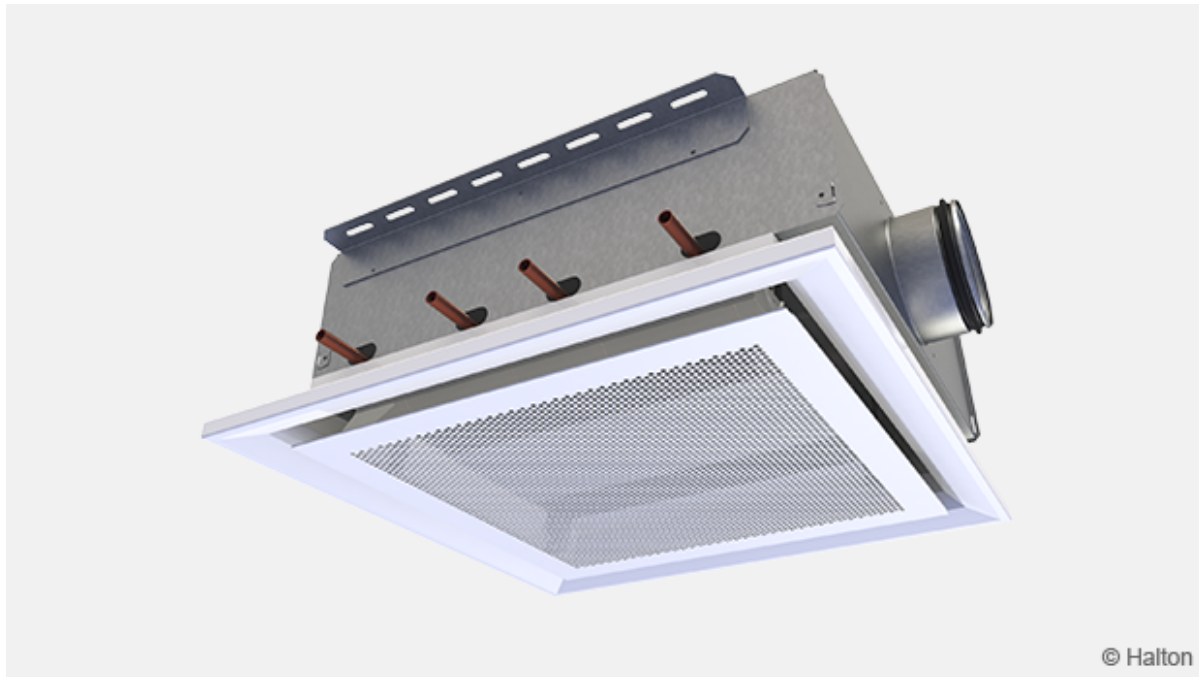


Private: Halton CBX – Comfort unit beam



Overview

Terminated as of 1st March 2021

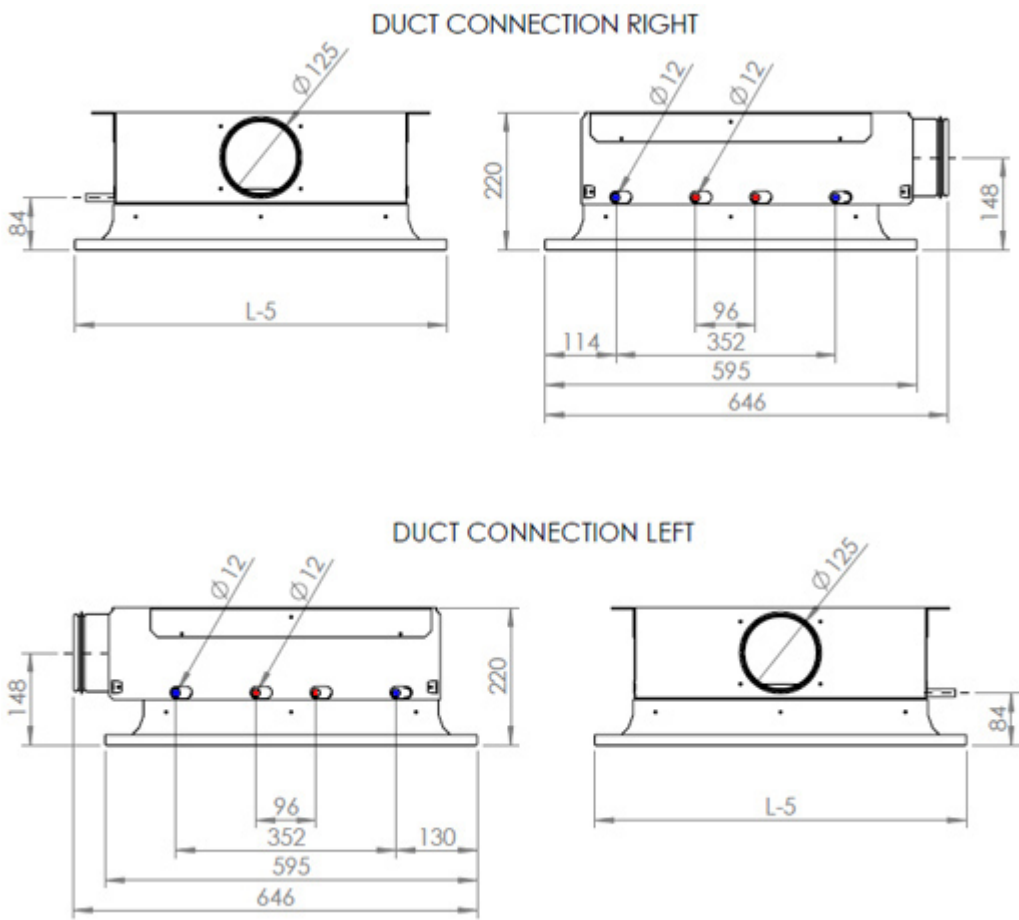
-> replaced with Halton Rex Expander (RXP)

- Operates like an active beam with an exception that it has four directional air distributions.
- Four directional air supply to ensure good room conditions even with higher cooling capacities due to efficient mixing with the room air. Efficient use of ceiling space due to the compact size and efficiency of the unit.
- Typical applications: offices and rooms, schools, public spaces, retail.

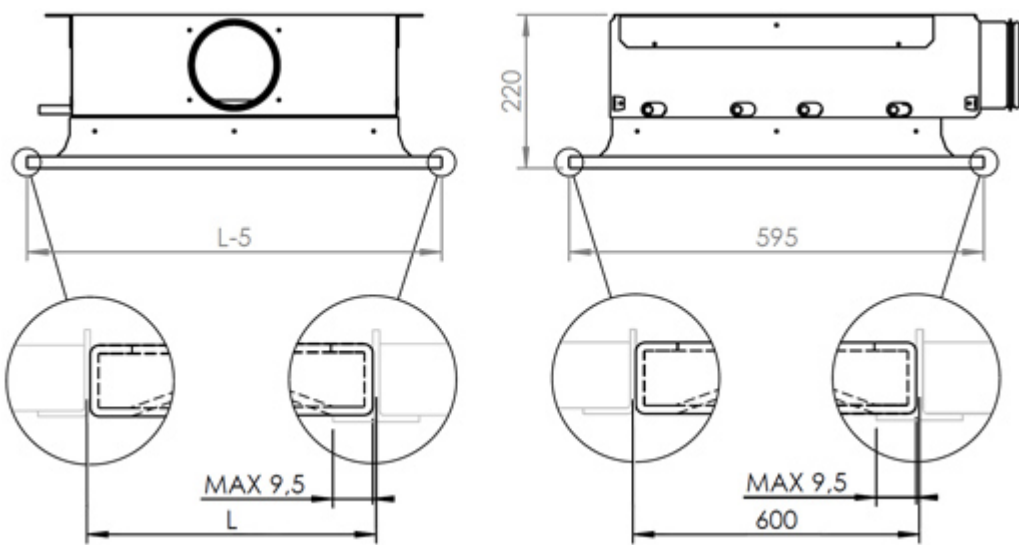
Product models

- Supply air, cooling
- Supply air, cooling and heating

Dimensions



Intergration with suspend ceiling



Weight

Size	kg (water excluded)
CBX 600	12,6
CBX 1200	25,9

Material

Part	Material	Finishing	Note
Front panel	Galvanised steel	Polyester-painted, white (RAL 9003 or RAL 9010, 20% gloss)	Special colours available Polyester-painted
Frame (side)	Aluminium	Polyester-painted, white (RAL 9003 or RAL 9010, 20% gloss)	Special colours available Polyester-painted
Frame (end)	Aluminium	Polyester-painted, white (RAL 9003 or RAL 9010, 20% gloss)	Special colours available Polyester-painted
Supply air plenum	Galvanised steel	–	–
Brackets	Galvanised steel	–	–
Coil pipes	Copper	–	–
Coil fins	Aluminium	–	–

