Unit Size	CFM (L/s)		Min Ps in.wg. (Pa)		ΔPs = 0.50 in.wg. (125 Pa)							ΔPs = 0.75 in.wg. (187 Pa)							ΔPs = 1.0 in.wg. (500 Pa)						
					Octave Band Sound Power, Lw, dB							Octave Band Sound Power, Lw, dB							Octave Band Sound Power, Lw, dB						
					2	3	4	5	6	7	NC	2	3	4	5	6	7	NC	2	3	4	5	6	7	NC
504/505 4 & 5 inch	50	(24)	0.005	(1)	67	57	40	37	33	26	23	69	61	46	41	37	33	26	70	63	57	51	41	33	27
	100	(47)	0.015	(4)	69	58	42	39	34	28	26	70	62	48	42	38	34	27	71	64	58	51	42	36	29
	150	(71)	0.027	(7)	71	59	44	41	35	30	29	72	63	49	44	39	35	30	72	65	59	52	44	38	30
	200	(94)	0.038	(9)	72	60	45	43	36	31	30	73	64	50	46	40	36	31	73	66	59	53	46	39	31
	250	(118)	0.059	(15)	74	61	48	44	38	33	32	75	66	52	47	41	37	34	74	67	60	53	47	42	32
	300	(142)	0.071	(18)	76	63	50	47	39	35	31	76	67	54	49	42	38	31	74	69	62	54	48	45	29
506 6 inch	100	(47)	0.005	(1.2)	65	55	40	38	33	28	21	66	59	46	41	37	34	22	67	61	56	50	41	36	23
	200	(94)	0.020	(5.0)	68	57	43	42	35	31	25	69	61	48	45	39	36	26	69	63	57	52	45	39	26
	300	(142)	0.045	(11.2)	72	60	48	46	38	35	26	72	64	52	48	41	38	26	70	66	60	53	47	45	25
	400	(189)	0.080	(19.9)	73	65	53	51	42	40	27	75	68	56	53	45	42	30	71	67	61	54	48	49	26
	500	(236)	0.125	(31.1)	74	68	58	55	47	44	29	76	71	60	57	48	45	31	74	71	65	59	53	52	31
	600	(283)	0.180	(44.8)	76	72	62	59	51	48	32	78	74	64	60	52	49	34	75	73	67	63	56	53	33
508 8 inch	200	(94)	0.000	(0.0)	65	55	47	41	34	30	21	66	58	51	44	37	34	22	69	62	56	50	44	42	26
	300	(142)	0.001	(0.2)	67	59	49	44	38	33	20	68	62	53	47	41	37	21	71	66	59	54	49	45	25
	600	(283)	0.003	(0.7)	72	65	55	52	43	39	26	74	67	57	54	46	42	29	76	71	62	59	53	48	31
	700	(330)	0.004	(1.0)	74	67	57	55	45	40	29	75	69	59	56	48	43	30	77	72	64	61	59	56	32
	1000	(472)	0.008	(2.0)	78	72	63	61	52	47	31	80	73	65	64	54	49	34	82	76	68	66	58	53	36
	1100	(519)	0.009	(2.2)	79	73	65	63	56	50	32	81	74	67	65	56	51	35	83	77	70	68	60	54	38
510 10 inch	300	(142)	0.002	(0.5)	61	57	46	43	36	31	< 15	62	60	50	46	39	35	18	65	64	55	52	46	43	22
	600	(283)	0.009	(2.2)	65	61	50	46	38	36	19	67	64	52	49	42	39	22	70	67	58	54	49	46	26
	800	(378)	0.013	(3.2)	68	64	53	49	41	39	21	70	66	55	51	44	42	24	72	70	60	56	51	48	28
	1000	(472)	0.018	(4.5)	71	65	55	52	41	36	22	72	67	57	53	44	39	25	74	70	62	58	55	52	28
	1100	(519)	0.021	(5.2)	71	66	57	53	45	43	24	73	68	59	55	48	45	26	75	71	63	58	53	51	29
	1400	(661)	0.028	(7.0)	75	72	62	59	52	50	31	77	73	64	62	54	52	32	79	76	67	64	58	56	35
	1700	(802)	0.036	(9.0)	79	76	65	64	59	55	35	81	77	67	66	59	56	37	83	80	70	69	63	59	40

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RT-500
DISCHARGE SOUND POWER at ΔPS = 0.50, 0.75 and 1.0 in.wg. continued

Unit Size	CFM	(L/s)	Min Ps in.wg.	(Pa)	ΔPs = 0.50 in.wg. (125 Pa) Octave Band Sound Power, Lw, dB 2	3	4	5	6	7	NC	ΔPs = 0.75 in.wg. (187 Pa) Octave Band Sound Power, Lw, dB 2	3	4	5	6	7	NC	ΔPs = 1.0 in.wg. (500 Pa) Octave Band Sound Power, Lw, dB 2	3	4	5	6	7	NC
512 12 inch	430	(203)	0.000	(0.1)	60	48	45	41	33	33	< 15	62	51	48	44	38	39	< 15	65	56	52	50	46	45	17
	800	(378)	0.001	(0.2)	61	54	46	43	39	33	< 15	63	58	50	47	43	40	< 15	67	64	57	55	52	49	21
	1450	(684)	0.008	(2.0)	64	59	52	48	45	42	15	66	62	56	52	50	48	19	70	67	62	59	58	56	25
	1600	(755)	0.010	(2.5)	66	62	53	50	47	45	19	67	64	57	53	52	50	21	71	68	63	60	59	57	26
	1950	(920)	0.015	(3.7)	68	66	59	56	54	53	24	70	67	60	57	57	56	25	73	70	64	62	62	60	28
	2200	(1038)	0.022	(5.5)	70	65	63	61	61	57	22	72	66	63	62	62	59	24	75	71	66	64	64	62	29
	2500	(1180)	0.025	(6.2)	73	66	64	60	59	59	25	75	67	65	63	62	61	27	77	72	68	66	66	64	31
514 14 inch	550	(260)	0.000	(0.0)	63	52	46	41	32	30	< 15	64	53	48	43	35	32	16	57	55	51	46	37	39	< 15
	925	(437)	0.000	(0.1)	68	57	52	46	40	39	18	69	58	53	48	43	41	20	63	60	55	51	48	45	16
	1600	(755)	0.001	(0.2)	75	70	65	61	57	50	28	75	70	65	61	58	52	28	67	65	66	59	55	49	22
	1900	(897)	0.001	(0.2)	75	70	67	62	59	53	28	75	71	67	63	59	54	29	69	67	68	61	57	51	25
	2100	(991)	0.001	(0.3)	76	71	68	63	60	54	29	76	72	68	64	60	55	31	70	69	73	63	58	53	27
	2600	(1227)	0.002	(0.4)	77	75	69	65	61	57	34	78	75	69	66	61	57	34	76	75	76	67	63	57	34
	3250	(1534)	0.003	(0.7)	82	77	74	70	64	62	37	82	77	74	71	65	64	37	84	79	79	73	68	62	39
516 16 inch	750	(354)	0.001	(0.4)	65	60	54	52	46	42	16	66	61	55	53	48	44	18	68	63	58	55	51	47	20
	1100	(519)	0.006	(1.5)	67	64	59	54	48	43	21	68	66	60	55	50	45	24	70	68	64	59	55	50	26
	1500	(708)	0.010	(2.6)	71	68	62	55	49	44	26	72	70	65	58	52	46	28	74	74	70	66	59	54	33
	2400	(1133)	0.023	(5.7)	77	73	66	60	55	51	32	77	74	68	62	56	52	33	79	77	72	67	62	57	37
	2800	(1321)	0.030	(7.5)	78	74	68	62	57	53	33	78	75	69	63	58	54	34	80	78	73	68	63	58	38
	3600	(1699)	0.045	(11.1)	78	75	71	64	59	56	34	79	75	72	65	60	56	34	81	78	74	69	64	60	38
	4400	(2076)	0.060	(15.0)	81	77	75	68	62	59	37	81	77	76	69	63	60	37	84	80	77	73	68	64	40

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RT-500
DISCHARGE SOUND POWER at ΔPS = 1.50, 2.0 and 3.0 in.wg.

Unit Size	CFM (L/s)		Min Ps in.wg. (Pa)		ΔPs = 1.5 in.wg. (375 Pa)							ΔPs = 2.0 in.wg. (500 Pa)							ΔPs = 3.0 in.wg. (750 Pa)						
					Octave Band Sound Power, Lw, dB							Octave Band Sound Power, Lw, dB							Octave Band Sound Power, Lw, dB						
					2	3	4	5	6	7	NC	2	3	4	5	6	7	NC	2	3	4	5	6	7	NC
504/505 4 & 5 inch	50	(24)	0.005	(1)	71	64	56	51	42	33	29	71	64	56	51	42	33	29	73	66	55	53	44	35	31
	100	(47)	0.015	(4)	72	65	58	51	43	36	30	72	65	58	51	43	36	30	74	67	58	53	45	38	32
	150	(71)	0.027	(7)	73	66	59	52	45	38	31	73	66	59	52	45	38	31	75	68	59	54	47	40	34
	200	(94)	0.038	(9)	74	67	59	53	47	39	32	74	67	59	53	47	39	32	76	69	59	55	49	41	35
	250	(118)	0.059	(15)	75	68	61	53	48	42	34	75	68	61	53	48	42	34	77	70	63	55	50	44	36
	300	(142)	0.071	(18)	75	70	63	54	49	45	30	75	70	63	54	49	45	30	77	72	65	56	51	47	32
506 6 inch	100	(47)	0.005	(1.2)	68	62	56	50	42	36	25	68	62	56	50	42	36	25	70	64	56	52	44	38	27
	200	(94)	0.020	(5.0)	70	64	57	52	46	39	27	70	64	57	52	46	39	27	72	66	57	54	48	41	30
	300	(142)	0.045	(11.2)	71	67	61	53	48	45	26	71	67	61	53	48	45	26	73	69	63	55	50	47	28
	400	(189)	0.080	(19.9)	72	68	62	54	49	49	27	72	68	62	54	49	49	27	74	70	64	56	51	51	29
	500	(236)	0.125	(31.1)	75	72	66	59	54	52	32	75	72	66	59	54	52	32	77	74	68	61	56	54	34
	600	(283)	0.180	(44.8)	76	74	68	63	57	53	34	76	74	68	63	57	53	34	78	76	70	65	59	55	37
508 8 inch	200	(94)	0.000	(0.0)	69	62	57	51	46	44	26	69	62	57	51	46	44	26	71	64	58	53	48	47	29
	300	(142)	0.001	(0.2)	71	66	61	56	53	48	25	71	66	61	56	53	48	25	73	67	62	57	57	52	27
	600	(283)	0.003	(0.7)	77	71	65	61	56	51	32	77	71	65	61	56	51	32	79	73	67	63	59	54	35
	700	(330)	0.004	(1.0)	78	73	66	62	59	56	34	78	73	66	62	59	56	34	80	75	68	64	61	57	36
	1000	(472)	0.008	(2.0)	83	77	70	67	60	54	38	83	77	70	67	60	54	38	85	78	72	68	63	57	40
	1100	(519)	0.009	(2.2)	84	78	72	69	61	55	39	84	78	72	69	61	55	39	86	80	73	70	63	59	41
510 10 inch	300	(142)	0.002	(0.5)	65	64	56	53	48	45	22	65	64	56	53	48	45	22	67	66	57	55	50	48	25
	600	(283)	0.009	(2.2)	71	68	61	57	52	49	27	71	68	61	57	52	49	27	73	70	63	59	55	53	29
	800	(378)	0.013	(3.2)	73	70	63	58	54	51	28	73	70	63	58	54	51	28	75	72	65	61	57	54	31
	1000	(472)	0.018	(4.5)	75	71	64	59	55	52	29	75	71	64	59	55	52	29	77	73	66	61	57	53	32
	1100	(519)	0.021	(5.2)	76	72	65	60	56	53	31	76	72	65	60	56	53	31	77	74	68	62	59	55	33
	1400	(661)	0.028	(7.0)	80	77	69	65	60	57	37	80	77	69	65	60	57	37	82	78	71	66	63	60	38
	1700	(802)	0.036	(9.0)	84	81	72	70	64	60	41	84	81	72	70	64	60	41	86	83	74	71	66	64	44

1. *Performance data contained within a bold border outline are AHRI certified data.*
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3. *Performance data is obtained from laboratory testing in accordance with AHRI 880-2011 and ANSI/ASHRAE 130-2008.*
4. *NC values are calculated using attenuation credits outlined in Appendix E of AHRI 885-2008.*
5. ***Discharge Sound power levels shown with End Reflection Corrections Included** in dB (ref: 10^{-12} watts).*
6. *Minimum Ps is the static pressure drop across the air terminal unit while the inlet damper is in the wide-open position at a given airflow rate.*

RT-500
DISCHARGE SOUND POWER at ΔPS = 1.50, 2.0 and 3.0 in.wg. continued

Unit Size	CFM (L/s)		Min Ps in.wg. (Pa)		ΔPs = 1.5 in.wg. (375 Pa)							ΔPs = 2.0 in.wg. (500 Pa)							ΔPs = 3.0 in.wg. (750 Pa)						
					Octave Band Sound Power, Lw, dB							Octave Band Sound Power, Lw, dB							Octave Band Sound Power, Lw, dB						
					2	3	4	5	6	7	NC	2	3	4	5	6	7	NC	2	3	4	5	6	7	NC
512 12 inch	430	(203)	0.000	(0.1)	67	58	54	54	51	50	20	67	58	54	54	51	50	20	69	59	56	56	56	54	22
	800	(378)	0.001	(0.2)	69	66	60	59	58	55	24	69	66	60	59	58	55	24	70	67	61	62	63	60	25
	1450	(684)	0.008	(2.0)	73	70	66	63	62	60	28	73	70	66	63	62	60	28	74	72	69	68	66	64	31
	1600	(755)	0.010	(2.5)	74	71	67	64	63	61	29	74	71	67	64	63	61	29	75	73	70	69	67	65	32
	1950	(920)	0.015	(3.7)	76	72	67	65	64	63	31	76	72	67	65	64	63	31	78	74	71	70	68	66	33
	2200	(1038)	0.022	(5.5)	77	73	68	66	66	64	32	77	73	68	66	66	64	32	79	75	71	71	69	67	34
	2500	(1180)	0.025	(6.2)	79	74	70	67	67	66	33	79	74	70	67	67	66	33	80	76	72	73	70	68	35
514 14 inch	550	(260)	0.000	(0.0)	57	55	52	47	38	40	< 15	57	55	52	47	38	40	< 15	58	57	55	53	39	43	< 15
	925	(437)	0.000	(0.1)	63	60	56	52	49	46	16	63	60	56	52	49	46	16	64	62	59	58	50	49	19
	1600	(755)	0.001	(0.2)	67	65	67	60	56	50	22	67	65	67	60	56	50	22	68	67	70	66	57	53	25
	1900	(897)	0.001	(0.2)	69	67	69	62	58	52	25	69	67	69	62	58	52	25	70	69	72	68	59	55	27
	2100	(991)	0.001	(0.3)	70	69	74	64	59	54	27	70	69	74	64	59	54	27	71	71	77	70	60	57	31
	2600	(1227)	0.002	(0.4)	76	75	77	68	64	58	34	76	75	77	68	64	58	34	77	77	80	74	65	61	37
	3250	(1534)	0.003	(0.7)	84	79	80	74	69	63	39	84	79	80	74	69	63	39	85	81	83	80	70	66	41
516 16 inch	750	(354)	0.001	(0.4)	69	64	59	56	52	48	21	69	64	59	56	52	48	21	70	65	61	58	53	50	22
	1100	(519)	0.006	(1.5)	71	69	66	61	58	52	27	71	69	66	61	58	52	27	72	70	67	63	60	55	28
	1500	(708)	0.010	(2.6)	75	76	71	70	64	58	35	75	76	71	70	64	58	35	75	77	74	72	69	63	37
	2400	(1133)	0.023	(5.7)	80	78	74	71	65	60	38	80	78	74	71	65	60	38	82	80	76	76	70	65	40
	2800	(1321)	0.030	(7.5)	81	79	75	71	66	61	39	81	79	75	71	66	61	39	83	81	77	76	71	65	41
	3600	(1699)	0.045	(11.1)	82	80	76	72	67	63	40	82	80	76	72	67	63	40	84	82	79	76	72	66	42
	4400	(2076)	0.060	(15.0)	85	81	78	76	70	66	41	85	81	78	76	70	66	41	86	84	81	78	74	69	45

