

# Halton DFB – Conical diffuser



## Overview

- Suitable for horizontal supply and exhaust
- Openable cone module enables cleaning of the diffuser and ductwork.
- All sizes adapted for installation in modular 600×600 mm suspended ceiling
- Lightweight aluminum material

## Accessories

- Airflow adjustment damper
- Plenum options with measurement and adjustment functions
- Measurement and adjustment module

# Quick selection

DFB/A-6-6	$\Delta p_{tot}$ L 0.2	7 2.9	9 3.3	13 3.8																
DFB/A-9-9	$\Delta p_{tot}$ L 0.2				6 5.6	9 6.5	12 7.5													
DFB/A-12-12	$\Delta p_{tot}$ L 0.2					6 8.2	8 9.9	13 12.1												
DFB/A-15-15	$\Delta p_{tot}$ L 0.2						6 13.2	9 16.4	13 18.9											
DFB/A-18-18	$\Delta p_{tot}$ L 0.2							6 9.2	8 10.5	11 11.9										
DFB/A-21-21	$\Delta p_{tot}$ L 0.2								5 11.1	9 14.8	12 17.0									

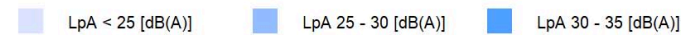
$\Delta T = 0$  [°C]



qv [l/s]

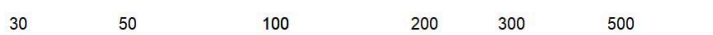
qv [m<sup>3</sup>/h]

$\Delta L_p$  Are 10m2sab = 4 [dB(A)]



DFB/B-6-6	$\Delta p_{tot}$ L 0.2	7 2.9	9 3.3	13 3.8																
DFB/B-9-9	$\Delta p_{tot}$ L 0.2				6 5.6	9 6.5	12 7.5													
DFB/B-12-12	$\Delta p_{tot}$ L 0.2					6 8.2	8 9.9	13 12.1												
DFB/B-15-15	$\Delta p_{tot}$ L 0.2						6 13.2	9 16.4	13 18.9											

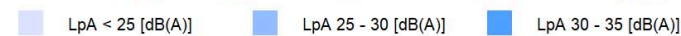
$\Delta T = 0$  [°C]



qv [l/s]

qv [m<sup>3</sup>/h]

$\Delta L_p$  Are 10m2sab = 4 [dB(A)]



DFB/C-6-6	$\Delta p_{tot}$ L 0.2	7 2.9	9 3.3	13 3.8																
DFB/C-9-9	$\Delta p_{tot}$ L 0.2				6 5.6	9 6.5	12 7.5													
DFB/C-12-12	$\Delta p_{tot}$ L 0.2					6 8.2	8 9.9	13 12.1												
DFB/C-15-15	$\Delta p_{tot}$ L 0.2						6 13.2	9 16.4	13 18.9											
DFB/C-18-18	$\Delta p_{tot}$ L 0.2							6 9.2	8 10.5	11 11.9										

$\Delta T = 0$  [°C]



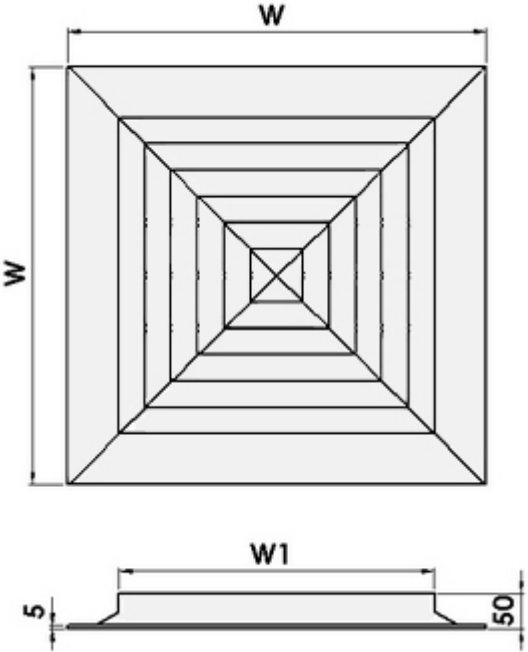
qv [l/s]

qv [m<sup>3</sup>/h]

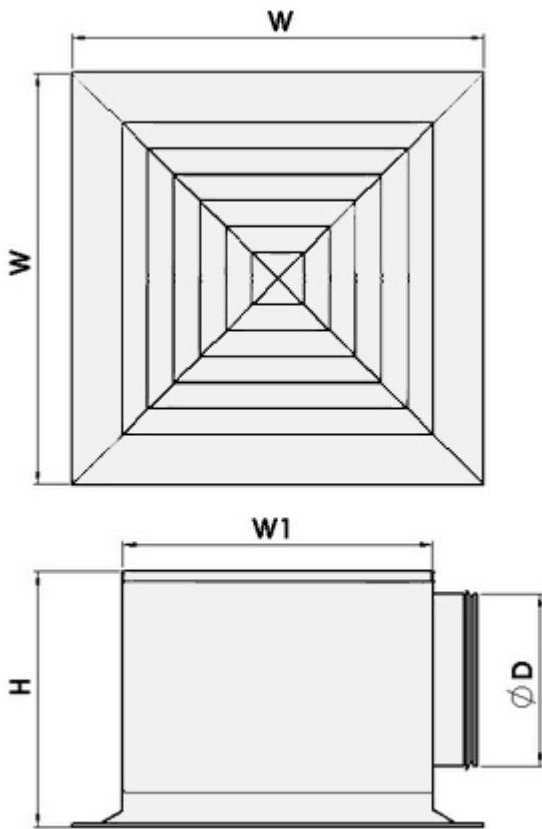
$\Delta L_p$  Are 10m2sab = 4 [dB(A)]



