

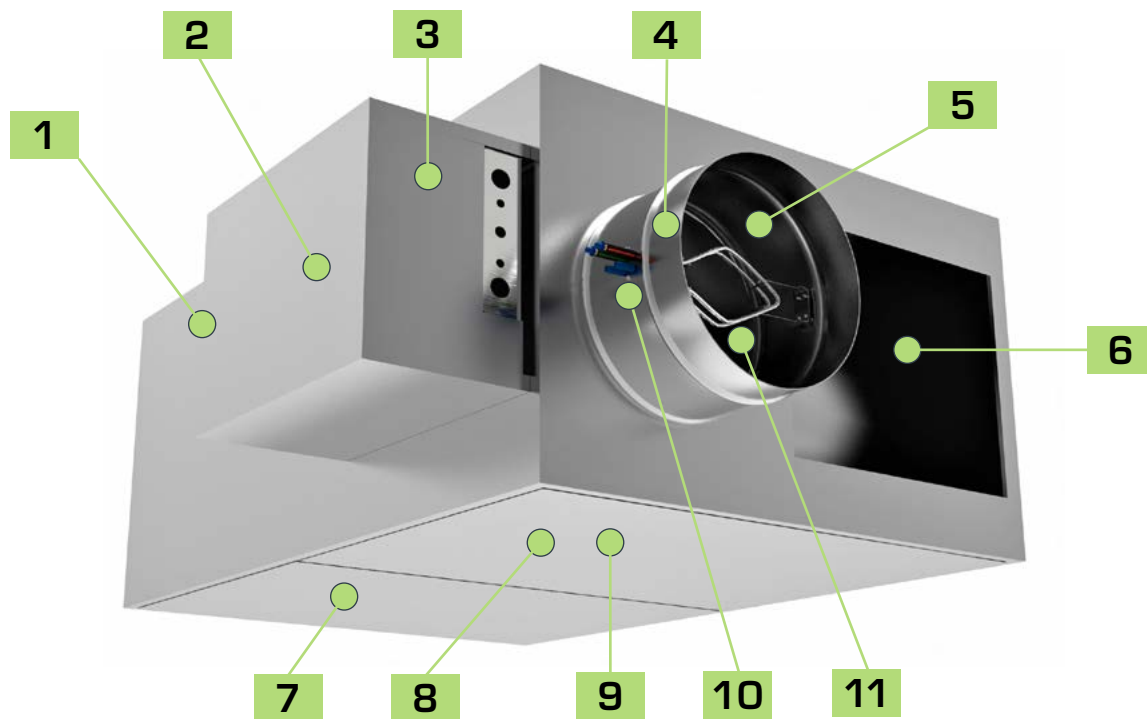
FVI-500 VARIABLE VOLUME FAN TERMINAL UNIT

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.
- 20 ga. galvanized steel casing, mechanically sealed, low leakage construction.
- Mechanically fastened damper assembly is double layer, 18 gauge equivalent, galvanized steel with integral blade 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 fan 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 / ft³ 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.



FVI-500 VARIABLE VOLUME FAN TERMINAL UNIT

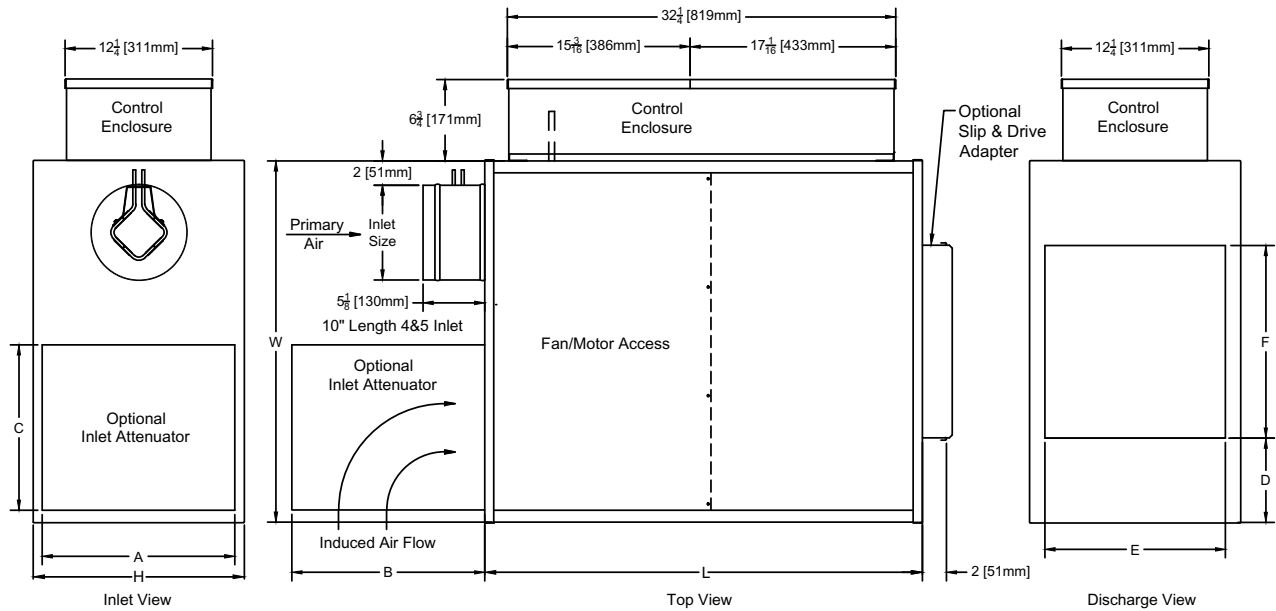
FEATURES AND BENEFITS

- 1** Galvanized steel casing, mechanically sealed for low leakage construction.
- 2** NEMA TYPE 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** Top and bottom access panels 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

PARALLEL FAN POWERED

FVI-500 VARIABLE VOLUME

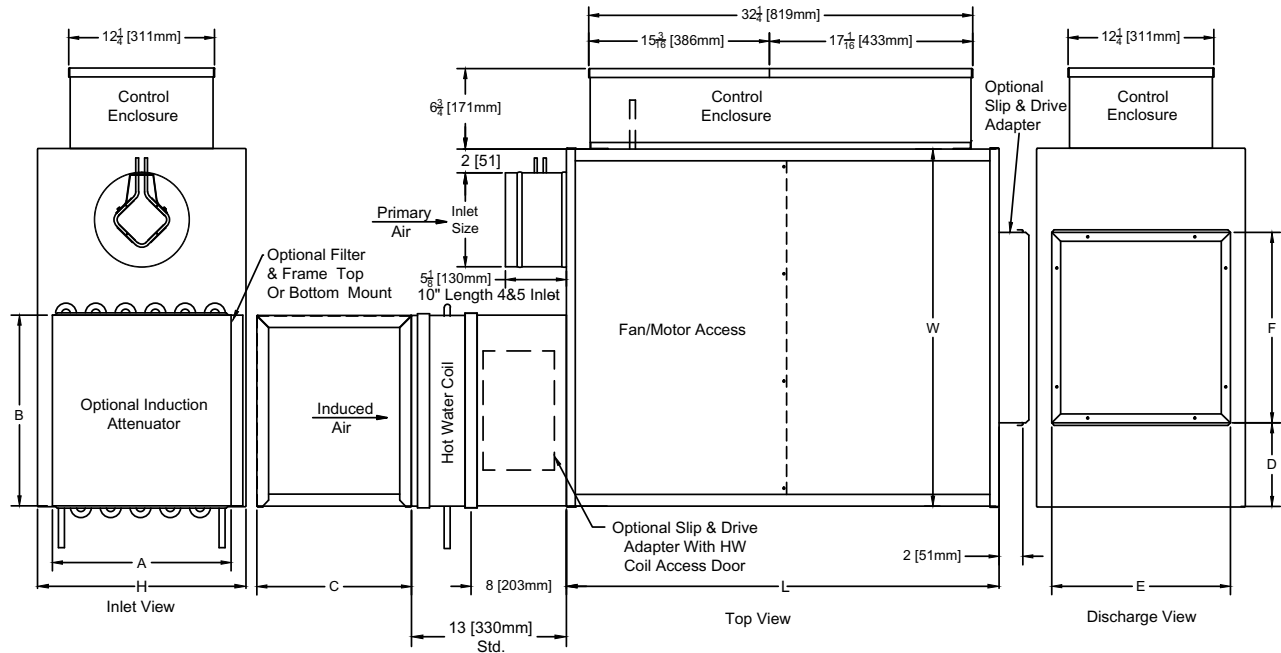


The standard location for control enclosure is Left Hand on Model FVI.
Looking in the direction of airflow, the control enclosure is on the left.

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
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	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)

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.

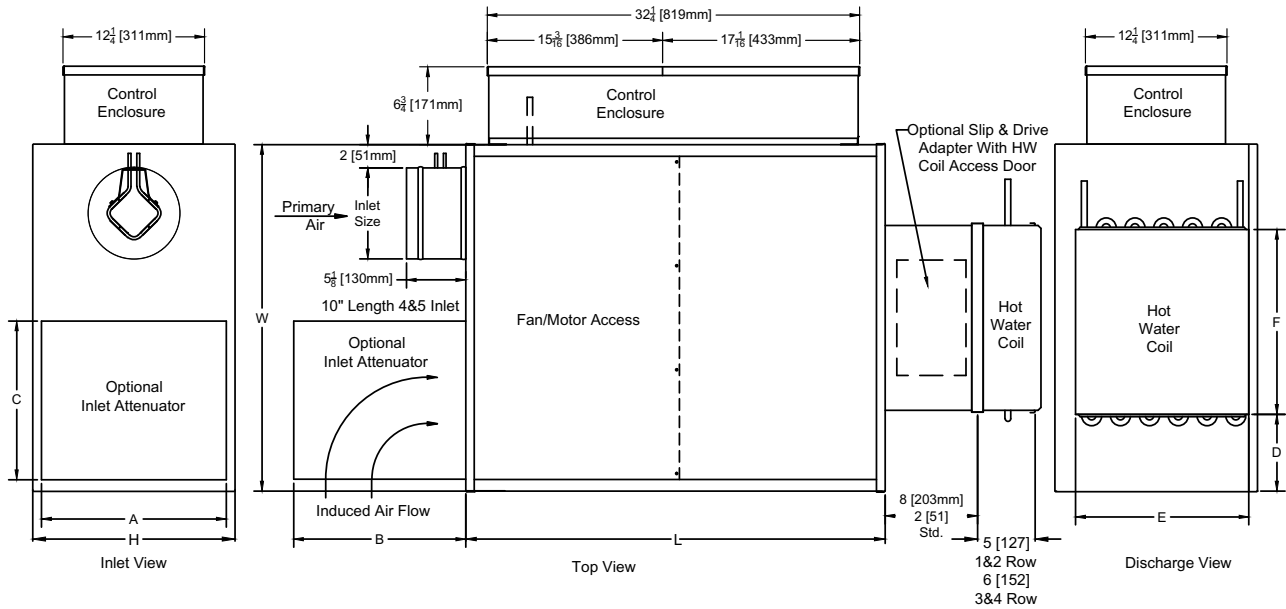
Case size	Inlet Size		Horsepower	Unit Dimensions			Induction Attenuator			Discharge		
	Standard	Optional		Height H	Width W	Length L	Height A	Width B	Length C	Loc. D	Height E	Width F
1	6 (152)	4,5,8,10	1/8	17 1/2 (445)	30 (718)	36 (914)	15 (381)	16 (406)	16 (406)	7 (178)	15 (381)	16 (406)
2	8 (203)	4,5,6,10	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)