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4. *NC values are calculated using attenuation credits outlined in Appendix E of AHRI 885-2008.*
5. ***Discharge Sound power levels shown with End Reflection Corrections Included** in dB (ref: 10^{-12} watts).*
6. *Minimum Ps is the static pressure drop across the air terminal unit while the inlet damper is in the wide-open position at a given airflow rate.*

RT-500
CONTROL SEQUENCE OFFERINGS

PPD–PNEUMATIC PRESSURE DEPENDENT

- 610 DA/NC Full Closed
- 612 RA/NO Full Open

PPI–PNEUMATIC PRESSURE INDEPENDENT

- 614 DA/NC
- 615 DA/NO
- 616 RA/NC
- 617 RA/NO
- 640 NO

ELECTRONIC–PRESSURE DEPENDENT

- 652 Cooling Only
- 653 Cooling with Reheat
- 656 Static Control
- 657 Actuator Only

ANALOG ELECTRIC

- 660 Cooling Only
- 664 Night Setback / Morning Warm-up
- 665 Heating / Cooling Changeover
- 673 Static Pressure Control

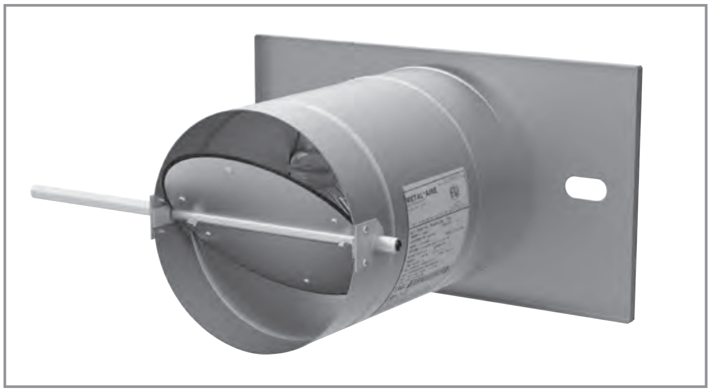
Refer to Reference Section for complete description.

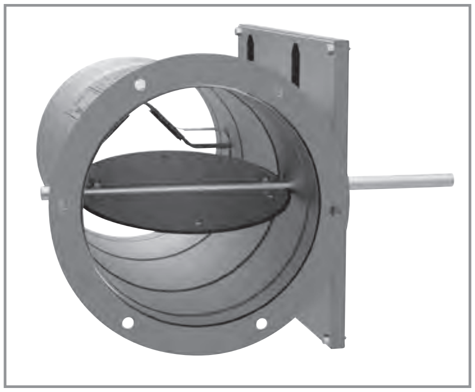
METALAIRE™

RA-500
RETROFIT AIR TERMINAL UNIT

SPECIFIABLE FEATURES

- Customized retrofit valves for existing single or dual duct systems
- Optional flow controllers available on satellite mounted panels
- Pneumatic or electronic control sequences available
- Metal inlet flow sensor with extra balancing taps



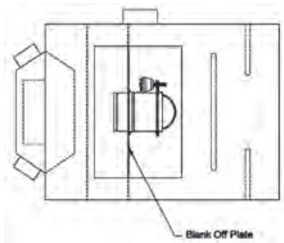


RA-500
RETROFIT
AIR TERMINAL UNITS

Series RA-500 retrofit assemblies are customized retrofit valves designed to slip into existing mechanically regulated single or dual duct terminals. The units allow the conversion of constant volume systems to more energy efficient, variable volume systems. RA-500 assemblies are currently available to fit most brands of terminals manufactured from the 1960s to the 1980s. The RA-500 valves can be installed, in most applications, without disrupting existing ductwork. Units are installed by removing existing volume regulators and inserting the RA valve. One or two valves in a single panel may be controlled by a single actuator.

METALAIRE™

RA-500
TECHNICAL DATA

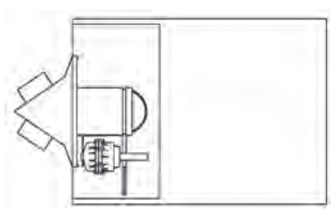


Titus® HD,TDH,TDL,TSH, LD, HS Series

Replace all mechanical regulators with combination of flanged retrofit assembly(ies) and blank off plate(s) through bottom access panel. One actuator per valve, field or factory mounts on valve body. Flow controller panel is mounted in the field on outside of HD air terminal casing.

TITUS®

The Titus® Series of single and dual duct mechanical air terminals may have as many as ten mechanical regulators. They were originally manufactured in a variety of sizes to deliver from 50 to 3120 CFM. Retrofitting these air terminals requires the removal of all mechanical regulators. The regulators are replaced with up to 4 METALAIRE RA retrofit valves to achieve the desired CFM. The remaining holes left as a result of removing the mechanical regulators are covered with blank-off plates. Retrofit is achieved through a bottom access panel. Control submittal 590 illustrates the METALAIRE Retrofit Assembly for Titus® Series air terminals. A chart detailing the number of nominal 8 retrofit valves and blank-off plates required to retrofit each size air terminal is presented on the submittal. Each valve is furnished with a multi-point air flow sensor. Order RA Assembly 590A for sizes 4 thru 7. Order 590B for larger sizes in multiples depending on CFM desired. Blank-off plates can be field fabricated, or ordered as 590X.

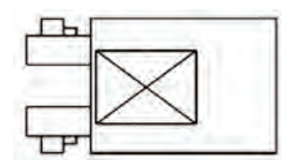


Tuttle & Bailey® MVC Series

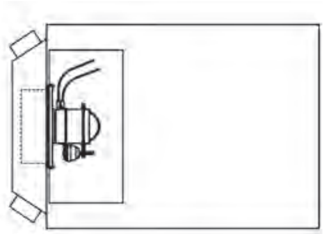
Replace mechanical regulator(s) with panel mounted single round retrofit valve through bottom access panel. A divider panel, if present, must be cut to provide clearance for the new valve. One actuator per valve, field or factory mounted on valve body. Flow Controller panel mounted on MVC air terminal casing in the field.

TUTTLE & BAILEY®

Tuttle & Bailey® Series MPM-MVC mechanical air terminals require a single METALAIRE RA retrofit valve per air terminal. Tuttle & Bailey® air terminals were built in a variety of sizes to deliver from 100 to 2600 CFM. Retrofitting these Tuttle & Bailey® air terminals requires removing the mechanical regulator(s) and replacing it (them) with a single, panel mounted retrofit valve equipped with a multi-point air flow sensor. The size of the valve and the panel it is mounted on varies with the size of the retrofitted air terminal. Retrofit is achieved through a bottom access panel. A divider panel, if present, must be cut to provide clearance for the new valve. Control sequence drawings 591A through 591F illustrate the dimensions of the panel and valve required for each MVC air terminal model.



MPM Series and alternate method for MVC series. Replace inlet damper assembly with dual flange mounted RA valves. Remove and discard internal regulator.



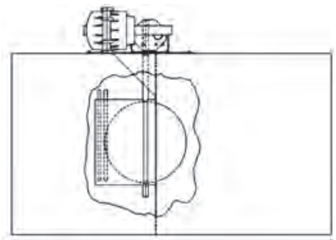
Anemostat® HV–C Series

Replace mechanical regulator(s) with panel mounted single or dual round retrofit valves. Retrofit is achieved through a bottom access panel. One actuator per valve or pair of valves, field or factory mounted on valve body. Flow Controller panel mounted on HVC air terminal casing in the field.

ANEMOSTAT®

Anemostat® Series HV–C mechanical air terminals may require 1, 2, 4, 5, 7 or 8 METALAIRE RA retrofit valves mounted on 1 or 4 panels. Each valve is equipped with a multi-point air flow sensor. Anemostat® HV–C air terminals were originally manufactured in a variety of sizes to deliver from 150 to 5400 CFM. Retrofitting the Anemostat® air terminals requires removing the mechanical regulator(s) and replacing it (them) with the appropriate number of retrofit valves usually mounted in a single panel, but in the case of the largest air terminal, 6 valves in 4 panels are required. Retrofit is achieved through a bottom access panel. Control sequence drawings 592A through 592G illustrate the dimensions of the panel and valve(s) required for each HV–C air terminal model.

RA-500
TECHNICAL DATA continued

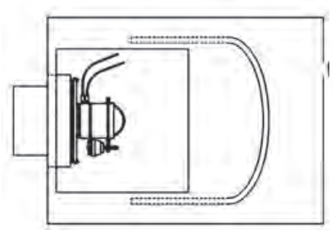


Barber-Colman® HS and HD Series

Replace mechanical regulator(s) with panel mounted single or dual round or oval retrofit valves. Retrofit is achieved through a side access panel. One actuator and flow controller are mounted on outside of the HS or HD side access panel in the field.

BARBER-COLMAN®

Barber-Colman® HS, and HD mechanical air terminals require 1 or 2 METALAIRE RA round or oval retrofit valves mounted on a single panel. Each valve is equipped with a multi-point air flow sensor. Barber Colman®'s HS and HD air terminals were originally manufactured in a variety of sizes to deliver from 100 to 5000 CFM. Retrofitting the Barber-Colman® air terminals requires removing the mechanical regulator(s) and replacing it (them) with 1 or 2 valves mounted in an appropriately sized panel. Each replacement valve is furnished with a multi-point flow sensor. Retrofit is achieved through a side access panel. Controls, including the actuator, are mounted on the outside of this panel. Control sequence drawings 593A through 593G illustrate the dimensions of the panel and valve(s) required for each HS or HD air terminal model.

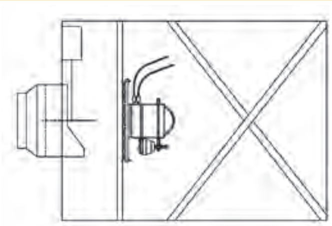


Buensod® H and HL Series

Replace mechanical regulator(s) with 1, 2 or 3 panel mounted round or oval retrofit valves. Retrofit is achieved through a bottom access panel. One panel mounted round or oval retrofit valve(s). One actuator per air terminal field or factory mounted on 1 valve body. Flow controller panel mounted on H or HL air terminal in the field.

BUENSOD®

Buensod® Model H and HL mechanical air terminals require from 1 to 3 METALAIRE RA round retrofit valves, each valve mounted on a single panel and furnished with a multi-point air flow sensor. Buensod® Model H and HL air terminals were originally manufactured in a variety of sizes to deliver from 50 to 4800 CFM. Retrofitting the Buensod® air terminals requires removing the mechanical regulator(s) and replacing it (them) with the appropriate number of panel mounted retrofit valves. Retrofit is achieved through a bottom access panel. Control sequence drawings 594B through 594I illustrate the number and dimensions of panels and valves required for each H or HL air terminal.



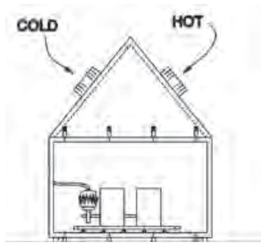
Krueger® CVM Series

Replace mechanical regulator(s) with 1 or 2 panels, each supporting 1 or 2 round retrofit valves. One actuator per panel, field or factory mounted on 1 valve body. Flow Controller panel mounted on CVM air terminal casing in the field.

KRUEGER®

Krueger® Model CVM mechanical air terminals require 1 or 2 METALAIRE RA round retrofit valves mounted in a single panel or 4 valves mounted in two panels. Each valve is furnished with a multi-point air flow sensor. Krueger® CVM air terminals were originally manufactured in a variety of sizes to deliver from 100 to 3900 CFM. Retrofitting the Krueger® air terminals requires removing the mechanical regulator(s) and replacing it (them) with a panel containing the appropriate number and size retrofit valves. Control sequence drawings 595A through 595D illustrate the number of valves and the dimensions of the panel required for each CVM air terminal.

RA-500
TECHNICAL DATA continued

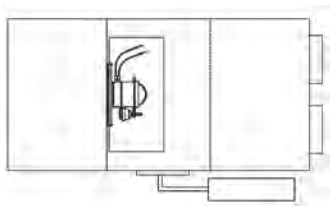


Connor® Series

Replace mechanical regulator(s) with panel mounted single or dual round retrofit valves. Retrofit is achieved through a bottom access panel. One actuator per valve or pair of valves, field or factory mounted on valve body. Flow Controller panel mounted on HVE air terminal casing in the field.

CONNOR®

Connor® Series HV, SD, DD, DS, RH and DC mechanical air terminals may require 1 or 2 METALAIRE RA retrofit valves mounted on 1 to 4 panels. Each valve is equipped with a multi-point air flow sensor. Connor® HV air terminals were originally manufactured in a variety of sizes to deliver from 100 to 4000 CFM. Retrofitting the Connor® air terminals requires removing the mechanical regulator(s) and replacing it (them) with the appropriate number of retrofit valves usually mounted in a single panel, but in the case of the largest air terminal, 8 valves in 4 panels are required. Retrofit is achieved through a bottom access panel. Control sequence drawings 596A through 596F illustrate the dimensions of the panel and valve(s) required for each air terminal model.

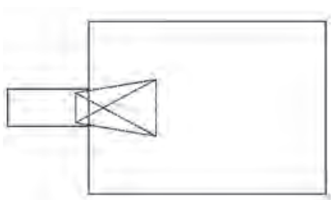


Carnes® Series

Replace mechanical regulator(s) with 1 or 2 panels, each supporting 1 or 2 round retrofit valves. One actuator per panel, field or factory mounted on 1 valve body. Flow Controller panel mounted on air terminal casing in the field.

