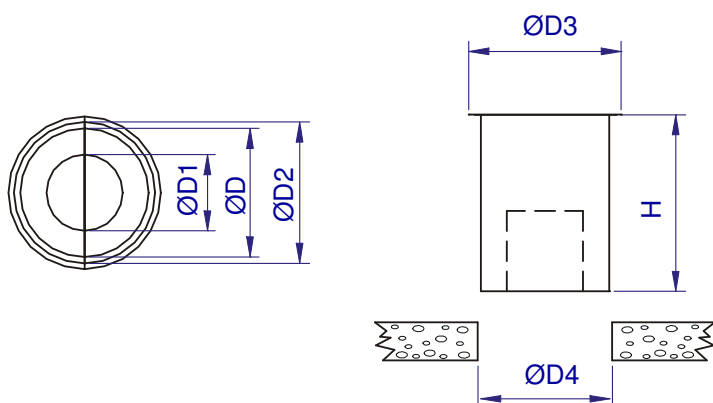


BCF Floor Diffuser



- Vertical air supply, for use in auditoriums, theatres, concert halls, classrooms etc.
- Comfortable, thermal and good acoustic conditions
- Installation flush to the floor and connected to pressurised under-floor plenum chamber
- Only very limited distance between diffuser and seat required
- Pressure drop of the diffuser enables self-balancing in most cases
- Detachable front panel enables cleaning of the diffuser

