WILLIAMS™

HORIZONTAL FAN COILS
200 - 1,200 CFM

HIGH PERFORMANCE HORIZONTAL FAN COILS
600 - 2,200 CFM

ADVANCED HYDRONICS

CONTENTS

FAN COIL CERTIFICATIONS

ETL LISTED

Williams horizontal fan coils are listed by Intertek (ETL). The ETL listing ensures that Williams horizontal have been examined by ETL and comply with the organization's applicable standards. ETL's re-examination service includes periodic visits by ETL inspectors to Williams' factory to ensure continued compliance for all listed products. Materials and equipment acceptance for use by the New York Department of Buildings: AH 008-120 / MEA 414-05-E

AHRI CERTIFIED

Williams horizontal fan coils are labeled and approved by the Air Conditioning, Heating & Refrigeration Institute (AHRI). This designation signifies that Williams horizontal fan coil units have been rated as follows in accordance with the latest edition of ANSI / AHRI 440 with Addendum 1 Performance Rating of room fan coils and subject to rating accuracy by AHRI sponsored, independent, third-party testing.

ALS-TRUESDAIL CERTIFICATION MARK FOR DRINKING WATER SYSTEM COMPONENTS - HEALTH EFFECTS

Certified Product and/or packaging, and/or documentation certified to both NSF / ANSI 61 and NSF/ANSI 372 by Truesdail shall bear this Certification mark to identify the compliance.

MORE THAN JUST FAN COILS

For over 100 years, Williams has been a market leader in providing high quality HVAC products for residential and commercial buildings. Today, Williams continues the proud tradition by offering to the commercial/industrial market more configurations and size options of quality fan coils and blower coils/air handlers than any other HVAC company in North America.

Williams is based in Colton California, serving all US and overseas markets with complete application engineering, sales, marketing and administrative services.

Our pledge is to provide complete, high quality and timely support for the successful completion of your construction projects involving engineered products offered by Williams. We believe in a partnering attitude that creates superior projects and high levels of satisfaction.

COLTON, CALIFORNIA

FAN COIL ASSEMBLY

AIR HANDLER ASSEMBLY

WILLIAMS FAN COIL AND AIR HANDLERS MODEL IDENTIFICATION SYSTEM

CFM
200 TO 12,000 *(002-120)* CFM AVAILABLE EXAMPLE: 800 CFM = 008 1,000 CFM = 010 12,000 CFM = 120

SYSTEM	
DX	DIRECT EXPANSION
DH	DIRECT EXPANSION / HYDRONIC HEAT
DS	DIRECT EXPANSION / STEAM HEAT
S2	STEAM HEATING
WS	HYDRONIC COOL / STEAM HEAT
W2	TWO PIPE HYDRONIC
W4	FOUR PIPE HYDRONIC
Z2	TWO PIPE WITH WILD COIL
Z4	FOUR PIPE WITH WILD COIL

ROWS	
COOLING	HEATING

MOTOR VOLTAGE	
1	115-1-60
2	280-1-60
3	208-3-60
4	230-1-60
5	230-3-60
6	277-1-60
7	460-3-60
8	570/600-3-60
9	208/230-1-50
A	190/380-1-50
B	115-1-60 HC
C	347-1-60

ELECTRIC HEAT	
KILOWATTS	**VOLTAGE**
00 NONE	**0** NONE
1A 1.5	**1** 115-1-60
2A 2.5	**2** 208-1-60
05 5	**3** 230-1-60
25 25	**4** 277-1-60
	5 208-3-60
	6 230-3-60
	7 460-3-60
	8 347-1-60
	9 575-3-60

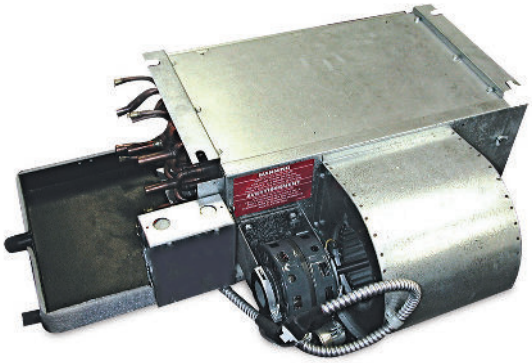
MODEL	
AH	HORIZONTAL AIR HANDLER
AV	VERTICAL AIR HANDLER
ER	EASY RISER VERTICAL STACK
LH	HORIZONTAL
LV	VERTICAL
LS	LOW SILHOUETTE VERTICAL
HIGH PERFORMANCE MODEL	
HH	HORIZONTAL
CV	CASED VERTICAL

CABINETS	
B	BASIC
D	DELUXE
E	FLUSH BOTTOM RETURN AND SUPPLY
F	FRONT RETURN / TOP SUPPLY (CV)
F	FLUSH
F	FRONT DISCHARGE (LS / LV)
G	REAR RETURN / BOTTOM SUPPLY (CV)
H	HEAT ONLY (CV)
J	DELUXE FRONT RETURN / TOP SUPPLY (CV)
K	BASIC FRONT RETURN / TOP SUPPLY (CV)
L	TOP RETURN / BOTTOM SUPPLY (CV)
M	MAIN (ER)
M	MODULAR (LV)
O	HEAT ONLY DELUXE (CV)
Q	BOTTOM RETURN AIR PLENUM (LH / HH)
Q	REAR RETURN / BOTTOM SUPPLY DELUXE (CV)
R	FRONT RETURN / TOP SUPPLY DELUXE (CV)
R	RECESSED (LS / LV)
R	REAR RETURN AIR PLENUM (LH / HH)
S	SECONDARY ER SLOPE TOP (LV)
S	FRONT SUPPLY / FRONT RETURN (CV)
W	WRAP SLOPE (LV)

HAND CONNECTION	
D	REAR
E	OPPOSITE END
L	LEFT
R	RIGHT
T	TOP

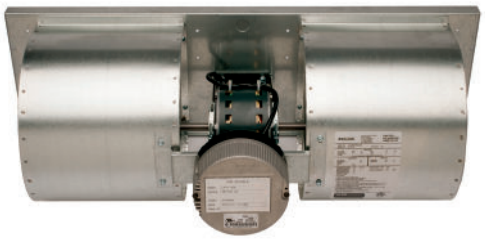
STANDARD FEATURES

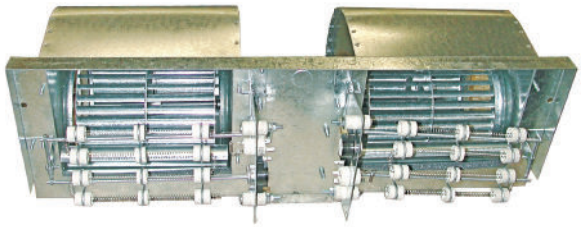
- Heavy gauge galvanized steel cabinet with neoprene coated 1/2" thick fiberglass insulation with 1.5 PCF density.
- Coils are made of 1/2" OD copper tube with aluminum fins (12 FPI) equipped with manual air vent DX and steam coils do not include manual air vent. Coils are 100% underwater pressure tested at 350 PSI with a 300 PSI working pressure.
- Galvanized drain pan is powder coated epoxy and subjected to a 650 hour salt spray test in accordance test in accordance with ASTM-B117. Also comes with 1/8" thick closed cell insulation and primary and secondary drain connections.
- Three-speed, 115/1/60 PSC motor with quick connect plug.
- Controls and motors are factory wired and terminated in a junction box for single point power supply.
- One inch, reinforced duct collar on return and supply air openings.
- Swing down, hinged return air grille/access door on Deluxe and Flush models.
- Deluxe unit has single deflection supply air grille.
- One inch fiberglass, throwaway filter, except Horizontal Basic.
- Individually tagged, crated and shipped as scheduled for installation.
- ETL approved, AHRI certified.
- 100% factory tested.



OPTIONS

- Soft white, powder coated epoxy cabinet that's subjected to a 1500 hour salt spray test in accordance with ASTM-B117.
- Drain Pans - stainless steel.
- Insulation, foil face, elastomeric and double wall separate foam insulation.
- Coils - custom tubes, phenolic coated, stainless steel end plates. All options are available on one to six rows.
- Three speed, 208-230/1/50-60 or 277/1/60 PSC motor with quick connect plug.
- Systems - two or four pipe, hydronic cooling/heating, steam, direct expansion (DX) and/or electric heat. Steam heat. DX coating.
- Cabinet - Deluxe, Flush and for a premium custom colors.
- ECM™ motors; programmed 3 speed, or variable volume, 120-240/1 /60 or 277 /1 /60.
- Controls - wide selection of factory mounted valves and controls.
- Filters - two inch thick throwaway, washable and pleated.
- Flow control circulator for water heating custom applications.
- Grilles available as double deflection and in custom colors.
- Electric Strip Heat from 0.5 to 5 kW.

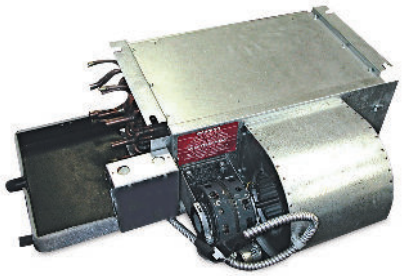




HORIZONTAL FAN COILS
LH SERIES
200 - 1,200 CFM

HORIZONTAL BASIC / LH-B

The low profile and flexible design of the Horizontal Basic fan coil (LH-B/low static) is ideal for multiple applications. The slim, compact design is well suited for drop-ceiling, closet, hallway and other concealed applications. The Horizontal Basic comes with a powder coated epoxy drain pan and a wide range of coil, motor and controls options. These models have no exterior cabinet



HORIZONTAL WITH RETURN AIR PLENUM / LH-R

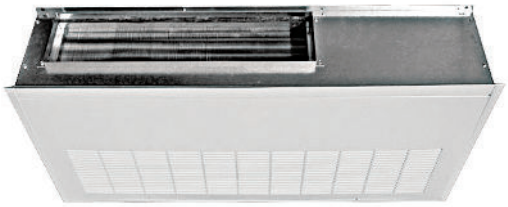
The Horizontal with Return Air Plenum (LH-R/low static) is our basic model with a galvanized rear return air plenum. Ideal for mounting above ceilings, in closets, hallways and bathroom areas, the plenum conceals the unit's blower motor which is easily accessible for service by removing the bottom panel. Available as a bottom return LH-Q. Comes with throwaway filter.

HORIZONTAL DELUXE / LH-D

The Horizontal Deluxe fan coil (LH-D/low static) is designed for horizontal exposed ceiling mounted applications. The Horizontal Deluxe is our basic unit housed in a cabinet intended for "free blow" exposed ceiling mounting. Ideal for remodel situations where adding AC ductwork is limited. Deluxe cabinets are constructed of cold rolled steel and finished with 385˚ baked on tough, soft white epoxy powder coated finish.

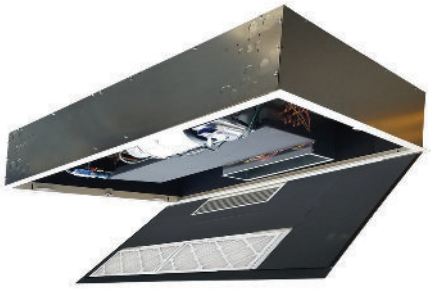
HORIZONTAL FLUSH / LH-F

The Horizontal Flush (LH-F/low static) is a recessed fan coil designed for flush ceiling applications. This unit is designed to accommodate ducted supply air. The telescoping frame and hinged access panel of the Horizontal Flush give it the flexibility to accommodate any type of ceiling. Same attractive, durable powder coated access panel as the Horizontal Deluxe.



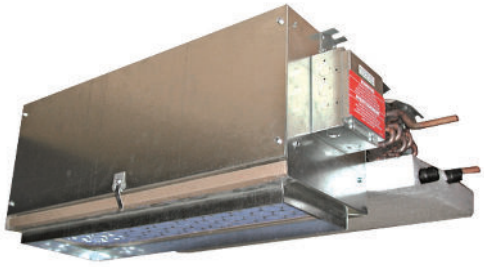
HORIZONTAL DELUXE BOTTOM SUPPLY & RETURN LH-E

The Horizontal Flush Bottom Supply and Return (LH-E/low static) is a recessed fan coil designed for flush ceiling applications. The telescoping frame and hinged access panel of the Horizontal Flush Bottom Supply and Return allow it to fit any type of ceiling. The unit comes in the same attractive, durable powder coated cabinet as the Horizontal Deluxe.



HORIZONTAL WITH BOTTOM RETURN AIR PLENUM / LH-Q

The Horizontal with Bottom Return-Air Plenum (LH-Q) is a low-static (up to .25 ESP) fan coil that comes with a coil, blower/motor assembly with quick-connect plug and a galvanized steel, powder-coated epoxy drain pan covered with ⅛-inch thick insulation. The galvanized steel plenum is insulated with ½-inch thick, over three pound density, neoprene-coated fiberglass. The plenum conceals the fan and motor assembly that is easily accessed for service by removing the back panel. This unit is easily mounted above ceilings, in closets, and in hallways.

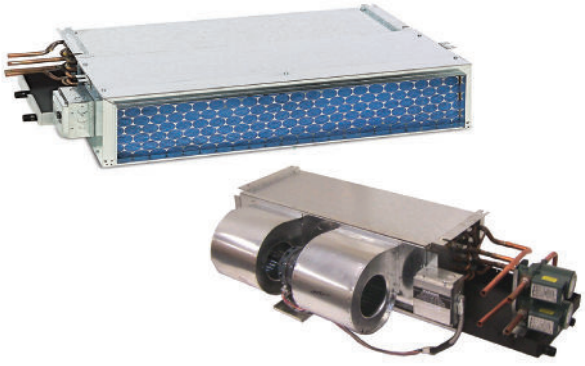


LOW PROFILE HORIZONTAL

This basic low-static with ultra low profile horizontal (LH-X) is ideal for multiple applications. It's slim, compact design is well suited for drop ceiling, closet, hallway and other concealed applications where our horizontal basic (LH-B) dimensions are not adequate. These fan coils come with a powder coated epoxy drain pan with a wide range of coil, motor and controls options.

LOW PROFILE HORIZONTAL (LH-X) with RETURN AIR PLENUM / LH-Y

The LP-X horizontal fan coil with return air plenum (LH-Y) is our basic LH-X with a galvanized rear return air plenum, ideal for mounting above ceilings, in closets, hallways and bathroom areas, the plenum conceals the unit's blower motor which is easily accessible for service by removing the bottom panel. Rear air plenum units come with throwaway filter.



AHRI CERTIFIED COOLING CAPACITY

LH SERIES

Williams Horizontal Fan Coils are labeled and approved by the Air Conditioning, Heating & Refrigeration Institute (AHRI). This designation signifies that Williams Horizontal Fan Coils units have been rated as follows in accordance with the latest edition of ANSI/AHRI 440 with Addendum 1 Performance Rating of Room Fan Coils and subject to rating accuracy by AHRI sponsored, independent, third-party testing.

AHRI APPROVED STANDARD RATINGS						COOLING CAPACITY	
MODEL / SIZE	MOTOR / TYPE	STYLE	RATED CFM	GPM	WPD (FT/H20	TOTAL COOLING (BTUH)	SENSIBLE COOLING (BTUH)
002	LH SERIES (STANDARD)	B	318	1.9	1.2	9,322	7,693
		R, Q	318	1.7	1.0	3500	6,949
		D, E, F	269	1.6	0.9	8,076	6,576
003	LH SERIES (STANDARD)	B	340	2.0	1.3	9829	8,173
		R, Q	311	1.8	1.1	9,153	7,538
		D, E, F	296	1.8	1.1	8,783	7,200
	LH SERIES (EC)	B, R, Q, D, E, F	300	1.8	1.1	8,883	7,291
004	LH SERIES (STANDARD)	B	477	3.1	3.0	15,254	12,018
		R, Q	440	2.9	2.8	14,374	11,206
		D, E, F	421	2.7	2.7	13,902	10,779
	LH SERIES (EC)	B, R, Q, D, E, F	400	2.7	2.5	13,358	10,299
006	LH SERIES (STANDARD)	B	644	5.3	11.9	26,643	18,683
		R, Q	588	5.0	10.8	24,868	17,282
		D, E, F	563	4.8	10.3	24,042	16,642
	LH SERIES (EC)	B, R, Q, D, E, F	600	5.1	11	25,258	17,587
008	LH SERIES (STANDARD)	B	833	6.8	20.2	34,236	24,069
		R, Q	773	6.5	18.6	32,429	22,609
		D, E, F	743	6.3	17.8	31,488	21,863
	LH SERIES (EC)	B, R, Q, D, E, F	800	6.7	19.3	33,254	23,271
		X, Y	800	5.1	3.1	25,265	20,023
010	LH SERIES (STANDARD)	B	1042	8.6	33	43063	30,199
		R, Q	985	8.3	31.1	41,377	28,827
		D, E, F	957	8.1	30.2	40,505	28,135
	LH SERIES (EC)	B, R, Q, D, E, F	1000	8.4	55	41,827	29,191
		X, Y	1000	7.5	9.6	37,356	27,304
012	LH SERIES (STANDARD)	B	1197	10.2	50.7	51,182	29,193
		R, Q	1.130	9.8	47.7	49,072	29,194
		D, E, F	1,097	9.6	46.1	47,996	32,906
	LH SERIES (EC)	B, R, Q, D, E, F	1200	10.3	50.9	51274	35,476
		X, Y	1200	9.1	5.7	45,722	33,122

Notes: 1) Based on 80°F DB and 67°F WB EAT, 45°F EWT, 10°F temperature rise, high fan speed. Motor voltage 115/1/60 power source. Air flow under dry coil conditions. Water pressure drops shown in feet of water. All units are listed under UL Category Control No. LZFE.
2) Ratings are based on actual CFM. Standard coils for 002-004 is 3 rows and 006-012 is 4 rows.
3) Legend - B = Basic; R = Rear return-air plenum; Q = Bottom return-air plenum; D = Deluxe; E = Deluxe bottom supply and bottom return and F = Flush.

HEATING PERFORMANCE

LH SERIES

AHRI APPROVED STANDARD RATINGS						HEATING CAPACITY
MODEL SIZE	MOTOR TYPE	STYLE	RATED CFM	GPM	WPD (FT/H20)	MBH
002	LH/LP-H SERIES (STANDARD)	B	327	1.8	1.3	18.2
		R,Q	295	0.7	3.1	17
		D,E,F	275	1.6	1.0	121.1
003	LH/LP-H SERIES (STANDARD)	B	346	1.9	1.3	18.9
		R,Q	317	1.8	1.2	121.1
		D,E,F	302	1.7	1.2	17.2
	LH/LP-H SERIES (EC)	B	300	1.7	1.2	17.1
		R,Q	300	1.7	1.2	17.1
		D,E,F	300	1.7	1.2	17.1
004	LH/LP-H SERIES (STANDARD)	B	484	2.7	2.9	27
		R,Q	447	2.5	2.7	25.5
		D,E,F	429	2.5	2.6	24.8
	LH/LP-H SERIES (EC)	B	200	2.3	2.4	23.5
		R,Q	400	2.3	2.4	23.5
		D,E,F	400	2.3	2.4	23.5
006	LH/LP-H SERIES (STANDARD)	B	649	5.5	3.9	55.5
		R,Q	603	5.2	3.6	52.6
		D,E,F	578	5.1	3.5	51
	LH/LP-H SERIES (EC)	B	600	5.2	3.6	52.4
		R,Q	600	5.2	3.6	52.3
		D,E,F	600	5.2	3.6	52.3
008	LH/LP-H SERIES (STANDARD)	B	844	7.0	6.5	70.4
		R,Q	785	6.7	6.1	67
		D,E,F	755	6.5	5.8	65.2
	LH/LP-H SERIES (EC)	B	800	6.8	6.2	68
		R,Q	800	6.8	6.2	70
		D,E,F	800	6.8	6.2	68
		X, Y				
010	LH/LP-H SERIES (STANDARD)	B	1053	8.7	10.4	87
		R,Q	996	8.4	9.9	84
		D,E,F	969	8.2	9.6	82.5
	LH/LP-H SERIES (EC)	B	1000	8.7	10.4	87
		R,Q	1000	8.4	9.9	84.3
		D,E,F	1000	8.4	9.9	84.3
		X, Y				
012	LH/LP-H SERIES (STANDARD)	B	1210	8.4	9.9	84.2
		R,Q	1,144	9.9	15	99
		D,E,F	11,110	9.7	14.6	97
	LH/LP-H SERIES (EC)	B	1200	102.3	10.2	15.8
		R,Q	1200	10.2	15.8	102.3
		D,E,F	1200	10.2	15.8	102.3
		X, Y				

Notes: Based on 70°F DB EAT, 180°F EWT, Delta T = 20, high fan speed. Motor voltage 115/1/60 power source. Air flow under dry coil conditions. Water pressure drops shown in feet of water.

COIL DATA

Coils are made from ½" O.D. copper tubing with .016" wall thickness, and tubes are staggered for maximum heat transfer. A manual air vent is standard on all hydronic coils. DX and steam coils do not include manual air vent. All coils are 100% underwater pressure tested to 350 PSIG with a 300 PSIG max working pressure. Steam coils are rated for up to 15 PSIG or 250°F.

Coils are available in two or four pipe, and from one to six row configurations for ER & DR Series units with any combination of chilled or hot water, steam or direct expansion. Custom circuiting is available.

