

# Halton Zen ZSC – Displacement ventilation unit



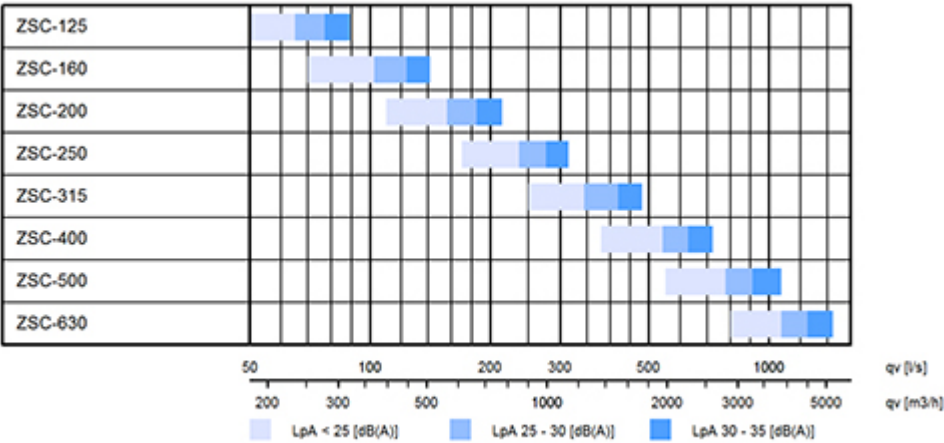
## Overview

- Capable of a large supply airflow range
- Uniform supply air distribution is achieved through small perforations, providing optimal conditions in the immediate proximity of the diffuser.
- Low velocity air is supplied horizontally at the floor level
- The air flow is patterned for 180 degrees of diffusion, enabling large airflow rates with low residual velocities in the occupied zone.
- The detachable front panel and metallic internal structure allow cleaning of the unit and ductwork
- Circular duct connection with an integrated rubber gasket at the top/bottom

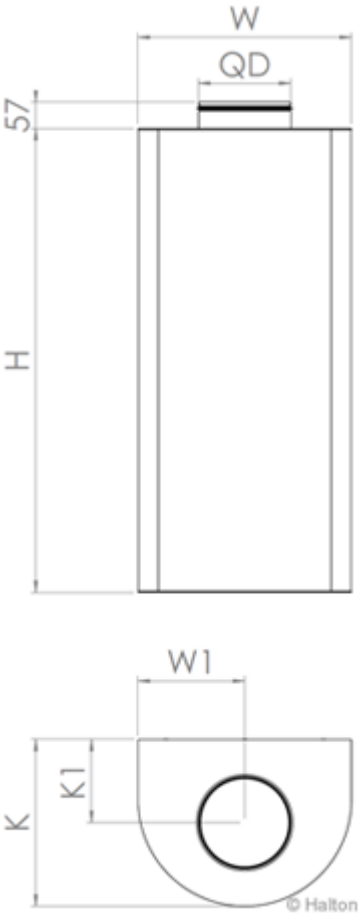
## Product models and accessories

- Model with stainless steel (AISI 316L) design
- Model with thick front panel (1.5 mm)
- Duct cover
- Installation base

