Halton CBD – Chilled beam (terminated)



Overview

Terminated as of 1st March 2023
-> no replacing product available

- Combined cooling heating and supply air unit for ceiling installation
- Narrow structure enables indistinguishable installation

Product models and accessories

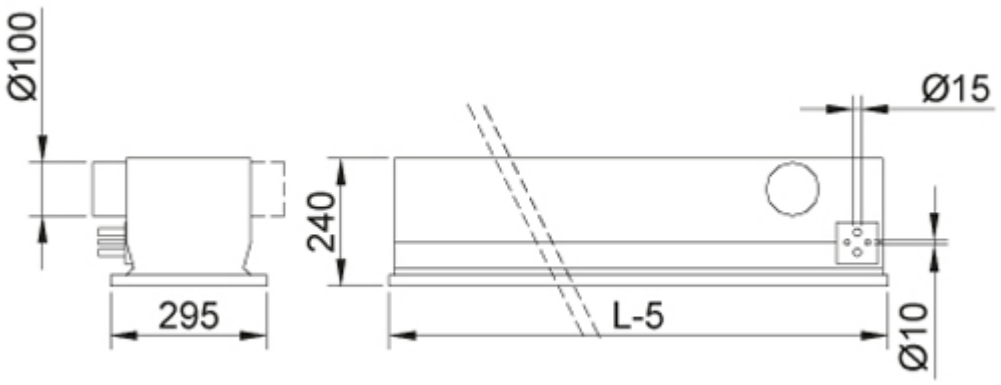
- Model with combined heating and cooling coil
- Several duct and water pipe connection locations available

Halton chilled beams are certified by Eurovent Certita.

Link to Certificate

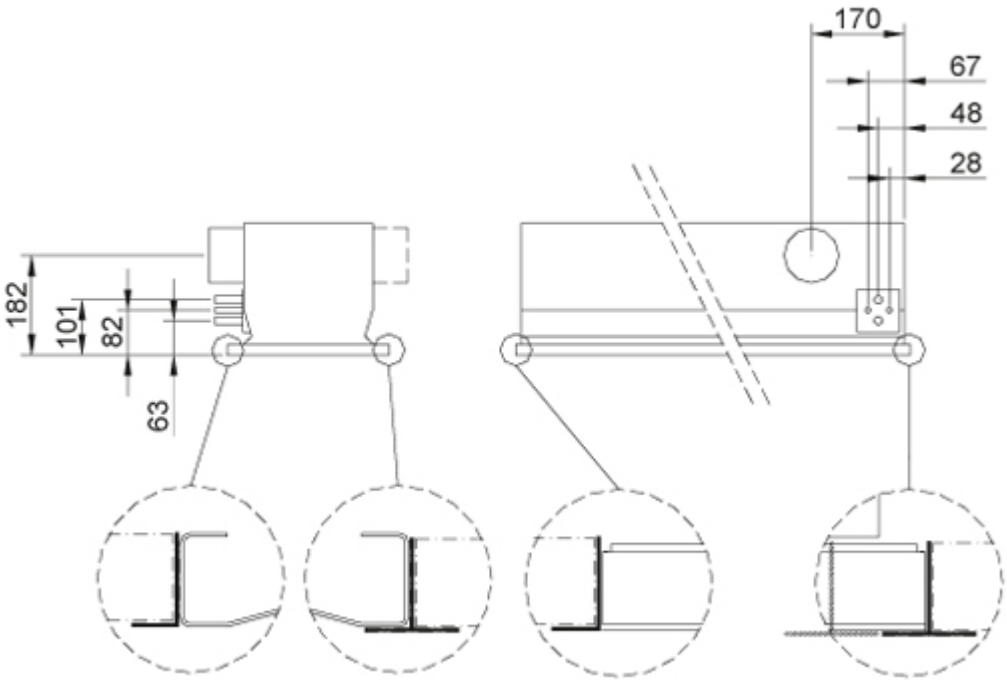
Halton reserves the right to alter products without notice.

