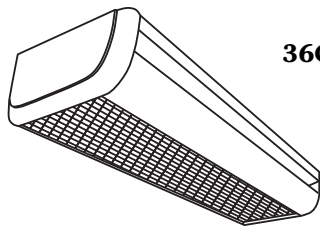




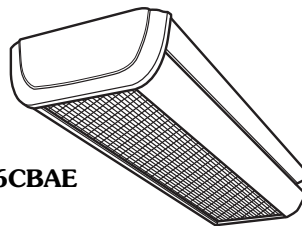
# Product Data

# 36CBAC,AE,AF,AH,AQ,AN, PB,PD,PS Series Active and Passive Chilled Beams

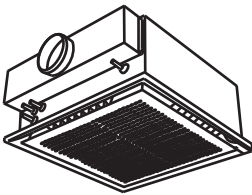
11 to 190 cfm



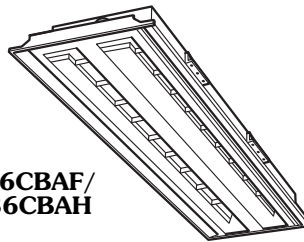
36CBAC



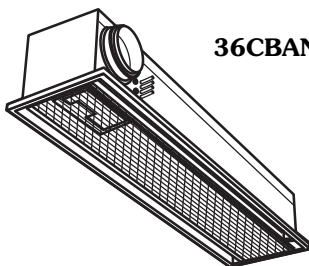
36CBAE



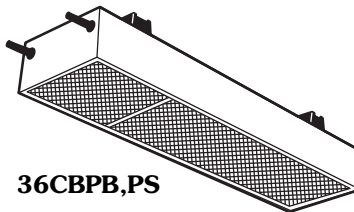
36CBAQ



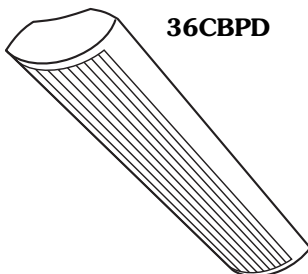
36CBAF/  
36CBAH



36CBAN



36CBPB,PS



36CBPD

Chilled beam units offer:

- An increase in total airflow
- Sensible cooling and heating options
- Induction or convection operation
- Adjustable hole lengths and integral manual damper function on active beams

## Features/Benefits

**Chilled beam systems are suitable for use in high cooling load applications or where individual temperature control is required.**

### Active and passive chilled beam systems

Active (supply air) chilled beams operate with induction, where incoming primary air induces room air through the beam coil. The primary and induced room airflow is then discharged through the outlet slot of the beam into the room, resulting in a total airflow of 3 to 4 times greater than the primary airflow.

Passive beams work using a reverse chimney effect, where cooler air inside the beam has a higher density than the surrounding room air. The difference in density in combination with the height of the beam induces room air down through the beam coil.

# Features/Benefits (cont)



## Comfort control

Airflow can be adjusted using the comfort control function featured on all active chilled beams (option on 36CBAF and 36CBAH unit).

Using the patented control rails, airflow is adjusted by varying the hole lengths in the primary air channel.

Beams have independently adjustable hole lengths on each side, permitting different air distribution patterns (2-way blow, one-way blow, and intermediate positions). Simple adjustment of air distribution and capacity makes it possible to adapt to future changes in conditions.

The adjustable hole lengths also mean that the beam has an integral damper function. Moderate changes in the pressure or flow can be made without significantly affecting the cooling capacity.

## Flow pattern control (FPC)

The airflow pattern can be adjusted using the FPC function featured on active chilled beams with comfort control (not available on 36CBAN units).

Built-in vanes and adjustable rails allow the airflow pattern to be adjusted at different angles: 0, 15, 30, and 45 degrees. Directional adjustments can be achieved in sections of 12 in. within the beam.

Generally, this can reduce air throw by 20%. A beam with FPC can thus be positioned both closer to a wall or to other beams when compared with a beam without FPC.

## High airflow

An optional high airflow feature is available on all active chilled beams. To obtain higher airflows, double rows of holes are used on both sides of the active chilled beam. The double rows of holes give the beam an increased airflow and cooling capacity or a given

pressure drop when compared to beams with a single row of holes.

## Lighting

The 36CBAF and 36CBPD chilled beams can be supplied with optional direct lighting (not available on size 04 units). The light fitting for a fluorescent lamp is positioned at the center of the chilled beams.

The 36CBAE chilled beam can be supplied with optional indirect lighting (not available on size 04 units). Two lighting fittings for fluorescent lamps are recessed into the upper "wings" of the beam. The light is directed upwards, providing indirect and glare-free lighting of the premises.

The capacity of the chilled beams is not affected by the lighting option.

## Sprinkler system

Space for a sprinkler system can be provided as an option in the 36CBAF chilled beam, releasing ceiling space and providing a neater aesthetic appearance with fewer disruptive elements in the ceiling.

Integrating a sprinkler system in the chilled beam is particularly advantageous in smaller rooms or offices where the chilled beam is normally positioned in the center of the room because this is also the best position for the sprinkler.

## 36CB Series chilled beams

The 36CBAF and 36CBAH active chilled beams are for flush mounting in a standard 24 in. wide false ceiling.

The 36CBAE and 36CBAC active chilled beams are for exposed ceiling applications.

The 36CBAN narrow active chilled beam is for flush mounting in a false ceiling. The 36CBAN chilled beam is used when limited space is an issue or integrating the beams with other utilities such as lighting.

The 36CBAQ active chilled beam is for flush mounted applications. The 36CBAQ chilled beam is available in two sizes: 2 x 2 ft or 2 x 4 ft.

The 36CBPB wide passive beam and 36CBPS narrow passive chilled beam can be exposed or flush mounted in a false ceiling. The 36CBPD chilled beam is an exposed passive beam.

# Table of contents

Features/Benefits . . . . .	Page 1,2
Options and Accessories . . . . .	3,4
Application Data . . . . .	5-7
Selection Procedure . . . . .	8
<b>Active Beams</b>	
<b>36CBAC,AE</b>	
Model Number Nomenclature . . . . .	9
Physical Data . . . . .	9
Base Unit Dimensions . . . . .	10,11
Accessory Dimensions . . . . .	12,13
Performance Data . . . . .	14-20
<b>36CBAF,AH</b>	
Model Number Nomenclature . . . . .	21
Physical Data . . . . .	21
Base Unit Dimensions . . . . .	22,23
Accessory Dimensions . . . . .	24,25
Performance Data . . . . .	26-34
<b>36CBAN</b>	
Model Number Nomenclature . . . . .	35
Physical Data . . . . .	35
Dimensions . . . . .	36
Performance Data . . . . .	37-40
<b>36CBAQ</b>	
Model Number Nomenclature . . . . .	41
Physical Data . . . . .	41
Dimensions . . . . .	42
Performance Data . . . . .	43,44
<b>Passive Beams</b>	
<b>36CBPB,PD,PS</b>	
Model Number Nomenclature . . . . .	45
Physical Data . . . . .	45
Base Unit Dimensions . . . . .	46
Accessory Dimensions . . . . .	47
Performance Data . . . . .	48-51
Guide Specifications . . . . .	52-56

# Options and accessories



ITEM	FACTORY-INSTALLED OPTIONS	FIELD-INSTALLED ACCESSORIES
Comfort Control (36CBAC,AF,AH,AE,AN,AQ unit only)	X	
Flow Pattern Control (36CBAC,AE,AF,AH,AQ units only)	X	
High Airflow (36CBAC,AE,AF,AH,AN units only)	X	
Heating Loop (36CBAC,AE,AF,AH,AN,AQ units only)	X	
Lighting* (36CBAE,AF,AN,PD units only)	X	
Mounting Brackets (36CBAC,AE,AF,AH,AQ units only)		X
Suspension Brackets (36CBAE,PB,PS units only)		X
Suspension Rods		X
Enclosure with Sealed End Wall (36CBAE unit only)		X
Enclosure without End Wall (36CBAC,AE units only)		X
End Plate (36CBAE unit only)		X
Casing Adapter (36CBPB,PS units only)		X
Protective Film (36CBAC,AE units only)		X
Gage Rod (36CBAC,AE,AF,AH,AN units only)		X
Flexible Water Pipes		X

\*Available as special order, does not include lights or wiring.

## Factory-installed options

**Comfort control** can be used to adjust total airflow by varying the hole lengths in the primary air channel on the 36CBAC,AF,AH,AE,AN,AQ units only. Comfort control is a standard feature on 36CBAC,AE,AN units.

**Flow pattern control (FPC)** can be used to adjust the air flow pattern on the active chilled beams (not available on the 36CBAN unit) with comfort control at different angles.

**High airflow** is available on the active chilled beams. The double rows of holes on both sides of the beam increase air flow and cooling capacity or a given pressure drop when compared to beams with a single row of holes.

**Heating loops** are available on the active chilled beams. The water heating loop gives high heat outputs with normal water supply temperatures.

**Integrated lighting** is available as a special order on 36CBAE,AF,AN,PD units. Not available on size 04 units. Either high efficiency or high heat output lighting can be selected.

## Field-installed accessories

**Mounting brackets** are available for suspending units in the ceiling (36CBAC,AE,AF,AH,AQ units only).

**Suspension brackets** are available for suspending units in the ceiling (36CBAE,AN,PB,PS units only).

**Suspension rods** are available for all units and have a 24 in. extended casing on the connection end.

**Enclosures with a sealed end wall** are available for the 36CBAE units.

**Enclosures without an end wall** are available for the 36CBAC,AE units. The 36CBAE enclosure can be used between the beam and a wall.

**End plates** are available for the 36CBAE unit enclosures without an end wall.

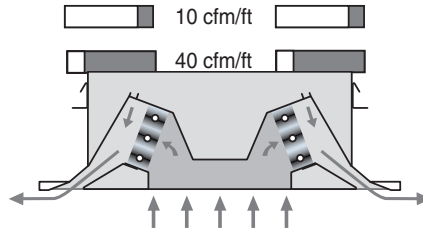
**A casing adapter** is available for use when installing 36CBPB,PS units in a series.

**Protective film** is available for use over painted surfaces when installing 36CBAC,AE units.

**A gage rod** is available for hole length adjustment for units with the comfort control function.

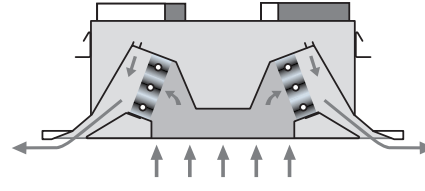
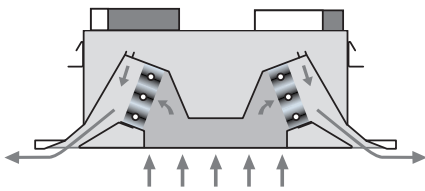
**Flexible water pipes** can be used for connecting units to the water piping system in series applications.

# Options and accessories (cont)



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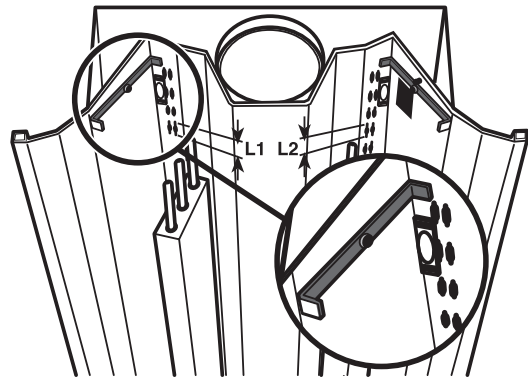
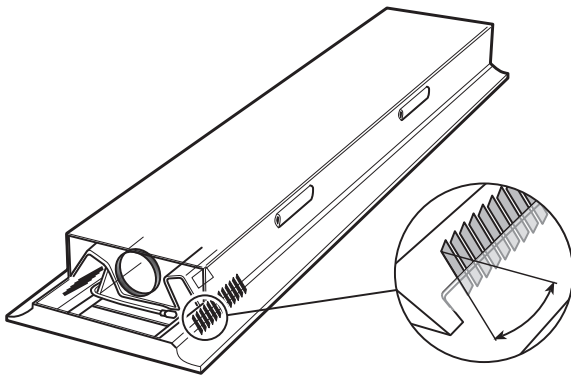
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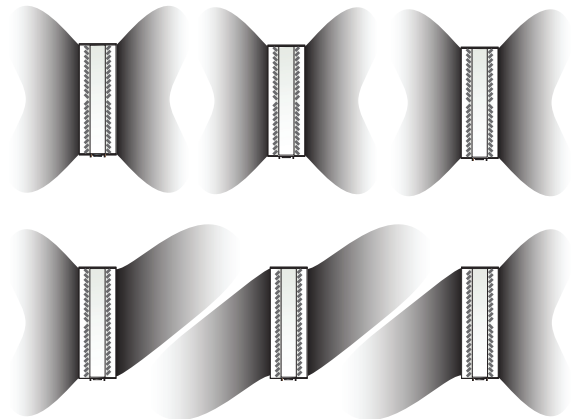
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## COMFORT CONTROL



## HIGH AIRFLOW



## FLOW PATTERN CONTROL

# Application data



Systems with chilled beams are suitable for use in high cooling load applications and/or where there is a requirement for individual temperature control. In offices with normal room heights, the maximum cooling capacity is 25 to 30 Btuh per sq ft of floor area. The limit is set by the maximum permissible velocity in the occupied zone, therefore high room heights can provide the opportunity for supplying a greater cooling effect.

Cooling load calculations must take in account the building's dynamic and thermal storage capacity. Simply adding the "gross loads" together gives an estimate of cooling load which can be approximately 50% too large.

The primary airflow is responsible for the air quality in the room and while also providing basic cooling. The maximum recommended difference for the primary air is 18° F. In certain cases, the supply-air temperature can be increased by a few degrees with a falling outdoor temperature. The chilled beam covers the rest of the cooling load. The water flow is varied according to the load using a room sensor.

Compared with a system where the cooling duty is supplied entirely by air, a chilled beam system reduces the fan power requirements and space needed for air-handling plant equipment and ducting.

Refer to the Application Data book for more information.

## Chilled beams in a system

The primary benefits of a chilled beam system are allowing the ventilation air requirements to be decoupled from the sensible load needs of the different zones of a building. The ventilation air is pretreated by a dedicated outside air unit to provide dehumidified air which will account for the latent loads of the space. This pretreated air is ducted to the

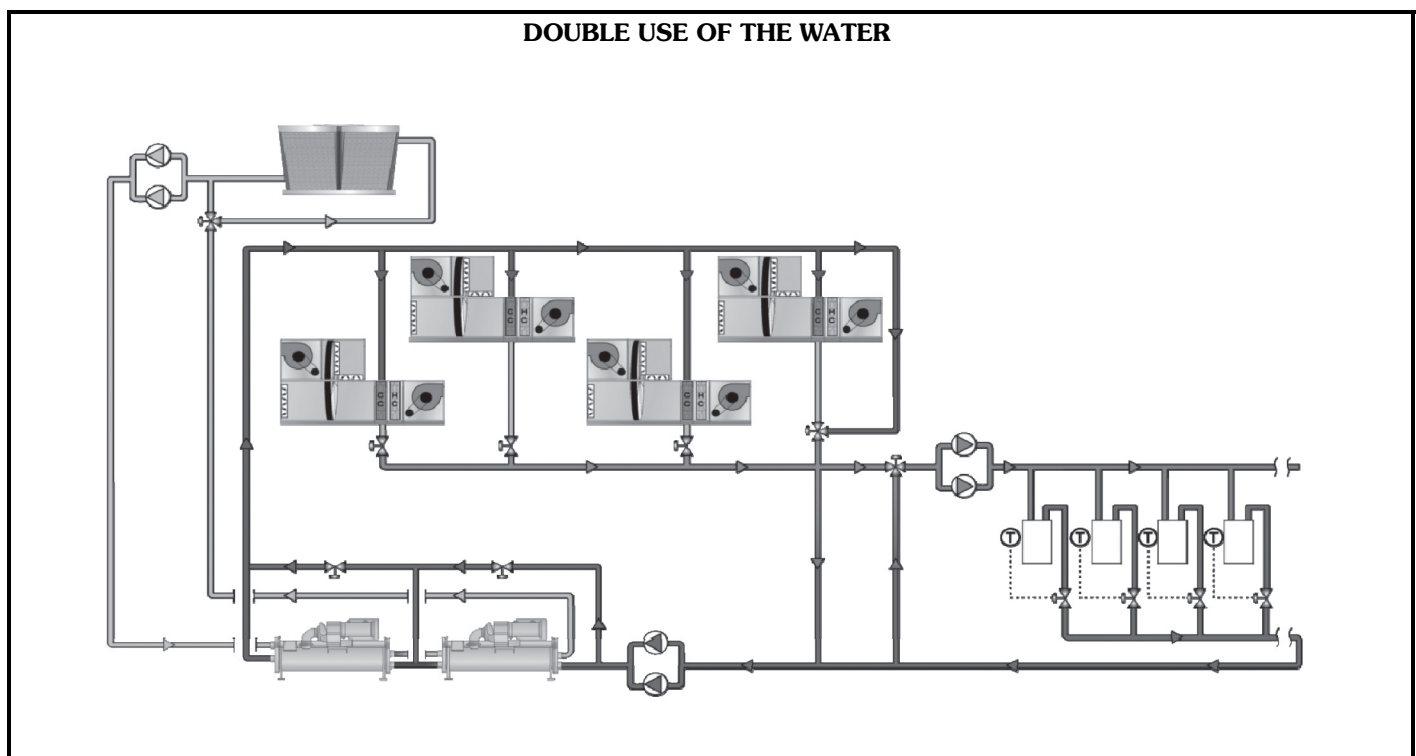
beams under a minimal amount of pressure and discharged along the length of the beam. The air moves along the length of a hydronic heat exchange coil inside the beam and induces room air to pass through the coil thus accounting for the sensible load of the space. Since the dedicated outside air unit is only providing ventilation and latent load volumes of air the amount of air can be downsized thus allowing less fan powered to be used.

The chilled beam system is comprised of both air side and water side components. The air side is comprised of 100% outside air which is treated through a central air-handling unit and is ducted to the unit. The chilled beam also has a coil which is connected to a water management system. The water which is provided to the beams should be a degree or two above the dew point (56 F to 60 F) of the space to avoid any condensation. Typically there are no drain pans in the chilled beams.

Due to the higher water temperatures than a traditional building HVAC system there are many alternatives system schemes that can be used in an applied chilled beam system. A few examples include:

## Double use of the water

In a large builder application the cold water, typically 45 F, which is exiting the chillers can first be delivered to the air handling units. This cold water is used to condition the incoming outside air which is used to satisfy the latent loads. The existing water is then sent to the beams. A three-way valve which has a dew point sensor monitoring the zone will mix the water and provide water to the beams slightly above the dew point of the zone. The water is then returned to the chiller at very large temperature delta.





