



MANUAL – INSTALLATION

Active Chilled Beam Recessed

ACBR Series

v100 – Issue Date: 07/17/17

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PRICE[®]

ACTIVE CHILLED BEAM RECESSED

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ACTIVE CHILLED BEAM RECESSED

PRODUCT OVERVIEW

Before You Start

Inspect all cartons and boxes for flaws and shipping damage. If anything is discovered to be damaged, take photos and contact the shipping company to file a freight claim immediately.

Ensure all tools (as listed on the following page) are on site and ready for use.

A minimum of two (2) people will be required to install this system.

ACBR:

- 1-way lateral or vertical (up or down) discharge
- Horizontal Coil or Vertical Coil
- 9 in. Width / 17 in. Height
- 24 - 96 in. Nominal length in 12 in. increments

Handling

Units should only be handled by the case or mounting brackets. Handling by the inlet or coil may cause damage.

Avoid introducing contaminants into the unit such as dirt, dust, etc. Keep the induction coil face, the duct inlet and the water connection piping covered at all times during the installation process until the beam is ready for connections.

To avoid smudging the unit while installing, the use of clean white cotton gloves is recommended.

Units should be stored in a covered, dry location while waiting for installation. Location should be cleaned of excess dust before installation.

Units should never be stored where they may be subjected to a hostile environment such as rain, snow, or extreme temperatures (>85°F).

Typical Installation

Determine where the beams should be located using building drawings and identification tags located on the units and schedule. The beam construction determines the performance. Coordinate the beam's length, nozzle size, type of water coil connection, duct size, duct

inlet location and air outlet configuration with the required location.

Installation hanger options

If ceiling mounted, it is suitable to hang an ACBR by the means listed below. The ACBR hanging load shall only be supported from the building structure using the mounting brackets provided. Active beam should not be supported by suspended ceiling elements, duct or piping connections.

- 3/8 in. Threaded rod & suspension nuts
- Hanger wire
- Wire rope

If wall mounted, the ACBR will require an enclosure or cabinet (either new or pre-existing). The ACBR shall be mounted with the discharge facing the enclosure discharge and the coil facing the room. Enclosure shall have a grille face that should not be blocked or else the beam performance will be impacted. The following means should be used to secure the beam through the mounting brackets provided.

- Wall and/or Concrete Anchors (depending on application) and screws
- 3/8 in. Nuts and bolts

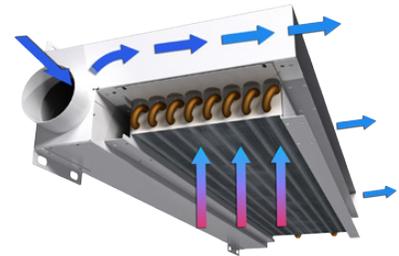
Maintenance

Maintenance required is accessing the coil from the room side and vacuuming the water coil with a soft bristle brush, as well as wiping the grille/slot (if installed) with a damp cloth based on space and owner requirements.

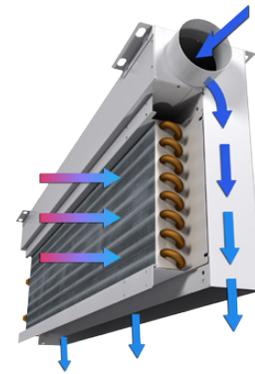
Maintain water conditions which prevent corrosion of copper tubing and ensure that safeguards against air accumulation through leaks or oxygen diffusion in system piping are functioning.

If included in the system design, check the condensate sensor(s) or humidity sensor(s) according to sensor manufacturer's methods and schedule.