Dimensions



Coil length	1000, 1300, ..., 2800
L-5	1195, 1495, ..., 2995
kg/m	12

Location of the pipe connections and integration to suspended ceiling



Accessories

Accessory	Code	Description	Note
Combined cooling and heating coil	TC = H	Coil with hot water circulation	Cooling/heating copper water pipe connestions are Ø 15/10 mm
Duct connections	E = R1N or L1N	R1N = connection from right, duct size 100 mm, without damper L1N = connection from left, duct size 100 mm, without damper	
Water pipe connections	WD = A, B, C or D	**A** = connection from left side at front end **B** = connection from right side at front end **C** = connection from left side at back end **D** = connection from right side at back end	Removable through access panel

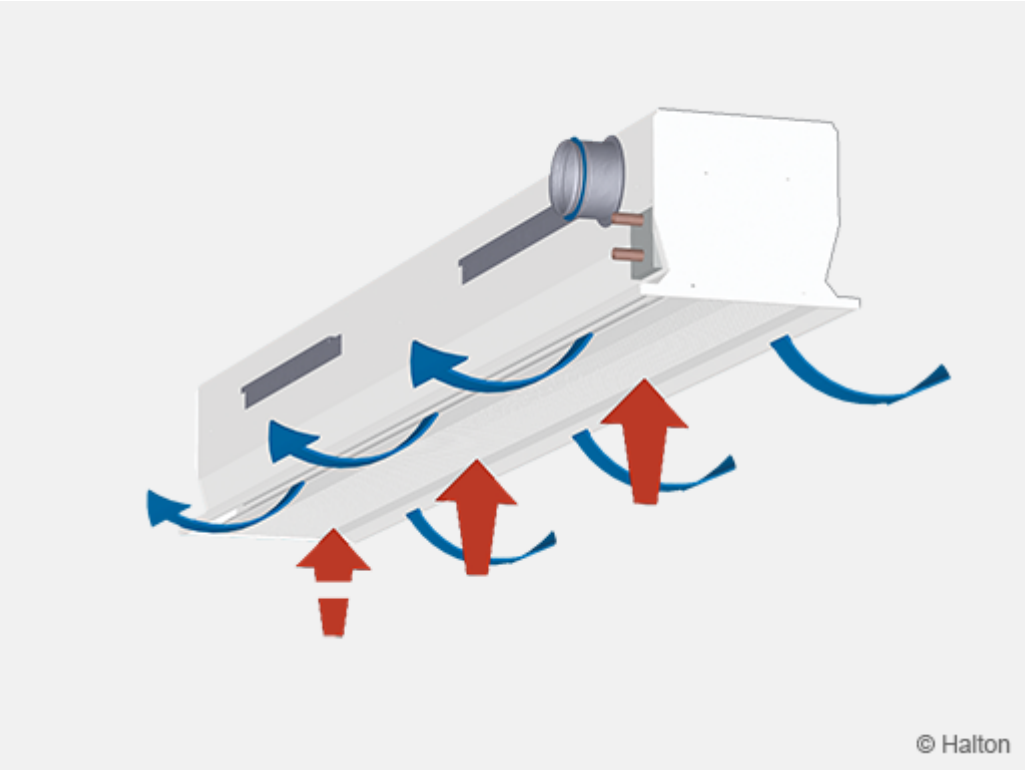
Material

Part	Material	Finishing	Note
Bottom panel	Pre-painted galvanised steel	Polyester-painted, White (RAL 9003 or RAL 9010, 20% gloss)	Special colours available Polyester-epoxy-painted
Side plates	Pre-painted galvanised steel	Polyester-painted White (RAL 9003 or RAL 9010, 20% gloss)	Special colours available Polyester-epoxy-painted
End plates	Galvanised steel	Polyester- epoxy-painted White (RAL 9003 or RAL 9010, 20% gloss)	Special colours available
Supply air plenum	Galvanised steel	Epoxy-painted White (RAL 9003 or RAL 9010, 20% gloss)	Special colours available
Brackets	Galvanised steel		
Coil pipes	Copper		
Coil fins	Aluminium		

Cooling/heating water pipe connections are Cu15/Cu10 with a wall thickness of 0.9-1.0 mm, fulfilling the European Standard EN 1057:1996.