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

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

PARALLEL FAN POWERED

FVI-500 VARIABLE VOLUME

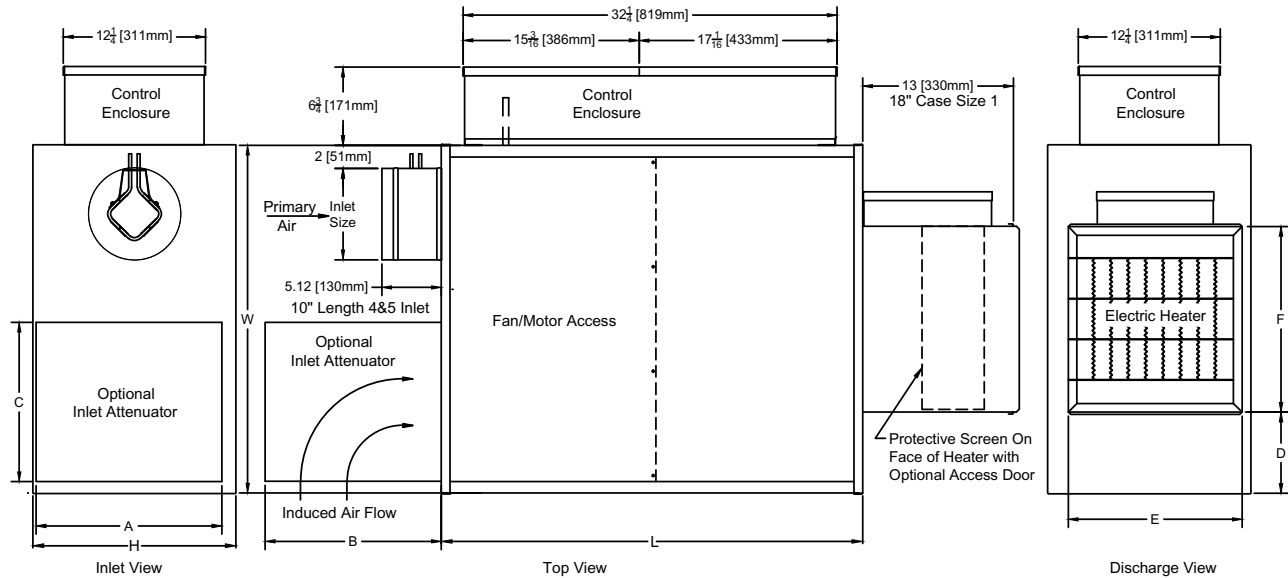


The standard location for control enclosure is Left Hand on Model FVI. Looking in the direction of airflow, the control enclosure is on the left.

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
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	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.

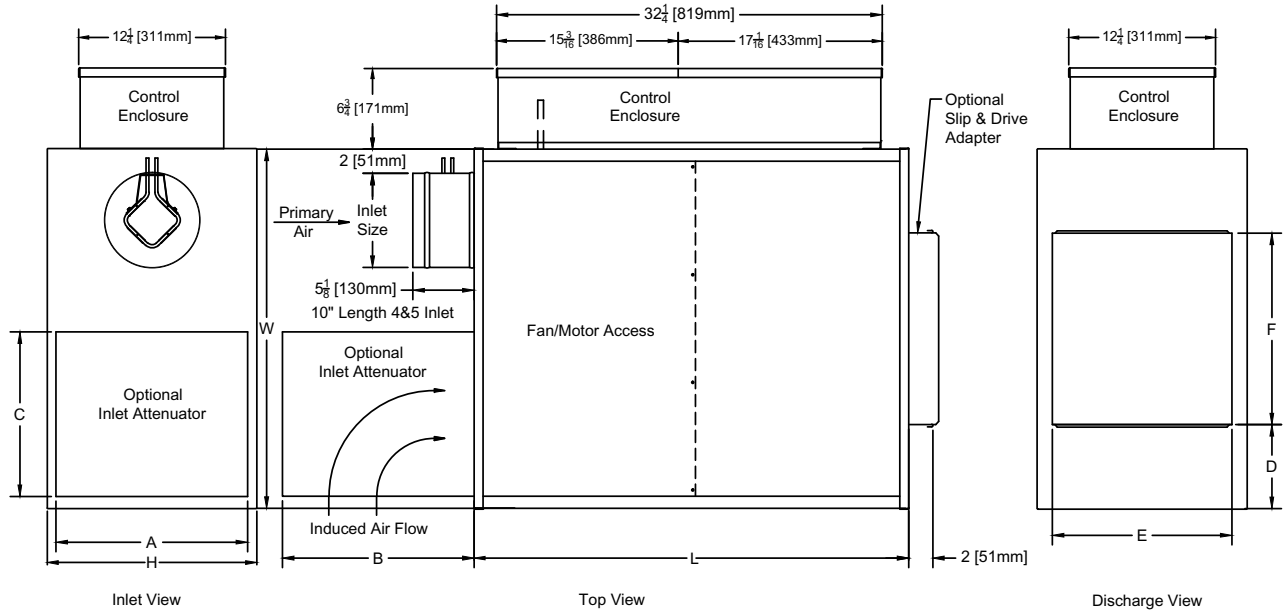
Case size	Inlet Size		Horsepower	Unit Dimensions			Induction Attenuator			Discharge		
	Standard	Optional		Height H	Width W	Length L	Height A	Width B	Length C	Loc. D	Height E	Width F
1	6 (152)	4,5,8,10	1/8	17 1/2 (445)	30 (718)	36 (914)	16 (406)	16 (406)	15 (381)	2 1/2 (64)	15 (381)	16 (406)
2	8 (203)	4,5,6,10	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)	20 (508)	30 (765)

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

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

PARALLEL FAN POWERED

FVI-500 VARIABLE VOLUME

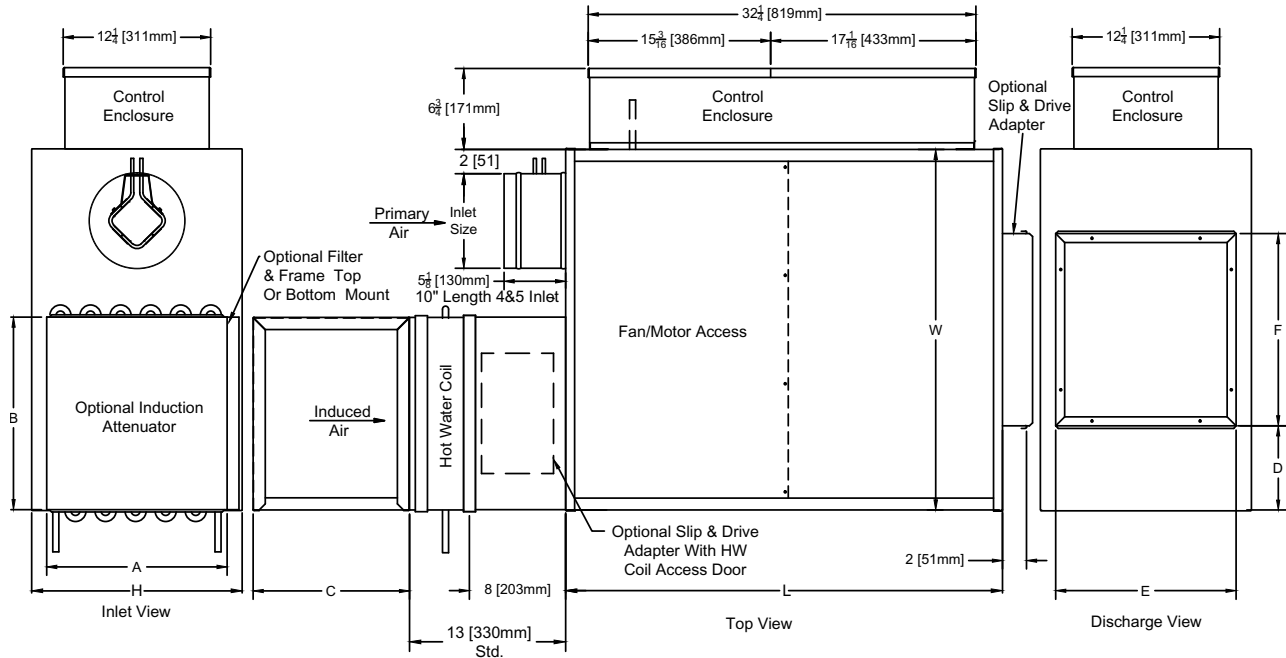


The standard location for control enclosure is Left Hand on Model FVI.
Looking in the direction of airflow, the control enclosure is on the left.

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
1	6	4,5,8,10	1/3	17 1/2	30	36	16	16	15	7	15	16
2	8	4,5,6,10	1/3	17 1/2	30	36	16	16	15	7	15	16
3	10	4,5,6,8,12,14	1/2	17 1/2	36	40	16	20	19	8	17 1/2	20
4	12	8,10,12,14	1/2	17 1/2	36	40	16	20	19	8	17 1/2	20
5	14	10,12,16	1	20	40	40	20	20	19	10	17 1/2	20
6	16	10,12,14	1	20	42	42	20	24	21	10	18	22
7	18x16	12,14,16	1	20	42	42	20	24	23	6	20	30

All dimensions are in inches.

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.

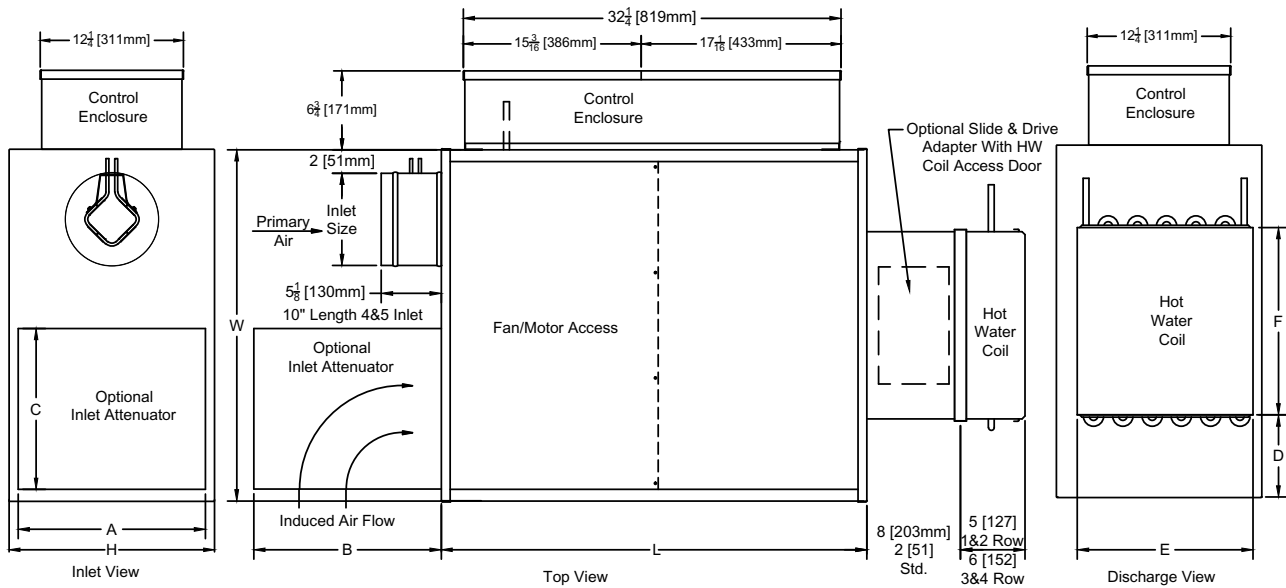
Case size	Inlet Size		Horsepower	Unit Dimensions			Induction Attenuator			Discharge		
	Standard	Optional		Height H	Width W	Length L	Height A	Width B	Length C	Loc. D	Height E	Width F
1	6	4,5,8,10	1/3	17 1/2	30	36	16	16	15	7	15	16
2	8	4,5,6,10	1/3	17 1/2	30	36	16	16	15	7	15	16
3	10	4,5,6,8,12,14	1/2	17 1/2	36	40	16	20	19	8	17 1/2	20
4	12	8,10,12,14	1/2	17 1/2	36	40	16	20	19	8	17 1/2	20
5	14	10,12,16	1	20	40	40	20	20	19	10	17 1/2	20
6	16	10,12,14	1	20	42	42	20	24	21	10	18	22
7	18x16	12,14,16	1	20	42	42	20	24	23	6	20	30

All dimensions are in inches.