Accessories

Accessory/model	Code	Description	Note
Cooling model	TC=C	Unit with cooling water circulation in the coil	Cooling copper water pipe connections are Ø 12 mm
Combined cooling and heating coil	TC = H	Unit with cooling and heating water circulation in the coil	Cooling/heating copper water pipe connections are Ø 12/12 mm

Cooling/heating water pipe connections are Cu12/Cu12 mm with wall thickness of 0.9-1.0 mm fulfilling European Standard EN 1057:1996.

The maximum chilled/hot water circuit operating pressure is 1.0 MPa.
The supply air duct connection is 125 mm.

Function

Halton CBX is a comfort units which operates like active beams with the exception of 4-way directional air distribution instead of two. It is a compact unit for cooling, heating and supply air for flush installation within a suspended ceiling.

The primary supply air enters the plenum of the Halton CBX active chilled beam. From there it is diffused into the room through nozzles. Supply slots are located at the bottom of the beam on all the four sides. The supply air nozzle jets induce efficiently ambient room air. This induced air flows through the heat exchanger, where it is either cooled or heated. The supply air jet is directed horizontally along the ceiling surface. Supply air is mixed efficiently with the room air even with high cooling and heating capacities ensuring good indoor environment.

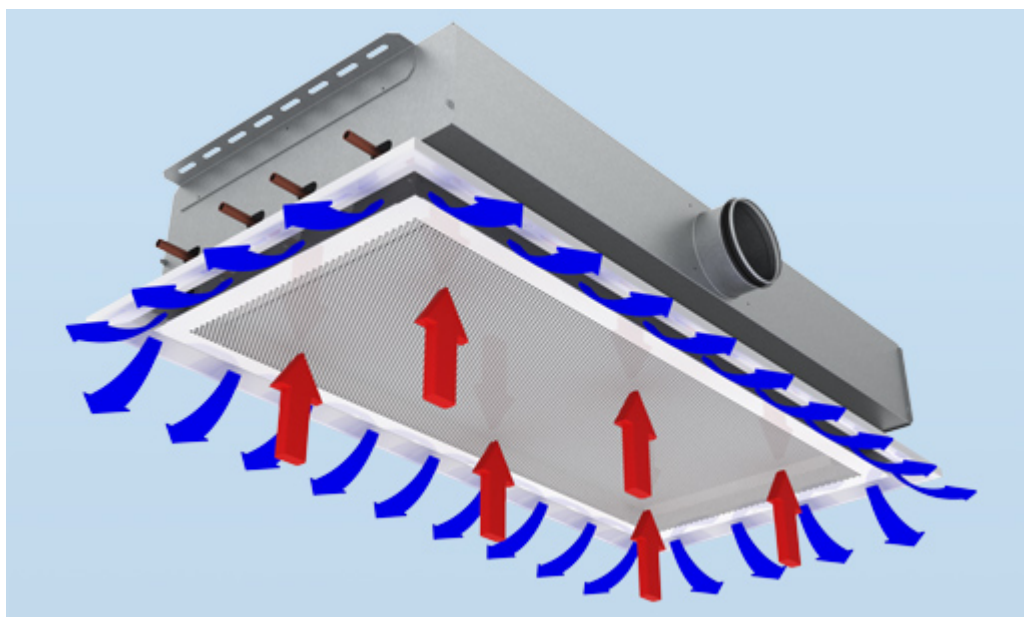


Fig.1. Normal flow

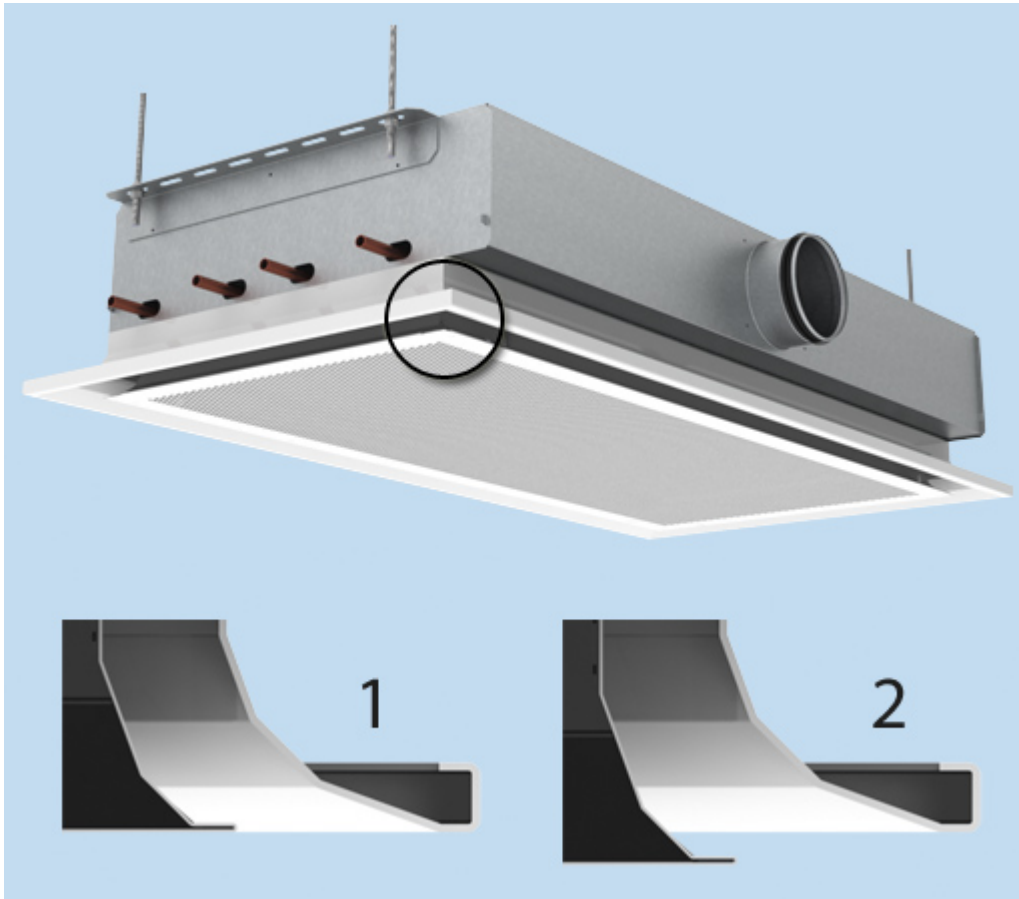
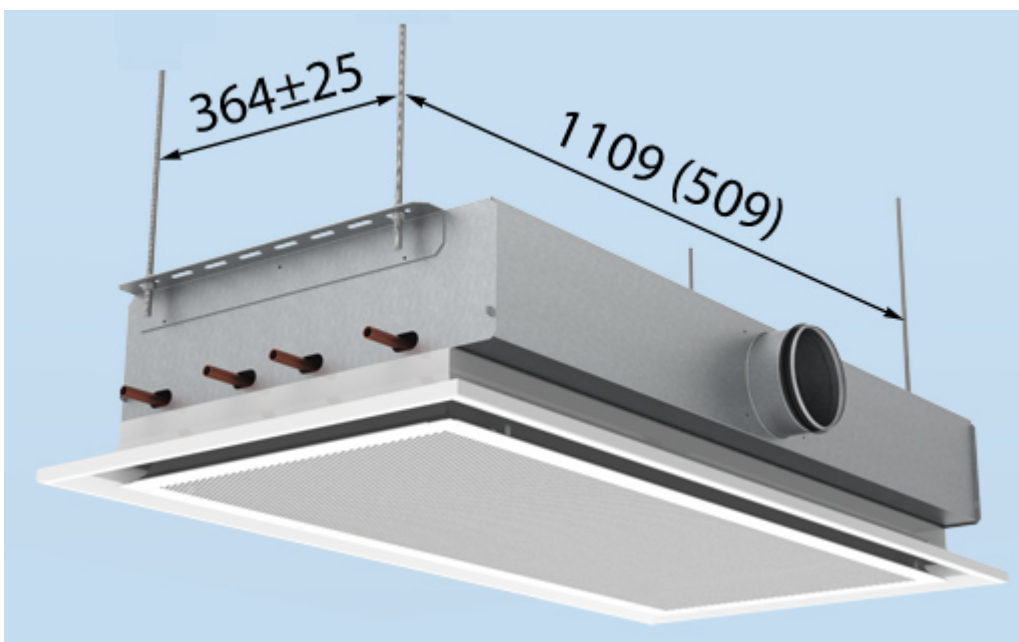