DIMENSIONS

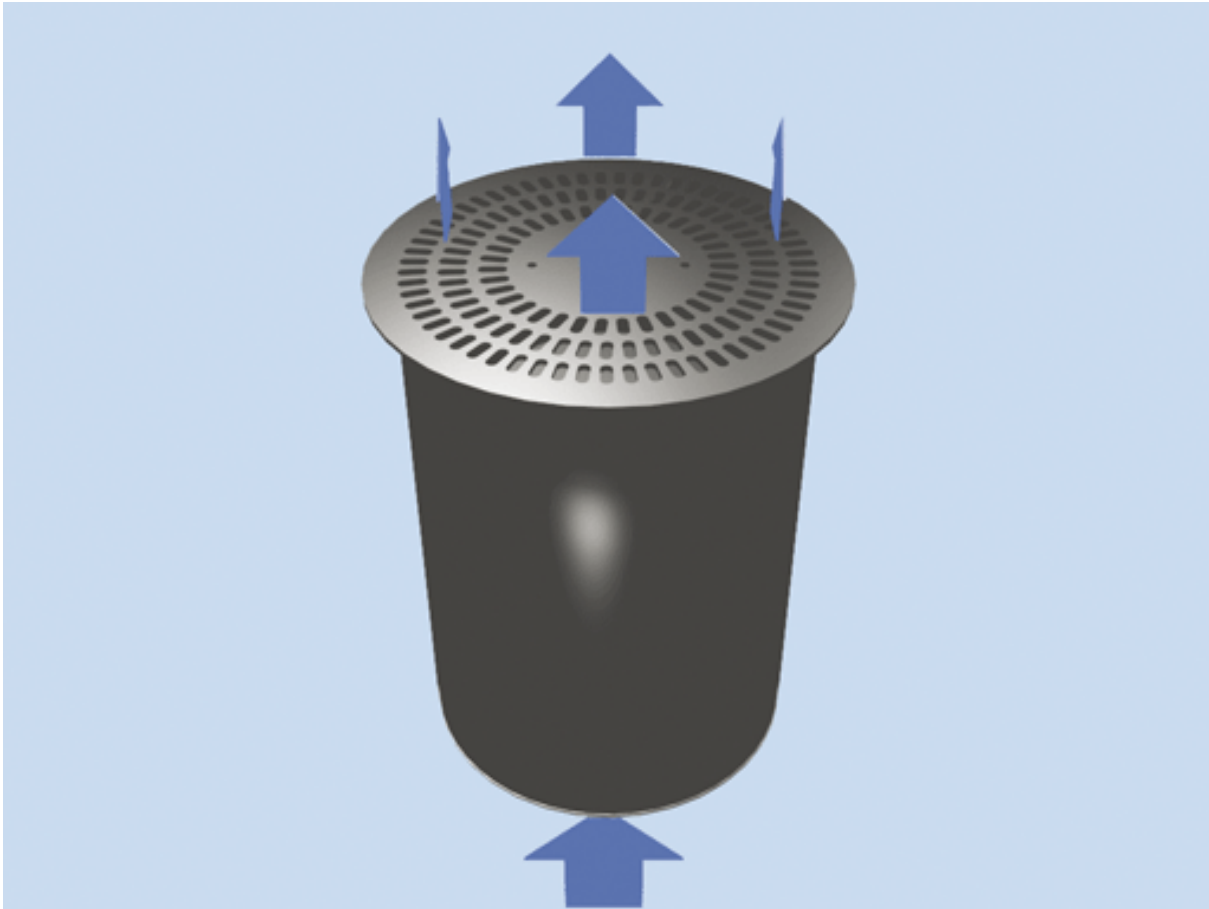


NS	ØD	ØD1	ØD2	ØD3	H	ØD4
190	160	95	176	190	220	165
250	220	120	235	250	300	225

MATERIAL AND FINISHING

PART	MATERIAL	FINISHING	NOTE
Front panel	Galvanised steel	Epoxy-painted black RAL 9005, 50% gloss	Special colours available
Perforated plate	Galvanised steel	Epoxy-painted black RAL 9005, 50% gloss	Special colours available
Plenum box	Galvanised steel	Epoxy-painted black RAL 9005, 50% gloss	Special colours available

FUNCTION



BCF floor diffusers are designed for under-floor air distribution systems. Air is supplied into the space through the front panel at a low velocity, mixing with room air above the diffuser. The perforated plate inside the plenum box creates sufficient pressure loss to enable self-balancing. The recommended pressure level in the plenum chamber is 30 ... 40 Pa. The recommended supply air temperature is max. 3°C lower than the room temperature. The supply airflow rate per unit is 10 ... 15 l/s.

FLOOR SUPPLY SYSTEM DESIGN

BCF floor diffusers are designed for installation in raised floor systems like auditoriums, conference rooms, theatres, where a high level of comfort and conveyance is required. Supply air velocity must be very low to reduce discomfort that may be felt in the near zone. We recommend designing as a displacement system with a maximum supply temperature of 3°C below room. Supply 10 to 15 l/s per unit and allow a distance between outlets of 0.8 to 1 meter. Where comfort requirements are less important, higher airflow rates can be used, generating increased velocities close to the diffuser. Discomfort may be felt if exposed for an extended period of time.

In this case outlets should be installed at least 1.5 m from the work place or other continuously occupied areas.

Connection of the diffusers

The BCF is suitable for installations without ductwork connections (figures 1 and 2).

The space beneath the raised floor is used as a distribution plenum chamber. Construction includes a perforated cylinder inside the sleeve, which causes an efficient pressure loss and provides a self-balancing system.

We recommend designing the system so that the pressure inside the plenum chamber will be 10 ... 40 Pa. Where the plenum chamber has a large volume, we recommended the use of multiple air introduction points (figure 2).