The maximum operating pressure for chilled/hot water pipework is 1.0 MPa. Supply air duct connection is D100 mm.

Function



The primary supply air enters the plenum of the active chilled beam, from where it is diffused into the room through nozzles and supply slots located at the bottom of the beam.

The supply air nozzle jets induce efficiently ambient room air through the heat exchanger, where it is either cooled or heated.

The supply air jet is directed horizontally along the ceiling surface.
Four different nozzle sizes are available to enable different supply airflow rates.

The cooling and heating capacities of the chilled beam are controlled by regulating the water flow rate according to the control signal of the room temperature controller.

Installation

*** image to be updated soon ***

The Halton CBD active chilled beam is suitable for mounting in ceilings running parallel to the long or short side of the room. When selecting the beam direction, the supply air and water circuit connection directions should be taken into account. The CBD unit is designed for flush mounting within a false ceiling.

The beam can be fixed directly onto the ceiling surface (H1=240 mm) or suspended using threaded drop rods (8 mm). The beam is equipped with movable brackets. It is recommended that the bracket be positioned one quarter of a unit length (L/4) away from the end of the beam.

The main pipelines of the cooling and heating water circuits should be installed above the beam in order to enable venting of the pipework.

Adjustment

Cooling

The recommended cooling water mass flow rate is 0.03 – 0.10 kg/s, resulting in a temperature rise of 1 – 3°C in the heat exchanger. To avoid condensation the recommended inlet water temperature of the heat exchanger is 14 – 16°C.

Heating

The recommended heating water mass flow rate is 0.01 – 0.04 kg/s, resulting in a temperature drop of 5 – 15°C in the heat exchanger.
The recommended temperature of the inlet water to the heat exchanger is 35 – 45°C.

Balancing and control of water flow rates

Balance the water flow rates of the chilled beam with adjustment valves installed on the outlet side of the cooling and heating water loops. Cooling capacity and heating capacity of the chilled beam are controlled by regulating the water mass flow rates. The water mass flow rate can be controlled using either an ON/OFF valve or a 2- or 3-way valve for proportional operation.