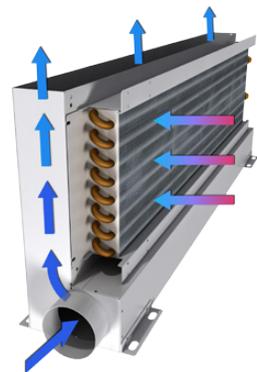
HORIZONTAL ▾



VERTICAL DOWN ▾



VERTICAL UP ▾



ACTIVE CHILLED BEAM RECESSED

PRODUCT OVERVIEW

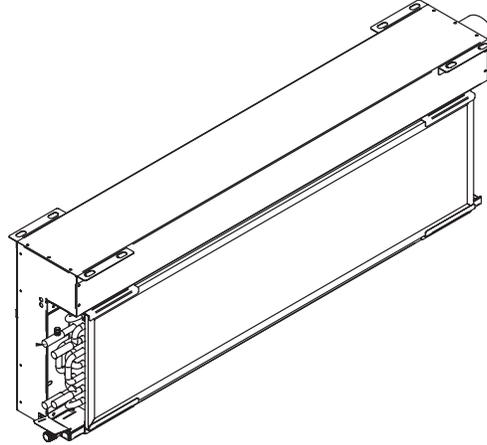
Required Tools/Parts

To be supplied by contractor

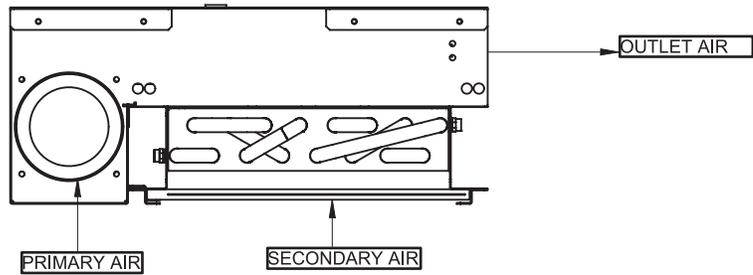
- (2+) Ladders or scaffolding (ceiling mounted application)
- Laser leveler
- Cordless drill/impact
- Damp cloth(s) (for cleaning)
- Tape measure
- Clamps/locking plier
- Suspension methods (ceiling mounted application)
 - Wire rope
 - Hanger wire
 - 3/8 in. Threaded rod, 3/8 in. suspension nuts
- Wall mount methods (wall mounted application)
 - Wall/concrete anchors and screws
 - Wood blocking