# Application data (cont)

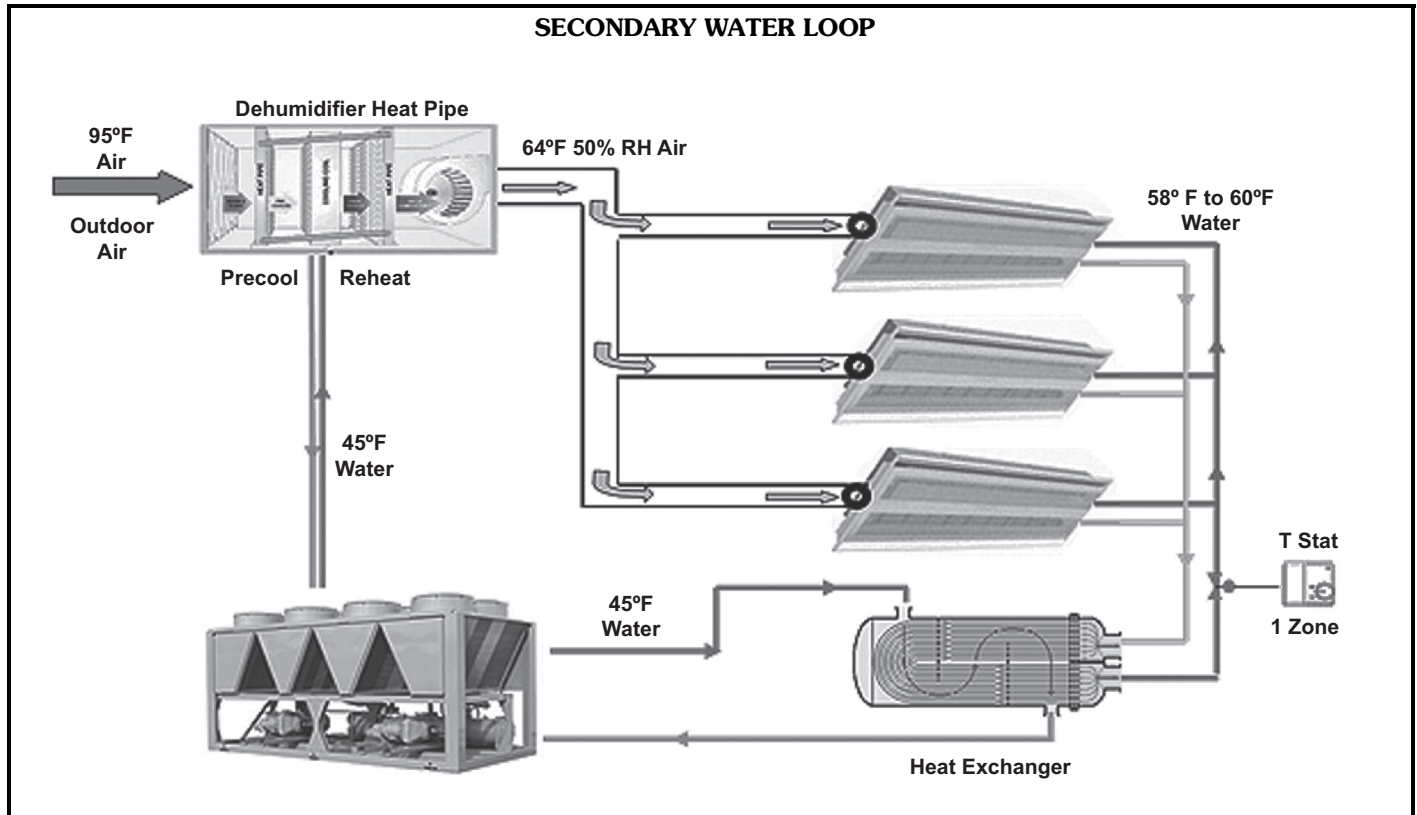


## Secondary water loop

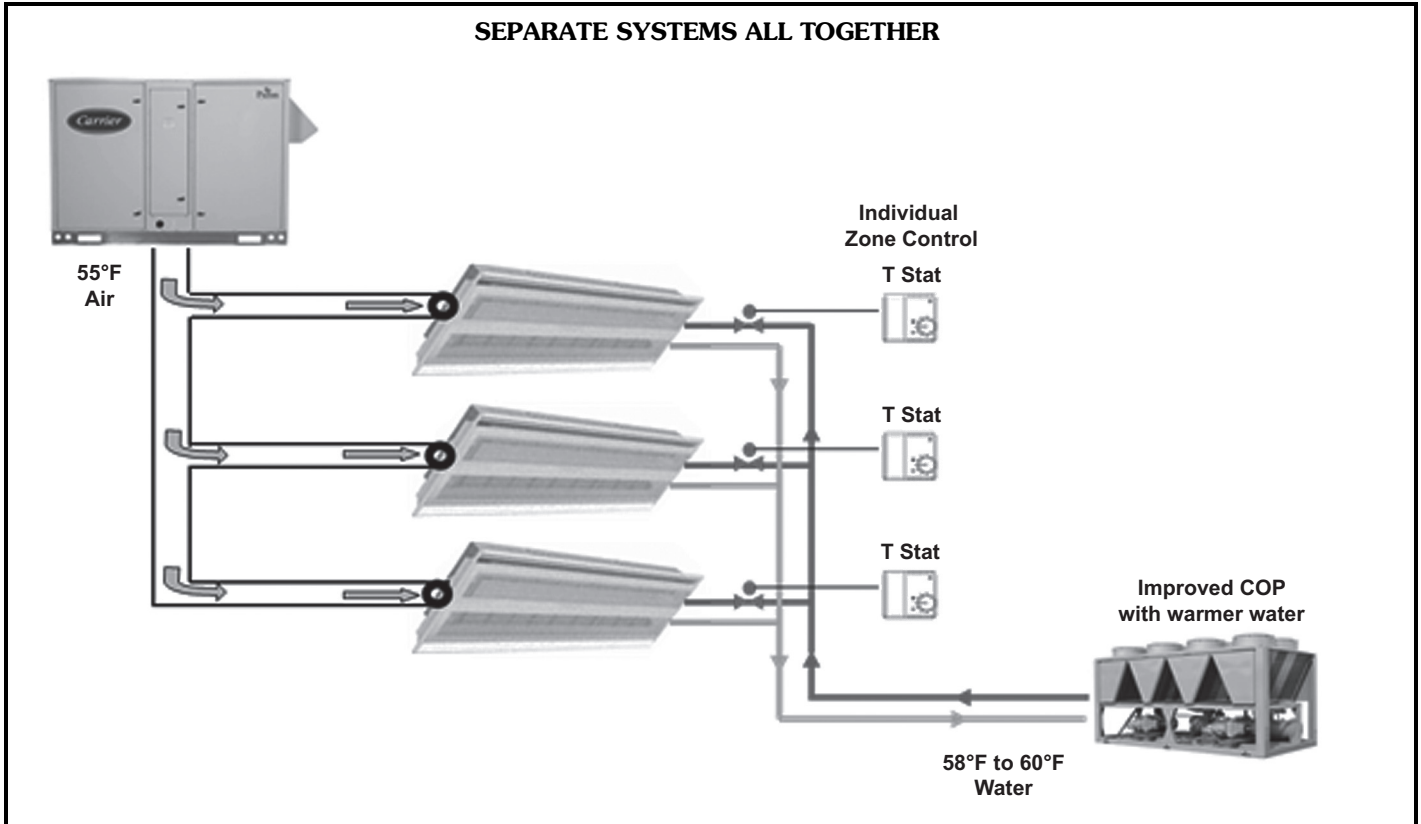
Another common method in a chilled beam system is to use a secondary water loop to supply water to the beams. The chiller provides cold water to both the dedicated outside AHU (air-handling unit) to treat the ventilation air and to a heat exchanger. The heat exchanger then provides water to the beams at the desired 58 to 60 degree water. The heat exchanger would have a dew point sensor providing information of the zones relative humidity levels and adjust the water temperature accordingly.

## Separate systems all together

It is also possible to separate the air side and the water side of the system completely and bring them together at the chilled beam. The ventilation air can be treated by a dedicated air unit which is DX (direct expansion) controlled such as a DOAS (direct outdoor air option) rooftop unit. The outside air is treated to provide both the ventilation and latent requirements of the building and sent directly to the beams. The water for the beams can be supplied by a dedicated chiller loop. Due to the higher water temperatures required by the chilled beams the COP (coefficient of performance) of the chiller can be improved.



**SEPARATE SYSTEMS ALL TOGETHER**



# Selection procedure (36CBPB12 unit example)



To select a 36CB chilled beam, use the product selection software or contact your Carrier representative. Passive beams can also be selected by following the example later in this section.

Taking the room, its loads and the requirement for the chilled beam as its starting point, the selection software proposes different beams that are capable of meeting the set requirements. The result is presented in a list of technical data including the cooling capacity, airflow, air pressure drop, hole length, noise generated, water flow, and water pressure drop.

The selection software has the ability to draw flow patterns for the airflow in the room (in plan view and sections) with one or more chilled beams. The program also takes into account that airflow can be different on each side of the beams, and that the air distribution depends on the FPC settings. The result for a number of different beams can be compared in a rapid and flexible manner, providing a good basis for design decisions.

Input data, codes and technical data can be presented in a printout, as well as a drawing of a section with flow patterns. Because the input data documents the conditions in the form of thermal loads, etc., this printout can be used as a valuable document for the quality assurance of the project design.

## Selection Procedure Example

### I Determine the temperature difference between air and water.

Given:

Maximum Beam Length .....	12 ft
Cooling Capacity .....	2400 Btuh
Room Temperature .....	75 F
Chilled Water Temperature .....	57 to 61 F

Temperature difference between air and water  $\Delta t = 75 - (57 + 61)/2 = 16$  R. See Cooling Effect in Btuh/ft Effective Length figure on page 49 for results for a wide passive beam with perforated bottom plate and water flow 0.8 gpm:  $P_{k0.8} = 220$  Btuh/ft.

### II Determine the water flow and cooling capacity.

The figure on page 49, Water Flow (GPM) results in water flow  $q_w = 1.15$  gpm for  $\Delta t_w = 4$  R and cooling capacity 2400 Btuh.

### III Determine the correction factor for water flow.

Correction for water flow, based on the figure on page 50, Correction of Cooling Effect for Water Flow Other than 0.8 GPM, uses the formula  $K = P_{k1.15}/P_{k0.8} = 1.04$ .

The actual effect is therefore 4% higher than the result given by the diagram, due to the higher water flow.  $P_k = 1.04 \times 220 = 229$  Btuh/ft

### IV Select the appropriate unit.

The required effective length (coil length) is found using:  $L_{eff} = 2400/229 = 10.5$  ft

The casing length is found using:  $L = 10.5 + 0.4 = 10$  ft 10 in. It is thus not necessary to use the maximum casing length 12 ft.

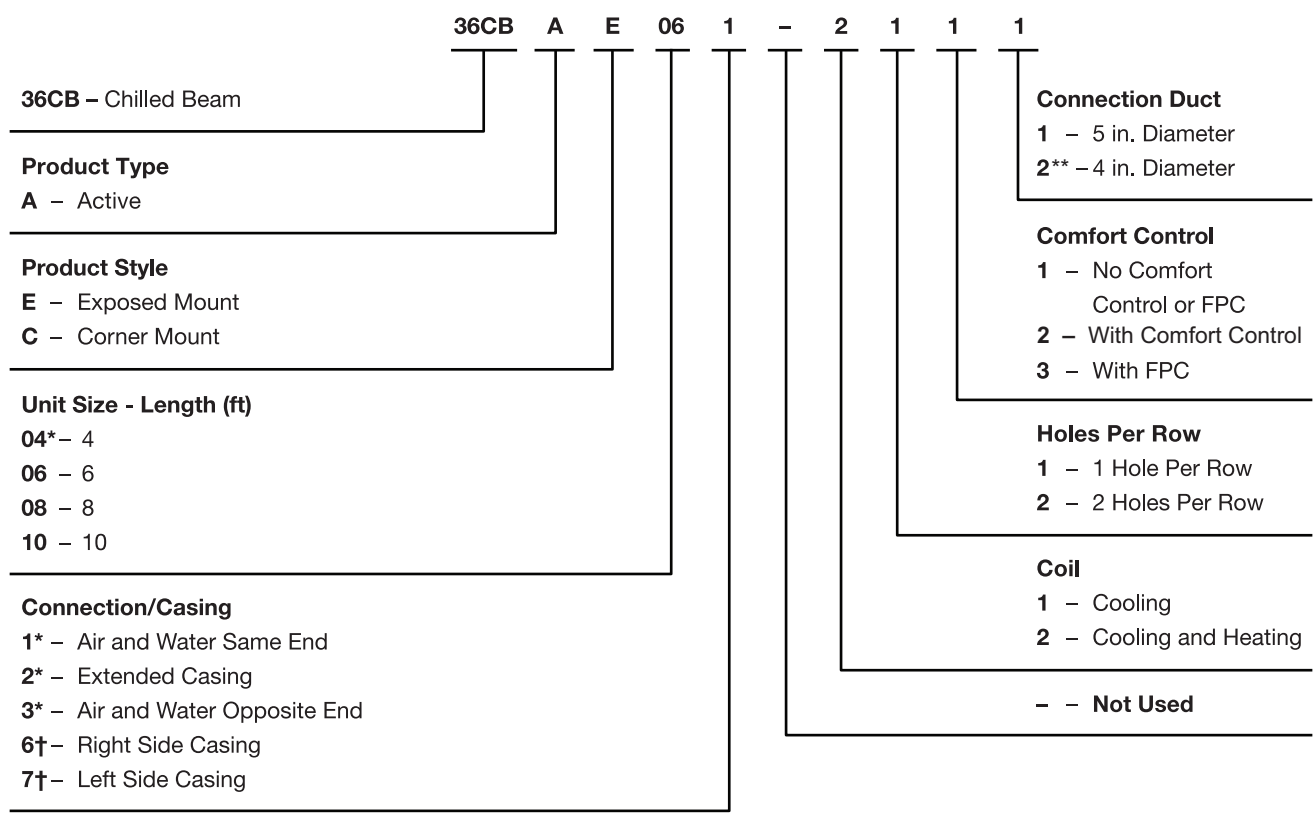
The figure on page 38, Water Pressure Drop (in. wg) — 36CBPB Unit, gives the pressure drop of water across the coil as  $\Delta p_w = 3.5$  in. wg.



# Model number nomenclature



36CBAC,AE Series Units



**LEGEND**

**FPC** — Flow Pattern Control

\*36CBAE units only.  
 †36CBAC units only.  
 \*\*Not available on units with 2 holes per row of air holes (high airflow).

## Physical data

### 36CBAC UNIT PHYSICAL DATA

36CBAC UNIT SIZE	06	08	10
Beam Length (ft)	6	8	10
Coil Length (ft)	5	7	9
Coil Connection Size (in.)	1		
Weight (lb)	57	77	101

### 36CBAE UNIT PHYSICAL DATA

36CBAE UNIT SIZE	04	06	08	10
Beam Length (ft)	4	6	8	10
Coil Length (ft)	3	5	7	9
Coil Connection Size (in.)	1			
Weight (lb)	44	62	81	101

### 36CBAC,AE UNIT ENCLOSURE PHYSICAL DATA

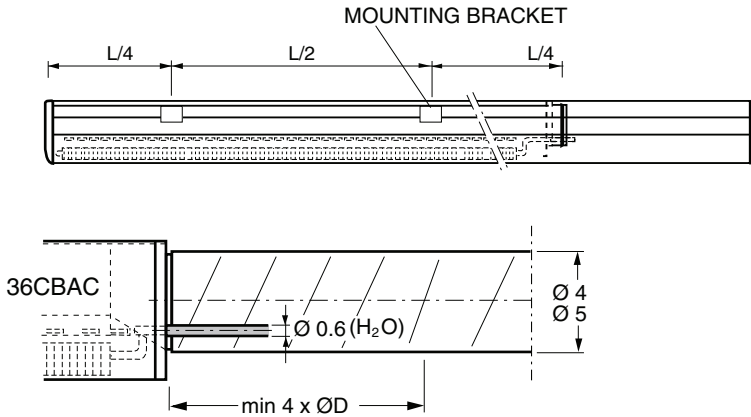
36CBAC,AE UNIT ENCLOSURE PHYSICAL DATA			
<b>36CBAC Unit Enclosure</b>			
Length (in.)	12 to 20	20 to 35	35 to 67
Weight (lb)	7	11	21
<b>36CBAE Unit Enclosure</b>			
<b>Sealed End Wall Enclosure</b>			
Length (in.)	12	20	35
Weight (lb)	3	6	9
<b>No End Wall Enclosure</b>			
Length (in.)	12 to 20	20 to 35	35 to 67
Weight (lb)	8	12	22

# Base unit dimensions

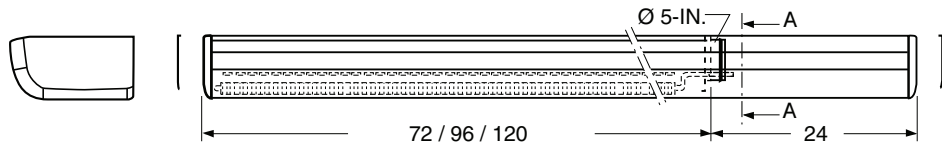


36CBAC,AE Series Units

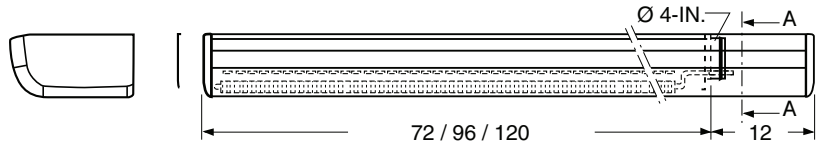
## 36CBAC BASE UNIT AND EXTENDED CASING DIMENSIONS



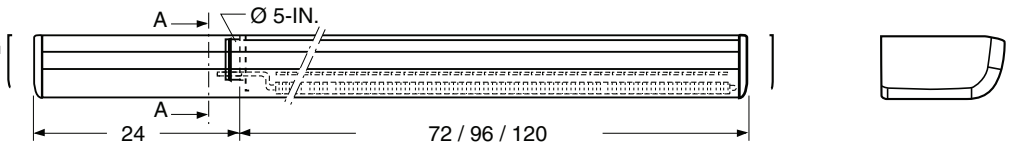
RIGHT SIDE CONNECTION,  
EXTENDED CASING  
Ø 5 IN. DUCT CONNECTION  
1 OR 2 HOLE ROWS



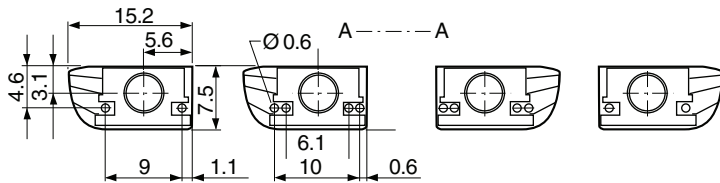
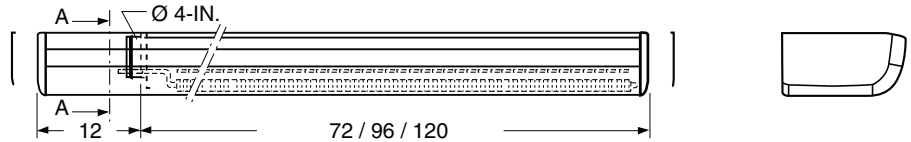
RIGHT SIDE CONNECTION,  
EXTENDED CASING  
Ø 4 IN. DUCT CONNECTION  
1 HOLE ROW



LEFT SIDE, EXTENDED CASING  
Ø 5 IN. DUCT CONNECTION  
1 OR 2 HOLE ROWS



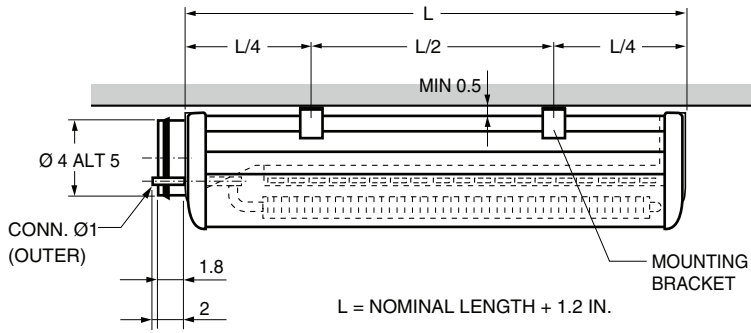
LEFT SIDE, EXTENDED CASING  
Ø 4 IN. DUCT CONNECTION  
1 HOLE ROW



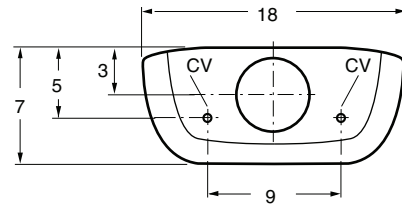
36CBAC UNIT SIZE	WEIGHT (lb)
06	57
08	77
10	101

NOTE: Dimensions shown in inches.

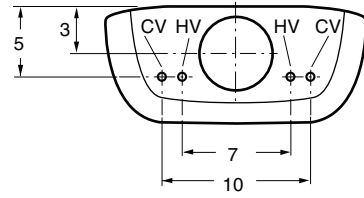
### 36CBAE BASE UNIT DIMENSIONS



WATER VOLUME COOLING = 0.13 GPM COIL  
 WATER VOLUME HEATING = 0.07 GPM COIL



CV = COOLING WATER (COOLING MODE)  
 HV = HEATING WATER (HEATING MODE)



36CBAE UNIT SIZE	LENGTH (ft)	WEIGHT (lb)
04	4	44
06	6	62
08	8	81
10	10	101

NOTE: Dimensions shown in inches, unless otherwise indicated.

