

ENGINEERING SPECIFICATION & CONFIGURATION

Furnish and install active chilled beams in the sizes, configurations and capacities indicated on the project schedules and plans. Unit shall comprise a primary air connection, a pressurized inlet plenum feeding a series of room air induction nozzles and an associated heat transfer coil contained in a single unit housing.

UNIT CASING

The unit casing shall be constructed from a minimum 20-gauge galvanized sheet steel. Units shall have a maximum casing height of 17".

FACE

- **(Optional)** The beam shall use a separate linear bar grille that allows inducted room air to seamlessly enter the ceiling plenum and access the chilled water coil.

FINISH

Concealed surfaces shall be G90 galvanized steel.

- **(Optional)** Supply and return grilles shall be finished in white powder coat paint or as specified by architect.

PRIMARY AIR INLETS

Manufacturer shall provide round or oval inlet collars of diameter(s) as indicated on the project plans and schedules and suitable for connection to common flexible or rigid ductwork sizes. The inlet collar shall be roll-formed to facilitate the connection of flexible or rigid ductwork. Inlet location may be side or top as indicated on the project plans and schedules. Nozzles shall be of a fixed size, selected with respect to cooling and heating requirements, and constructed of formed sheet metal.

PRIMARY AIR PLENUM PRESSURE TAP

A plenum air pressure tap shall be mounted within the pressurized plenum for measuring the pressure differential between the primary air plenum and the room. The pressure tap manometer connection port shall be fitted to the end of a plastic tube accessible from the diffuser face. Airflow calibration charts that relate the pressure differential reading with the primary airflow rates, shall be furnished with the IOM's.

MOUNTING RAILS

Factory installed mounting rails shall incorporate slotted holes for hanging using threaded rods.

HYDRONIC HEAT TRANSFER COIL

Integral heat transfer coils shall be provided with connections for either 2 or 4 pipe water connections as indicated on plans and schedules. Four pipe configurations shall require separate supply and return connections for chilled and hotwater. The coil shall be mounted horizontally and shall be manufactured with seamless copper tubing (1/2" or 3/4" outside diameter as indicated on the plans and schedules) with minimum .016" wall thickness mechanically fixed to aluminum fins. The aluminum fins shall be limited to

no more than ten (10) fins per inch. The coil shall have a working pressure of at least 360 PSI, and be factory tested for leakage at a minimum pressure of 500 PSI.

Each chilled beam shall be provided with factory integrated manual air vents.

COILS

- **(Optional)** Coil shall be provided with factory integrated drain fittings. Unless otherwise specified, coil connections shall be bare copper for field sweating to the water supply circuit(s).
- **(Optional)** The chilled water coil shall be provided with NPT male threaded fittings. These fittings must be suitable for field connection to a similar NPT female flexible hose spigot and shall be at least 1 1/2" long to facilitate field connection (by others).

Connections shall face upwards to avoid issues with coordination of ceiling installation. The coil shall be rated and certified in accordance with AHRI Standard 410.

PACKAGING

Beams shall be delivered to site clean with hydronic coils flushed and fitted with protective caps. Protective film shall be applied to the entire beam face to prevent ingress of dirt. Units shall be shipped to site in cartons and labeled with identification tagging.

THE MANUFACTURER SHALL PROVIDE THE FOLLOWING ACCESSORIES

- **(Optional) Water Connection Hoses:** Manufacturer shall provide 1/2" or 3/4" dia. x (12"), (18") or (24") long stainless-steel braided hoses with female swivel connections. Hoses shall be constructed with a KEVLAR® reinforced EPDM core with stainless steel ferrules. Hoses shall be tested for working pressures up to 400 PSIG (at max. operating temperature of 248°F) with a burst pressure of 1600 PSIG.
- **(Optional) Airflow Regulators:** Manufacturer shall supply UL94 V-0 rated ABS polymer and UL2043 listed constant volume regulators (BFR's). BFR's shall be designed to fit inside rigid round ductwork and located at a minimum distance of three duct diameters upstream of the active chilled beam primary air inlet.

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1. **SERIES: (XXX)**
BAR - Vertical Recessed Active Chilled Beam
2. **BEAM LENGTH: (X)**
2 - 2 ft
3 - 3 ft
4 - 4 ft
6 - 6 ft
8 - 8 ft
3. **AIR PATTERN-NOZZLE TYPE: (XXX)**
M13 - M13
M17 - M17
M23 - M23
M31 - M31
4. **THROW PATTERN: (X)**
0 - None
S - Supply Grille
R - Return Grille
5. **COIL TYPE: (XXXX)**
2P1C - 2 Pipe Coil - 1 Circuit
2P2C - 2 Pipe Coil - 2 Circuit
4P1C - 4 Pipe Coil - 1 Circuit
4P2C - 2 Pipe Coil - 2 Circuit
6. **COIL ACC1: (X)**
M - Manual Air Vent
7. **COIL ACC2: (X)**
0 - None
D - Drain Pan
8. **WATER CONNECTION: (X)**
L - Left Handing
R - Right Handing
9. **PIPING TYPE: (XXX)**
SWT - Sweat
MPT - 1/2" Male Pipe Thread
10. **INLET SIZE: (X)**
4 - 4" Round
5 - 5" Round
6 - 6" Oval
8 - 8" Oval
11. **INSULATION: (X)**
0 - None
I - Internal Closed Foam Insulation

SAMPLE CONFIGURATION: BAR - 2 - M13 - 0 - 2P1C - M - 0 - L - SWT - 4 - 0