

Models CDH / CDV

OBSOLETE



Horizontal and Vertical
**DIRECT DRIVE
BLOWER COIL UNITS**

 **ENVIRO-TEC**[®]
ENGINEERING FOR EXCELLENCE

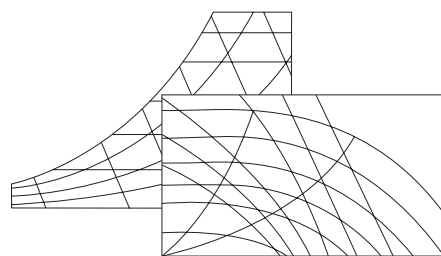
Rating and selection at www.enviro-tec.com

Construction Features.....3
 Fan Assembly4
 Optional Construction5
 Electric Heat6
 Coils and Static Pressure Loss7
 Nominal Capacities8
 Fan Performance Curves9
 Unit Dimensional Data.....12
 Physical Data16
 Motor, Fan and Sound Data17
 Guide Specifications18



GENERAL NOTES

- ENVIRO-TEC® offers the industry’s first web-based rating and selection program for complete unit, coil and sound selection. See your representative or visit our website at www.enviro-tec.com for more information.
- Some drawings are not shown in this catalog. Please refer to www.enviro-tec.com for complete submittal drawings for your project.
- ETL Report Number 524615.
- MEA Number MEA 54-98-E applies to all units with any combination of chilled water or R-22 direct expansion coils and either hot water coils, steam coils, or electric heat.



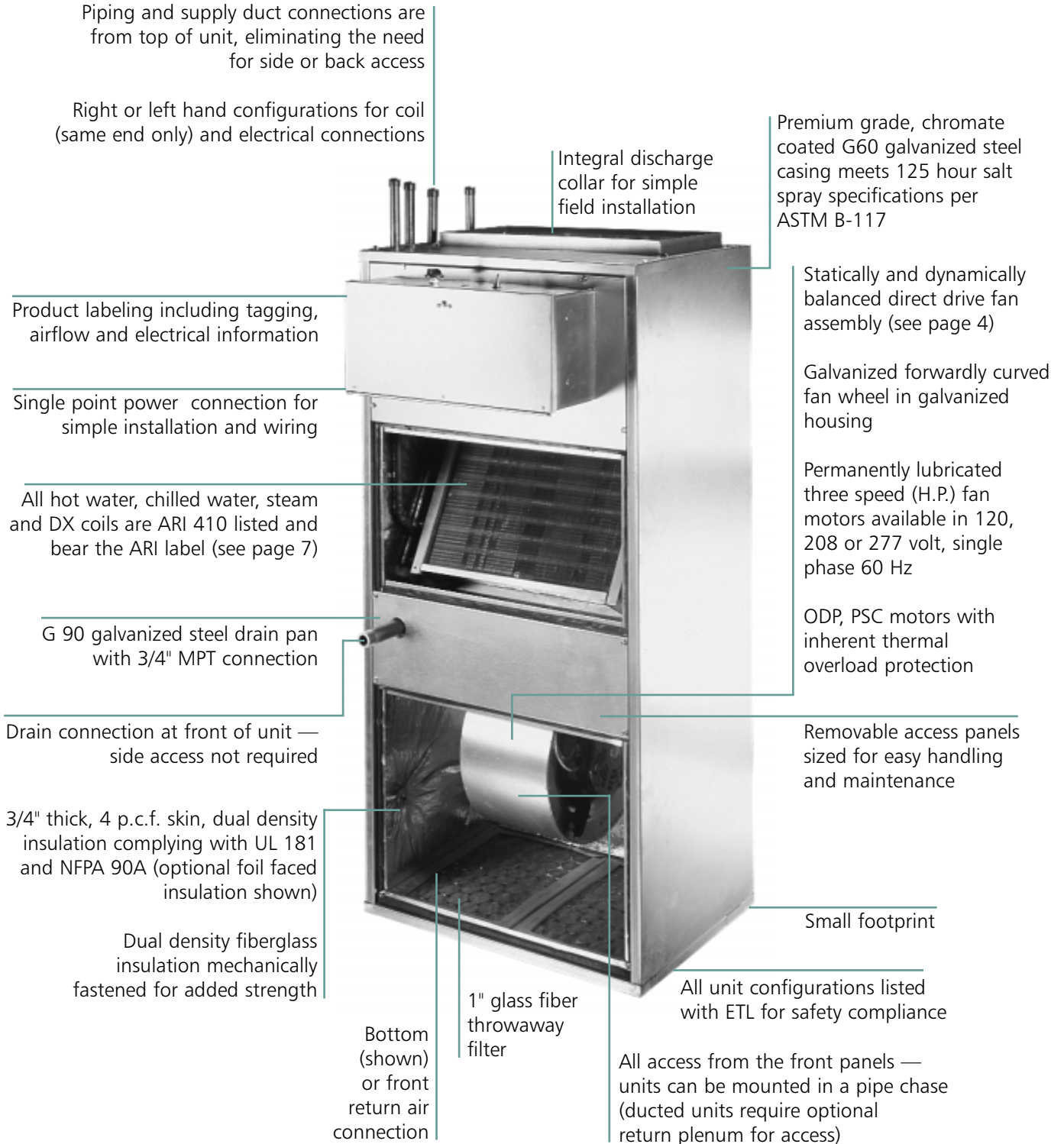
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 Please refer to the ENVIRO-TEC® website at www.enviro-tec.com for the latest version of this catalog.

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 Stock ID: CAT-BCUDD • Part No. PX-00-0014

Model CDH/CDV

(CDV Shown)

Many standard features on the CDH and CDV blower coil units are expensive add-ons for other manufacturers.



Quiet, Energy Efficient Fan Assembly

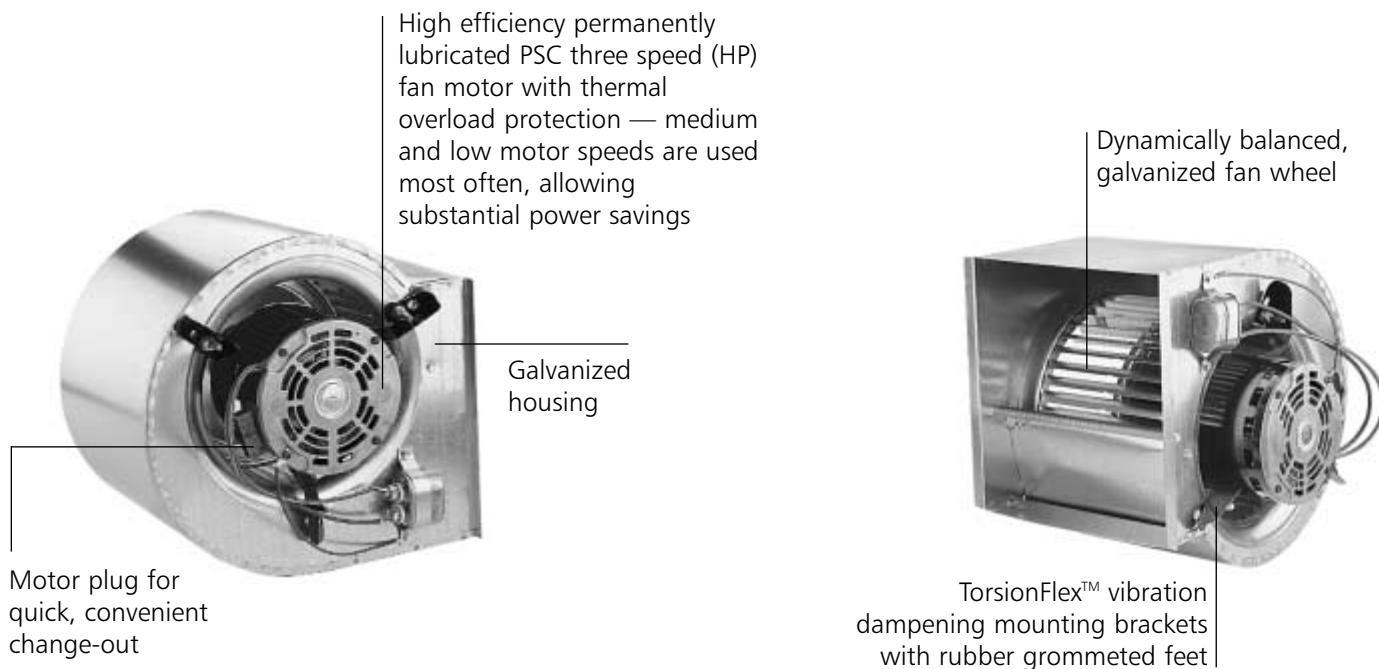
A key to comfort is the ENVIRO-TEC® extra quiet fan assembly. Each assembly is specifically designed and built for quiet, energy efficient air delivery.

What makes ENVIRO-TEC® fan assemblies efficient is the use of three speed, three winding, permanent split capacitor fan motors. The three speed motors are capable of delivering three separate horsepower outputs. For example, a nominal 1/2 HP motor at medium and low speeds will deliver 1/3 HP and 1/4 HP respectively. This is the most efficient means of handling reduced fan capacities.