CARNES®

Carnes® Models MH, SH and TH mechanical air terminals require 1, 2 or 3 METALAIRE RA round retrofit valves mounted in a single panel. Each valve is furnished with a multi-point air flow sensor. Carnes® air terminals were originally manufactured in a variety of sizes to deliver from 100 to 2000 CFM. Retrofitting the Carnes® air terminals requires removing the mechanical regulator(s) and replacing it (them) with a panel containing the appropriate number and size retrofit valves. Control sequence drawings 597A through 597H illustrate the number of valves and the dimensions of the panel required for each air terminal.



Trane® Series

Replace mechanical regulator (inlet valve) with a flanged retrofit valve. Flow controller is factory mounted on retrofit unit.

TRANE® SERIES

Trane® models VD, VC and VF mechanical air terminal require a single retrofit valve, the same nominal size as the terminal inlet. Retrofit valve is equipped with a flow sensor. Retrofitting requires removing the original inlet mechanical regulator and replacing it with a retrofit unit. Trane® retrofit can be shipped with controls mounted and wired.

RA-500
SELECTION DATA

Mechanical Air Terminal Data				METALAIRE Model RA-500 Retrofit Assembly Data*			
Manufacturer's Name (Models)	Size	Inlet Size	Flow Range	Quantity Needed	Order NUmber	Valve Size(s)	Total Capacity
Anemostat® HV-C	5	5"	150-174	1	592A	6"	600
	5	5"	175-300	1	592B	6"	600
	6	6"	200-300	1	592B	6"	600
	6	6"	300-500	1	592C	6"	600
	7	7"	300-500	1	592C	6"	600
	7	7"	450-750	1	592D	6"	1200
	8	8"	450-750	1	592D	6"	1200
	8	8"	700-1150	1	592E	6"	1200
	10	10"	700-1150	1	592E	6"	1200
	10	10"	1000-1300	1	592F	10"	1600
	12	12"	1000-1500	1	592F	10"	1600
	12	12"	1501-2100	1	592G	10"	2200
	14	14"	1600-2200	2	592E	2-6"	2400
	14	14"	2201-4000	4	2-592D&E	4-6"	4800
	16	16"	3000-4000	3	1-592D,F&G	2-6", 3-10"	5000
	16	16"	4001-5400	4	1-592D,E,F,G	4-6", 3-10"	6200
Barber-Coleman® HS, HD	5	5"	100-400	1	593A	6"	600
	6	6"	300-600	1	593B	8"	1000
	8	8"	600-900	1	593C	8"	1000
	10	10"	900-1600	1	593D	10"	1600
	12	12"	1600-2400	1	593E	10"	3200
	14	14"	2400-3400	1	593F	2-12" Oval	4400
	16	16"	3400-5000	1	593G	2-14" Oval	6000

** One RA unit may have multiple valves. Since RA valves have higher capacities than existing mechanical regulators, select quantity of RA units by retrofitted CFM desired and blank off extra openings. RA assemblies are offered as basic units (502B), units with pneumatic actuators (510N) and unites with 24V floating electric actuators (550N). All RA units include the METALAIRE®, multipoint, averaging and amplifying flow sensor. See submittal drawings for full descriptions.*

Caution: *Manufacturers sometimes vary mounting dimensions without changing model numbers. It is recommended that several RA assemblies be tested at the installation site before large orders are manufactured.*

RA-500
SELECTION DATA continued

Mechanical Air Terminal Data				METALAIRE Model RA-500 Retrofit Assembly Data*			
Manufacturer's Name (Models)	Size	Inlet Size	Flow Range	Quantity Needed	Order NUmber	Valve Size(s)	Total Capacity
Buensod® H, HL	4H	4"	50-230	1	594B	6"	600
	5H	5"	200-350	1	594B	6"	600
	6H	6"	300-450	1	594B	6"	600
	7H	7"	400-650	1	594C	8"	1000
	8H	8"	600-850	1	594D	8"	1000
	9H	9"	800-1050	1	594D	8"	1000
	10H	10"	1000-1300	1	594E	10"	1600
	HLA	30x14"	1200-2000	2	594D	2-8"	2000
	HLB	30x14"	2000-2500	2	594E	2-10"	3200
	HLC	40x16"	2500-3000	1	594H	3-8"	3000
	HLD	40x16"	3000-4000	1	594I	3-10"	4800
Krueger® CVM	4	4"	100-200	1	595A	6"	600
	5	5"	175-300	1	595A	6"	600
	6	6"	300-450	1	595A	6"	600
	7	7"	400-600	1	595B	8"	1000
	8	8"	500-800	1	595B	8"	1000
	9	9"	700-1000	1	595B	8"	1000
	10	10"	800-1200	1	595C	2-6"	1200
	12	12"	1000-1600	1	595D	6", 8"	1600
	1212	12 1/2"x12"	1500-2500	2	595C	4-6"	2400
	1614	16 1/2"x16"	1800-3000	2	595D	2-6", 2-8"	3200
	2014	20 1/2"x20"	2400-3900	2	595D	2-6", 2-8"	3200
Titus® HD, LD, HS, TD, TS	A	4-5-6"	50-240	1	590A	8"	1000
	B	6-7-8"	100-480	1	590A	8"	1000
	C	7-8-9-10"	150-720	2	590A	8"	2000
	D	9-10-12"	200-960	2	590A	8"	2000
	E	12-14"	250-1200	2	590A	8"	2000
	F	14-16"	350-1680	2	590A	8"	2000
	G	20x16"	450-2160	3	590A	8"	3000
	H	20x16 / 24x16	550-2640	3	590A	8"	4000
	J	24x16	650-3120	4	590A	8"	4000

** One RA unit may have multiple valves. Since RA valves have higher capacities than existing mechanical regulators, select quantity of RA units by retrofitted CFM desired and blank off extra openings. RA assemblies are offered as basic units (502B), units with pneumatic actuators (510N) and unites with 24V floating electric actuators (550N). All RA units include the METALAIRE®, multipoint, averaging and amplifying flow sensor. See submittal drawings for full descriptions.*

Caution: *Manufacturers sometimes vary mounting dimensions without changing model numbers. It is recommended that several RA assemblies be tested at the installation site before large orders are manufactured.*

RA-500
SELECTION DATA continued

Mechanical Air Terminal Data				METALAIRE Model RA-500 Retrofit Assembly Data*			
Manufacturer's Name (Models)	Size	Inlet Size	Flow Range	Quantity Needed	Order NUmber	Valve Size(s)	Total Capacity
Turtle & Bailey® MPM-MVC	A	5"	50-200	1	591A	6"	600
	AB	5"	100-350	1	591B	6"	600
	B	6"	150-550	1	591B	6"	600
	C	7"	200-800	1	591C	8"	1000
	D	8"	800-1300	1	591D	10"	1600
	E	10"	500-2000	1	591E	12" Oval	2200
	F	12"	700-2600	1	591F	14" Oval	3000
Connor® SD, DD, DS, RH, DC	4	4"	100-200	1	596A	6"	600
	5	5"	150-325	1	596B	6"	600
	6	6"	250-425	1	596C	6"	600
	7	7"	350-650	1	596D	2-6"	1200
	8	8"	500-850	1	596E	2-6"	1200
	10	10"	650-1200	1	596F	2-6"	1200
	12	12"	800-1800	2	596E	4-6"	2400
	14	14"	1500-3000	4	596E	8-6"	4800
	16	16"	2100-4000	4	596F	8-6"	4800
Carnes® MH, SH, TH	1004-2004	4"	75-200	1	597A	6"	600
	0005	5"	175-350	1	597B	6"	600
	0006	6"	250-500	1	597C	6"	600
	0007	7"	325-650	1	597D	6"	600
	0008	8"	425-850	1	597E	2-6"	1200
	0009	9"	550-1100	1	597F	2-6"	1200
	0010	10"	700-1400	1	597G	3-6"	1800
	0012	12"	1000-2000	1	597H	2-8"	2000
Trane® VD, VC, VF	03	5"	300	1	598A	1-6"	600
	06	6"	600	1	598A	1-6"	600
	11	8"	1100	1	598B	1-8"	1000
	17	10"	1700	1	598C	1-10"	1600
	24	12"	2400	1	598D	1-12"	2400
	32	14"	3200	1	598E	1-14"	3200
	42	16"	4200	1	598F	1-16"	4200

** One RA unit may have multiple valves. Since RA valves have higher capacities than existing mechanical regulators, select quantity of RA units by retrofitted CFM desired and blank off extra openings. RA assemblies are offered as basic units (502B), units with pneumatic actuators (510N) and unites with 24V floating electric actuators (550N). All RA units include the METALAIRE®, multipoint, averaging and amplifying flow sensor. See submittal drawings for full descriptions.*

***Caution:** Manufacturers sometimes vary mounting dimensions without changing model numbers. It is recommended that several RA assemblies be tested at the installation site before large orders are manufactured.*

RA-500
CONTROL SEQUENCE OFFERINGS

PPI–PNEUMATIC PRESSURE INDEPENDENT

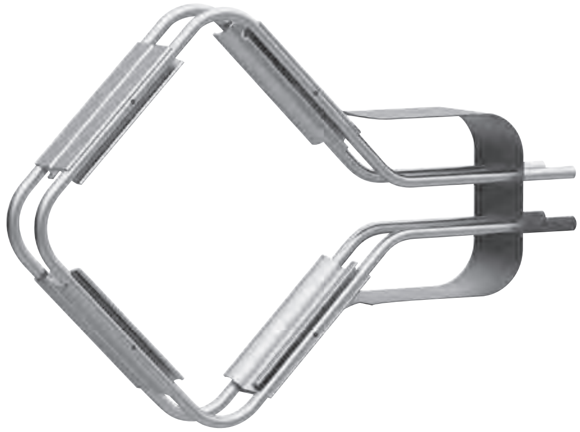
- 514 DA/NC
- 515 DA/NO
- 516 RA/NC
- 517 RA/NO
- 535 DA/NC
- 536 RA/NO

ELECTRONIC–PRESSURE DEPENDENT (DUAL DUCT)

- 550
- 510

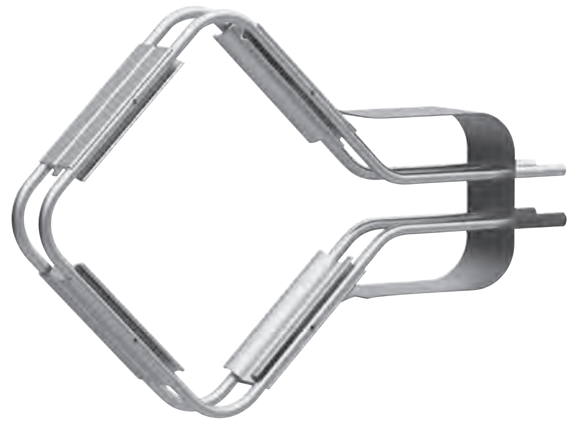
Refer to Reference Section for complete description.

METALAIRE™



OPTIONS, ACCESSORIES & REFERENCE

INDEX OF SECTIONS



OPTIONS AND ACCESSORIES OVERVIEW

CONSTRUCTION:

- 20 gauge construction available on all units, except retrofit units.
- Hanger brackets available for all units. Metal “L” brackets (4 per unit) which are shipped loose for field installation. Brackets are provided with a 5/8" diameter hole and vibration isolation grommet.
- Inlet attenuators available for fan powered units. The opening is on the side of the box, and the insulation type will match whatever is chosen for the unit. With an induction mounted coil, the filter is on either the top or bottom.
- Individual cartoning is available for all TH/TL units.

CONTROL ENCLOSURES:

- Dust tight control enclosures available for all units. The damper control enclosure is provided sealed to prevent light or dust from entering the enclosure when the cover is in place.
- Oversized 12" x 18" control enclosure and cover available on all single duct, dual duct, and retrofit units when the DDC controls are too large for the standard enclosure.
- Control enclosures also available with a sliding control cover on all single duct, dual duct, retrofit units, as well as the FCQ. The cover slides towards the primary inlet. This option is available for both the standard and oversized control enclosures.

FILTERS:

- Fan powered units have optional 1" or 2" filter racks with filters. Filters are installed at the fan air intake and have a MERV 6-7 rating. Spare filters can also be ordered and ship loose.

METALAIRE™

INSULATION:

- All units available with dual density fiberglass insulation. Available thicknesses are 1/2" and 1". FCL and FVL can only accommodate 1/2" thickness.
- All units available with foil-faced fiberglass insulation, 1.5 lbs density. Available thicknesses are 1/2", 3/4", and 1". FCL and FVL can only accommodate 1/2" thickness.
- All units except FCL and FVL available with foil-faced fiberglass insulation, 4lbs density. Only available in 1" thickness.
- All units available with ThermoPure closed cell foam insulation. Available thicknesses are 1/2" and 1". FCL and FVL can only accommodate 1/2" thickness.
- Single duct (TH, TL) and dual duct (DD, DH) units are available with solid double-wall / metal lined insulation. The double wall is available with either 1/2" or 1" fiberglass insulation between the unit and metal liner.

ACCESS:

- All units without heat have an optional access panel available for inspection of the damper. The panel is rectangular and gasketed, and is installed with zip screws.
- Protective screen for TH/TL units with electric heat. This allows an access panel to be installed, but blocks contact with the electric heat elements.
- Optional standard coil access door can be mounted on the top or the bottom of the unit.
- Optional quick release access door available for all units. Available for coil access on units with a hot water coil; available for inspection of damper on all units without heat. The panel is heavy gauge galvanized steel, insulated and gasketed, and is closed with quarter-turn latches. For coil access it can be mounted on either the top or the bottom of the unit.
- Optional high pressure spin-in access door with cam latches available for all units. Available for coil access on units with a hot water coil; available for inspection of damper on all units without heat.

HANDING:

- All single duct and dual duct units are configured with controls and coil connections on the right as standard (looking in direction of air flow). Optional configurations include controls on left, coil connections on right; controls on right, coil connections on left; and both controls and coil connections on the left.
- All fan powered units are configured with the controls and coil connections on the left as standard (looking in direction of air flow). Optional configurations include controls on left, coil connections on right; controls on right, coil connections on left; and both controls and coil connections on right. Optional handing not available on the FVI unit if the coil is mounted on the induction.

