

INTRODUCTION

The BEP is ideal for exposed installations or can be integrated into lay-in ceiling systems for concealed installations. For applications with low ceilings or limited ceiling plenum height the low profile design excels at satisfying sensible cooling.

The system provides comfortable and effective sensible cooling to the space with ultra-quiet, natural convection-driven operation. It offers flexibility with perforated or linear bar grille options for exposed models and supports exposed, recessed, or concealed installation. Designed for quick and simple setup, it is available in nominal lengths up to 10 feet and includes ½" sweat or ½" MPT coil connections for versatile piping compatibility.

MODEL

BEP - Exposed Linear Passive Chilled Beam

FINISHES

- Standard Finish - #WHT British White
- Optional Finish - #BLK Black

APPLICATION

Passive chilled beams are primarily used to provide sensible cooling in perimeter zones and comfortable sensible cooling within interior zones. The primary mode of heat transfer is by natural convection, with a percentage of heat transfer transmitted through radiation. During cooling, warm room air rises to the ceiling area; cool air around the coil sinks down to the occupied area as a result of the higher density. As the cool air descends in to the space, more warm air is drawn over the coil creating a convective current that drives the system.

The airflow pattern generated from a passive beam is unidirectional with direct downward projection from the bottom of the beam. As the thermal buoyancy of the cool air drives the airflow down into space it will begin to mix with ambient room air and diffuse throughout the space. To maximize occupant comfort with passive beam systems, stationary or seated occupants should not be positioned directly under a beam. Passive beams should be installed in aisles, walkways or corridors, or at least 15' above the occupied space to prevent instances of occupant discomfort.

When using passive chilled beams, ventilation and latent cooling loads are addressed by a separate primary air system. Primary air systems could be traditional mixed air distribution, underfloor air distribution or displacement ventilation systems. As the primary air system is not used to address the entire cooling load the total system fan energy is reduced improving overall energy efficiency of the building. Applications with low latent cooling loads could use 100% outdoor air allowing for use of a dedicated outdoor air system with energy recovery further reducing total system energy consumption.