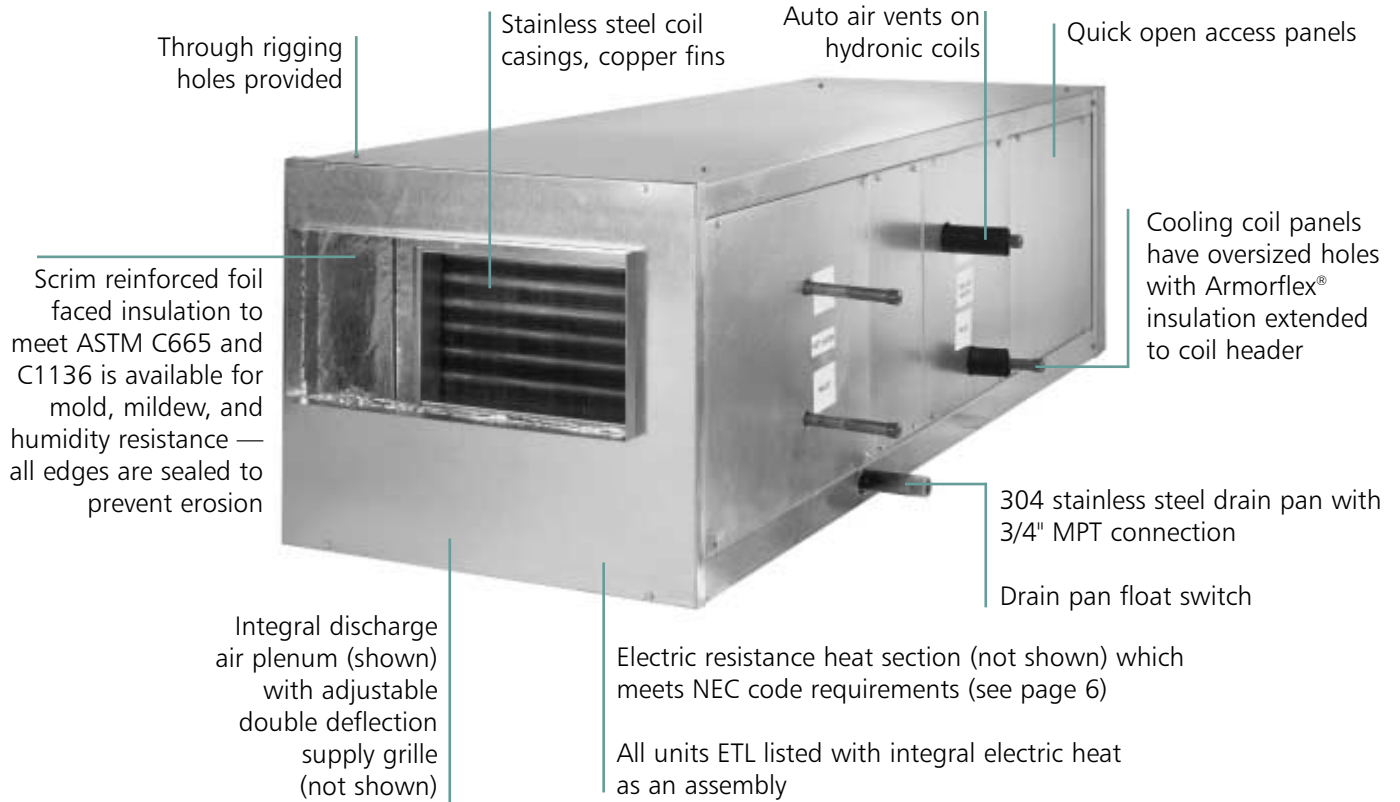
A quick select terminal strip is provided for switching between motor speeds. An optional three position rotary switch is also available for simplified motor speed selection. Additional air balance of the fan can be achieved through field adjustment of an electronic (SCR) fan speed controller. The electronic (SCR) fan speed controller is manufactured by ENVIRO-TEC® and has been specifically designed for compatibility with the fan motors. Each SCR also includes a minimum voltage limiter for stall protection.

The combination of a three speed fan motor, and electronic SCR provides the most flexible and energy efficient means of balancing fan capacities with varying field conditions. This combination is preferred over single speed motor and SCR combinations which cause excessive power consumption and high motor winding temperatures.

Each fan housing is specifically designed for compatibility with the fan motors and internal pressure losses of the CDH and CDV cabinets. This design provides proper motor loading and maximizes fan performance.



Model CDH/CDV
(CDH shown)



ENVIRO-TEC® manufactures electric heating coils for specific application with all CDH and CDV blower coil units. This allows the flexibility to provide an unrivaled amount of electric heat options in one complete package.

Quality and safety are the basis of design for all ENVIRO-TEC® heaters. ETL certification as an assembly and construction per NEC standards ensure safety compliance on every CDH and CDV unit. Premium quality materials such as stainless steel element hardware, Ni-Chrome wire element, and high temperature rated wiring exceed typical industry quality standards.

Standard Features

- Designed, Manufactured and Tested by ENVIRO-TEC®
- ETL Certified and Listed as an Assembly
- Meets all National Electric Code (NEC) Requirements
- Single Point Power Connection with Fan Motor
- Ni-Chrome Wire Element in Ceramic Insulators
- All Stainless Steel Element Terminations and Hardware
- Primary and Secondary Thermal Overload Protection
- Internal Wiring Rated for Minimum 105°C
- Incoming Line Power Distribution Block
- Wiring Diagram and ETL Label

Optional Features

- Panel Mounted or Door Interlocking Disconnect Switches
- Main Fusing
- Disconnecting or De-energizing Magnetic Contactors
- Class II 24 Volt Control Transformer
- Dual Point Power Connection
- 1 and 2 stage control

Electric Heat Selection Procedure

The KW Selection Chart below indicates the maximum safe limit electric heater capacity for each size unit, and the minimum air-flow (CFM) required for a given KW throughout the unit's operating range. Exceeding these limits can result in nuisance cycling of the heater safety devices. If an application requires exceeding these limits, contact your ENVIRO-TEC® representative for selection assistance.

MBH (BTU in thousands) listed in the selection chart has been calculated at sea level. To correct for elevations greater than sea level, the standard air density component of 1.085 must be reduced by 0.036 per thousand feet of elevation above sea level (refer to the selection equations shown).

SELECTION EQUATIONS:

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

$$\text{Single Phase AMPS} = \frac{kW \times 1000}{VOLTS} \quad \text{Three Phase AMPS} = \frac{kW \times 1000}{VOLTS \times 1.732}$$

* Air density at sea level. Reduce by 0.036 for each 1000 ft. of altitude above sea level. For example:
 5000 ft. elevation: $5000/1000 = 5$ $5 \times 0.036 = .18$ $1.085 - .18 = .905$ $CFM = \frac{kW \times 3413}{\Delta T \times 0.905}$

MBH (BTU in thousands)		3.4	6.8	10.2	13.6	17.0	20.4	23.8	27.3	30.7	34.1	37.6	40.9	44.3	47.7	51.1	54.6	58.0	61.4	64.8	68.2	75.0	81.9	88.7	95.3	102.3	109.2	116.0	122.0	129.6	136.5			
AVAILABLE KW		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	22	24	26	28	30	32	34	36	38	40			
UNIT SIZE	04																																	
	06																																	
	08																																	
	10																																	
	12																																	
	16																																	
20																																		
MIN. AIRFLOW (CFM)		70	140	214	280	350	420	490	560	630	700	770	840	910	980	1050	1120	1190	1260	1330	1400	1540	1680	1820	1960	2100	2240	2300	2520	2660	2800			

KW Selection Chart

HEATER AMP CALCULATION	
VOLTAGE	AMPS per kW
115/1	8.70
208/1	4.81
277/1	3.61
208/3	2.78
230/3	2.51
460/3	1.26

NOTES:

1. Contact the factory for applications requiring higher kW limits.
2. Available kW increments are: 0.5 to 10.0 kW – .50 kW; above 10 kW – 1.0 kW.
3. Maximum number of stages for single phase heaters is 3 on sizes 4 - 20.
4. Maximum number of stages for three phase heaters is 1 on sizes 4 - 12, and 3 on sizes 16 - 20.

Coils by ENVIRO-TEC®

ENVIRO-TEC® manufactures hot water, chilled water, direct expansion (DX), and standard steam coils for specific application with all CDH and CDV blower coils. ARI 410 certified and labeled, and strict on-site inspection before, during, and after installation guarantees the highest quality and performance available.

Standard Features

- Designed, manufactured and tested by ENVIRO-TEC®
- ARI 410 certified and labeled
- 1/2" O.D. seamless copper tubes
- 0.0055" thick aluminum corrugated fin construction with die-formed collars for uniform fin spacing
- Mechanically expanded copper tubes leak tested to a minimum 450 PSIG air pressure under water
- Manual air vent plug on all water coils
- Copper ODM sweat connections
- 300 PSIG working pressure at 200°F
- Evaporator coils are factory sealed and charged with minimum of 5 PSIG nitrogen or refrigerated dry air
- Refrigerant coils are provided with a fixed orifice metering device (distributor-eliminator)
- Steam coils rated at 15 PSIG maximum operating pressure at above 35°F
- 0.016" tube wall thickness (0.025" on Steam)

Optional Features

- Stainless steel coil casings
- Automatic air vents on water coils
- Heat pump compatible cooling coils
- 0.0075" thick copper fins
- 0.0075" thick aluminum fins
- 0.025" tube wall thickness



ENVIRO-TEC® offers the industry's first web-based fan coil rating and selection program for complete unit, coil and sound selection. See your representative or visit our website at www.enviro-tec.com for more information.

