

# SUBMITTAL



PREPARED FOR:

DATE:

JOB NAME:

WE ARE PLEASED TO PROVIDE THE ENCLOSED SUBMITTAL FOR YOUR REVIEW AND APPROVAL

EQUIPMENT DETAILS			
ITEM	TAG	DESCRIPTION	MODEL NUMBER
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			

EQUIPMENT ACCESORIES			
ITEM	TAG	DESCRIPTION	MODEL NUMBER
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			

# SUBMITTAL



COOLING COIL							
AIRFLOW							
ALTITUDE							
ESP							
MOTOR HP							
MOTOR VOLTAGE							
APD (IN OF WATER)							
FIN HEIGHT/LENGHT							
ROWS/FPI							
ENT AIR DB/WB							
LVG AIR DB/WB							
TOTAL COOLING MBH							
SENSIBLE COOLING MBH							
FACE VELOCITY							
REFRIGERANT							
REFRIGERANT PD PSI							
LIQUID TEMP							
EVAP TEMP							

HOT WATER HEATING COIL							
PREHEAT							
REHEAT							
APD (IN OF WATER)							
ROWS/FPI							
FIN HEIGHT/LENGHT							
ENT DB/WB							
TOTAL COOLING MBH							
LEAV AIR TEMP °F							
ENT 30% EG TEMP							
LEAVING WATER TEMP							
WATER FLOW (GPM)							
FLUID PD FT OF H2O							

OPTIONAL ELECTRIC HEAT							
ELEC HTR CAP. KWH							
HTR ELEC DETAILS							
NUMBER OF STAGES							
STANDARD CONTROLS							
SRC CONTROLS							

# SUBMITTAL



MADE IN USA 



## **SIZES FROM 600 CFM TO 9,000 CFM**

All Technical Specifications are Subject to Change without Notice. For more information contact Customer Service Phone (817)624.0820 Fax (817)624.8581

# SUBMITTAL

## STANDARD FEATURES

### CONSTRUCTION

- Single and Double wall post and panel construction from heavy gauge galvanized steel.
- 1" Insulation sandwiched between double wall galvanized panels.
- 1" foil faced insulation on single wall units.
- IAQ drain pan sloped 3-ways.
- Drain pans made from 304 stainless steel.
- Integral auxiliary drain pan.
- Both sides of cabinet include gasket, service access panels.
- Factory installed mounting rails provided for unit suspension system on units up to 3000 cfm. Capped Knockouts to be provided for units over 3000 cfm and larger to accommodate threaded rods to pass through unit corners
- All cabinet parts are assembled with stainless steel hardware.
- All access panels can be removed while unit is suspended without affecting the unit's structure.

### BLOWER ASSEMBLY

- Blower sections feature base mounted motors and adjustable motor bases for ease of service mounted on RIS isolators for quite vibration free operation.
- All blowers are mounted to 12-gauge support channels on rubber isolators.
- Blower exits cabinet through flexible rubber isolators.
- A discharge duct flange is provided.

### FILTER SECTION

- 2" TA flat filters are single wall standard.

### COIL SECTION

- 3/8", 12" or 5/8" O.D. seamless copper tube on sizes 24 to 240
- Coil and drain pan assembly slides into cabinet from either side of unit for left hand or right hand piping and electrical connections.
- Units can accept up to 10 rows of coil without modification.
- Manual air vents are accessible

### STANDARD MOTORS

- ODP Motor is mounted to a 12 gauge adjustable base attached to the unit floor with rubber isolators
- 115/230v 1ph, 277v 1ph, 208/230/460v 3ph.
- All units are ETL listed.

## OPTIONAL FEATURES

### CONSTRUCTION

- Liner options include stainless steel, aluminum, or Anti-microbial coating. (double wall only)
- Powder coated cabinet.
- Pre-painted steel cabinet
- 1/2" foil faced and 7/8 closed cell are offered on single wall units.

### FILTER SECTION

- Double wall filter section accepts 2" or 4" flat filters.
- Filter access can be from top, bottom or from either side (24-60).
- Filter access for (90-240) from sides only.
- 2" pleated (30%), 4" pleated (65%, 85%, 95%).