COIL DATA

LH SERIES

COIL ROW	002	003	004	006	008	010	012
Single-Row Coil							
Two-Row Coil				STANDARD			
Three-Row Coil							
Four-Row Coil							
Five-Row Coil							
*Six-Row Coil				OPTIONAL			

* Six-row coil maximum when selecting a DX coil with a hot water coil.

COIL OPTIONS:

- DX – Includes distributor and nozzle, TXV must be field furnished and installed
- Steam – 1-15 PSIG
- Preheat Coil Position – Standard coil is reheat position
- Phenolic Anti-Corrosion Coating (PAC) · Stainless Steel Tubes/Fins/End Plates
- Custom/Tubes

· 10 - 16 fins per inch (standard is 12 FPI)

Coil connections on the chilled water side are ½" on the 003-012. The hot water connection is also ½" on the 003-012.

ELECTRIC HEAT
LH SERIES

Electric heat may be furnished with either hydronic, direct expansion or steam coils and is factory mounted, wired, and tested. Option equipped with low watt density (for long life) nichrome wire elements. The heater has a built-in, high limit, and fusible link to provide maximum safety. Can only be installed in preheat position.

MODEL / SIZE	kW	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0
	VOLTAGE	AMPS									
002 (low static only)	115	4.4	8.7	13.0	17.4						
	208	2.4	4.8	7.2	9.6	12.0					
	230	2.2	4.4	6.5	8.7	10.9					
	277	1.8	3.6	5.4	7.2	9.0					
003	115	104	8.7	13.0	17.4	21.7	26.1				
	208	2.4	4.8	7.2	9.6	12.0	14.4	16.8	19.2	21.6	24.0
	230	2.2	4.4	6.5	8.7	10.9	13.0	15.2	17.4	19.6	21.7
	277	1.8	3.6	5.4	7.2	9.0	10.8	12.6	12.6	16.3	18.1
004	115	4.4	8.7	13.0	17.4	21.7	26.1				
	208	2.4	4.8	7.2	9.6	12.0	14.4	16.8	19.2	21.6	24.0
	230	2.2	4.4	6.5	8.7	10.9	13.0	15.2	17.4	19.6	21.7
	277	1.8	3.6	5.4	7.2	9.0	10.8	12.6	12.6	16.3	18.1
006	115	4.4	8.7	13.0	17.4	21.7	26.1				
	208	2.4	4.8	7.2	9.6	12.0	14.4	16.8	19.2	21.6	24.0
	230	2.2	4.4	6.5	8.7	10.9	13.0	15.2	17.4	19.6	21.7
	277	1.8	3.6	5.4	7.2	9.0	10.8	12.6	12.6	16.3	18.1
008	115	4.4	8.7	13.0	17.4	21.7	26.1				
	208	2.4	4.8	7.2	9.6	12.0	14.4	16.8	19.2	21.6	24.0
	230	2.2	4.4	6.5	8.7	10.9	13.0	15.2	17.4	19.6	21.7
	277	1.8	3.6	5.4	7.2	9.0	10.8	12.6	12.6	16.3	18.1
010	115	4.4	8.7	13.0	17.4	21.7	26.1				
	208	2.4	4.8	7.2	9.6	12.0	14.4	16.8	19.2	21.6	24.0
	230	2.2	4.4	6.5	8.7	10.9	13.0	15.2	17.4	19.6	21.7
	277	1.8	3.6	5.4	7.2	9.0	10.8	12.6	12.6	16.3	18.1
012	115	4.4	8.7	13.0	17.4	21.7	26.1				
	208	2.4	4.8	7.2	9.6	12.0	14.4	16.8	19.2	21.6	24.0
	230	2.2	4.4	6.5	8.7	10.9	13.0	15.2	17.4	19.6	21.7
	277	1.8	3.6	5.4	7.2	9.0	10.8	12.6	12.6	16.3	18.1

AIR FLOW DATA
LH SERIES

Air flow shown below is under dry coil conditions.

AIR FLOW DATA		EXTERNAL STATIC PRESSURE																	
SIZE	COIL ROWS	0.00			0.05			0.10			0.15			0.20			0.25		
		HI	MED	LOW	HI	MED	LOW	HI	MED	LOW	HI	MED	LOW	HI	MED	LOW	HI	MED	LOW
002 (Standard)	B	321	229	143	288	199	113	256	169	83	223	139	53	189	113	32	154	88	NA
	R	295	205	119	262	175	89	230	145	59	196	118	36	161	93	NA	130	66	NA
	D	279	190	119	153	NA	NA	213	131	46	179	105	24	145	80	NA	114	52	NA
	F	279	190	104	246	160	74	213	131	46	179	106	24	145	80	NA	114	52	NA
002 (ECM)	B, R, D, F	225	186	141	202	153	104	180	121	66	157	88	29	137	56	36	117	NA	49
003 (Standard)	B	346	304	234	317	270	204	288	236	174	259	202	144	224	171	116	187	142	88
	R	317	270	204	288	236	174	259	202	144	224	171	116	187	142	88	156	110	52
	D	302	253	189	273	219	159	243	186	130	206	157	102	170	126	72	141	93	32
	F	309	253	189	273	219	159	243	186	130	206	157	102	170	126	72	141	93	32
003 (ECM)	B, R, D, F	322	261	183	302	228	153	282	196	123	262	163	93	242	131	131	222	98	176
004 (Standard)	B	484	386	274	447	360	242	410	334	210	373	308	178	340	276	147	309	241	117
	R	447	360	242	410	334	210	373	308	178	340	276	147	309	241	117	265	194	84
	D	429	347	226	384	316	187	350	286	156	319	251	126	280	210	94	230	159	60
	F	421	342	219	384	316	187	350	286	156	319	251	126	280	210	94	230	159	60
004 (ECM)	B, R, D, F	439	341	247	404	304	204	369	266	162	334	229	119	312	191	79	292	154	39
006 (Standard)	B	644	523	347	593	476	318	543	429	289	492	382	260	433	338	226	374	295	192
	R	593	476	318	543	429	289	492	382	260	433	338	226	374	295	192	311	243	162
	D	568	452	303	517	405	274	463	360	243	404	317	209	343	270	177	280	217	148
	F	568	452	303	517	405	274	463	360	243	404	317	209	343	270	177	280	217	148
006 (ECM)	B, R, D, F	630	489	350	603	454	305	575	419	260	548	384	215	518	346	170	488	309	125
008 (Standard)	B	838	697	432	779	646	405	719	596	377	660	545	350	607	492	323	555	439	297
	R	779	646	405	719	596	377	660	545	350	607	492	323	555	439	297	488	386	253
	D	779	621	391	690	570	364	633	519	336	581	466	310	522	413	276	453	359	230
	F	749	621	391	690	570	364	633	519	336	581	466	310	522	413	276	453	359	230
008 (ECM)	B, R, D, F	828	628	441	803	603	404	778	578	366	753	553	329	725	523	287	698	493	244
010 (Standard)	B	1,019	874	601	991	833	579	934	793	557	877	752	535	826	712	513	776	671	490
	R	991	833	579	934	793	557	877	752	535	826	712	513	776	671	490	719	628	458
	D	968	817	570	911	776	548	856	736	526	806	695	504	754	654	478	696	610	444
	F	991	813	568	905	772	546	851	732	524	801	691	502	748	650	475	691	606	441
010 (ECM)	B, R, D, F	1,041	789	555	1,004	754	505	966	719	455	929	684	405	891	651	315	854	618	220
012 (Standard)	B	1,177	949	616	1,144	914	601	1,077	879	585	1,011	844	570	938	794	545	865	742	519
	R	1,144	914	601	1,077	879	585	1,011	844	570	938	794	595	865	792	519	791	683	480
	D	1,110	896	593	1,044	861	577	975	819	558	902	768	532	828	713	500	754	652	461
	F	1,110	896	593	1,044	861	577	975	819	558	902	768	532	828	713	500	754	652	461
012 (ECM)	B, R, D, F	1,200	900	600	1,200	900	600	1,200	900	600	1,200	900	600	1,200	900	600	1,200	900	600

Notes: Ratings and capacity tables based on nominal CFM.

MOTOR DATA
LH SERIES

Motors are wired to a junction box ready for single-point field connection.

OUTSTANDING MOTOR FEATURES:

- Quick connect plug
- Permanent split capacitor
- Thermal overload protection
- 1050 RPM for lower operating costs
- Oversized bearings, permanently lubricated and sealed
- 122°F maximum operating temperature
- Custom motor mounts designed to reduce noise and eliminate vibration
- Stators are epoxy dipped for more efficient motor cooling

OPTIONAL MOTORS:

- 208V-1Ø-60 motors
- 277V-1Ø-60 motors
- 230/220V-1Ø-60 motors
- 50-Hz motors in specified voltages

60 HERTZ SINGLE-PHASE MOTORS (1100 RPM)			VOLTAGE / WATTS							
			115V		208V		230V		277V	
SIZE	HP (QTY)	BLOWERS	AMPS	WATTS	AMPS	WATTS	AMPS	WATTS	AMPS	WATTS
002	1/20 (1)	1	0.78	98	0.66	98	0.45	98	0.40	98
	1/20 (1)	1	1..0	104	0.66	104	0.55	104	0.50	104
003	1/10 (1)	2	1.30	116	0.77	116	0.70	118	0.60	116
	1/15 (1)	2	1.00	134	0.55	134	0.55	134	0.50	134
004	1/8 (1)	2	2.00	170	1.21	170	1.10	170	0.84	170
006	1/15 (1)	2	1.20	141	0.55	141	0.65	141	0.60	141
	1/8 (1)	2	2.00	201	1.32	201	1.20	201	0.90	201
008	1/4 (1)	2	2.30	215	1.45	215	1.20	215	1.00	215
	1/4 (1)	2	3.20	372	1.87	372	1.70	372	1.40	372
010	1/4 (1)	2	2.50	231	1.78	231	1.30	231	1.10	231
	1/4 (1)	2	3.80	430	2.18	430	1.98	430	1.60	430
012	1/4 (1)	2	3.00	249	2.10	249	1.60	249	1.30	249
	1/4 (1)	2	4.00	450	2.30	450	1.60	450	1.70	450

Notes: Motor full load amps listed refer to NEC amps. Actual motor nameplate amps may vary.

SOUND DATA
LH SERIES

SIZE	FAN SPEED	OCTAVE BAND						
		2	3	4	5	6	7	8
		CENTER FREQUENCY (CPS)						
		125	250	500	1000	2000	4000	8000
002	High	45.0	45.3	42.0	38.7	31.5	29.5	26.0
	Medium	43.0	44.0	39.5	36.0	29.5	25.0	22.5
	Low	40.5	41.0	36.5	29.0	24.5	23.0	19.5
003	High	48.0	48.5	46.0	43.0	37.0	32.0	28.0
	Medium	46.0	47.0	44.0	41.0	34.0	29.5	25.5
	Low	41.0	41.5	38.5	33.5	28.0	26.0	21.5
004	High	50.0	51.0	49.0	45.0	39.0	34.5	29.5
	Medium	48.0	49.5	46.5	42.5	36.5	31.0	27.0
	Low	42.5	43.0	40.0	36.5	32.3	27.0	23.0
006	High	51.0	52.0	49.5	44.5	38.5	33.0	29.0
	Medium	48.5	50.0	47.0	41.5	37.0	315.	27.0
	Low	43.0	44.5	41.0	37.0	31.5	25.0	22.0
008	High	52.0	53.0	47.5	42.5	36.0	31.5	28.0
	Medium	50.2	50.0	46.5	4.0	35.5	29.0	25.0
	Low	44.5	45.0	41.0	36.5	27.5	25.3	21.0
010	High	51.0	52.5	48.0	42.5	36.5	33.0	29.5
	Medium	49.0	50.0	46.0	42.0	34.0	30.0	26.5
	Low	43.0	44.0	42.5	35.5	31.5	27.0	23.0
012	High	50.0	51.5	46.0	42.0	36.0	31.5	29.0
	Medium	48.0	49.5	44.0	40.0	33.5	29.0	26.0
	Low	42.5	43.5	39.0	34.5	29.5	26.0	22.5

Notes: 1) Power levels are in dB RE 10-12 watts.
2) Sound data tested in accordance with ASHRAE Standard 68 and AHRI Standard 260 and 350.
3) Ratings are based on actual CFM. Standard coils for 003-004 are 3 rows and 006-012 are 4 rows.
4) Air Flow under dry coil conditions.

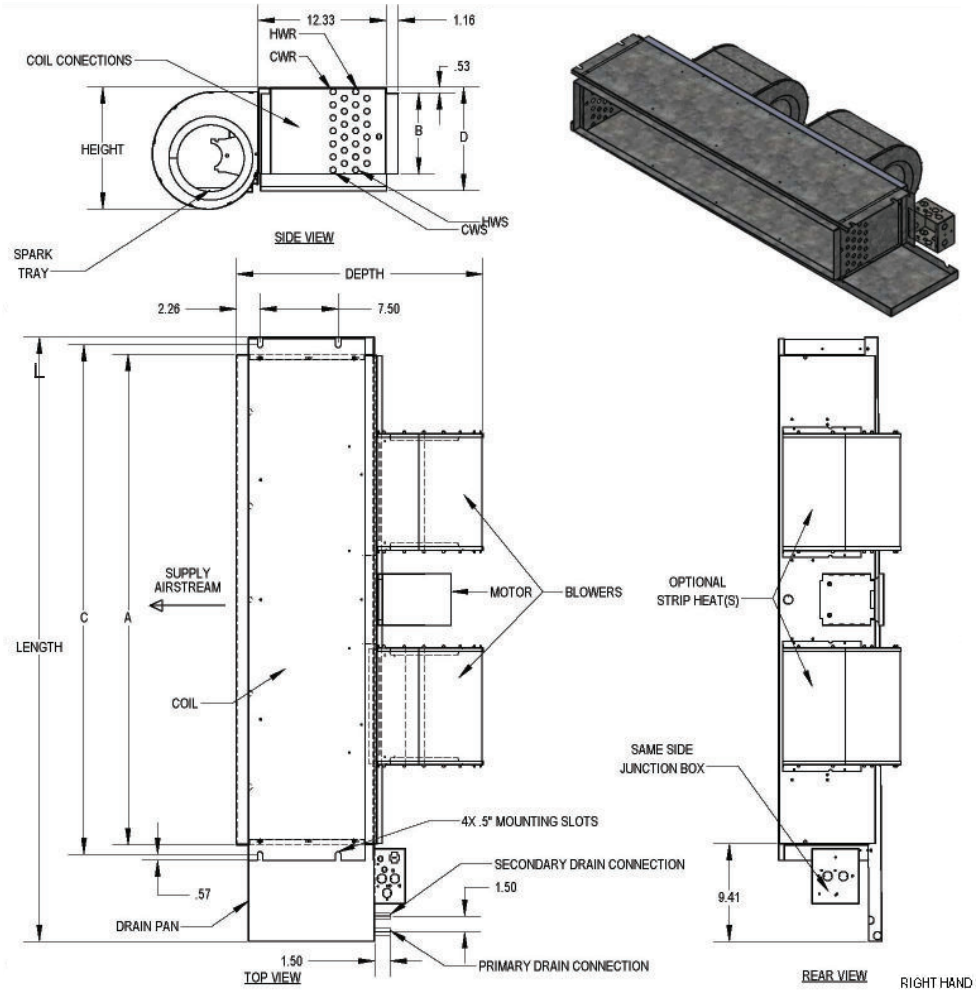
WEIGHTS & MEASURES
LH SERIES

The following LH Series weights and measures are based on fan coil units only. Add approximately 20% for packaging and crating.

UNIT	MODEL	ROWS	DIMENSIONS / INCHES			WEIGHT / LBS.		DIMENSIONS / MILLIMETERS			WEIGHT / KG	
			HEIGHT	WIDTH	DEPTH	DRY	WET	HEIGHT	WIDTH	DEPTH	DRY	WET
LH SERIES BASIC	002	3	10	32	22	77	81	254	813	559	35	36
	002	4	10	32	22	80	85	254	813	559	36	38
	003	3	10	32	22	77	81	254	813	559	35	36
	003	4	10	32	22	80	85	254	813	559	36	38
	004	3	10	32	22	93	99	254	813	559	42	43
	004	4	10	32	22	100	107	254	813	559	45	47
	006	3	10	38	22	120	126	254	965	559	54	53
	006	4	10	38	22	125	133	280	965	559	56	57
	008	3	11	38	23	134	140	280	965	584	61	59
	008	4	11	38	23	140	148	280	965	584	63	63
	010	3	11	50	23	155	162	280	965	584	70	68
	010	4	11	50	23	140	149	280	1270	584	63	72
	012	3	11	50	23	166	174	280	1270	584	75	73
	012	4	11	50	23	189	200	280	1270	584	85	78
LH SERIES RETURN AIR PLENUM	002	3	11	32	26	106	110	280	1270	661	48	45
	002	4	11	32	26	109	114	280	813	661	49	47
	003	3	11	32	26	97	101	280	813	661	44	45
	003	4	11	32	26	121	126	280	813	661	54	47
	004	3	11	32	26	123	136	280	813	661	56	57
	004	4	11	32	26	126	133	280	813	661	57	60
	006	3	11	32	26	145	151	280	813	661	66	62
	006	4	11	38	26	145	153	280	965	661	66	66
	008	3	13	38	27	159	165	280	965	686	72	68
	008	4	13	38	27	169	177	330	965	686	76	72
	010	3	13	38	27	175	182	330	965	686	80	77
	010	4	13	50	27	187	190	330	1270	686	85	81
	012	3	13	50	27	220	228	330	1270	686	100	82
	012	4	13	50	27	203	234	330	1270	686	92	87
LH SERIES DELUXE	002	3	11	43	24	179	183	280	1270	610	81	76
	002	4	11	43	24	191	196	280	1092	610	86	79
	003	3	11	43	24	189	193	280	1092	610	85	76
	003	4	11	43	24	191	1496	280	1092	610	86	79
	004	3	11	43	24	178	184	280	1092	610	81	82
	004	4	11	43	24	204	211	280	1092	610	92	85
	006	3	13	51	28	184	190	330	1092	711	83	82
	006	4	13	51	28	198	106	330	1346	711	90	85
	008	3	13	51	28	194	200	330	1346	711	88	86
	008	4	13	51	28	200	208	330	1346	711	91	90
	010	3	13	61	28	215	222	330	1346	711	97	96
	010	4	13	61	28	100	109	330	1549	711	45	99
	012	3	13	61	28	236	244	330	1549	711	107	100
	012	4	13	61	28	234	245	330	1549	711	106	105
LH SERIES FLUSH	002	3	11	48	28	111	115	279	1219	711	50	50
	002	4	11	48	28	111	116	279	1219	711	50	52
	003	3	11	48	28	132	136	279	1219	711	60	50
	003	4	11	48	28	111	116	279	1219	711	50	52
	004	3	11	48	28	152	158	279	1219	711	69	70
	004	4	11	48	28	155	162	279	1219	711	70	74
	006	3	12	56	28	187	196	305	1422	711	85	70
	006	4	12	56	28	173	181	305	1422	711	78	74
	008	3	12	56	28	179	185	305	1422	711	81	75
	008	4	12	56	28	184	192	305	1422	711	83	78
	010	3	12	62	28	228	235	305	1575	711	103	84
	010	4	12	62	28	196	205	305	1575	711	89	88
	012	3	12	62	28	243	250	305	1575	711	110	89
	012	4	12	62	28	261	206	305	1575	711	118	93

HORIZONTAL BASIC

LH-B / 200 - 1,200 CFM

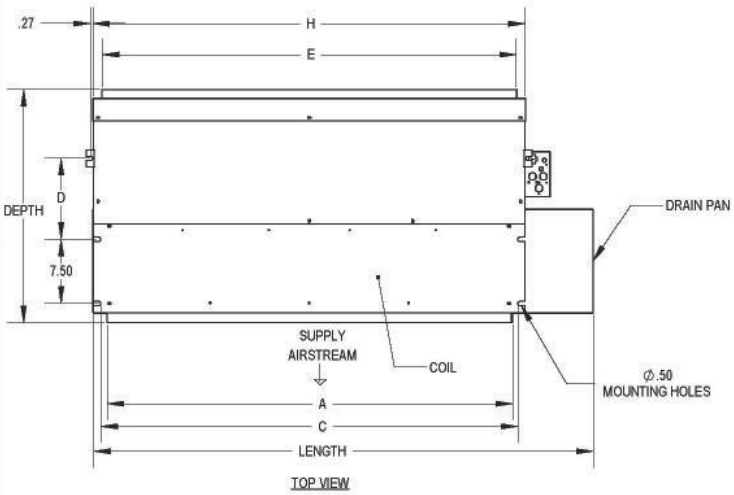


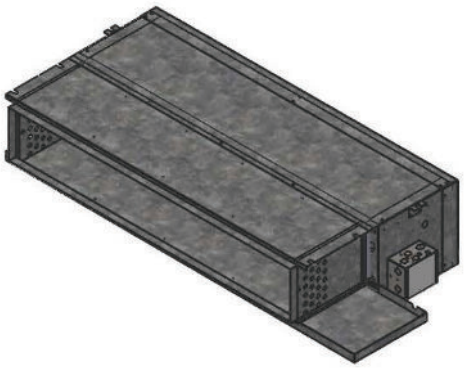
OVERALL				SUPPLY DUCT				
UNIT SIZE	LENGTH	HEIGHT	DEPTH	A	B	C	D	BLOWERS
002-003	30	9.88	22.5	19.13	6	20.88	8	1
004	37.5	9.88	22.5	25.13	6	26.88	8	2
006	44	9.88	22.5	33.13	6	34.88	8	2
008	44	11.75	23.63	33.13	7.75	34.88	9.75	2
010	50	11.75	23.63	39.13	7.75	40.88	9.75	2
012	58	11.75	23.63	47.13	7.75	48.88	9.75	2

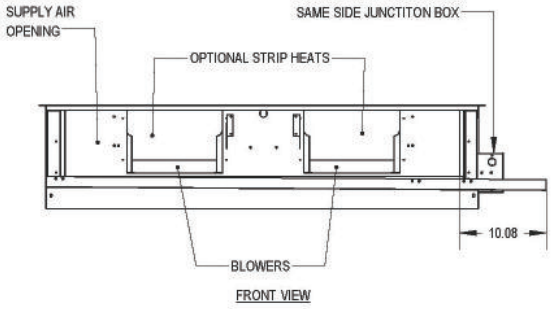
- All sizes shown in inches.
- Right-hand unit shown, left hand unit opposite.
- Coil connections determined by facing the supply air opening.
- Electrical junction box is located on the same side as the coil connections.
- Unit must be installed level and condensate drain lines should be trapped.
- Drain pan is powder-coated epoxy with a 1/8" thick closed-cell insulation and has 3/4" NPT primary and secondary drain connections.
- Entire cabinet, scroll and blower wheel are heavy gauge, galvanized steel
- Coil connections: 1/2" CW on 004-006, 3/4" CW on 008-012 and 1/2" HW on 004-012.