Component Static Pressure Loss - Inches W.G.

UNIT SIZE	NOMINAL CFM	FILTER		AUXILIARY HEATING COIL		SUPPLY PLENUM WITH D.D. GRILLE	SUPPLY PLENUM WITHOUT D.D. GRILLE	MIXING BOX
		1" T/A	2" T/A	1 ROW	2 ROW			
04	400	0.04	0.09	0.06	0.12	0.11	0.09	0.03
06	600	0.08	0.11	0.11	0.22	0.11	0.06	0.06
08	800	0.12	0.17	0.11	0.22	0.11	0.03	0.10
10	1000	0.08	0.12	0.06	0.13	0.11	0.07	0.08
12	1200	0.12	0.16	0.08	0.17	0.11	0.06	0.12
16	1600	0.08	0.12	0.06	0.12	0.11	0.08	0.06
20	2000	0.12	0.16	0.09	0.17	0.11	0.06	0.09

NOTES:

1. Filter static pressure is for standard flat filter rack with clean filter.
2. Coil static pressure for number of rows indicated with 10 fins per inch.
3. Hot water coil mounted in reheat position.
4. Losses for cabinet, electric heater, 4 row coil, and clean throwaway filter are included in fan curves on pages 9 - 11.
5. At ARI conditions.

UNIT SIZE	NOM. CFM	CHILLED WATER COOLING								
		3 ROW			4 ROW			6 ROW (CDH)		
		TMBH	SMBH	GPM	TMBH	SMBH	GPM	TMBH	SMBH	GPM
04	400	10.0	7.5	2.0	13.6	9.4	2.7	18.3	11.8	3.6
06	600	14.9	11.0	3.0	18.0	12.9	3.6	25.4	16.8	5.1
08	800	17.5	13.5	3.5	24.3	17.2	4.9	33.8	22.3	6.8
10	1000	27.6	19.4	5.5	33.6	23.0	6.7	45.0	29.1	9.0
12	1200	33.1	23.1	6.6	40.4	27.5	8.1	52.1	34.0	10.4
16	1600	41.6	29.9	8.3	57.6	38.4	11.5	69.6	45.5	13.9
20	2000	57.2	39.5	11.4	66.4	45.7	13.3	87.7	57.3	17.5

UNIT SIZE	NOMINAL CFM	AUXILIARY HOT WATER HEATING			
		1 ROW		2 ROW	
		MBH	GPM	MBH	GPM
04	400	12.5	1.3	21.2	2.2
06	600	14.9	1.5	26.4	2.7
08	800	20.5	2.1	36.3	3.7
10	1000	30.7	3.2	52.9	5.4
12	1200	33.5	3.4	58.5	6.0
16	1600	50.4	5.2	89.0	9.1
20	2000	56.0	5.7	100.9	10.3

NOTES:

1. Cooling: 80°/67° EAT, 45° EWT, 10° Δ T.
2. Heating: 70° EAT, 180° EWT, 20° Δ T.
3. For other selections, refer to Web-Select™, available at www.enviro-tec.com.
4. CFM data based on high speed tap with 120/1/60 PSC motor.
5. All CFM data include pressure losses for cabinet, electric heater, 4 row coil, and clean 1" throwaway filter.

Coil Connection Sizes

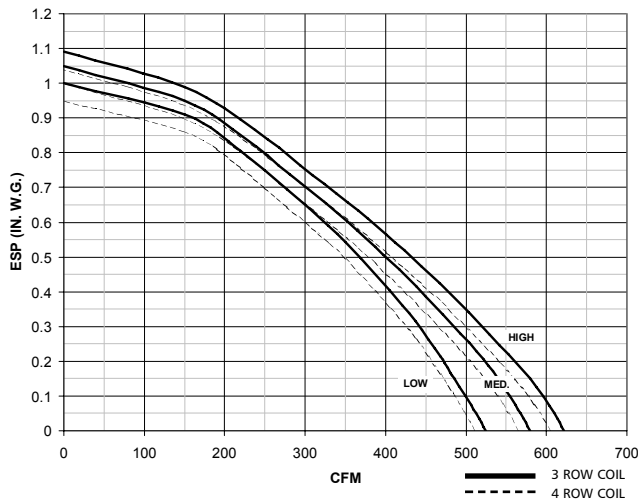
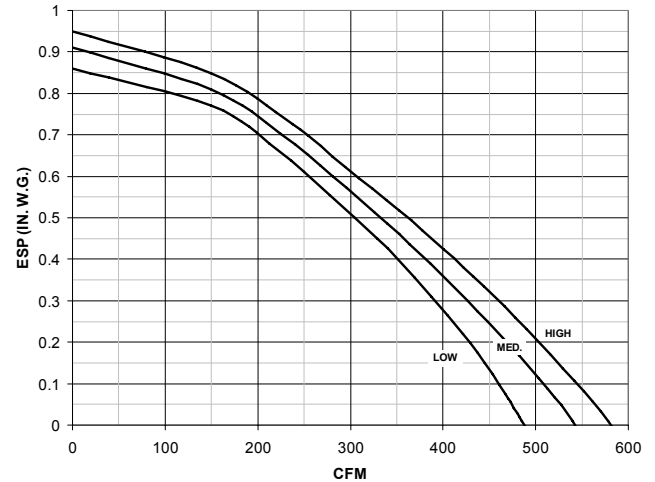
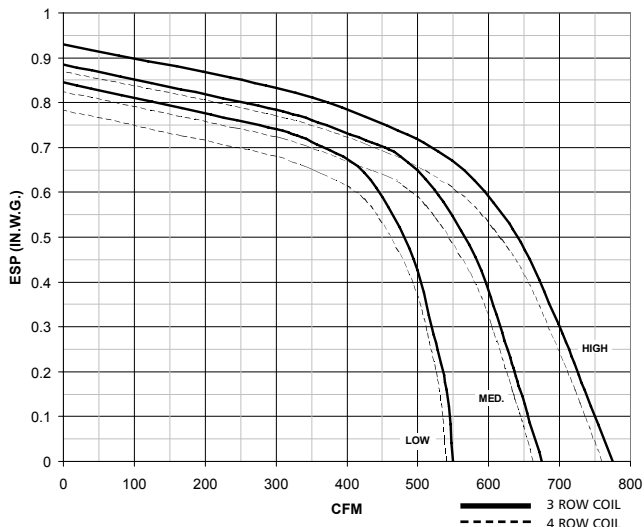
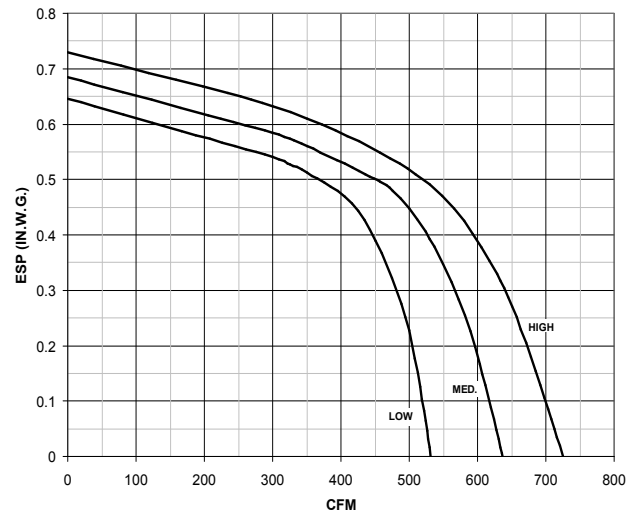
UNIT SIZE	COIL TYPE												
	WATER					STEAM		REFRIGERANT					
	1 ROW	2 ROW	3 ROW	4 ROW	6 ROW ⁴	1 ROW	2 ROW	3 ROW		4 ROW		6 ROW ⁴	
								Liquid	Suction	Liquid	Suction	Liquid	Suction
04	5/8" [16]	5/8" [16]	5/8" [16]	5/8" [16]	7/8" [22]	5/8" [16]	7/8" [22]	3/8" [10]	5/8" [16]	3/8" [10]	5/8" [16]	3/8" [10]	5/8" [16]
06	5/8" [16]	5/8" [16]	5/8" [16]	5/8" [16]	7/8" [22]	5/8" [16]	7/8" [22]	3/8" [10]	5/8" [16]	3/8" [10]	5/8" [16]	1/2" [13]	5/8" [16]
08	5/8" [16]	5/8" [16]	5/8" [16]	5/8" [16]	7/8" [22]	7/8" [22]	7/8" [22]	3/8" [10]	7/8" [22]	1/2" [13]	7/8" [22]	1/2" [13]	7/8" [22]
10	5/8" [16]	5/8" [16]	7/8" [22]	7/8" [22]	1 1/8" [29]	1 1/8" [29]	1 1/8" [29]	1/2" [13]	7/8" [22]	1/2" [13]	7/8" [22]	5/8" [16]	7/8" [22]
12	5/8" [16]	5/8" [16]	7/8" [22]	7/8" [22]	1 1/8" [29]	1 1/8" [29]	1 1/8" [29]	1/2" [13]	7/8" [22]	1/2" [13]	1 1/8" [29]	5/8" [16]	1 1/8" [29]
16	5/8" [16]	5/8" [16]	7/8" [22]	1 1/8" [29]	1 3/8" [35]	1 1/8" [29]	1 1/8" [29]	1/2" [13]	1 1/8" [29]	1/2" [13]	1 1/8" [29]	5/8" [16]	1 1/8" [29]
20	5/8" [16]	5/8" [16]	7/8" [22]	1 1/8" [29]	1 3/8" [35]	1 1/8" [29]	1 1/8" [29]	1/2" [13]	1 1/8" [29]	1/2" [13]	1 1/8" [29]	5/8" [16]	1 1/8" [29]