### MIXING BOXES

- \*MB3-\*\* Mixing Box with 3 position Manual Control (Non filtered)
- \*MBM-\*\* Mixing Box with Modulating Actuator Control (Non Filtered)
- \*FMB3-\*\* Filtered Mixing Box w/3position Manual Control (2" TA Filter)
- \*FMBM-\*\* Filtered Mixing Box w/ Mod. Act. Control (2" TA Filter)
- \*FS-\*\* Return Filter Sec. w/ MERV-8 30% Pre Filter & MERV-13 85% 18" BAG Fin. Filter
- \*DFS-\*\* Discharge Filter Section w/12" MERV-15 & 95% HEPA Filters
- \*MSS-\*\* Motor Stop/Start Station
- VDP\*\* Vertical Discharge Plenum
- VRG\*\* Return Grill for Vertical Unit

### ELECTRIC HEAT SECTION

- Factory Supplied for Field Mounting
- Reheat Configurations.
- Single point power connection.
- Custom staging and controls.
- Available Voltages: Single phase (115v, 230v, 277v)  
Three phase (208v, 230v, 460v, 575v)

### VFD'S - Variable Frequency Drives

Available for Field installation for motors bigger than 1 hp

### COIL SECTION

- 2, 4, 6, 8 or 10 row coil options. (8 row max on 180/240)
- Heating coils are factory installed in preheat or reheat positions.
- Steam coils-Low Pressure, less than 2 PSI.
- Optional tube diameters.
- Optional copper fin.
- Optional stainless steel end plates.
- Face split, row split, intertwined circuiting available.
- Face and bypass dampers.
- Automatic air vents.

### MOTOR OPTIONS

- TEFC
- High efficient.
- 2-speed 2-winding.
- 575 volt

## GUIDE SPECIFICATIONS

### Unit Description:

Rooftop belt drive with optional chilled water, hot water, steam or DX coils. Galvanized steel cabinet can be double or single wall construction. Unit designated to be installed in above ceiling space. Units have full service access from both sides of the cabinet.

### Quality Assurance:

Coils are factory tested under water at 500 psig for operating pressures to 400 psig. Insulation and adhesive shall meet the NFPA-90A standard for smoke and flame spread.

### Delivery, Handling and Storage:

Units have to be stored and handled in accordance with equipment manufacturer's recommendations.

## PRODUCTS

### Equipment:

- A. Factory assembled, horizontal, draw-thru blower coil units, for installation above the ceiling. Units shall be complete with chilled or hot water, steam or DX coils, fans and motor, belt and drives, drain pan and filter rack to accept 2" or 4" TA filters.

### Cabinet, Single wall:

- B. Post and panel construction shall be from heavy gauge galvanize steel, lined with 1" 1.5 lb density and 0.5" as an option fiber glass Thermal acoustical insulation 7/8" closed cell is offered as an option too. Unit sizes 024 to 060 include a factory mounted suspension rail mounted to the bottom of the unit. Capped Knockouts to be provided for units over 3000 cfm and larger to accommodate threaded rods to pass through unit corners. Supply and return flanges to be 1" long. Large removable access panels shall be on both sides of unit.

### Cabinet, Double wall:

- C. Post and panel construction shall be from heavy gauge galvanize steel, lined with 1" 1.5 lb density fiber glass Thermal acoustical insulation, lined with smooth galvanized steel. Unit sizes 024 to 060 include a factory mounted suspension rail mounted to the bottom of the unit. Capped Knockouts to be provided for units over 3000 cfm and larger to accommodate threaded rods to pass through unit corners. Supply and return flanges to be 1" long. Large removable access panels shall be on both sides of unit.

### Drain Pan:

- D. The primary shall be stainless steel and include a built in overflow pan with a 1" MPT secondary and a 1" MPT primary drain connection. Secondary

drain shall be galvanized or stainless steel to prevent corrosion should an overflow occur.