# Quick selection



# Dimensions and weight



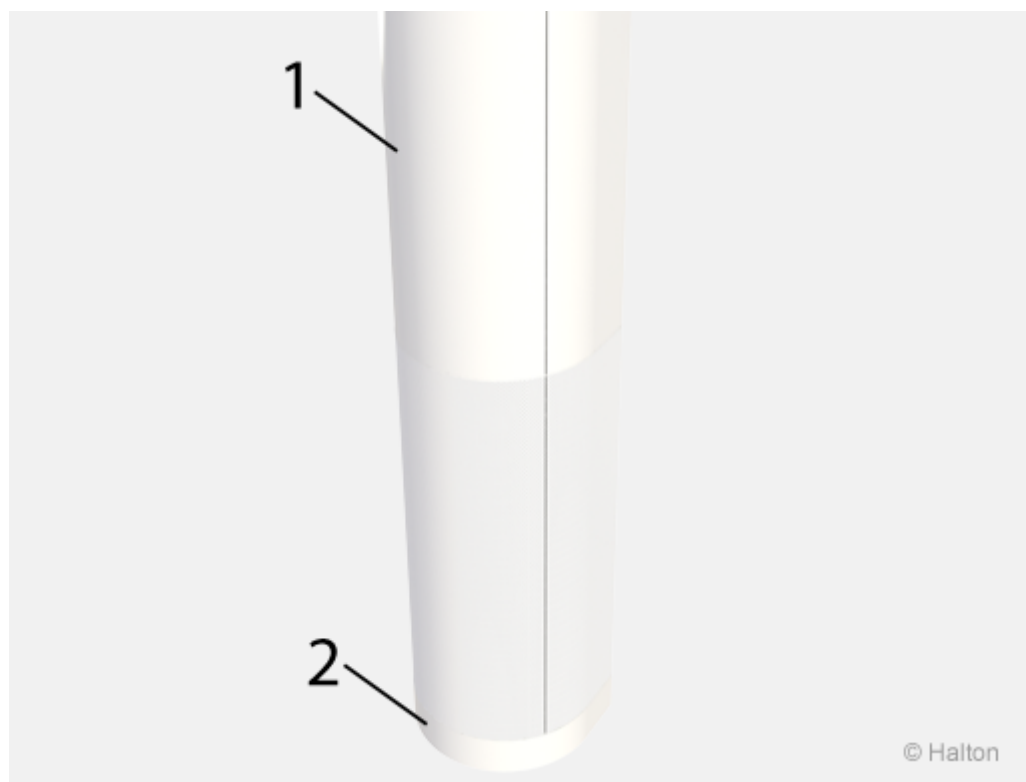
NS [mm]	W [mm]	W1 [mm]	H [mm]	K [mm]	K1 [mm]	ØD [mm]	Weight [kg]
125	360	180	600	280	140	124	11.4
160	460	230	600	360	180	159	15.7
200	460	230	1000	360	180	199	22.0
250	530	265	1200	410	205	249	29.4
315	700	350	1600	515	257	314	49.1
400	800	400	1600	600	300	399	58.0
500	900	450	2000	700	350	499	80.4
630	1000	500	2000	830	415	629	94.4

- **AB/ZSC** installation base:  
Height = 100 mm
- **SB/ZSC** installation base, high (store) model:  
Height = 200 mm, W=W+120 mm, K=K+60 mm

## Material

Part	Material	Note
Front panel	Perforated galvanised steel	Stainless steel AISI 316L as option
Casing	Galvanised steel	Stainless steel AISI 316L as option
Flow equalisation element	Perforated galvanised steel	–
Pressure measurement pipe	Plastic PVC	–
Spigot	Galvanised steel	–
Gasket	Rubber compound	–
Installation base	Galvanised steel	–
Duct cover	Galvanised steel	–
Finishing	Polyester-epoxy-painted White (RAL 9003/30% gloss)	Special colours available

# Accessories



Accessory	Code	Description	Note
Duct cover (1)	DC	Standard lengths 500 / 1000 / 1500 / 2000 mm	–
Installation base (2)	AB	Standard height 100 mm	–
Installation base	SB	Standard height 200 mm Dimensions = (unit size+ 60 mm)	High (store) model

## Product models

- Model with stainless steel (AISI 316L)
- Duct cover (DC) made of perforated steel (same as ZSC unit)
- Thick front panel (1.5 mm)

# Function



Air is supplied into the space through the front panel of Halton Zen ZSC, normally at a slightly lower temperature than the room. The supply air flows down to floor level and gradually pervades the occupied space at low velocity level before finally rising up due to the convection of warm surfaces. The low velocity flow pattern is semi-circular (180°).