NOTES:

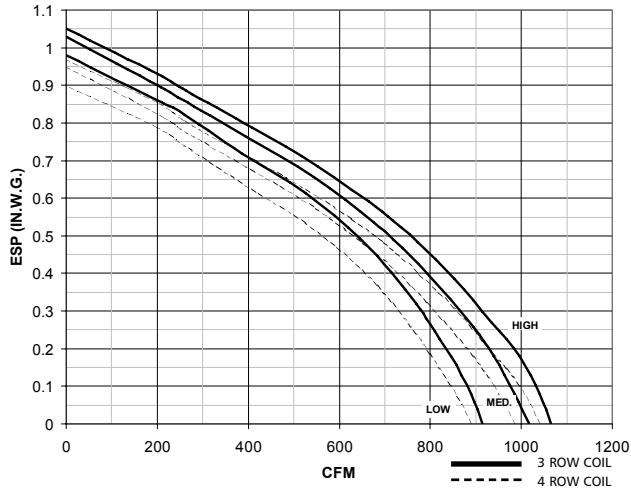
1. Connection sizes are for standard circuit coils. Consult factory for special applications.
2. See submittal drawings at www.enviro-tec.com for connection locations.
3. All dimensional data is outside diameter (O.D.), measured in inches [millimeters].
4. 6 row coils available on Model CDH (Horizontal) only.
5. For other selections, refer to Web-Select™, available at www.enviro-tec.com.
6. See page 7 for a list of the standard and optional features of ENVIRO-TEC® coils.
7. Model CDV 3 row water coil connections: Size 08 = 7/8" [22], Sizes 16 and 20 = 1 1/8" [29].

General Fan Notes

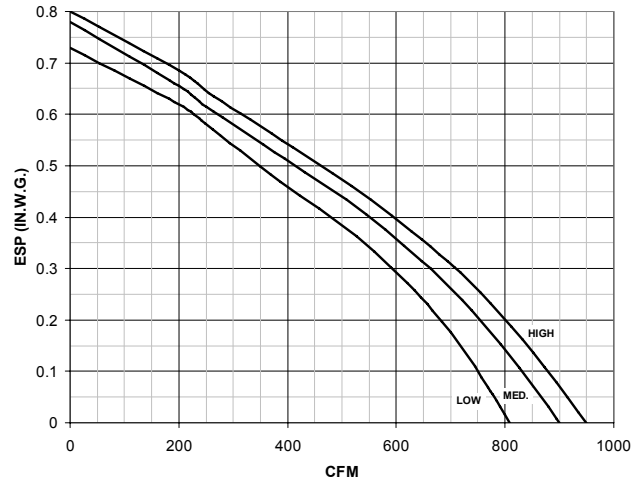
1. Fan curves depict actual performance of each motor tap without any additional fan balance adjustment. Actual capacities which fall below each curve can be obtained by adding an adjustment device. Units should not be run prior to installation of downstream ductwork; otherwise, damage to the motor may result. The minimum external static pressure required is 0.1 inches w.g.
2. ENVIRO-TEC® Direct Drive Blower Coil Units are equipped with permanent split-capacitor (PSC) motors with three separate speeds (High, Medium and Low) which provides variable horsepower outputs. Most often, size selections are conservative and actual CFM requirements and/or external static pressure requirements are lower than those specified. In this case, the unit fan motor can be run at low or medium tap, substantially reducing the operating cost of the unit.
3. All fan curves are for 120/1/60 motors and include losses for cabinet, electric heater, 3, 4 or 6 row coil, and clean 1" throwaway filter. For other configurations, adjust performance curves based on pressure losses for individual components found on page 7.
4. See page 17 for fan motor electrical data.