Dimensional Data

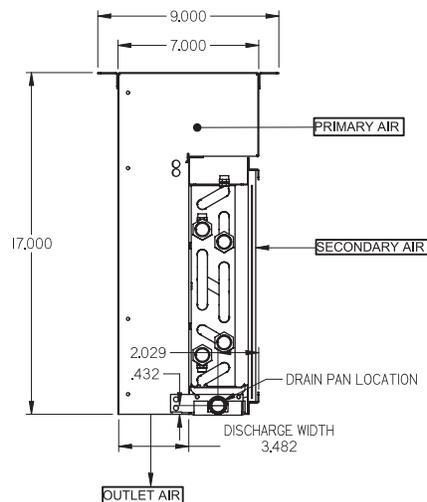
ACBR ▼



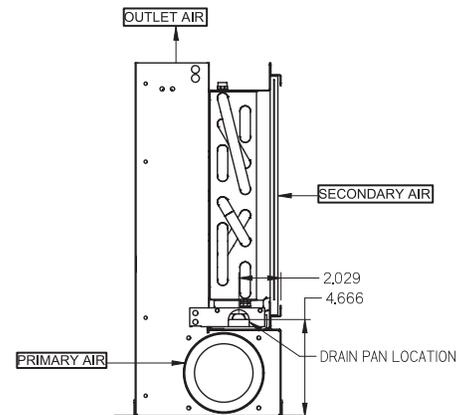
HORIZONTAL APPLICATION ▼



VERTICAL DOWN ORIENTATION ▼



VERTICAL UP ORIENTATION ▼

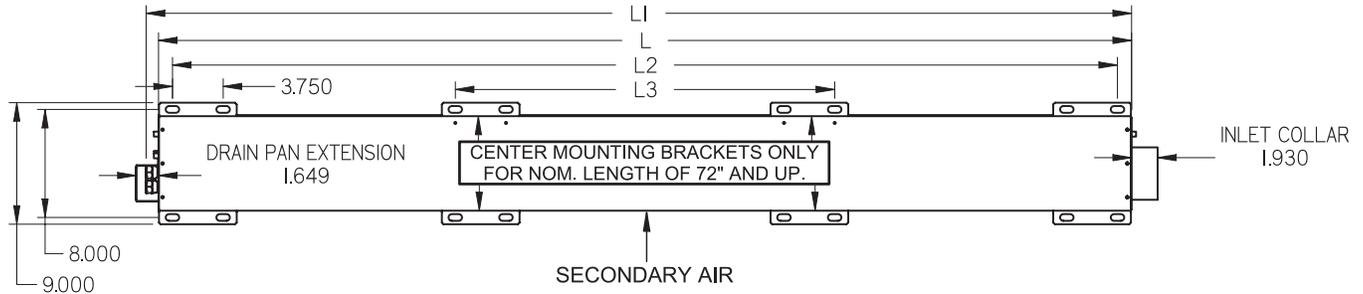


ACTIVE CHILLED BEAM RECESSED

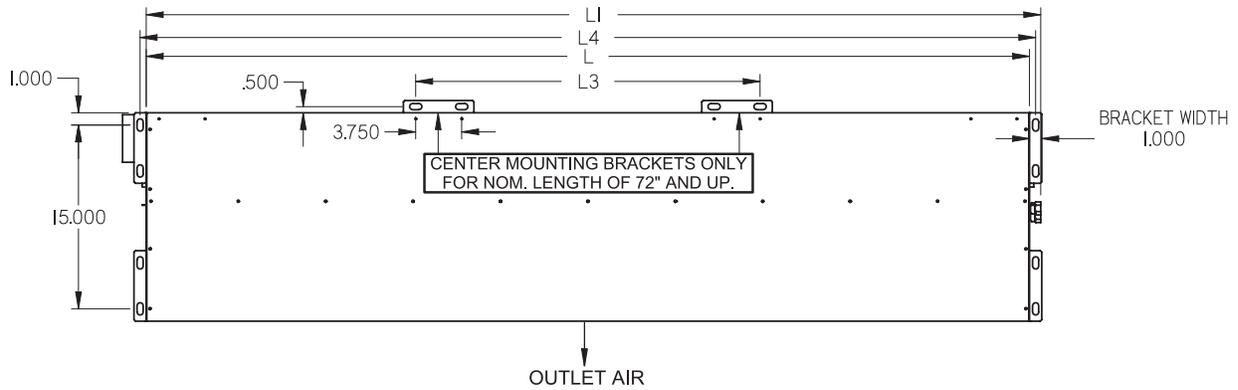
PRODUCT OVERVIEW

Dimensional Data

MOUNTING BRACKETS FOR VERTICAL DOWN AND UP ORIENTATIONS ▼



MOUNTING BRACKETS FOR HORIZONTAL ORIENTATIONS ▼

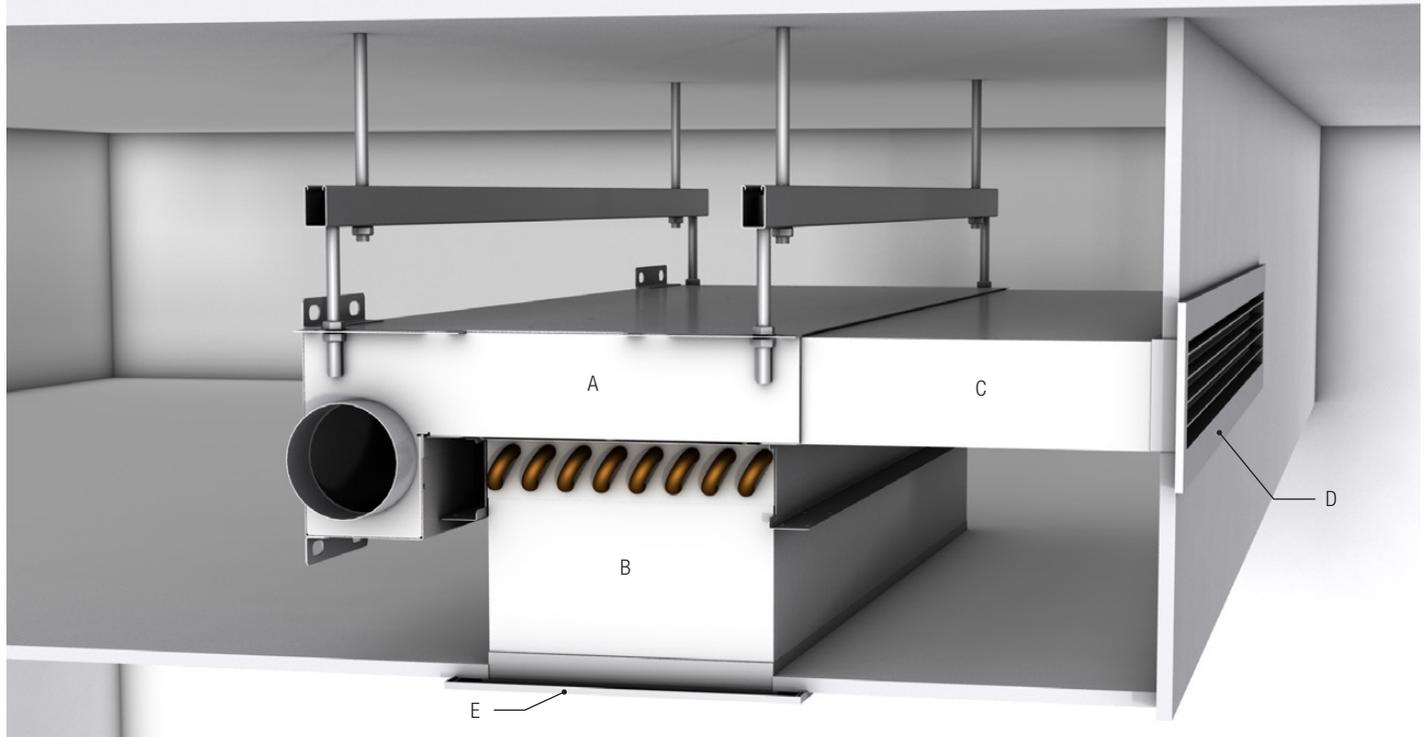


Nominal Length	Unit Size (L)	Overall Length (L1)	VD, VU Mounting Length (L2)	Support Mounting Length (L3)	H Mounting Length (L4)
24	24.000	24.906	21.924	14.357	25.000
36	36.000	36.906	33.924	17.786	37.000
48	48.000	48.906	45.924	21.214	49.000
60	60.000	60.906	57.924	24.643	61.000
72	72.000	72.906	69.924	28.071	73.000
84	84.000	84.906	81.924	31.500	85.000
96	96.000	96.906	93.924	34.929	97.000

ACTIVE CHILLED BEAM RECESSED

INSTALLATION & MOUNTING INSTRUCTIONS

HORIZONTAL BULKHEAD APPLICATION ▼



Installation for bulkhead applications – Horizontal

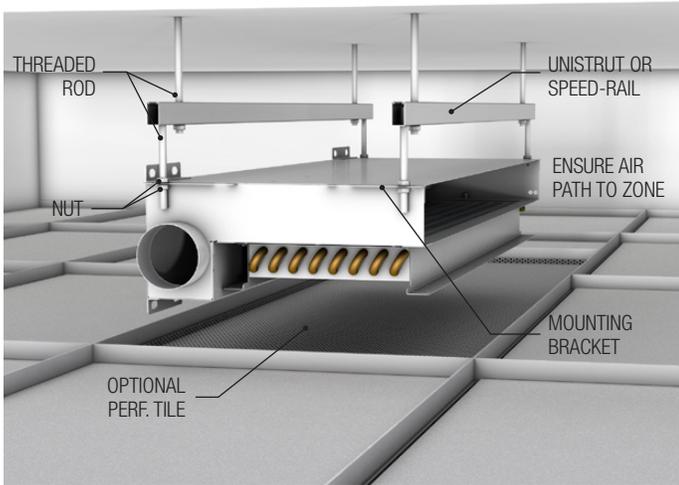
1. Determine beam (A) location and orientation shown in approved reflected ceiling plans.
2. Install adjustable hanging wire, speed rail, threaded rods, and/or hanger to support all four corners of the beam. Beams 5ft in length and longer will have two middle supports.
3. Unit is to be hung with coil in bottom-most configuration directly above ceiling.
4. Mounting brackets offer 1 inch flexible fore and aft positioning in locating threaded rod. Dual sided Unistrut or other speed rail as mounted above the beam offers side-to-side adjustment and flexibility in locating threaded rod.
5. Install discharge and return sheet metal transitions (supplied by others), if applicable, to the active beam. Attach return transition (B) to flow guides around the coil. Attach discharge transition (C) to discharge opening.
6. Initially mount the beam approximately 1-2 inches above the final ceiling level.
7. Install the ceiling structure or framing then lower the beam to final level.
8. Connect the water supply and return piping to the beam coil. Hard pipe or flexible hose connections can be used.
9. Connect the supply air to the ACBR inlet collar. The air connection can be made with either hard duct or flex duct. Ensure an airtight connection to achieve desired performance.
10. Balance both air and water systems prior to finishing ceiling or ensure access by adjacent ceiling panel.
11. Finish ceiling allowing for openings to accommodate discharge and return grilles.
12. Locate discharge grille (D) (ordered separately) on discharge duct and secure with fastening method as ordered for the grille.
13. Locate return grille (E) (ordered separately) on return duct and secure with fastening method as ordered for the grille.

*Installation of active beam to substructure should be done in accordance with local building codes. Additional seismic bracing may be required.