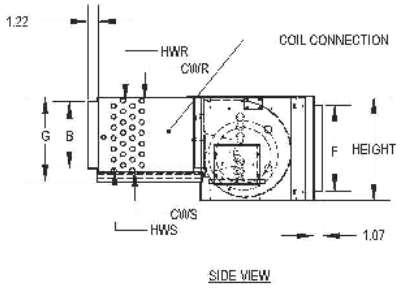
HORIZONTAL REAR RETURN AIR PLENUM

LH-R / 200 - 1,200 CFM









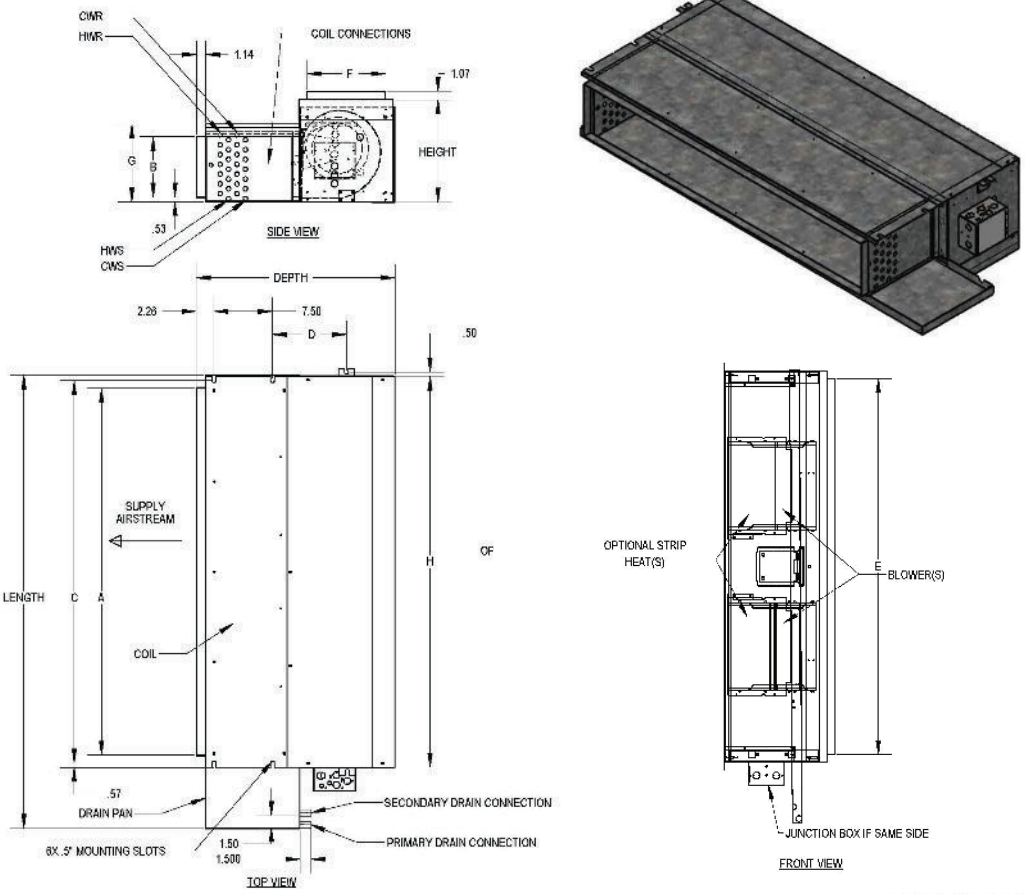
RIGHT HAND SHOWN, LEFT HAND UNIT OPPOSITE

OVERALL				SUPPLY DUCT		MOUNTING		RETURN DUCT					
UNIT SIZE	LENGTH	HEIGHT	DEPTH	A	B	C	D	E	F	G	H	BLOWERS	FILTER SIZE
002-003	30	10.19	24.38	19.13	6.00	20.88	8.50	20.13	8.08	8.00	22.00	1	10 X 22 X 1
004	37.50	10.19	24.38	25.13	6.00	26.88	8.50	29.13	8.08	8.00	31.00	2	10 X 31 X 1
006	44.00	10.19	24.38	33.13	6.00	34.88	8.50	34.13	8.08	8.00	36.00	2	10 X 36 X 1
008	44.00	12.19	26.38	33.13	7.75	34.88	9.50	34.13	10.08	9.75	36.00	2	12 X 36 X 1
010	50.00	12.19	26.38	39.13	7.75	40.88	9.50	40.13	10.08	9.75	42.00	2	12 X 42 X 1
012	58.00	12.19	26.38	47.13	7.75	48.88	9.50	48.13	10.08	9.75	50.00	2	12 X 50 X 1

- Right hand unit shown, left hand unit opposite.
- Coil connections determined by facing the supply air opening.
- Electrical junction box is located on the same side as the coil connections.
- Unit must be installed level and condensate drain lines should be trapped.
- Drain pan is powder coated epoxy with a 1/8" thick Elastomeric insulation and has 3/4" NPT primary and secondary drain connections.
- Entire cabinet, scroll and blower wheel are heavy gauge, galvanized steel.
- Coil connections: 1/2" CW and HW on 002-003.

HORIZONTAL BOTTOM RETURN AIR PLENUM

LH-Q/200 - 1,200 CFM



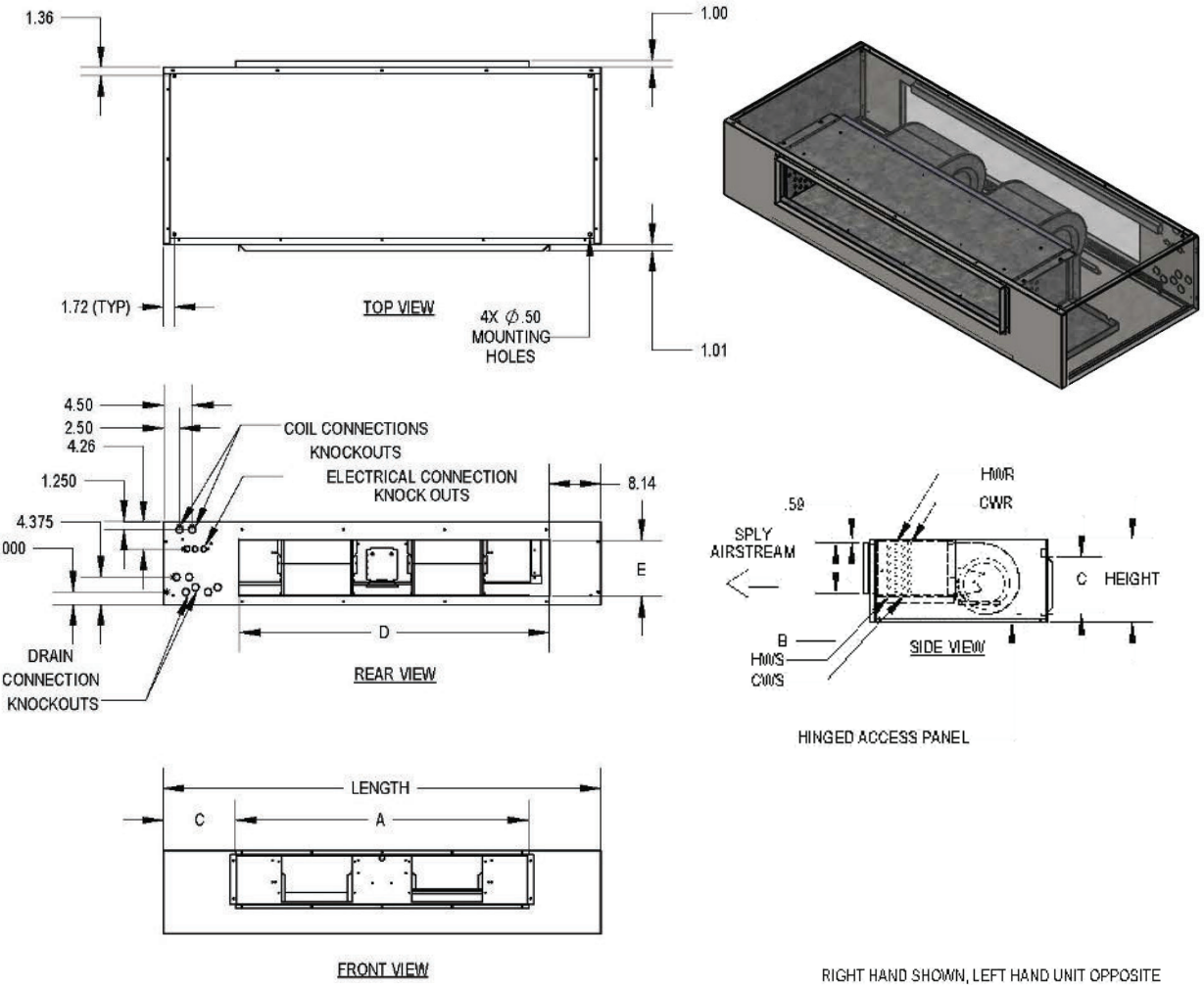
RIGHT HAND SHOWN, LEFT HAND OPPOSITE

OVERALL				SUPPLY DUCT		MOUNTING		RETURN DUCT					
UNIT SIZE	LENGTH	HEIGHT	DEPTH	A	B	C	D	E	F	G	H	BLOWERS	FILTER SIZE
002-003	30	1119	23.38	19.13	6.00	20.88	8.5	20.13	8.08	8	22	1	10 X 22 X 1
004	37.50	11.19	23.38	25.13	6.00	26.88	8.5	29.13	8.08	8	31	2	10 X 31 X 1
006	44.00	11.19	23.38	33.13	6.00	34.88	8.5	34.13	8.08	8	36	2	10 X 36 X 1
008	44.00	13.19	25.38	33.13	7.75	34.88	9.5	34.13	10.08	9.75	36	2	12 X 36 X 1
010	50.00	13.19	25.38	39.13	7.75	40.88	9.5	40.13	10.08	9.75	42	2	12 X 42 X 1
012	58.00	13.19	25.38	47.13	7.75	48.88	9.5	48.13	10.08	9.75	50	2	12 X 50 X 1

- All sizes shown in inches.
- Right hand unit shown, left hand unit opposite.
- Coil connections determined by facing the supply air opening.
- Electrical junction box is located on the same side as the coil connections.
- Unit must be installed level and condensate drain lines should be trapped.
- Drain pan is powder coated epoxy with a 1/8" thick Elastomeric insulation and has 3/4" NPT primary and secondary drain connections.
- Entire cabinet, scroll and blower wheel are heavy gauge, galvanized steel.
- Coil connections: 1/2" CW on 004-006, 3/4" on 008-012 and 1/2" HW on 004-012.

HORIZONTAL DELUXE

LH-D / 200 - 1,200 CFM

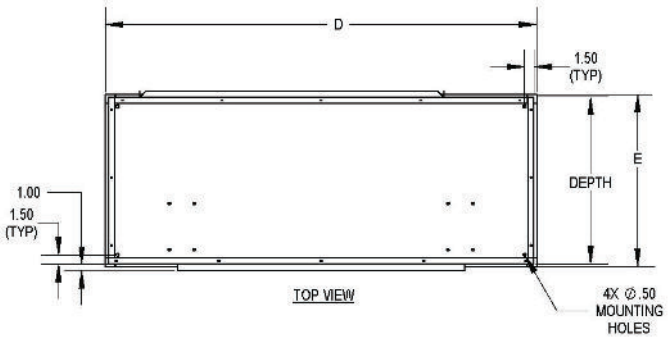


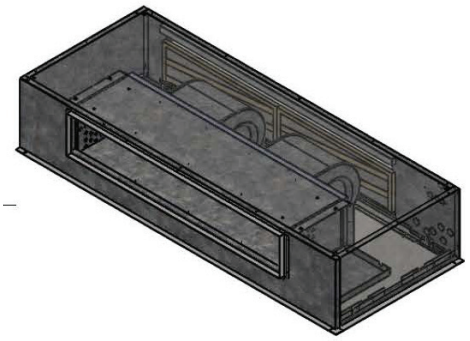
OVERALL				SUPPLY DUCT			RETURN DUCT			
UNIT SIZE	LENGTH	HEIGHT	DEPTH	A	B	C	D	E	BLOWERS	FILTER ZSIZE
002-003	47	11.38	24	18.25	6.38	14.38	29	7	1	(1) 11 x 20 x 1
004	47	11.38	24	24.25	6.38	11.38	29	7	2	(1) 8 x 30 x 1
006	55	11.38	28	32.25	6.38	11.38	39	7	2	(2) 8 x 20 x 1
008	55	13.13	28	32.25	8	11.38	39	9	2	(2) 10 x 20 x 1
010	69	13.13	28	38.25	8	15.38	49	9	2	(1) 10 x 20 x 1
012	69	13.13	28	46.25	8	11.38	49	9	2	(1) 10 x 20 x 1

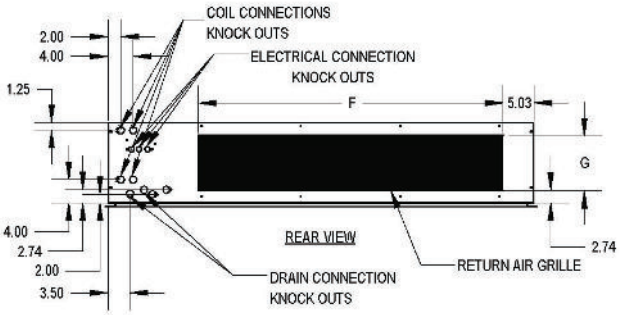
- Right hand unit shown, left hand unit opposite.
- Coil connections determined by facing the supply air opening.
- Electrical junction box is located on the same side as the coil connections.
- Unit must be installed level and condensate drain lines should be trapped.
- Drain pan is powder coated epoxy with a 1/8" thick Elastomeric insulation and has 3/4" NPT primary and secondary drain connections.
- Entire cabinet, scroll and blower wheel are heavy gauge, galvanized steel.
- Coil connections: 1/2" CW and HW on 002-003.

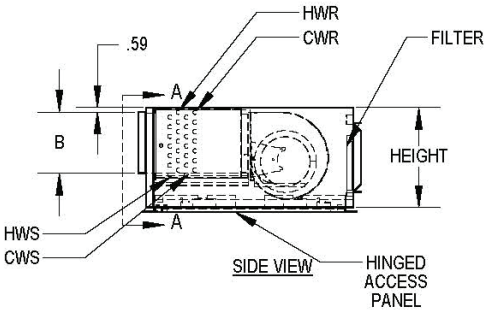
HORIZONTAL FLUSH

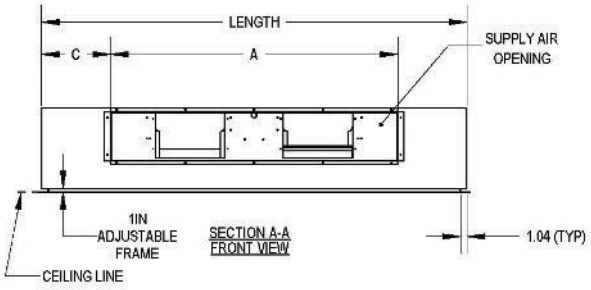
LH-F / 200 - 1,200 CFM











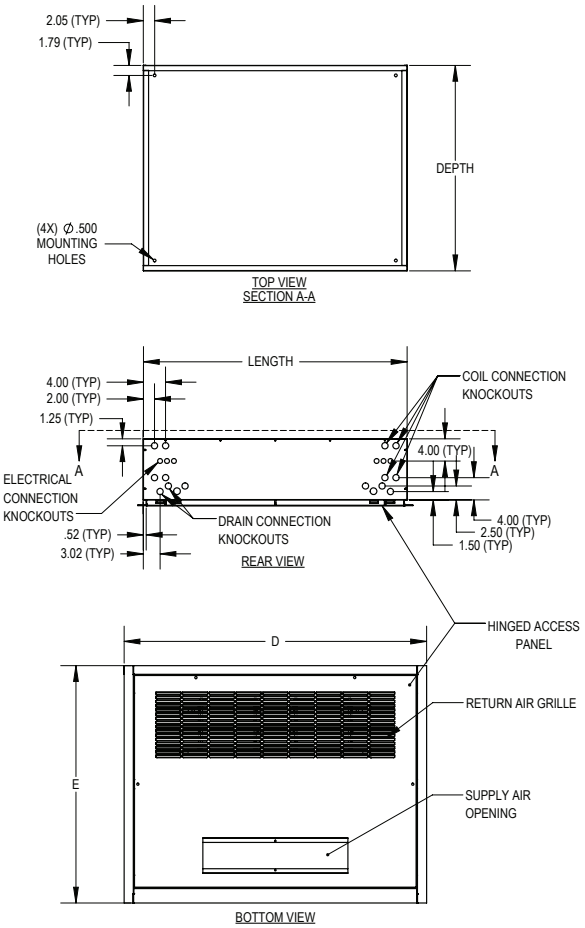
RIGHT HAND SHOWN, LEFT HAND UNIT OPPOSITE

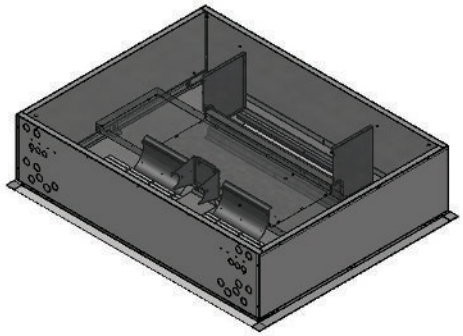
OVERALL				SUPPLY DUCT			FRAME		RETURN DUCT			
UNIT SIZE	LENGTH	HEIGHT	DEPTH	A	B	C	D	E	F	G	BLOWERS	FILTER SIZE
002-003	46.5	11	27	18.25	6.38	14.13	47.5	27.75	29	7	1	(1) 8 x 30 x 1
004	46.5	11	27	24.25	6.38	11.13	47.5	27.75	29	7	2	(1) 8 x 30 x 1
006	54.5	11	27	32.25	6.38	11.13	55.5	27.75	39	7	2	(2) 8 x 20 x 1
008	54.5	13	27	32.25	8	11.13	55.5	27.75	39	9	2	(2) 8 x 20 x 1
010	68.5	13	27	38.28	8	15.13	69.5	27.75	49	9	2	(2) 8 x 25 x 1
012	68.5	13	27	46.25	8	11.13	69.5	27.75	49	9	2	(2) 8 x 25 x 1

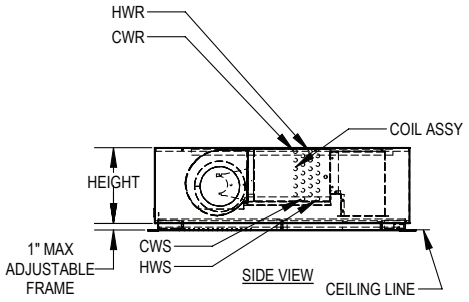
- All sizes shown in inches.
- Right hand unit shown, left hand unit opposite.
- Coil connections determined by facing the supply air opening.
- Electrical junction box is located on the same side as the coil connections.
- Unit must be installed level and condensate drain lines should be trapped.
- Drain pan is powder coated epoxy with a 1/8" thick Elastomeric insulation and has 3/4" NPT primary and secondary drain connections.
- Entire cabinet, scroll and blower wheel are heavy gauge, galvanized steel.
- Coil connections: 1/2" CW on 004-006, 3/4" CW on 008-012 and 1/2" HW on 004-012.