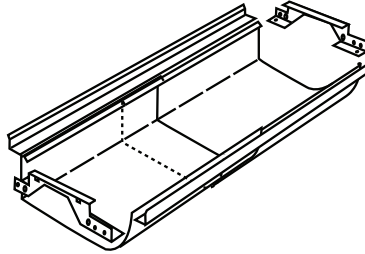
# Accessory dimensions



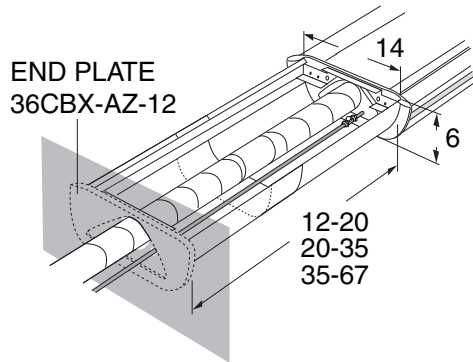
36CBAC,AE Series Units

## 36CBAC,AE ACCESSORY UNIT DIMENSIONS

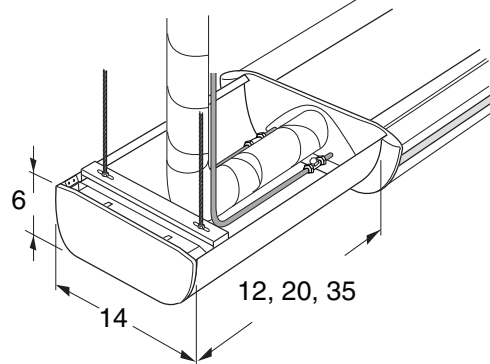
36CBAC UNIT ENCLOSURE  
NO END WALL



36CBAE UNIT ENCLOSURE  
NO END WALL



36CBAE UNIT ENCLOSURE  
SEALED END WALL

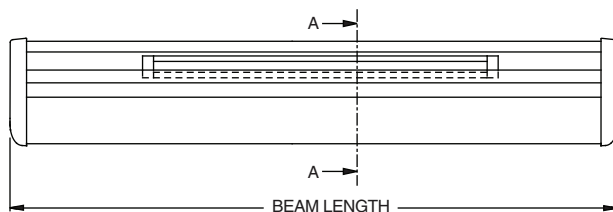
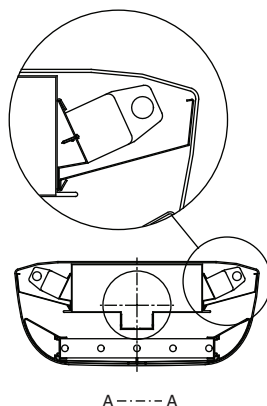


36CBAC UNIT ENCLOSURE, NO END WALL	LENGTH (in.)	WEIGHT (lb)
36CBX-TZ-09-20	12 to 20	7
36CBX-TZ-09-36	20 to 35	11
36CBX-TZ-09-68	35 to 67	21

36CBAE UNIT ENCLOSURE, NO END WALL	LENGTH (in.)	WEIGHT (lb)
36CBX-AZ-09-20	12 to 20	8
36CBX-AZ-09-36	20 to 35	12
36CBX-AZ-09-68	35 to 67	22

36CBAE UNIT ENCLOSURE, SEALED END WALL	LENGTH (in.)	WEIGHT (lb)
36CBX-AZ-10-12	12	3
36CBX-AZ-10-24	20	6
36CBX-AZ-10-36	35	9

NOTE: Dimensions shown in inches.

**36CBAE UNIT DIMENSIONS — LIGHTING OPTION**


36CBAE UNIT SIZE	ARMATURE LENGTH (ft)	NUMBER OF FITTINGS	OUTPUT (W) HE/HO
06	4	2*	28/54
08	5	2*	35/49
10	5	2*	35/49

**LEGEND**

**HE** — High Efficiency  
**HO** — High Output

\*One fitting in each wing.

**NOTES:**

1. The fitting has a T5 fluorescent lamp which is available in two power levels, HE and HO, depending on how much light is required. The HE version has an output of 28 W for a 4 ft fitting and 35 W for a 5 ft fitting. The HO version has an output of 54 W for a 4 ft fitting and 49 W for a 5 ft fitting.
2. The color temperature of the fluorescent lamp is 830/3000 K.
3. The connection cable can be supplied with a plug, Ensto or Wieland connector.

# Performance data



## 36CBAC UNIT COOLING CAPACITY, ONE-WAY BLOW

36CBAC, AE Series Units

36CBAC UNIT SIZE	WATER PRESSURE DROP (ft wg)	SUPPLY AIR FLOW (cfm)	TOTAL COOLING CAPACITY (Btuh) $\Delta T$ (F)			COIL COOLING CAPACITY (Btuh) $\Delta T$ (F)			SOUND PRESSURE LEVEL (dB[A])
			11	14	18	11	14	18	
06	0.7	13	614	751	887	409	546	682	<20
		17	819	989	1177	546	734	921	<20
		21	989	1211	1433	665	887	1109	25
		25	1143	1382	1638	751	989	1245	28
08	0.9	17	546	717	904	546	717	904	25
		21	1024	1245	1484	699	921	1160	25
		25	1194	1467	1740	802	1075	1348	25
		30	1365	1672	1979	904	1211	1518	27
		34	1501	1842	2167	989	1314	1638	27
		38	1621	1979	2320	1041	1382	1723	29
10	1.2	21	989	1211	1433	665	887	1109	25
		25	1211	1484	1757	819	1092	1365	25
		30	1399	1723	2030	955	1262	1587	25
		34	1587	1945	2286	1058	1416	1774	27
		38	1757	2150	2525	1160	1552	1945	28
		42	1894	2303	2730	1245	1655	2064	28
		47	2030	2457	2900	1314	1740	2184	29

**LEGEND**

- A** — Absorbtion
- dB** — Decibel
- $\Delta T$  — Temperature Change

**NOTES:**

1. Water flow is equal to 0.8 gpm.
2. Assume static pressure drop on the air side is 0.25 in. wg.
3.  $\Delta T$  equals the difference between room air temperature and average water temperature.
4. Sound pressure level as measured in a room with 32.8 sq ft room absorbtion.
5. Total cooling capacity of the beam equals the cooling capacity of the coil plus the cooling capacity of the primary air, where the

cooling capacity of the primary air is based on a difference of 14.4 F between the primary air and room temperatures.

6. Data based on tests using the Nordtest method which requires a zero temperature difference between the air entering the beam coil and the air at 3.6 ft above the floor surface. To achieve this, the walls in the test room are cooled. In actual conditions, the temperature difference is normally 1.8 to 3.6 F. This is why the temperature difference  $\Delta T$  should be increased by 1.8 to 3.6 F to avoid oversizing of the beam. Therefore, the table value can be increased by 10 to 20%.
7. Sound is increased by 2 to 3 dB(A) with top connections.
8. The chilled beam can be supplied as a special unit for higher air-flow rates than those listed in these tables.





### 36CBAE UNIT COOLING CAPACITY, TWO-WAY BLOW

36CBACAE Series Units

36CBAE UNIT SIZE	WATER PRESSURE DROP (ft wg)	SUPPLY AIR FLOW (cfm)	TOTAL COOLING CAPACITY (Btuh) ΔT (F)			COIL COOLING CAPACITY (Btuh) ΔT (F)			SOUND PRESSURE LEVEL (dB[A])
			11	14	18	11	14	18	
04	0.4	11	699	887	1058	546	717	887	<15
		21	1075	1314	1570	734	989	1245	<15
		32	1314	1587	1860	819	1092	1365	15
06	0.7	21	1314	1638	1962	989	1297	1638	<15
		32	1655	2047	2423	1160	1552	1928	16
		42	1911	2337	2747	1262	1672	2081	19
		53	2133	2559	3003	1314	1740	2184	23
08	0.9	21	1433	1808	2150	1092	1484	1825	<15
		32	1911	2371	2849	1416	1877	2354	<15
		42	2235	2747	3276	1570	2098	2627	15
		53	2508	3054	3600	1689	2235	2781	16
		64	2747	3327	3907	1757	2337	2934	18
		74	2951	3548	4146	1808	2405	3003	20
10	1.2	32	2047	2542	3054	1552	2064	2576	<15
		42	2491	3088	3702	1825	2423	3037	<15
		53	2815	3480	4146	1996	2661	3327	16
		64	3088	3787	4487	2098	2815	3497	18
		74	3327	4060	4777	2184	2917	3634	21
		85	3566	4299	5050	2252	2986	3736	23
		95	3770	4538	5289	2286	3054	3821	25

**LEGEND**

- A** — Absorbion
- dB** — Decibel
- ΔT** — Temperature Change

**NOTES:**

1. Water flow is equal to 0.8 gpm.
2. Assume static pressure drop on the air side is 0.25 in. wg.
3. ΔT equals the difference between room air temperature and average water temperature.
4. Sound pressure level as measured in a room with 32.8 sq ft room absorbion.
5. Total cooling capacity of the beam equals the cooling capacity of the coil plus the cooling capacity of the primary air, where the cooling capacity of the primary air is based on a difference of 14.4 F between the primary air and room temperatures.

6. Data based on tests using the Nordtest method which requires a zero temperature difference between the air entering the beam coil and the air at 3.6 ft above the floor surface. To achieve this, the walls in the test room are cooled. In actual conditions, the temperature difference is normally 1.8 to 3.6 F. This is why the temperature difference ΔT should be increased by 1.8 to 3.6 F to avoid oversizing of the beam. Therefore, the table value can be increased by 10 to 20%.
7. Sound is increased by 2 to 3 dB(A) with top connections.
8. The chilled beam can be supplied as a special unit for higher air-flow rates than those listed in these tables.

# Performance data (cont)



## 36CBAE UNIT COOLING CAPACITY, HIGH AIRFLOW

36CBAC,AE Series Units

36CBAE UNIT SIZE	WATER PRESSURE DROP (ft wg)	SUPPLY AIR FLOW (cfm)	TOTAL COOLING CAPACITY (Btuh) ΔT (F)			COIL COOLING CAPACITY (Btuh) ΔT (F)		
			11	14	18	11	14	18
06	0.7	64	1542	1854	2165	932	1244	1555
		74	1714	2047	2381	1002	1335	1669
		85	1890	2248	2606	1076	1434	1792
		95	2064	2447	2831	1148	1532	1915
08	0.9	85	2140	2581	3023	1326	1767	2210
		95	2294	2754	3214	1379	1839	2299
		106	2432	2903	3375	1415	1886	2358
		117	2570	3053	3536	1451	1934	2417
10	1.2	106	2782	3369	3958	1765	2352	2941
		117	2922	3523	4125	1803	2405	3006
		127	3051	3661	4271	1831	2441	3051
		138	3182	3801	4422	1860	2479	3100
		148	3297	3922	4547	1873	2498	3123

**LEGEND**

ΔT — Temperature Change

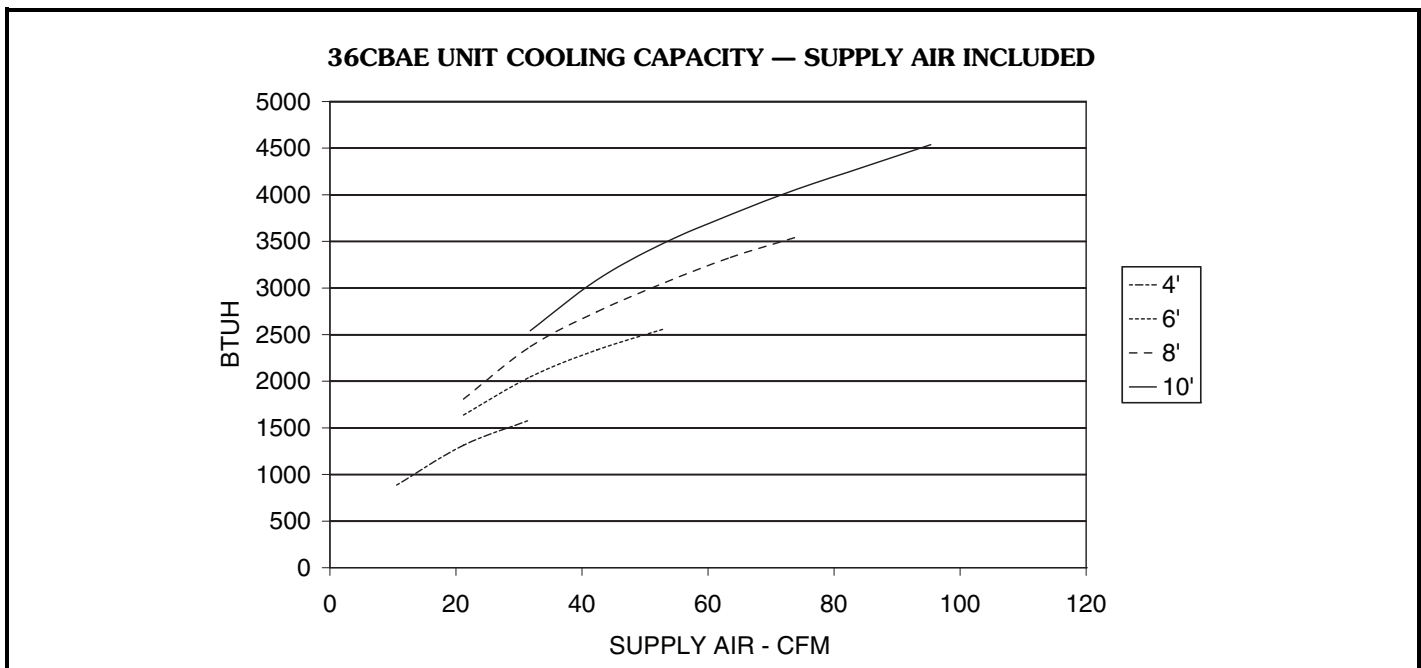
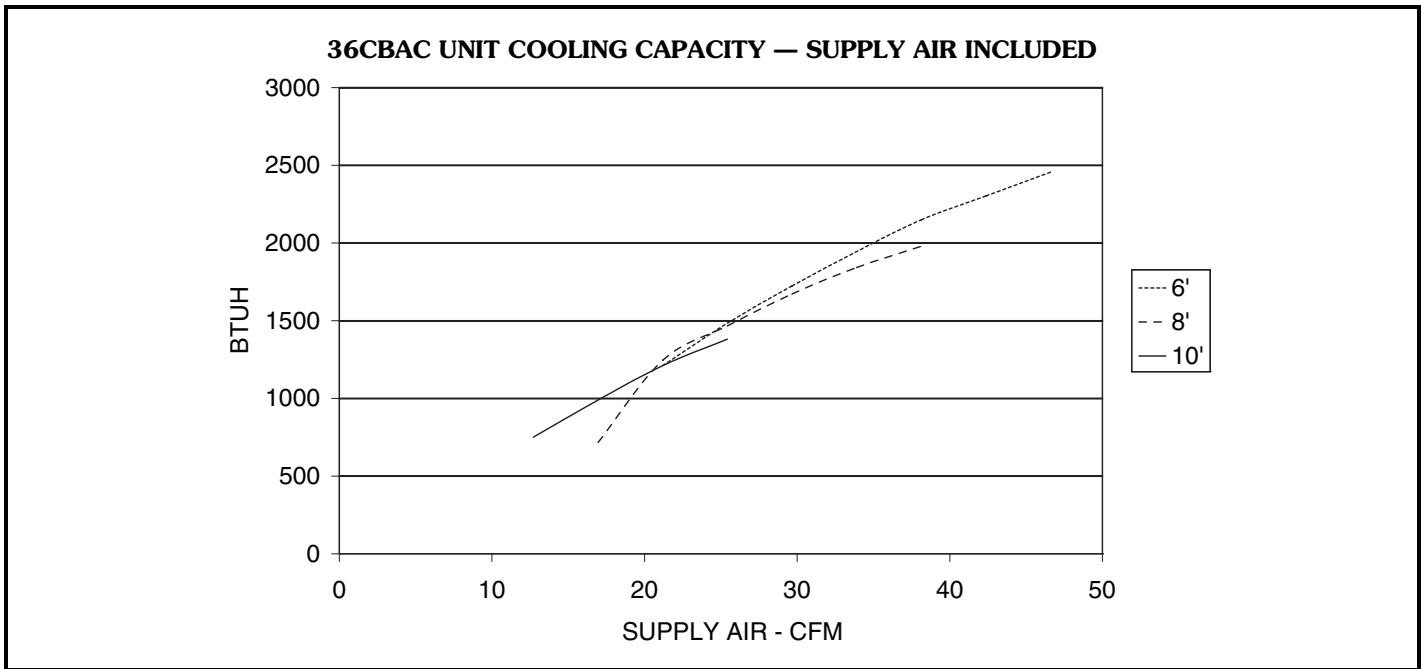
**NOTES:**

1. Water flow is equal to 0.8 gpm.
2. Assume static pressure drop on the air side is 0.25 in. wg.
3. ΔT equals the difference between room air temperature and average water temperature.
4. High airflow function data for 36CBAE04 units can be supplied upon request.

## 36CBAE UNIT COOLING CAPACITY FACTOR FOR ONE-WAY AND INTERMEDIATE BLOW

36CBAE UNIT SIZE	AIR DISTRIBUTION	MAXIMUM PRIMARY AIRFLOW (cfm)	CAPACITY FACTOR
04	One-way	5	0.8
	70 to 30%	10	0.9
06	One-way	15	0.8
	70 to 30%	15	0.9
08	One-way	20	0.8
	70 to 30%	25	0.9
10	One-way	25	0.8
	70 to 30%	30	0.9

NOTE: The value given in the unit cooling capacity table is multiplied by the capacity factor in the above table to reflect the reduced coil capacity in a one-way blow distribution or intermediate air distribution position.



# Performance data (cont)



## 36CBAC UNIT HEATING CAPACITY, ONE-WAY BLOW

36CBAC UNIT SIZE	WATER PRESSURE DROP (ft wg)	SUPPLY AIR FLOW (cfm)	COIL HEATING CAPACITY (Btuh) — ΔT (F)		
			36	45	54
06	0.27	13	887	546	682
		17	1194	734	921
		21	1433	887	1109
		25	1604	989	1245
08	0.37	17	1160	1450	1740
		21	1501	1877	2252
		25	1740	2184	2627
		30	1962	2457	2951
		34	2133	2661	3207
		38	2252	2815	3361
10	0.43	21	1450	1808	2167
		25	1774	2218	2661
		30	2047	2559	3071
		34	2303	2883	3446
		38	2525	3156	3787
		42	2695	3361	4026
		47	2832	3531	4248

LEGEND

ΔT — Temperature Change

NOTES:

1. Water flow is equal to 0.8 gpm.
2. Assume static pressure drop on the air side is 0.25 in.wg.
3. ΔT equals the difference between room air temperature and average water temperature.
4. Heating capacity shown on unit without extended casing.

## 36CBAE UNIT HEATING CAPACITY, TWO-WAY BLOW

36CBAE UNIT SIZE	WATER PRESSURE DROP (psi)	SUPPLY AIR FLOW (cfm)	COIL HEATING CAPACITY (Btuh) — ΔT (F)		
			36	45	54
04	0.20	11	1177	1450	1723
		21	1587	2013	2423
		32	1774	2218	2661
06	0.27	21	2150	2627	3190
		32	2508	3156	3753
		42	2730	3395	4060
		53	2849	3531	4265
08	0.37	21	2371	3020	3566
		32	3071	3804	4589
		42	3395	4265	5118
		53	3668	4538	5425
		64	3804	4743	5715
10	0.43	74	3924	4879	5852
		32	3361	4197	5016
		42	3958	4913	5920
		53	4333	5408	6483
		64	4555	5715	6824
		74	4726	5920	7080
		85	4879	6056	7285
95	4947	6210	7455		

LEGEND

ΔT — Temperature Change

NOTES:

1. Water flow is equal to 0.8 gpm.
2. Assume static pressure drop on the air side is 0.25 in. wg.
3. ΔT equals the difference between room air temperature and average water temperature.



### 36CBAC UNIT SOUND POWER LEVEL

36CBAC UNIT	CORRECTION $K_{oct}$ (dB)							
	OCTAVE BAND, MEAN FREQUENCY, Hz							
	63	125	250	500	1000	2000	4000	8000
06	-8	-12	-6	-2	-1	-4	-7	-3
08	-8	-12	-6	-2	-1	-4	-7	-3
10	-8	-12	-6	-2	-1	-4	-7	-3
Tol ±	6	3	2	2	2	2	2	3

LEGEND  
Tol ± — Tolerance (dB)

NOTE: The sound power levels for each octave band are obtained by adding the sound pressure level dB(A) to the corrections,  $K_{oct}$ , given in the table above. The correction is the average in the area of application of the chilled beam.