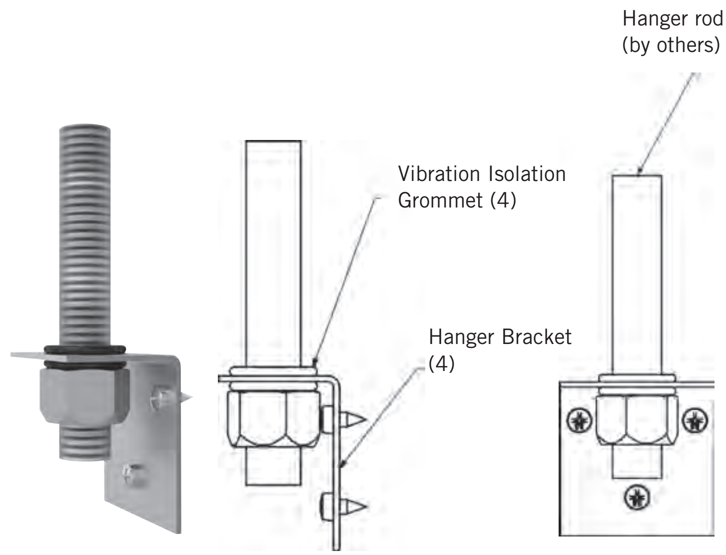
For a complete list of available options, please contact Metal Industries.

CONSTRUCTION OPTIONS

HANGER BRACKETS

Hanger brackets are shipped loose for field installation. The optional hanger brackets (4) are bagged and placed inside the control enclosure on each air terminal. Hanger bracket kit includes:

- (4) Hanger Brackets
- (12) Sheet Metal Screws
- (4) Isolation Grommets



INLET ELBOW ATTENUATOR FOR FAN POWERED TERMINAL UNITS

The inlet elbow attenuator is designed to reduce the radiated noise of fan powered terminal units. The standard inlet elbow attenuator is manufactured from 22 gauge metal and is lined with the same insulation material as the terminal unit it is mounted to. Optional 20 gauge construction and various types of insulation are also available. The standard inlet elbow attenuator is factory installed and ships as an integral part of the terminal. Depending on the terminal unit model and case size, attenuator lengths vary from 16-24". The table to the right lists the Insertion loss credits for the inlet elbow attenuator.

Insertion Loss for Inlet Elbow Attenuator

	CFM					
	125	250	500	1000	2000	4000
dB	1	4	6	7	10	12

1. *22 ga. Galvanized steel casing*
2. *1.5 lb/ft^3 dual density coated fiberglass insulation*
3. *Insulation meets standards UL 181 and NFPA 90A*
4. *Performance data is obtained from laboratory testing in accordance with AHRI 880-2011*

Typical view showing position of filter with induction mounted coil

INSULATION OPTIONS

Many insulation types are available for use in air terminal units. Each type and thickness of insulation has different thermal and acoustical characteristics as well as unit cost. It is important when specifying any type of insulation to specify not only the material, but the thickness and density as well. For instance, a common fiberglass specification is 1" thick, dual density (1.5lb/ft^3 min.) fiberglass insulation. For all insulations, the thicker the insulation, the greater the acoustical and thermal performance, and the higher the cost.

Generally, insulation erosion resistance is stated with respect to UL 181 erosion test. Insulation meeting this specification will not erode or otherwise contribute particulate to the airstream at velocities up to 2500 fpm. Also, insulation is regulated regarding the restriction of fire and smoke spread by NFPA 90A, which requires insulation to be tested at a minimum of 250°F. All insulations offered by METALAIRE meet UL 181 and NFPA 90A requirements.

FIBERGLASS

The most common type of insulation applied to ATU boxes is fiberglass. Fiberglass insulation is relatively inexpensive, and provides good thermal and acoustical performance. In most cases, some type of binder is applied to the airstream-facing side of the fiberglass to minimize fiber erosion. This is referred to as 'dual density' insulation as the density of the coated material 'skin' is greater than the core material.

FOIL-FACED FIBERGLASS INSULATION

In situations where erosion resistance above that of dual density is required, foil-faced insulation may be specified. The material, commonly referred to as FSK (foil scrim kraft) facing is adhered to the face of the fiberglass insulation. Critical to the specification is whether or not the FSK material is to be included in the overall material density. Generally, the density of the underlying insulation should be clearly stated.

CLOSED-CELL FOAM INSULATION

Closed-cell foam has acoustical and thermal properties at near parity to dual density fiberglass. In addition to its non-fibrous composition, the material resists mold and mildew growth and is easily cleanable. The material will not wick moisture on exposed edges. The material is more costly than dual density fiberglass and this must be considered when specifying the material.

DOUBLE-WALL INSULATION

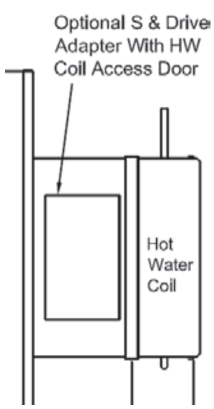
For very stringent specifications where fiber erosion must be completely eliminated as a possibility, solid or double wall metal liners have been specified. These liners are extremely expensive and negatively affect the sound performance of the terminal unit to which it is applied.

ACCESS OPTIONS

MOTOR / BLOWER ACCESS

Typical Quick Release Motor/Blower Bottom Access Panel with 1/4 Turn Latches

Typical Standard Motor/Blower Access Panel with Zip Screws



COIL ACCESS

On fan powered terminals with discharge mounted hot water coils that require an access door, a section of insulated duct is added to the discharge of the terminal upstream of the coil.

All coil access doors are insulated with ThermoPure closed cell fiber free insulation. The closed cell foam insulation is used for achieving an air tight seal on the access door. Also, by using the closed cell foam insulation there is no concern for the access door insulation tearing or the edge coating seal being damaged during removal.

INLET FLOW SENSORS

OVERVIEW OF AVAILABLE SENSORS

MULTI-QUADRANT AVERAGING FLOW SENSOR

METALAIRE's standard air flow sensor is a multi-quadrant averaging sensor, suitable for use in most differential pressure feedback air control circuits. The accuracy or minimum-maximum set point is ±5% or less when calibration is accurately performed.

LINEAR HIGH GAIN LOW LOSS FLOW SENSOR

This air flow sensor is provided on METALAIRE ATU products constructed of stainless steel, which include the RT, and is optional for the TH and TL. This unit works well in exhaust hood or for positive, neutral, or negative displacement air flow control in hospital room and clean room applications.

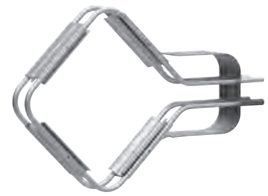
HIGH GAIN "CROSS-BOW" FLOW SENSOR

The optional "cross-bow" sensor is a premium sensor where a K Factor of 3+ is specified to allow register control or air flow set points. It also allows control at lower CFM settings than the standard Multi-Quadrant Averaging Flow Sensor.

INLET FLOW SENSOR PORTS

METALAIRE air terminal units are provided with external piping sensor connections, allowing visual verification of inlet sensor piping connections without having to remove the primary duct or relying solely on tubing color coding. The units are shipped with blue stripe tubing on the high pressure port and red stripe tubing on the low pressure port of the inlet sensor. The tubing are short pieces with barbed fittings. The "HIGH" pressure side of the inlet flow sensor is what the air hits first and the "LOW" pressure side of the inlet flow sensor is farthest away from the air flow. All pneumatic piping diagrams and electric, electronic or digital wiring diagrams display the color of tubing used on the "HIGH" and "LOW" pressure ports of the inlet flow sensor.

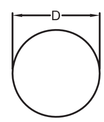
MULTI-QUADRANT AVERAGING FLOW SENSOR



Model	Inlet Size	Flow Coefficient	Magnification Factor
TH, FCI, FCQ	04 & 05 Rnd	300	6.65
FVI, DD	06 Rnd	540	2.12
DH, BP	08 Rnd	990	1.99
RT, RA	10 Rnd	1640	1.77
TL (4 to 10)	12 Rnd	2350	1.79
FCL C2 (4 to 8)	14 Rnd	3250	1.74
FVL C2 (4 to 8)	16 Rnd	4100	1.86
TL (12)	12 Flat Oval	2270	1.77
TL (14) & FVL C6	14 Flat Oval	2850	1.89
TL (16)	16 Flat Oval	3550	1.82
FVL C4	14x8 Rect	2450	1.62
FCL C4	16x8 Rect	2770	1.65
FCI, FCQ & FVI C7	18x16 Rect	6200	1.67
TH20	20x16 Rect	6430	1.92
TH24	24x16 Rect	7270	2.16

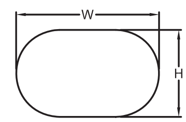
Magnification factor is equal to the following:
[(4005 / (Velocity at 1 in. wg. delta Ps)]^2

Rnd



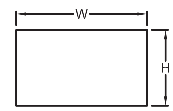
Size	D (in.)
04 Rnd	4
05 Rnd	5
06 Rnd	6
08 Rnd	8
10 Rnd	10
12 Rnd	12
14 Rnd	14
16 Rnd	16

Flat Oval



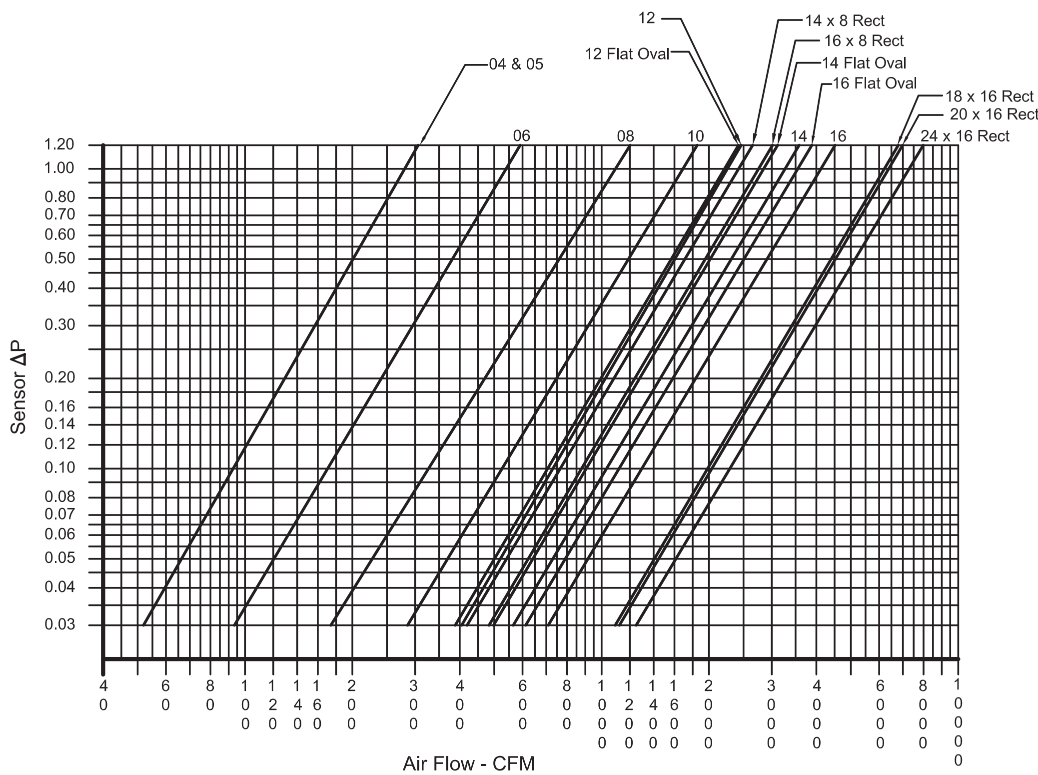
Size	W (in.)	H (in.)
12 Flat Oval	13	10
14 Flat Oval	16.25	10
16 Flat Oval	19.38	10

Rect



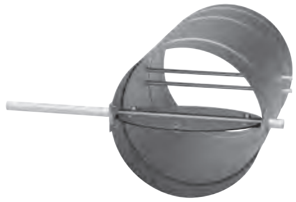
Size	W (in.)	H (in.)
14x8 Rect	14	8
16x8 Rect	16	8
20x16 Rect	20	16
24x16 Rect	24	16

$$\text{Cfm} = \sqrt{\triangle p} \times \text{Flow Coefficient}$$



Data per Test Number T-1103
Sensors tested down to 0.005 **Δ**P.

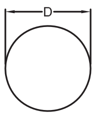
LINEAR HIGH GAIN LOW LOSS FLOW SENSOR (STAINLESS STEEL PRODUCTS ONLY)



Model	Inlet Size	Flow Coefficient	Magnification Factor
TH, FCI	04 Rnd	270	7.41
FVI, DD	05 Rnd	415	3.14
DH, BP	06 Rnd	480	2.34
RT, RA	08 Rnd	865	2.36
TL (4 to 10)	10 Rnd	1365	2.36
FCL C2 (4 to 8)	12 Rnd	2060	2.36
FVL C2 (4 to 8)	14 Rnd	2650	2.18
	16 Rnd	3465	2.46
TL (12)	12 Flat Oval	1845	2.48
TL (14) & FVL C6	14 Flat Oval	2300	2.68
TL (16)	16 Flat Oval	3005	2.91
FVL C4	14x8 Rect	1905	2.54
FCL C4	16x8 Rect	2085	2.67
FCI C7 & FVI C7	18x16 Rect	5130	2.92
TH20	20x16 Rect	5890	2.28
TH24	24x16 Rect	6975	2.34

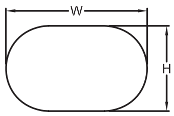
Magnification factor is equal to the following:
[(4005 / (Velocity at 1 in. wg. delta Ps)]^2

Rnd



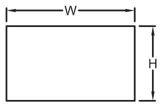
Size	D (in.)
04 Rnd	4
05 Rnd	5
06 Rnd	6
08 Rnd	8
10 Rnd	10
12 Rnd	12
14 Rnd	14
16 Rnd	16

Flat Oval



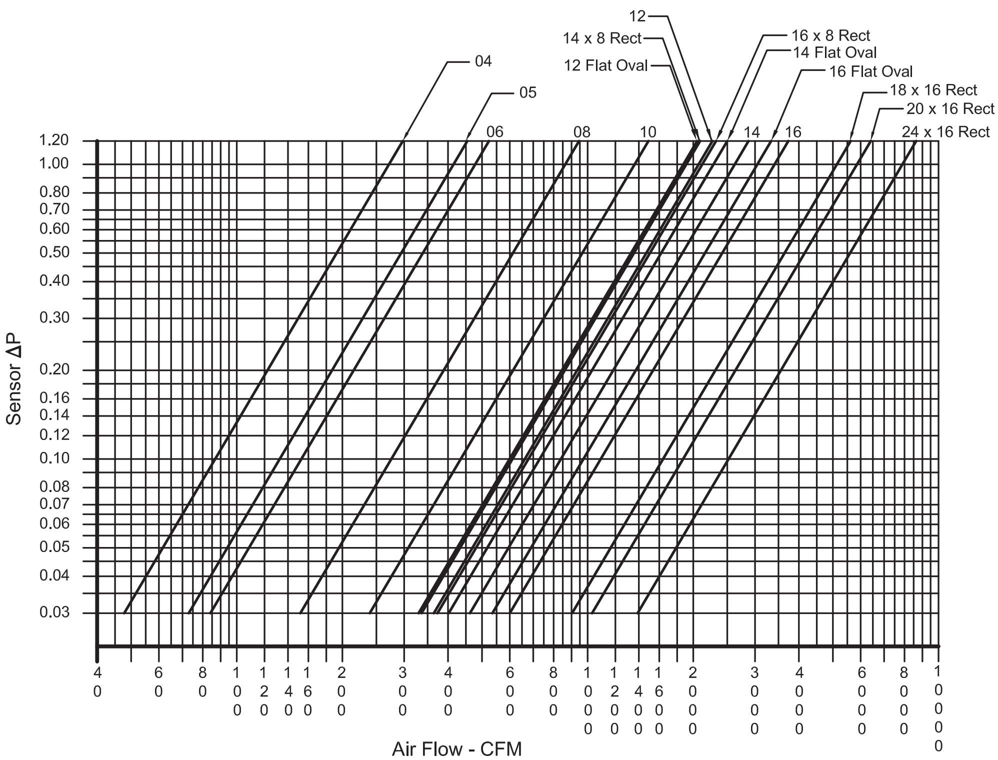
Size	W (in.)	H (in.)
12 Flat Oval	13	10
14 Flat Oval	16.25	10
16 Flat Oval	19.38	10

Rect



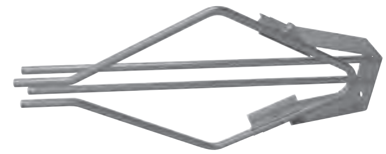
Size	W (in.)	H (in.)
14x8 Rect	14	8
16x8 Rect	16	8
20x16 Rect	20	16
24x16 Rect	24	16

$$\text{Cfm} = \sqrt{\triangle p} \times \text{Flow Coefficient}$$

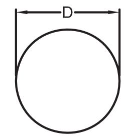


Data per Test Number T-1103
Sensors tested down to 0.005 ΔP.