HORIZONTAL FLUSH BOTTOM RETURN AND SUPPLY

LH-E / 200 - 1,200 CFM







RIGHT HAND SHOWN, LEFT HAND OPPOSITE

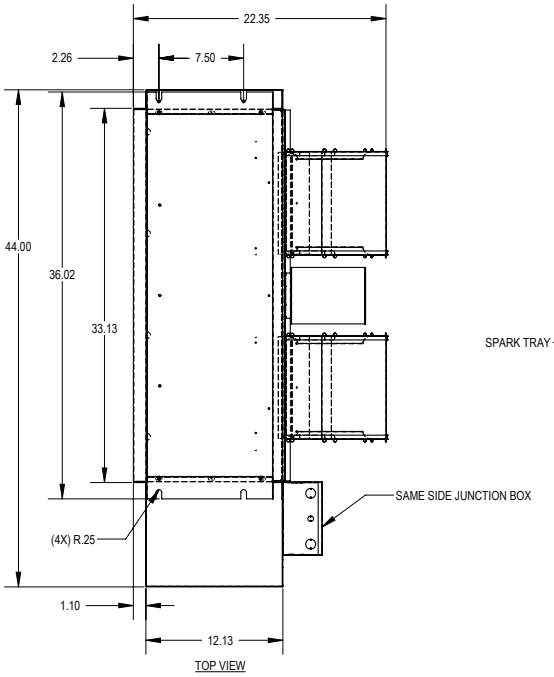
OVERALL				FRAME					
UNIT SIZE	LENGTH	HEIGHT	DEPTH	D	E	BLOWERS	FILTER ZSIZE	RA GRILLE	SA GRILLE
002-003	46.5	11	38	47.5	38.75	1	(2) 11 X 22 X 1	39 x 11	18 x 6
004	46.5	11	38	47.5	38.75	2	(2) 11 X 20 X 1	39 x 11	24 x 6
006	54.5	11	38	55.5	38.75	2	(2) 11 X 24 X 1	47.5 x 10.5	32 x 6
008	54.5	13	44	55.5	44.75	2	(2) 11 X 24 X 1	43.5 x 10.5	32 x 8
010	68.5	13	44	69.5	44.75	2	(2) 11 X 27 X 1	52 x 10.75	36 x 8
012	68.5	13	44	69.5	44.75	2	(2) 11 X 27 X 1	52 x 10.75	42 x 8

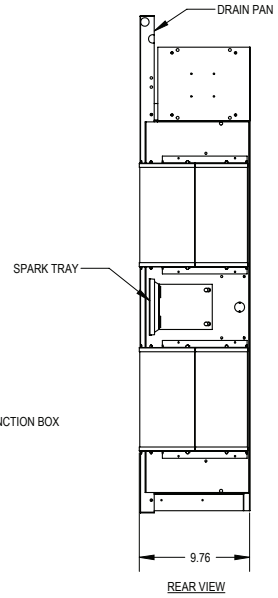
- Right hand unit shown, left hand unit opposite.
- Coil connections determined by facing the supply air opening.
- Electrical junction box is located on the same side as the coil connections.
- Unit must be installed level and condensate drain lines should be trapped.
- Drain pan is powder coated epoxy with a 1/8" thick Elastomeric insulation and has 3/4" NPT primary and secondary drain connections.
- Entire cabinet, scroll and blower wheel are heavy gauge, galvanized steel.
- Coil connections: 1/2" CW and HW on 002-003.

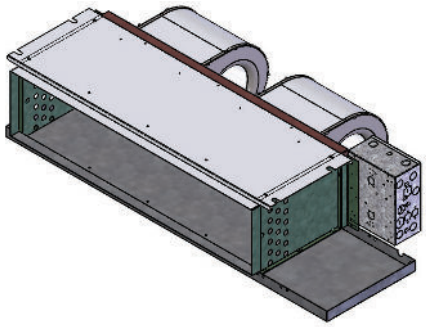
CERTIFIED DIMENSIONAL DRAWINGS - LH SERIES

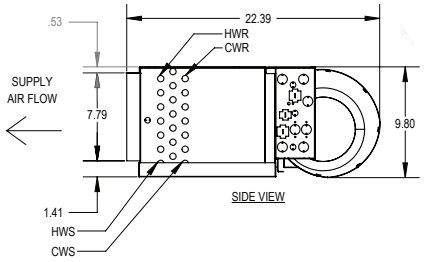
HORIZONTAL LH SERIES

LH-X 008 / 800 CFM





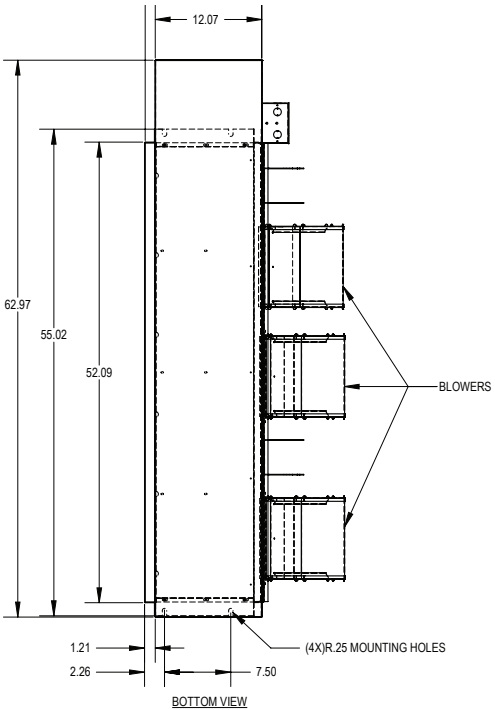


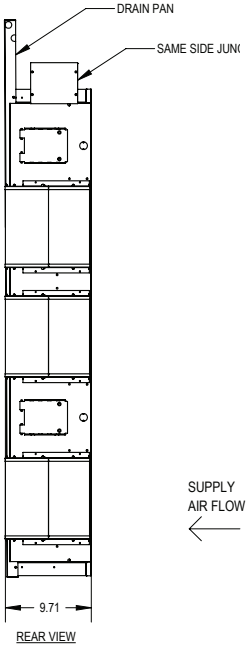


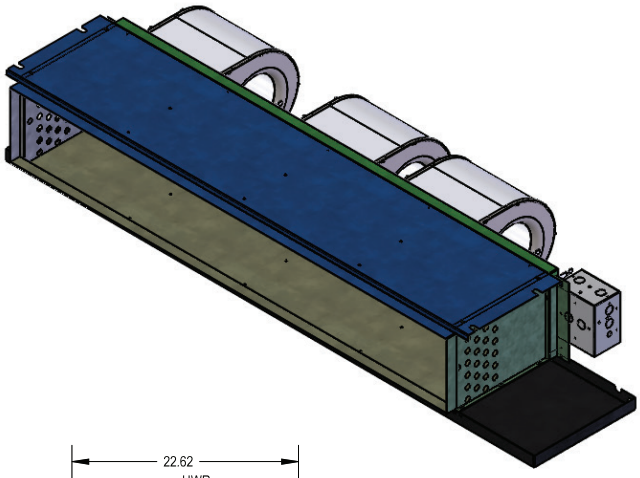
CERTIFIED DIMENSIONAL DRAWINGS - LH SERIES

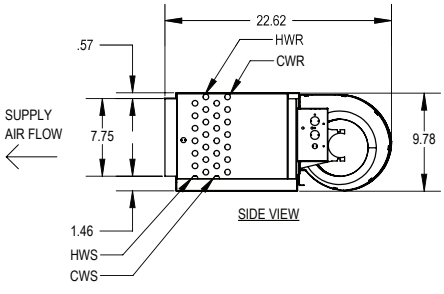
HORIZONTAL LH SERIES

LH-X 010 / 1,000 CFM



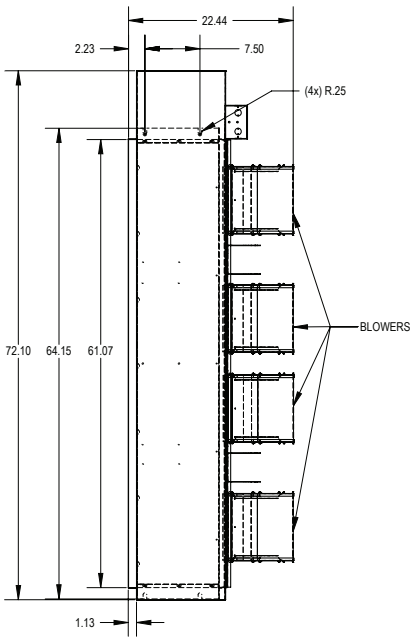




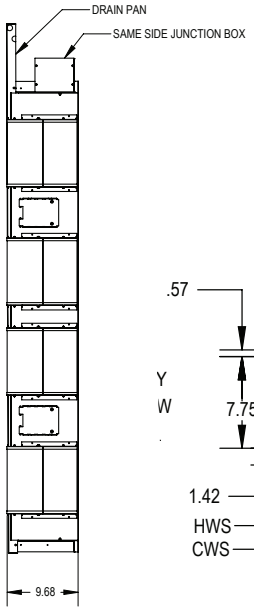


HORIZONTAL LH SERIES

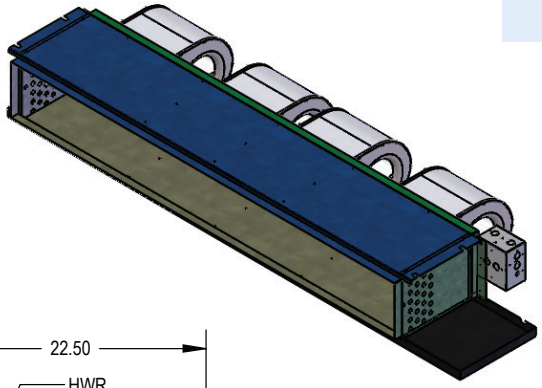
LH-X 012 / 1,200 CFM

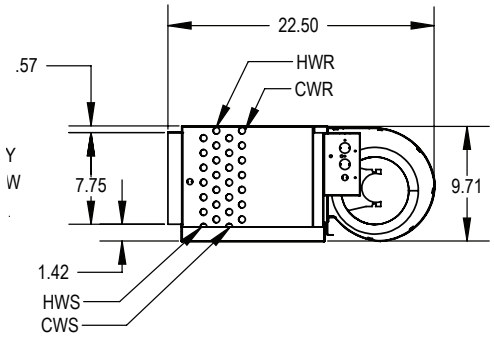


TOP VIEW



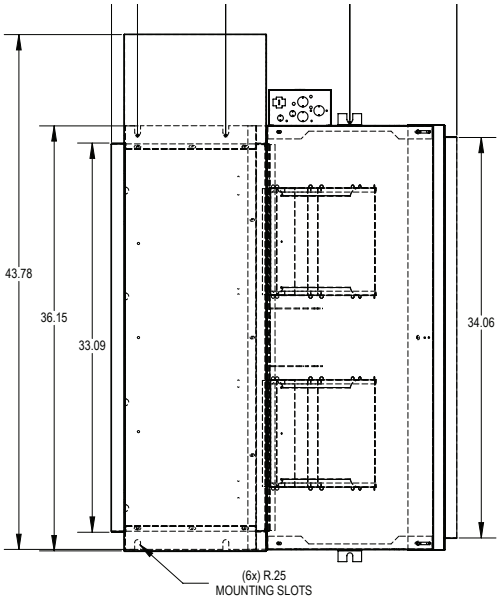
REAR VIEW



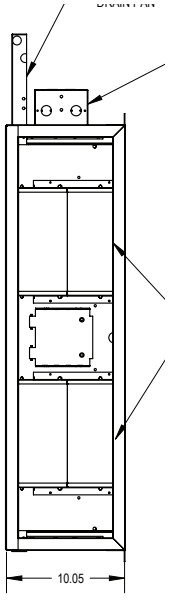


HORIZONTAL LH SERIES

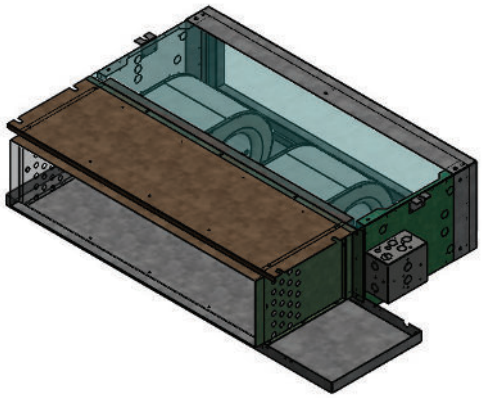
LH-Y 008 / 800 CFM

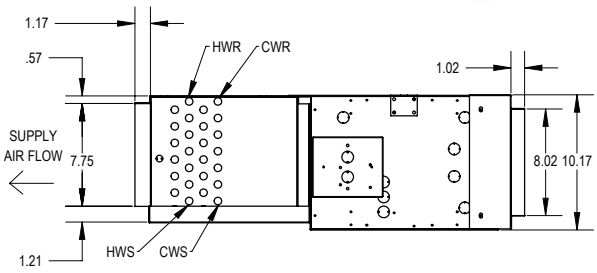


BOTTOM VIEW



REAR VIEW

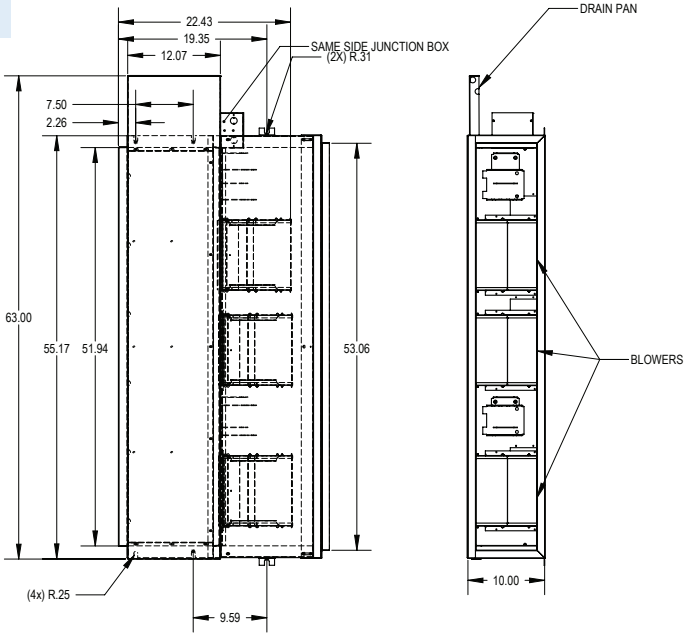


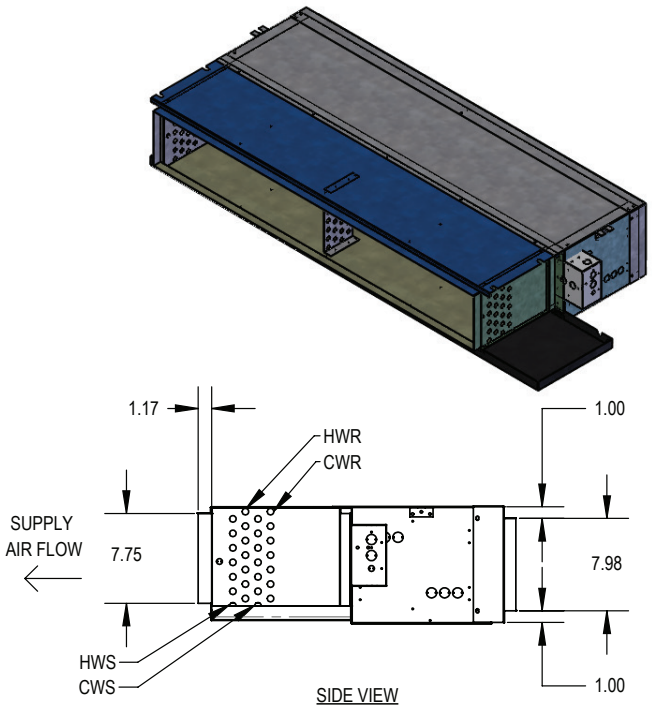


SIDE VIEW

HORIZONTAL LH SERIES

LH-Y 010 / 1,000 CFM

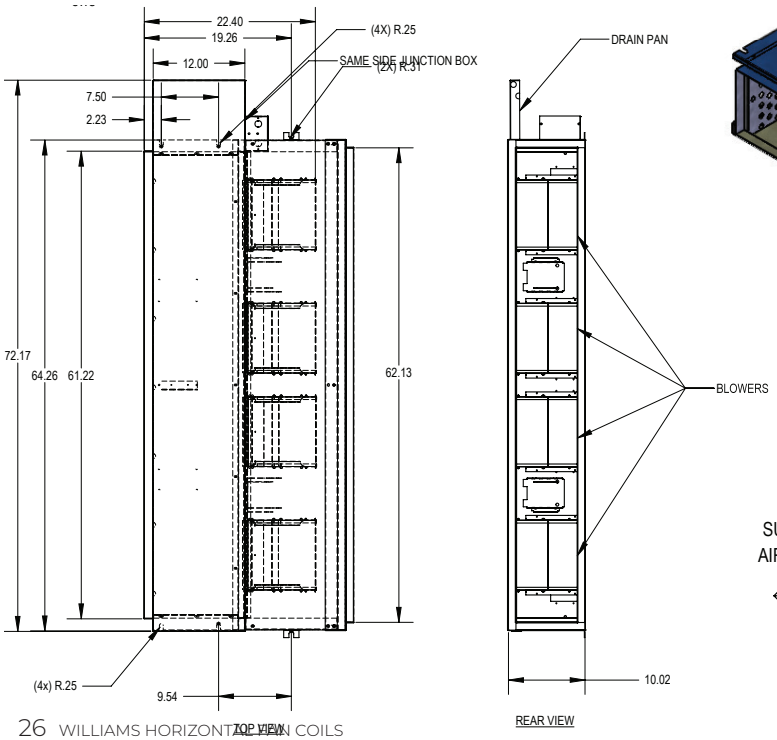


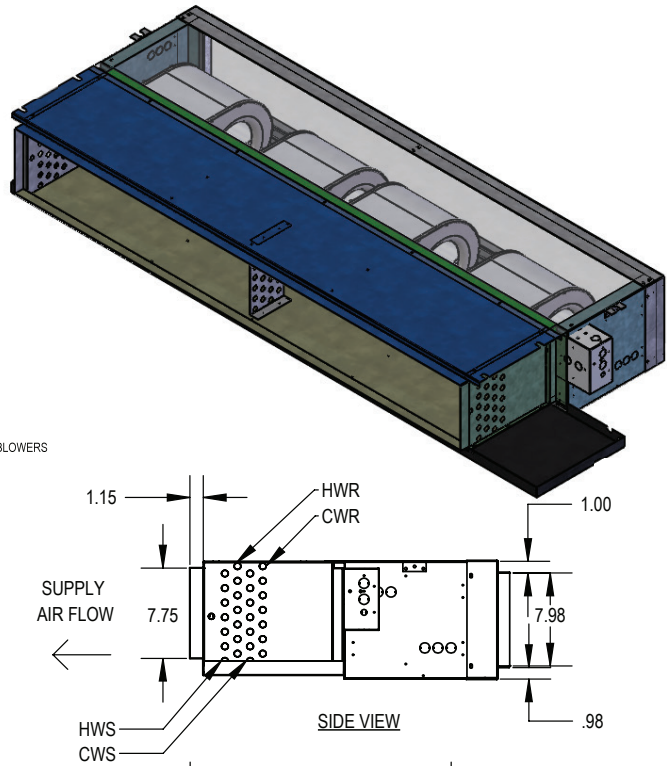


CERTIFIED DIMENSIONAL DRAWINGS - LH SERIES

HORIZONTAL LH SERIES

LH-Y 012 / 1,200 CFM





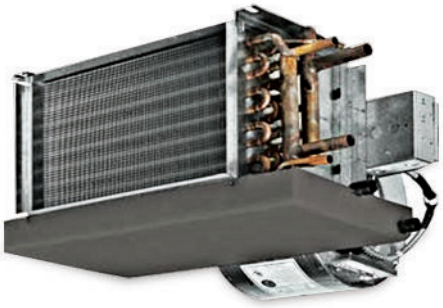
HIGH PERFORMANCE HORIZONTAL FAN COILS

HH SERIES

600 - 2,200 CFM

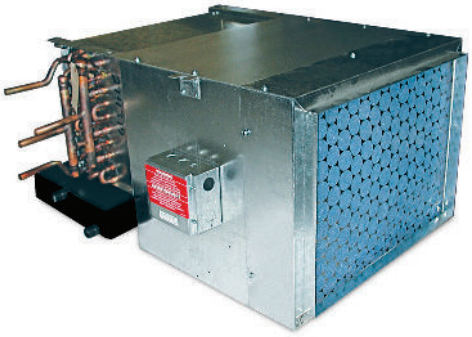
HIGH PERFORMANCE HORIZONTAL BASIC / HH-B

The low profile and flexible design of the Horizontal Basic (HH-B) fan coil is the right choice for multiple applications where high static performance is required. The slim, compact design is well suited for drop ceiling, closet, hallway and other concealed applications. This unit comes with a powder coated epoxy drain pan and a wide range of coil, motor and controls options. These models have no exterior cabinet.



HIGH PERFORMANCE HORIZONTAL WITH RETURN-AIR PLENUM / HH-R

The Horizontal Rear Return Air Plenum (HH-R) is our basic fan coil for high static application with a galvanized rear return air plenum and filter. Ideal for mounting above ceilings, in closets, hallways and bathroom areas, the plenum conceals the unit's blower motor, which is easily accessible for service by removing the bottom panel. Horizontal Bottom Return also available.