### 36CBAC UNIT SOUND ATTENUATION

36CBAC UNIT	SOUND ATTENUATION IN PRIMARY AIR DUCT OF THE BEAM (dB)							
	OCTAVE BAND, MEAN FREQUENCY, Hz							
	63	125	250	500	1000	2000	4000	8000
06	23	19	10	8	8	13	13	12
08	23	19	10	8	8	13	13	12
10	23	19	10	8	8	13	13	12
Tol ±	6	3	2	2	2	2	2	3

LEGEND  
Tol ± — Tolerance (dB)

NOTE: The average sound attenuation of chilled beam from duct to room includes the end reflection of the connecting duct in ceiling mounting.

### 36CBAE UNIT SOUND POWER LEVEL

36CBAE UNIT	CORRECTION $K_{oct}$ (dB)							
	OCTAVE BAND, MEAN FREQUENCY, Hz							
	63	125	250	500	1000	2000	4000	8000
04	-4	0	3	3	-2	-4	-11	-18
06	-4	0	3	3	-2	-4	-11	-18
08	-4	0	3	3	-2	-4	-11	-18
10	-4	0	3	3	-2	-4	-11	-18
Tol ±	6	3	2	2	2	2	2	3

LEGEND  
Tol ± — Tolerance (dB)

NOTE: The sound power levels for each octave band are obtained by adding the sound pressure level dB(A) to the corrections,  $K_{oct}$ , given in the table above. The correction is the average in the area of application of the chilled beam.

### 36CBAE UNIT SOUND ATTENUATION

36CBAE UNIT	SOUND ATTENUATION IN PRIMARY AIR DUCT OF THE BEAM (dB)							
	OCTAVE BAND, MEAN FREQUENCY, Hz							
	63	125	250	500	1000	2000	4000	8000
04	23	19	10	8	8	13	13	12
06	23	19	10	8	8	13	13	12
08	23	19	10	8	8	13	13	12
10	23	19	10	8	8	13	13	12
Tol ±	6	3	2	2	2	2	2	3

LEGEND  
Tol ± — Tolerance (dB)

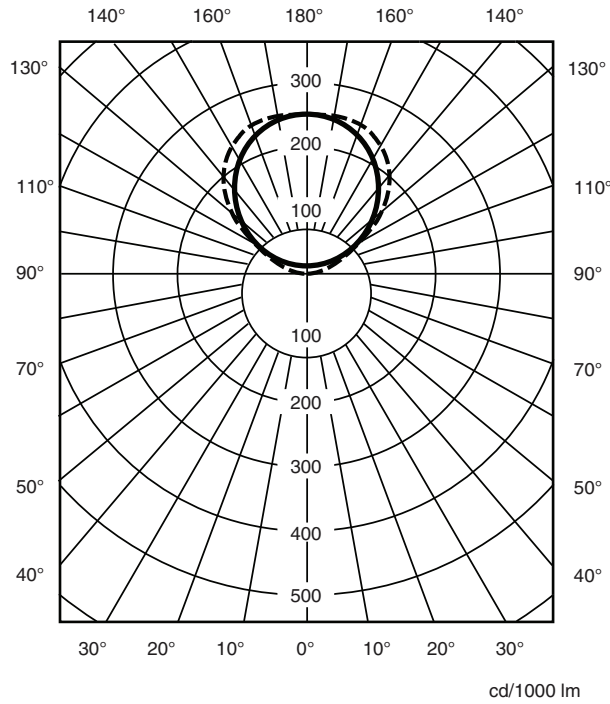
NOTE: The average sound attenuation of chilled beam from duct to room includes the end reflection of the connecting duct in ceiling mounting.

# Performance data (cont)



36CBAC,AE Series Units

**36CBAE LIGHT DISTRIBUTION CURVE**



36CBAE UNIT SIZE	OUTPUT (W) HE/HO
06	28/54
08	35/49
10	35/49

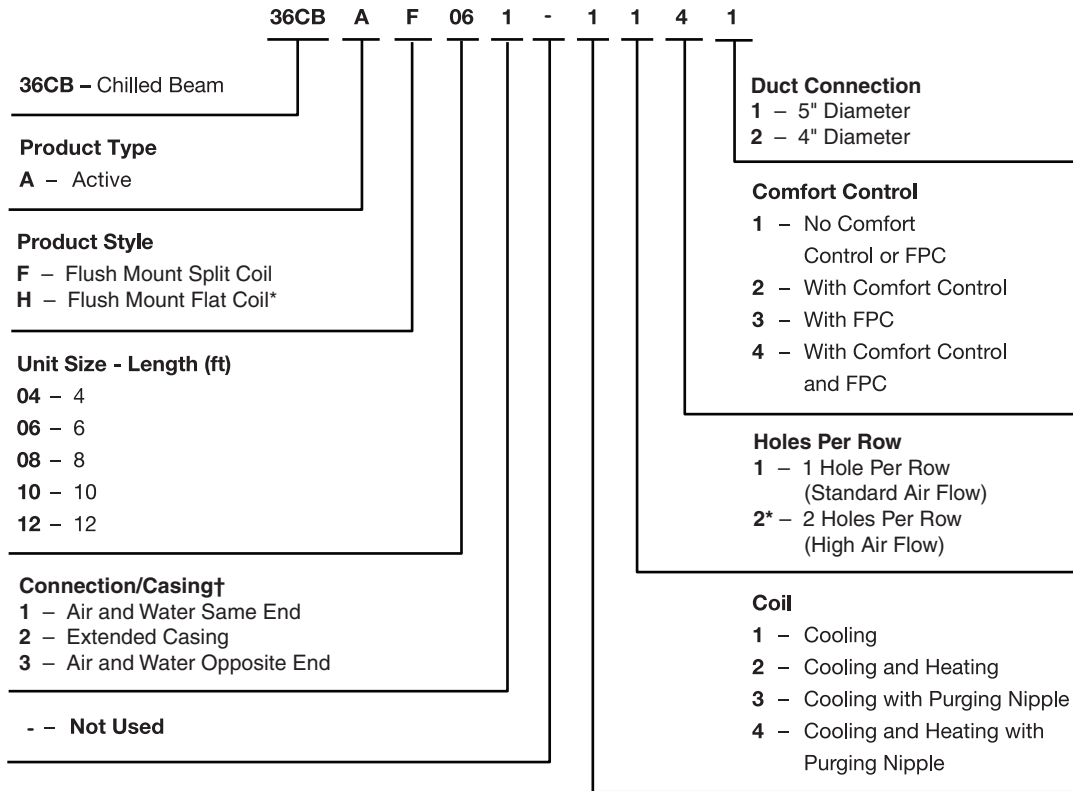
**LEGEND**

- HE** — High Efficiency
- HO** — High Output
- High Efficiency
- - - High Output

NOTE: Light output shown in candle power per 1000 lumens.



# Model number nomenclature



36CBAF/AH Series Units

**LEGEND**

**FPC** — Flow Pattern Control

\*Not available on unit size 12.

†Contact application engineering if alternative connections are required.

## Physical data

### 36CBAF UNIT PHYSICAL DATA

36CBAF UNIT SIZE	04	06	08	10	12
Beam Length (ft)	4	6	8	10	12
Coil Length (ft)	3	5	7	9	11
Coil Connection Size (in.)	1				
Weight (lb)	44	59	79	101	121

### 36CBAH UNIT PHYSICAL DATA

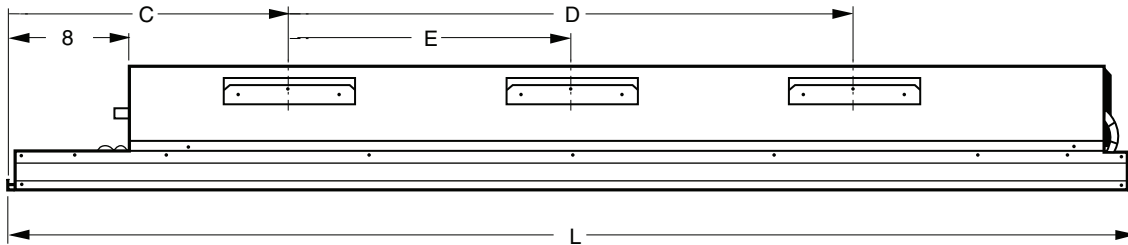
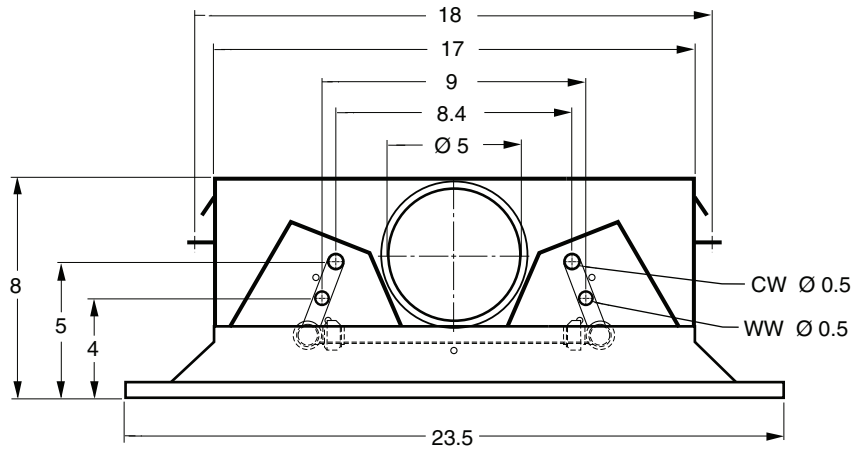
36CBAH UNIT SIZE	04	06	08	10
Beam Length (ft)	4	6	8	10
Coil Length (ft)	3	5	7	9
Coil Connection Size (in.)	1			
Weight (lb)	40	55	71	86

# Base unit dimensions



36CBAF/AH Series Units

## 36CBAF UNIT DIMENSIONS



36CBAF UNIT SIZE	L (ft)	C (ft)	D (ft)	E (ft)	WEIGHT (lb)
04	4	1	2	—	44
06	6	1	3	—	59
08	8	2	4	—	79
10	10	2	5	—	101
12	12	3	7	3	121

36CBAF UNIT SIZE, EXTENDED CASING	L (ft)	C (ft)	D (ft)
06	8	3	3
08	10	4	4
10	12	4	5

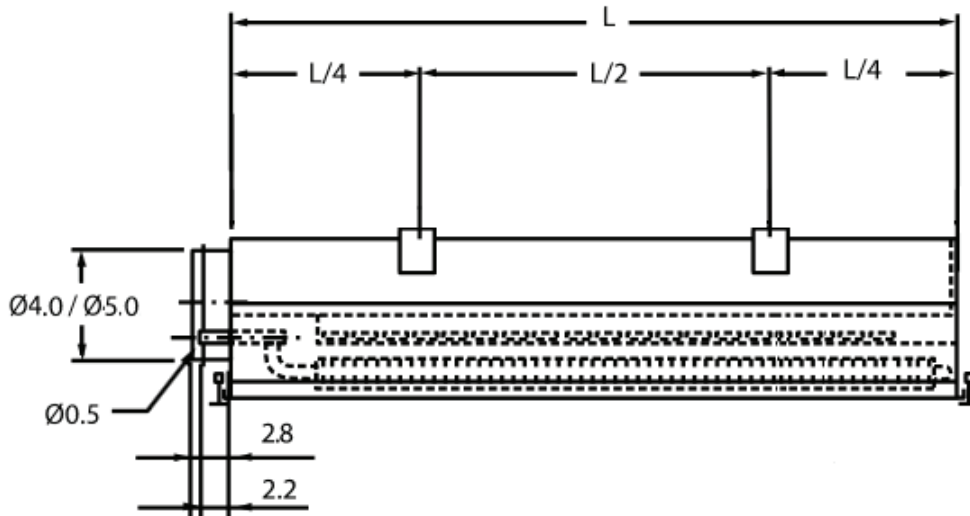
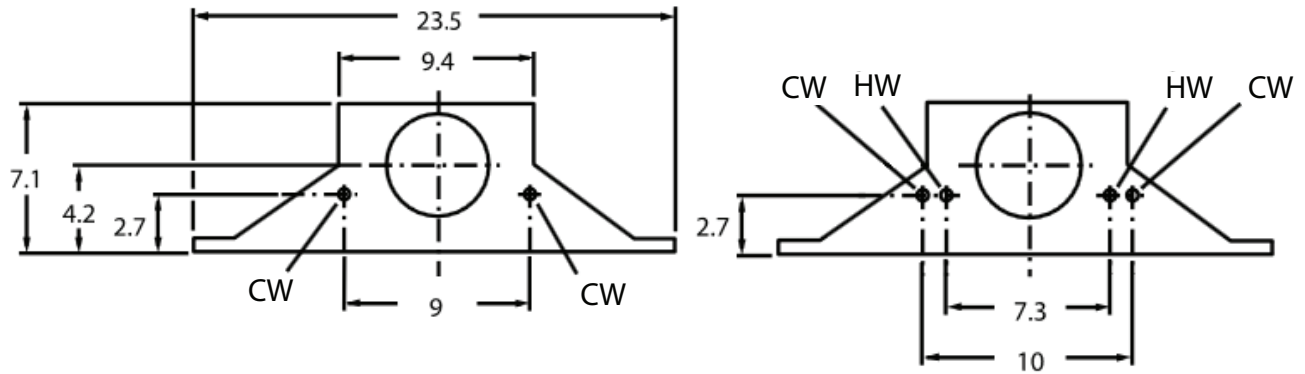
### LEGEND

**CW** — Chilled Water  
**WW** — Warm Water

### NOTES:

- Dimensions shown in inches unless otherwise indicated.
- Water volume cooling = 0.13 gpm.
- Water volume heating = 0.07 gpm.

### 36CBAH UNIT DIMENSIONS



36CBAH UNIT SIZE	NOMINAL LENGTH (ft)	L (in)	WEIGHT (lb)
04	4	47.5	40
06	6	71.5	55
08	8	95.5	71
10	10	119.5	86

**LEGEND**

**CW** — Chilling Water (cooling)  
**HW** — Heating Water (heating)

**NOTES:**

1. Dimensions shown in inches unless otherwise indicated.
2. Water volume cooling = 0.13 gpm.
3. Water volume heating = 0.07 gpm.

**36CBAF,AH Series Units**

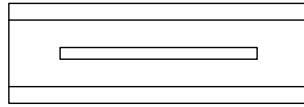
# Accessory dimensions



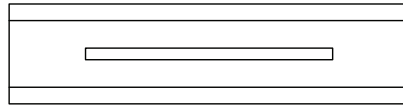
36CBAF-AH Series Units

## 36CBAF UNIT DIMENSIONS — LIGHTING OPTION\*

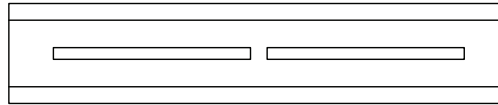
36CBAF06



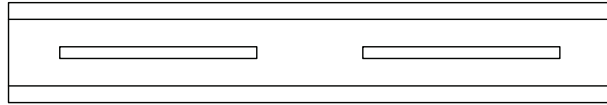
36CBAF08



36CBAF10



36CBAF12



36CBAF UNIT SIZE	ARMATURE LENGTH (ft)	NUMBER OF FITTINGS	OUTPUT (W) HE/HO
06	4	1	28/54
08	5	1	35/49
10	4	2	35/49
12	4	2	28/54

### LEGEND

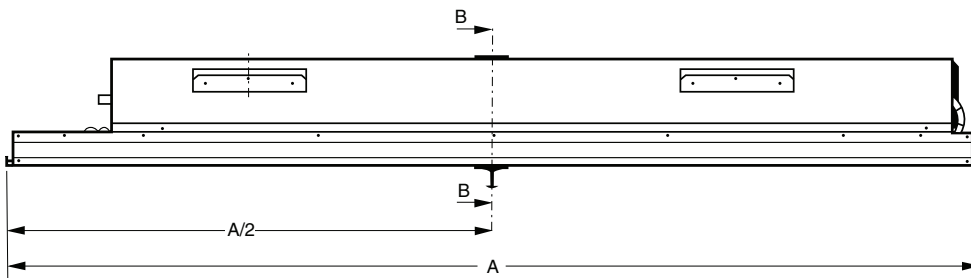
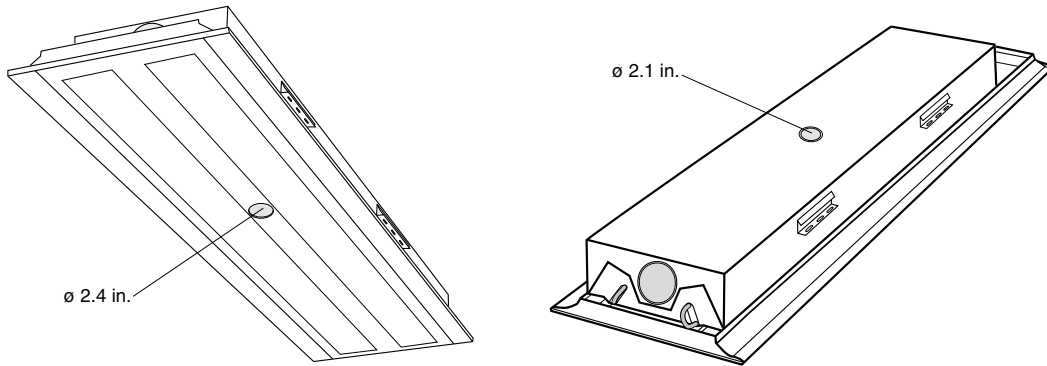
HE — High Efficiency  
HO — High Output

\*Not available for 36CBAH.

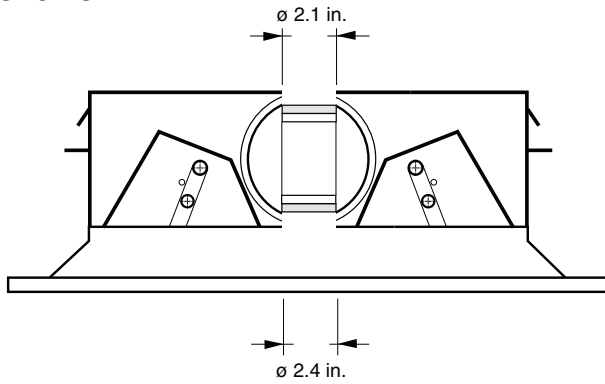
### NOTES:

1. The fitting has a T5 fluorescent lamp which is available in two power levels, HE and HO, depending on how much light is required. The HE version has an output of 28 W for a 4 ft fitting and 35 W for a 5 ft fitting. The HO version has an output of 54 W for a 4 ft fitting and 49 W for a 5 ft fitting.
2. The color temperature of the fluorescent lamp is 830/3000 K.
3. The connection cable can be supplied with a plug, Ensto or Wieland connector.

**36CBAF UNIT DIMENSIONS — SPRINKLER OPTION\***



**SECTION B – B**



36CBAF UNIT SIZE	A (ft)
06	6
08	8
10	10
12	12

\*Not available for 36CBAH.

# Performance data



## 36CBAF UNIT COOLING CAPACITY, TWO-WAY BLOW

36CBAF, AH Series Units

36CBAF UNIT SIZE	WATER PRESSURE DROP (ft wg)	SUPPLY AIR FLOW (cfm)	TOTAL COOLING CAPACITY (Btuh) ΔT (F)			COIL COOLING CAPACITY (Btuh) ΔT (F)			SOUND PRESSURE LEVEL (dB[A])
			11	14	18	11	14	18	
04	0.6	11	461	563	665	290	392	495	<20
		21	853	1024	1194	529	699	870	<20
		32	1126	1331	1535	631	836	1041	<20
06	0.9	21	1228	1518	1791	904	1194	1467	<20
		32	1655	2030	2388	1160	1535	1894	<20
		42	1894	2320	2747	1245	1672	2098	<20
		53	2150	2610	3071	1331	1791	2252	<20
08	1.1	21	1228	1604	1911	972	1280	1587	<20
		32	1774	2184	2593	1280	1689	2098	<20
		42	2218	2713	3207	1552	2047	2542	<20
		53	2508	3054	3600	1689	2235	2781	<20
		64	2713	3310	3907	1740	2337	2934	20
		74	2951	3566	4180	1808	2423	3037	21
10	1.4	32	1860	2303	2747	1365	1808	2252	<20
		42	2320	2866	3395	1655	2201	2730	<20
		53	2730	3344	3958	1911	2525	3139	<20
		64	3088	3770	4436	2115	2798	3463	<20
		74	3327	4060	4777	2184	2917	3634	<20
		85	3531	4299	5050	2218	2986	3736	20
		95	3736	4521	5289	2252	3037	3804	22
12	1.6	32	1928	2405	2866	1433	1911	2371	<20
		42	2423	2986	3566	1757	2320	2900	<20
		53	2832	3497	4163	2013	2678	3344	<20
		64	3276	4009	4743	2303	3037	3770	<20
		74	3583	4384	5186	2440	3241	4043	22
		85	3890	4743	5596	2576	3429	4282	25
		95	4163	5050	5937	2678	3566	4453	28
		106	4333	5254	6159	2695	3617	4521	30
		117	4538	5459	6380	2730	3651	4572	31

**LEGEND**

- A** — Absorbtion
- dB** — Decibel
- ΔT** — Temperature Change

**NOTES:**

1. Water flow is equal to 0.8 gpm.
2. Assume static pressure drop on the air side is 0.25 in. wg.
3. ΔT equals the difference between room air temperature and average water temperature.
4. Sound pressure level as measured in a room with 32.8 sq ft room absorbtion.

