

ZSC - Halton Zen Semi-Circle

Displacement ventilation unit



- Capacity for wide 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 & accessories

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

MATERIAL AND FINISHING

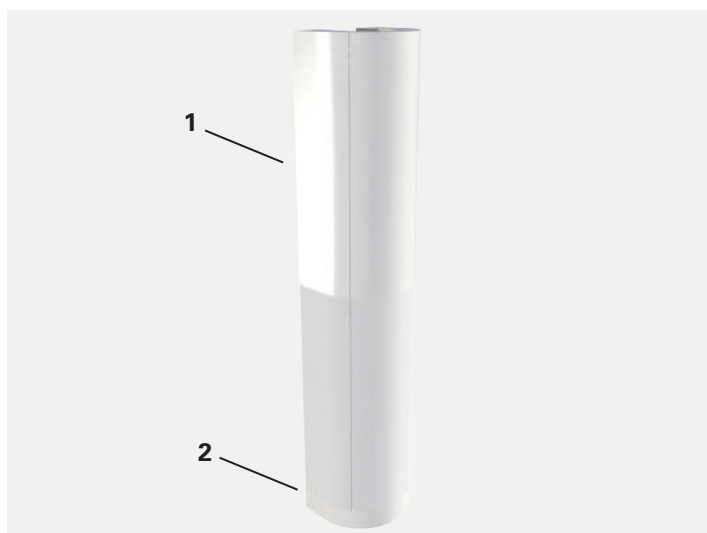
PART	MATERIAL	NOTE
Front panel	Perforated galvanised steel	Stainless steel AISI 316 as option
Casing	Galvanised steel	Stainless steel AISI 316 as option
Flow equalisation element	Perforated galvanised steel	
Pressure measurement pipe	Plastic PVC	
Spigot	Galvanised steel	
Gasket	Rubber compound	
Installation base	Galvanised steel	
Duct cover	Galvanised steel	
Finishing	Polyester-epoxy-painted White RAL 9010 (30% gloss)	Special colors available

ACCESSORIES AND OPTIONS

ACCESSORY	CODE	DESCRIPTION
Duct cover (1)	DC	Standard lengths 500 / 1000 / 1500 / 2000 mm
Installation base (2)	AB	Standard height 100 mm
Installation base, high (store) model	SB	Standard height 200 mm / Dimensions = unit size + 60 mm

Options

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



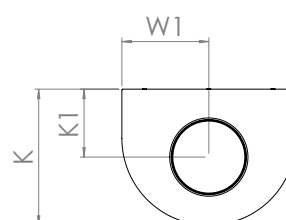
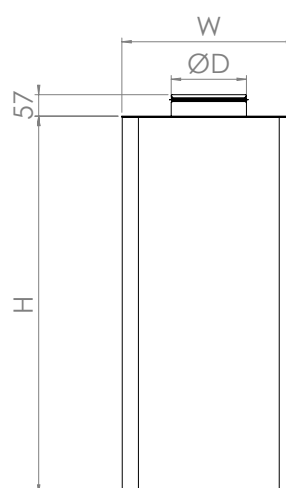
DIMENSIONS AND WEIGHT

Size	W	W1	H	K	K1	ØD
125	360	180	600	280	140	124
160	460	230	600	360	180	159
200	460	230	1000	360	180	199
250	530	265	1200	410	205	249
315	700	350	1600	515	257	314
400	800	400	1600	600	300	399
500	900	450	2000	700	350	499
630	1000	500	2000	830	415	629

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

Weight

Size	kg
125	11.42
160	15.69
200	21.96
250	29.39
315	49.13
400	57.96
500	80.39
630	94.44





FUNCTION

Air is supplied into the space through the front panel of Halton Zen Semi Circle, 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 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 of Halton Zen Semi Circle in the following order:

A) Without AB/SB 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).

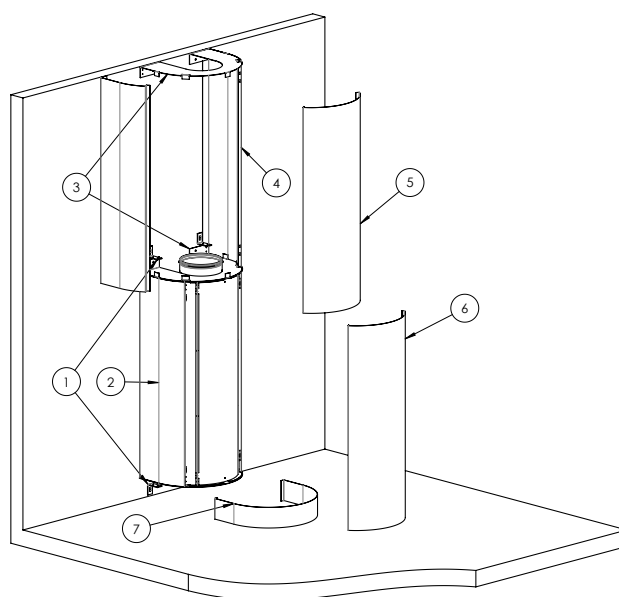
With AB/SB base:

- Fix AS/AB 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.