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

PARALLEL FAN POWERED

FVI-500 VARIABLE VOLUME

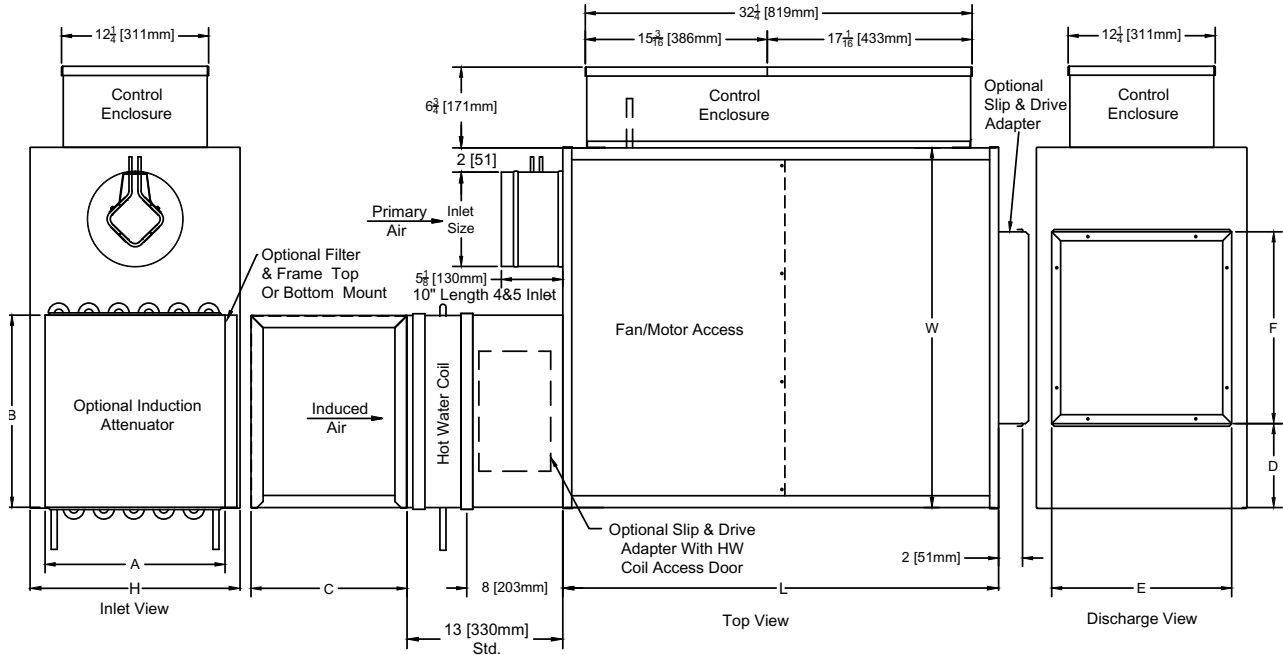


The standard location for control enclosure is Left Hand on Model FVI. Looking in the direction of airflow, the control enclosure is on the left.

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
1	6	4,5,8,10	1/3	17 1/2	30	36	16	16	15	7	15	16
2	8	4,5,6,10	1/3	17 1/2	30	36	16	16	15	7	15	16
3	10	4,5,6,8,12,14	1/2	17 1/2	36	40	16	20	19	8	17 1/2	20
4	12	8,10,12,14	1/2	17 1/2	36	40	16	20	19	8	17 1/2	20
5	14	10,12,16	1	20	40	40	20	20	19	10	17 1/2	20
6	16	10,12,14	1	20	42	42	20	24	21	10	18	22
7	18x16	12,14,16	1	20	42	42	20	24	23	6	20	30

All dimensions are in inches.

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.

Case size	Inlet Size		Horsepower	Unit Dimensions			Optional Induction Attenuator			Loc. D	Discharge	
	Standard	Optional		Height H	Width W	Length L	Height A	Width B	Length C		Height E	Width F
1	6	4,5,8,10	1/3	17 1/2	30	36	16	16	15	7	15	16
2	8	4,5,6,10	1/3	17 1/2	30	36	16	16	15	7	15	16
3	10	4,5,6,8,12,14	1/2	17 1/2	36	40	16	20	19	8	17 1/2	20
4	12	8,10,12,14	1/2	17 1/2	36	40	16	20	19	8	17 1/2	20
5	14	10,12,16	1	20	40	40	20	20	19	10	17 1/2	20
6	16	10,12,14	1	20	42	42	20	24	21	10	18	22
7	18x16	12,14,16	1	20	42	42	20	24	23	6	20	30

All dimensions are in inches.

FVI-500 APPROXIMATE SHIPPING WEIGHTS

Case Size	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.



CERTIFICATIONS AND STANDARDS

- Units tested per ASHRAE Standard 130-2016.
- All model sizes certified in accordance with AHRI 880-2017 certification program.
- ETL listed to meet requirements of UL 1995 and CSA 236.
- Dual-density fiberglass insulation meets UL 181 and NFPA 90A/90B.
- Insulation meets ASHRAE 62.1 requirements for resistance to mold growth and erosion.
- Hot water coils are manufactured in accordance to AHRI Standard 410.

FVI-500 AHRI CERTIFIED RATING POINTS



RADIATED AND DISCHARGE SOUND - PSC MOTOR - FAN ONLY HEATING

OCTAVE BAND SOUND POWER, Lw, dB														
Case-Inlet Size	CFM	Discharge Ps	RADIATED SOUND FAN ONLY						DISCHARGE SOUND FAN ONLY					
			2	3	4	5	6	7	2	3	4	5	6	7
1-06	270	0.25	65	60	52	45	42	41	59	56	52	50	46	41
2-08	440	0.25	63	58	48	41	37	35	58	53	53	52	47	40
3-10	780	0.25	66	62	55	49	43	44	65	61	58	57	53	49
4-12	1000	0.25	70	68	62	62	53	53	69	67	59	63	59	56
5-14	1200	0.25	66	61	58	50	49	48	60	52	59	57	54	53
6-16	1800	0.25	76	73	67	63	57	56	73	70	67	69	63	64
7-16	2800	0.25	78	75	73	72	66	64	81	78	76	75	72	74

RADIATED AND DISCHARGE SOUND - PSC MOTOR - PRIMARY AIR ONLY COOLING

OCTAVE BAND SOUND POWER, Lw, dB														
Case-Inlet Size	CFM	Min ΔPs	ΔPs = 1.5 in. wg.											
			RADIATED SOUND						DISCHARGE SOUND					
			2	3	4	5	6	7	2	3	4	5	6	7
1-06	400	0.16	56	50	43	38	34	34	62	54	51	48	45	45
2-08	700	0.15	59	52	43	39	34	29	67	59	52	53	49	45
3-10	1100	0.16	63	54	50	47	41	35	69	62	57	56	53	50
4-12	1600	0.12	70	62	55	51	48	45	77	69	63	62	56	54
5-14	2100	0.16	66	61	52	48	43	36	73	67	61	61	58	52
6-16	2800	0.16	73	67	62	58	54	50	80	74	68	63	61	60
7-16	2800	0.16	73	68	65	63	58	55	81	76	64	62	61	60

PERFORMANCE NOTES

- 1) Radiated sound is the noise transmitted through the unit casing
- 2) Discharge sound is noise emitted from unit discharge into downstream ductwork
- 3) Sound power levels expressed in decibels, (dB) re 10⁻¹² Watts
- 4) Min ΔPs is the min. operating pressure requirement of the unit with the damper full open and is the static pressure drop from the unit inlet to the unit discharge
- 5) Performance data based on laboratory tests conducted in accordance with ASHRAE 130-2016 and AHRI 880-2017
- 6) Discharge sound power levels include duct end reflection corrections per AHRI Standard 880-2017
- 7) Sound performance based on units lined with standard dual density fiberglass insulation
- 8) Discharge (external) static pressure is 0.25" w.g. for all cases

FVI RADIATED AND DISCHARGE SOUND - PSC MOTOR - FAN ONLY HEATING

OCTAVE BAND SOUND POWER, Lw, dB																
Case-Inlet Size	CFM	Discharge Ps	RADIATED SOUND FAN ONLY							DISCHARGE SOUND FAN ONLY						
			2	3	4	5	6	7	NC	2	3	4	5	6	7	NC
1-06	230	0.25	65	58	51	43	40	41	29	55	52	48	47	43	38	<15
	250		65	59	52	44	41	41	29	58	55	51	50	45	40	<15
	270		65	60	52	45	42	41	30	59	56	52	50	46	41	<15
	290		66	61	53	46	43	42	31	60	57	53	51	47	42	15
	310		66	61	54	47	44	43	31	60	57	53	51	47	42	15
2-08	380	0.25	61	57	47	41	37	35	26	57	52	51	51	45	39	<15
	410		62	57	47	41	37	35	26	57	52	52	51	46	39	<15
	440		63	58	48	41	37	35	28	58	53	53	52	47	40	<15
	470		63	58	48	42	38	36	28	58	53	53	52	47	41	<15
	500		64	59	49	42	38	36	29	59	54	54	53	48	42	16
3-10	580	0.25	60	58	51	45	38	39	28	60	57	52	49	48	42	>15
	680		63	61	53	47	40	41	31	63	60	57	55	50	46	18
	780		66	62	55	49	43	44	32	65	61	58	57	53	49	18
	880		67	63	56	50	44	45	34	68	62	59	60	57	54	19
	980		68	65	57	51	41	45	36	70	64	60	61	58	57	21
4-12	700	0.25	64	63	58	56	48	46	34	64	62	56	55	54	50	19
	850		66	65	60	58	50	49	36	66	64	58	56	56	52	21
	1000		70	68	62	62	53	53	39	69	67	59	63	59	56	25
	1150		70	69	62	63	54	54	40	70	68	60	63	60	57	26
	1300		72	71	64	66	56	57	42	71	70	61	62	62	59	29
5-14	1000	0.25	64	57	53	45	43	42	28	62	59	58	55	52	50	15
	1100		67	60	57	49	48	47	32	59	61	58	56	53	52	18
	1200		66	61	58	50	49	48	33	60	52	59	57	54	53	19
	1300		69	62	59	51	50	49	34	61	62	60	58	55	54	19
	1400		70	64	61	52	51	50	36	67	66	62	60	58	57	24
6-16	1600	0.25	74	72	66	62	56	55	35	69	66	64	61	59	59	24
	1700		75	72	66	62	56	55	36	71	68	66	64	61	61	26
	1800		76	73	67	63	57	56	40	73	70	67	69	63	64	29
	1900		77	74	67	64	58	57	43	74	71	67	68	64	64	30
	2000		77	74	68	64	58	57	45	74	71	68	68	65	65	30
7-16	2600	0.25	77	74	71	69	62	61	47	79	76	75	73	70	73	36
	2700		78	74	72	70	64	62	48	80	77	46	74	71	74	37
	2800		78	75	73	72	66	64	49	81	78	76	75	72	74	38
	2900		79	76	74	72	66	65	50	82	78	76	76	73	74	38
	3000		80	76	75	73	67	66	51	82	79	77	76	74	74	39