HIGH PERFORMANCE HORIZONTAL DELUXE / HH-D

The Horizontal Deluxe (HH-D) fan coil is designed for horizontal exposed ceiling mounted applications where high static performance is required. This unit is our basic unit housed in a fully cased cabinet intended for "free-blow" exposed ceiling mounting. Ideal for remodel situations where adding AC ductwork is limited. Deluxe cabinets are constructed of cold rolled steel and finished with a soft white epoxy powder-coated finish, and subjected to a 1500-hour salt spray test in accordance with ASTM-B117.

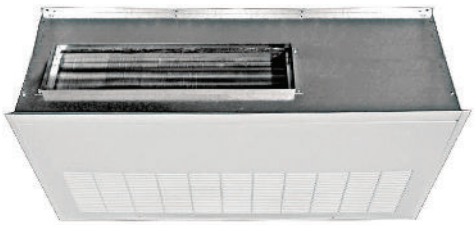
HIGH PERFORMANCE HORIZONTAL FAN COILS

HH SERIES

600 - 2,200 CFM

HIGH PERFORMANCE HORIZONTAL FLUSH BOTTOM SUPPLY & RETURN / HH-F

The Horizontal Flush (HH-F) is a recessed fan coil designed for flush ceiling applications. The telescoping frame and hinged access panel allow it to fit any type of ceiling. The access panel comes in the same attractive, durable powder coated as the Horizontal Deluxe. Unit comes standard with bottom return front supply.

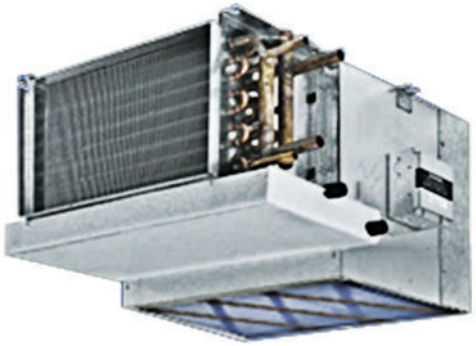


HIGH-PERFORMANCE HORIZONTAL DELUXE WITH BOTTOM SUPPLY & RETURN / HH-E

The High Performance Horizontal Deluxe Bottom Supply & Return (HH-E) is a high static (up to .50 ESP) recessed fan coil designed for flush ceiling applications. The HH-E comes with a coil, blower/motor assembly with quick connect plug and a galvanized steel, powder coated epoxy drain pan covered with ⅛" thick insulation. Deluxe cabinets are constructed of cold rolled steel and finished with 385° baked on tough, soft-white epoxy power coated finish.

HIGH PERFORMANCE HORIZONTAL BOTTOM RETURN AIR PLENUM / HH-Q

The High Performance Horizontal Bottom Return Air Plenum (HH-Q) is a high static (up to .50 ESP) fan coil that comes with a coil, blower/motor assembly with quick connect plug and a galvanized steel, powder coated epoxy drain pan covered with ⅛" thick insulation. The galvanized steel plenum is insulated with ½" thick, over three pound density, neoprene coated fiberglass. The plenum conceals the fan and motor assembly that is easily accessed for service by removing the back panel. This unit is easily mounted above ceilings, in closets, and in hallways.



AHRI CERTIFIED COOLING CAPACITY
HH SERIES

Williams high performance horizontal fan coils are labeled and approved by the Air-Conditioning, Heating & Refrigeration Institute (AHRI). This designation signifies that Williams high performance vertical fan coil units have been rated as follows in accordance with the latest edition of ANSI/AHRI 440 with Addendum 1 Performance Rating of Room Fan Coils and subject to rating accuracy by AHRI sponsored, independent, third-party testing.

AHRI APPROVED STANDARD RATINGS						COOLING CAPACITY	
MODEL / SIZE	MOTOR / TYPE	STYLE	RATED CFM	GPM	WPD (FT/H20	TOTAL COOLING (BTUH)	SENSIBLE COOLING (BTUH)
006	HH SERIES (STANDARD)	B	755	3.3	1.1	16,373	15,302
		R,Q	755	3.3	1.1	16,373	15,303
		D,E,F	755	3.3	1.1	16,373	15,303
	HH SERIES (EC)	B, R, Q, D, E, F	600	2.9	0.9	14,087	13,017
008	HH SERIES (STANDARD)	B	855	4.5	2.0	22.465	19,058
		R,Q	855	4.5	2.0	22,465	19,058
		D,E,F	855	4.5	2	22,465	19,058
	HH SERIES (EC)	B, R, Q, D, E, F	800	4.3	1.9	21,660	18,173
010	HH SERIES (STANDARD)	B	1,140	6.6	4.4	33,130	26,605
		R,Q	1,120	6.6	4.3	32,825	26,284
		D,E,F	1,108	4.5	2.0	22,465	19,058
	HH SERIES (EC)	B, R, Q, D, E, F	1000	6.2	4.0	30,794	24,225
012	HH SERIES (STANDARD)	B	1,345	4.6	0.4	22,954	22,954
		R,Q	1,340	8.0	4.1	40,054	31,854
		D,E,F	1,330	8.0	4.1	39,890	31,685
	HH SERIES (EC)	B, R, Q, D, E, F	1,200	7.5	3.7	37,533	29,355
015	HH SERIES (STANDARD)	B	1,715	10	1.6	49,842	40,761
		R,Q	1,705	10.4	6.8	51,839	40,675
		D,E,F	1,690	1,690	9.9	49,381	40,300
	HH SERIES (EC)	B, R, Q, D, E, F	1,200	7.5	3.7	37,533	29,355
018	HH SERIES (STANDARD)	B	2,005	12.5	2.5	62,732	49,345
		R,Q	2,005	12.5	2.5	62,732	49,345
		D,E,F	2,005	2.5	2.5	62,732	49,345
	HH SERIES (EC)	B, R, Q, D, E, F	1,800	11.7	2.3	58,610	45,398
022	HH SERIES (STANDARD)	B	2,285	5.7	4.7	57,110	50,856
		R,Q	2,285	15	3.6	75,045	57,614
		D,E,F	2,285	15	3.6	75,045	57,614
	HH SERIES (EC)	B, R, Q, D, E, F	2,200	14.7	4.7	73,377	56,010

Notes: 1) Based on 80°F DB and 67°F WB EAT, 45°F EWT, 10°F temperature rise, high fan speed. Motor voltage 115/1/60 power source. Air flow under dry coil conditions. Water pressure drops shown in feet of water. All units are listed under UL Category Control No. LZFE.

2) Ratings are based on actual CFM. Standard coils for 006-022 is 4 rows.

3) Legend - B = Basic; R = Rear return-air plenum; Q = Bottom return-air plenum; D = Deluxe; E = Bottom deluxe supply and bottom return and F = Flush.

COIL DATA
HH SERIES

Coils are made from ½" O.D. copper tubing with .016" wall thickness, and tubes are staggered for maximum heat transfer. A manual air vent is standard on all hydronic coils. DX and steam coils do not include manual air vent. All coils are 100% underwater pressure tested to 350 PSIG with a 300 PSIG working pressure. Steam coils are rated for up to 15 PSIG or 250°F.

Coils are available in two or four pipe, and from one to six row configurations for HH Series units. All units available with any combination of chilled or hot water, steam or direct expansion. Custom circuiting is available.

COIL ROW	003	004	006	008	010	012	015	018	022
Single-Row Coil									
Two-Row Coil									
Three-Row Coil					STANDARD				
Four-Row Coil									
Five-Row Coil					OPTIONAL				
*Six-Row Coil									

COIL OPTIONS:

- DX – Includes distributor and nozzle, TXV must be field furnished and installed
- Steam – 1-15 PSIG
- Preheat Coil Position – Standard coil is reheat position
- Phenolic Anti-Corrosion Coating (PAC) custom.
- 10-15 Fins Per Inch (Standard is 12 FPI)

Coil connections on the chilled water side for and HH006 is ½" and ¾" HH008-022. The hot water connection is ½" on HH006-022.

HEATING PERFORMANCE
HH SERIES

AHRI APPROVED STANDARD RATINGS						HEATING CAPACITY
MODEL SIZE	MOTOR TYPE	STYLE	RATED CFM	GPM	WPD (FT/H20)	MBH
006	HH SERIES (STANDARD)	B	755	6.3	1.6	63,213
		R,Q	755	6.3	1.6	63,213
		D,E,F	755	6.3	1.6	63,213
	HH SERIES (EC)	B, R, Q, D, E, F	600	3.4	0.7	51,162
008	HH SERIES (STANDARD)	B	855	7.7	2.7	77,292
		R,Q	855	7.7	2.7	77,292
		D,E,F	855	7.7	2.7	77,292
	HH SERIES (EC)	B, R, Q, D, E, F	800	7.4	2.5	74,190
010	HH SERIES (STANDARD)	B	1,040	10.4	5.1	104,625
		R,Q	1,120	10.3	5.1	103,509
		D,E,F	1,130	10.4	5.2	104,071
	HH SERIES (EC)	B, R, Q, D, E, F	1,000	9.6	4.6	96,117
012	HH SERIES (STANDARD)	B	1,350	12.6	4.8	126,454
		R,Q	1,340	12.6	4.7	125,852
		D,E,F	1,330	12.5	4.7	125,243
	HH SERIES (EC)	B, R, Q, D, E, F	1200	11.7	4.3	116,721
015	HH SERIES (STANDARD)	B	1,715	15.8	7.6	158,398
		R,Q	1,705	15.8	7.6	157,840
		D,E,F	1,690	15.7	7.5	156,993
	HH SERIES (EC)	B, R, Q, D, E, F	1,500	14.5	6.8	145,182
018	HH SERIES (STANDARD)	B	2,005	11.7	6	176,545
		R,Q	2,005	11.7	6	176,545
		D,E,F	2,005	11.7	6	176,545
	HH SERIES (EC)	B, R, Q, D, E, F	1,800	11	5.5	165,270
022	HH SERIES (STANDARD)	B	2,285	13.5	8.3	202,846
		R,Q	2,285	13.5	8.3	202,846
		D,E,F	2,285	13.5	8.3	202,846
	HH SERIES (EC)	B, R, Q, D, E, F	2,200	13.2	8	198,348

Notes: Based on 70°F DB EAT, 180°F EWT, 40°F temperature drop, high fan speed. Motor voltage 115/1/60 power source. Air flow under dry coil conditions. Water pressure drops shown in feet of water.

ELECTRIC HEAT
HH SERIES

Electric heat may be furnished with either hydronic, direct expansion or steam coils and is factory mounted, wired, and tested. Option equipped with low watt density (for long life) nichrome wire elements. The heater has a built-in, high limit, and fusible link to provide maximum safety. Can only be installled in preheat position.

MODEL / SIZE	kW	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0
	VOLTAGE	AMPS															
006	115		8.7	13.0	17.4	21.7	26.1										
	208		4.8	7.2	9.6	12.0	14.4	16.8	19.2								
	230		4.4	6.5	8.7	10.9	13.0	15.2	17.4								
	277		3.6	5.4	7.2	9.0	10.8	12.6	14.4								
008	115		8.7	13.0	17.4	21.7	26.1										
	208		4.8	7.2	9.6	12.0	14.4	16.8	19.2	21.6	24.0	26.4	28.9	31.3	33.7	36.1	38.5
	230		4.4	6.5	8.7	10.9	13.0	15.2	17.4	19.6	21.7	23.9	26.1	28.3	30.4	32.6	34.8
	277		3.6	5.4	7.2	9.0	10.8	12.6	14.4	16.3	18.1	19.9	21.7	23.5	25.3	27.1	28.9
010	115		8.7	13.0	17.4	21.7	26.1										
	208		4.8	7.2	9.6	12.0	14.4	16.8	19.2	21.6	24.0	26.4	28.9	31.3	33.7	36.1	38.5
	230		4.4	6.5	8.7	10.9	13.0	15.2	17.4	19.6	21.7	23.9	26.1	28.3	30.4	32.6	34.8
	277		3.6	5.4	7.2	9.0	10.8	12.6	14.4	16.3	18.1	19.9	21.7	23.5	25.3	27.1	28.9
012	115		8.7	13.0	17.4	21.7	26.1										
	208		4.8	7.2	9.6	12.0	14.4	16.8	19.2	21.6	24.0	26.4	28.9	31.3	33.7	36.1	38.5
	230		4.4	6.5	8.7	10.9	13.0	15.2	17.4	19.6	21.7	23.9	26.1	28.3	30.4	32.6	34.8
	277		3.6	5.4	7.2	9.0	10.8	12.6	14.4	16.3	18.1	19.9	21.7	23.5	25.3	27.1	28.9
015	115		8.7	13.0	17.4	21.7	26.1										
	208		4.8	7.2	9.6	12.0	14.4	16.8	19.2	21.6	24.0	26.4	28.9	31.3	33.7	36.1	38.5
	230		4.4	6.5	8.7	10.9	13.0	15.2	17.4	19.6	21.7	23.9	26.1	28.3	30.4	32.6	34.8
	277		3.6	5.4	7.2	9.0	10.8	12.6	14.4	16.3	18.1	19.9	21.7	23.5	25.3	27.1	28.9
018	115		8.7	13.0	17.4	21.7	26.1										
	208		4.8	7.2	9.6	12.0	14.4	16.8	19.2	21.6	24.0	26.4	28.9	31.3	33.7	36.1	38.5
	230		4.4	6.5	8.7	10.9	13.0	15.2	17.4	19.6	21.7	23.9	26.1	28.3	30.4	32.6	34.8
	277		3.6	5.4	7.2	9.0	10.8	12.6	14.4	16.3	18.1	19.9	21.7	23.5	25.3	27.1	28.9
022	115		8.7	13.0	17.4	21.7	26.1										
	208		4.8	7.2	9.6	12.0	14.4	16.8	19.2	21.6	24.0	26.4	28.9	31.3	33.7	36.1	38.5
	230		4.4	6.5	8.7	10.9	13.0	15.2	17.4	19.6	21.7	23.9	26.1	28.3	30.4	32.6	34.8
	277		3.6	5.4	7.2	9.0	10.8	12.6	14.4	16.3	18.1	19.9	21.7	23.5	25.3	27.1	28.9

AIR FLOW DATA
HH SERIES

Air flow shown below is under dry coil conditions.

AIR FLOW DATA		EXTERNAL STATIC PRESSURE																	
SIZE	COIL ROWS	0.00			0.05			0.10			0.15			0.20			0.25		
		HI	MED	LOW	HI	MED	LOW	HI	MED	LOW	HI	MED	LOW	HI	MED	LOW	HI	MED	LOW
006 (Standard)	B	1,350	1,115	720	1,340	1,100	705	1,320	1,085	685	1,295	1,65	665	1,265	1,035	635	1,220	1,005	605
	R	1,340	1,100	705	1,320	1,085	685	1,295	1,065	665	1,265	1,035	635	1,220	1,005	330	595	455	265
	D	755	520	390	755	520	390	755	520	390	693	505	360	613	473	298	575	438	228
	F	755	520	390	755	520	390	755	520	390	693	505	360	613	473	298	575	438	228
006 (ECM)	B, R, D, F	600	450	300	600	450	300	600	450	300	600	450	300	600	450	300	600	450	300
008 (Standard)	B	855	750	600	855	750	600	855	750	600	855	750	600	855	750	600	835	730	585
	R	855	750	600	855	750	600	855	750	600	855	750	600	835	730	585	800	705	560
	D	855	750	600	855	750	600	855	750	600	852	747	598	818	718	573	783	690	548
	F	855	750	600	855	750	600	855	750	600	852	747	598	818	718	573	783	690	548
008 (ECM)	B, R, D, F	800	600	400	800	600	400	800	600	400	800	600	400	800	600	400	800	600	400
010 (Standard)	B	1,140	930	705	1,120	915	710	1,095	890	705	1,065	865	695	1,025	840	680	980	805	660
	R	1,120	915	710	1,095	890	705	1,065	865	695	1,025	840	680	980	805	660	925	765	630
	D	1,120	903	708	1,080	878	700	1,045	853	688	1,003	823	670	953	785	645	895	745	615
	F	1,108	903	708	1,080	878	700	1,045	853	688	1,003	823	670	953	785	645	895	745	615
010 (ECM)	B, R, D, F	1,000	750	500	1,000	750	500	1,000	750	500	1,000	750	500	1,000	750	500	1,000	750	500
012 (Standard)	B	1,350	1,115	720	1,340	1,100	705	1,320	1,085	685	1,295	1,065	665	1,265	1,035	635	1,220	1,005	605
	R	1,340	1,100	705	1,320	1,085	685	1,295	1,065	665	1,265	1,035	635	1,220	1,005	605	1,170	970	575
	D	1,340	1,093	695	1,308	1,075	675	1,280	1,050	650	1,243	1,020	620	1,195	988	590	1,143	950	558
	F	1,330	1,093	695	1,308	1,075	675	1,280	1,050	650	1,243	1,020	620	1,195	988	590	1,143	950	558
012 (ECM)	B, R, D, F	1,200	900	600	1,200	900	600	1,200	900	600	1,200	900	600	1,200	900	600	1,200	900	600
015 (Standard)	B	1,690	1,295	1,000	1,658	1,260	960	1,618	1,220	920	1,570	1,178	878	1,518	1,128	830	1,460	1,070	780
	R	1,690	1,310	1,020	1,675	1,280	980	1,640	1,240	940	1,595	1,200	900	1,545	1,155	855	1,490	1,100	805
	D	1,705	1,295	1,000	1,658	1,260	960	1,618	1,220	920	1,570	1,178	878	1,518	1,128	830	1,460	1,070	780
	F	1,690	1,295	1,000	1,668	1,260	960	1,618	1,220	920	1,570	1,178	878	1,518	1,128	830	1,460	1,070	780
015 (ECM)	B, R, D, F	1,500	1,125	750	1,500	1,125	750	1,500	1,125	750	1,500	1,125	750	1,500	1,125	750	1,500	1,125	750
018 (Standard)	B	2,005	1,680	1,260	2,005	1,680	1,260	2,005	1,680	1,260	2,005	1,680	1,260	2,005	1,680	1,260	1,970	1,645	1,245
	R	2,005	1,680	1,260	2,005	1,680	1,260	2,005	1,680	1,260	2,005	1,680	1,260	1,645	1,680	1,245	1,880	1,555	1,215
	D	2,005	1,680	1,260	2,005	1,680	1,260	2,005	1,680	1,260	2,005	1,680	1,260	1,925	1,600	1,230	1,825	1,500	1,203
	F	2,005	1,680	1,260	2,005	1,680	1,260	2,005	1,680	1,260	2,005	1,680	1,260	1,925	1,600	1,230	1,825	1,500	1,203
018 (ECM)	B, R, D, F	1,800	1,350	900	1,800	1,350	900	1,800	1,350	900	1,800	1,350	900	1,800	1,350	900	1,800	1,350	900
022 (Standard)	B	2,285	2,090	1,390	2,285	2,090	1,390	2,285	2,090	1,390	2,285	2,090	1,390	2,285	2,090	1,390	2,285	2,090	1,390
	R	2,285	2,090	1,390	2,285	2,090	1,390	2,285	2,090	1,390	2,285	2,090	1,390	2,285	2,090	1,390	2,170	1,960	1,320
	D	2,285	2,090	1,390	2,285	2,090	1,390	2,285	2,090	1,390	2,285	2,090	1,390	2,228	2,025	1,355	2,110	1,890	1,285
	F	2,285	2,090	1,390	2,285	2,090	1,390	2,285	2,090	1,390	2,285	2,090	1,390	2,228	2,025	1,355	2,110	1,890	1,285
022 (ECM)	B, R, D, F	2,200	1,650	1,100	2,200	1,650	1,100	2,200	1,650	1,100	2,200	1,650	1,100	2,200	1,650	1,100	2,200	1,650	1,100

MOTOR DATA
HH SERIES

Motors are wired to a junction box ready for single point field connection.

OUTSTANDING MOTOR FEATURES:

- Quick connect plug
- Permanent split capacitor
- Thermal overload protection
- 1050 RPM for lower operating costs
- Oversized bearings and permanently lubricated and sealed
- 122°F maximum operating temperature
- Custom motor mounts designed to reduce noise and eliminate vibration
- Stators are epoxy dipped for more efficient motor cooling

OPTIONAL MOTORS:

- 208V-1Ø-60 motors
- 277V-1Ø-60 motors
- 230/220V-1Ø-60 motors
- 50-Hz motors in specified voltages

60 HERTZ SINGLE-PHASE MOTORS (1100 RPM)				VOLTAGE / WATTS							
				115V		208V		230V		277V	
SIZE	MODEL / MOTOR TYPE	HP (QTY)	BLOWERS	AMPS	WATTS	AMPS	WATTS	AMPS	WATTS	AMPS	WATTS
006	HH series (high static)	1/6 (1)	1	2.2	280	1.0	280	1.0	280	0.8	280
008	HH series (high static)	1/4 (1)	1	3.2	330	1.5	330	1.5	330	1.2	330
010	HH series (high static)	1/4 (1)	1	3.2	378	1.5	378	1.5	378	1.2	378
012	HH series (high static)	1/3 (1)	1	4.5	403	2.4	403	2.4	403	1.8	400
015*	HH series (high static)	1/6 (2)	2	4.6	560	2.0	560	2.0	560	1.6	560
018*	HH series (high static)	1/4 (2)	2	6.4	660	3.0	660	3.0	660	2.4	660
022*	HH series (high static)	1/3 (2)	2	9.0	806	4.8	806	4.8	806	3.6	806

* Data reflects combined performance of (2) motors. Notes: Motor full load amps listed refer to NEC amps. Actual motor nameplate amps may vary.