CDV/CDH 04 • 3 and 4 Row Coils

CDH 04 • 6 Row Coil

CDV/CDH 06 • 3 and 4 Row Coils

CDH 06 • 6 Row Coil


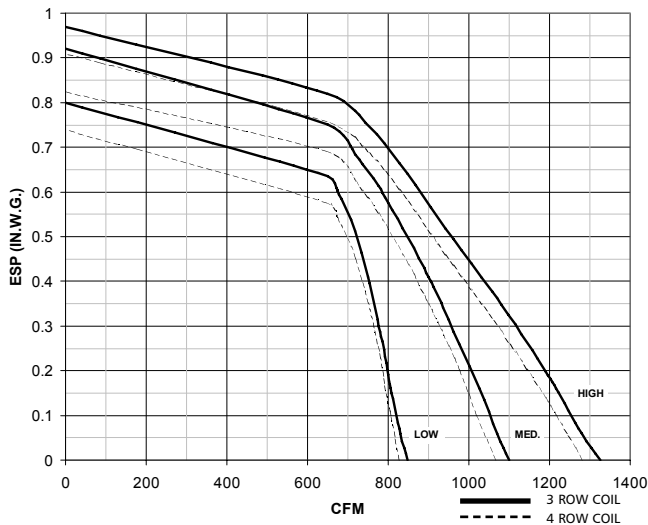
CDV/CDH 08 • 3 and 4 Row Coils



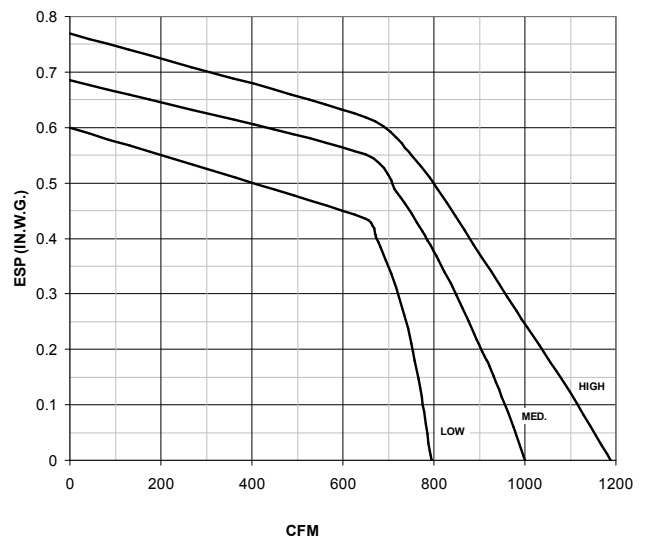
CDH 08 • 6 Row Coil



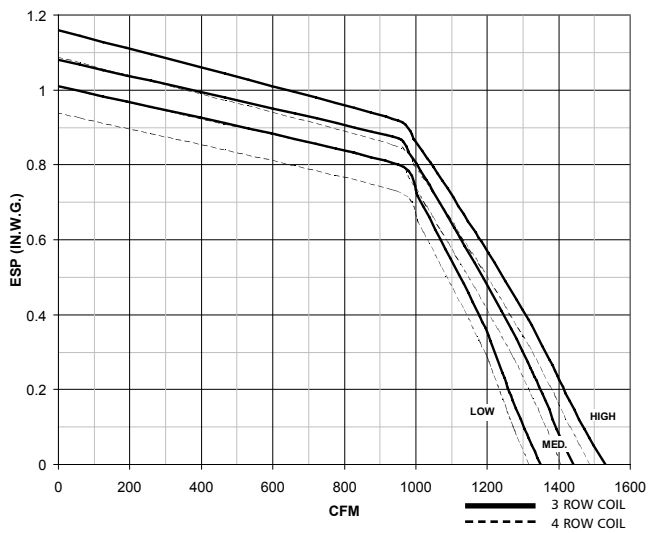
CDV/CDH 10 • 3 and 4 Row Coils



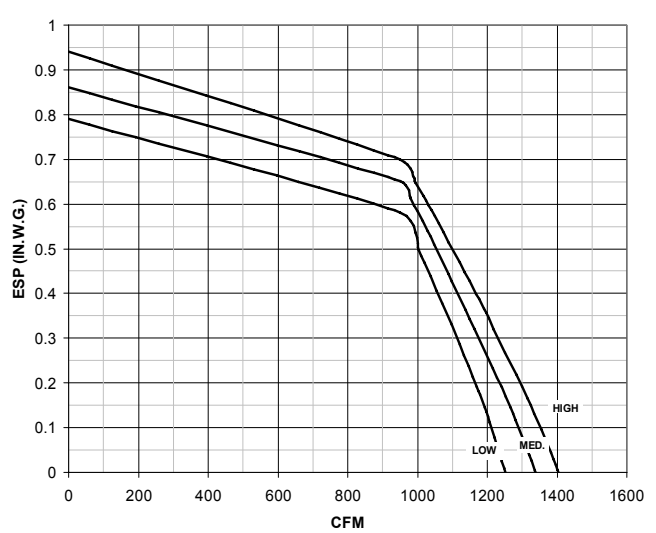
CDH 10 • 6 Row Coil



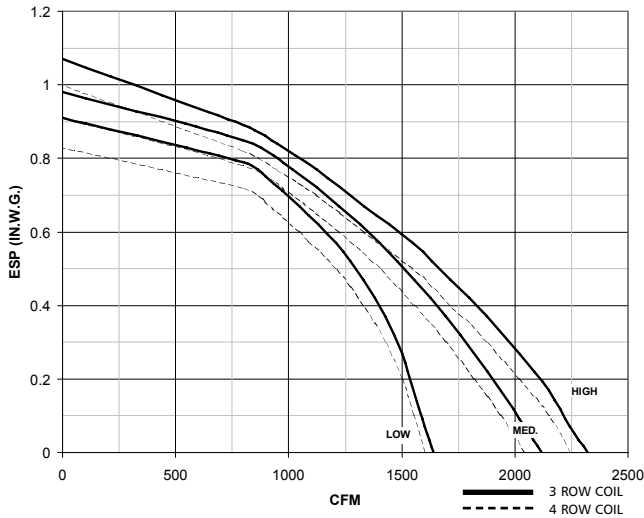
CDV/CDH 12 • 3 and 4 Row Coils



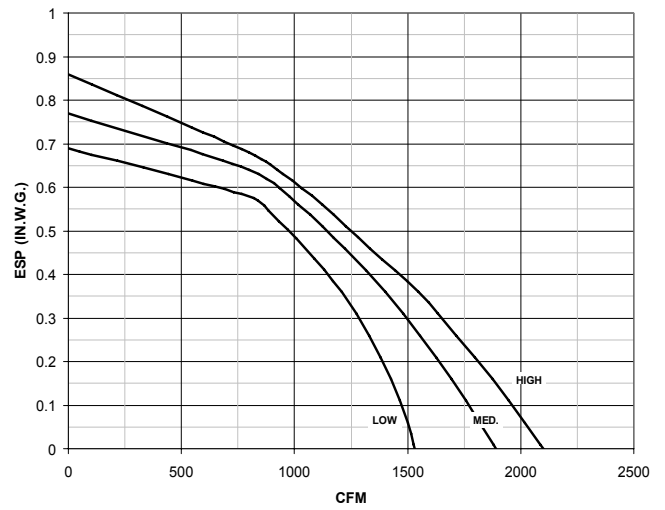
CDH 12 • 6 Row Coil



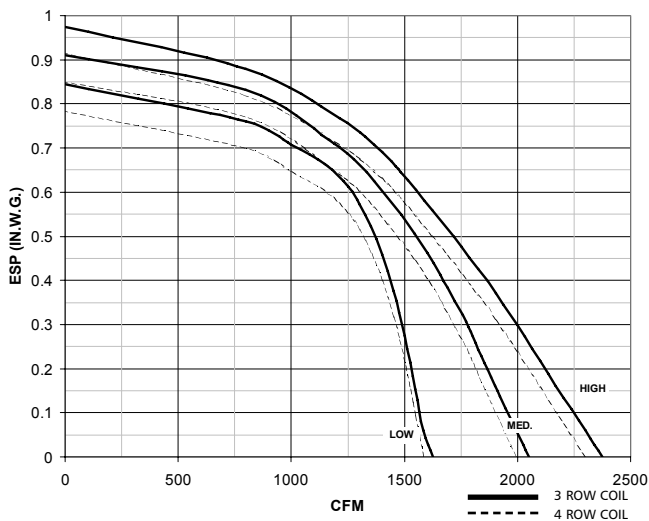
CDV/CDH 16 • 3 and 4 Row Coils



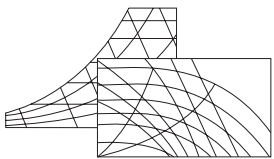
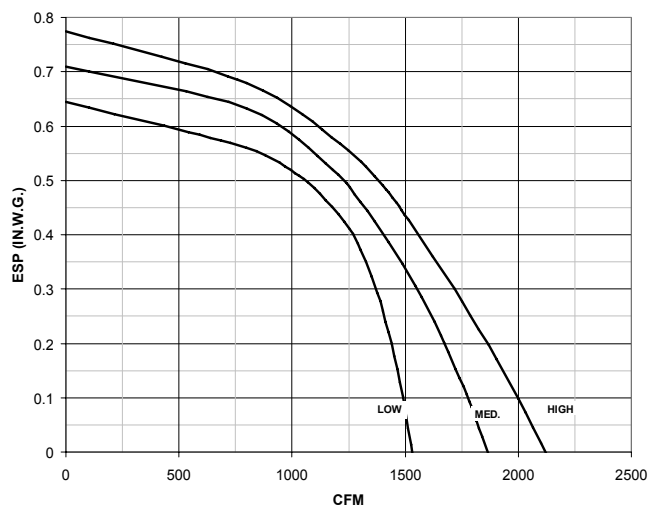
CDH 16 • 6 Row Coil



CDV/CDH 20 • 3 and 4 Row Coils



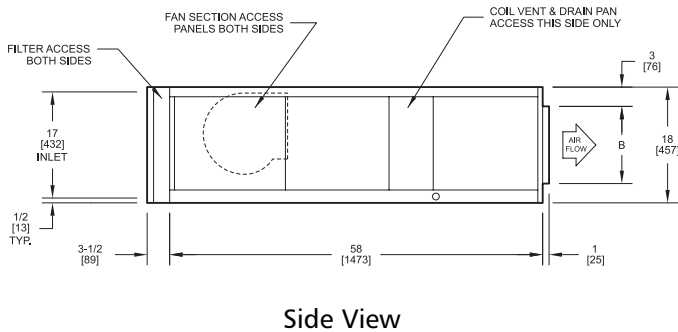
CDH 20 • 6 Row Coil



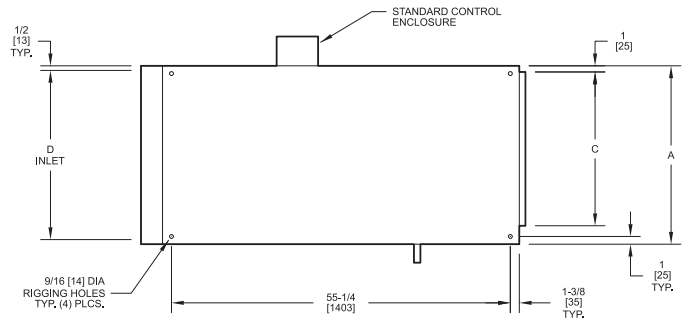
WEB-SELECT™
www.enviro-tec.com

ENVIRO-TEC® offers the industry's first web-based fan coil rating and selection program for complete unit, coil and sound selection. See your representative or visit our website at www.enviro-tec.com for more information.

Horizontal Units (Model CDH) Without Electric Heat

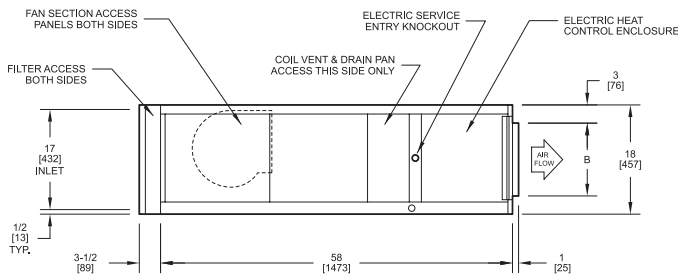


Side View

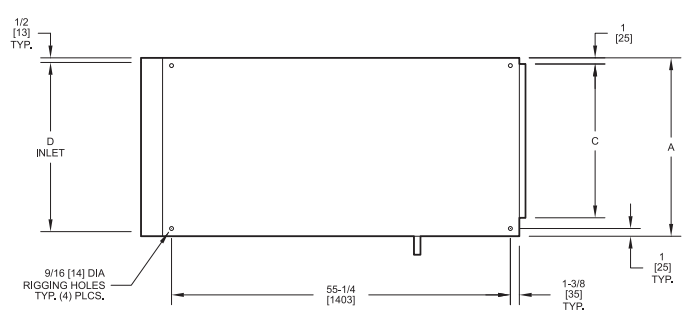


Top View

With Electric Heat



Side View



Top View

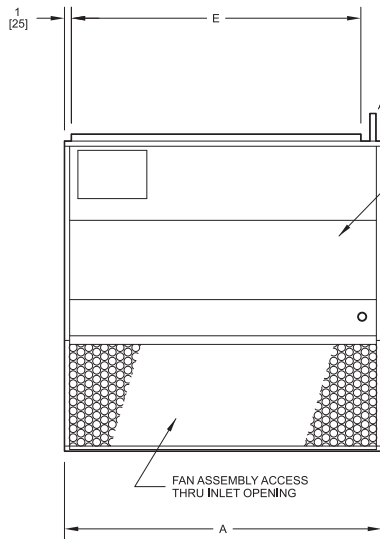
Dimensions

UNIT SIZE	A	B	C	D
04-08	22 [559]	8 [203]	18 [457]	21 [533]
10-12	29 [737]	12 [305]	25 [635]	28 [711]
16-20	46 [1168]	12 [305]	40 [1016]	45 [1143]