### Coil Section:

- E. Entire coil section cabinet shall be double wall lined with smooth galvanized steel for easy cleaning and coil removal.

### Blowers:

- F. Belt Drive DWDI (double with, Double Inlet) fan wheel shall be forward curved blades and be factory statically and dynamically balanced. Blower's drives shall consist of cast iron variable pitch motor pulley and V-belt. Blowers and scrolls shall be manufactured from galvanized steel.

### Coils:

- G. Coil tube diameters shall be 0.375", 0.50" or 0.625" OD copper tubes, aluminum fins mechanically bonded to the tubes and have a working pressure of 250 psig at 200 °F. Each water coil shall have manual air vents and sweat connections, which have to be accessible from the exterior of cabinet. Coils shall be circuited so they can be switched from right to left hand piping access while maintaining counter flow water circuiting.

### Motors:

- H. Motors shall be Open Type, Drip Proof, single or 2 speed, 60 Hz 1750 RPM, 1 or 3 phases, suitable for continuous duty at 130 °F; single phase motors are capacitor start, include automatic reset thermal over-load protection and are available in 115, 208, 230 and 277 volts. Three phase motors are available in 208, 230, 460 or 575 volts. Motors shall be resilient base mounted up to 2 hp. From 3 hp and up shall be rigid base mounted.

### Electric Heat:

- I. Electric heat shall be designed to mount at the discharge air openings of the unit. Electric heat are factory supplied for field installation and shall include a de-energizing magnetic control contactor per stage with a capacity of 48 Amps per circuit and include a secondary over-temperature switch. Heaters shall include fan-interlocking, power and control terminal boards with grounding lugs. An automatic limit switch shall provide over-temperature protection and a manual reset limit switch shall provide secondary over-temperature protection.

### Filters:

- J. Standard filter rack shall include 2" TA filters but are suitable for 4" TA filters. With options for 2" and 4" pleated filters. Filter racks have to be accessible from both sides and options for access from top or bottom.

## BELT DRIVE UNITS

### CAP DESCRIPTION MODEL NUMBER NOMENCLATURE - PAGE #1

H	W	E	D	A	0	9	0	B	3	2	2	5	1	.	2	5	2	4	2	A	R	H	6
MODEL				CM	SIZE	BS	CFM				ESP		COIL ROWS		RF	CN	MOTOR						

**UNIT CONFIGURATION**

H HORIZONTAL  
 V VERTICAL  
 M MODULAR  
 R ROOFTOP

**COOLING OPTIONS**

W CHILLED WATER  
 X DIRECT EXPANSION  
 0 NO COOLING

**HEATING OPTIONS**

H HOT WATER  
 S STEAM  
 E ELECTRIC  
 0 NO HEAT

**UNIT INSULATION**

S SINGLE WALL 1" F F FIBERGLAS  
 D DOUBLE WALL  
 U SINGLE WAL 7/8" CLOSED CELL  
 X SPECIAL

**CABINET MATERIAL**

A GALVANIZED STEEL  
 B PRE-PAINTED STEEL  
 C POWDER PAINTED

**UNIT SIZE**

024 24000  
 036 36000  
 048 48000  
 060 60000  
 090 90000  
 120 120000  
 180 180000  
 240 240000

**BLOWER SIZE OPTIONS**

1 9 X 4  
 2 9 X 6  
 3 9 X 9  
 4 10 X 10  
 5 12 X 12  
 6 15 X 11  
 7 15 X 15  
 8 18 X 18

**PRE-HEAT**

0 NO PH  
 1 1- ROW  
 2 2-ROW

**COOLING**

0 NO COOLING  
 2 2-ROWS  
 4 4-ROWS  
 6 6-ROWS  
 8 8-ROWS

**RE-HEAT**

0 NO RH  
 1 1- ROW  
 2 2-ROW

**REFRIGERANT**

A R-410A  
 B R-22  
 C R-NU22  
 D R-134A  
 0 NONE

**PIPING CONNECTIONS**

R RIGHT HAND  
 L LEFT HAND  
 ALL CONNECTIONS ARE SET  
 LOOKING THE UNIT IN THE AIR FLOW DIRECTION

**MOTOR SIZE AND VOLTAGE OPTIONS**

**1ST DIGIT**  
 A 0.25 HP  
 B 0.33 HP  
 C 0.50 HP  
 D 0.75 HP  
 E 1.00 HP  
 F 1.50 HP  
 G 2.00 HP  
 H 3.00 HP  
 I 5.00 HP  
 J 7.50 HP  
 K 10.0 HP