5. Total cooling capacity of the beam equals the cooling capacity of the coil plus the cooling capacity of the primary air, where the cooling capacity of the primary air is based on a difference of 14.4 F between the primary air and room temperatures.
6. Data based on tests using the Nordtest method which requires a zero temperature difference between the air entering the beam coil and the air at 3.6 ft above the floor surface. To achieve this, the walls in the test room are cooled. In actual conditions, the temperature difference is normally 1.8 to 3.6 F. This is why the temperature difference ΔT should be increased by 1.8 to 3.6 F to avoid oversizing of the beam. Therefore, the table value can be increased by 10 to 20%.
7. The chilled beam can be supplied as a special unit for higher air-flow rates than those listed in these tables.





### 36CBAH UNIT COOLING CAPACITY, TWO-WAY BLOW

36CBAH UNIT SIZE	WATER PRESSURE DROP (in wg)	SUPPLY AIR FLOW (cfm)	TOTAL COOLING CAPACITY (Btuh) ΔT (F)			COIL COOLING CAPACITY (Btuh) ΔT (F)			SOUND PRESSURE LEVEL (dB[A])
			11	14	18	11	14	18	
04	0.5	11	852	989	1172	640	777	960	<20
		21	1376	1584	1861	970	1178	1455	<20
		32	1891	2164	2527	1273	1545	1909	<20
06	0.7	21	1450	1674	1972	1044	1268	1566	<20
		32	1988	2281	2672	1369	1663	2054	<20
		42	2443	2793	3259	1631	1981	2447	<20
		53	2919	3325	3867	1895	2301	2843	<20
08	0.9	21	1631	1894	2244	1225	1488	1838	<20
		32	2225	2570	3029	1607	1951	2411	<20
		42	2549	2921	3418	1737	2110	2606	<20
		53	3042	3475	4051	2018	2451	3027	<20
		64	3515	4004	4655	2279	2767	3418	20
		74	3932	4468	5183	2502	3038	3753	21
10	1.2	32	2225	2569	3029	1607	1951	2410	<20
		42	2726	3136	3683	1914	2324	2871	<20
		53	3248	3724	4360	2224	2700	3335	<20
		64	3748	4286	5003	2511	3049	3766	<20
		74	4187	4778	5565	2757	3348	4135	<20
		85	4657	5303	6164	3014	3660	4521	20
		95	5074	5768	6693	3238	3932	4857	22

**LEGEND**

- A** — Absorbion
- dB** — Decibel
- ΔT** — Temperature Change

**NOTES:**

1. Water flow is equal to 0.8 gpm.
2. Assume static pressure drop on the air side is 0.25 in. wg.
3. ΔT equals the difference between room air temperature and average water temperature.
4. Sound pressure level as measured in a room with 32.8 sq ft room absorbion.

5. Total cooling capacity of the beam equals the cooling capacity of the coil plus the cooling capacity of the primary air, where the cooling capacity of the primary air is based on a difference of 14.4 F between the primary air and room temperatures.
6. Data based on tests using the Nordtest method which requires a zero temperature difference between the air entering the beam coil and the air at 3.6 ft above the floor surface. To achieve this, the walls in the test room are cooled. In actual conditions, the temperature difference is normally 1.8 to 3.6 F. This is why the temperature difference ΔT should be increased by 1.8 to 3.6 F to avoid oversizing of the beam. Therefore, the table value can be increased by 10 to 20%.
7. The chilled beam can be supplied as a special unit for higher air-flow rates than those listed in these tables.

**36CBAF/AH Series Units**

# Performance data (cont)



## 36CBAF UNIT COOLING CAPACITY, HIGH AIRFLOW

36CBAF UNIT SIZE	WATER PRESSURE DROP (ft wg)	SUPPLY AIR FLOW (cfm)	TOTAL COOLING CAPACITY (Btuh) ΔT (F)			COIL COOLING CAPACITY (Btuh) ΔT (F)		
			11	14	18	11	14	18
04	0.6	22	651	765	885	333	448	568
		42	1204	1392	1589	607	798	899
		64	1590	1809	2043	724	955	1195
06	0.9	42	1723	2064	2405	1058	1399	1740
		64	2303	2713	3139	1314	1723	2150
		85	2730	3207	3668	1416	1894	2354
		106	3088	3566	4026	1450	1928	2388
08	1.1	42	1877	2269	2661	1211	1604	1996
		64	2508	2986	3480	1518	1996	2491
		85	3020	3583	4146	1706	2269	2832
		106	3480	4077	4692	1842	2440	3054
		127	3839	4470	5101	1877	2508	3139
		148	4197	4828	5459	1894	2525	3156
10	1.4	64	2644	3190	3719	1655	2201	2730
		85	3258	3890	4521	1945	2576	3207
		106	3770	4470	5169	2133	2832	3531
		127	4231	4982	5732	2269	3020	3770
		148	4623	5408	6193	2320	3105	3890
		169	4999	5783	6585	2388	3173	3975
		191	5306	6090	6875	2371	3156	3941

LEGEND

ΔT — Temperature Change

NOTES:

1. Water flow is equal to 0.8 gpm.
2. Assume static pressure drop on the air side is 0.25 in. wg.
3. ΔT equals the difference between room air temperature and average water temperature.

## 36CBAH UNIT COOLING CAPACITY, HIGH AIRFLOW

36CBAH UNIT SIZE	WATER PRESSURE DROP (in wg)	SUPPLY AIR FLOW (cfm)	TOTAL COOLING CAPACITY (Btuh) ΔT (F)			COIL COOLING CAPACITY (Btuh) ΔT (F)		
			11	14	18	11	14	18
04	0.5	22	1263	1443	1682	838	1017	1257
		42	2082	2355	2718	1271	1543	1906
		64	2903	3261	3737	1667	2024	2500
06	0.7	42	2145	2430	2811	1333	1619	2000
		64	2985	3360	3860	1749	2123	2623
		85	3707	4153	4748	2083	2530	3125
		106	4468	4987	5678	2420	2939	3630
08	0.9	42	2426	2771	3233	1614	1960	2421
		64	3078	3472	3998	1841	2235	2761
		85	3816	4286	4913	2193	2663	3290
		106	4596	5142	5870	2548	3094	3822
		127	5316	5930	6747	2862	3476	4293
		148	6019	6695	7598	3159	3835	4738
10	1.2	64	3266	3697	4272	2010	2441	3016
		85	3995	4503	5180	2371	2880	3557
		106	4803	5393	6180	2755	3345	4132
		127	5584	6250	7139	3110	3777	4666
		148	6275	7007	7983	3415	4147	5123
		169	6986	7783	8846	3720	4517	5580
		191	7716	8578	9728	4025	4887	6037

LEGEND

ΔT — Temperature Change

NOTES:

1. Water flow is equal to 0.8 gpm.
2. Assume static pressure drop on the air side is 0.25 in. wg.
3. ΔT equals the difference between room air temperature and average water temperature.

36CBAF/AH Series Units



### 36CBAF UNIT COOLING CAPACITY FACTOR FOR ONE-WAY AND INTERMEDIATE BLOW

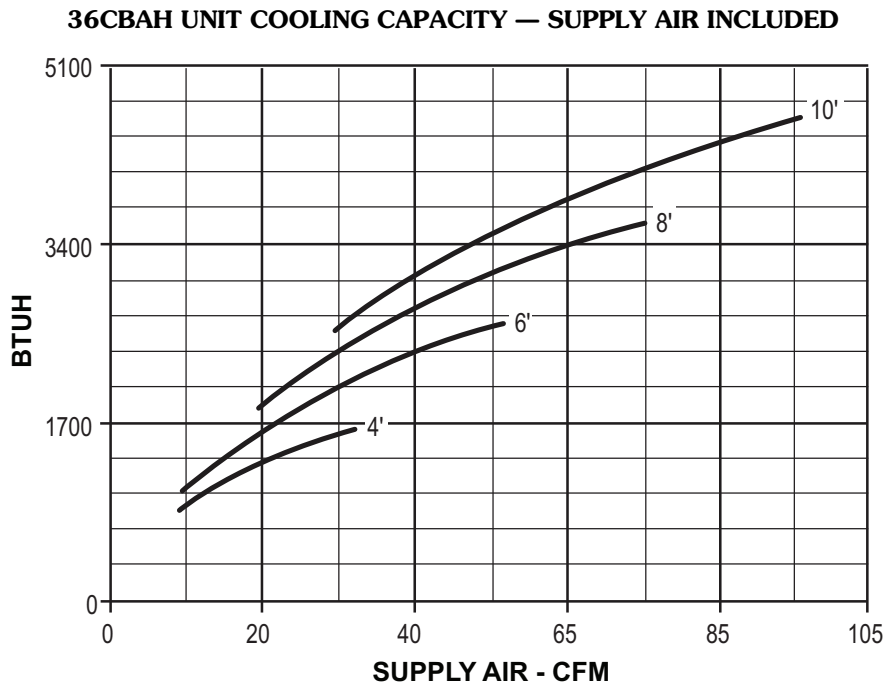
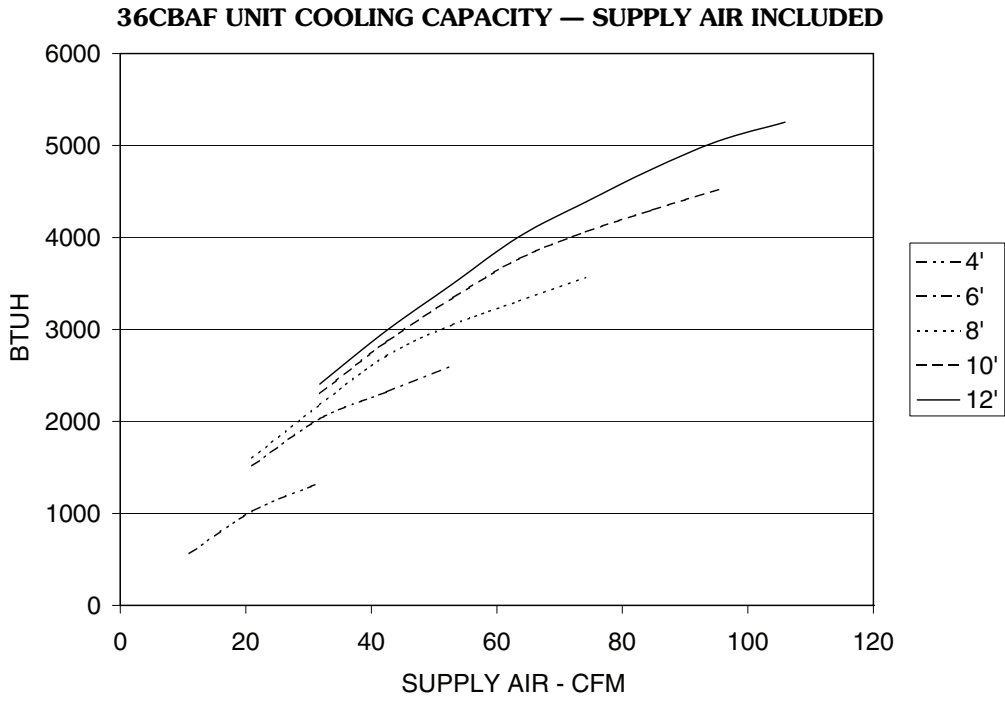
36CBAF UNIT SIZE	AIR DISTRIBUTION	MAXIMUM PRIMARY AIR FLOW (cfm)	CAPACITY FACTOR
04	One-way	11	0.8
	70 to 30%	21	0.9
06	One-way	32	0.8
	70 to 30%	42	0.9
08	One-way	42	0.8
	70 to 30%	64	0.9
10	One-way	64	0.8
	70 to 30%	74	0.9
12	One-way	74	0.8
	70 to 30%	95	0.9

NOTE: The value given in the unit cooling capacity table is multiplied by the capacity factor in the above table to reflect the reduced coil capacity in a one-way blow distribution or intermediate air distribution position.

# Performance data (cont)



36CBAF/AH Series Units





### 36CBAF UNIT HEATING CAPACITY, TWO-WAY BLOW

36CBAF UNIT SIZE	WATER PRESSURE DROP (ft wg)	SUPPLY AIR FLOW (cfm)	COIL HEATING CAPACITY (Btuh) — $\Delta T$ (F)		
			36	45	54
04	0.33	11	629	795	967
		21	1144	1422	1700
		32	1366	1698	2031
06	0.50	21	1962	2423	2866
		32	2508	3122	3702
		42	2695	3395	4094
		53	2883	3634	4384
08	0.60	21	2115	2593	3088
		32	2781	3429	4094
		42	3361	4163	4964
		53	3668	4538	5425
		64	3770	4743	5715
10	0.70	74	3924	4913	5920
		32	2968	3668	4384
		42	3583	4470	5323
		53	4146	5135	6125
		64	4589	5681	6756
		74	4726	5920	7080
12	0.80	85	4811	6056	7285
		95	4879	6176	7421
		32	3105	3890	4623
		42	3804	4709	5664
		53	4367	5442	6517
		64	4999	6176	7353
		74	5289	6585	7882
		85	5579	6960	8342
		95	5800	7251	8684
		106	5835	7353	8820
		117	5920	7421	8922

**LEGEND**

$\Delta T$  — Temperature Change

**NOTES:**

1. Water flow is equal to 0.8 gpm.
2. Assume static pressure drop on the air side is 0.25 in. wg.
3.  $\Delta T$  equals the difference between room air temperature and average water temperature.

36CBAF, FAH Series Units

# Performance data (cont)



## 36CBAH UNIT HEATING CAPACITY, TWO-WAY BLOW

36CBAH UNIT SIZE	WATER PRESSURE DROP (ft wg)	SUPPLY AIR FLOW (cfm)	COIL HEATING CAPACITY (Btuh) — $\Delta T$ (F)		
			36	45	54
04	0.33	11	692	875	1064
		21	1258	1564	1870
		32	1503	1868	2234
06	0.50	21	2158	2066	3153
		32	2759	3434	4072
		42	2965	3738	4503
		53	3166	3997	4822
08	0.60	21	2327	2852	3397
		32	3059	3772	4503
		42	3697	4620	5460
		53	4035	4992	5968
		64	4147	5217	6287
10	0.70	74	4316	5404	6512
		32	3265	4035	4822
		42	3941	4917	5855
		53	4561	5649	6738
		64	5048	6249	7523
		74	5199	6512	7788
		85	5292	6662	8014
12	0.80	95	5367	6794	8163
		32	3416	4279	5085
		42	4184	5180	6230
		53	4804	5986	7169
		64	5499	6794	8088
		74	5818	7244	8670
		85	6137	7656	9176
		95	6380	7976	9552
		106	6419	8088	9702
		117	6512	8163	9814

LEGEND

$\Delta T$  — Temperature Change

NOTES:

1. Water flow is equal to 0.8 gpm.
2. Assume static pressure drop on the air side is 0.25 in. wg.
3.  $\Delta T$  equals the difference between room air temperature and average water temperature.

36CBAF, AH Series Units



### 36CBAF, AH UNIT SOUND POWER LEVEL

36CBAF UNIT	CORRECTION $K_{oct}$ (dB)							
	OCTAVE BAND, MEAN FREQUENCY, Hz							
	63	125	250	500	1000	2000	4000	8000
04	-4	0	3	3	-2	-4	-11	-18
06	-4	0	3	3	-2	-4	-11	-18
08	-4	0	3	3	-2	-4	-11	-18
10	-4	0	3	3	-2	-4	-11	-18
12	-4	0	3	3	-2	-4	-11	-18
Tol $\pm$	6	3	2	2	2	2	2	3

LEGEND

Tol  $\pm$  — Tolerance (dB)

NOTE: The sound power levels for each octave band are obtained by adding the sound pressure level dB(A) to the corrections,  $K_{oct}$ , given in the table above. The correction is the average in the area of application of the chilled beam.

### 36CBAF, AH UNIT SOUND ATTENUATION

36CBAF UNIT	SOUND ATTENUATION IN PRIMARY AIR DUCT OF THE BEAM (dB)							
	OCTAVE BAND, MEAN FREQUENCY, Hz							
	63	125	250	500	1000	2000	4000	8000
04	21	13	7	7	9	11	12	13
06	21	13	7	7	9	11	12	13
08	21	13	7	7	9	11	12	13
10	21	13	7	7	9	11	12	13
12	21	13	7	7	9	11	12	13
Tol $\pm$	6	3	2	2	2	2	2	3

LEGEND

Tol  $\pm$  — Tolerance (dB)

NOTE: The average sound attenuation of chilled beam from duct to room includes the end reflection of the connecting duct.

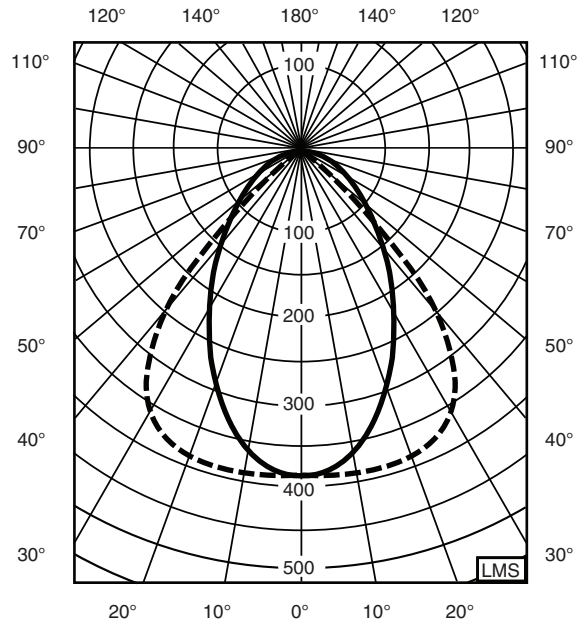
36CBAF, AH Series Units

# Performance data (cont)



36CBAF/AH Series Units

**36CBAF LIGHT DISTRIBUTION CURVE**



cd/1000 lm

36CBAF UNIT SIZE	OUTPUT (W) HE/HO
06	28/54
08	35/49
10	35/49
12	28/54

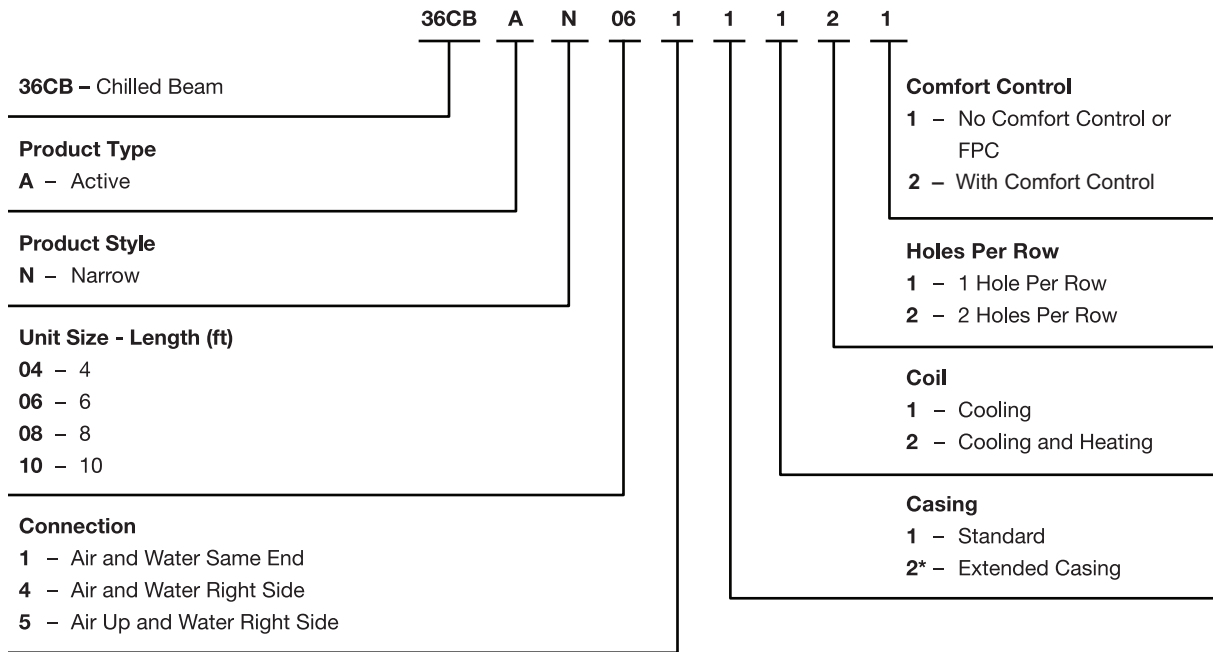
**LEGEND**

- HE — High Efficiency
- HO — High Output
- High Efficiency
- - - High Output

NOTE: Light output shown in candle power per 1000 lumens.