MULTI-QUADRANT AVERAGING HIGH GAIN "CROSS-BOW" FLOW SENSOR



Rnd



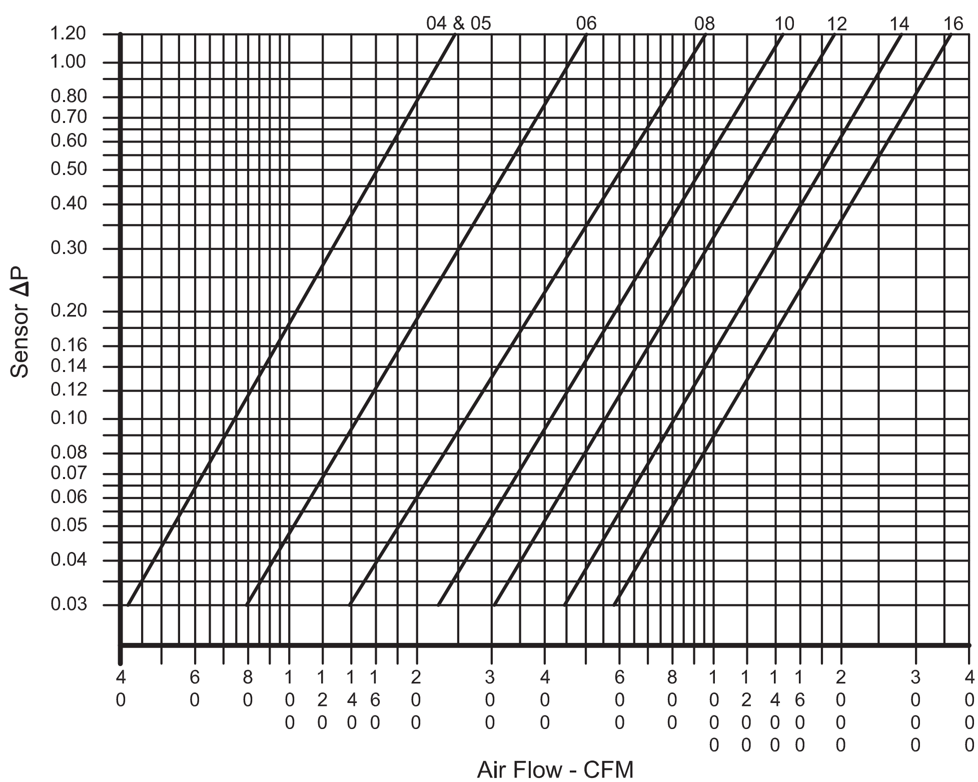
Model	Inlet Size	Flow Coefficient	Magnification Factor
TH, FCI, FCQ	04 & 05 Rnd	225	12.22
FVI, DD	06 Rnd	455	2.77
DH, BP	08 Rnd	830	2.83
RT, RA	10 Rnd	1330	2.70
TL (4 to 10)	12 Rnd	1770	3.00
FCL C2 (4 to 8)	14 Rnd	2460	2.82
FVL C2 (4 to 8)	16 Rnd	3340	2.72

Size	D (in.)
04 Rnd	4
05 Rnd	5
06 Rnd	6
08 Rnd	8
10 Rnd	10
12 Rnd	12
14 Rnd	14
16 Rnd	16

Magnification factor is equal to the following:
[(4005 / (Velocity at 1 in. wg. delta Ps)]^2

$$\text{Cfm} = \sqrt{\Delta p} \ \text{x Flow Coefficient}$$

Round Duct



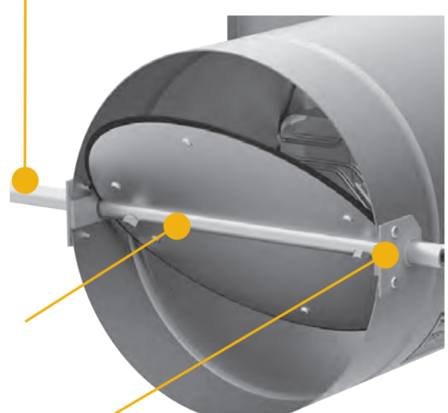
PRIMARY AIR DAMPERS

The METALAIRE damper blade is manufactured with a flexible gasket and mounted without adhesives to provide an excellent close off seal. Included on the damper gasket are slits around the perimeter to prevent damper noise at low turn down. The damper is constructed of double thick 18-gauge equivalent steel. Damper leakage is less than 1% of maximum CFM at 3.0"wg static pressure.

METALAIRE has designed the primary air damper shaft assembly for improved performance. The shaft is a one-piece, continuous shaft extruded from aluminum alloy. The shaft has a straightness tolerance of 0.010"/ft which provides extremely smooth operation. Determining damper position is straightforward since the shaft has a built-in damper position indicator. The indicating arrows provide a high-contrast against the shaft interior for easily visible damper position confirmation. The continuous shaft is much stronger than multiple-piece shaft assemblies, which rely on a thin damper blade to span the middle part of the damper assembly, thus eliminating the opportunity for flexing and twisting of the damper blade.

High contrast damper position indication

Easily withstands 200 in-lbs of torque



Continuous shaft for added strength

0.010"/ft straightness tolerance for smooth operation

HOT WATER COILS

NOTES FOR COIL PERFORMANCE

- Hot water coil data is for discharge mounted coils.
- For water valve sizing, contact your METALAIRE representative. For data values other than those listed, interpolate using the METALAIRE ATU Epic selection software.
- METALAIRE coil data is AHRI 410 certified.

IMPERIAL NOTES

- Tabulated values are in MBH (thousands of BTU/hr).
- Head loss is in feet of water.
- MBH values are based on a ΔT (temperature difference) of 115°F between entering air and entering water. For other ΔTs, multiply the MBH value by the factors shown:

  Air Temperature Rise = 927 x MBH/CFM

  Water Temperature Drop = 2.04 x MBH/GPM

METRIC NOTES

- Tabulated values are in kW (thousands of Watts).
- Head loss is in kPa.
- kW values are based on a ΔT (temperature difference) between entering air and entering water of 64°C. For other ΔTs, multiply the kW values by the factors shown:

  Air Temperature Rise = 579 x kW/Air Flow (L/s)

  Water Temperature Drop = 0.17 x kW/Water Flow (L/s)

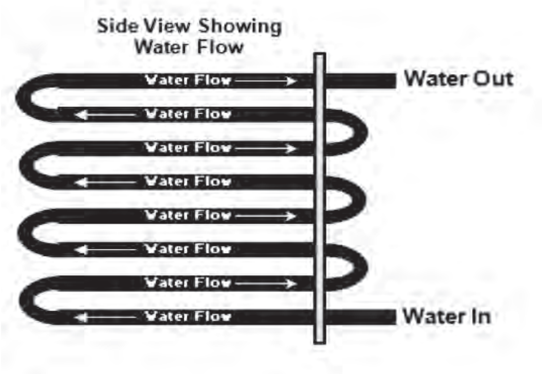
IMPERIAL	
ΔT (°F)	Factor
50	0.44
60	0.52
70	0.61
80	0.70
90	0.79
100	0.88
115	1.00
125	1.07
140	1.20
150	1.30

METRIC	
ΔT (°C)	Factor
30	0.48
35	0.55
40	0.63
50	0.78
60	0.94
64	1.00
70	1.08
80	1.24

WATER FLOW IN COIL

For optimum performance, a water coil should have the water flowing counter to the direction of airflow (counter flow). If the water is run in the same direction as the airflow (parallel flow), the performance will be approximately 96% of the counter flow performance on a 3 row coil and 98% on a 2 row coil.

A coil should always be selected at 0.5gpm or greater for METALAIRE coils. If the gpm is below 0.5, the flow becomes laminar; turbulent flow is required for the heat transfer calculations to be valid.



COIL VENTING AND DRAINING

When water is supplied to the coil the flow is in an upward direction, taking the air to the top of the coil and out the return connection. When the coil is to be drained, there will be no trapped water remaining in the coil circuitry; all water will drain out of the supply connection.

ELECTRIC HEAT

OPTIONAL ACCESSORIES FOR ELECTRIC HEATERS

SPECIAL FEATURES:

- Disconnecting Break Magnetic Contactors
- Fusing per Step – All Voltages / Phase Combinations
- Line-Disconnect Fusing
- Neutral Terminal – International Orders Only
- Air Pressure Switch (Fan Powered only, Standard on TH w/ EH)
- Pipe Air Flow Switch to Inlet Sensor (TH boxes)
- Pilot Light 24V only
- Mercury Contactor per Step
- Back-up Mercury Contactor
- Disconnecting Mercury Contactor
- Disconnecting Back-up Mercury Contactor

FUSED TRANSFORMERS:

- Transformer with fused Primary
- Transformer with fused Secondary
- Transformer with both fused Primary and Secondary

SSR SOLID STATE ELECTRONIC CONTROLS:

- 2-10 VDC
- 4-20 mA
- Pulse Width Modulation

DISCONNECT SWITCHES:

- Door Interlocking Non-Fused Disconnect Switch

EXPLANATION OF ELECTRIC HEAT OPTIONS

DISCONNECTING BREAK CONTACTORS:

Disconnecting break contactors break all ungrounded (hot) power leads when the contactor opens. In the case of 3-phase power, all 3 phases are broken simultaneously. For single phase power where both leads are ungrounded (208-240 v), both leads are broken simultaneously.

When only one lead is ungrounded (120 or 277 v) the other (neutral) does not need to be broken. When using a 1-pole contactor, there is no difference between 'disconnecting' and 'de-energizing'.

DE-ENERGIZING BREAK CONTACTORS:

For de-energizing break contactors, only enough leads need to be broken to de-energize (turn off) the heater. For 3-phase power, 2 of the 3 leads are broken to achieve this. In single phase power, with 208-240 v, only one of the leads needs to be broken. For single phase, 120 or 277 v, only the underground lead will break (1-pole).

TOTAL AMPS CALCULATION

- Heater Amps Single Phase = (kW X 1000) / (LINE VOLTAGE)
- Heater Amps Three Phase = (kW X 1000) / (LINE VOLTAGE X 1.732)
- Motor F.L.A. is the nameplate amp rating of a given motor (depends on HP and Voltage)
- Total Circuit Amps = (Heater Amps + Motor F.L.A.)
- Minimum Circuit Ampacity = (Total Circuit Amps X 1.25)
- Maximum Overcurrent Protection = (Minimum Circuit Ampacity) rounded up to the nearest standard Fuse or HACR Circuit Breaker size.

UL 1995 AND METALAIRE ELECTRIC HEAT DESIGN CRITERIA

All METALAIRE Air Terminal Units with Electric Heat are built to UL 1995 standards. Intertek/ETL is the listing agency we have chosen to enforce UL 1995 requirements. The agency is primarily concerned with safety of the product, especially in regards to fire and electric shock hazards. The following items are governed by the listing agency to ensure safety:

- Sheet metal thickness and corrosion resistance.
- All internal components must be either UL listed or recognized.
- Internal wiring and electrical spacings of live uninsulated parts in regard to Voltage Ratings.
- Internal Control Enclosure and electrical component temperatures.
- Primary and Secondary temperature limit ratings.
- Airflow and Fan Interlock requirements.
- Discharge and Duct temperature rise. This indirectly influences our minimum airflow requirements.
- Maximum kW for a given unit size based upon 17 kW/Sq. Ft. and available airflow.
- Duct insulation and adhesive temperature and flammability ratings.

All Air Terminal Unit models must be tested before the ETL label is issued to our products. The agency representative chooses at least 2 samples of each model to be tested, usually the largest and smallest units with the maximum kW allowable for each size. A specially designed duct with temperature sensing thermocouples is attached to the discharge of the heater to measure temperature rise under various normal and abnormal operating conditions. All of our units with Electric Heat are designed for zero clearance to combustible materials. This limits our maximum discharge temperature to 200° F and the duct surface temperature to 197° F (Section 45.9 of UL 1995, 3rd Edition).

To meet the above temperature rise, testing has shown that the primary limit control (auto reset thermal cutout) should be rated at 120° F. The spacing between the return bend of the element and the primary limit control, as well as general placement, is determined by this test. As the airflow begins to drop, glowing of the return bends send radiant energy to the cutout, adding to the air temperature sensed by this device. The cutout is assured of tripping before the maximum temperature is achieved, by breaking the operating or safety contactors and de-energizing the heating elements.

In the event of primary limit control failure, a backup system is employed that is completely independent of the primary limit control or controlled switching device (operating contactor or safety contactor). This secondary limit control system utilizes a manual reset thermal cutout that controls a backup contactor wired in series with the heating elements. The requirements and placement of the manual reset cutout is also determined by testing to limit the duct temperature to a maximum of 212° F (Section 47.2).

To meet the above temperature rise, testing has shown that the secondary limit control (manual reset thermal cutout) should be rated at 160° F maximum. The spacing between the return bend of the element and the primary limit control, as well as general placement, is determined by this test. The cutout is assured of tripping before the maximum temperature is achieved by breaking the backup contactor and deenergizing the heating elements. All tests are conducted under specific duct static pressure conditions.

In addition to temperature rise, a method of fan or airflow interlock system must be provided to prevent heater operation when no airflow is present. Section 26.11 of UL 1995 describes its function.