**2ND DIGIT**  
 1 115/1 ODP/HE  
 2 208/1 ODP/HE  
 3 230/1 ODP/HE  
 4 277/1 ODP  
 5 208/3/60/ODP/HE  
 6 230/3/60/ODP/HE  
 7 460/3/60/ODP/HE  
 8 575 /3/60/ ODP/HE

## BELT DRIVE UNITS

### CAP DESCRIPTION MODEL NUMBER NOMENCLATURE - PAGE #2

B	B	C	0	E	1	0	0	.	0	C	0	0	C	F	0	1	1
OAD	UNIT ACCS			V	EH KW				HTR ACCS		V	VFD ACCS		REV.	REV.		

**OUTSIDE AIR OPTIONS**

- O NONE
- A MIXING BOX W/ PLEATED FILTER 2"
- B MB W/ 3 POSITION CONTROL PACKAGE
- C MB W/MODULATING CONTROL PACKAGE
- E FACE & BYPASS DAMPER W/FILTER SEC.
- F 100% OUTSIDE AIR HOOD W/DAMPER
- G 30% OUTSIDE AIR HOOD W/DAMPER
- X SPECIAL

**UNIT ACCESSORIES**

- O NONE
- A PLEATED FILTER 2"
- B DISCHARGE GRILL PLENUM
- C RETURN GRILL AIR PLENUM
- E MOTOR START STOP STATION
- F ROOF CURB 12"
- G ROOF CURB 14"
- X SPECIAL

**HEATER VOLTAGE**

- O NO HEATERS
- A 115/1
- B 208/1
- C 230/1
- E 277/1
- F 208/3
- G 230/3
- H 460/3
- J 575/3

**HEATER CAPACITY**

1.0 to 100.0 KW IN .1 Kw increments

- O NO HEATERS

**HEATER ACCESSORIES**

- O NO ACCESSORIES
- A Single point line Conn.
- B SCR Controls
- C Start Stop Control St
- D None

**FACTORY USE**

**VFD ACCESSORIES**

- O NO ACCESSORIES
- A REM MTG KIT
- B LCP11 CONT PANEL
- C LCP12 CONT PANEL
- D NE/UL TY1 K FOR M1 FR
- E NE/UL TY1 K FOR M2 FR
- F NE/UL TY1 K FOR M3 FR
- G DECOUPLING PLT KIT FOR M1&M2 FRAME
- H DECOUPLING PLT KIT FOR M3 FRAME
- I IP21 FOR M1 FRAME
- J IP21 FOR M2 FRAME
- K IP21 FOR M3 FRAME
- L DIN RAIL MTG KIT

**VFD SIZE**

- O NO VFD
- A 0.25 HP 230/1
- B 0.50 HP 230/1
- C 1.00 HP 230/1
- D 2.00 HP 230/1
- E 3.00 HP 230/1
- F 0.33 HP 230/3
- G 0.50 HP230/3
- H 1.00 HP 230/3
- I 2.00 HP 230/3
- J 3.00 HP 230/3
- K 5.00 HP 230/3
- L 0.50 HP 460/3
- M 1.00 HP 460/3
- N 2.00 HP 460/3
- P 3.00 HP 460/3
- Q 5.00 HP 460/3
- R 7.50 HP 460/3
- S 10.0 HP 460/3