# Dimensions



NS	W	W1
6×6	295	150
9×9	370	225
12×12	445	300
15×15	520	375
18×18	595	450
21×21	670	525
24×24	745	600



NS	W	W1	H	ØD
6×6	295	150	225	124
9×9	370	225	310	199
12×12	445	300	350	249
15×15	520	375	415	314
18×18	595	450	500	399
21×21	670	525	550	449
24×24	745	600	600	499

## Material

Part	Material	Finishing	Note
Frame	Aluminium	Polyester-painted, White (RAL 9003 / 30% gloss)	Special colours available
Central cone	Aluminium	Polyester-painted, White (RAL 9003 / 30% gloss)	Special colours available

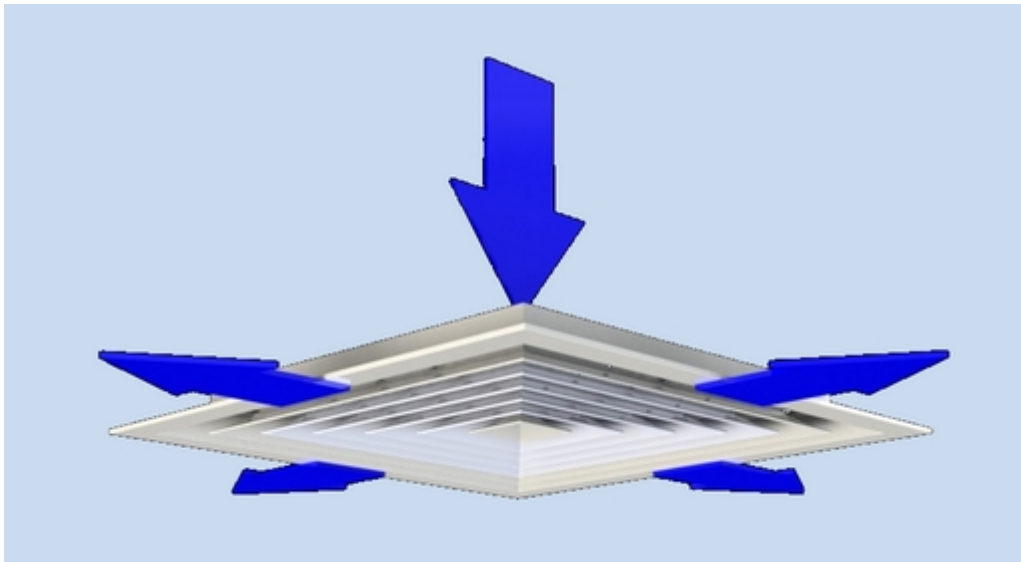
# Accessories

Accessory	Code	Description
Plenum	PDF/H	Plenum for horizontal duct connection (with or without insulation)
Plenum	PDF/V	Plenum for vertical duct connection (with or without insulation)
Airflow measurement and adjustment module	MSM	For supply installation
Sound attenuation	IN	Mineral wool in the plenum
Flow adjustment damper	ODD	Aluminium opposite blade damper for flow adjustment

## Product Models

All standard sizes are available also with 1, 2 or 3 supply directions (DFC).