Fig.2. Boost flow

Halton CBX cooling capacity is adjusted by lowering the frontplate from the normal position (1) to boost position (2) for a higher capacity, which is beneficial in the case of meeting rooms.

Installation



Halton CBX comfort unit is suitable for various applications due to its compact size. When selecting

the chilled beam orientation, the location of the supply air and water circuit connections must be taken into account.

The chilled beam can be attached directly to the ceiling surface (H1 = 220 mm) or suspended using threaded drop rods (8 mm). Ceiling installation with brackets that are located at the sides of the unit.

Install the main pipelines of the cooling and heating water circuits above the level of the CBX chilled beam in order to enable venting of the pipework.

The duct connection is located either at the left or right side of the chilled beam compared to the pipe connections (see locations on the dimensions page).

Change to the side of connection can be made on site by rotating the heat exchanger.

Adjustment

Cooling

The recommended cooling water mass flow rate is 0.02 – 0.10 kg/s, resulting in a temperature rise of 1- 4 °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- 0.06 kg/s, resulting in a temperature drop of 5-15 °C in the heat exchanger.

The maximum recommended temperature of the inlet water for the heat exchanger is 35 °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. The cooling capacity and heating capacity of the chilled beam are controlled by regulating the water mass flow rate. The water mass flow rate can be controlled by using an ON/OFF valve or a two- or three-way proportional valve.

Adjustment of the supply airflow rate

Each chilled beam is equipped with a measurement tap for static pressure measurement, which enables fast and accurate measurement of the rate of supply-air flow through the beam. The air-flow rate is calculated by means of the formula below.