**For more information contact Customer Service**

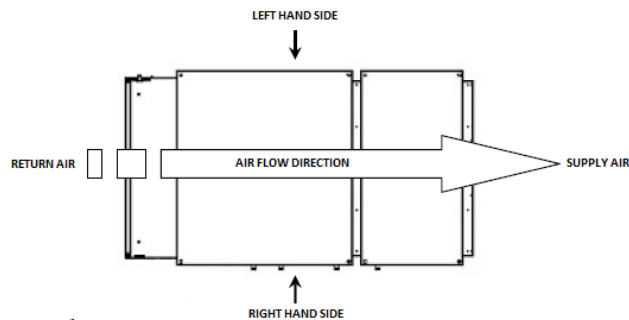
Phone: 817-624-0820 Fax: 817-624-8581

# SUBMITTAL



## COIL DATA

MO DEL	FIN BLOCK H X W	FAC E ARE A	ROWS	FPI	WATER CONN.	DX CONN		MODEL	FIN BLOCK		FACE	ROWS	FPI	WATER CONN.		DX CONN	
					HEADE R OD	SUCT	LIQ.		H X W	AREA				HEADER OD	SUCT	LIQ.	
24-R	10 X 31	2.15	1		5/8	N/A	N/A	90-R	22.5 X 47	7.34		2		7/8		N/A	N/A
			2	N/A		N/A	4					1-1/8		1-3/8	5/8		
			4	7/8	7/8	3/8	6					1-3/8		1-5/8	5/8		
			6		7/8	3/8	8					1-3/8		1-5/8	5/8		
			8		7/8	3/8											
36-R	13 X 31	2.8	1		5/8	N/A	N/A	120-R	31 X 47	10.11		2		7/8		N/A	N/A
			2	N/A		N/A	4					1-1/8		1-5/8	5/8		
			4	7/8	7/8	3/8	6					1-3/8		1-5/8	5/8		
			6		7/8	3/8	8					1-5/8		1-5/8	5/8		
			8		10	1-1/8	3/8										
48-R	15 X 40	4.17	1		5/8	N/A	N/A	180-R	31.5 X 60	13.13		2		1-1/8		N/A	N/A
			2	N/A		N/A	4					1-3/8		1-5/8	5/8		
			4	7/8	7/8	1/2	6					1-5/8		2-1/8	5/8		
			6		1-1/8	1/2	8					2-1/8		2-1/8	5/8		
			8		1-1/8	1-3/8	1/2										
60-R	17.5 X 40	4.86	1		5/8	N/A	N/A	240-R	42 X 60	17.5		2		1-3/8		N/A	N/A
			2	N/A		N/A	4					1-5/8		2-1/8	5/8		
			4	7/8	7/8	1/2	6					2-1/8		2-1/8	5/8		
			6		1-1/8	1-1/8	1/2										
			8		1-3/8	1/2											
CONTACT THE FACTORY FOR ADDITIONAL COIL INFORMATION																	





# SUBMITTAL



STANDARD FILTER RACK

SINGLE & DOUBLE WALL

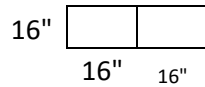
(HFDA) ACCEPTS 2" OR 4" TA

OR PLATED FILTERS

FILTER SIZE	UNIT					FILTER QUANTITY							
	MODEL					24	36	48	60	90	120	180	240
14"	X	20"	X	2/4"									
14"	X	25"	X	2/4"						4	4		
16"	X	16"	X	2/4"	2	2							
16"	X	20"	X	2/4"								4	4
16"	X	25"	X	2/4"								4	4
20"	X	20"	X	2/4"			2	2					
FILTER TOTAL					2	2	2	2	4	4	8	8	

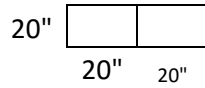
24/36

2-16"X16"X2/4"



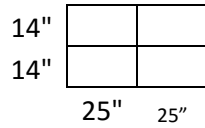
48/60

2-20"X20"X2/4"



90/120

4-14"X25"X2/4"



180/240

4-16"X20"X2/4"