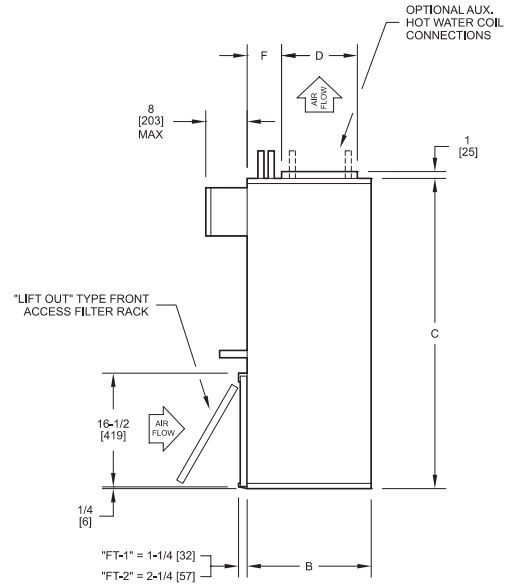
NOTES:

1. All dimensions are inches [millimeters] +/- 1/4" [6mm]. Metric values are soft conversion.
2. Drawings not for installation purposes. Factory certified submittals available at www.enviro-tec.com.
3. Right hand unit shown, left hand unit opposite.
4. Rigging holes are provided on both top and bottom of unit for through hanger rods.
5. Dimensions subject to change without prior notice.

Vertical Units (Model CDV) Without Electric Heat

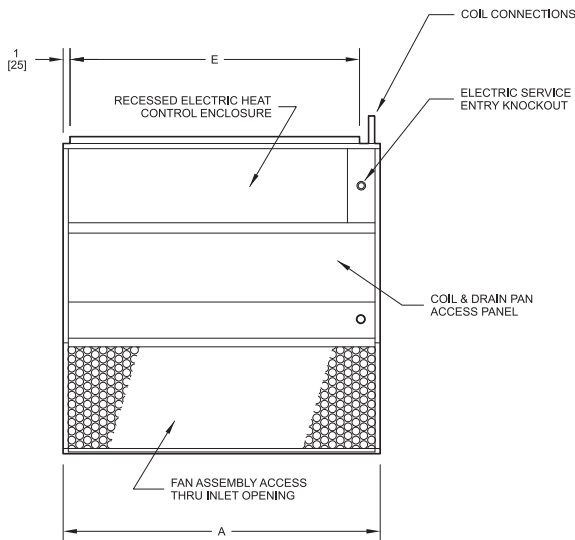


Front View

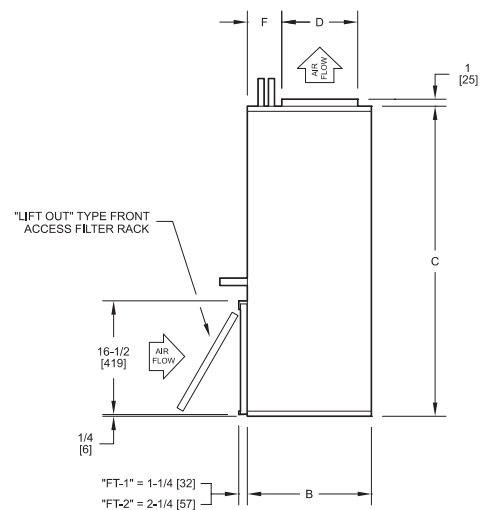


Side View

With Electric Heat



Front View



Side View

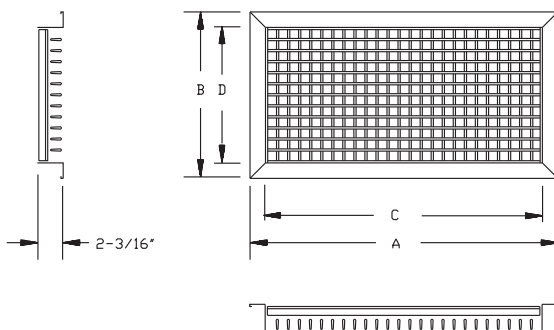
Dimensions

UNIT SIZE	A	B	C	D	E	F
04-08	22 [559]	15 [381]	48 [1219]	8 [203]	18 [457]	4 [102]
10-12	29 [737]	18 [457]	48 [1219]	12 [305]	25 [635]	4 [102]
16-20	46 [1168]	18 [457]	48 [1219]	12 [305]	40 [1016]	5 [127]

NOTES:

1. All dimensions are inches [millimeters] +/- 1/4" [6mm]. Metric values are soft conversion.
2. Front access only is required for installation and service.
3. Drawings not for installation purposes. Factory certified submittals available at www.enviro-tec.com.
4. Right hand unit shown, left hand unit opposite.
5. Dimensions subject to change without prior notice.

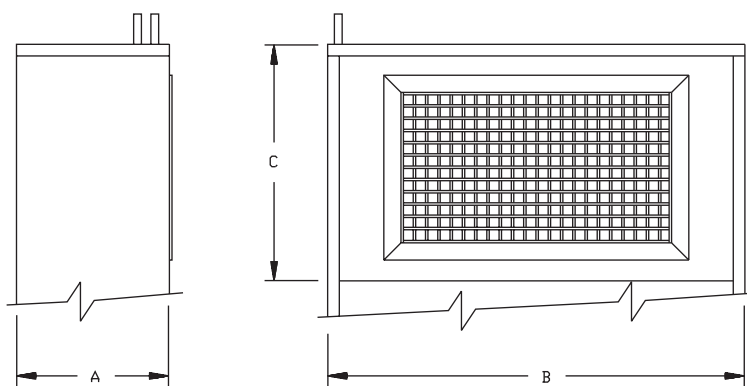
Double Deflection Discharge Grille - Horizontal



UNIT SIZE	A	B	C	D
04-08	20 1/8" [511]	10 1/8" [257]	18" [457]	8" [203]
10-12	26 1/8" [664]	14 1/8" [359]	24" [610]	12" [305]
16-20	42 1/8" [1070]	14 1/8" [359]	40" [1016]	12" [305]

NOTE: Grille ships factory installed on unit discharge.

Discharge Plenum with Double Deflection Grille - Vertical

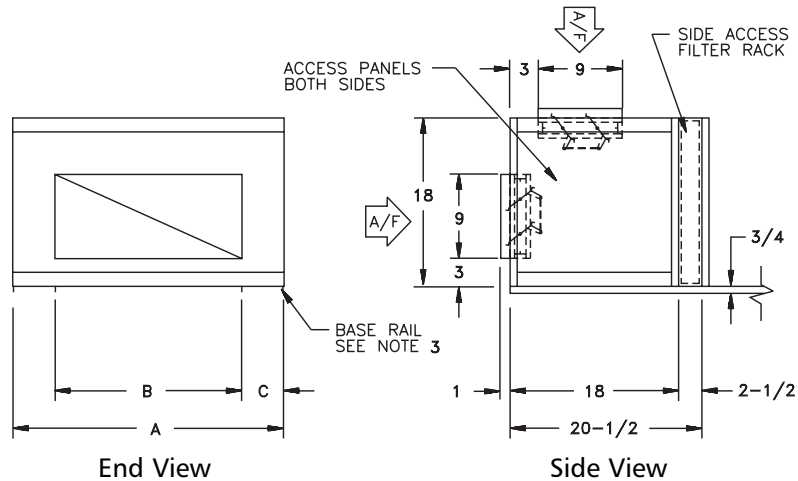


UNIT SIZE	A	B	C	SUPPLY GRILLE W x H
04-08	15" [381]	22" [559]	15" [381]	18" x 8" [457 x 203]
10-12	18" [457]	29" [737]	18" [457]	24" x 12" [610 x 305]
16-20	18" [457]	46" [1168]	18" [457]	40" x 12" [1016 x 305]

NOTES:

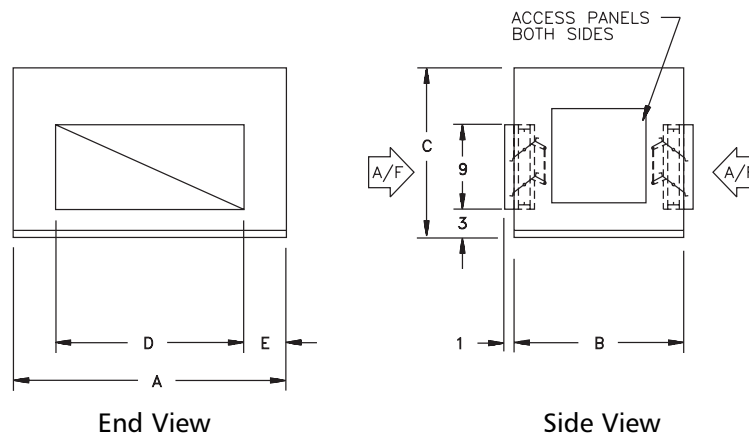
1. All dimensions are inches [millimeters] +/- 1/4" [6mm]. Metric values are soft conversion.
2. Drawings not for installation purposes. Factory certified submittals available at www.enviro-tec.com.
3. C-dimension adds to basic unit height on Model CDV (Vertical).
4. Dimensions subject to change without prior notice.