# Model number nomenclature



**LEGEND**

**FPC** — Flow Pattern Control

\*Not available on unit size 10.

## Physical data

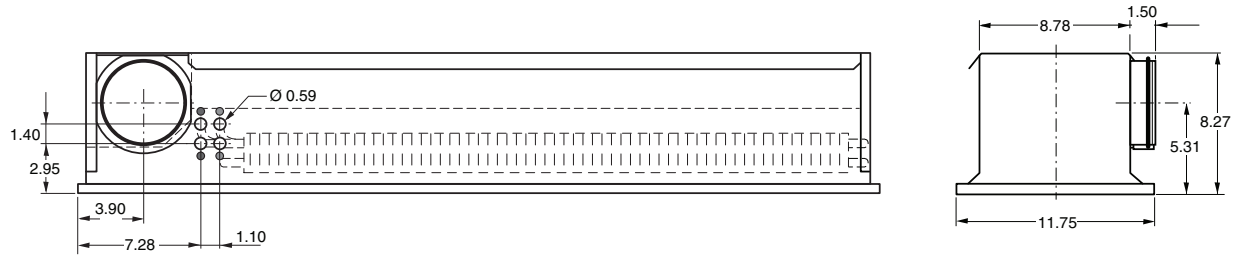
**36CBAN UNIT PHYSICAL DATA**

36CBAN UNIT SIZE	04	06	08	10
Beam Length (ft)	4	6	8	10
Coil Length (ft)	3	5	7	9
Coil Connection Size (in.)	1			
Weight (lb)	31	46	62	77

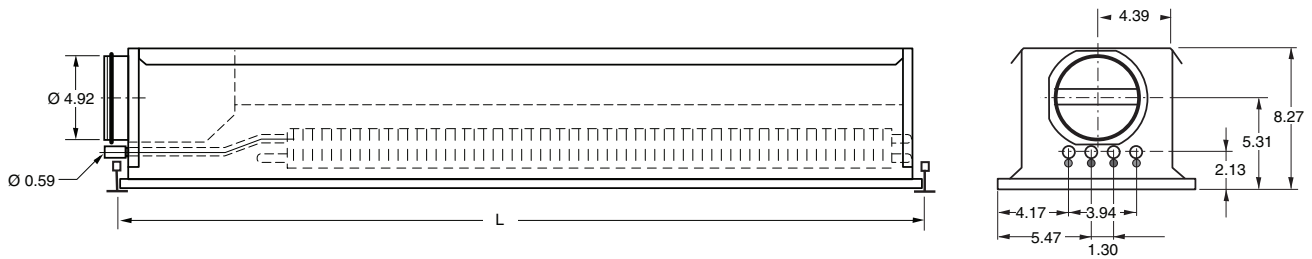
**36CBAN Series Units**

## 36CBAN UNIT DIMENSIONS

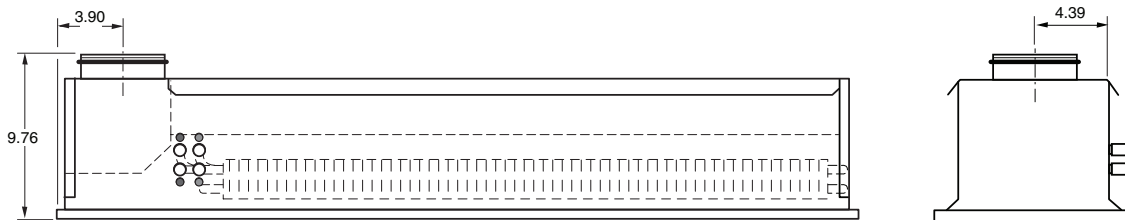
CONNECTION ALTERNATIVE 1 – AIR AND WATER CONNECTIONS RIGHT IN THE DIRECTION OF AIRFLOW



CONNECTION ALTERNATIVE 2 – AIR AND WATER CONNECTIONS THROUGH END WALL



CONNECTION ALTERNATIVE 3 – AIR CONNECTION UP AND WATER CONNECTION RIGHT IN THE DIRECTION OF AIRFLOW



36CBAN UNIT SIZE	LENGTH (ft)	WEIGHT (lb)
04	4	31
06	6	46
08	8	62
10	10	77

**NOTES:**

1. Dimensions shown in inches.
2. Water volume cooling = 0.13 gpm coil.
3. Water volume heating = 0.07 gpm coil.

# Performance data



## 36CBAN UNIT COOLING CAPACITY, TWO-WAY BLOW

36CBAN UNIT SIZE	WATER PRESSURE DROP (ft wg)	SUPPLY AIR FLOW (cfm)	TOTAL COOLING CAPACITY (Btuh) ΔT (F)			COIL COOLING CAPACITY (Btuh) ΔT (F)			SOUND PRESSURE LEVEL (dB[A])
			11	14	18	11	14	18	
04	0.67	11	478	580	682	307	409	512	<17
		21	802	955	1126	478	631	802	18
		32	1092	1280	1484	597	785	989	25
06	0.97	21	887	1092	1280	563	768	955	<17
		32	1194	1433	1672	699	938	1177	19
		42	1518	1808	2081	853	1143	1416	26
		53	1774	2081	2405	955	1262	1587	27
08	1.30	21	938	1160	1365	614	836	1041	<17
		32	1280	1535	1791	785	1041	1297	<17
		42	1638	1962	2286	972	1297	1621	18
		53	1911	2269	2644	1092	1450	1825	23
		64	2184	2576	2986	1211	1604	2013	29
		74	2440	2716	3310	1297	1740	2167	30
10	1.60	32	1348	1638	1911	853	1143	1416	<17
		42	1723	2064	2423	1058	1399	1757	18
		53	1996	2388	2781	1177	1570	1962	21
		64	2320	2747	3207	1348	1774	2235	24
		74	2576	3054	3548	1433	1911	2405	29
		85	2883	3412	3924	1570	2098	2610	32
		95	3122	3668	4214	1655	2201	2747	34

### LEGEND

- A** — Absorbion
- dB** — Decibel
- ΔT** — Temperature Change

### NOTES:

1. Water flow is equal to 0.8 gpm.
2. Assume static pressure drop on the air side is 0.25 in. wg.
3. ΔT equals the difference between room air temperature and average water temperature.
4. Sound pressure level as measured in a room with 32.8 sq ft room absorbion.
5. Total cooling capacity of the beam equals the cooling capacity of the coil plus the cooling capacity of the primary air, where the

cooling capacity of the primary air is based on a difference of 14.4 F between the primary air and room temperatures.

6. Data based on tests using the Nordtest method which requires a zero temperature difference between the air entering the beam coil and the air at 3.6 ft above the floor surface. To achieve this, the walls in the test room are cooled. In actual conditions, the temperature difference is normally 1.8 to 3.6 F. This is why the temperature difference ΔT should be increased by 1.8 to 3.6 F to avoid oversizing of the beam. Therefore, the table value can be increased by 10 to 20%.
7. Sound is increased by 1 – dB(A) with side connections. Sound is decreased by 1 – dB(A) with top connections.
8. The chilled beam can be supplied as a special unit for higher air-flow rates than those listed in these tables.

# Performance data (cont)

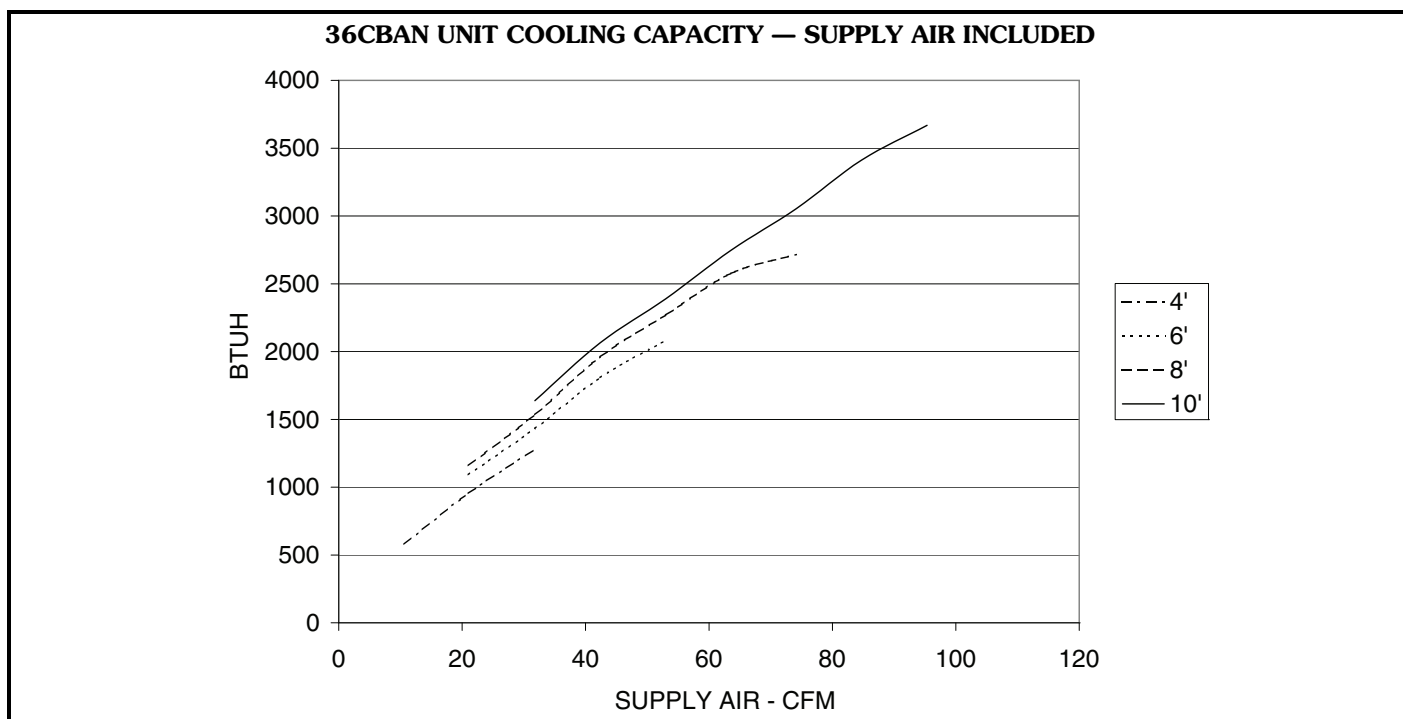


## 36CBAN UNIT COOLING CAPACITY FACTOR FOR ONE-WAY AND INTERMEDIATE BLOW

36CBAN UNIT SIZE	AIR DISTRIBUTION	MAXIMUM PRIMARY AIRFLOW (cfm)	CAPACITY FACTOR
04	One-way	11	0.8
	70 to 30%	21	0.9
06	One-way	32	0.8
	70 to 30%	32	0.9
08	One-way	42	0.8
	70 to 30%	53	0.9
10	One-way	53	0.8
	70 to 30%	64	0.9

NOTE: The value given in the unit cooling capacity table is multiplied by the capacity factor in the above table to reflect the reduced coil capacity in a one-way blow distribution or intermediate air distribution position.

36CBAN Series Units





### 36CBAN UNIT HEATING CAPACITY, TWO-WAY BLOW

36CBAN UNIT SIZE	WATER PRESSURE DROP (ft wg)	SUPPLY AIR FLOW (cfm)	COIL HEATING CAPACITY (Btuh) – ΔT (F)		
			36	45	54
04	0.23	11	631	802	955
		21	989	1228	1484
		32	1228	1518	1842
06	0.33	21	1160	1484	1774
		32	1450	1825	2184
		42	1757	2218	2627
		53	1979	2440	2951
08	0.43	21	1262	1621	1928
		32	1621	2013	2405
		42	2013	2508	3020
		53	2252	2815	3395
		64	2508	3105	3736
		74	2678	3378	4026
10	0.54	32	1757	2218	2627
		42	2184	2713	3276
		53	2440	3037	3651
		64	2781	3446	4163
		74	2968	3702	4470
		85	3241	4060	4862
		95	3412	4265	5101

LEGEND

ΔT — Temperature Change

NOTES:

1. Water flow is equal to 0.8 gpm.
2. Assume static pressure drop on the air side is 0.25 in. wg.
3. ΔT equals the difference between room air temperature and average water temperature.

# Performance data (cont)



## 36CBAN UNIT SOUND POWER LEVEL

36CBAN UNIT	CORRECTION $K_{oct}$ (dB)							
	OCTAVE BAND, MEAN FREQUENCY, Hz							
	63	125	250	500	1000	2000	4000	8000
04	6	-2	1	1	0	-4	-10	-10
06	6	-2	1	1	0	-4	-10	-10
08	6	-2	1	1	0	-4	-10	-10
10	6	-2	1	1	0	-4	-10	-10
Tol $\pm$	6	3	2	2	2	2	2	3

LEGEND  
Tol  $\pm$  — Tolerance

NOTE: The sound power levels for each octave band are obtained by adding the sound pressure level dB(A) to the corrections,  $K_{oct}$ , given in the table above. The correction is the average in the area of application of the chilled beam.

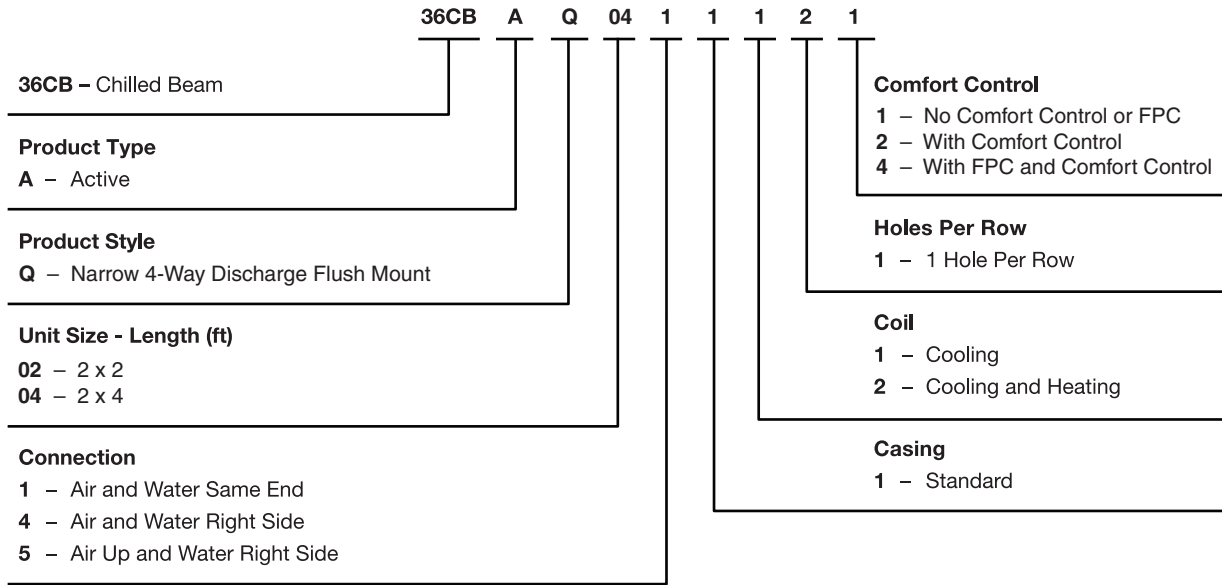
## 36CBAN UNIT SOUND ATTENUATION

36CBAN UNIT	SOUND ATTENUATION IN PRIMARY AIR DUCT OF THE BEAM (dB)							
	OCTAVE BAND, MEAN FREQUENCY, Hz							
	63	125	250	500	1000	2000	4000	8000
04	22	16	6	7	8	13	13	12
06	22	16	6	7	8	13	13	12
08	22	16	6	7	8	13	13	12
10	22	16	6	7	8	13	13	12
Tol $\pm$	6	3	2	2	2	2	2	3

LEGEND  
Tol  $\pm$  — Tolerance

NOTE: The average sound attenuation of chilled beam from duct to room includes the end reflection of the connecting duct.

# Model number nomenclature



**LEGEND**

FPC — Flow Pattern Control

## Physical data

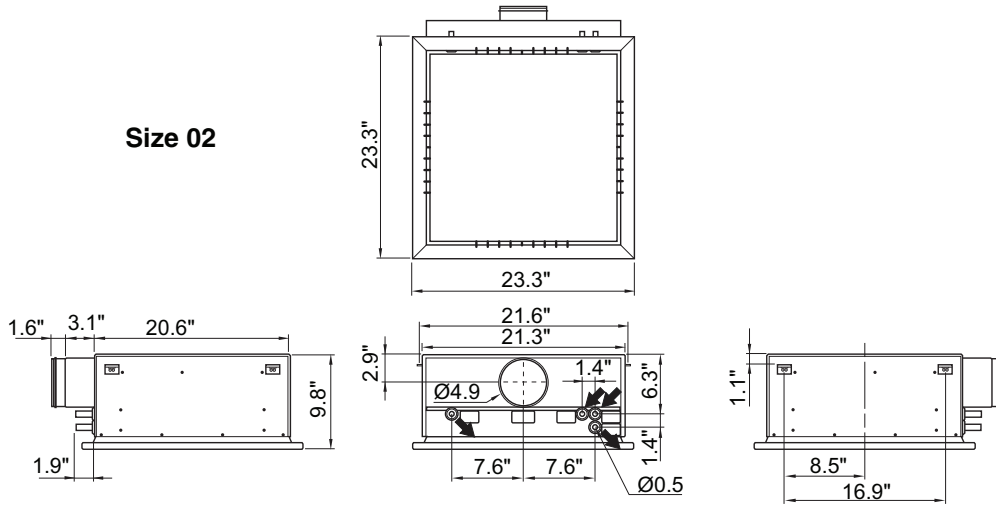
**36CBAQ UNIT PHYSICAL DATA**

36CBAQ UNIT SIZE	02	04
Beam Length (ft)	2 x 2	2 x 4
Coil Length (ft)	2	4
Coil Connection Size (in.)		1
Weight (lb)	41.8	77.1