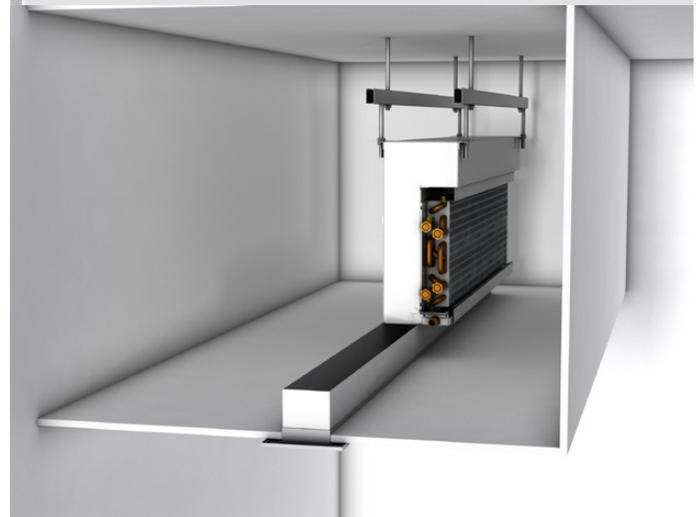
ACTIVE CHILLED BEAM RECESSED

INSTALLATION & MOUNTING INSTRUCTIONS

HORIZONTAL RECESSED CEILING APPLICATION ▼



VERTICAL CEILING PERIMETER APPLICATION ▼



Installation for recessed ceiling applications – Horizontal and Vertical

1. Determine beam location and orientation shown in approved reflected ceiling plans.
2. Install adjustable hanging wire, speed rail, threaded rods and/or hanger to support all four corners of the beam. Beams 5 feet in length and longer will have two middle supports.
3. The ACBR is to be hung with coil in bottom-most configuration or directly above perforated face for horizontal application or hung with coil in vertical position for vertical application.
4. Mounting brackets offer 1 inch flexible fore and aft positioning in locating threaded rod. Dual sided Unistrut or other speed rail as mounted above the beam offers side-to-side adjustment and flexibility in locating threaded rod.
5. Install any discharge and return sheet metal transitions (supplied by others) to the active beam. Attach return transition to flow guides around the coil. Attach discharge transition to discharge opening.
6. Initially mount the beam approximately 1-2 inches above the final ceiling level.
7. Install the ceiling structure or framing then lower the beam to final level.
8. Connect the water supply and return piping to the beam coil. Hard pipe or flexible hose connections can be used.
9. Connect the supply air to the ACBR inlet collar. The air connection can be made with either hard duct or flex duct. Ensure an airtight connection to achieve desired performance.
10. Balance both air and water systems prior to finishing ceiling or ensure access by adjacent ceiling panel.
11. If applicable, finish ceiling allowing for openings to accommodate discharge and grilles.
12. If applicable, locate discharge grille (ordered separately) on discharge duct and secure with fastening method as ordered for the grille.
13. If applicable, locate return grille (ordered separately) on return duct and secure with fastening method as ordered for the grille.

*Installation of active beam to substructure should be done in accordance with local building codes. Additional seismic bracing may be required.

ACTIVE CHILLED BEAM RECESSED

INSTALLATION & MOUNTING INSTRUCTIONS

Installation for Wall/Floor Mounted Application

1. Determine beam location and orientation shown in approved reflected ceiling plans. If retrofitting beam, confirm casing matches location and orientation.
2. Remove the face from the ACBR casing or pre-existing cabinet. The beam's mounting brackets should now be visible. Position the beam in desired location and fasten mounting brackets securely to blocking or wall. Ensure unit is within casing or cabinetry cavity.
3. Connect the water supply and return piping to the beam coil. Hard pipe or flexible hose connections can be used.
4. Connect the supply air to the ACBR inlet collar. The air connection can be made with either hard duct or flex duct. Ensure an airtight connection to achieve desired performance.
5. Balance both air and water systems.
6. Attach face back onto beam once all connections have been made.

*Installation of active beam to substructure should be done in accordance with local building codes. Additional seismic bracing may be required.

WALL/FLOOR MOUNTED APPLICATION ▼



ACTIVE CHILLED BEAM RECESSED

INSTALLATION & MOUNTING INSTRUCTIONS

Water System Preparation

- Recommended water connections: Sweat, Threaded, Push connect for 0.5 inch (nominal) Copper tube.
- Before connecting beams to the water system, flush and drain the main system piping to remove contaminants from the construction process.
- Pressure test the water system for leaks. Isolate and repair leaks.
- Move water through the hydronic system at or above 0.5 gpm to assist purging air from the beams. If 0.5 gpm per beam is not normally available, shut off flow through other beams to divert more water through the beams being flushed. Ensure system air traps are operating as required if installed.

Water Balancing – Manual

- Adjust balancing valves based on fluid flow rates scheduled on Price performance data.

Water Balancing – Auto/Pressure Independent

- Ensure correct pressure independent valves are installed based on design drawings. Confirm the correct flow rate is on the correct branch. (i.e. hot water flow rate going through hot water coil.)