PARALLEL FAN POWERED

FVI-500 VARIABLE VOLUME

- 1) AHRI certified data is highlighted while all other data are application ratings
- 2) Radiated sound is the noise transmitted through the unit casing
- 3) Sound power levels expressed in decibels, (dB) re 10⁻¹² Watts
- 4) Min ΔPs is the minimum operating pressure requirement of the unit with the damper full open and is the static pressure drop from the unit inlet to the unit discharge
- 5) Performance data based on laboratory tests conducted in accordance with ASHRAE 130-2016 and AHRI 880-2017

- 6) NC values are calculated using attenuation credits outlined in AHRI 885-2008 Appendix E
- 7) Blank spaces indicate Minimum Ps if unit exceeds the ΔPs across the unit
- 8) Sound performance based on units lined with standard dual density fiberglass insulation
- 9) Discharge (external) static pressure is 0.25" w.g. for all cases
- 10) Discharge sound power levels include duct end reflection corrections per AHRI Standard 880-2017

FVI RADIATED SOUND - PSC MOTOR - PRIMARY AIR ONLY COOLING

OCTAVE BAND SOUND POWER, Lw, dB																							
Case-Inlet Size	CFM	Min ΔPs	ΔPs = 0.50 in. wg.							ΔPs = 1.0 in. wg.							ΔPs = 1.5 in. wg.						
			2	3	4	5	6	7	NC	2	3	4	5	6	7	NC	2	3	4	5	6	7	NC
1-06	300	0.13	48	40	33	29	24	24	<15	54	48	39	36	32	30	15	55	49	41	37	32	33	16
	350	0.14	50	42	35	30	26	26	<15	55	49	41	37	33	31	17	56	50	42	37	33	33	17
	400	0.16	51	44	38	32	28	29	<15	55	50	42	37	34	32	18	56	50	43	38	34	34	18
	450	0.18	52	46	40	33	29	29	<15	56	51	46	41	35	33	20	56	51	45	41	35	34	19
	500	0.19	53	47	41	35	30	30	<15	57	52	46	43	36	33	20	57	52	49	42	36	34	20
2-08	500	0.12	51	43	36	30	23	25	<15	55	49	40	35	30	27	16	56	49	41	36	31	29	17
	600	0.13	52	45	39	33	25	27	<15	57	51	42	37	32	28	19	58	51	42	37	33	29	19
	700	0.15	53	48	42	35	27	28	15	58	52	43	38	33	28	20	59	52	43	39	34	29	21
	800	0.16	54	50	44	38	29	30	18	59	54	45	39	34	29	22	60	54	45	40	35	30	22
	900	0.17	56	53	48	42	32	33	22	59	56	49	43	35	29	25	61	55	47	42	35	30	24
3-10	700	0.12	52	44	40	37	29	21	<15	60	50	45	43	37	32	22	61	52	47	45	39	34	23
	900	0.13	54	46	42	39	31	23	15	62	51	46	45	38	33	25	62	53	48	46	39	34	25
	1100	0.16	57	50	45	42	34	29	19	63	52	47	46	40	34	26	63	54	50	47	41	35	26
	1300	0.17	62	51	48	44	32	24	25	64	55	54	49	43	35	29	64	56	55	49	43	36	30
	1500	0.18	63	53	49	46	32	26	26	65	56	54	50	44	36	36	66	57	55	51	45	37	31
4-12	1000	0.10	55	50	44	42	32	27	16	64	57	50	46	44	42	28	66	59	52	48	46	44	31
	1300	0.11	57	55	49	45	36	28	24	66	58	52	48	45	42	30	68	60	54	50	47	44	32
	1600	0.12	65	56	51	47	43	39	29	68	60	54	50	47	43	32	70	62	55	51	48	45	35
	1900	0.13	68	58	53	46	41	37	32	71	62	56	52	49	45	36	72	64	57	53	50	47	37
	2200	0.14	69	59	54	47	42	38	35	73	61	56	52	49	43	39	75	64	58	54	50	46	41
5-14	1300	0.11	52	47	38	34	25	26	15	61	57	48	44	39	32	26	63	58	50	46	41	34	27
	1700	0.14	57	50	41	36	29	30	18	63	59	50	46	41	34	28	65	60	52	48	43	36	29
	2100	0.16	59	53	45	40	34	32	21	64	59	50	46	41	34	28	66	61	52	48	43	36	31
	2500	0.18	62	52	44	38	31	33	25	68	62	53	49	44	36	32	69	63	55	51	46	37	31
	2900	0.20	64	54	47	40	33	36	27	69	64	54	50	44	38	34	71	65	57	52	47	39	36
6-16	1800	0.12	60	48	44	42	37	30	22	67	62	57	53	49	46	32	68	64	59	56	52	49	34
	2300	0.14	64	57	51	47	42	36	28	70	64	59	54	50	47	35	71	66	61	57	53	49	37
	2800	0.16	69	63	56	51	47	42	34	72	66	60	55	51	47	38	73	67	62	58	54	50	39
	3300	0.18	71	64	59	53	48	42	36	74	68	63	58	52	48	41	76	69	64	59	55	51	44
	3800	0.20	74	67	61	56	50	46	41	78	71	66	61	55	52	45	79	71	66	61	56	54	47
7-16	1800	0.12	62	53	51	51	44	39	25	64	58	54	53	49	46	28	67	63	59	58	53	50	30
	2300	0.13	65	58	55	54	48	43	30	69	64	61	59	54	51	36	71	66	63	62	56	54	39
	2800	0.16	69	62	59	57	51	46	32	72	66	63	61	55	52	38	73	68	65	63	58	55	42
	3300	0.18	71	65	62	58	53	48	37	74	68	65	62	56	52	41	75	69	67	64	59	55	43
	3800	0.20	74	68	64	60	55	49	40	76	70	67	64	58	53	43	77	71	68	65	61	56	44

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- Sound power levels expressed in decibels, (dB) re 10⁻¹² Watts
- Min ΔPs is the minimum operating pressure requirement of the unit with the damper full open and is the static pressure drop from the unit inlet to the unit discharge
- Performance data based on laboratory tests conducted in accordance with ASHRAE 130-2016 and AHRI 880-2017

- NC values are calculated using attenuation credits outlined in AHRI 885-2008 Appendix E
- Blank spaces indicate Minimum Ps if unit exceeds the ΔPs across the unit
- Sound performance based on units lined with standard dual density fiberglass insulation
- Discharge (external) static pressure is 0.25" w.g. for all cases

FVI DISCHARGE SOUND - PSC MOTOR - PRIMARY AIR ONLY COOLING

OCTAVE BAND SOUND POWER, Lw, dB																							
Case-Inlet Size	CFM	Min ΔPs	ΔPs = 0.50 in. wg.							ΔPs = 1.0 in. wg.							ΔPs = 1.5 in. wg.						
			2	3	4	5	6	7	NC	2	3	4	5	6	7	NC	2	3	4	5	6	7	NC
1-06	300	0.13	56	46	42	36	37	34	<15	61	52	47	45	42	41	<15	62	53	49	47	43	43	17
	350	0.14	57	48	43	37	38	36	<15	62	53	49	46	44	42	<15	62	54	50	47	44	44	17
	400	0.16	58	49	44	38	39	37	<15	62	54	50	46	45	43	<15	62	54	51	48	45	45	17
	450	0.18	59	51	46	39	40	38	<15	63	55	54	51	46	44	<15	63	55	55	51	46	46	18
500	0.19	60	52	47	41	41	38	<15	64	56	55	53	47	44	16	64	56	56	53	47	46	20	
2-08	500	0.12	63	53	46	46	42	39	<15	64	56	48	49	46	43	16	64	57	49	50	47	44	20
	600	0.13	64	55	49	49	44	40	16	65	57	50	51	47	44	16	66	58	51	52	48	44	20
	700	0.15	64	56	51	51	45	40	16	66	58	51	52	48	44	16	67	59	52	53	49	45	20
	800	0.16	64	56	51	51	45	40	16	66	58	51	52	48	44	16	67	59	52	53	49	45	20
900	0.17	65	58	54	53	46	42	17	66	59	53	54	49	44	16	67	60	53	55	50	46	20	
3-10	700	0.12	66	56	50	49	43	42	16	67	60	55	53	51	48	17	68	61	55	54	52	49	21
	900	0.13	67	58	51	51	44	42	17	69	61	56	55	52	49	20	69	62	57	56	53	50	22
	1100	0.16	67	58	51	51	44	42	17	69	61	56	55	52	49	20	69	62	57	56	53	50	22
	1300	0.17	72	60	54	54	47	44	23	70	64	64	58	55	50	21	70	64	63	58	56	50	23
1500	0.18	73	62	56	56	48	46	25	70	65	63	59	57	51	22	71	65	62	59	57	51	25	
4-12	1000	0.10	68	60	53	51	47	43	18	71	64	58	54	49	46	22	72	65	59	55	51	48	26
	1300	0.11	70	62	56	55	50	47	21	73	69	59	57	51	49	25	74	67	60	58	53	51	29
	1600	0.12	74	64	60	58	54	52	26	76	69	62	60	55	53	29	77	69	63	62	56	54	30
	1900	0.13	77	66	63	62	57	55	30	78	71	64	63	58	56	31	79	71	65	63	58	57	32
2200	0.14	80	67	64	68	62	62	34	81	72	68	67	64	62	35	82	73	69	68	65	63	36	
5-14	1300	0.11	62	55	49	47	42	37	<15	69	64	57	57	54	50	21	70	65	59	59	56	51	22
	1700	0.14	67	58	52	51	45	41	17	71	65	58	58	55	51	22	73	66	61	61	57	52	25
	2100	0.16	68	60	54	53	47	43	18	72	66	59	59	56	51	24	73	67	61	61	58	52	25
	2500	0.18	71	60	54	53	48	44	22	72	67	60	60	57	52	25	74	68	63	62	59	53	26
2900	0.20	73	61	56	55	48	45	25	74	68	61	61	57	52	26	76	69	64	63	59	53	29	
6-16	1800	0.12	71	63	56	50	47	45	22	73	65	59	53	52	51	25	74	66	61	55	53	52	26
	2300	0.14	76	67	60	54	52	51	29	78	69	62	58	57	56	31	79	70	64	59	58	57	32
	2800	0.16	77	69	62	57	56	55	30	79	73	67	63	61	59	32	80	74	68	63	61	60	34
	3300	0.18	79	71	64	59	60	59	32	81	76	70	65	65	62	35	83	78	71	66	66	63	38
3800	0.20	82	73	65	63	61	61	36	84	77	71	67	66	63	39	86	80	72	68	67	64	41	
7-16	1800	0.12	70	65	57	56	53	51	22	75	70	61	59	57	55	28	75	70	61	59	57	55	28
	2300	0.13	74	68	59	58	56	54	26	79	74	62	61	59	58	33	79	74	62	61	59	58	33
	2800	0.16	78	71	61	60	59	59	31	81	76	64	62	61	60	35	81	76	64	62	61	60	35
	3300	0.18	79	76	66	66	64	62	35	83	80	78	73	71	70	40	83	80	78	73	71	70	40
3800	0.20	81	78	68	67	66	64	38	85	82	77	76	74	74	42	85	82	77	76	74	74	42	

PARALLEL FAN POWERED

FVI-500 VARIABLE VOLUME

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- 4) Min ΔPs is the minimum operating pressure requirement of the unit with the damper full open and is the static pressure drop from the unit inlet to the unit discharge
- 5) Performance data based on laboratory tests conducted in accordance with ASHRAE 130-2016 and AHRI 880-2017