SOUND DATA (PSC MOTOR)
HH SERIES

SIZE	MODEL	FAN SPEED	OCTAVE BAND						
			2	3	4	5	6	7	8
			CENTER FREQUENCY (CPS)						
			125	250	500	1000	2000	4000	8000
006	HH series	high	60.0	55.0	55.0	54.0	50.5	46.0	36.5
		medium	54.0	56.0	49.0	46.0	41.0	35.0	24.0
008	HH series	high	61.0	63.0	56.0	55.0	52.0	47.0	38.0
		medium	57.0	58.0	50.0	47.0	43.0	36.0	24.5
010	HH series	high	62.0	64.0	58.0	57.0	53.0	48.0	39.0
		medium	58.5	60.0	51.5	49.0	44.0	37.0	25.0
012	HH series	high	63.5	65.5	60.5	58.0	54.0	49.5	40.5
		medium	56.0	60.5	56.0	50.0	44.5	39.0	25.5
015	HH series	high	55.5	59.5	60.5	57.5	55.0	51.0	48.0
		medium	51.0	53.5	53.0	49.5	45.0	40.0	26.5
018	HH series	high	57.2	61.0	62.5	59.0	58.0	54.0	43.0
		medium	52.5	60.0	55.0	51.0	48.5	42.0	31.0
022	HH series	high	60.0	63.0	64.0	61.0	59.5	57.0	46.0
		medium	55.0	57.0	57.0	53.0	49.0	45.0	33.0

Notes: 1) Power levels are in dB RE 10-12 watts.
2) Sound data tested in accordance with ASHRAE standard 68 and AHRI standard 260 and 350.
3) Air flow under dry coil conditions.

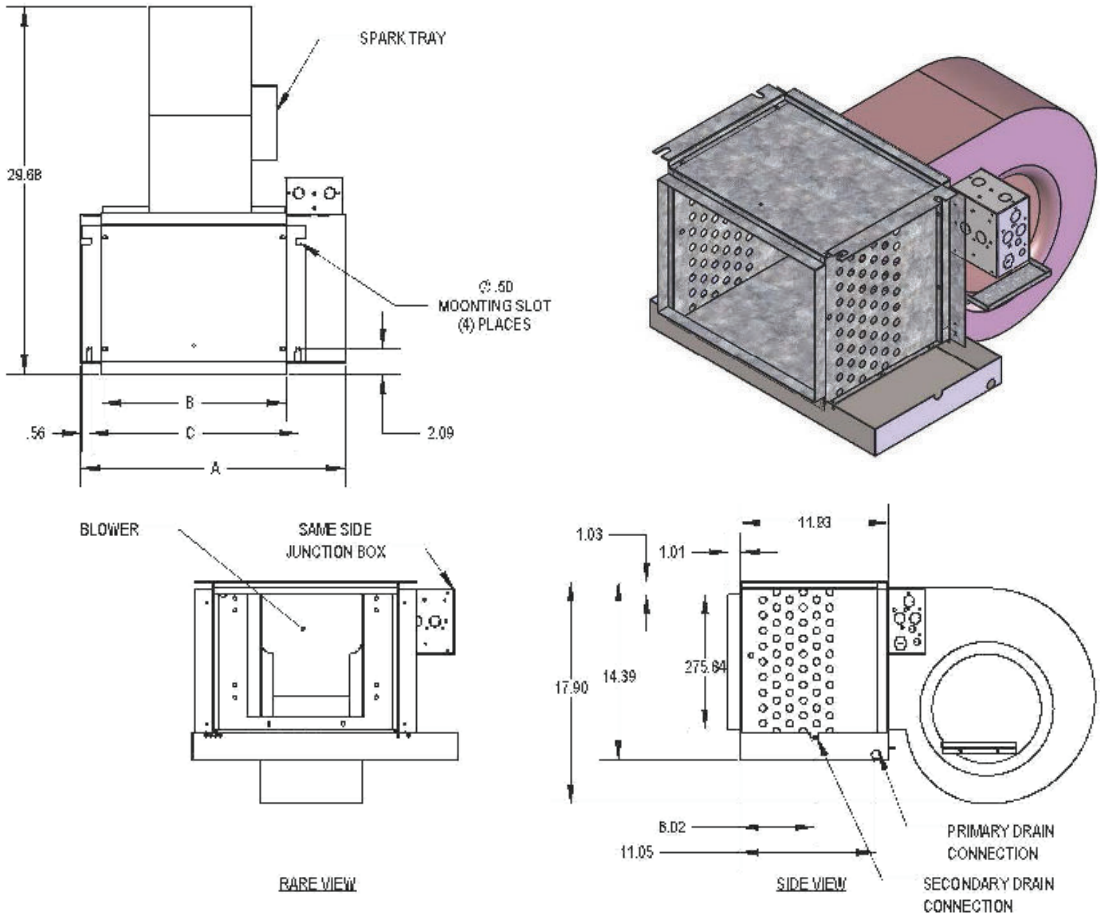
WEIGHTS AND MEASUREMENTS
HH SERIES

The following HH Series weights and measures are based on fan coil units only. Add approximately 20% for packaging and crating.

UNIT	MODEL	ROWS	DIMENSIONS / INCHES			WEIGHT / LBS.		DIMENSIONS / MILLIMETERS			WEIGHT / KG	
			HEIGHT	WIDTH	DEPTH	DRY	WET	HEIGHT	WIDTH	DEPTH	DRY	WET
HH SERIES BASIC	006	3	17	22	28	133	137	432	559	711	60.33	62.14
	006	4	17	22	28	116	121	432	559	711	52.62	54.88
	008	3	17	26	28	124	124	432	661	711	56.25	56.25
	008	4	17	26	28	128	128	432	661	711	58.06	58.06
	010	4	17	32	28	137	137	432	813	711	62.14	62.14
	010	5	17	32	28	149	149	432	813	711	67.59	67.59
	012	4	17	38	28	148	148	432	965	711	67.13	67.13
	012	5	17	38	28	165	165	432	965	711	74.84	74.84
	015	4	17	44	28	206	206	432	1118	711	93.44	93.44
	015	5	17	44	28	223	223	432	1118	711	101.15	101.15
	018	4	17	50	28	243	243	432	1270	711	110.22	110.22
	018	5	17	50	28	263	263	432	1270	711	119.29	119.29
	022	4	17	56	28	266	266	432	1423	711	120.66	120.66
	022	6	17	56	28	288	288	457	1423	711	130.63	130.63
HH SERIES RETURN AIR PLENUM	006	3	18	22	32	137	141	457	559	813	62.14	63.96
	006	4	18	22	32	135	140	457	559	813	61.23	63.50
	008	3	18	26	32	157	162	457	661	813	71.21	73.48
	008	4	18	26	32	143	150	457	661	813	64.86	68.04
	010	4	18	32	32	274	283	457	813	813	124.28	128.37
	010	5	18	32	32	167	178	457	813	813	75.75	80.74
	012	4	18	38	32	163	174	457	965	813	73.94	78.93
	012	5	18	38	32	170	184	457	965	813	77.11	83.46
	015	4	18	44	32	102	115	457	1118	813	46.27	52.16
	015	5	18	44	32	242	319	457	1118	813	109.77	144.70
	018	4	18	50	32	268	284	457	1270	813	121.56	128.82
	018	5	18	50	32	278	298	457	1270	813	126.10	135.17
	022	4	18	56	32	291	309	457	1423	813	132.00	140.16
	022	5	18	56	32	302	324	483	1423	813	136.98	146.96
HH SERIES DELUXE	006	5	19	33	32	246	250	483	838	813	111.58	113.40
	006	4	19	33	32	143	148	483	838	813	64.86	67.13
	008	3	19	37	32	159	164	483	940	813	72.12	74.39
	008	4	19	37	32	163	170	483	940	813	73.94	77.11
	010	4	19	43	32	175	184	483	1092	813	79.38	83.46
	010	5	19	43	32	181	192	483	1092	813	82.10	87.09
	012	4	19	49	32	181	190	483	1245	813	82.10	86.18
	012	5	19	49	32	195	209	483	1245	813	88.45	94.80
	015	4	19	55	32	145	158	483	1997	813	65.77	71.67
	015	5	19	55	32	254	271	483	1397	813	115.21	122.92
	018	4	19	61	32	288	304	483	1549	813	130.63	137.89
	018	5	19	61	32	135	155	483	1549	813	61.23	70.31
	022	4	19	67	32	311	329	483	1702	813	141.07	149.23
	022	5	19	67	32	333	355	483	1702	813	151.05	161.03
HH SERIES FLUSH	006	3	19	48	32	142	146	484	1219	813	64.41	66.22
	006	4	19	48	32	136	141	485	1219	813	61.69	63.96
	008	3	19	48	32	158	163	486	1219	813	71.67	73.94
	008	4	19	48	32	162	169	487	1219	813	73.48	76.66
	010	4	19	48	32	172	179	488	1219	813	78.02	81.19
	010	5	19	48	32	166	177	489	1219	813	75.30	80.29
	012	4	19	56	32	173	184	490	1422	813	78.47	83.46
	012	5	19	56	32	180	194	491	1422	813	81.65	88.00
	015	4	19	58	32	251	213	492	1473	813	113.85	96.62
	015	5	19	58	32	248	265	493	1473	813	112.49	120.20
	018	4	19	62	32	273	289	494	1575	813	123.83	131.09
	018	5	19	62	32	283	303	495	1575	813	128.37	137.44
	022	4	19	68	32	318	336	496	1727	813	144.24	152.41
	022	5	19	68	32	307	329	497	1727	813	139.25	149.23

HIGH PERFORMANCE HORIZONTAL BASIC

HH-B / 600 - 1,200 CFM



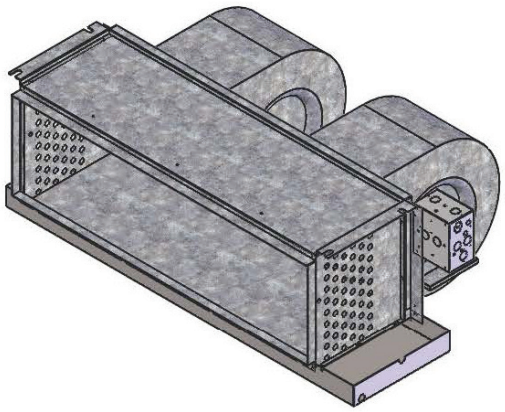
RIGHT HAND SHOWN.LEFT HAND UNIT OPPOSITE

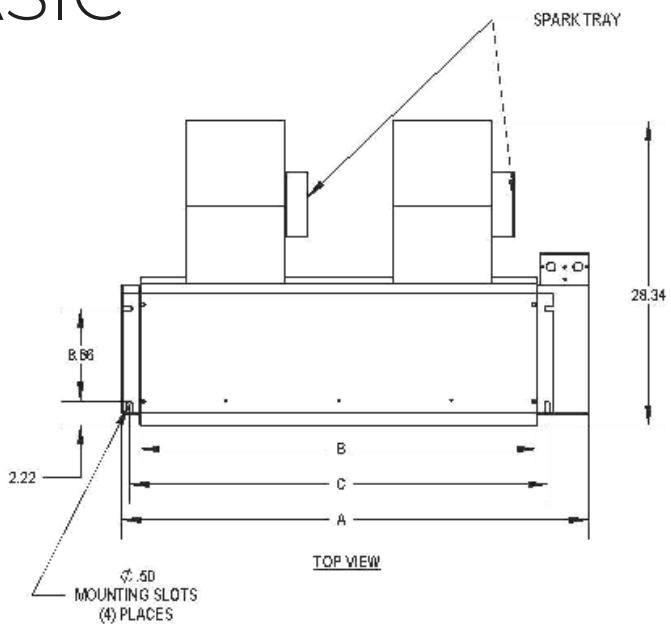
MODEL BASIC	A	B	C	BLOWER
600	21-1/2	15	16-3/4	1
800	25-1/2	19	20-3/4	1
1000	31-1/2	25	26-3/4	1
1200	37-1/2	31	32-3/4	1

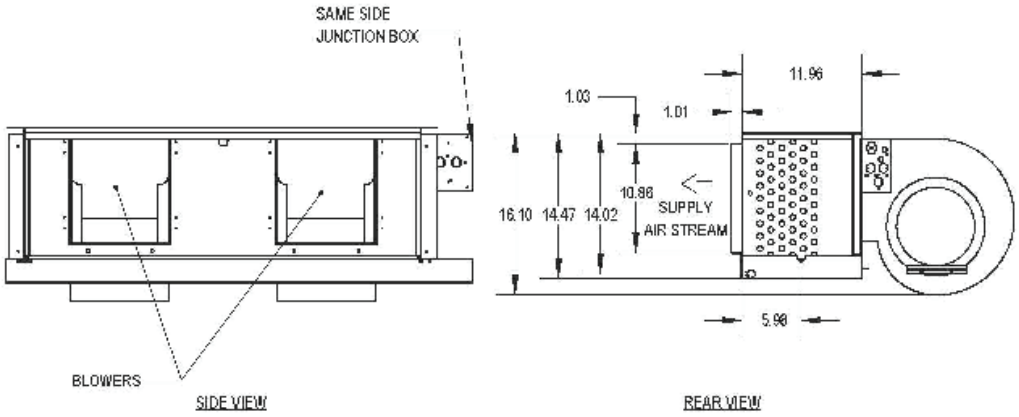
- All sizes shown in inches.
- Right hand unit shown, left hand unit opposite.
- Coil connections determined by facing the supply air opening.
- Electrical junction box is located on the same side as the coil connections.
- Unit must be installed level and condensate drain lines should be trapped.
- Drain pan is powder coated epoxy with a 1/8" thick closed-cell insulation and has 3/4" NPT primary and secondary drain connections.
- Entire cabinet, scroll and blower wheel are heavy- gauge, galvanized steel.
- Coil connections: 1/2" CW on HH-006, 3/4" CW on HH008-012 and. 1/2" HW on HH006-012.

HIGH PERFORMANCE HORIZONTAL BASIC

HH-B / 1,500 - 2,200 CFM







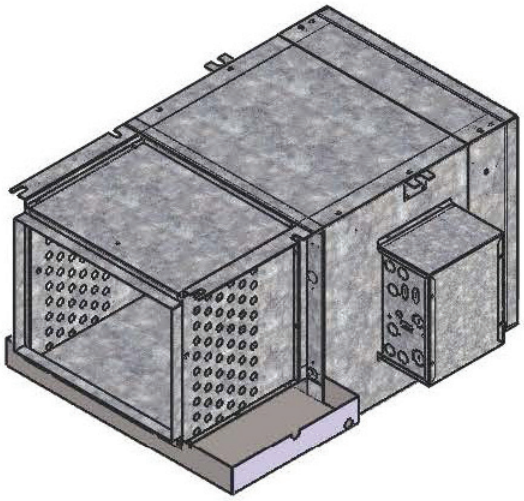
RIGHT HAND SHOWN.LEFT HAND OPPOSITE

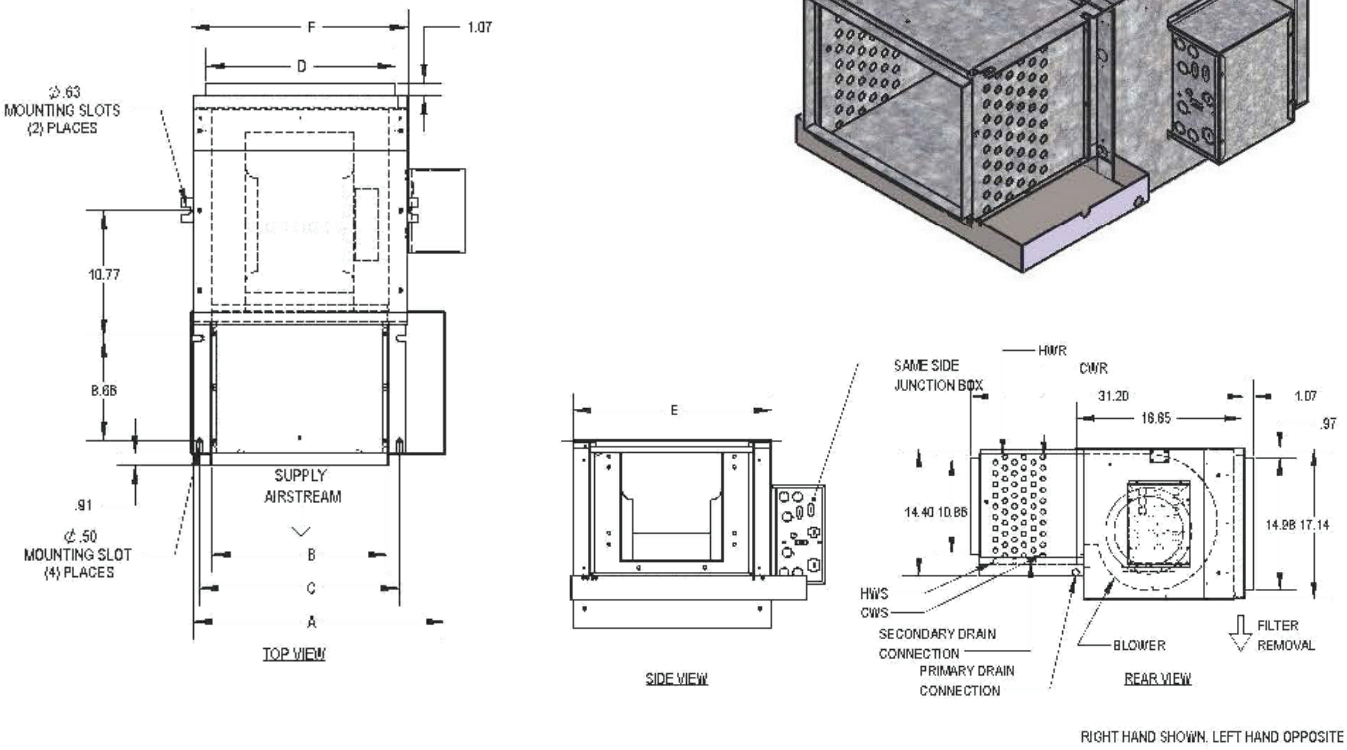
MODEL BASIC	A	B	C	BLOWER
1500	43-1/2	37	38-3/4	2
1800	49-1/2	43	44-3/4	2
2200	55-1/2	49	50-3/4	2

- All sizes shown in inches.
- Right hand unit shown, left hand unit opposite.
- Coil connections determined by facing the supply air opening.
- Electrical junction box is located on the same side as the coil connections.
- Unit must be installed level and condensate drain lines should be trapped.
- Drain pan is powder-coated epoxy with a 1/8" thick closed-cell insulation and has 3/4" NPT primary and secondary drain connections.
- Entire cabinet, scroll and blower wheel are heavy-gauge, galvanized steel.
- Coil onnections: 3/4" CW on HH015-022, and 1/2" HW on HH015-022. 1/2" HW on HH015-022.

HIGH PERFORMANCE HORIZONTAL WITH REAR RETURN AIR PLENUM

HH-R / 600 - 1,200 CFM





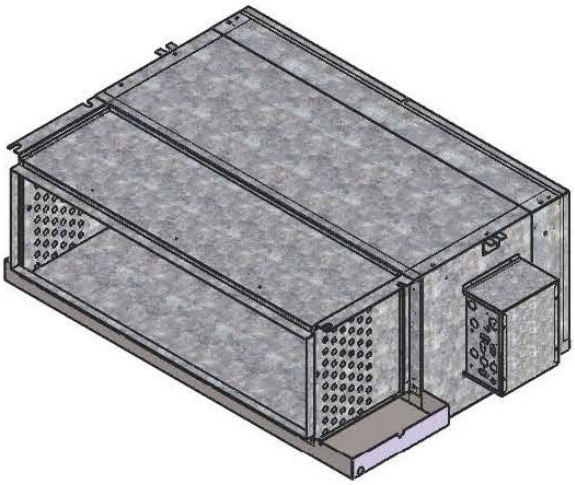
RIGHT HAND SHOWN. LEFT HAND OPPOSITE

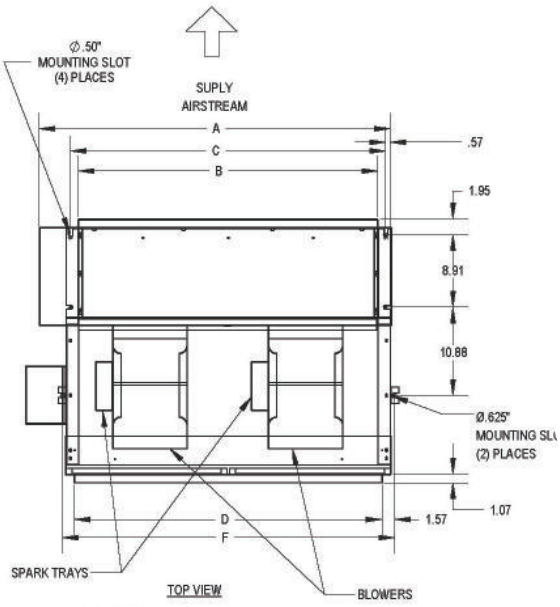
MODEL REAR RETURN AIR	A	B	C	D	E	F	FILTER SIZE
600	21-1/2	15	16	16-1/16	19-3/16	19-3/8	17 X 18 X 1
800	25-1/2	19	20	20-1/16	23-3/16	23-3/8	17 X 22 X 1
1000	31-1/2	25	26	26-1/16	29-3/16	29-3/8	17 X 28 X 1
1200	37-1/2	31	32	32-1/16	35-3/16	35-3/8	17 X 34 X 1

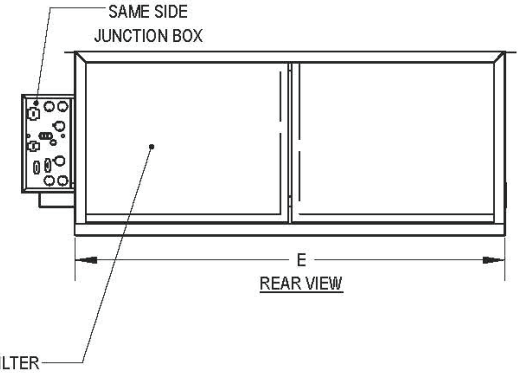
- All sizes shown in inches.
- Right hand unit shown, left hand unit opposite.
- Coil connections determined by facing the supply air opening.
- Electrical junction box is located on the same side as the coil connections.
- Unit must be installed level and condensate drain lines should be trapped.
- Drain pan is powder coated epoxy with a 1/8" thick closed cell insulation and has 3/4" NPT primary and secondary drain connections.
- Entire cabinet, scroll and blower wheel are heavy gauge, galvanized steel.
- Coil connections: 1/2" CW on HH006, 3/4" on HH008-012 and 1/2" HW on HH006-012.