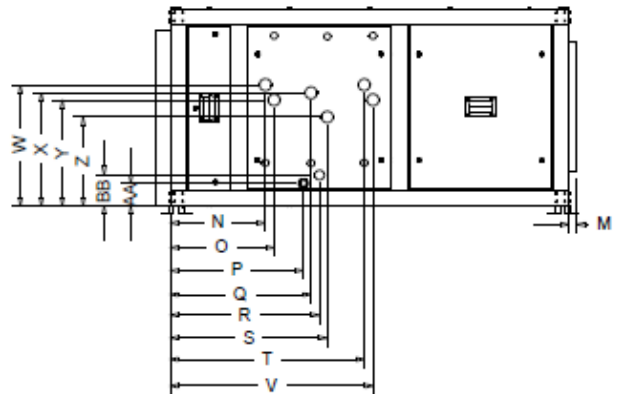
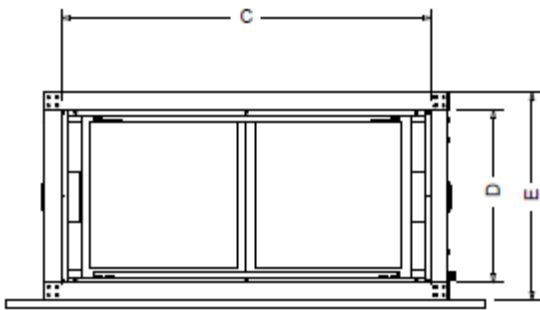
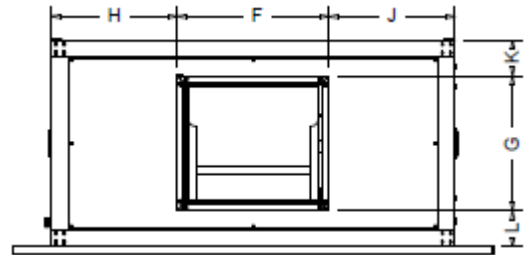
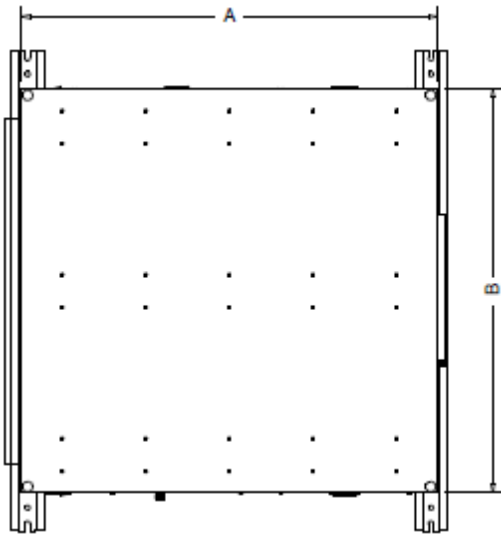
4-16"X25"X2/4"