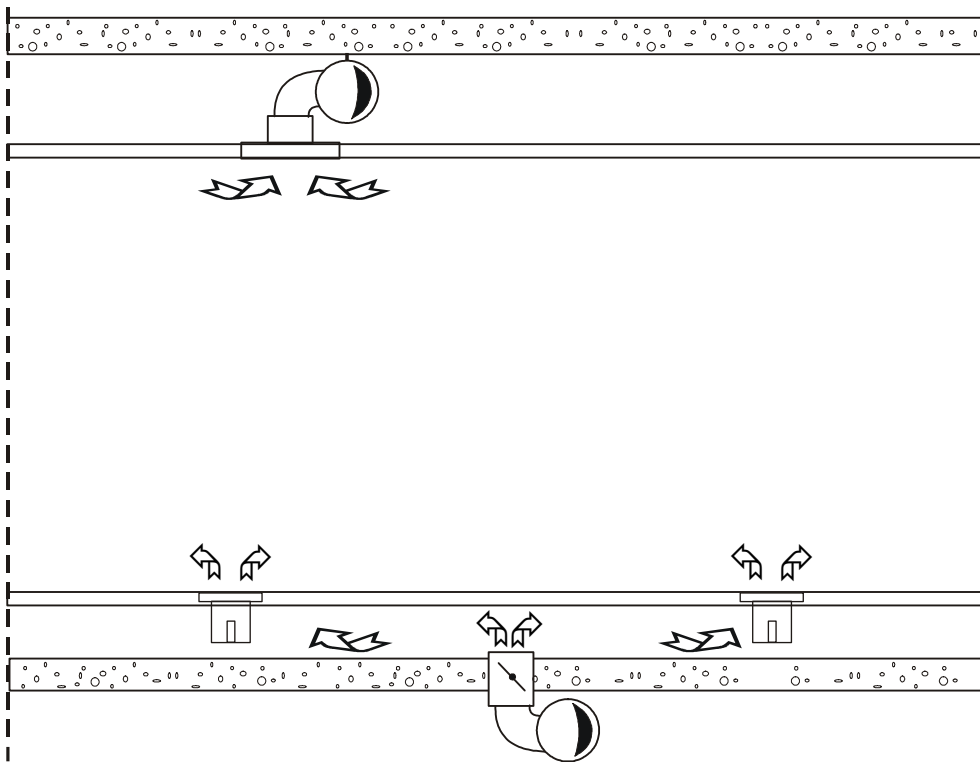


Figure 1

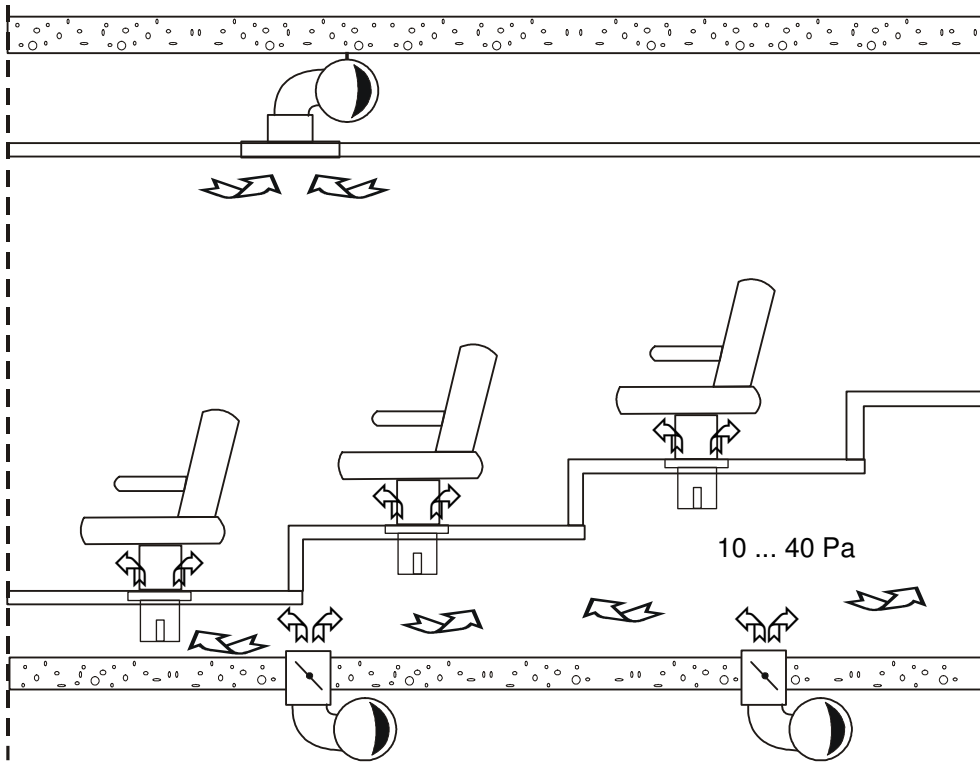
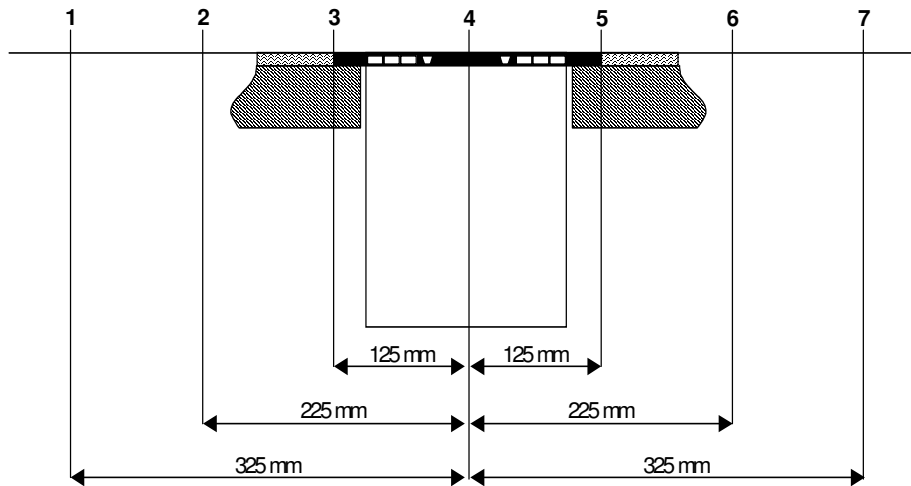