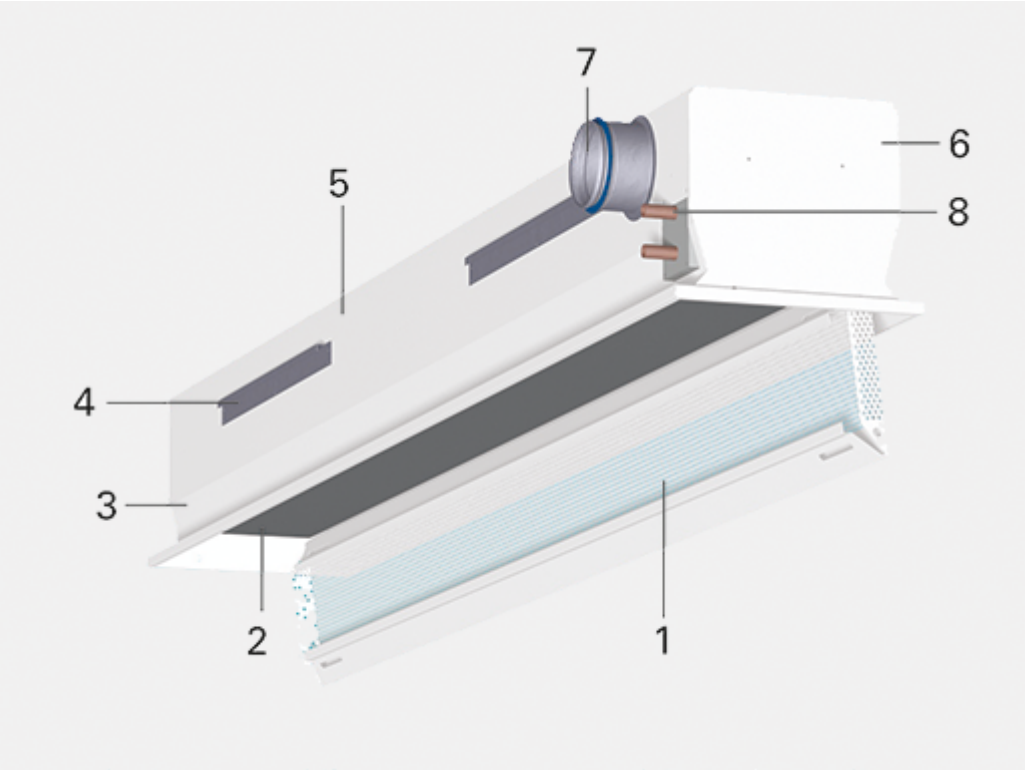
Adjustment of supply airflow rate

Each beam is equipped with a measurement tap for static pressure measurement, which enables fast and accurate measurement of the supply airflow rate. The airflow rate is calculated using the formula below.

$$q_v = k * l_{eff} * \sqrt{\Delta p_m}$$

Model	k
A	0.71
B	0.99
C	1.33
D	2.00

Servicing



Code Description
1. Bottom panel
2. Heat exchanger (coil)
3. Side plate
4. Movable bracket
5. Supply air plenum
6. Chilled & hot water pipe connections
7. Supply air connection
8. End plate

Open the bottom panel of the chilled beam.

Clean the supply air plenum, duct and finned coils of the heat exchanger using a vacuum cleaner, taking care not to damage the finned coils.

Clean the bottom panel and, if required, the side plates using a damp cloth.

Specification

The active chilled beam has an integral recirculation air path through the perforated bottom panel. The bottom panel is openable and demountable from either side for general maintenance and cleaning.
The bottom panel is removable without using any special tools.

The air supply is bi-directional.

The active chilled beam is 295mm wide and 240mm high.
The active chilled beams has an inlet duct diameter of 100 mm.
The frame, bottom and side panels is made of galvanised steel plate.
All visible parts are white painted to RAL 9003 or RAL 9010 (20% gloss).

All pipes are manufactured from copper connection pipes with a wall thickness of 0.9-1.0 mm. The cooling heat exchanger consists of six 15mm pipes connected in series.
The fins of the heat exchanger are manufactured from aluminium.
Heating is incorporated within the heat exchanger by two 10mm pipes connected in series.
All joints are soldered and factory pressure tested.
Pipework have maximum operation pressure of 1.0 MPa.

Each active chilled beam is protected by a removable plastic coating. Duct connection and pipe ends are sealed during transit. The active chilled beams are identifiable by a serial number printed on labels attached to both the active chilled beam and the cardboard packaging.

Order code

CBD/S-E-L-C; WD-TC-CO-ZT

S = Direction of supply patterns & nozzle type
A Bi-directional / Nozzle 1
B Bi-directional / Nozzle 2
C Bi-directional / Nozzle 3
D Bi-directional / Nozzle 4

E = Duct connection/Duct size/Damper
R1N Right / 100 / Without damper
L1N Left / 100 / Without damper

L = Total length (mm)
1200, +100, 1700, 1720, 1800, +100, ..., 3000

C = Effective length – cooling coil length (mm)
1000, +100, .., 2800 (L-200)

Other option and accessories

WD = Location of the pipe connections
A Left side at front end
B Right side at front end
C Left side at back end
D Right side at back end

TC = Cooling/Heating functions (Coil type)
C Cooling
H Cooling and Heating

CO = Colour
SW Signal white (RAL 9003)
W Pure white (RAL 9010)
X Special colour (RALxxxx)

ZT = Tailored product
N No
Y Yes (ETO)

Code example

CBD/A-R1N-1200-1000, WD=A,TC=C,CO=SW, ZT = N