Water Coil Connection

	4-Pipe Right Hand Coil Connection	4-Pipe Left Hand Coil Connection
Vertical Down Discharge		
Vertical Up Discharge		
Horizontal Discharge		

ACTIVE CHILLED BEAM RECESSED

INSTALLATION & MOUNTING INSTRUCTIONS

Air System Preparation

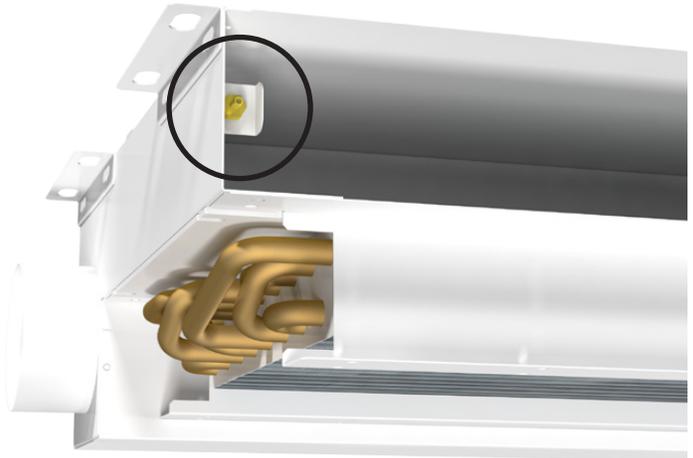
- Ensure an airtight connection between the air supply duct and the active beam. Duct connections are recommended to meet SMACNA class A up to 2 in. w.g.
- Air connections should ideally have straight duct sections upstream of the air inlet, although bends in the duct are permitted close to the air inlet. However, there should be 5 duct diameters straight leading into the inlet to ensure laminar flow. Only straight ductwork connections will yield a reliable pressure port measurement.

Air Balancing

- Measure static pressure drop in the plenum of the active beam by connecting a static pressure measurement device to the brass pressure port included on the beam. The pressure port is located inside the discharge slot near the end of the beam.
- Ensure damper is installed 5 duct diameters away from inlet.
- Adjust balancing damper to match the schedule static pressure with the measurement.
- Damper should be used for trimming only.
- Contact Price Beam team for high altitude balancing charts.
- See Air flow calibration charts on page 12.

NOTE: Traversing the duct work before a beam will not guarantee that the beam is properly balanced because performance is based on internal plenum pressure.

PRESSURE PORT ▼



ACTIVE CHILLED BEAM RECESSED

INSTALLATION & MOUNTING INSTRUCTIONS

Damper Installation

Select the appropriate MQ/VAV Damper required for the location based on the diameter of the unit.

The MQ/VAV damper should always be installed in locations that are accessible for inspection and removal if necessary. In order to avoid additional noise in the occupied space:

1. The MQ/VAV damper should be installed at least 5 duct diameters upstream of the active beam.
2. The MQ/VAV damper should be used as a trimming damper and not a balancing damper.

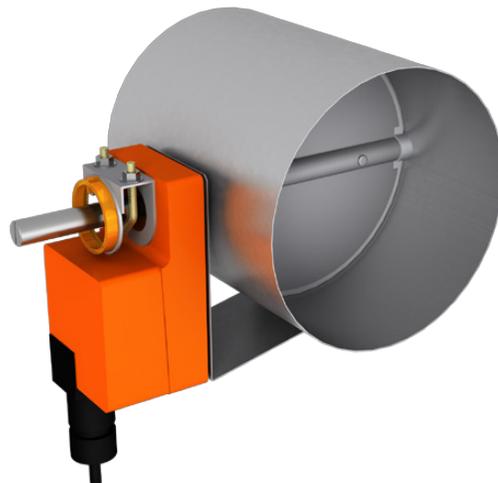
DAMPER INSTALLATION ▼



MQ DAMPER ▼



VAV DAMPER ▼



ACTIVE CHILLED BEAM RECESSED

INSTALLATION & MOUNTING INSTRUCTIONS

Lint Screen Installation and Maintenance

The ACBR is shipped with the lint screen (if ordered) already installed.

The lint screen is held between guide brackets on each corner of the lint screen. If the lint screen requires external maintenance, follow these steps:

1. Slide the lint screen laterally out from the brackets.
2. Use vacuum to clear away any dirt or debris.
3. Slide lint screen back in between brackets.

LINT SCREEN ▼



Drain Pan Installation and Maintenance

The ACBR is shipped with a drain pan (if ordered) already installed.