## Function

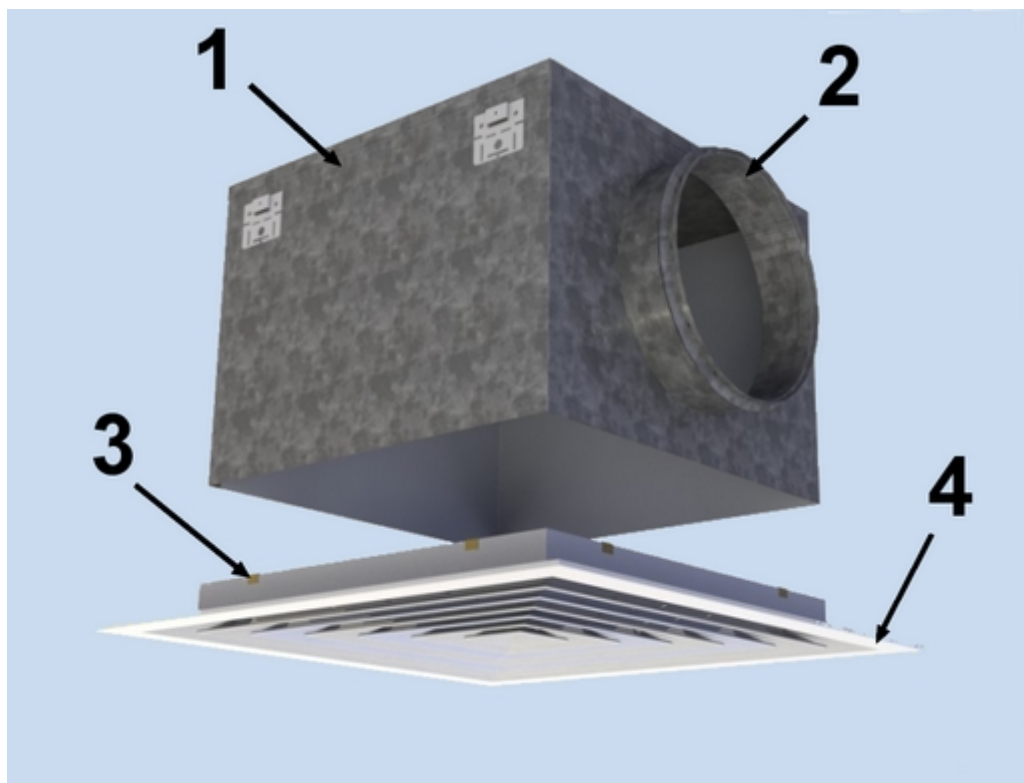


Air is supplied horizontally into the space through the slots in the conical front panel. Supply air mixes with room air in the vicinity of the diffuser.

The fixed cones of the diffuser are designed to ensure that the supply air flows along the ceiling.

The Halton DFB diffuser can also be used as an exhaust unit.

# Installation



## Code description

1. Plenum
2. Spigot
3. Clips
4. DFB or DFC plenum

## Plenum installation

The plenum is installed into the suspended ceiling with M8 drop rods (not supplied in the delivery) and connected to the ductwork with a spigot.

When equipped with a measurement and adjustment module, the recommended safety distance upstream of the device is at least  $3xD$ , in order to ensure a reliable airflow rate measurement. The units control spindle must not be excessively bent.

## Diffuser installation

The diffuser is attached to the plenum via clips.

## Dimensions of installation hole

NS	H (mm)	L (mm)
6×6	215	215
9×9	290	290
12×12	365	365
15×15	440	440
18×18	515	515
21×21	590	590
24×24	665	665

## Adjustment

To aid in adjusting and measuring the air flow rate, it is recommended that the diffuser is connected to a plenum equipped with a MSM.

The supply airflow is determined by measuring the pressure difference with a measurement module.

Measure the differential pressure with a manometer.

The airflow rate is calculated according to the following formula:

$$Qv = k \times \sqrt{\Delta Pm}$$

where:

$\Delta Pm$  is the measured pressure (Pa)

$k$  is a factor given as a function of mounting and diameter

$Qv$  is the airflow rate

The k factor for installations with different safety distances (distance of other items from the MSM):

Spigot Diameter	Safety distance	
	> 6xD	min. 3xD
100	6	7
125	10	12
160	19	22
200	28	32
250	49	51
315	78	–

## Airflow adjustment damper OD

The airflow rate is adjusted by turning the damper blades behind the grille with a screwdriver. The measurement is carried out when diffuser is installed.

## Servicing

Remove the central cones by gently drawing out the central part.  
Clean the parts by wiping them with a damp cloth.

Push the central cones back into place so that the springs lock.

### Option: With balancing plenum Halton PDF + MSM

Remove the measurement and adjustment module by gently pulling the shaft (not the control spindle).  
Wipe the parts with a damp cloth, instead of immersing in water.

Remount the measurement and adjustment module by pushing in the shaft until the module meets the stopper.  
Push the central cones back into place so that the springs lock.

## Specification

The diffuser is made of extruded aluminium, polyester-painted to white (RAL 9003) colour.

The bevel angles of the outer frame and central cone are welded so that the joints are almost invisible.

The diffuser is connected to the ductwork using a plenum with mineral wool as sound attenuation material.

The plenum is equipped with an airflow measurement and adjustment module.  
The central cones of the diffuser are detachable to provide access to the measurement and adjustment module in the plenum.

## Order Code

### DFB/S-A-B; FI-CO-ZT

**S = Model**  
A Standard



- B Suspended ceiling installation 600×600
- C Suspended ceiling installation 675×675

**A = Size of connection**

S=A: 6, 9, 12, 15, 18, 21, 24

S=B: 6, 9, 12, 15

S=C: 6, 9, 12, 15, 18

**B = Height of connection**

A=6: 6

A=9: 9

A=12: 12

A=15: 15

A=18: 18

A=21: 21

A=24: 24

## Other options and Accessories

**FI = Finishing**

PN Painted

**CO = Colour**

SW White (RAL 9003)

X Special colour

**ZT = Tailored product**

N No

Y Yes (ETO)

## Sub products

PDF Plenum for DFB and DFC

## Code example

DFB/A-6-6, FI=PN, CO=SW, ZT=N