- 6) NC values are calculated using attenuation credits outlined in AHRI 885-2008 Appendix E
- 7) Blank spaces indicate Minimum Ps if unit exceeds the ΔPs across the unit
- 8) Sound performance based on units lined with standard dual density fiberglass insulation
- 9) Discharge (external) static pressure is 0.25" w.g. for all cases
- 10) Discharge sound power levels include duct end reflection corrections per AHRI Standard 880-2017



FVI-500 PSC FAN MOTOR AMPERAGE RATINGS

Case Size	Motor HP	Standard PSC Motor Amperage Ratings		
		120v-1 Phase 60 Hz Rated Amps	208-240v-1 Phase 60 Hz Rated Amps	277v-1 Phase 60 Hz Rated Amps
1	1/8	2.6	0.8	1.1
2	1/6	3.1	0.8	1.1
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	3.9
7	1	N/A	6.2	6.2

FVI-500 ECM FAN MOTOR AMPERAGE RATINGS

Case Size	Motor HP	ECM Motor Amperage Ratings		
		120v-1 Phase 60 Hz Rated Amps	208-240v-1 Phase 60 Hz Rated Amps	277v-1 Phase 60 Hz Rated Amps
1	1/3	4.2	2.7	2.1
2	1/3	4.2	2.7	2.1
3	1/2	6.6	3.8	3.2
4	1/2	6.6	3.8	3.2
5	1	12.0	7.5	6.2
6	1	12.0	7.5	6.2
7	1	12.0	7.5	6.2

FVI-500 DAMPER LEAKAGE

Standard Construction			
Inlet Diameter	Static Pressure " w.g.	Maximum Airflow	Max Damper Leakage
4	3	300	5
5	3	375	5
6	3	540	5
7	3	760	7
8	3	990	9
9	3	1250	12
10	3	1640	16
12	3	2350	22
14	3	3250	32
16	3	4100	41
20	3	6430	64
24	3	7270	72

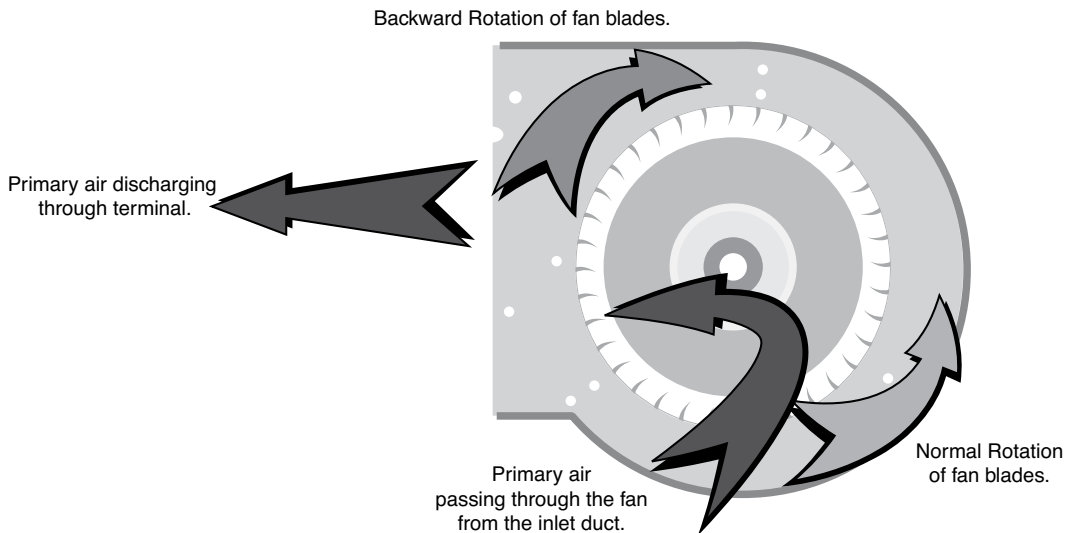
PERFORMANCE NOTES

- 1) Leakage testing conducted in accordance with ASHRAE 130-2016
- 2) Per ASHRAE Standard 130-2016 "terminal damper leakage: the amount of air in ft³/min (L/s) leaking through a fully closed damper/valve of a supply/exhaust terminal unit at a given inlet pressure"opened"

- 3) Damper leakage shall not exceed 1% of the maximum rated airflow at 3" w.g.
- 4) 4" and 5" inlets are built with 6" casings

FVI-500 AIR TERMINALS 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.

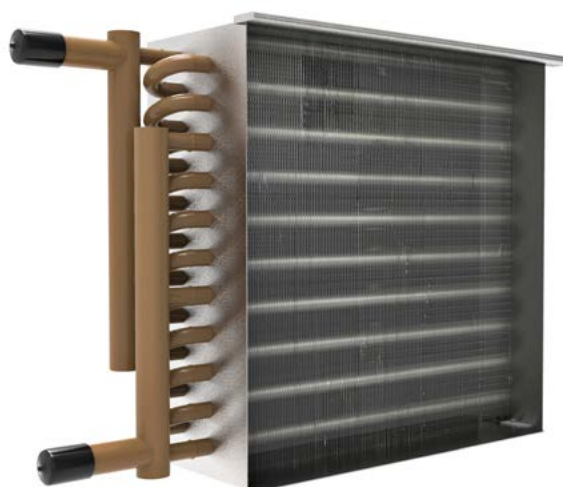
FVI-500 HOT WATER COILS

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 sweat 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.



Outside Diameter (OD) connection size, Inches		
Case Size	Standard HW Coil Inches	
	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

All accessories that 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 HOT WATER COILS MBH SELECTION DATA

PARALLEL FAN POWERED

FVI-500 VARIABLE VOLUME

Imperial Units				MBH								
Case Size	Rows	Connection OD	GPM	Head Loss (ft-H ₂ O)	CFM							
					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	—

Case Size	Rows	Connection OD	GPM	Head Loss (ft-H ₂ O)	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	—

Case Size	Rows	Connection OD	GPM	Head Loss (ft-H ₂ O)	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	—

Case Size	Rows	Connection OD	GPM	Head Loss (ft-H ₂ O)	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	—

- 1) All coil performance in accordance with AHRI Standard 410-2001
- 2) Heating capacities are in MBH
- 3) Performance data based on a temperature differential of 115°F (180°F entering water temperature and 65°F entering air temperature)
- 4) For temperature differentials other than 115°F, multiply the MBH by the correction factors below

- 5) Head Loss is in feet of water
- 6) Airside ΔPs is the air pressure drop of the hot water coil
- 7) Aire temperature rise = 927 x MBH/CFM
- 8) Water temperature drop = 2.04 x MBH/GPM
- 9) Values in tables are listed for 0 ft. of altitude and no glycol in the system

MBH CORRECTION FACTORS

ΔT	50	60	70	80	90	100	115	125	140	150
Factor	0.44	0.52	0.61	0.70	0.79	0.88	1.00	1.07	1.20	1.30

FVI-500 HOT WATER COILS MBH SELECTION DATA

Case Size	Rows	Connection OD	GPM	Head Loss (ft-H ₂ O)	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	—

Case Size	Rows	Connection OD	GPM	Head Loss (ft-H ₂ O)	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	—

Case Size	Rows	Connection OD	GPM	Head Loss (ft-H ₂ O)	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.

- 1) All coil performance in accordance with AHRI Standard 410-2001
- 2) Heating capacities are in MBH
- 3) Performance data based on a temperature differential of 115°F (180°F entering water temperature and 65°F entering air temperature)
- 4) For temperature differentials other than 115°F, multiply the MBH by the correction factors below
- 5) Head Loss is in feet of water
- 6) Airside ΔPs is the air pressure drop of the hot water coil
- 7) Aire temperature rise = 927 x MBH/CFM
- 8) Water temperature drop = 2.04 x MBH/GPM
- 9) Values in tables are listed for 0 ft. of altitude and no glycol in the system

MBH CORRECTION FACTORS

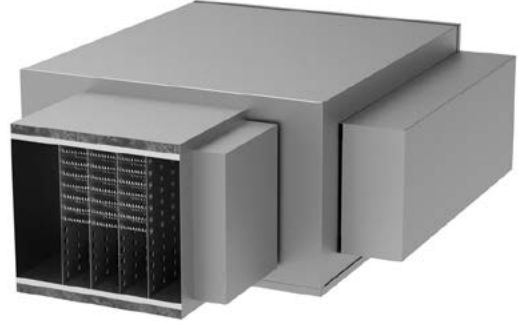
ΔT	50	60	70	80	90	100	115	125	140	150
Factor	0.44	0.52	0.61	0.70	0.79	0.88	1.00	1.07	1.20	1.30

FVI-500 ELECTRIC HEAT

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 galvanized 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	Fan 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 that 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				
Case Size	Heater Voltage	Min. kW per 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	1.0	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				
Case Size	Heater Voltage	Min. kW per Step	Max. kW	Max. Steps
5	120	0.5	5	3
5	208	0.5	8.5	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	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	277	0.5	11.5	3
7	480	0.5	17	3

NOTES:

1. Heaters equal to or less than 10 kW are specifiable to nearest 0.5 kW. Heaters greater than 5 kW and less than 10 kW are specifiable to 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 per step 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, phase, kW, and number of steps.

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

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

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

* 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				
Case Size	Heater Voltage	Min. kW per Step	Max. kW	Max. Steps
1	208	0.5	13	2
1	480	10.5	17	2
2	208	0.5	13	2
2	480	1.5	17	2
3	208	0.5	13	3
3	480	1.5	17	3
4	208	0.5	13	3
4	480	1.5	25	3

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

NOTES:

1. Heaters less than 10 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 per step 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, phase, 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-PNEUMATIC PRESSURE DEPENDENT

- 810 Direct Acting / Normally Closed (DA / NC)
- 812 Reverse Acting / Normally Open (RA / NO)



PPI-PNEUMATIC PRESSURE INDEPENDENT

- 814 Direct Acting / Normally Closed (DA / NC)
- 815 Direct Acting / Normally Open (DA / NO)
- 816 Reverse Acting / Normally Closed (RA / NC)
- 817 Reverse Acting / Normally Open (RA / NO)