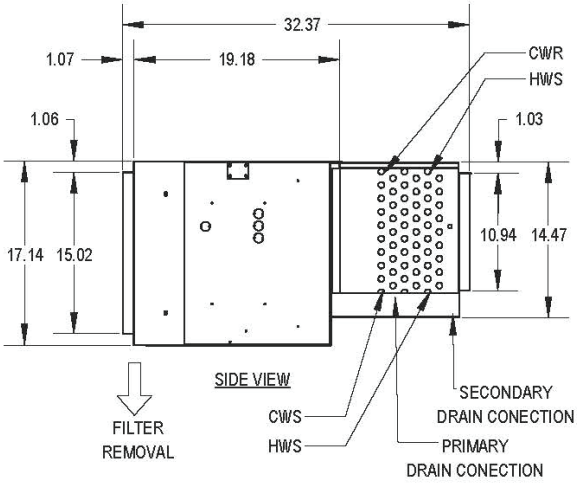
HIGH PERFORMANCE HORIZONTAL WITH REAR RETURN AIR PLENUM

HH-R / 1,500 - 2,200 CFM







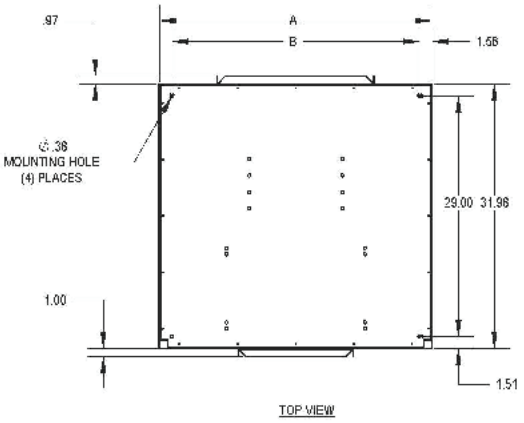


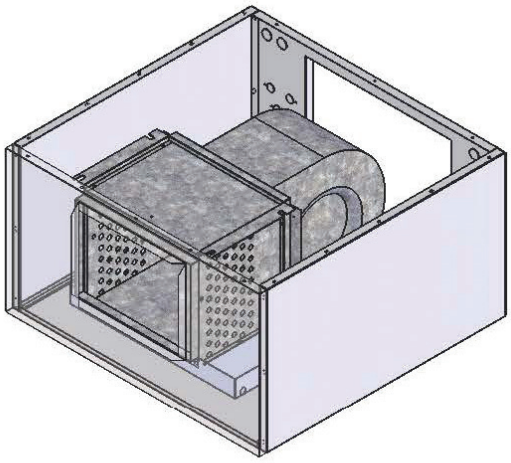
MODEL REAR RETURN AIR	A	B	C	D	E	F	BLOWER	FILTER SIZE
1500	43-1/2	37	38-3/4	38-1/16	40-1/8	41-3/16	2	17 X 40 X 1
1800	49-1/2	43	44-3/4	44-1/16	46-1/8	47-3/16	2	17 X 46 X 1
2200	55-1/2	49	50-3/4	50-1/16	52-1/8	53-3/16	2	17 X 50 X 1

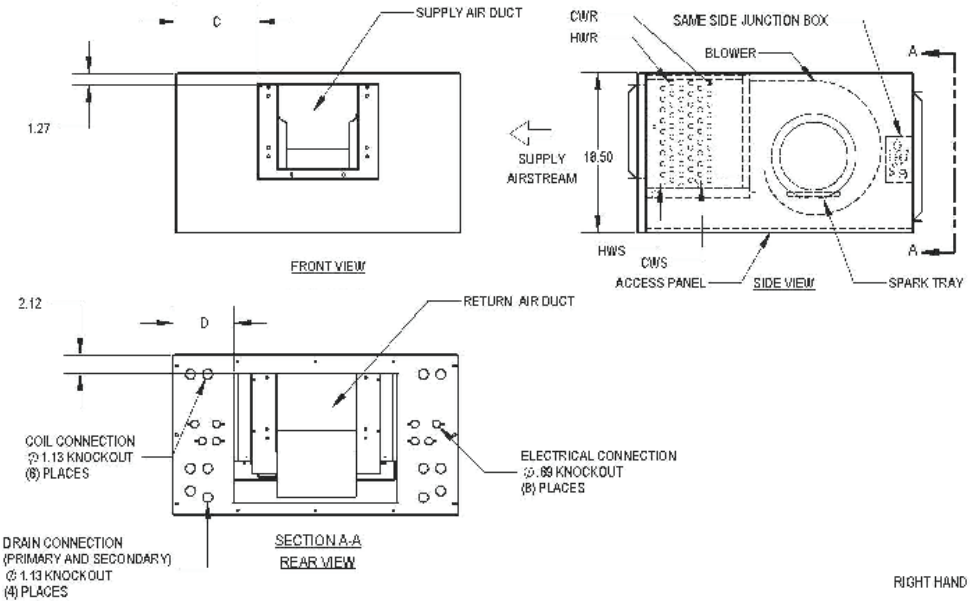
- All sizes shown in inches.
- Right hand unit shown, left hand unit opposite.
- Coil connections determined by facing the supply air opening.
- Electrical junction box is located on the same side as the coil connections.
- Unit must be installed level and condensate drain lines should be trapped.
- Drain pan is powder coated epoxy with a 1/8" thick closed cell insulation and has 3/4" NPT primary and secondary drain connections.
- Entire cabinet, scroll and blower wheel are heavy-gauge, galvanized steel.
- Coil connections: 3/4" CW on HH015-022 and 1/2" HW on HH015-022.

HIGH PERFORMANCE HORIZONTAL DELUXE

HH-D / 600 - 1,200 CFM







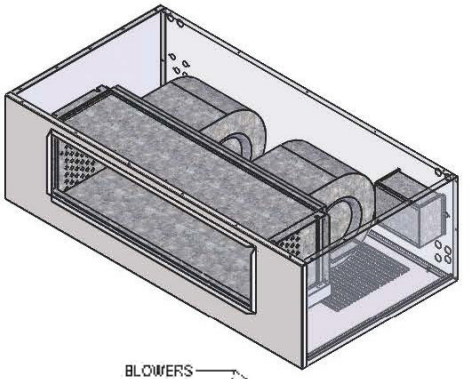
RIGHT HAND SHOWN, LEFT HAND UNIT OPPOSITE

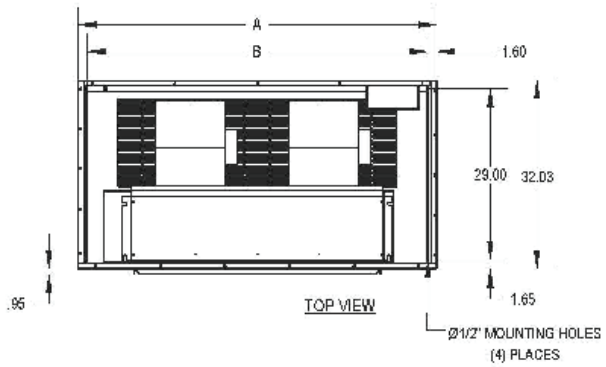
MODEL DELUXE	A	B	C	D	SA DUCT	RA DUCT	FILTER SIZE
600	33	29-7/8	7	7.04	14 X 11	19 X 15	17 X 28 X 1
800	37	33-7/8	9.44	6.52	17 X 12	23.95 X 15	17 X 34 X 1
1000	43	39-7/8	9.44	7.04	24 X 12	29 X 15	17 X 40 X 1
1200	49	45-7/8	9.44	7.15	30 X 12	34.7 X 15	17 X 46 X 1

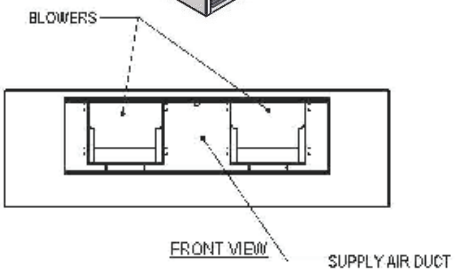
- All sizes shown in inches.
- Right hand unit shown, left hand unit opposite.
- Coil connections determined by facing the supply air opening.
- Electrical junction box is located on the same side as the coil connections.
- Unit must be installed level and condensate drain lines should be trapped.
- Drain pan is powder coated epoxy with a 1/8" thick closed cell insulation and has 3/4" NPT primary and secondary drain connections.
- Entire cabinet, scroll and blower wheel are heavy-gauge, galvanized steel.
- Coil connections: 1/2" CW on HH006, 3/4" on HH008-012 and 1/2" HW on HH006-12.

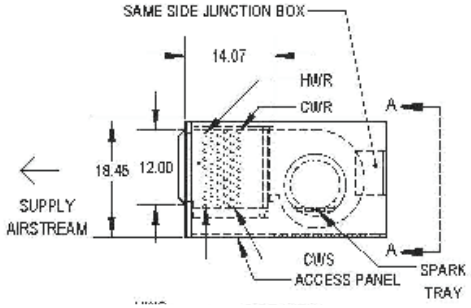
HIGH PERFORMANCE HORIZONTAL DELUXE

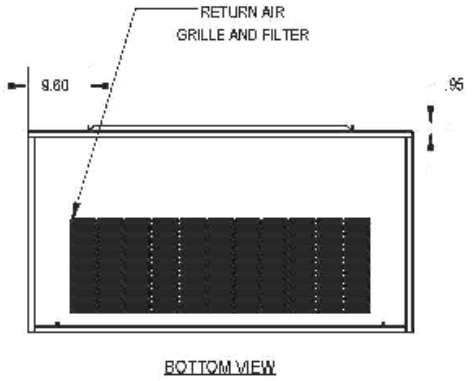
HH-D / 1,500 - 2,200 CFM

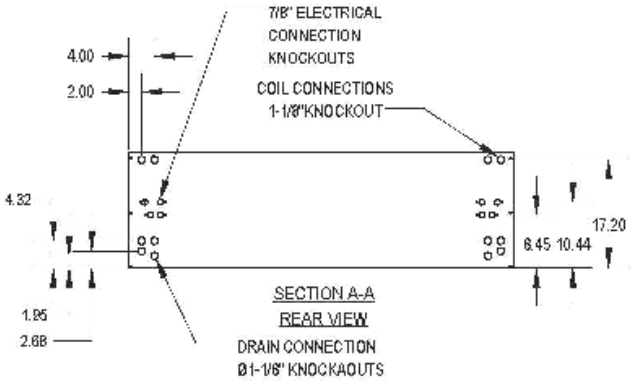












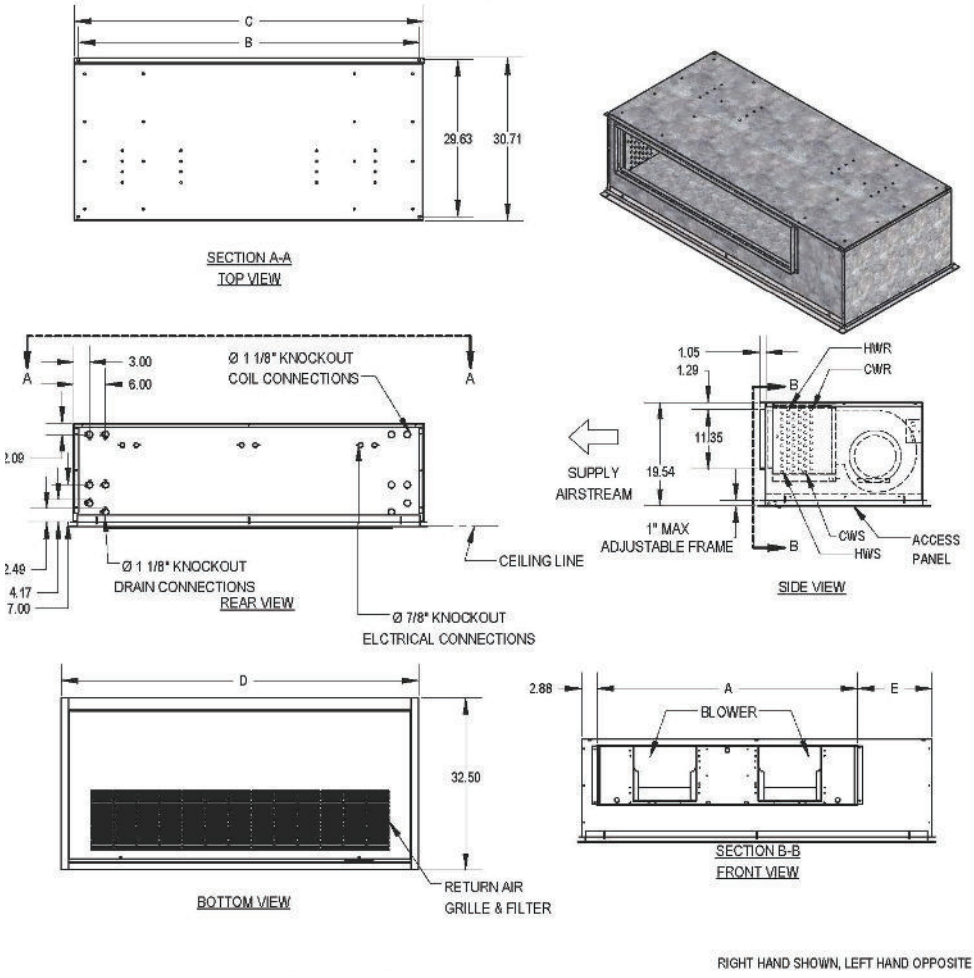
RIGHT HAND SHOWN. LEFT UNIT OPPOSITE

MODEL DELUXE	A	B	FILTER SIZE
1500	55	51-7/8	(1) 17 X 46 X 1
1800	61	57-7/8	(1) 17 X 52 X 1
2200	67	63-7/8	(1) 17 X 52 X 1

- All sizes shown in inches.
- Right hand unit shown, left hand unit opposite.
- Coil connections determined by facing the supply air opening.
- Electrical junction box is located on the same side as the coil connections.
- Unit must be installed level and condensate drain lines should be trapped.
- Drain pan is powder coated epoxy with a 1/8" thick closed-cell insulation and has 3/4" NPT primary and secondary drain connections.
- Entire cabinet, scroll and blower wheel are heavy gauge, galvanized steel.
- Coil connections: 3/4" CW on HH015-022 and 1/2" HW on HH015-022.

HIGH PERFORMANCE HORIZONTAL FLUSH

HH-F / 600 - 1,200 CFM



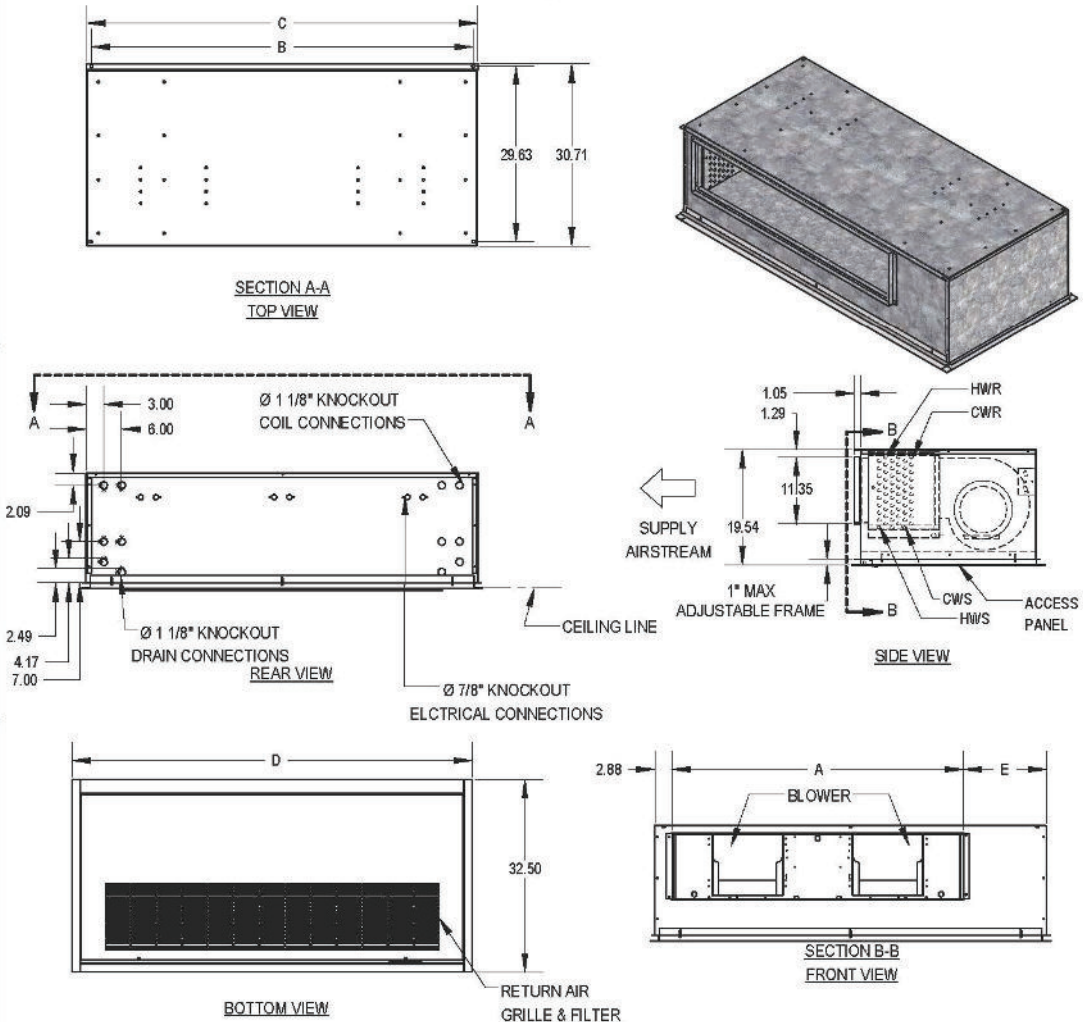
RIGHT HAND SHOWN, LEFT HAND OPPOSITE

MODEL FLUSH	A	B	C	D	FILTER SIZE
600	15-5/16	44-3/8	46	47-1/2	(2) 12 X 20 X 1
800	19-5/16	44-3/8	46	47-1/2	(2) 12 X 20 X 1
1000	25-5/16	44-3/8	46	47-1/2	(2) 12 X 20 X 1
1200	31-5/16	52-3/8	54	55-1/2	(2) 12 X 25 X 1

- All sizes shown in inches.
- Right hand unit shown, left hand unit opposite.
- Coil connections determined by facing the supply air opening.
- Electrical junction box is located on the same side as the coil connections.
- Unit must be installed level and condensate drain lines should be trapped.
- Drain pan is powder coated epoxy with a 1/8" thick closed cell insulation and has 3/4" NPT primary and secondary drain connections.
- Entire cabinet, scroll and blower wheel are heavy gauge, galvanized steel.
- Coil connections: 1/2" CW on HH006, 3/4" on HH008-012 and 1/2" HW on HH006-012.