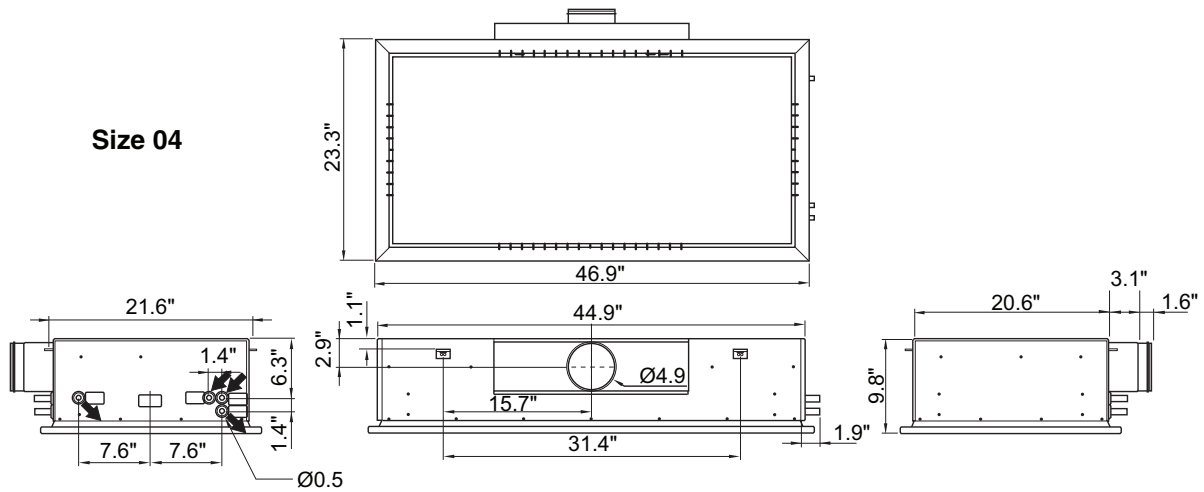
**36CBAQ Series Units**

## 36CBAQ UNIT DIMENSIONS

### Size 02



### Size 04





# Performance data



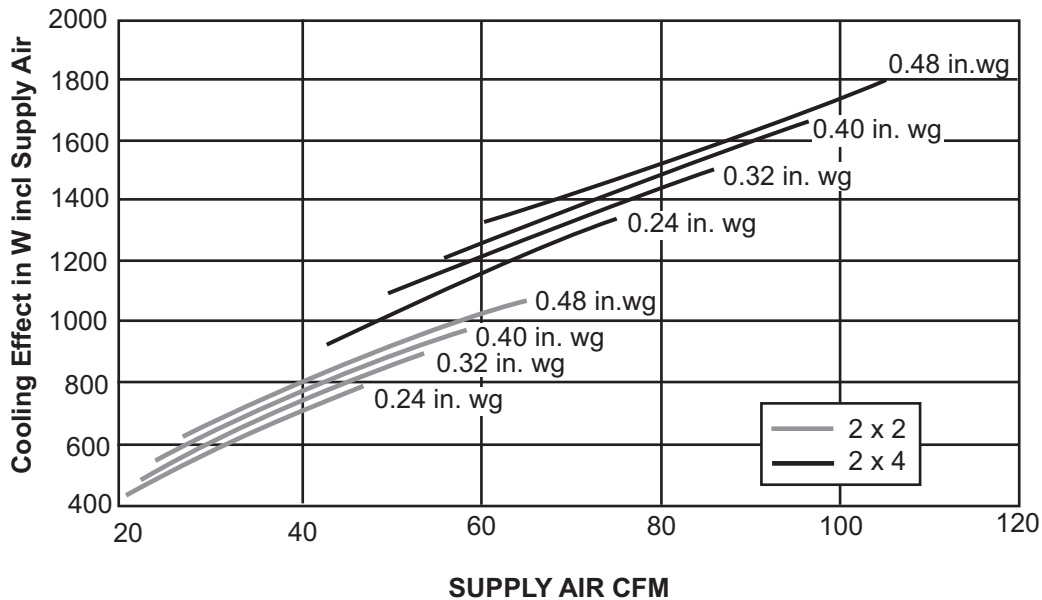
## 36CBAQ UNIT COOLING CAPACITY, FOUR-WAY BLOW

36CBAQ UNIT SIZE	WATER PRESSURE DROP (ft wg)	SUPPLY AIR FLOW (cfm)	TOTAL COOLING CAPACITY (Btuh) $\Delta T$ (F)			COIL COOLING CAPACITY (Btuh) $\Delta T$ (F)			SOUND PRESSURE LEVEL (dB[A])
			11	14	18	11	14	18	
02	1.9	19	972	1160	1365	597	785	989	<20
		28	1331	1587	1860	802	1058	1894	<20
		36	1655	1962	2286	955	1262	2098	<23
		44	1894	2235	2576	1041	1382	2252	<24
04	3.3	30	1774	2167	2576	1194	1587	1996	<20
		44	2252	2713	3173	1399	1860	2320	<22
		59	2781	3327	3873	1638	2184	2730	<27
		76	3310	3924	4555	1842	2457	3088	<28

## 36CBAQ UNIT COOLING CAPACITY FACTOR FOR ONE-WAY AND INTERMEDIATE BLOW

36CBAQ UNIT SIZE	AIR DISTRIBUTION	MINIMUM PRIMARY AIRFLOW (cfm)	CAPACITY FACTOR
02	Two-way	9	0.7
	Three-way	11	0.8
04	Two-way	16	0.9
	Three-way	18	0.95

## 36CBAQ UNIT COOLING CAPACITY — SUPPLY AIR INCLUDED



The diagram shows the approximate cooling effect  $P_{tot}$  in W with water flow  $q_w = 0.05$  l/s, temperature difference between room air and supply air  $\Delta t = 10^\circ\text{C}$ . Temperature difference between mean water temperature and room temperature  $\Delta t = 10^\circ\text{C}$ .

# Performance data (cont)



## 36CBAQ UNIT SOUND POWER LEVEL

36CBAQ UNIT	CORRECTION $K_{oct}$ (dB)							
	OCTAVE BAND, MEAN FREQUENCY, Hz							
	63	125	250	500	1000	2000	4000	8000
02	4	-6	-2	-1	1	-3	-10	-16
04	4	-3	-3	-1	1	-3	-10	-17
Tol $\pm$	6	3	2	2	2	2	2	3

LEGEND  
Tol  $\pm$  — Tolerance

NOTE: The sound power levels for each octave band are obtained by adding the sound pressure level dB(A) to the corrections,  $K_{oct}$ , given in the table above. The correction is the average in the area of application of the chilled beam.

## 36CBAQ UNIT SOUND ATTENUATION

36CBAQ UNIT	SOUND ATTENUATION IN PRIMARY AIR DUCT OF THE BEAM (dB)							
	OCTAVE BAND, MEAN FREQUENCY, Hz							
	63	125	250	500	1000	2000	4000	8000
02	19	7	6	8	4	10	12	4
04	19	7	6	7	9	11	13	5
Tol $\pm$	6	3	2	2	2	2	2	3

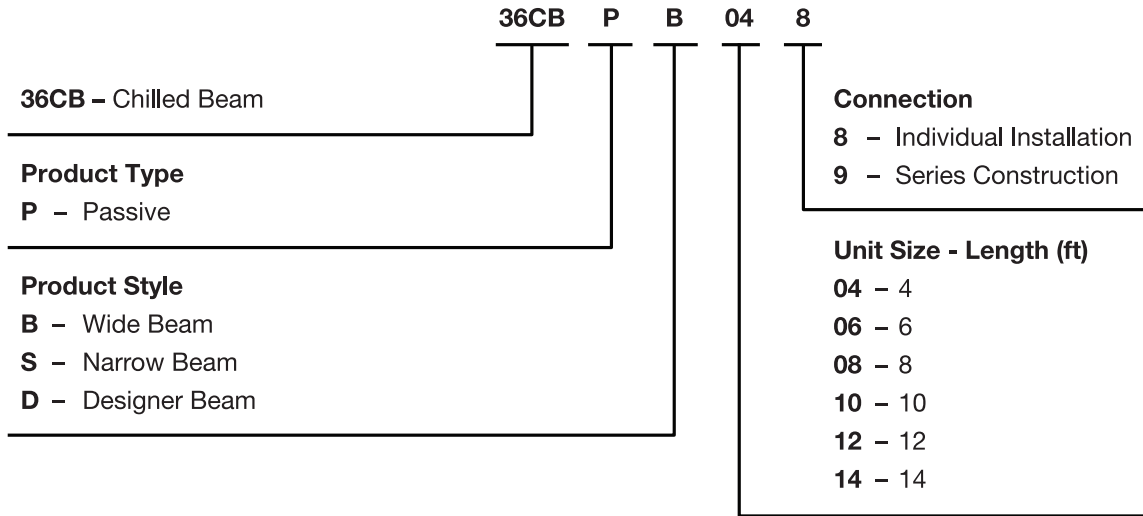
LEGEND  
Tol  $\pm$  — Tolerance

NOTE: The average sound attenuation of chilled beam from duct to room includes the end reflection of the connecting duct.

# Model number nomenclature



36CBPB,PS,PD Series Units



## Physical data

**36CBPB,PS UNIT PHYSICAL DATA**

36CBPB,PS UNIT SIZE	04	06	08	10	12	14
Beam Length (ft)	4	6	8	10	12	14
Beam Width (in.) (36CBPB/36CBPS)	16.9/11.4					
Beam Height (in.)	5.6					
Coil Length (ft)	3.7	5.7	7.7	9.7	11.7	13.7
Coil Connection Size (in.)	1					
Flexible Water Pipes (in.)	8					
Weight (lb/ft) (36CBPB/36CBPS)	5.4/4.7					

**36CBPD UNIT PHYSICAL DATA**

36CBPD UNIT SIZE	06	08
Beam Length (ft)	6	8
Beam Width (in.)	15.7	
Beam Height (in.)	7.1	
Coil Length (ft)	5.7	7.7
Coil Connection Size (in.)	1	
Flexible Water Pipes (in.)	8	

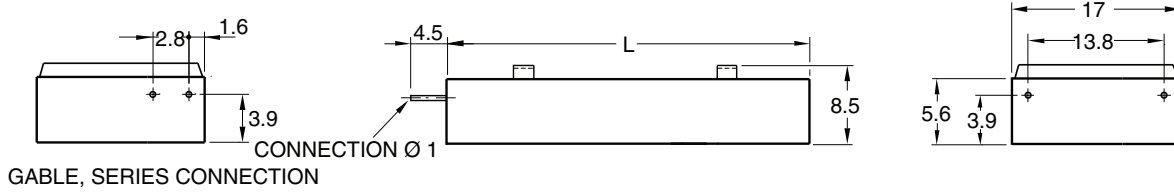
# Base unit dimensions



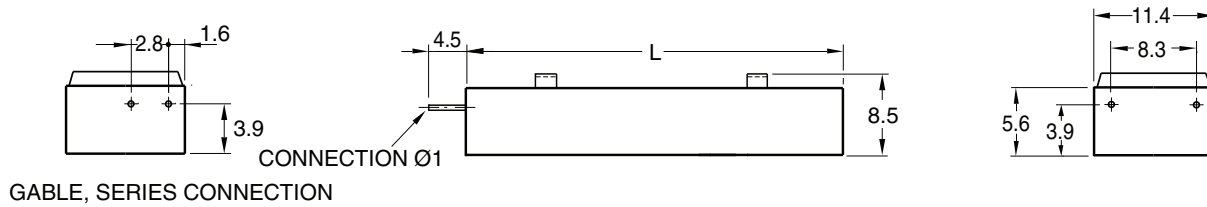
36CBPB,PS,PD Series Units

## 36CBPB,PD,PS UNIT DIMENSIONS

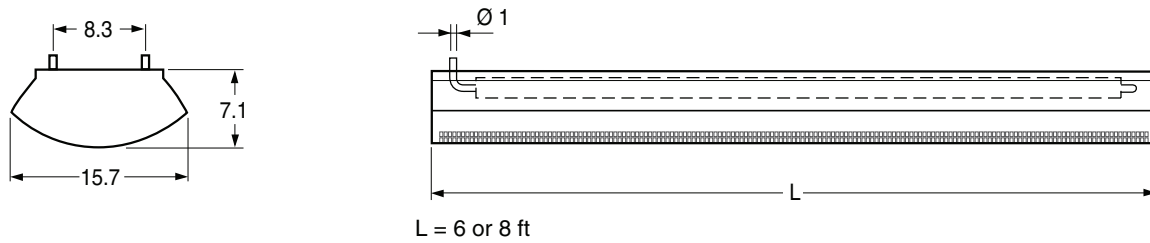
### 36CBPB



### 36CBPS



### 36CBPD



**NOTES:**

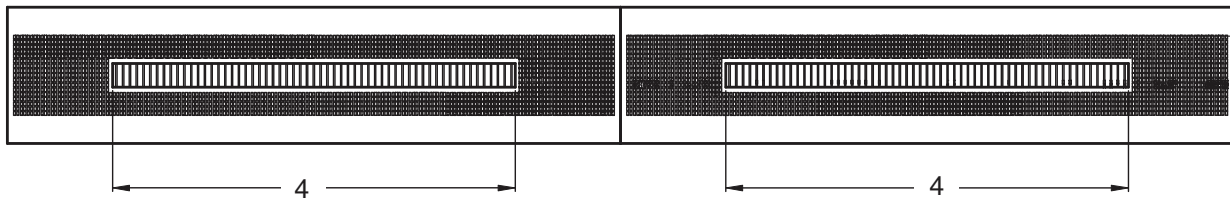
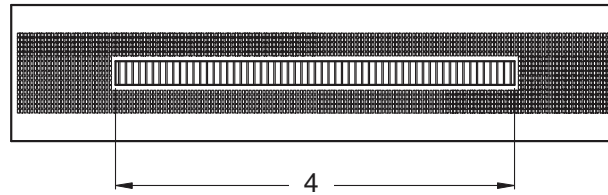
1. Dimensions shown in inches.
2. L = Nominal length — 0.31 inches.

# Accessory dimensions



## 36CBPD UNIT DIMENSIONS — LIGHTING OPTION

### UNIT SIZES 04-08



### UNIT SIZES 10-14

36CBPD UNIT SIZE	FITTING LENGTH (ft)	NUMBER OF FITTINGS	OUTPUT (W) HE/HO
04-08	4	1	28/54
10-14	4	2	28/54

#### LEGEND

**HE** — High Efficiency  
**HO** — High Output

#### NOTES:

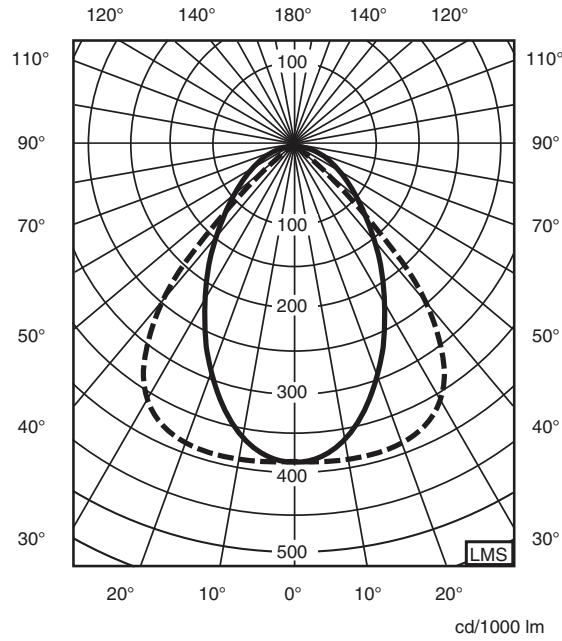
1. Dimensions shown in feet.
2. The fitting has a T5 fluorescent lamp which is available in two power levels, HE and HO, depending on how much light is required. The HE version has an output of 28 W while the HO version has an output of 54 W.
3. The color temperature of the fluorescent lamp is 830/3000 K.
4. The connection cable can be supplied with a plug, Ensto or Wieland connector.

# Performance data



36CBPB,PS,PD Series Units

**36CBPD LIGHT DISTRIBUTION CURVE**



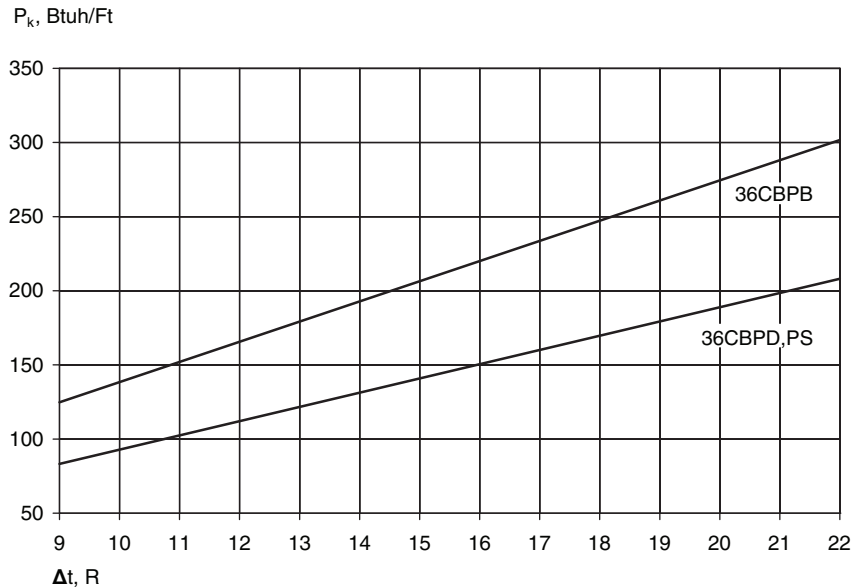
36CBPD UNIT SIZE	OUTPUT (W) HE/HO
04-08	28/54
10-14	28/54

**LEGEND**

- HE — High Efficiency
- HO — High Output
- High Efficiency
- - - High Output

NOTE: Light output shown in candle power per 1000 lumens.

### COOLING EFFECT IN BTUH/FT EFFECTIVE LENGTH

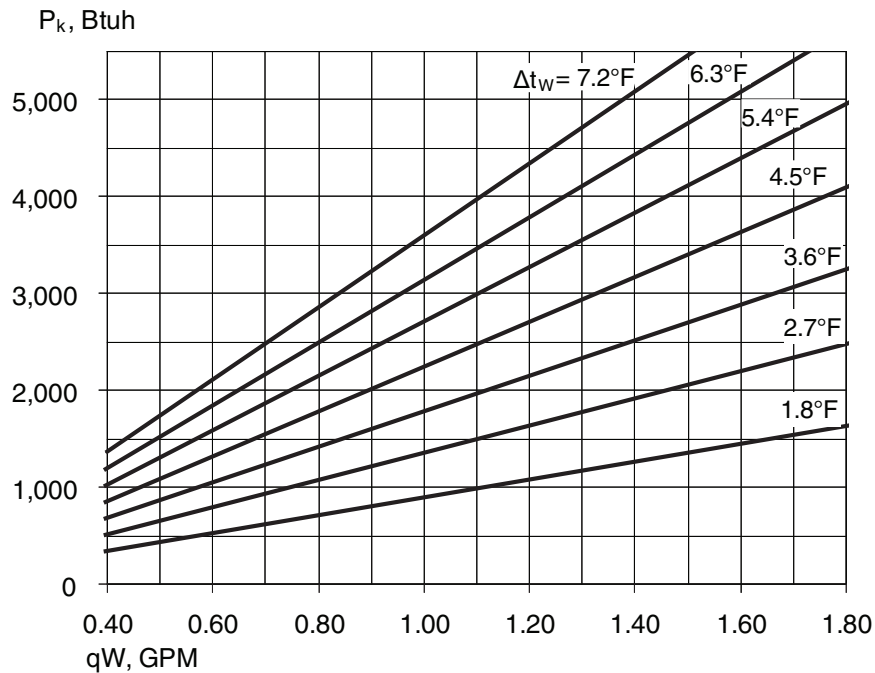


**LEGEND**  
**P<sub>k</sub>** — Power  
**R** — Rankines

**NOTES:**

1. Water flow = 0.8 gpm.
2. Data based on tests using the Nordtest method which requires a zero temperature difference between the air entering the beam coil and the air at 3.6 ft above the floor surface. To achieve this, the walls in the test room are cooled. In actual conditions, the temperature difference is normally 1.8 to 3.6 F. The temperature difference between room air and water should in this case be increased by 1.8 to 3.6 F. This is because in the actual conditions, the beam will produce a higher effect.