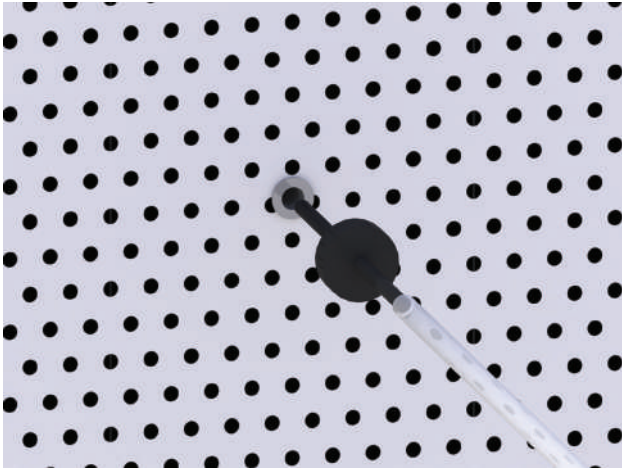
C) After installation of the ductwork, install the front plate of the DC duct cover (5) and diffuser front plate (6)

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



ADJUSTMENT

The supply flow rate for Halton Zen Semi Circle 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.



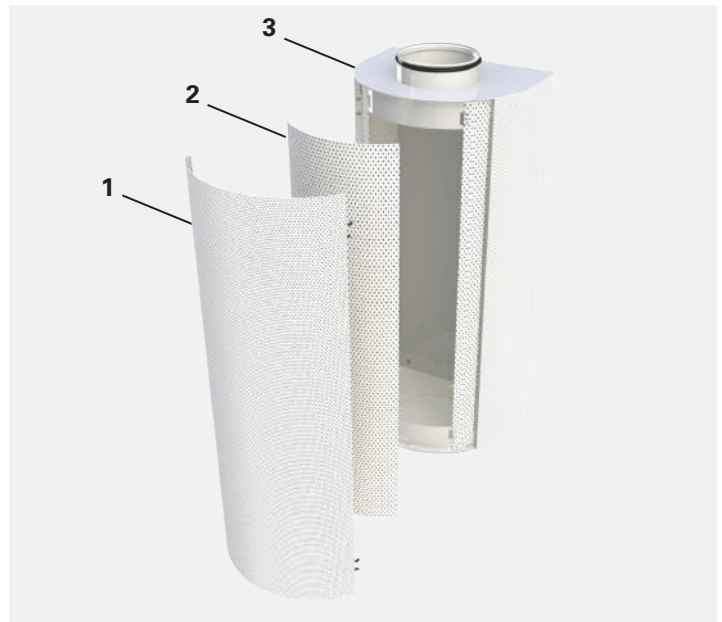
The flow rate is calculated by using the formula below:

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

- q_v: airflow rate, [l/s]
- k: k factor
- ΔP_m: differential pressure of the measurement probe [Pa]

K factor for formula (D = duct diameter):

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



SERVICING

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.

SOUND DATA

Size	Duct velocity		Airflow		ΔP [Pa]	LpA (1) [dB(A)]
	[m/s]	[l/s]	[m ³ /h]			
ZSC-125	3	43	133	3	<20	
	3,5	49	155	4	<20	
	4	61	177	6	<20	
	5	74	221	9	<20	
ZSC-160	3	70	217	4	<20	
	3,5	80	253	6	<20	
	4	101	289	7	<20	
	5	121	362	11	21	
ZSC-200	3	110	339	8	<20	
	3,5	126	396	11	<20	
	4	157	452	14	<20	
	5	188	565	22	21	
ZSC-250	3	172	530	4	<20	
	3,5	196	619	5	<20	
	4	246	707	6	<20	
	5	294	884	9	22	
ZSC-315	3	234	842	4	<20	
	4	312	1122	6	<20	
	5	390	1403	9	24	
ZSC-400	3	377	1357	5	<20	
	4	503	1809	9	<20	
	5	628	2262	13	26	
ZSC-500	3	589	2121	6	<20	
	4	785	2827	10	21	
	5	982	3534	16	28	
ZSC-630	3	935	3367	9	<20	
	4	1247	4489	16	25	
	5	1559	5611	24	33	

(1) LpA values presented with room attenuation 8 dB (red 10m² - sab). When using room attenuation 4 dB (red 10m² - sab): LpA + 4dB.

SPECIFICATION

The displacement ventilation supply unit is made of galvanized steel, polyester-epoxy-painted with a white (RAL 9010 / 30%) 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.

PRODUCT CODE

ZSC-D

D = Diameter of duct connection
125, 160, 200, 250, 315, 400, 500, 630

Specifics and accessories

MA = Material
CS: Steel
AS: Stainless steel, AISI 316

TP = Front panel, thickness 1,5 mm
N: No
Y: Yes

CO = Color
W: White
X: Special color

Accessories

DC: Duct cover
AB: Standard base
SB: High store base

Exemple de code

ZSC-200, MA=CS, TP=N, CO=W