HIGH PERFORMANCE HORIZONTAL FLUSH

HH-F / 1,500 - 2,200 CFM



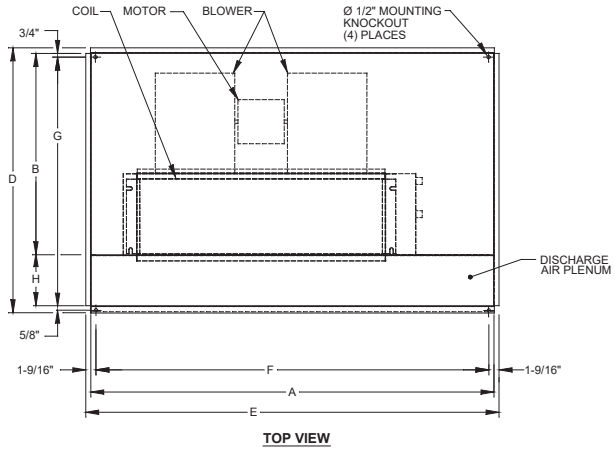
RIGHT HAND SHOWN. LEFT HAND OPPOSITE

MODEL FLUSH	A	B	C	D	FILTER SIZE
1500	37-5/16	54-3/8	56	57-1/2	(2) 12 X 25 X 1
1800	43-5/16	58-3/8	60	61-1/2	(3) 12 X 20 X 1
2200	49-5/16	64-3/8	66	67-1/2	(3) 12 X 20 X 1

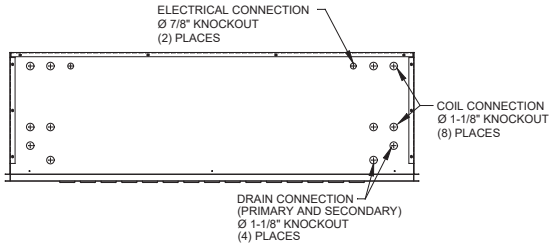
- All sizes shown in inches.
- Right hand unit shown, left hand unit opposite.
- Coil connections determined by facing the supply air opening.
- Electrical junction box is located on the same side as the coil connections.
- Unit must be installed level and condensate drain lines should be trapped.
- Drain pan is powder coated epoxy with a 1/8" thick closed cell insulation and has 3/4" NPT primary and secondary drain connections.
- Entire cabinet, scroll and blower wheel are heavy gauge, galvanized steel.
- Coil connections: 3/4" CW on HH015-022 and 1/2" HW on HH015-022.

HIGH PERFORMANCE DELUXE BOTTOM SUPPLY AND RETURN

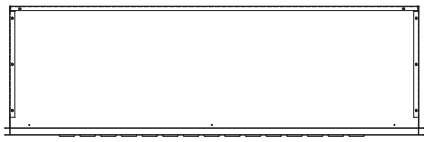
HH-E / 600 - 1,200 CFM



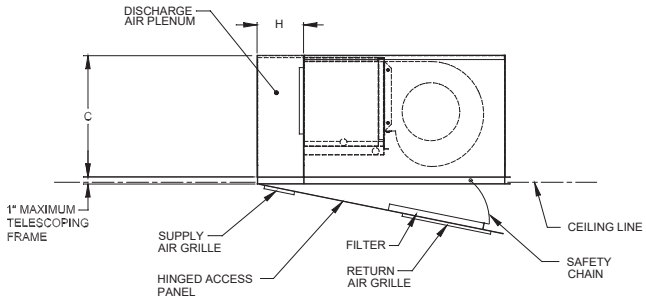
TOP VIEW



REAR VIEW (COIL CONNECTIONS)



FRONT VIEW

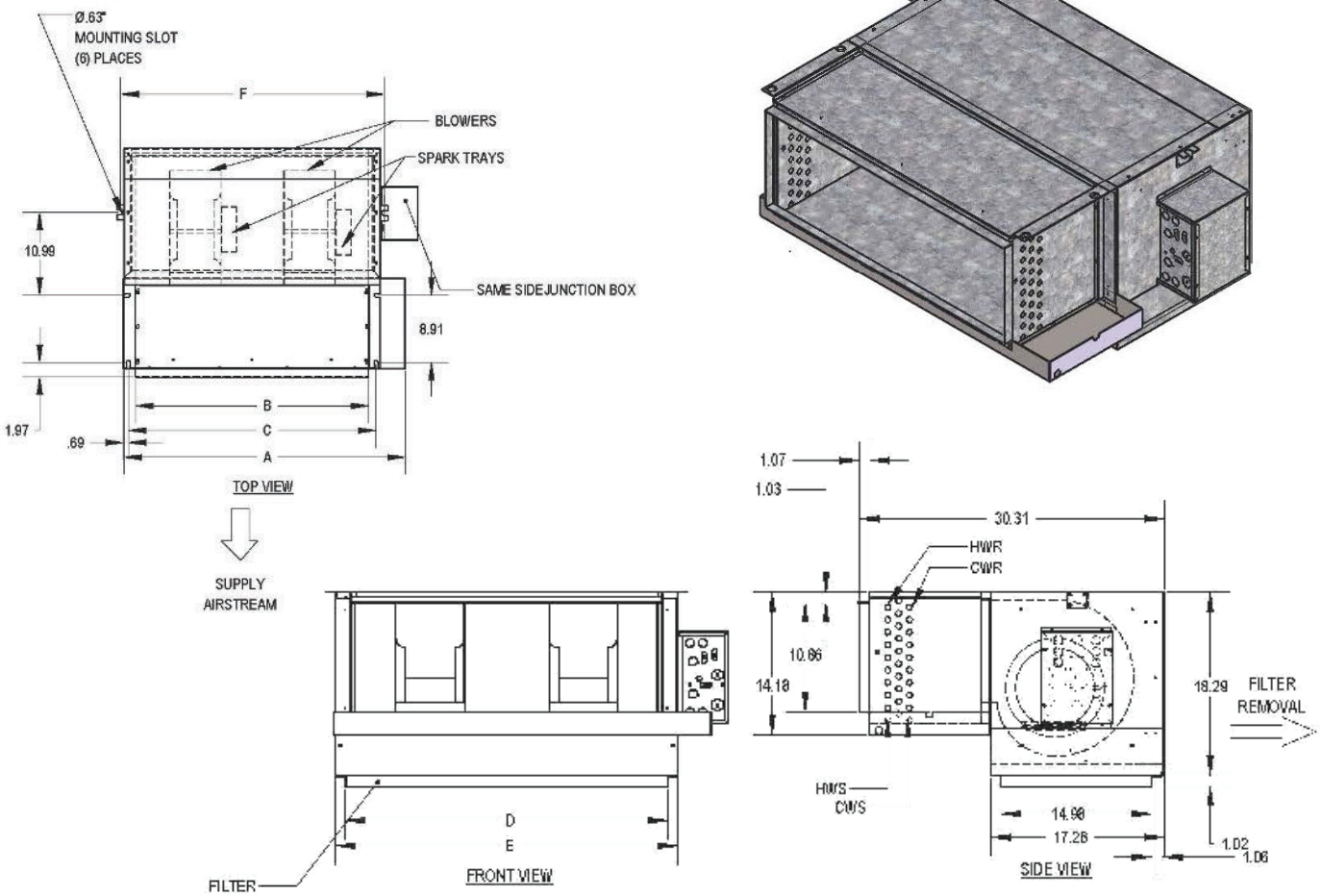


MODEL HH-Q	A	B	C	D	E	F	G	H	FILTER SIZE
600	54	25 7/8	11	39 3/8	55 3/8	52 1/4	37 1/8	12	12 x 25
800	54	25 7/8	12	45 3/8	55 3/8	52 1/4	43 1/8	18	12 x 25
1000	60	25 7/8	12	45 3/8	61 3/8	58 1/4	43 1/8	18	12 x 25
1200	60	25 7/8	12	45 3/8	61 3/8	58 1/4	43 1/8	18	12 x 25

- Right hand unit shown, left hand unit opposite.
- Coil connections determined by facing the supply air opening.
- Electrical junction box is located on the same side as the coil connections.
- Unit must be installed level and condensate drain lines should be trapped.
- Drain pan is powder coated epoxy with a 1/4" thick closed cell insulation and has 3/4" NPT primary and secondary drain connections.
- Entire cabinet, scroll and blower wheel are heavy gauge, galvanized steel.
- Coil connections: 3/4" CW on HH015-022 and, 1/2" HW on HH015-022.

HIGH PERFORMANCE HORIZONTAL WITH BOTTOM RETURN AIR PLENUM

HH-Q / 600 - 1,200 CFM

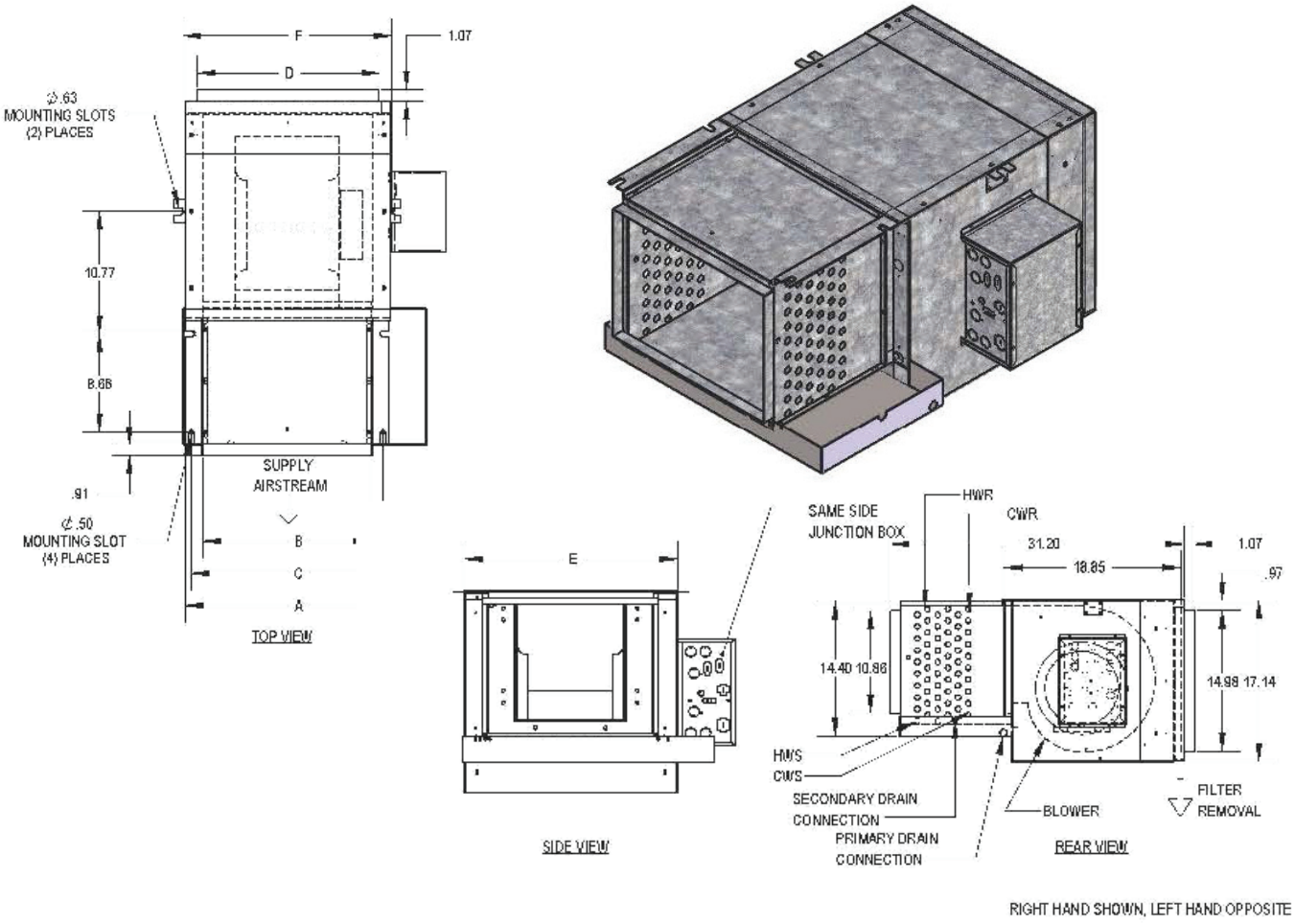


MODEL HH-Q	A	B	C	D	E	F	FILTER SIZE
600	21 ½	15	16	16 1/16	19 3/16	19 3/8	17 x 18 x 1
800	25 ½	19	20	20 1/16	23 3/16	23 3/8	17 x 22 x 1
1000	31 ½	25	26	26 1/16	29 3/16	29 3/8	17 x 28 x 1
1200	37 ½	31	32	32 1/16	35 3/16	35 3/8	17 x 34 x 1

- Right hand unit shown, left hand unit opposite.
- Coil connections determined by facing the supply air opening.
- Electrical junction box is located on the same side as the coil connections.
- Unit must be installed level and condensate drain lines should be trapped.
- Drain pan is powder coated epoxy with a 1/4" thick closed cell insulation and has 3/4" NPT primary and secondary drain connections.
- Entire cabinet, scroll and blower wheel are heavy gauge, galvanized steel.
- Coil connections: 1/2" CW on HH006, 3/4" on HH008-012 and 1/2" HW on HH006-012.

HIGH PERFORMANCE HORIZONTAL WITH BOTTOM RETURN AIR PLENUM

HH-Q / 1,500 - 2,200 CFM



RIGHT HAND SHOWN, LEFT HAND OPPOSITE

MODEL HH-Q	A	B	C	D	E	F	FILTER SIZE
1500	43 ½	37	38 3/4	38 1/16	40 ⅛	41 3/16	17 x 40 x 1
1800	49 ½	43	44 3/4	44 1/16	46 ⅛	47 3/16	17 x 46 x 1
2200	55 ½	49	50 3/4	50 1/16	52 ⅛	53 3/16	17 x 52 x 1

- Right hand unit shown, left hand unit opposite.
- Coil connections determined by facing the supply air opening.
- Electrical junction box is located on the same side as the coil connections.
- Unit must be installed level and condensate drain lines should be trapped.
- Drain pan is powder coated epoxy with a 1/4" thick closed cell insulation and has 3/4" NPT primary and secondary drain connections.
- Entire cabinet, scroll and blower wheel are heavy gauge, galvanized steel.
- Coil connections: 3/4" CW on HH015-022 and, 1/2" HW on HH015-022.

GENERAL INFORMATION

Furnish and install Williams LH/HH/CH Series Horizontal Direct Drive fan coil units as indicated on the plans and in the specifications. All units shall be completely factory assembled, tested and shipped as one working unit. All units shall be capable of meeting or exceeding the scheduled capacities for cooling, heating and air delivery. Dimensions for each model and size shall be considered maximums. Units shall be UL listed and also in compliance with UL/ANSI Standard 1995, and be certified as complying with the latest edition of AHRI Standard 440.

CONSTRUCTION

All unit chassis shall be fabricated of heavy gauge galvanized steel panels able to meet 125 hour salt spray test per ASTM B-117. All exterior panels shall be insulated with 1/2" thick, 1.5 pound per cubic foot, dual density fiberglass insulation rated for a maximum air velocity of 3600 f.p.m. Insulation shall conform to UL 181 for erosion and NFPA 90A and 90B for flame spread (25) and smoke developed (50) rating per ASTM E-84 and UL 723 and CAN./ULC, S102-M88.

All concealed units shall have a minimum 1" duct collar on the discharge. Plenum units shall have a minimum 1" duct collar on the return.

All exposed units shall have exterior panels fabricated of cold rolled steel.

OPTION: Provide foil faced insulation in lieu of standard. Foil insulation shall meet or exceed the requirements stated above, and in addition, meet ASTM Standards C665 and C-1136 for biological growth in insulation. Insulation shall be lined with aluminum foil, fiberglass scrim reinforcement, and 30 pound kraft paper laminated together with a flame resistant adhesive. All exposed edges shall be sealed to prevent any fibers from reaching the air stream.

OPTION: Provide elastomeric closed cell foam insulation in lieu of standard. Insulation shall conform to UL 181 for erosion and NFPA 90A for fire, smoke and melting, and comply with a 25/50 flame spread and smoke developed Index per ASTM E-84 or UL 723. Additionally, insulation shall comply with antimicrobial performance rating of zero, no observed growth, per ASTM G21. Polyethylene insulation is not acceptable.

OPTION: For exposed units, the bottom access panels shall be attached with quick open fasteners to allow for easy removal and access for service.

OPTION: For exposed units, provide double deflection discharge grille and either a rear return or bottom return single deflection grille. Supply and return duct connections are available.

Unit mounting shall be by hanger and slotted hanging brackets provided at four locations. For easy installation, exposed units provided with 1/2" mounting knockouts in four places.

PAINTED FINISH

All exposed cabinet exterior panels shall be provided with soft white powder coated epoxy finish and subjected to a 1500 hour salt spray test in accordance with ASTM B117.

SOUND

Units shall have published sound power level data tested in accordance with AHRI Standard 350-2000 (non-ducted equipment) and AHRI Standard 260-2001 (ducted equipment).

FAN ASSEMBLY

Unit fan shall be a dynamically balanced, forwardly curved, DWDI centrifugal type constructed of heavy gauge zinc coated galvanized steel for corrosion resistance. Motors shall be high efficiency, permanently lubricated sleeve bearing, permanent split capacitor type with UL and C-UL listed automatic reset thermal overload protection and three separate horsepower taps. Single speed motors are not acceptable.

The fan assembly shall be easily removable for servicing the motor and blower at or away from the unit. The entire fan assembly shall be able to come out of the unit by removing two wing nuts and unplugging the motor.

Plenum unit fan assemblies shall be easily serviced through an access panel provided.

OPTION: Devices used to energize and de-energize (switch) fan speeds must be totally silent. Mercury

and/or quiet relays and/or contactors are not acceptable.

COILS

All cooling and heating coils shall optimize rows and fins per inch to meet the specified capacity. Coils shall have seamless copper tubes and shall be mechanically expanded to provide an efficient, permanent bond between the tube and fin. Fins shall have high efficiency aluminum surface optimized for heat transfer, air pressure drop and carryover.

All coils shall be hydrostatically tested at 350 PSIG air pressure under water, and rated for a maximum of 300 PSIG working pressure at 200°F maximum water temperature. Direct expansion cooling coils shall include a fixed orifice distributor and nozzle.

Steam coils shall be standard steam type suitable for temperatures above 35°F and 15 PSIG maximum working pressure.

OPTION: Coil casing shall be fabricated from 304 stainless steel. All coils shall be provided with a manual air vent fitting to allow for coil venting.

OPTION: Provide automatic air vents in lieu of manual air vents.

Cooling and heating coils shall be in the common coil casing, heating coils shall be furnished in the re-heat or pre-heat position on the unit with chilled water coils, and DX heating coil shall be in pre-heat position only.

DRAIN PANS

Primary condensate drain pans shall be single wall, heavy gauge, powder-coated epoxy subjected to a 650 hour salt spray test in accordance with ASTM B117, and shall extend under the entire cooling coil. Drain pans shall be of one piece construction and be positively sloped for condensate removal. Drain pans shall have primary and secondary drain connections.

The drain pan shall be externally insulated with a closed cell foam insulation. The insulation shall carry no more than a 25/50 Flame Spread and Smoke Developed Rating per ASTM E-84 and UL 723 and fungi resistant per ASTM G21/C1338, bacteria resistant per ASTM G22 and mold growth per UL 181.

OPTION: Provide a single wall primary drain pan constructed entirely of heavy gauge type 304 stainless steel for superior corrosion resistance. Stainless steel drain pans shall be externally insulated and meet or exceed the requirements stated above.

Provide a secondary drain connection on the primary drain pan for condensate overflow.

OPTION: Provide a condensate overflow switch in the primary drain pan for condensate overflow.

FILTERS

All plenum and exposed units shall be furnished with a minimum 1" nominal glass fiber throwaway filter. Filters shall be tight fitting to prevent air by-pass. Plenum and exposed unit filters shall be easily removable from the bottom or rear of the unit without the need for tools.

OPTION: Provide unit with 2" pleated filters rated at 25-30% efficiency and MERV 6 based on ASHRAE 52.2 - 1999 Electrical (Option)

ELECTRICAL

Units shall be furnished with single point power connection. Provide an electrical junction box with terminal strip for motor and other electrical terminations.

OPTION: The factory mounted terminal wiring strip consists of a multiple position screw terminal block to facilitate wiring terminations for the electric control valves and thermostats.

ELECTRIC HEAT

Furnish an electric resistance heating assembly as an integral part of the fan coil unit, with the heating capacity, voltage and kilowatts scheduled. The heater assembly shall be designed and rated for installation on the fan coil unit without the use of duct extensions or transitions, and be located in the unit as to not expose the fan assembly to excessive leaving air temperatures that could affect motor performance.

The heater and unit assembly shall be listed for zero clearance and meet all NEC requirements, and be UL listed with the unit as an assembly in compliance with UL/ANSI Standard 1995.

All heating elements shall be open coil type Nichrome wire mounted in ceramic insulators and located in an insulated heavy gauge galvanized steel housing. All elements shall terminate in a machine staked stainless steel terminal secured with stainless steel hardware for corrosion resistance. The element support brackets shall be spaced no greater than 3-1/2” on center. All internal wiring shall be rated for 105°C minimum.

All heaters shall include over temperature protection consisting of an automatic reset primary thermal limit and back up secondary thermal limit. All heaters shall be single stage.

An incoming line power distribution block shall be provided and designated to accept single point power wiring capable of carrying 125% of the calculated load current.

OPTION: Devices used to energize and de-energize (switch) electric heat must be totally silent. Mercury and/or quiet relays and/or contactors are not acceptable.

PIPING PACKAGES (OPTION)

Provide a factory assembled valve piping package to consist of a 2 or 3 way, on/off, motorized electric control valve and two ball isolation valves. Control valves are piped normally closed to the coil. Maximum entering water temperature on the control valve is 180°F, and maximum close-off pressure is 75 PSIG (1/2") or 50 PSIG (3/4"). Maximum operating pressure shall be 300 PSIG.

OPTION: Provide 3 wire floating point modulating control valve in lieu of standard 2 position control valve with factory assembled valve piping package.

OPTION: Provide either a fixed or adjustable flow control device for each piping package.

OPTION: Provide pressure temperature ports for each piping package.

Piping packages are shipped installed on all units and can be shipped separately by request only.

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