In order to remove the drain pan for external maintenance, follow these steps:

1. Remove screws on each side of the beam fastening the drain pan (4 screws total).
2. Remove screws fastening the flow guide (2 screws total). Remove flow guide.
3. If installed, slide out lint screen.
4. Remove drain pan.
5. Repeat steps in reverse order to reinstall drain pan after maintenance.

DRAIN PAN ▼



ACTIVE CHILLED BEAM RECESSED

INSTALLATION & MOUNTING INSTRUCTIONS

Interpretation of Beam Tag

All beams come shipped with a tag affixed to the beam. This tag should be checked to ensure that the beam is placed in the proper location, and contains the correct options.



0 75992500210001 8001

ORDER	LINE	UNIT	PART	SECTION	
744629	1	1	A	1/6	TAG: (EXAMPLE)

ACBR/ / VD/ // 48/ /// 601/ 2P1C-DV/ SWT/ RH///// 4/ B/ MQ6/ VFR6-90/ /// / /// LS/ DP/ ///// EXT/ ///// PF/GLV/

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----

1 Model

2 Type

3 Sub Model

4 Unit Length

5 Nozzle Size

6 Coil Type

7 Connection

8 Coil Location

9 Inlet Size

10 Inlet Location

11 Inlet Damper

12 VFR Option

13 Cabinet

14 Lint Screen

15 Drain Pan

16 Insulation

17 Protective Film

18 Finish

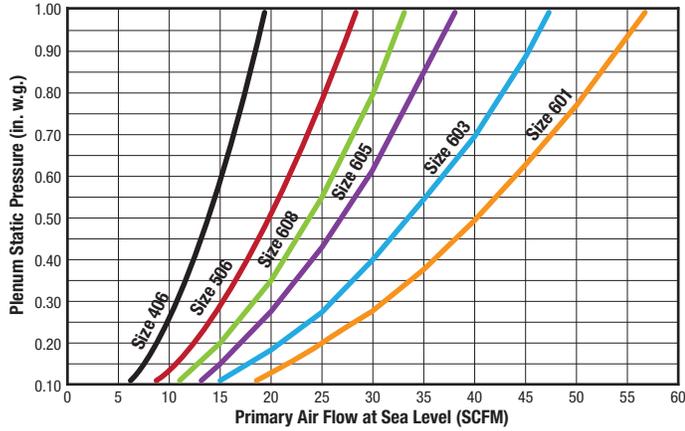
ACTIVE CHILLED BEAM RECESSED

INSTALLATION & MOUNTING INSTRUCTIONS

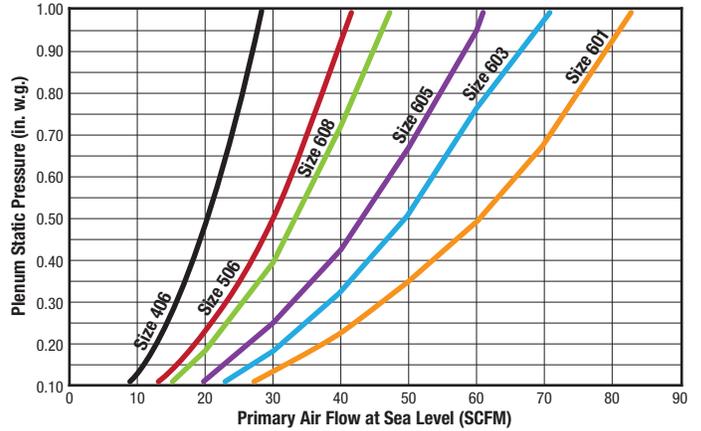
Airflow Calibration Charts

Data presented for Standard Atmosphere at sea level.

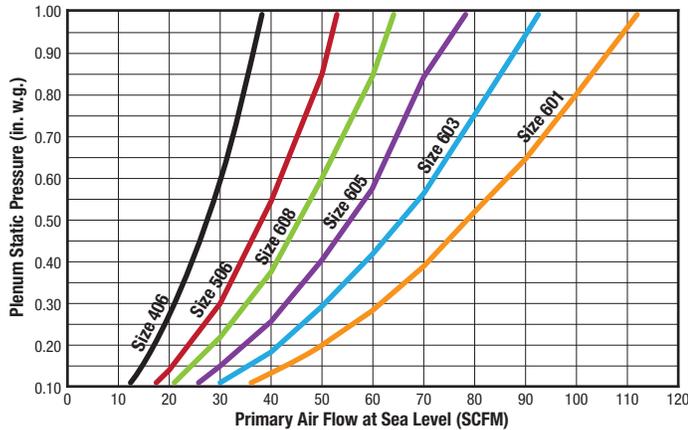
Airflow Calibration Chart for 2 ft. ACBR