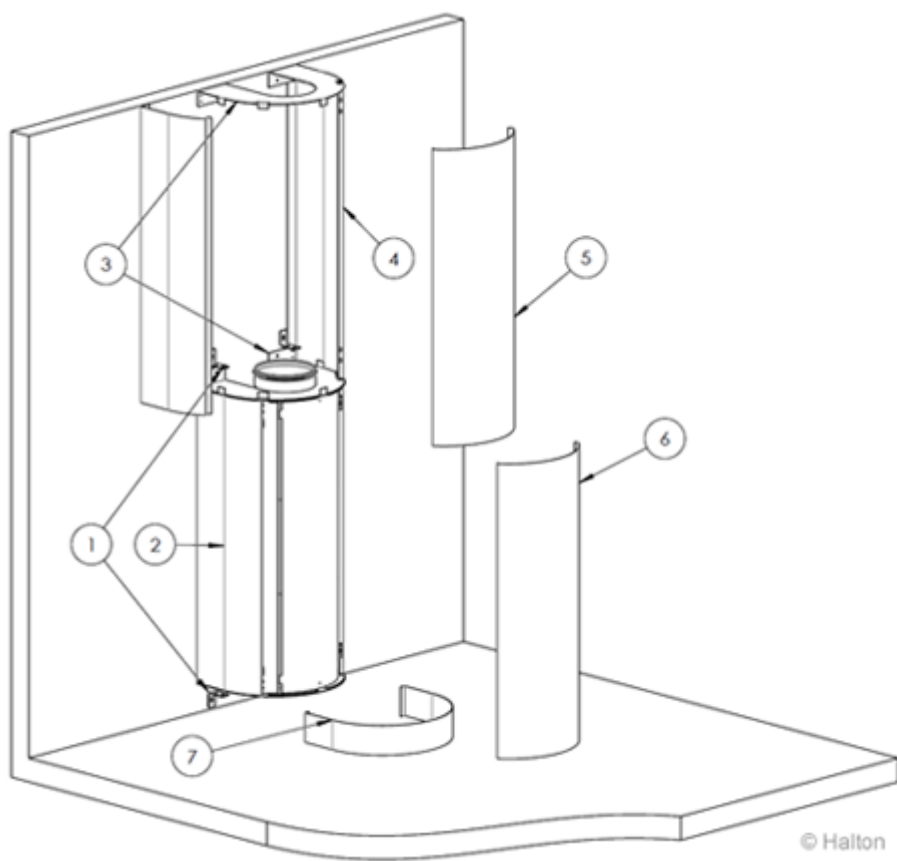
The non-clogging unit can be easily opened and cleaned.

Halton PRA or Halton PTS/C can be used as an airflow adjustment damper in round duct sections. The safety distance for reliable air flow measurement from the displacement unit is 5 duct dimensions between displacement unit and air flow adjustment damper.

If air flow adjustment damper is installed closer to the displacement unit (minimum distance about 3 duct dimensions), supply air throw pattern is correct, but air flow measurement result will not be accurate. When installing air flow adjustment damper close to the displacement unit (minimum 3xD), attenuator could be needed between the damper and the displacement unit.

**Note:** The flow pattern data has been defined for floor installation.

# Installation



## Perform the installation in the following order:

### A) Installation without base:

Fix mounting brackets (4 places) to the Halton Zen Semi Circle displacement ventilation supply unit (1).

Position the unit (2) against the wall and secure with mounting brackets (delivered with the unit).

### Installation with base:

Fix the base (7) onto the floor and fix the Halton Zen Semi Circle displacement ventilation supply unit (2) onto that.

Secure with mounting brackets on top (1) (2 places)

B) Fix duct cover top and bottom parts (3) and sides (4) onto the wall between the unit and ceiling with screws.

C) After installation of the ductwork, install the front plate of the duct cover (5) and diffuser front plate (6)

D) When multiple sections of duct covers are used, secure them with screws (not included in delivery).

# Adjustment

The supply flow rate for displacement ventilation unit is determined by measuring the differential pressure from the measurement nipple with a manometer. Use a measurement probe thin enough fit into the nipple. Then use tape or another gasket to create a seal in the nipple in order to get an accurate reading .