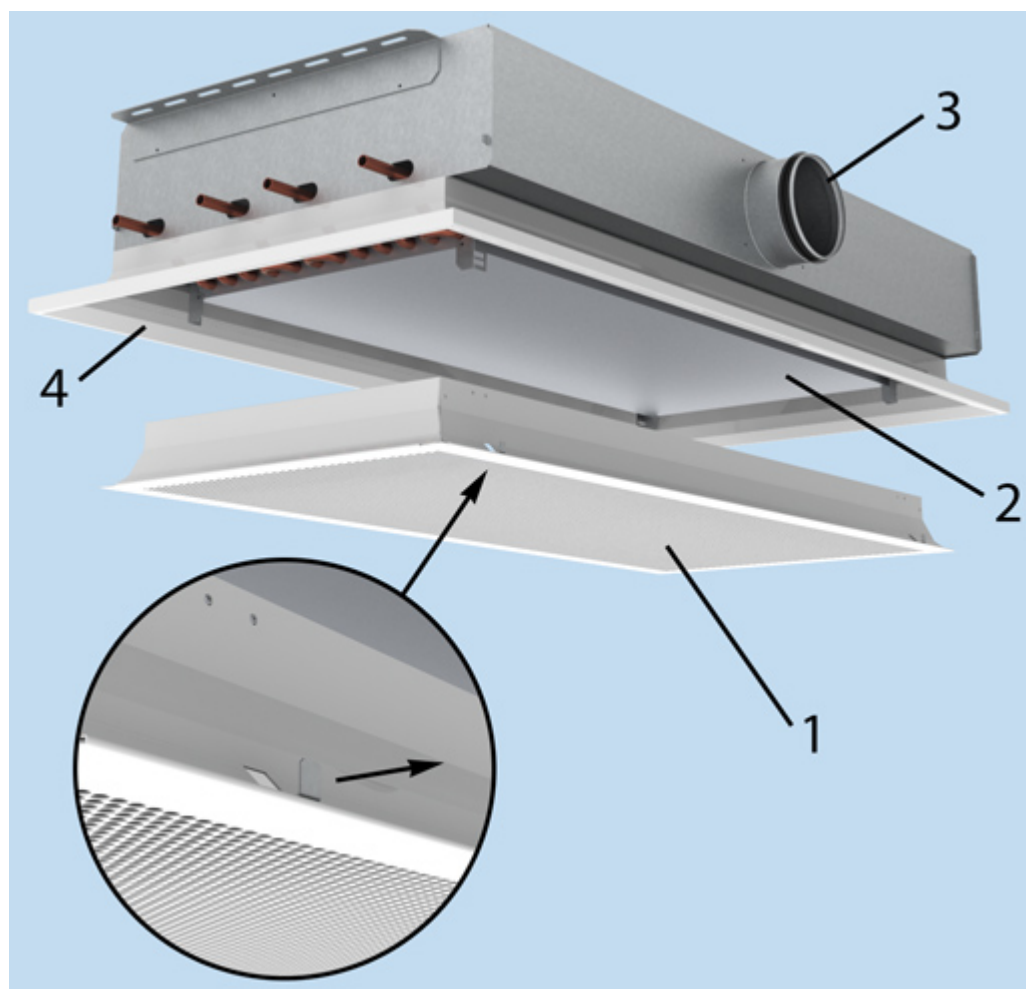
$$q_v = k * \sqrt{\Delta p_m}$$

Where the k value is determined according table below:

Nozzle	Size	k [l/s]	k [m3/h]
A	600	0,64	2,30
A	1200	1,03	3,71
B	600	0,85	3,06
B	1200	1,47	5,29
C	600	1,16	4,18
C	1200	1,93	6,95
D	600	1,73	6,23
D	1200	2,95	10,62
E	600	2,87	10,33
E	1200	4,75	17,10

Δp_m measured static chamber pressure, Pa

Servicing



Code Description

1. Front panel
2. Heat exchanger
3. Supply air connection
4. Frame

Remove the front panel to access for the supply air plenum, the ductwork and the heat exchanger. Clean the supply air plenum and finned coils of the heat exchanger with a vacuum cleaner, taking care not to damage the finned coils.

Clean the front panel and the side frames when required using a damp cloth.

Specification

The active chilled beam has an integral recirculation air path through the perforated front panel.

The front panel is removable in order to allow general maintenance and cleaning.

The front panel is removable without any special tools.

The air supply to the room space is four directional.

The active chilled beam is 595 mm wide and 220 mm high.

The active chilled beam has an inlet duct diameter of 125 mm

The position of the water connections can be changed by turning around the heat exchanger without special tools

The plenum and front are made of galvanised steel plate.

The frame is made of aluminium

All visible parts are white, painted to RAL 9003 or RAL 9010 (20% gloss).

All pipes are manufactured from copper, and connection pipes with a wall thickness of 0.9-1.0 mm.

The fins are manufactured from aluminium.

Optionally, heating is incorporated within the heat exchanger by means of two 12 mm pipes, connected in series.

All joints are soldered and factory pressure-tested.

The pipeworks maximum operation pressure is 1.0 MPa.

The active chilled beam has a measurement tap to allow air flow measurement.

Active chilled beams are protected by a removable plastic coating.

The duct connection and pipe ends remains sealed during transport.

The active chilled beams are identified by a serial number printed on labels attached to both the active chilled beam and the plastic packaging.

Order code

CBX/S-E-L, TC-CO-ZT

S = Direction of supply patterns & nozzle type

- A Four-directional / Nozzle 1
- B Four-directional / Nozzle 2
- C Four-directional / Nozzle 3
- D Four-directional / Nozzle 4
- E Four-directional / Nozzle 5

E = Duct connection

R2N Right / 125 / Without damper

L2N Left / 125 / Without damper

L =Length

600 or 1200

Other options and accessories

TC = Cooling / Heating functions (Coil type)

C Cooling

H Cooling and Heating

CO = Colour

SW Signal white (RAL9003)

W Pure white (RAL 9010)

X Special colour (RALxxxx)

ZT = Tailored product

N No

Y Yes (ETO)

Code example

CBX/B-R2N-1200, TC=C, CO=SW, ZT=N