CHART ABOVE SHOWS SPECIFIC FILTER ARRANGEMENTS

2" and 4" FILTER RACKS ARE SIDE LOADING

# SUBMITTAL

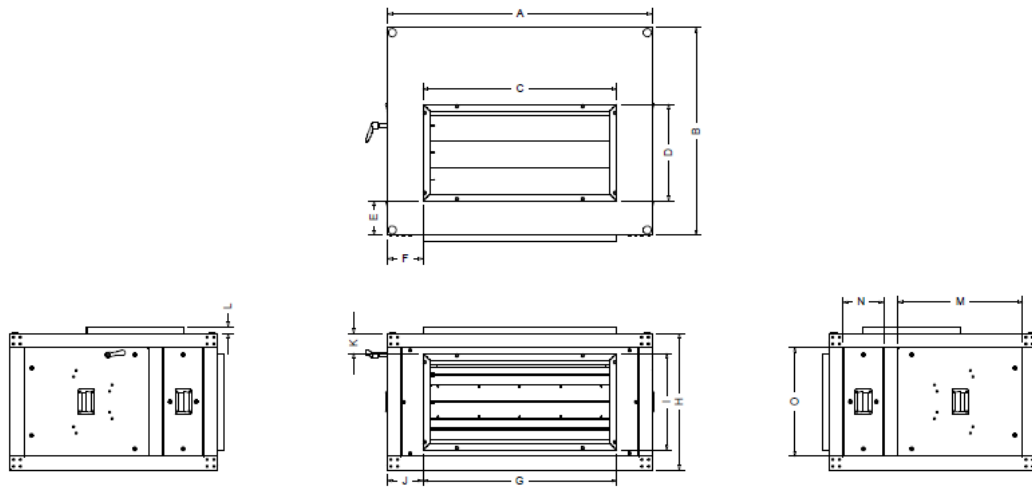


HORIZONTAL BELT DRIVE SINGLE & DOUBLE WALL DIMMENSIONS FROM 024 TO 120													
UNIT	A	B	C	D	E	F	G	H	J	K	L	M	N
H***A-024	49.5	39.0	35.0	16.0	20.0	14.0	12.5	12.5	12.5	2.0	2.0	1.0	11.2
H***A-036	49.5	39.0	35.0	16.0	20.0	14.0	12.5	12.5	12.5	2.0	2.0	1.0	11.2
H***A-048	49.5	48.0	44.0	20.5	24.5	18.0	16.0	15.0	15.0	4.3	4.3	1.0	11.8
H***A-060	49.5	48.0	44.0	20.5	24.5	18.0	16.0	15.0	15.0	4.3	4.3	1.0	11.8
H***A-090	63.0	57.0	53.0	32.4	36.6	20.0	17.5	18.5	18.5	9.5	9.5	1.0	12.6
H***A-120	63.0	57.0	53.0	32.4	36.6	20.0	17.5	18.5	18.5	9.5	9.5	1.0	12.6

UNIT	O	P	R	S	T	U	V	W	X	Y	Z	AA	BB
H***A-024	13.6	16.5	17.2	N/A	19.8	23.5	25.9	11.4	11.4	9.2	9.2	2.8	2.8
H***A-036	13.6	16.5	17.2	N/A	19.8	23.5	25.9	11.4	11.4	9.2	9.2	2.8	2.8
H***A-048	12.9	16.5	17.5	18.5	19.5	24.1	25.2	15.1	14.1	13.2	11.1	1.1	2.8
H***A-060	12.9	16.5	17.5	18.5	19.5	24.1	25.2	15.1	14.1	13.2	11.1	1.1	2.8
H***A-090	13.9	17.7	18.8	20.7	22.7	27.6	26.8	20.0	19.7	18.5	17.6	3.3	4.3
H***A-120	13.9	17.7	18.8	20.7	22.7	27.6	26.8	20.0	19.7	18.5	17.6	3.3	4.3

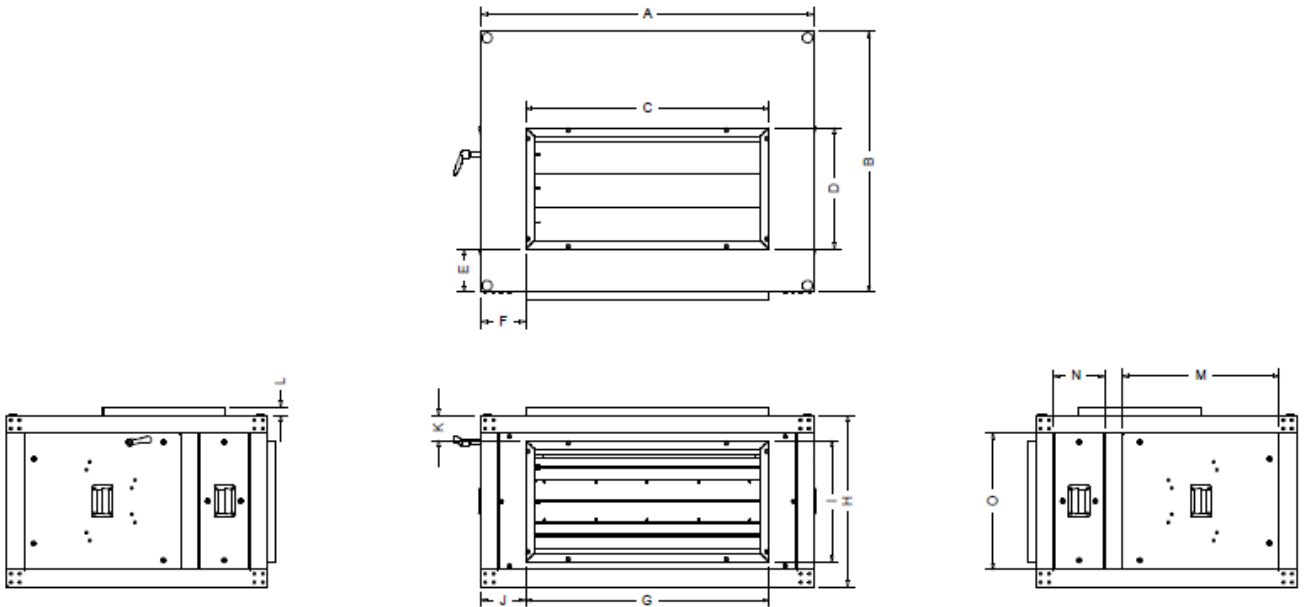
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[www.commercialaire.com](http://www.commercialaire.com)