All single duct units with electric heat utilize an airflow-sensing switch that measures supply airflow at the discharge side near the air valve. It must read a total pressure (static + velocity) of at least .07" of positive pressure to operate. On Dust Tight applications, the negative port of this switch must be vented outside of the control enclosure to prevent reading pressure buildup within the enclosure.

All fan powered units with electric heat have a fan interlocking relay that will not allow the heater to energize until power to the fan motor is confirmed. The control transformer is also wired in series with the motor fuse, to prevent the heater from energizing by breaking all control voltage to the heater when the fuse opens. The optional airflow-sensing switch can be specified as a secondary device. It requires a probe placed near the blower discharge to sense positive pressure. FC units also require venting of the negative port of the airflow switch to the negative pressure of the blower plenum to assure sufficient differential pressure. The fan interlock relay remains operational when the optional airflow switch is chosen.

Units with electric heat should have a minimum airflow of 70 CFM per kW. Also, a maximum leaving air temperature of 115° F should be observed to prevent premature heater coil failure. The Temperature Rise is a function of kW and airflow: TR = (kW x 3413)/(CFM x 1.085). The entering air temperature will determine the leaving air temperature: Entering Air Temperature + Temperature Rise = Leaving Air Temperature. In this case, we want to limit the leaving air temperature to 115° F maximum. Ideally, per an ASHRAE Article published in a 1979 handbook, the leaving air temperature should be around 15° F above the room set point to prevent air stratification. Our catalog recommends no more than 20° F above the set point.

How does this all relate to METALAIRE design? The primary cutout limit was selected to be 120° F to meet the Primary Limit Control test. These cutouts are generally accurate within 5° F. To prevent nuisance tripping of the cutout, and eventual fatigue failure, the leaving air temperature must never exceed 115° F. Also, in the event that either the auto reset or airflow switch trips due to sudden loss of airflow or improperly programmed DDC control systems that allow the heater to function during re-calibration, stored heat will build up within the heater, allowing the temperature to continue to rise above the auto reset set point. To prevent unnecessary tripping of the manual reset, the setting of 160° F provides a safe temperature spread and prevents this from occurring. At the same time, it prevents duct temperatures above 212° F from being reached in the event that there is total failure of the primary limit system.

The 70 CFM/kW rule assumes that the inlet air temperature does not exceed 70° F. This temperature is usually less for single duct units (55° F typical). If it is known that the inlet temperature will always be below 70° F, calculation of the Catalog program can be used to determine the outlet temperature per the formulas above. As an example, a 5 kW heater will need at least 350 CFM if the inlet air temperature is 70° F, but this same heater can go as low as 265 CFM if the inlet air temperature is 55° F. Since the ideal leaving air temperature is 95° F or less, it is recommended not to go below 70 CFM per kW.

Fan Powered Units use a mix of Primary Air (about 55° F) and Plenum Air (about 75° F). This mix will usually average out to about 70° F or less unless the primary air is set to zero. This further reinforces the need to limit the minimum airflow setting to 70 CFM per kW.

ELECTRIC HEAT WIRING

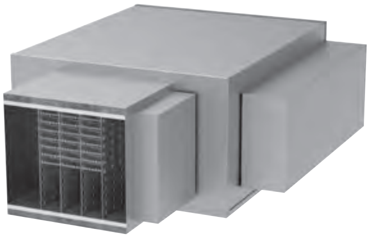
All units with electric heat are Single Point electrical connection devices. The power supply voltages can be Single or Three Phase. See the chart below for voltage availability and requirements. In all cases of Three Phase power, only 3 wires of a 4-Wire supply will be used. A separate neutral is not required.

- 120 volts, single phase is derived from a 208 volt, 3-phase, 4-wire supply. The voltage is taken from the grounded neutral and any one of the 3 hot legs.
- 220 volts, single phase (usually 50/60 HZ, Overseas) is derived from a 380 volt, 3-phase, 4-wire supply. The voltage is taken from the grounded neutral and any one of the 3 hot legs.
- 240 volts, single phase can be derived from 2 possible sources:

  1) Domestically, it is usually a stand alone transformer supplying a 3-phase, 3-wire supply and has no neutral. The exception is the residential market where the transformer has an center tapped grounded neutral to supply 120 volts for normal household usage with 240 volts available for heavy appliances, such as central A/C, Cooking Ranges, and Electric Clothes Dryers.

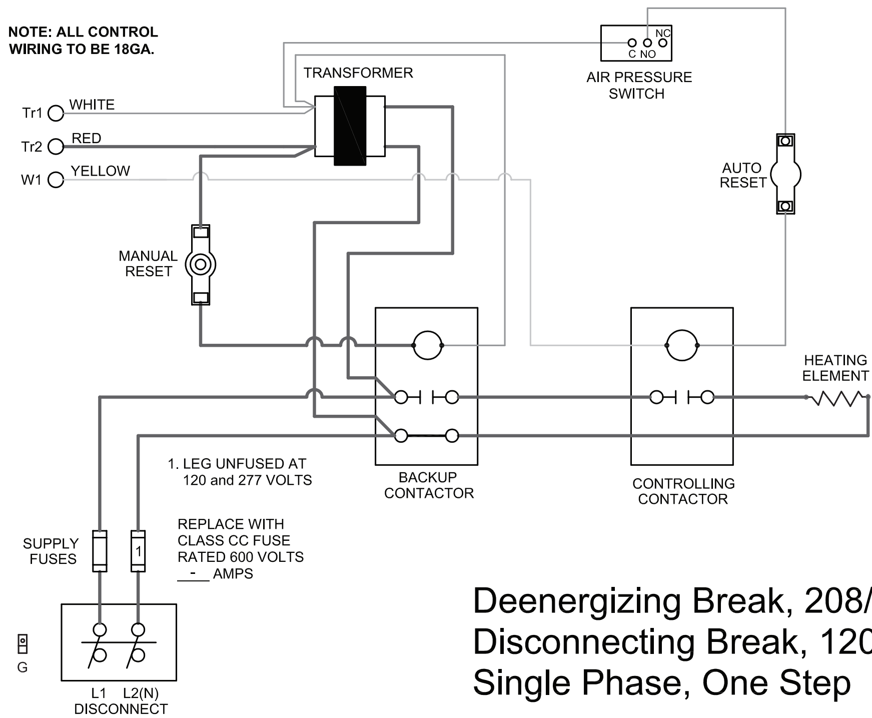
  2) Commercially, it is usually derived from a 415 volt, 3-phase, 4-wire supply. The voltage is taken from the grounded neutral and any one of the 3 hot legs.
- 277 volts, single phase, is derived from a 480 volt, 3-phase, 4-wire supply. The voltage is taken from the grounded neutral and any one of the 3 hot legs.
- 208 volts and 480 volts, 3-phase may not have a separate neutral available in some older buildings. This is called a Delta connected supply transformer. All 4-wire supplies are Wye connected transformers. This is not a concern with single duct units, since a separate neutral is not required.

SINGLE DUCTS		
Supply Volts	Phase	No. of Wires
120	1	2
208	1	2
220	1	2
240	1	2
277	1	2
380	1	2
415	1	2
480	1	2
415	1	2
208	3	3
240	3	3
415	3	3
380	3	3
480	3	3

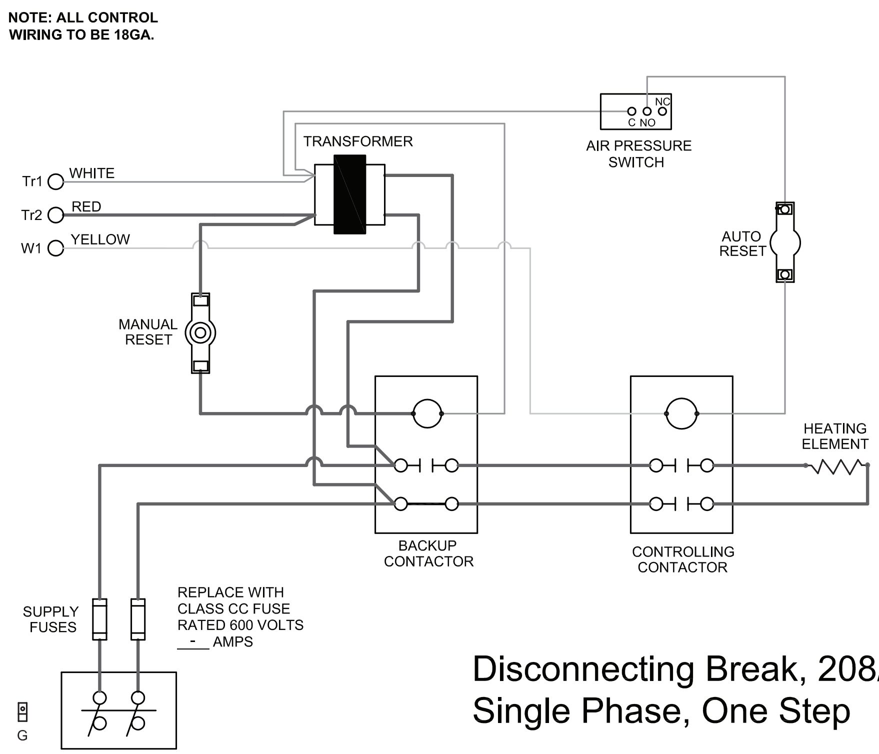


FAN POWERED		
Heater Voltage	Motor Voltage	Separate Neutral Required
120 V 1 PH	120 V 1 PH	NO
208 V 1 PH	120 V 1 PH	YES
277 V 1 PH	277 V 1 PH	NO
480 V 1 PH	277 V 1 PH	YES
208 V 1 PH	208 V 1 PH	NO
208 V 3 PH	120 V 1 PH	YES
480 V 3 PH	277 V 1 PH	YES
208 V 3 PH	208 V 1 PH	NO

ELECTRIC HEAT – TYPICAL WIRING DIAGRAMS

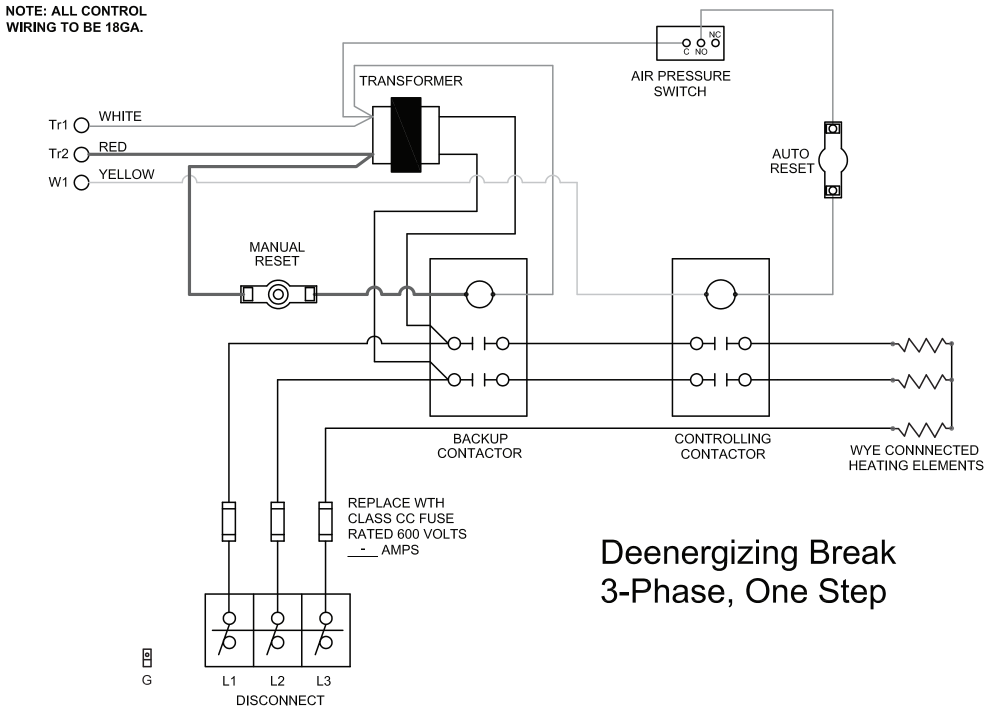


Deenergizing Break, 208/240/480 V.
Disconnecting Break, 120/277 V.
Single Phase, One Step

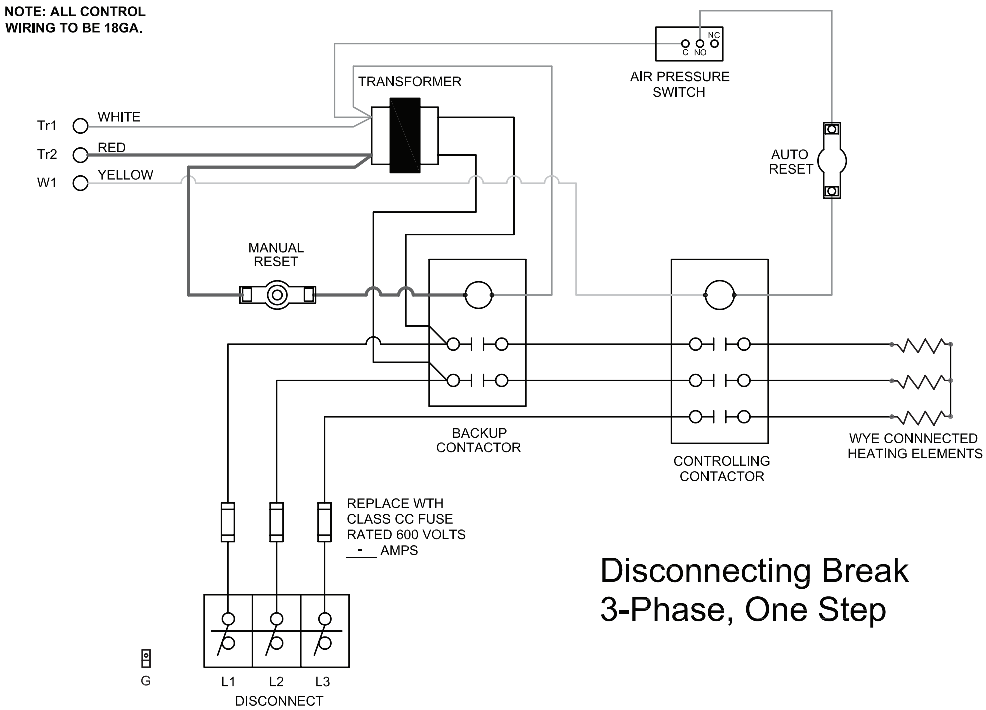


Disconnecting Break, 208/240/480 V.
Single Phase, One Step

ELECTRIC HEAT – TYPICAL WIRING DIAGRAMS



Deenergizing Break
3-Phase, One Step



Disconnecting Break
3-Phase, One Step

MOTORS

PSC MOTORS

The vast majority of motors used in air terminal units are PSC (permanent split capacitor) type motors. They are generally 6-pole AC motors with a nominal speed of 1075 RPM. They have an efficiency of around 50% at full load. The PSC motor can be used with a speed control down to about 50% of max RPM. It can also be modified by tapping the windings to provide multiple speeds. When utilized at part load conditions, however, the PSC operating efficiency falls off dramatically, to as low as 15%. When a VAV terminal must operate at part load conditions, special consideration should be given to ECM motors.