### WATER FLOW (GPM)



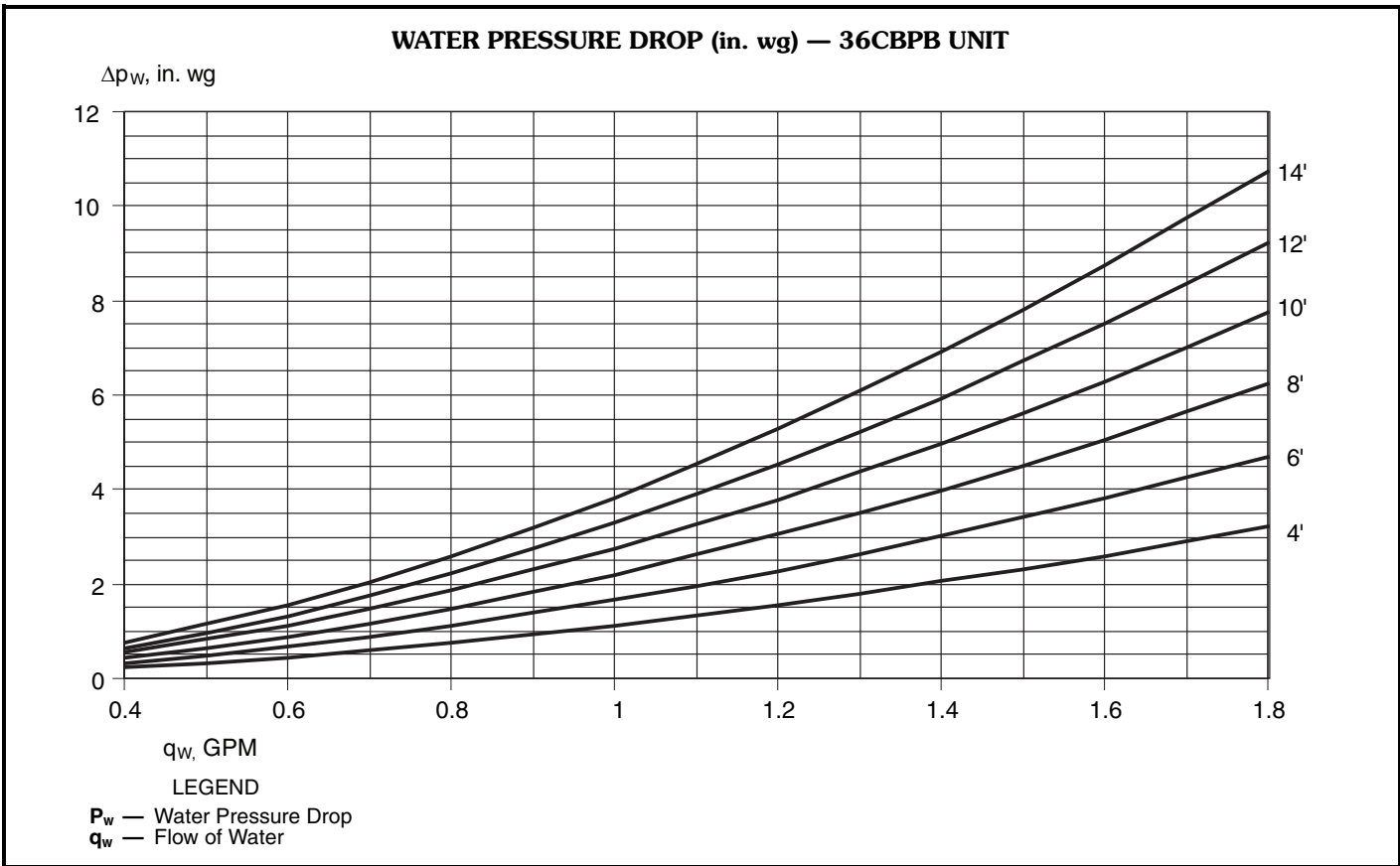
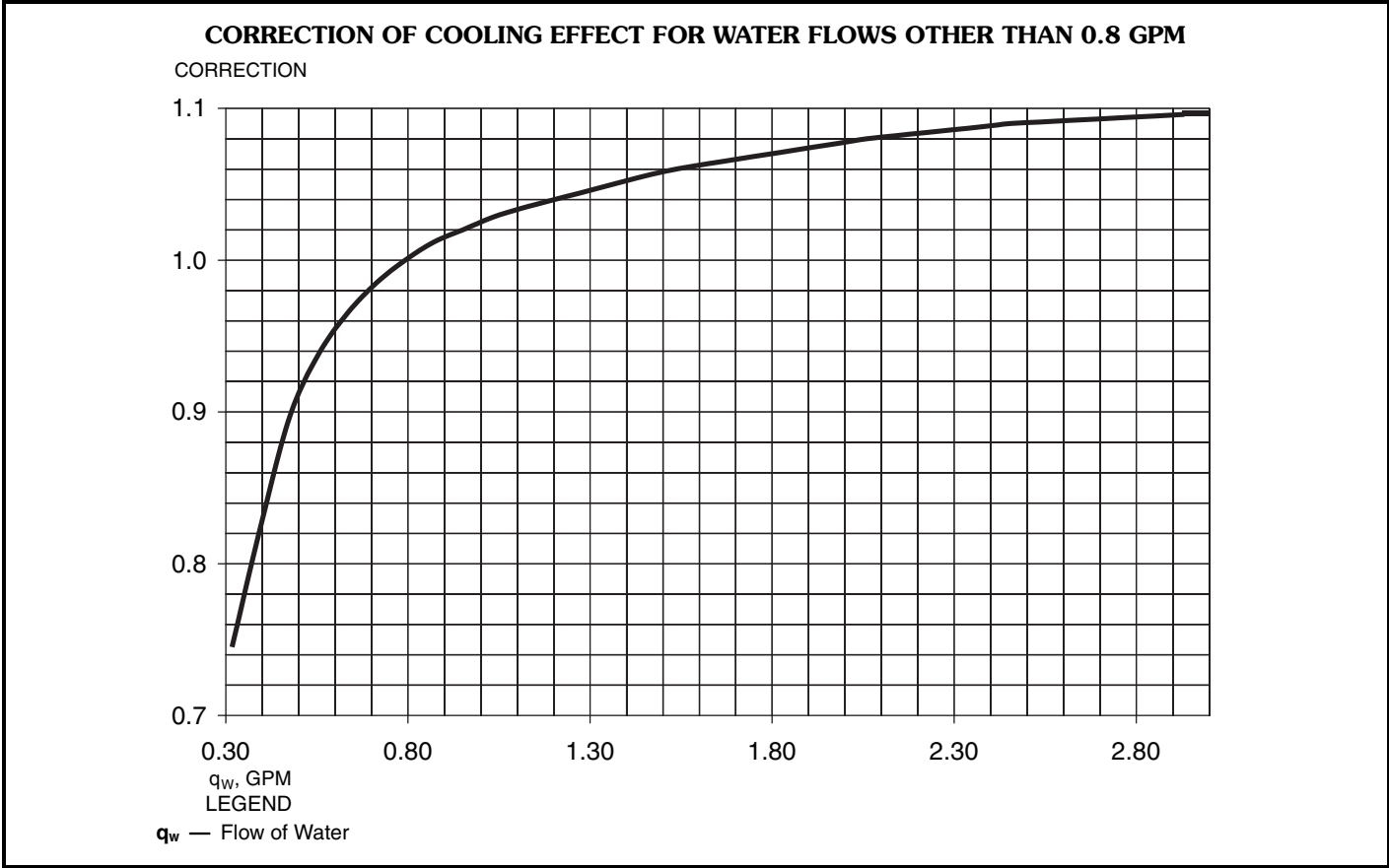
**LEGEND**  
**P<sub>k</sub>** — Power  
**q<sub>W</sub>** — Flow of Water  
**t<sub>w</sub>** — Temperature Variance of Supply Water

**NOTE:** Data based on tests using the Nordtest method which requires a zero temperature difference between the air entering the beam coil and the air at 3.6 ft above the floor surface. To achieve this, the walls in the test room are cooled. In actual conditions, the temperature difference is normally 1.8 to 3.6 F. The temperature difference between room air and water should in this case be increased by 1.8 to 3.6 F. This is because in the actual conditions, the beam will produce a higher effect.

# Performance data (cont)

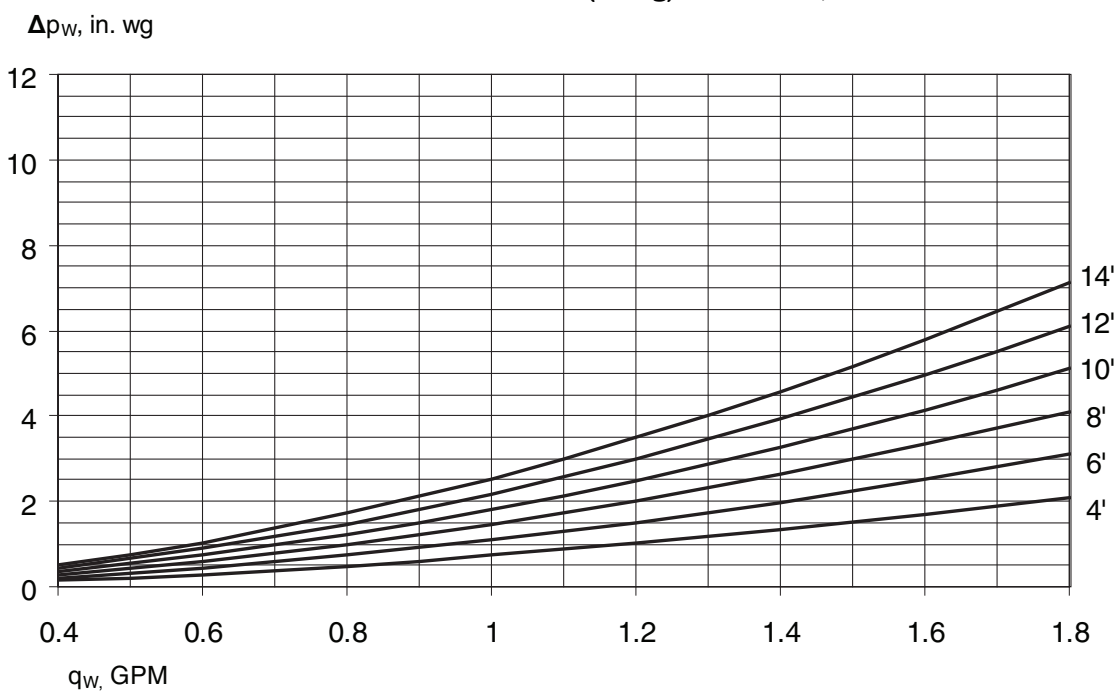


36CBPB,PS,PD Series Units





**WATER PRESSURE DROP (in. wg) — 36CBPD,PS UNITS**



LEGEND  
 $P_w$  — Water Pressure Drop  
 $q_w$  — Flow of Water

# Guide specifications — 36CBAC,AE series



## Active Chilled Beams

### HVAC Guide Specifications

Size Range: **4 to 10 ft**

Carrier Model Number: **36CBAC,AE**

#### Part 1 — General

##### 1.01 SYSTEM DESCRIPTION

- A. Integrated chilled beam system for ventilation, cooling, and heating.
- B. Equipment shall be completely assembled, and piped. Capacities and characteristics as listed in the schedule and the guide specifications that follow.

##### 1.02 QUALITY ASSURANCE

- A. Units shall be tested using the prEN 15116 test method.
- B. All units shall be fully quality tested by factory run testing under normal operating conditions and water flow rates as described herein.

#### Part 2 — Product

##### 2.01 EQUIPMENT

###### A. General:

- 1. The chilled beam shall be equipped with adjusting rails, comfort control, and flow pattern control.
- 2. 36CBAC chilled beam unit shall be designed for exposed installation at ceiling level next to partitions or walls.
- 3. 36CBAE chilled beam unit shall be designed for exposed installation.

###### B. Unit Casing:

- 1. Airflow through the supply air slot is directed diagonally upwards and can be adjusted by adjusting rails change the length of the holes in the primary air channel.
- 2. Hole lengths of standard beams shall be preset at the longest possible position before delivery. If individual factory adjustment of hole lengths is requested, all beams shall be marked and must be identified at delivery and sorted at the building site.

- C. The casing shall be made of galvanized steel sheet and aluminum profiles, and shall be powder painted in white.
- D. The gables shall be made of ABS plastic.
- E. The standard color shall be RAL 9010, which corresponds to NCS 0502-Y, gloss level 30.
- F. The bottom plates can be pushed aside to allow easy cleaning and airflow adjustment.
- G. Extended casing shall be available.
- H. Coil:
  - 1. The coil shall be made of copper tubes and aluminum fins, coil diameter connection size is  $\frac{1}{2}$  in. OD.
  - 2. The maximum working pressure shall be 232 psi.
  - 3. An optional hot water heating loop can be added to the beam coil.
  - 4. A purging vent shall be included as standard.
- I. Special Features:
  - 1. An enclosure without end walls shall be made available.
  - 2. An enclosure with sealed end walls shall be made available on 36CBAE units.
  - 3. A gage rod for hole length adjustment is available.
  - 4. High airflow shall be made available.
  - 5. Heating ability shall be made available.
  - 6. Lighting is available as a special order for 36CBAE units.
  - 7. Suspension rods shall be made available for unit suspension.
  - 8. Suspension brackets shall be made available on 36CBAE units.
  - 9. Flexible water pipes (hoses) shall be made available for series connections. (18 in. length standard.)
  - 10. Mounting brackets for ceiling suspension are available.
  - 11. Protective film for installation over painted surfaces is available.

# Guide specifications — 36CBAF,AH series



## Active Chilled Beams

### HVAC Guide Specifications

Size Range: **4 to 12 ft**

Carrier Model Number: **36CBAF,AH**

#### Part 1 — General

##### 1.01 SYSTEM DESCRIPTION

- A. Integrated chilled beam system for ventilation, cooling, and heating.
- B. Equipment shall be completely assembled, and piped. Capacities and characteristics as listed in the schedule and the guide specifications that follow.

##### 1.02 QUALITY ASSURANCE

- A. Units shall be tested using the prEN 15116 test method.
- B. All units shall be fully quality tested by factory run testing under normal operating conditions and water flow rates as described herein.

#### Part 2 — Product

##### 2.01 EQUIPMENT

###### A. General:

The chilled beam unit shall be designed for flushed mounting in a false ceiling and shall be sized to match a standard 2 ft false ceiling module.

###### B. Unit Casing:

- 1. Airflow through the supply air slot can be adjusted using the optional comfort control function by adjusting rails which change the length of the holes in the primary air channel.
- 2. Hole lengths of standard beams shall be preset at the longest possible position before delivery if the comfort control option is requested.

- C. The casing shall be made of galvanized steel sheet and aluminum profiles, and shall be powder painted in white.
- D. The standard color shall be RAL 9010, which corresponds to NCS 0502-Y, gloss level 30.
- E. Coil:
  - 1. The coil shall be made of copper tubes and aluminum fins, coil diameter connection size is 1/2 in. OD.
  - 2. The maximum working pressure shall be 232 psi.
  - 3. An optional hot water heating loop can be added to the beam coil.
  - 4. A purging vent shall be made available.
- F. Special Features:
  - 1. Flow pattern control shall be made available.
  - 2. Comfort control shall be made available.
  - 3. High airflow shall be made available.
  - 4. Lighting is a special order option.
  - 5. Provision for a sprinkler system can be requested.
  - 6. Suspension rods shall be made available for unit suspension.
  - 7. A gage rod for hole length adjustment shall be made available.
  - 8. Mounting brackets shall be made available for unit installation.
  - 9. Flexible water pipes (hoses) shall be made available for series connections. (18 in. length standard.)

# Guide specifications — 36CBAN series



## Active Chilled Beams

### HVAC Guide Specifications

Size Range: **4 to 10 ft**

Carrier Model Number: **36CBAN**

#### Part 1 — General

##### 1.01 SYSTEM DESCRIPTION

- A. Integrated chilled beam system for ventilation, cooling, and heating.
- B. Equipment shall be completely assembled, and piped. Capacities and characteristics as listed in the schedule and the guide specifications that follow.

##### 1.02 QUALITY ASSURANCE

- A. Units shall be tested using the prEN 15116 test method.
- B. All units shall be fully quality tested by factory run testing under normal operating conditions and water flow rates as described herein.

#### Part 2 — Product

##### 2.01 EQUIPMENT

- A. General:
  1. The chilled beam unit shall be designed for flushed mounting in a false ceiling and shall be sized to match a standard 1 ft false ceiling module.
  2. The chilled beam shall be equipped with adjusting rails, comfort control, and flow pattern control.

##### B. Unit Casing:

1. Airflow through the supply air slot can be adjusted by adjusting rails change the length of the holes in the primary air channel.
2. Hole lengths of standard beams shall be preset at the longest possible position before delivery.

##### C. The casing shall be made of galvanized steel sheet and aluminum profiles, and shall be powder painted in white.

##### D. The standard color shall be RAL 9010, which corresponds to NCS 0502-Y, gloss level 30.

##### E. The bottom plates can be pushed aside to allow easy cleaning and airflow adjustment.

##### F. Coil:

1. The coil shall be made of copper tubes and aluminum fins, coil diameter connection size is  $\frac{1}{2}$  in. OD.
2. The maximum working pressure shall be 232 psi.
3. An optional hot water heating loop can be added to the beam coil.
4. A purging vent shall be included as standard.

##### G. Special Features:

1. A gage rod for hole length adjustment shall be made available.
2. High airflow shall be made available.
3. Lighting is a special order option.
4. Suspension rods shall be made available for unit suspension.
5. Suspension brackets shall be made available.
6. Flexible water pipes (hoses) shall be made available for series connections. (18 in. length standard.)

# Guide specifications — 36CBAQ series



## Active Chilled Beams

### HVAC Guide Specifications

Size Range: **2 to 4 ft**

Carrier Model Number: **36CBAQ**

#### Part 1 — General

##### 1.01 SYSTEM DESCRIPTION

- A. Integrated chilled beam system for ventilation, cooling, and heating.
- B. Equipment shall be completely assembled, and piped. Capacities and characteristics as listed in the schedule and the guide specifications that follow.

##### 1.02 QUALITY ASSURANCE

- A. Units shall be tested using the prEN 15116 test method.
- B. All units shall be fully quality tested by factory run testing under normal operating conditions and water flow rates as described herein.

#### Part 2 — Product

##### 2.01 EQUIPMENT

###### A. General:

The chilled beam unit shall be designed for flushed mounting in a false ceiling and shall be sized to match a standard 2 ft false ceiling module.

###### B. Unit Casing:

1. Airflow through the supply air slot can be adjusted using the optional comfort control function by adjusting rails which change the length of the holes in the primary air channel.

2. Hole lengths of standard beams shall be preset at the longest possible position before delivery if the comfort control option is requested.

C. The casing shall be made of galvanized steel sheet and aluminum profiles, and shall be powder painted in white.

D. The standard color shall be RAL 9010, which corresponds to NCS 0502-Y, gloss level 30.

###### E. Coil:

1. The coil shall be made of copper tubes and aluminum fins, coil diameter connection size is 1/2 in. OD.

2. The maximum working pressure shall be 232 psi.

3. An optional hot water heating loop can be added to the beam coil.

###### F. Special Features:

1. Flow pattern control shall be made available.

2. Comfort control shall be made available.

3. Suspension rods shall be made available for unit suspension.

4. A gage rod for hole length adjustment shall be made available.

5. Mounting brackets shall be made available for unit installation.

6. Flexible water pipes (hoses) shall be made available for series connections. (18 in. length standard.)

# Guide specifications — 36CBPB,PD,PS series



## Passive Chilled Beams

### HVAC Guide Specifications

Size Range: **4 to 14 ft**

Carrier Model Number: **36CBPB,PD,PS**

#### Part 1 — General

##### 1.01 SYSTEM DESCRIPTION

- A. Chilled beam system for cooling where air is supplied by separate supply air devices.
- B. Equipment shall be completely assembled, and piped. Capacities and characteristics as listed in the schedule and the guide specifications that follow.

##### 1.02 QUALITY ASSURANCE

- A. Units shall be tested using the EN 14518 test method.
- B. All units shall be fully quality tested by factory run testing under normal operating conditions and water flow rates as described herein.

#### Part 2 — Product

##### 2.01 EQUIPMENT

- A. General:
  1. 36CBPB,PS chilled beams shall be designed for either flush installation in a suspended ceiling or exposed installation without a false ceiling. The 36CBPD unit is only intended for exposed installation.
  2. 36CBPD chilled beams shall be designed for exposed installation.
- B. Unit Casing:
  1. For 36CBPB,PS units, a casing adapter with the same form as the beam shall be made available to adjust the beam length or to be

placed between beams in case of series connection.

2. The adapter shall be open-ended to allow the entry of duct and water pipes. A closed end shall be available upon request.
3. The bottom plate of the adapter shall be removable in order to make duct or pipe connections.
- C. The casing shall be made of galvanized steel sheet and aluminum profiles, and shall be powder painted in white.
- D. The standard color shall be RAL 9010, which corresponds to NCS 0502-Y, gloss level 30. Other colors shall be made available upon request.
- E. Coil:
  1. The coil shall be made of copper tubes and aluminum fins, coil diameter connection size is  $\frac{1}{2}$  in. OD.
  2. The maximum working pressure shall be 232 psi.
  3. A purging vent shall be required on the return pipe if the beam is positioned in a high point in the piping system.
- F. Special Features:
  1. Lighting is a special order option on 36CBPD units. Not available on 36CBPB,PS units.
  2. Suspension rods shall be made available for unit suspension.
  3. Suspension brackets shall be made available.
  4. Beam attachments shall be made available.
  5. Flexible water pipes (hoses) shall be made available for series connections. (18 in. length standard.)