UNIT	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
HMB3 - 024	39.0	30.5	28.5	14.25	5.0	5.25	28.5	20.0	14.25	5.25	2.9	1.0	18.4	6.0	16.0
HMB3 - 036	39.0	30.5	28.5	14.25	5.0	5.25	28.5	20.0	14.25	5.25	2.9	1.0	18.4	6.0	16.0
HMB3 - 048	48.0	30.0	36.5	17.25	4.2	5.75	36.5	24.5	17.25	5.75	3.7	1.0	16.75	7.7	20.5
HMB3 - 060	48.0	30.0	36.5	17.25	4.2	5.75	36.5	24.5	17.25	5.75	3.7	1.0	16.75	7.7	20.5
HMB3 - 090	63.0	41.5	36.5	22.25	4.5	10.25	57.0	36.7	22.25	10.25	7.2	1.0	23.6	11.8	32.7
HMB3 - 120	63.0	41.5	36.5	22.25	4.5	10.25	57.0	36.7	22.25	10.25	7.2	1.0	23.6	11.8	32.7
HMB3 - 180	72.0	41.5	51.5	24.5	4.5	10.25	51.5	47.0	32.6	10.25	7.2	1.0	23.6	11.8	42.0
HMB3 - 240	72.0	41.5	51.5	24.5	4.5	10.25	51.5	47.0	32.6	10.25	7.2	1.0	23.6	11.8	42.0

# SUBMITTAL

## MIXING BOX FOR SIZE 024 TO 240



UNIT	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
HMB3 - 024	39.0	30.5	28.5	14.25	5.0	5.25	28.5	20.0	14.25	5.25	2.9	1.0	18.4	6.0	16.0
HMB3 - 036	39.0	30.5	28.5	14.25	5.0	5.25	28.5	20.0	14.25	5.25	2.9	1.0	18.4	6.0	16.0
HMB3 - 048	48.0	30.0	36.5	17.25	4.2	5.75	36.5	24.5	17.25	5.75	3.7	1.0	16.75	7.7	20.5
HMB3 - 060	48.0	30.0	36.5	17.25	4.2	5.75	36.5	24.5	17.25	5.75	3.7	1.0	16.75	7.7	20.5
HMB3 - 090	63.0	41.5	36.5	22.25	4.5	10.25	57.0	36.7	22.25	10.25	7.2	1.0	23.6	11.8	32.7
HMB3 - 120	63.0	41.5	36.5	22.25	4.5	10.25	57.0	36.7	22.25	10.25	7.2	1.0	23.6	11.8	32.7
HMB3 - 180	72.0	41.5	51.5	24.5	4.5	10.25	51.5	47.0	32.6	10.25	7.2	1.0	23.6	11.8	42.0
HMB3 - 240	72.0	41.5	51.5	24.5	4.5	10.25	51.5	47.0	32.6	10.25	7.2	1.0	23.6	11.8	42.0