EPD-ELECTRIC PRESSURE DEPENDENT

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



API-ANALOG PRESSURE INDEPENDENT

- Consult Factory



DDC-DIRECT DIGITAL CONTROL

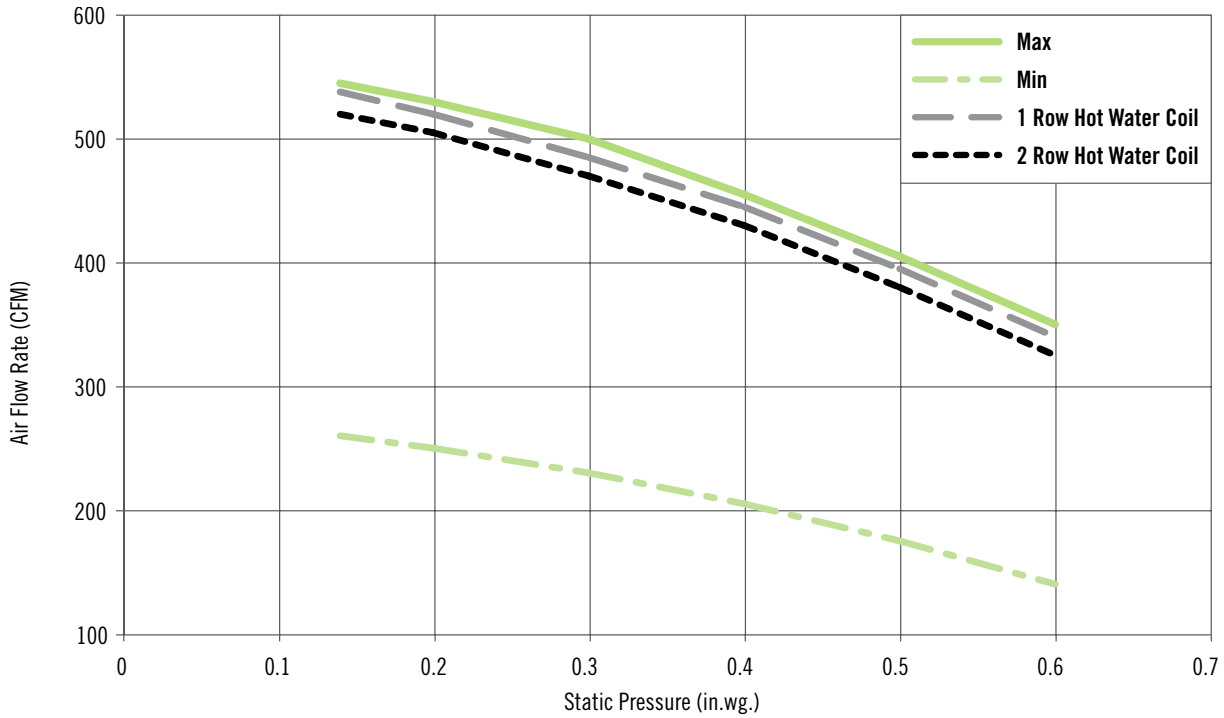
BACnet

- 890 Constant Fan—No Auxiliary Heating
- 892 Constant Fan—Modulating Floating Control—Hot Water Heat
- 893-E Electric Heat

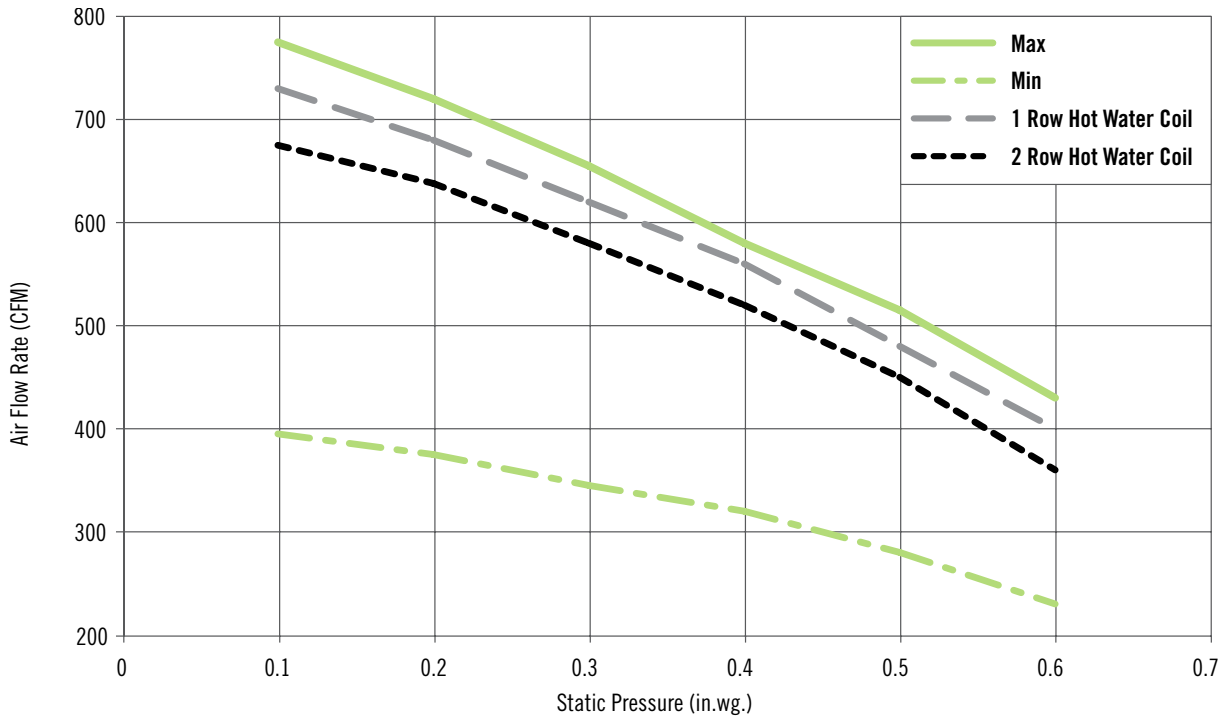
Refer to ACC 24 for complete description.