Mixing Box Section – Horizontal



UNIT SIZE	A	B	C
04-08	22" [559]	15" [381]	3 1/2" [89]
10-12	29" [737]	20" [508]	4 1/2" [114]
16-20	46" [1168]	36" [914]	5" [127]

Mixing Box Section – Vertical



UNIT SIZE	A	B	C	D	E
04-08	22" [559]	15" [381]	15" [381]	15" [381]	3 1/2" [89]
10-12	29" [737]	18" [457]	18" [457]	20" [508]	4 1/2" [114]
16-20	46" [1168]	18" [457]	18" [457]	36" [914]	5" [127]

NOTES:

1. All dimensions are inches [millimeters] +/- 1/4" [6mm]. Metric values are soft conversion.
2. Drawings not for installation purposes. Factory certified submittals available at www.enviro-tec.com.
3. Base rail required on Model CDH (Horizontal).
4. Return air plenum (one inlet, no dampers) is available in lieu of mixing box section.
5. C-dimension adds to basic unit height on Model CDV (Vertical).
6. Linkage and actuator for damper control shall be provided/installed by others.
7. Dimensions subject to change without prior notice.

Coil Face Area and Filter Data

UNIT SIZE	AUXILIARY HEATING COIL	COOLING COIL	NOMINAL FILTER SIZES		
	Face Area	Face Area	CDH	CDV with Front Return	CDV with Bottom Return
04	0.9 [0.08]	1.3 [0.12]	18 x 22 x 1 [457 x 559 x 25]	16 x 22 x 1 [406 x 559 x 25]	(2) 14 x 10.5 x 1 [356 x 267 x 25]
06	0.9 [0.08]	1.6 [0.15]	18 x 22 x 1 [457 x 559 x 25]	16 x 22 x 1 [406 x 559 x 25]	(2) 14 x 10.5 x 1 [356 x 267 x 25]
08	1.2 [0.11]	1.8 [0.17]	18 x 22 x 1 [457 x 559 x 25]	16 x 22 x 1 [406 x 559 x 25]	(2) 14 x 10.5 x 1 [356 x 267 x 25]
10	2.0 [0.19]	2.6 [0.24]	18 x 29 x 1 [457 x 737 x 25]	16 x 29 x 1 [406 x 737 x 25]	(2) 14 x 17 x 1 [356 x 432 x 25]
12	2.0 [0.19]	2.9 [0.27]	18 x 29 x 1 [457 x 737 x 25]	16 x 29 x 1 [406 x 737 x 25]	(2) 14 x 17 x 1 [356 x 432 x 25]
16	3.3 [0.31]	4.0 [0.37]	(2) 18 x 23 x 1 [457 x 584 x 25]	(2) 16 x 23 x 1 [406 x 584 x 25]	(2) 17 x 22.5 x 1 [432 x 572 x 25]
20	3.3 [0.31]	5.1 [0.47]	(2) 18 x 23 x 1 [457 x 584 x 25]	(2) 16 x 23 x 1 [406 x 584 x 25]	(2) 17 x 22.5 x 1 [432 x 572 x 25]

NOTES:

1. Standard filters are 1" throwaway; optional filters are 2" throwaway.
2. Coil face areas are measured in square feet [square meters].
3. Filter sizes are measured in inches [millimeters].

Unit Weight Data

COMPONENT	UNIT SIZE							
	04	06	08	10	12	16	20	
CDV BASE UNIT	81 [37]	81 [37]	103 [47]	103 [47]	106 [48]	128 [58]	134 [61]	
CDH BASE UNIT	95 [43]	95 [43]	117 [53]	120 [54]	123 [56]	151 [68]	157 [71]	
MIXING BOX	24 [11]	24 [11]	24 [11]	37 [17]	37 [17]	54 [24]	54 [24]	
CDV SUPPLY PLENUM	21 [10]	21 [10]	21 [10]	33 [15]	33 [15]	48 [22]	48 [22]	
CDV RETURN PLENUM	17 [8]	17 [8]	17 [8]	25 [11]	25 [11]	33 [15]	33 [15]	
COIL ROWS	1 ROW - DRY	7 [3]	7 [3]	8 [4]	11 [5]	11 [5]	16 [7]	16 [7]
	1 ROW - WET	8 [4]	8 [4]	9 [4]	14 [6]	14 [6]	19 [9]	19 [9]
	2 ROW - DRY	10 [5]	10 [5]	12 [5]	17 [8]	17 [8]	25 [11]	25 [11]
	2 ROW - WET	12 [5]	12 [5]	14 [6]	21 [10]	21 [10]	31 [14]	31 [14]
	3 ROW - DRY	16 [7]	19 [9]	21 [10]	27 [12]	29 [13]	38 [17]	46 [21]
	3 ROW - WET	20 [9]	23 [10]	26 [12]	35 [16]	38 [17]	49 [22]	60 [27]
	4 ROW - DRY	20 [9]	23 [10]	26 [12]	34 [15]	37 [17]	49 [22]	59 [27]
	4 ROW - WET	25 [11]	29 [13]	34 [15]	44 [20]	48 [22]	64 [29]	77 [35]
6 ROW - DRY	28 [13]	32 [15]	37 [17]	49 [22]	52 [24]	70 [32]	84 [38]	
6 ROW - WET	36 [16]	42 [19]	48 [22]	64 [29]	68 [31]	92 [42]	111 [50]	

NOTE: Unit weight data is shipping weight in pounds [kilograms].

Motor Data

UNIT SIZE	MOTOR TAP	MOTOR H.P.	NUMBER OF FANS	WHEEL SIZE	120V	208V	230V	277V
					AMPS	AMPS	AMPS	AMPS
04	HI	1/6	1	DD-0904	2.6	1.2	--	0.9
	MED	1/8			2.1	1.0	--	0.8
	LOW	1/10			1.8	0.8	--	0.7
06	HI	1/6	1	DD-0906	2.6	1.2	--	0.9
	MED	1/8			2.1	1.0	--	0.8
	LOW	1/10			1.8	0.8	--	0.7
08	HI	1/4	1	DD-0909	4.9	2.7	2.2	1.9
	MED	1/5			4.1	2.1	1.5	1.6
	LOW	1/8			3.2	1.6	1.1	1.3
10	HI	1/4	1	DD-0908	4.9	2.7	2.2	1.9
	MED	1/5			4.1	2.1	1.5	1.6
	LOW	1/8			3.2	1.6	1.1	1.3
12	HI	1/2	1	DD-1006	8.8	4.3	4.2	3.6
	MED	1/3			7.9	3.9	3.1	3.2
	LOW	1/4			6.9	3.4	1.9	2.7
16	HI	(2) 1/4	2	DD-0908	9.8	5.4	4.4	3.8
	MED	(2) 1/5			8.2	4.2	3.0	3.2
	LOW	(2) 1/8			6.4	3.2	2.2	2.6
20	HI	(2) 1/4	2	DD-0908	9.8	5.4	4.4	3.8
	MED	(2) 1/5			8.2	4.2	3.0	3.2
	LOW	(2) 1/8			6.4	3.2	2.2	2.6

NOTES:

1. Motor electrical data is nameplate data. Actual data will vary with application.
2. Nameplate RPM is 1075 (3 speed).

Sound Data

UNIT SIZE	FAN SPEED	CFM	RPM	TOTAL SOUND POWER DATA						
				OCTAVE BAND / CENTER FREQUENCY						
				2/125	3/250	4/500	5/1000	6/2000	7/4000	8/8000
04	HI	610	1107	70	62	57	53	51	49	42
	MED	570	1040	69	61	55	51	49	49	42
	LOW	515	949	69	63	58	53	50	49	42
06	HI	750	1050	78	71	63	59	57	56	49
	MED	650	895	73	66	59	55	53	51	47
	LOW	540	735	68	61	54	50	48	45	41
08	HI	1050	1114	75	70	64	59	57	56	49
	MED	1000	1023	72	68	62	57	55	54	46
	LOW	895	877	69	64	58	53	51	48	40
10	HI	1275	1051	74	70	64	64	62	61	53
	MED	1050	849	70	64	60	59	56	55	47
	LOW	825	671	65	58	54	53	50	48	40
12	HI	1490	1089	77	72	67	68	68	67	62
	MED	1420	1035	76	71	66	67	66	65	60
	LOW	1320	964	74	69	64	65	64	63	58
16	HI	2300	1099	77	71	67	65	64	63	57
	MED	2030	988	75	69	65	63	61	60	54
	LOW	1600	785	71	63	59	57	55	54	46
20	HI	2290	1088	77	73	68	66	64	64	58
	MED	1970	941	76	69	65	63	61	60	54
	LOW	1590	769	71	64	60	57	56	53	46

NOTES:

1. Sound data tested in accordance with ARI 350-86.
2. Sound levels are expressed in decibels, dB RE: 1×10^{-12} watts.
3. Total sound power level data based on fan CFM at corresponding motor tap with 120/1/60 volt motor, 0.0" external static pressure and standard rated internal pressure losses.