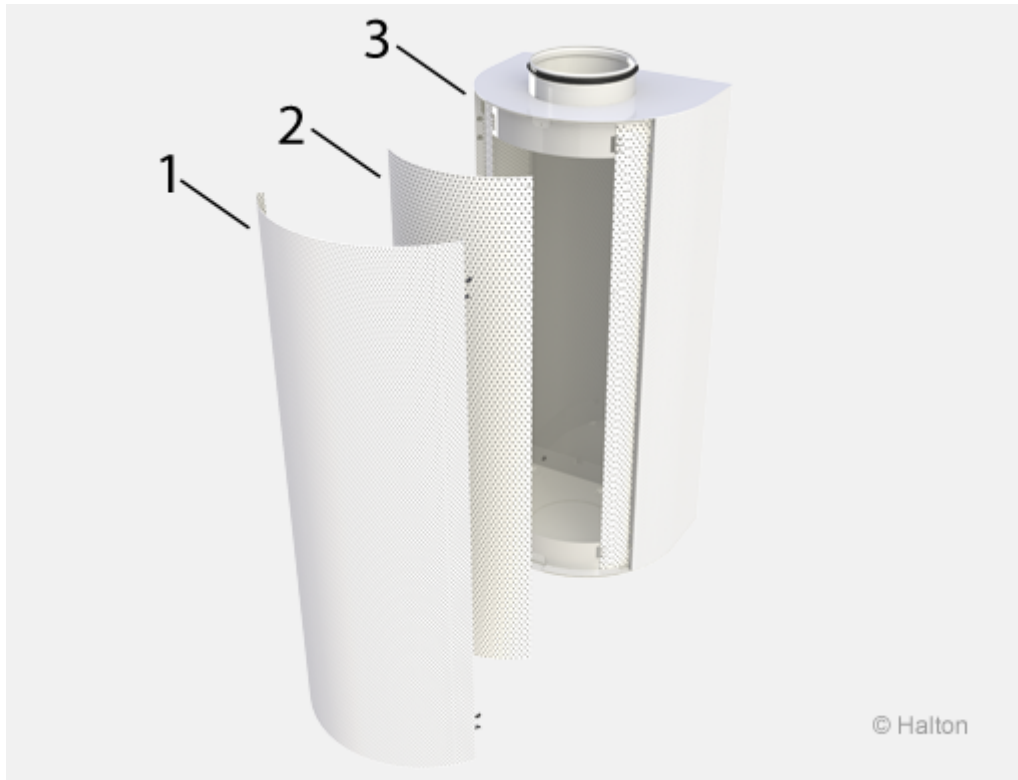
The flow rate is calculated by using the formula below:

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

**Value of k factor for formula**  
(D = duct diameter)

D	k factor
125	11.5
160	18.4
200	30.6
250	46.8
315	71.0
400	114.3
500	168.1
630	257.9

# Servicing



## Key

- 1. Front panel
- 2. Inner panel
- 3. Casing

Open the front panel (1) by carefully pulling the spring connections out.

Open the inner panel (2) by unscrewing the screws.

If required, the flow equalization plate can be detached.

Wipe the parts with a brush or damp cloth. Do not immerse in water.

After cleaning, reassemble in reverse order.

# Specification

The Halton Zen ZSC displacement ventilation supply unit is made of galvanized steel, polyester-epoxy-painted with a white (RAL 9003) colour.

The unit has a robust maintenance-free, non-clogging structure.

The unit is comprised of a detachable, perforated front and inner panel, an internal flow equalization plate, and casing.



The unit has a circular duct connection at the top or bottom, depending the location of the unit.

Mounting brackets are included in the delivery, screws not.

## Options

The unit can be equipped with a duct cover and/or installation base where required.

The front panel of the unit is available of 1.5mm thick galvanised steel for demanding spaces.

## Order code

### ZSC/D; MA-TP-CO-ZT

**D = Diameter of duct connection [mm]**

125, 160, 200, 250, 315, 400, 500, 630

## Other options and accessories

**MA = Material**

CS Steel

AS Stainless steel (AISI 316L)

**TP = Front panel thickness 1.5 mm**

N No

Y Yes

**CO = Colour**

SW Signal white (RAL 9003)

X Special colour

**ZT = Tailored product**

N No

Y Yes (ETO)

## Sub products

DC Duct cover

AB Standard base

SB High store base

## Order code example

ZSC-200, MA=CS, TP=N, CO=SW, ZT=N