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

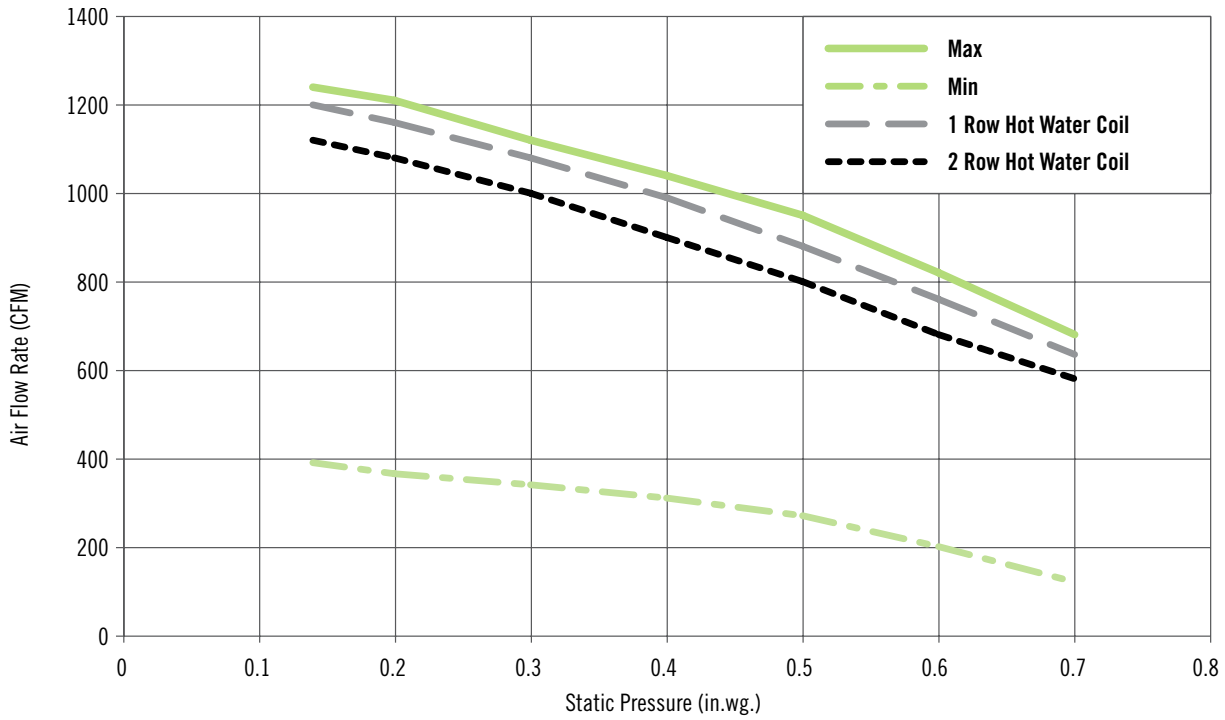


FVI-500 FAN PERFORMANCE CURVES UNIT SIZE 2 - STANDARD HW COIL

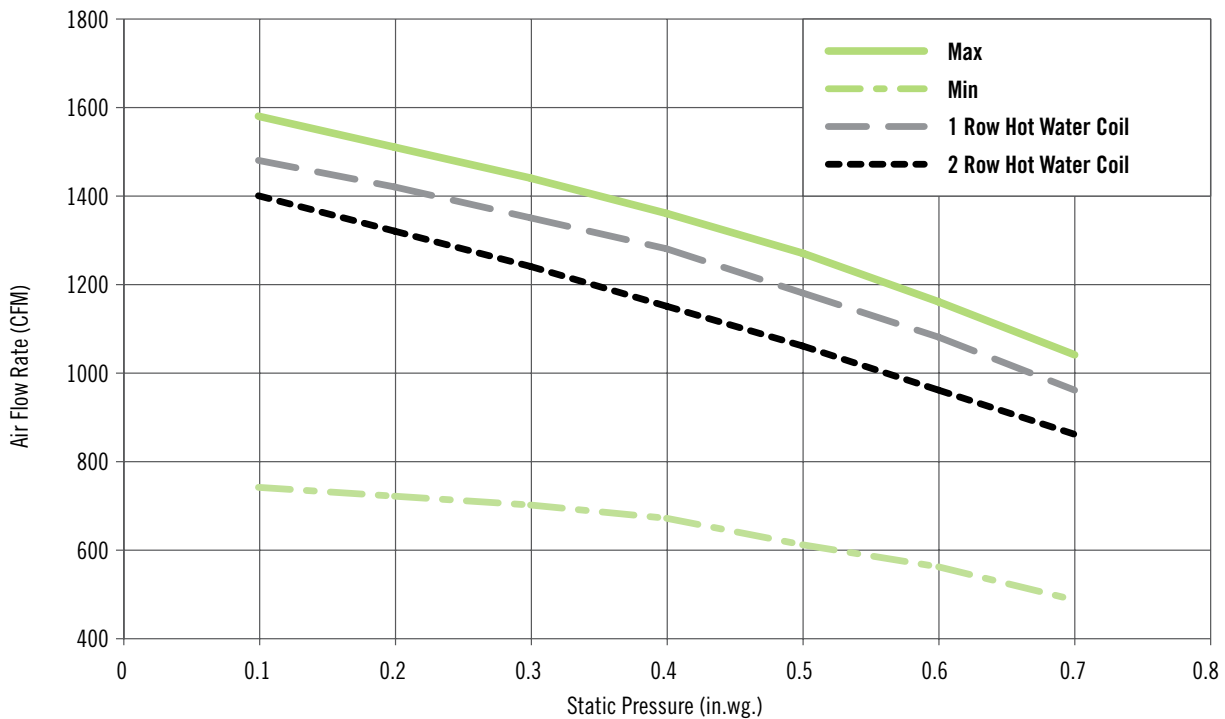




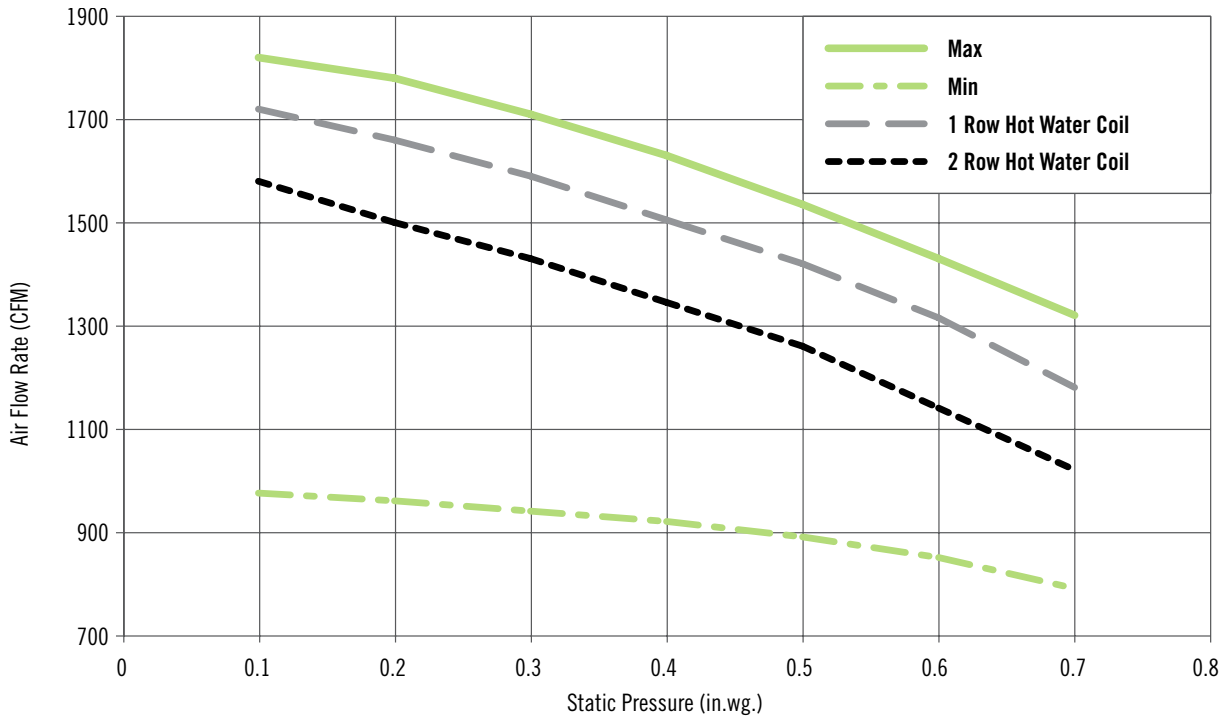
FVI-500 FAN PERFORMANCE CURVES UNIT SIZE 3 - STANDARD HW COIL



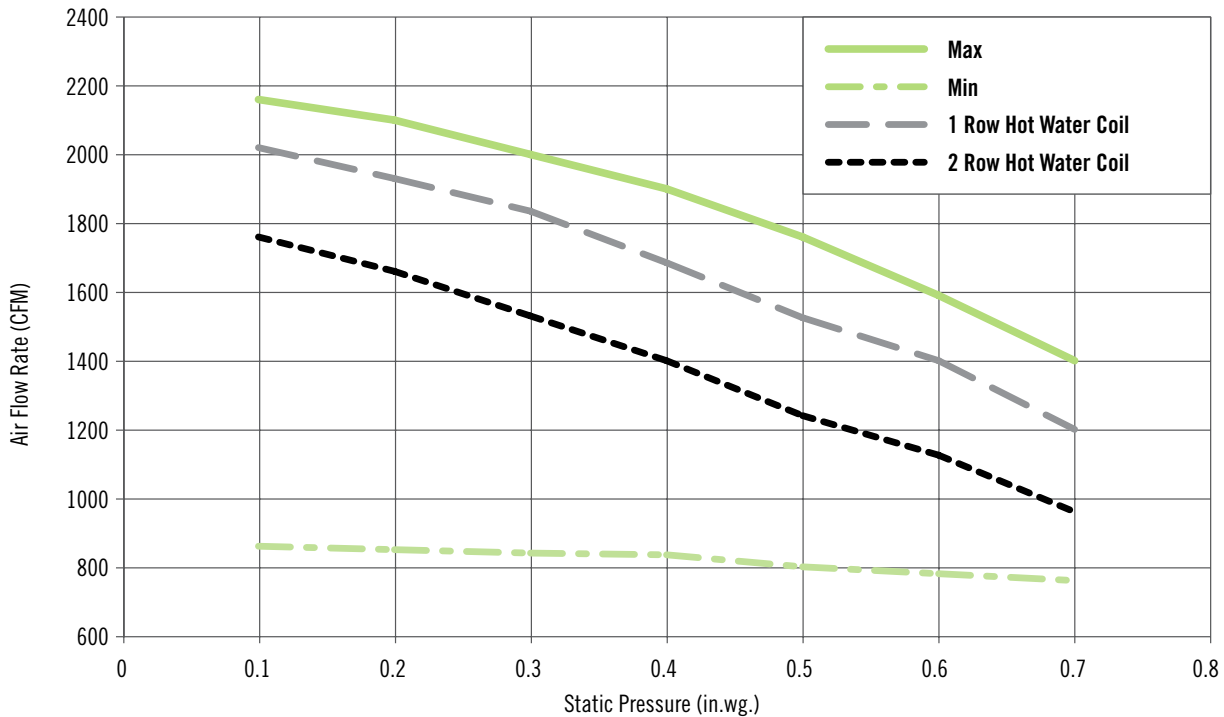
FVI-500 FAN PERFORMANCE CURVES UNIT SIZE 4 - STANDARD HW COIL



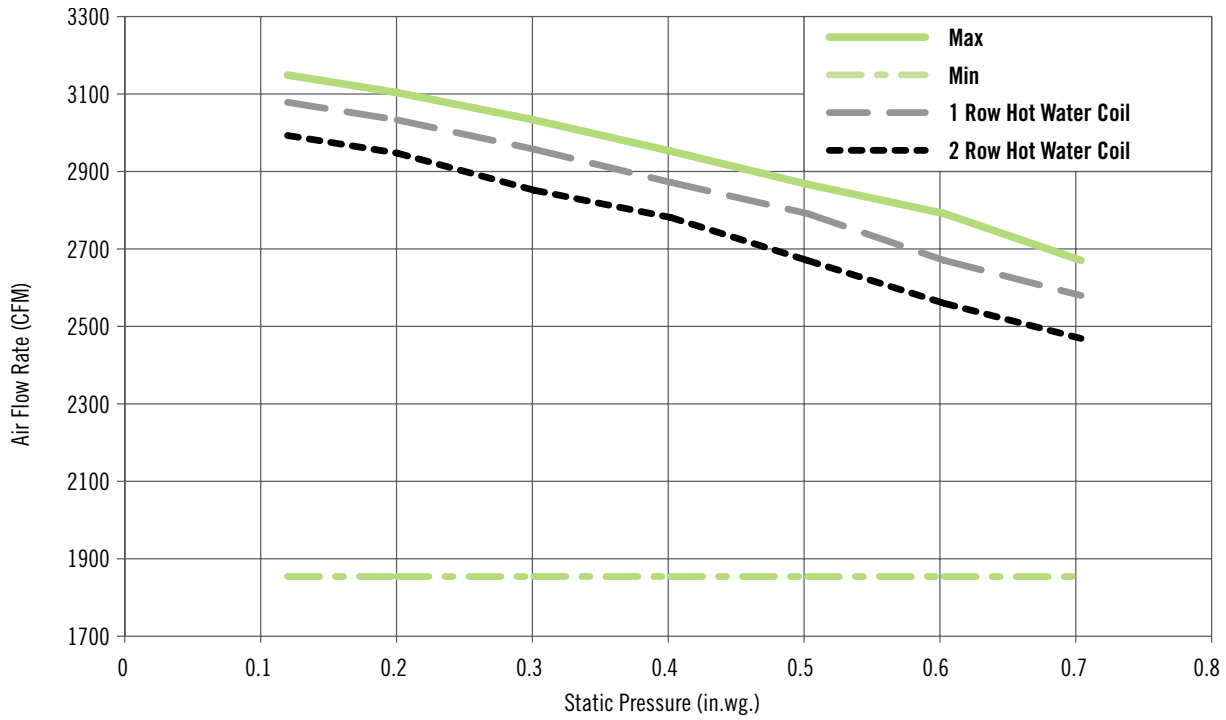
FVI-500 FAN PERFORMANCE CURVES UNIT SIZE 5 - STANDARD HW COIL



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

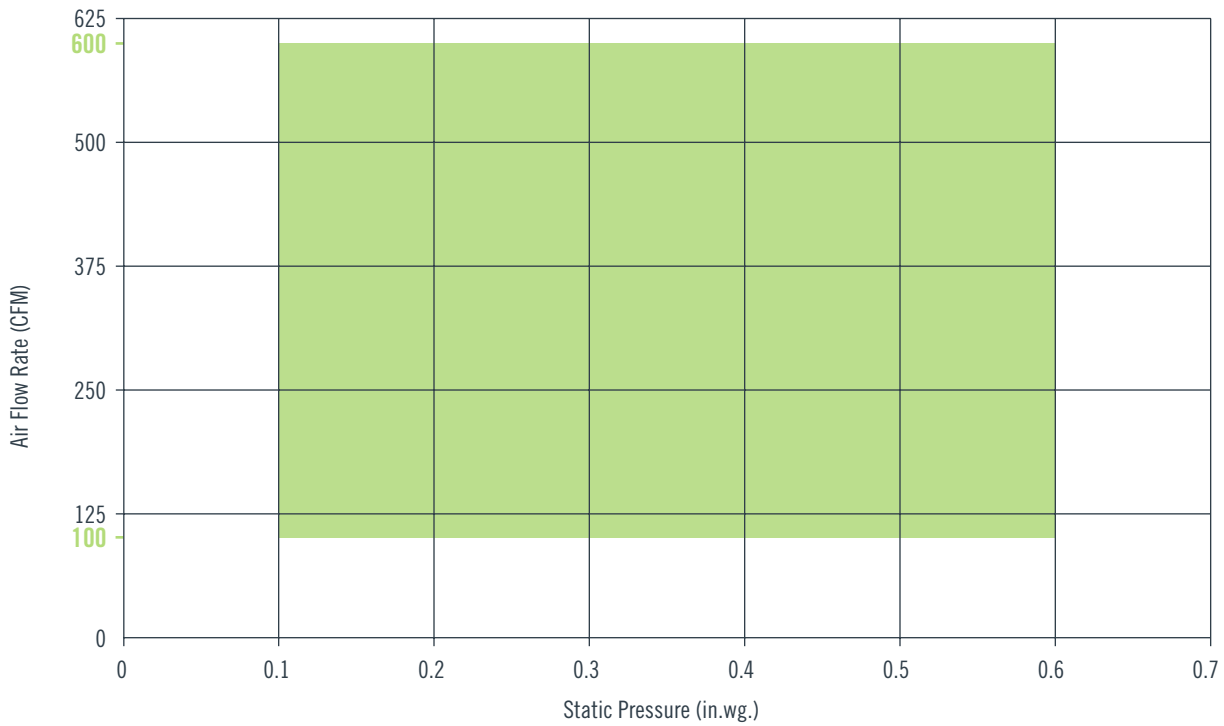


FVI-500 FAN PERFORMANCE CURVES UNIT SIZE 7 - STANDARD HW COIL