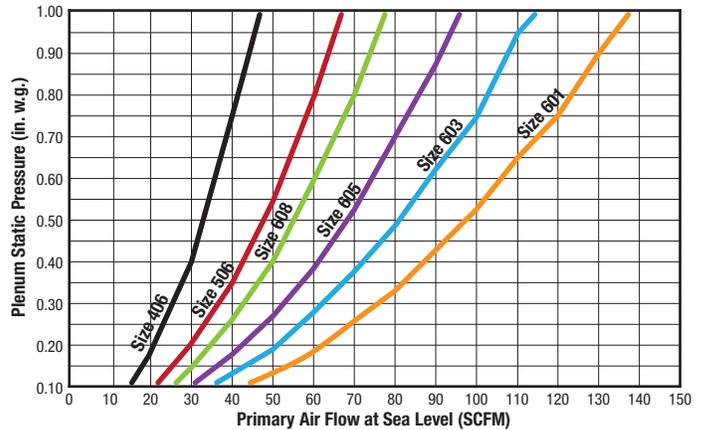
Airflow Calibration Chart for 3 ft. ACBR



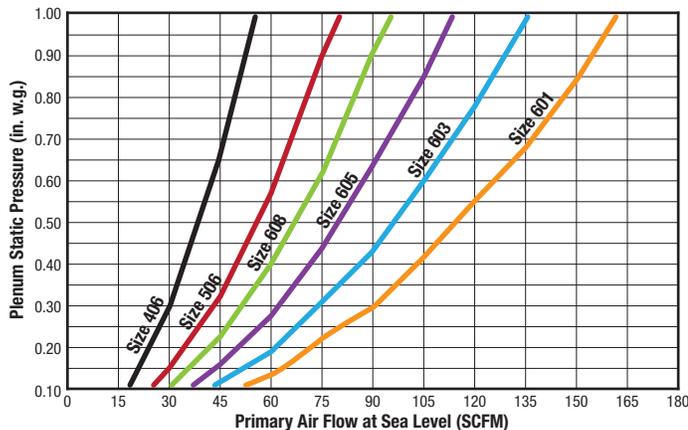
Airflow Calibration Chart for 4 ft. ACBR



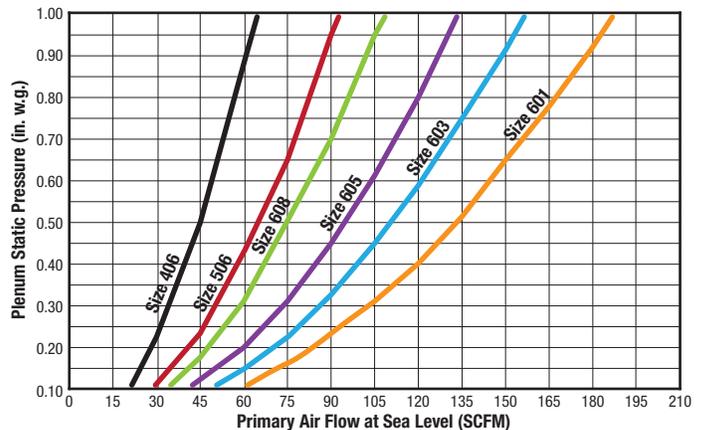
Airflow Calibration Chart for 5 ft. ACBR



Airflow Calibration Chart for 6 ft. ACBR



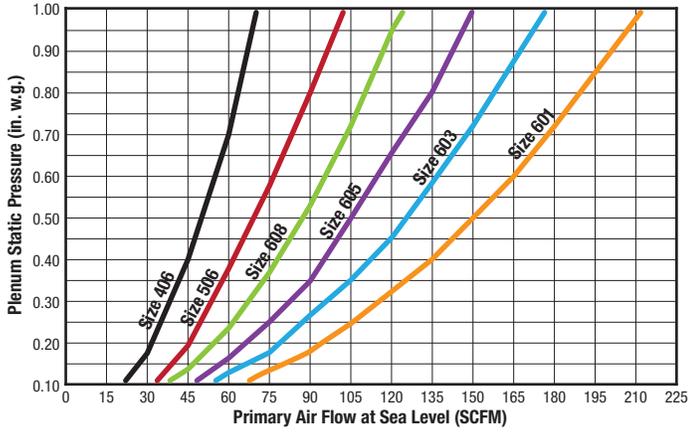
Airflow Calibration Chart for 7 ft. ACBR



ACTIVE CHILLED BEAM RECESSED

INSTALLATION & MOUNTING INSTRUCTIONS

Airflow Calibration Chart for 8 ft. ACBR



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