GENERAL

Furnish and install ENVIRO-TEC® Model CDH Horizontal and CDV Vertical Direct Drive Blower Coil Units where indicated on the plans and specifications. Units shall be completely factory assembled, tested and shipped as one piece except where noted.

All units shall be capable of meeting or exceeding the scheduled capacities for cooling, heating, and air delivery. All unit dimensions for each model and size shall be considered maximums. Units shall be ETL listed in compliance with UL/ANSI Standard 1995.

CONSTRUCTION

All units shall be fabricated of heavy gauge galvanized steel with a minimum G60 zinc coating, able to meet 125 hour salt spray test per ASTM B-117. All exterior panels shall be insulated with 3/4" thick 4 pound per cubic foot dual density matt faced glass fiber insulation rated for a maximum air velocity of 3600 f.p.m., and tested to 9600 f.p.m. In addition to using adhesive complying with NFPA 90A and 90B, the insulation shall incorporate a secondary mechanical fastener attached to the unit casing wall (weld pin). Adhesive as the only method of fastening the insulation to the casing is not acceptable. Insulation shall conform to UL 181, ASTM C-1071, and NFPA 90A and 90B for fire and smoke, and carry no more than a 25/50 Flame Spread and Smoke Developed Rating, per ASTM E-84 and UL 723.

All units shall have a minimum 1" duct collar on the discharge. All access panels shall be fully insulated and attached with standard

fasteners on at least two opposite sides. No coil, drain piping, or electrical connections shall pass through any access panel.

Option: Provide foil faced insulation in lieu of matt faced. Foil insulation shall meet or exceed the requirements stated above, and in addition meet ASTM Standards C-665 and C-1136 for mold, mildew, and humidity resistance. Insulation shall be lined with aluminum foil, glass fiber scrim reinforcement, and 30# kraft paper laminated together with a flame resistant adhesive. All exposed edges shall be sealed to prevent any fibers from reaching the air stream.

Each unit shall be furnished with a one-piece heavy gauge G90 steel drain pan with welded corner construction.

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 meet or exceed the requirements stated above.

Horizontal units shall be provided with 9/16" diameter hanger rod holes in the top and bottom panels for "through-bolt" type suspension installation.

SOUND

Units shall have published sound power level data tested in accordance with ARI Standard 350-86.

FAN ASSEMBLY

Unit fan shall be dynamically balanced, forwardly curved, direct drive DWDI wheel with 18 gauge galvanized chromate coated double inlet scroll. Motor shall include torsion flex suspension

mount affixed to scroll using permanently attached mounting studs. Motor mount shall be secured with Nylock® lock nuts. Blower scroll shall be mounted to fan bulkhead with 18 gauge mounting rail in a manner to allow no metal-to-metal contact with fan bulkhead.

Blower motor shall be high efficiency, permanently lubricated sleeve bearing, permanent split-capacitor type with thermal overload protection and three separate horsepower taps. Single speed motors are not acceptable. The fan motor shall be unpluggable from the electrical leads at the motor case for simplified removal.

Option: Provide an electronic (SCR) fan speed controller for aid in balancing the fan capacity. The speed controller shall have a turn down stop to prevent the possibility of harming the motor bearings, and incorporate electrical noise suppression to minimize noise on the incoming power lines.

COILS

All unit coils shall be rated in accordance with ARI 410.

All coils shall be 1/2" O.D. seamless copper tubes with collared and corrugated aluminum fins. All tubes shall be mechanically expanded to provide an efficient bond between tube and fin. All water coils shall be provided with a manual air vent fitting to allow for coil venting. Valve core type vent fittings shall not be accepted.

All chilled water, hot water, and direct expansion (DX) coils shall have 0.0055" thick aluminum fins and 0.016" tube wall thickness.

All steam coils shall have 0.0055" thick aluminum fins and 0.025" tube wall thickness.

All steam coils shall be suitable for temperatures above 35°F and 15 PSIG maximum operating pressure.

All coils shall be hydrostatically tested with air under water at 450 PSIG minimum pressure and rated for a maximum of 300 PSIG working pressure at 200°F.

DX coils shall be tested to 450 PSIG pressure and factory sealed and charged with a minimum of 5 PSIG nitrogen or refrigerated dry air. DX coils shall be provided with a fixed orifice metering device (distributor-eliminator).

OPTIONS

Coil casing shall be fabricated from 304 Stainless Steel.

Provide automatic air vents, in lieu of manual air vents.

Fin material shall be (0.0075" thick aluminum) (0.0075" thick copper).

Tube wall thickness shall be 0.025" on chilled water, hot water, and direct expansion coils.

FILTER

All units shall be furnished with a minimum 1" nominal glass fiber throwaway filter. Provide optional 2" filter rack with 2" throwaway filter where indicated. Filters shall be tight fitting to prevent air bypass.

SUPPLY PLENUM SECTION

Option: Provide a fully insulated integral supply air discharge section, complete with double deflection supply grille. Supply

plenum sections shipped loose for field installation to the units are not acceptable.

MIXING BOX SECTION

Option: Provide a fully insulated integral mixing box section, complete with return and outside air dampers. Mixing box sections shipped loose for field installation to the units are not acceptable.

ELECTRICAL

Units shall be furnished with a single point power location and electrical junction box for motor and other electrical terminations.

ELECTRIC RESISTANCE HEATER

Option: Provide an integral electric resistance heating assembly with the heating capacity, voltage, kilowatts, and stages as shown in the schedule.

The heater assembly shall be designed and rated for installation to the air handling unit without the use of duct extensions or transitions between the unit and the heater assembly. The heater shall be factory assembled and completely wired for single point power connection.

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

All heating elements shall be open coil design using Ni-Chrome wire mounted in ceramic insulators and housed 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 overtemperature protection, and shall be interlocked with the fan. All heater elements shall be energized through magnetic contactors wired for de-energizing operation.

An incoming line power distribution block shall be provided. The power distribution block shall be designed to accept incoming power wiring capable of carrying 125% of the calculated load current.

In addition to the above, all heaters shall include the following features (options):

- Main incoming power disconnect, non-fused
- Main fusing
- Magnetic contactors wired for disconnecting or de-energizing operation
- 24 volt unit start/stop relay
- Class II 24 volt control transformer

STANDARD FEATURES**Construction**

- G60 steel cabinet construction
- 3/4" thick 4 lb/ft³ dual-density fiberglass insulation, glued and pinned in place
- 1" supply duct collars
- Removable access panel sized for easy handling
- G90 steel drain pan with 3/4" MPT galvanized outlet
- Left and right hand arrangement

Fan Motor/Assembly

- Forward curved (double width, double inlet) fans
- Statically and dynamically balanced
- PSC motors with inherent thermal protection
- Three speed 120/1/60 motors

Coils

- ARI 410 certified and labeled
- 1/2" O.D. seamless copper tubes
- Collared and corrugated aluminum fins
- Copper ODM sweat connections
- Manual air vent plug on all water coils
- 300 PSIG working pressure at 200°F
- Steam coils rated at maximum for 15 PSIG

Filter Rack and Filters

- 1" flat filter rack
- 1" nominal throwaway filters

Electrical

- Fan motor wired and terminated to J-box
- All units ETL listed in compliance with UL/ANSI Standard 1995

OPTIONAL FEATURES**Construction**

- Scrim reinforced foil faced insulation
- 304 stainless steel drain pan
- Double deflection discharge grille
- Quarter turn quick open access panel fasteners
- Return and supply plenum

Fan Motor

- Three speed 208/1/60 and 277/1/60 motors

Coils

- 8 total rows on CDH units, 6 rows on CDV
- 3, 4 and 6 row chilled water or R22 DX coils (6 row coil on CDH units only)
- 1 and 2 row hot water or steam coils (Steam coils on CDH units only)
- Auto air vents on water coils
- Stainless steel cooling coil casings
- Copper fins
- Heat pump compatible

Filter Rack and Filters

- 2" flat filter rack
- Spare throwaway filters

Inlet Damper Section

- Factory assembled and installed
- Heavy gauge galvanized steel formed blade dampers
- Low-leak dampers with extruded vinyl blade seals and flexible metal jamb seals
- Parallel blade operation
- Interconnecting damper linkage

Electrical Control

- Fan speed controller (SCR)
- Fan motor relay
- Drain pan float switch
- Toggle type single phase service switch
- Low voltage transformer
- Fused incoming power
- Unit and wall mounted 3-speed switches

Electric Resistance Heat Section

- Factory mounted electric heater with single point power connection, ETL listed as an assembly (see page 6)