AVAILABLE VOLTAGES

METALAIRE standard motors are 120 and 277 volt single phase. The 208-240 volt single phase motor is optional. 480 volt motors are not available for METALAIRE units.

Model	Case Size	Motor HP	120 V Motor Full Load Amps	208/240 V Motor Full Load Amps	277 V Motor Full Load Amps
FCI	2	1/8	2.6	0.8	1.1
	3	1/8	2.6	0.8	1.1
	4	1/4	4.8	1.9	1.9
	5	1/3	8.8	3.0	3.6
	6	1	N/A	6.2	6.2
	7	3/4 (2)	22.8	8.0	8.6
FCL	2	1/4	3.8	1.9	1.3
	4	1/4 (2)	7.6	3.8	2.6
FCQ	2	1/8	2.6	0.8	1.1
	3	1/4	4.8	1.9	1.9
	4	1/3	8.8	3.0	3.6
	5	1/3	11.4	3.0	3.6
	6	1/3 (2)	17.6	6.0	7.2
	7	3/4 (2)	22.8	8.0	8.6
FVI	1	1/8	2.6	0.8	1.1
	2	1/6	3.1	0.8	1.2
	3	1/4	4.8	1.9	1.9
	4	1/4	4.8	1.9	1.9
	5	1/3	8.8	3.0	3.6
	6	1/2	9.8	3.5	3.6
	7	1	N/A	6.2	6.2
FVL	2	1/8	2.6	1.5	1.1
	4	1/4	3.8	2.0	1.3
	6	1/3	7.8	3.9	1.7
FCI w/ ECM	2	1/2	4.3	2.4	1.8
	4	1/2	7.5	4.1	3.1
	6	1	11.1	6.1	4.6
FCL w/ ECM	2	1/3	4.4	2.7	2.0
	4	1/3 (2)	9.0	5.2	3.9
FCQ w/ ECM	2	1/3	5.5	3.2	2.4
	3	1/2	6.4	3.7	2.8
	4	1	9.1	5.2	3.9
	6	1/2 (2)	14.8	8.5	6.4
FVI w/ECM	3	1/2	6.0	3.3	2.5
	6	1	12.8	8.0	6.0

Motor rated amps for fan powered boxes (1ph, 60hz)

ECM MOTOR

METALAIRE offers the optional GE ECM™ 2.3 motor for the FCI, FCL, FVI and FCQ fan powered terminal units. Add the ECM motor to any of these and you have an ultra high efficient air terminal.

WHAT IS AN ECM MOTOR?

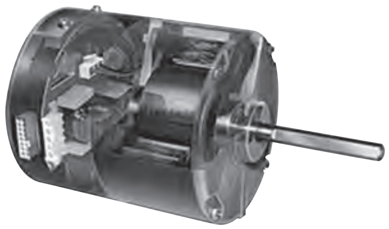
ECM stands for Electronically Commutated Motor. This technology was developed by GE. The GE ECM™ motor is a brushless-DC motor with built in speed and torque controls.

Unlike a conventional induction motor, GE's ECM™ motor regulates itself by automatically changing its torque and speed to maintain a pre-programmed level of constant airflow over a wide range of external static pressures and does so without the use of airflow sensors. The ECM's regulated airflow output remains constant over that same range of static pressure.

For optimum heating, the ECM system can be programmed to deliver just the right level of airflow for both low and high

FEATURES AND BENEFITS

ULTRA HIGH EFFICIENCY



ECM 2.3 efficiencies are as high as 82%. At full load the ECM 2.3 is 20% more efficient than a standard induction motor. At low speed the ECM is over 30% more efficient than a standard induction motor. On constant fan speed, the ECM consumes 60-80 Watts as compared to 400 Watts for the induction motor. The permanent magnet DC design allows it to maintain its efficiency over its wide speed range.

FACTORY PROGRAMMED

Programming options for the ECM 2.3 include: start/stop ramp rates, on/off blower delays, and many other functions all stored in the motor's memory. Even its speed and torque characteristics can be customized to meet specific performance requirements.

SELF REGULATING CONSTANT AIRFLOW

The GE ECM variable-speed motor can run in a wide range of speeds. The motor can be programmed to deliver constant airflow into a wide range of external static pressures in an air distribution system. This is all accomplished without the use of external sensors.

ECM CONTROLS

METALAIRE engineering has carefully integrated the ECM motor into each terminal blower assembly resulting in a terminal fan that produces a constant CFM over a wide range of operating pressures.

The CFM can be adjusted from the specified minimum CFM to the specified maximum CFM by sending the fan a flow index signal. A fan control interface allows external adjustment of the flow index and provides fan on/off control.

GE ECM™ CONTROL INTERFACES

METALAIRE offers two fan control interface devices for fan terminals equipped with the GE ECM motor.

MODEL ECM-VCU

The visual fan control interface allows local adjustment of the fan CFM and indicates the fan RPM on an illuminated numerical display. The visual control interface may also be used where automation systems only turn the fan on or off.

MODEL ECM-RPM

The automation fan control interface allows an automation system to control fan on/off, fan CFM, and to monitor the fan RPM from the automation console.

Both control interfaces provide a means to monitor fan RPM. This is an important value to record after air balance, and can be used to diagnose system problems.

MODEL ECM-RPM – REMOTE ADJUSTMENT

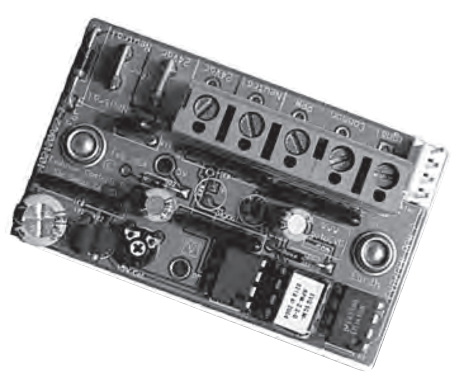
The ECM-RPM allows industry standard 2-10 VDC controls to adjust and monitor General Electric's ECM Motor™. These are fractional horsepower air moving motors featuring an internal microprocessor. The design provides exceptional efficiency, performance and motor life. The motor may be factory configured to provide constant mass airflow or constant torque.

The ECM-RPM allows remote adjustment of the output from 0% to 100% of the programmed control range. A lamp on the control continuously flashed out the flow index, so instruments are not required to read the value.

The ECM-RPM version provides low voltage on/off controls by switching the motor's "GO" control when the input signal drops below the 2 volt (4 mA) operating point.

Specifications:

Power	NEC Class II Only 24 Vac +/- 20% 50/60 Hz 2 W, 4 VA + 1VA/Motor
Control Signal	2-10 VDC – 0-100% 4-20 mA – 0-100% ON/OFF Control



MODEL ECM-VCU – MANUAL ADJUSTMENT

The ECM-VCU control allows accurate manual adjustment and monitoring of fans using General Electric's ECM Motor™. These are fractional horsepower air moving motors featuring an internal microprocessor. The design provides exceptional efficiency, performance, and motor life. These self regulating motors may be factory configured so the fan will provide constant mass airflow.

OPERATION

GE ECM™ motors configured for Vspd operation are factory configured for external torque or airflow adjustment. The configuration data includes the fan manufacturer's specified adjustment range. A numerical flow index accurately adjusts the fan to the desired torque or air-flow. The flow index is a number from 0-100 having a linear relationship to the minimum to maximum torque or airflow range specified by the motor fan.

The ECM-VCU allows local on/off and fan airflow adjustment. Rotating a single screwdriver adjuster changes the variable output signal to the motor from off to full output. While rotating the adjuster, a numerical flow index is locked on the illuminated numerical display. After adjustment, the display shows fan RPM.

The ECM-VCU may also be used where automation systems only turn the fan on or off.

Specifications:

Power	NEC Class II Only 24 Vac +/- 20% 50/60 Hz 4 W, 6 VA
Flow Index Adjustment	270° rotation F Off – 0-100

AVAILABLE FACTORY PROVIDED/ MOUNTED CONTROLS

CONTROL SEQUENCE NOMENCLATURE

The control sequences begin with a digit that refers to the model type (1 is single ducts, 2 is dual ducts, etc.). The next two digits are the code for the sequence, and the last digit, a letter, refers to the transformer (N is none, A is 120 v, etc). Example: -110N is a single duct with DA/NC sequence and no transformer.

Reference Digit	Terminal Type
1	TH, TL
2	DD, DH
3	BP
4	SR
5	RA
6	RT
8	FVI, FVL
9	FCI, FCL, FCQ

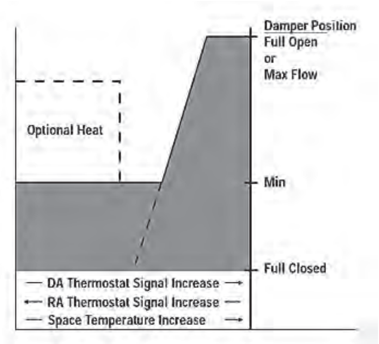
Control Sequence	Diagram to Reference
-X10	Pneumatic Pressure Dependent
-X12	
-X14	Pneumatic Pressure Independent
-X15	
-X16	
-X17	
-535 (retrofit)	
-536 (retrofit)	
-238 (dual duct)	
-239 (dual duct)	
-X40	
-241 through -245 (dual duct)	
-X52	Electronic - Pressure Dependent
-X53	
-X56	
-X57	
-258 (dual duct)	
-X60	Analog Electric
-X61	
-263 (dual duct)	
-X64	
-X65	
-X73	

PNEUMATIC CONTROLS

A direct acting thermostat causes an increase in branch pressure as the room temperature rises. A reverse acting thermostat causes a decrease in branch pressure as the room temperature rises. Since the pneumatic actuator is a spring return device, the damper can be connected so that without main pressure it will return to normally closed position to shut of the air to the room or a normally open position to permit unobstructed air flow to the room.

PNEUMATIC PRESSURE DEPENDENT

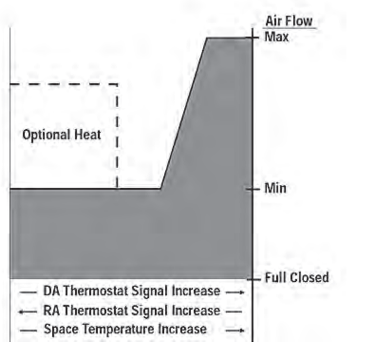
Pressure dependent pneumatic air terminal actuators are powered directly by branch line pressure signals from the room thermostat.



PNEUMATIC PRESSURE INDEPENDENT

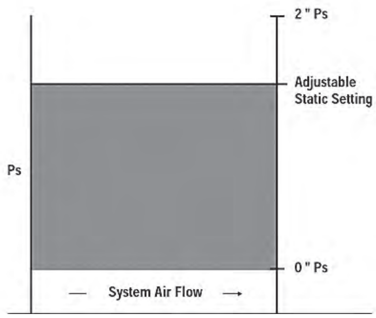
Pressure independent pneumatic air terminal actuators are powered by signals from a flow control device which balances pressure readings from the main air supply and the branch air pressure from the thermostat. The damper's position is regulated by the flow control which operates within preset minimum and maximum flow rates.

Multi-function flow controllers for pressure independent applications can be field modified for use with a direct or reverse acting thermostat and the damper actuator can be switched to either normally open or normally closed position without adding control components.



PNEUMATIC-STATIC CONTROL

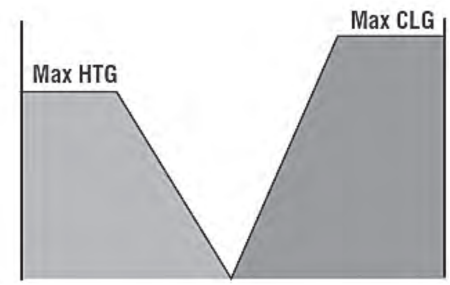
Local or remote pickup senses duct static and signals controller to maintain constant static at sensing point. It may be used for direct static control or as a bypass flow method. 0"-2" range.



TYPICAL DUAL DUCT PNEUMATIC CONTROLS

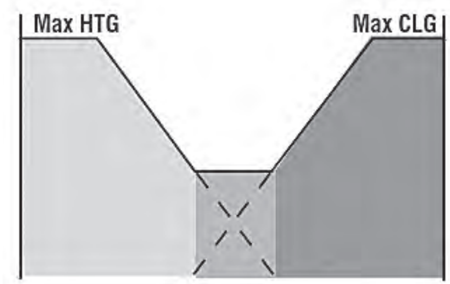
PNEUMATIC PRESSURE INDEPENDENT-VARIABLE VOLUME/DUAL FLOW CONTROLLERS/ZERO MINIMUM

Thermostat signals dual flow controls to regulate hot and cold duct damper positions in sequence. Flow control modulates cold duct damper in response to signals from the room thermostat within preset maximum to 0 CFM range while hot duct remains closed. If room temperature drops below the set point, the cold duct damper is closed and the hot duct damper is modulated between 0 and the maximum CFM range. Once the set point has been reached, neither heating nor cooling occurs.



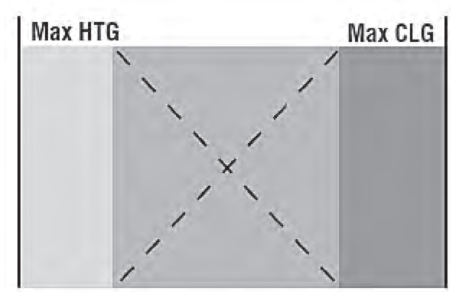
PNEUMATIC PRESSURE INDEPENDENT- VARIABLE VOLUME/DUAL FLOW CONTROLLERS/REDUCED MIXING

Thermostat signals dual flow controls to regulate hot and cold duct damper positions in sequence. Flow control modulates cold duct damper in response to signals from room thermostat within preset maximum and minimum CFM range while hot duct damper remains closed. If the set point is still not reached, the unit switches from the cooling minimum to the heating minimum CFM with hot and cold air blending. If room temperature still remains below the set point, the cold duct damper goes to minimum or closed and the hot duct damper is modulated between its minimum and maximum CFM range until the set point is reached.



PNEUMATIC PRESSURE INDEPENDENT- CONSTANT VOLUME/DUAL FLOW CONTROLLERS/MIXING SENSORS

Flow controllers respond to signals from the room thermostat in a complimentary fashion so that as the hot duct damper closes, the cold duct damper opens and vice versa. In this way varying volumes of hot and cold air are blended to maintain a constant volume of air to the room.