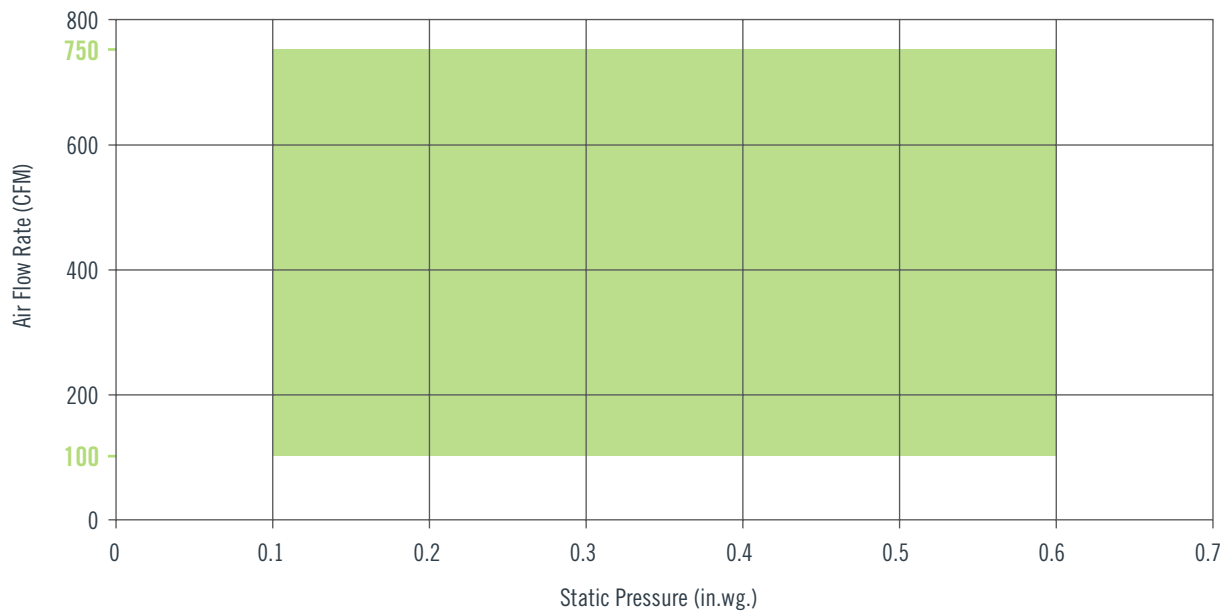


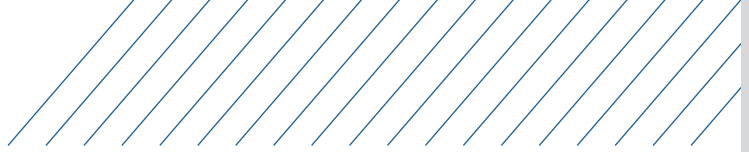


FVI-500 ECM FAN PERFORMANCE CURVES UNIT SIZE 1 - STANDARD HW COIL

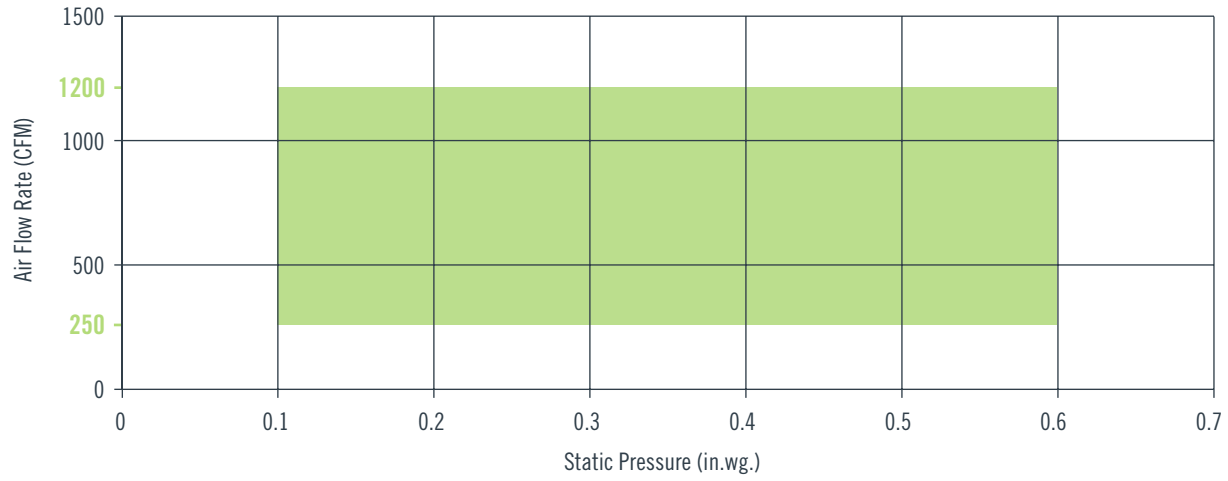


FVI-500 ECM FAN PERFORMANCE CURVES UNIT SIZE 2 - STANDARD HW COIL

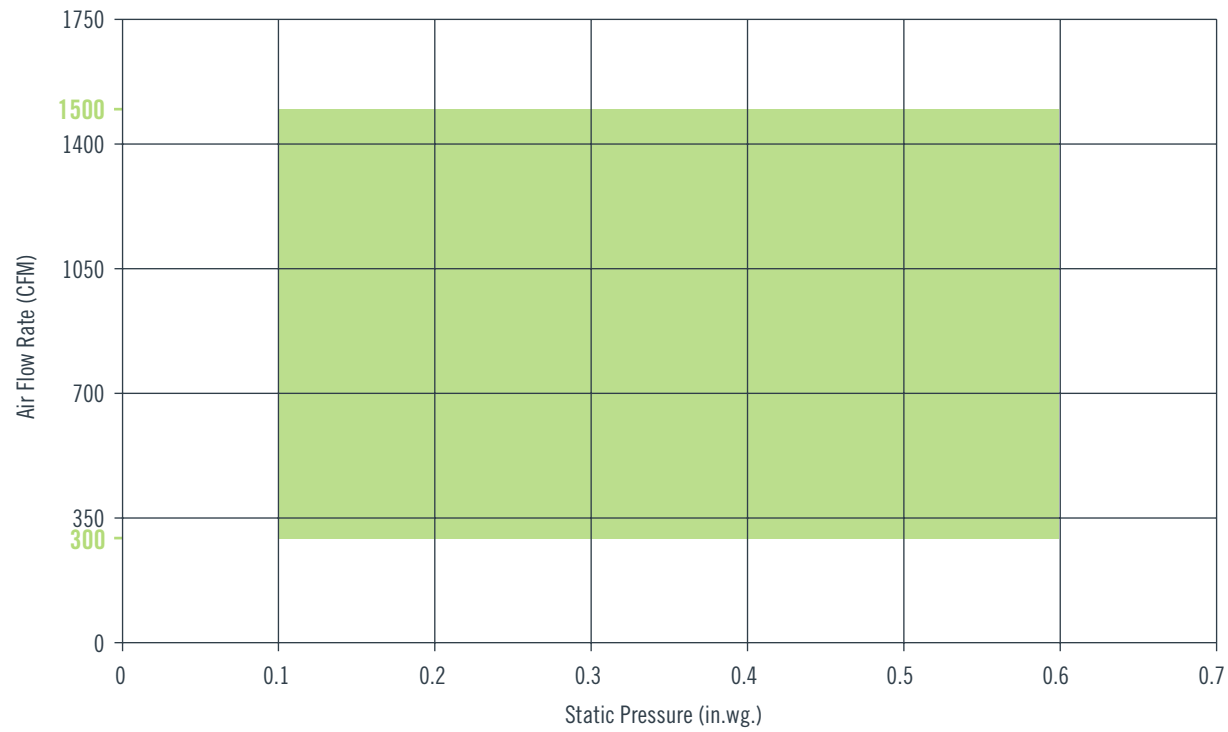




FVI-500 ECM FAN PERFORMANCE CURVES UNIT SIZE 3 - STANDARD HW COIL

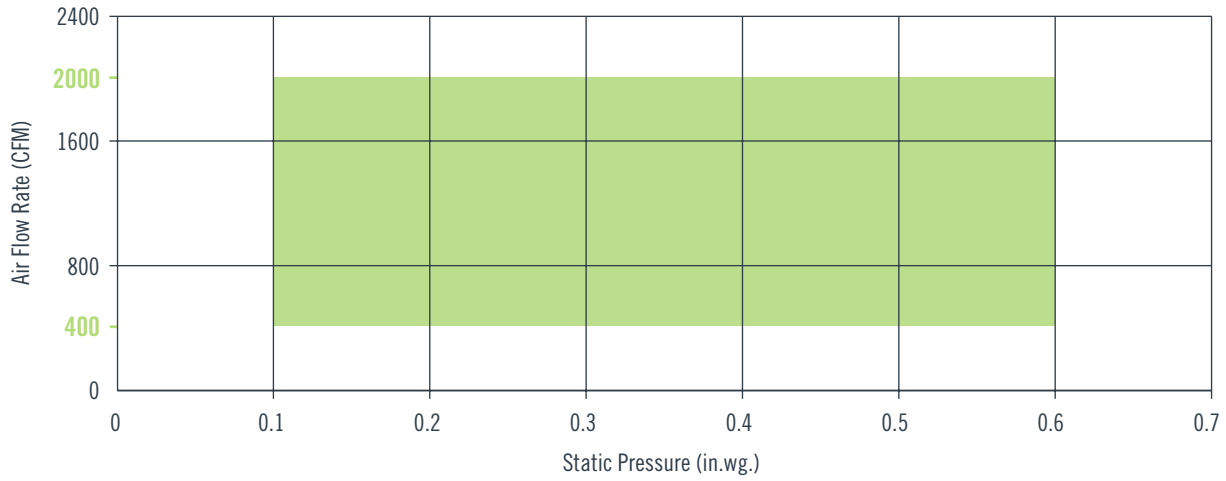


FVI-500 ECM FAN PERFORMANCE CURVES UNIT SIZE 4 - STANDARD HW COIL

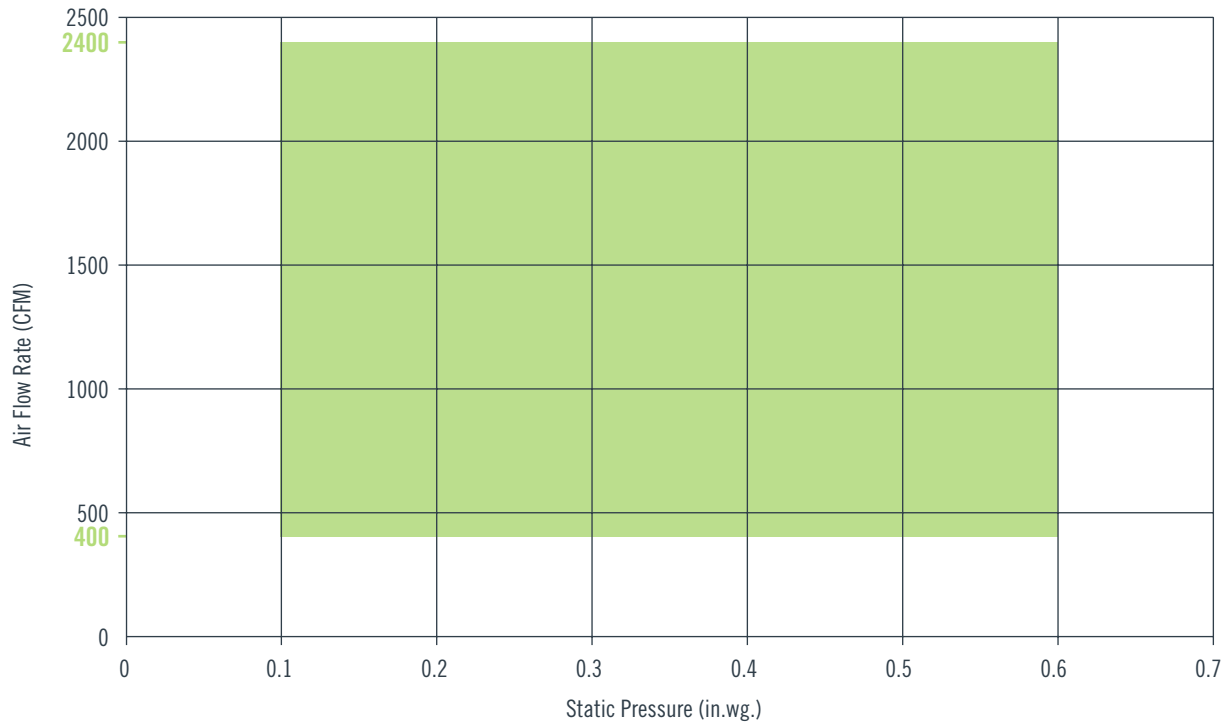




FVI-500 ECM FAN PERFORMANCE CURVES UNIT SIZE 5 - STANDARD HW COIL



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





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