ELECTRIC CONTROL

ELECTRICALLY CONTROLLED AIR TERMINALS

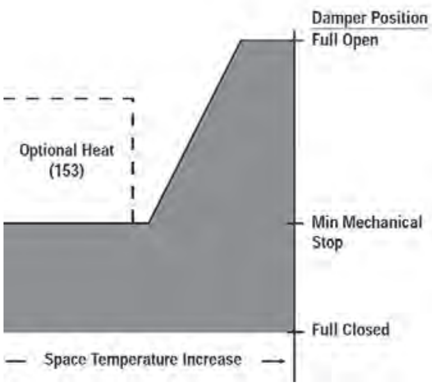
Reversible electric actuators are pressure dependent and are powered directly by signals from the room thermostat. As room temperature rises, the actuator opens the damper to permit a higher flow of cooling air into the room. As temperature falls, the actuator closed the damper to reduce air flow to the room. The electric actuator is not a spring return device. If there is a loss of power to the air terminal, the damper will remain in the position it occupied at the time of the failure. A mechanical stop is provided with each electric control sequence to assure minimum air flow to the room. The modulating actuator provides floating proportional control of supply air to the room and can be left in a stalled position indefinitely. A 24 volt bi-metallic room thermostat is standard component on each electric control sequence, with the exception of the 57N. A transformer is required to reduce the line voltage to 24 volts to operate the thermostat and the actuator. An optional minimum 40 VA transformer that will step down the primary voltage from 120, 277 or 208-240 line voltage to 24 control voltage.

COOLING ONLY

As room temperature rises, the thermostat signals the actuator to open the damper to its fully open position. As room temperature falls, the thermostat signals the actuator to close the damper to a mechanically determined minimum set point.

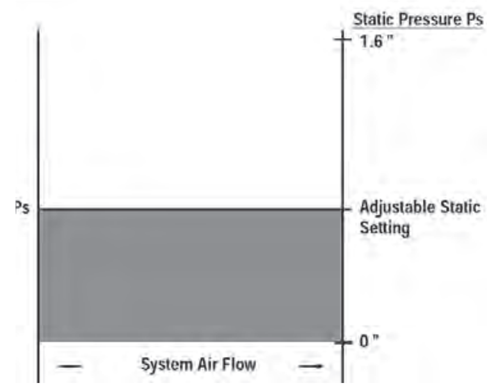
COOLING WITH HEAT

As room temperature rises, the thermostat signals the actuator to open the damper to its fully open position. As room temperature falls, the thermostat signals the actuator to close the damper to a mechanically determined minimum set point.. At this point, an electrical accessory switch energizes optional heat at the minimum air flow rate. Up to two stages of heat are available.



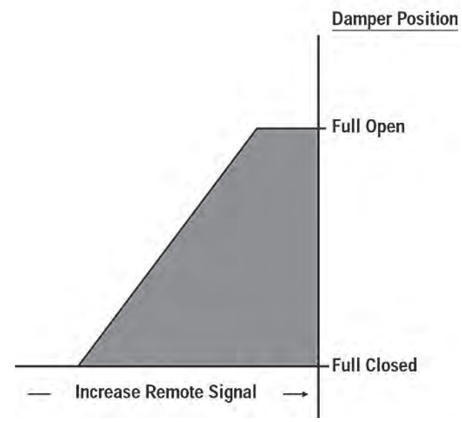
STATIC CONTROL

Static sensor — at terminal or remote — senses static variations and signals controller to maintain static. 0"-1.6" range.



FLOATING ELECTRIC CONTROL

Actuator modulates air flow in response to controller(by others) signals. Signal, 24 volt, may be from a static, velocity or other controller requiring air flow modulation. (Flow sensor and thermostat optional)



ANALOG ELECTRONIC CONTROLS

Analog electronic flow controls are the only electrical devices available for use with electric or electronic damper actuators that achieve pressure independent control so that variations in supply static pressure do not affect air flow conditions to the room. The analog electronic room thermostats supplied with the control sequences detailed on these pages have field adjustable flow limit set points. The thermostat electronically signals the actuator to open or close the damper in response to room temperature within preset air flow limits. The electric and electronic actuators are not spring return devised. If there is a loss of power to the air terminal, the damper will remain in the position it occupied at the time of power failure.

These state-of-the-art control sequences are available with both analog and computer compatible digital input/output controller options. Numerous control arrangements are possible with electronic control sequencing which are not discussed in this catalog.

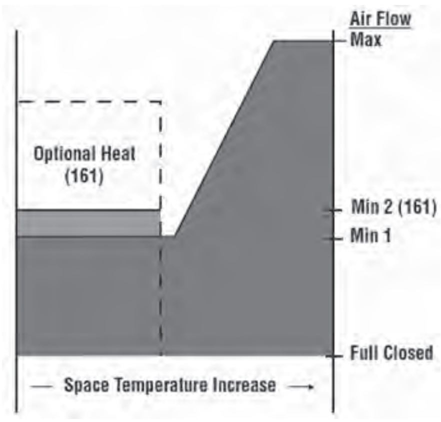
All electric and electronic components used in these sequences use low voltage (24V) controls and are readily enclosed with a standard control panel cover. A standard 50Va transformer that reduces 120, 240, or 277 line voltage to 24 control voltage is wired into the control sequence as a standard component. It is assumed that 120 line voltage is being supplied to the air terminal if a different line voltage is not specifically listed.

COOLING ONLY

Electronic thermostat (analog models with integral, adjustable, maximum, and minimum flow limits) signals electronic flow controller to regulate damper position. The damper is rotated to its maximum open position as room temperature rises and to its minimum open position as room temperature falls in proportion to the temperature conditions in the space.

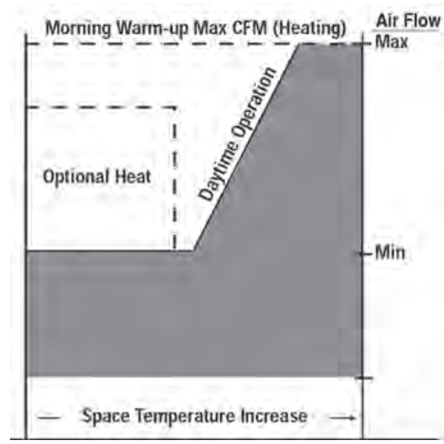
COOLING WITH HEAT

The electronic thermostat (analog models with integral, adjustable, maximum and minimum flow limits) signals the electronic flow controller to regulate the dampers position. The damper is rotated to its maximum open position as room temperature rises and to its minimum open position as room temperature falls in proportion to the temperature conditions in the space. After the damper has reached its minimum position, the thermostat activates the optional heat at an independently selected set point. Up to three stages of heat are available.



NIGHT SHUTDOWN/MORNING WARM-UP DAYTIME OPERATION

Electronic thermostat (analog models with integral, adjustable, maximum and minimum flow limits) signals electronic flow controller to regulate damper position. The damper is rotated to its maximum open position as room temperature rises and to its minimum open position as temperature falls. After the damper has reached its minimum position, the thermostat actuates optional heat at an independently selected set point. Up to three stages of heat are available depending on the control manufactured selected.

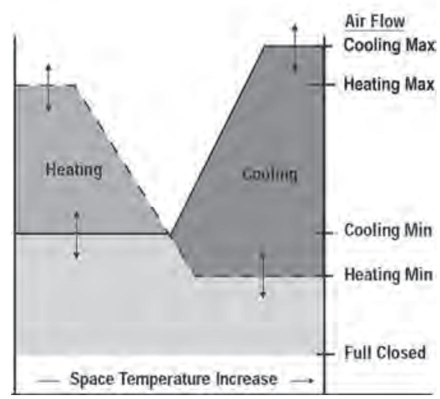


NIGHT SHUTDOWN/MORNING WARM-UP

With central system off, no air or duct mounted heat is supplied to the room. At morning warm up, a duct sensor detects warm air in the central system and drives air terminal to maximum CFM. During warm up, duct heat is held off. When duct sensor detects warm air in the central system, the air terminal automatically reverts to daytime operation.

HEATING / COOLING CHANGEOVER:

A duct thermostat or a remote input signal switches the heat/cool relay to force the system to operate in the desired heating or cooling mode.



COOLING MODE:

The electronic thermostat signals the analog electronic flow controller to regulate primary air damper position. The damper is rotated to its maximum flow settings as room temperature rises and to its minimum flow setting as room temperature falls in proportion to the temperature conditions in the space. For fan powered units, when the primary air damper is at its minimum airflow position, fan induced plenum air is supplied to the room until the room temperature reaches the set point.

HEATING MODE:

The primary air damper is modulated in response to signals from the electronic room thermostat. In fan powered units, plenum air is induced proportionally to maintain a constant volume of airflow to the room.

DDC ELECTRONIC CONTROL CAPABILITY

The majority of controls installed in HVAC systems today are direct digital controls (DDC). METALAIRE can mount and wire any manufacturer's control product that fits on our standard control panel, regardless of the brand. Mounting of other manufacturer's control enclosures or transformer is not available.

In those cases where it is desirable to have the controls field mounted and wired, a basic air terminal without controls can be purchased from METALAIRE. The basic unit includes a control panel and cover.

In either case where controls are to be factory mounted and wired by METALAIRE or field installed by the control manufacturer, most types of DDC controllers require a flow sensor. METALAIRE will provide our multi-quadrant averaging flow sensor which is compatible with all electronic control devices currently on the market. We can mount a control manufacturer's compatible sensor for an additional cost.

Visit Metalaire.com for a complete controls offering

SOUND PATH ATTENUATION ASSUMPTIONS

The current AHRI standard for NC calculation is AHRI 885-08

AHRI-885-08 Radiated Sound Path Assumptions

Assumptions	Octave Band 2	3	4	5	6	7
Environmental Effect	2	1	0	0	0	0
Ceiling/Space Effect*	16	18	20	26	31	36
Total dB Reduction	18	19	20	26	31	36

Note: Attenuation assumptions are based upon factors located in the AHRI Standard AHRI-885-08

Parameters: 1) Mineral fiber ceiling tile, 5/8" thick (35 lb / 3 ft density)

2) The plenum space is at least 3 ft. deep and either wide (> 30 ft.) or insulated

** Combined effect including absorption of the ceiling tile, plenum absorption and room absorption. This is new to AHRI-885-08; AHRI-885-90 had separate lines for these absorptions.*

AHRI-885-08, Appendix E defines "Small" for applications less than 300 CFM

AHRI-885-08 Discharge Sound Path Assumptions, Small

Assumptions	Octave Band 2	3	4	5	6	7
Environmental Effect	2	1	0	0	0	0
Duct Lining	2	6	12	25	29	18
End Reflection	9	5	2	0	0	0
Flex Duct	6	10	18	20	21	12
Space Effect	5	6	7	8	9	10
Power Split	0	0	0	0	0	0
Total dB Reduction	24	28	39	53	59	40

Note: Attenuation assumptions are based upon factors located in the AHRI Standard AHRI-885-08

Parameters: 1) Fiberglass duct lining is 1" thick, 8 x 8 duct length is 5 feet

2) Flex duct is 8" in diameter and 5 feet in length for run to diffuser

3) Flex duct has vinyl core

4) Room size is 2400 3 ft

5) Unit is located 5 feet from measurement point

6) Sound power split: attenuation credit based on unit feeding one outlet (10 log (# outlets=1)).

AHRI-885-08, Appendix E defines "Medium" for applications from 300-700 CFM

AHRI-885-08 Discharge Sound Path Assumptions, Medium

Assumptions	Octave Band					
	2	3	4	5	6	7
Environmental Effect	2	1	0	0	0	0
Duct Lining	2	4	10	20	20	14
End Reflection	9	5	2	0	0	0
Flex Duct	6	10	18	20	21	12
Space Effect	5	6	7	8	9	10
Power Split	3	3	3	3	3	3
Total dB Reduction	27	29	40	51	53	39

Note: Attenuation assumptions are based upon factors located in the AHRI Standard AHRI-885-08

Parameters:
1) Fiberglass duct lining is 1" thick, 12 x 12 duct length is 5 feet
2) Flex duct is 8" in diameter and 5 feet in length for run to diffuser
3) Flex duct has vinyl core
4) Room size is 2400 3 ft
5) Unit is located 5 feet from measurement point
6) Sound power split: attenuation credit based on unit feeding one outlet (10 log (# outlets=2)).

AHRI-885-08, Appendix E defines "Large" for applications 700 CFM and greater

AHRI-885-08 Discharge Sound Path Assumptions, Large

Assumptions	Octave Band					
	2	3	4	5	6	7
Environmental Effect	2	1	0	0	0	0
Duct Lining	2	3	9	18	17	12
End Reflection	9	5	2	0	0	0
Flex Duct	6	10	18	20	21	12
Space Effect	5	6	7	8	9	10
Power Split	5	5	5	5	5	5
Total dB Reduction	29	30	41	51	52	39

Note: Attenuation assumptions are based upon factors located in the AHRI Standard AHRI-885-08

Parameters:
1) Fiberglass duct lining is 1" thick, 15 x 15 duct length is 5 feet
2) Flex duct is 8" in diameter and 5 feet in length for run to diffuser
3) Flex duct has vinyl core
4) Room size is 2400 3 ft
5) Unit is located 5 feet from measurement point
6) Sound power split: attenuation credit based on unit feeding one outlet (10 log (# outlets=3)).

SYSTEM DESIGN AND NOISE GENERATION

The central system equipment and distribution ductwork must be properly designed if the air terminal units are to operate correctly. Noise generated at the central system travels through the duct system to the individual zones and can be objectionable when it is sufficient to 'break out' of the duct system or is carried through the duct system to 'discharge' into the occupied zone.

The most common source of objectionable noise emanating from VAV systems arises from high static pressure in primary (upstream of the terminal unit) duct systems. These pressures have a two-fold effect of increasing the central system sound levels and of causing the terminal units to operate noisily. When the pressure is too high, the primary air damper must close to compensate. The air flowing past the damper must do so at a relatively high pressure drop creating objectionable noise levels.

This is seen quite commonly in VAV systems when the highest inlet static pressure in a distribution duct is used as the default condition for all terminal units served by the trunk duct. The result is over sizing of the upstream VAV terminal units. The result is additional system cost, excessive noise, and inefficient operation of the terminal units. To avoid this condition, the designer would be better suited to provide a balancing damper ahead of the upstream branch ducts serving these terminal units, reducing the inlet pressure at each unit.

System noise is also commonly generated by improper duct design or installation. Particular care should be taken in the excessive and improper use of flex duct as it is more susceptible to break out noise and can cause noisy airflow equipment operation when installed in a 'kinked' fashion. Avoid using 'bullhead' tees and tight elbows before and after terminal units and discharge devices.

In order to ensure proper VAV terminal selection, the system sound pressure levels should be determined. These levels can be used in accordance with AHRI Standard 885 to determine the maximum sound power levels acceptable for each terminal unit. Design engineers should familiarize themselves with the standard and perform an acoustical analysis of each critical path within the system. Standard 885 provides the methodology and data to perform such an analysis for most common applications. Critical applications may require consultation with an acoustical consultant.