Figure 2

VELOCITY AND TEMPERATURE MEASUREMENTS; BCF-190



BCF-190

Airflow rate, q_v 10 l/s (36 m³/h)
 Supply air temperature 21 °C
 Room temperature 24 °C
 ΔT -3 °C

HEIGHT mm	DISTANCE mm						
	-325	-225	-125	0	125	225	325
700	0.03 m/s 23.3 °C	0.07 m/s 22.7 °C		0.21 m/s 22.0 °C		0.11 m/s 22.4 °C	0.13 m/s 22.8 °C
500	0.01 m/s 23.4 °C	0.02 m/s 22.9 °C		0.25 m/s 21.9 °C		0.03 m/s 22.4 °C	0.02 m/s 22.9 °C
300	0.01 m/s 23.4 °C	0.01 m/s 23.2 °C		0.30 m/s 21.8 °C		0.03 m/s 22.6 °C	0.01 m/s 23.4 °C
200	0.01 m/s 23.2 °C	0.02 m/s 23.1 °C		0.35 m/s 21.8 °C		0.04 m/s 22.7 °C	0.01 m/s 23.1 °C
100		0.04 m/s 23.1 °C	0.49 m/s 22.3 °C	0.40 m/s 22.03 °C	0.50 m/s 22.0 °C	0.08 m/s 22.7 °C	
50		0.03 m/s 23.7 °C	0.43 m/s 23.4 °C	0.41 m/s 22.9 °C	0.46 m/s 22.9 °C	0.04 m/s 23.5 °C	

BCF-190

Airflow rate q_v 14 l/s (50 m³/h)
 Supply air temperature 23 °C
 Room temperature 26 °C
 ΔT -3 °C

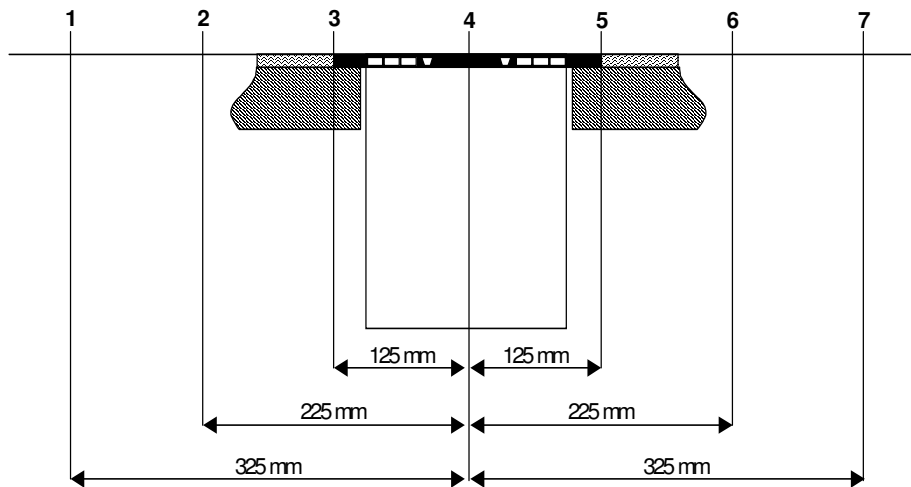
HEIGHT mm	DISTANCE mm						
	-325	-225	-125	0	125	225	325
700	0.04 m/s 24.6°C	0.08 m/s 24.0°C		0.49 m/s 23.1°C		0.12 m/s 23.9°C	0.07 m/s 23.9°C
500	0.02 m/s 24.5°C	0.03 m/s 24.0°C		0.06 m/s 23.1°C		0.04 m/s 23.7°C	0.03 m/s 23.8°C
300	0.01 m/s 24.4°C	0.01 m/s 24.2°C		0.49 m/s 23.1°C		0.05 m/s 23.8°C	0.01 m/s 24.5°C
200	0.02 m/s 24.3°C	0.08 m/s 24.1°C		0.35 m/s 23.0°C		0.07 m/s 23.7°C	0.03 m/s 24.2°C
100		0.07 m/s 24.2°C	0.87 m/s 23.2°C	0.52 m/s 23.1°C	0.89 m/s 23.1°C	0.15 m/s 23.8°C	
50		0.06 m/s 25.3°C	0.68 m/s 24.7°C	0.38 m/s 24.0°C	0.66 m/s 23.7°C	0.07 m/s 24.8°C	

BCF-190

Airflow rate q_v 16 l/s (58 m³/h)
Supply air temperature 23 °C
Room temperature 26 °C
 ΔT -3°C

HEIGHT mm	DISTANCE mm						
	-325	-225	-125	0	125	225	325
700	0.02 m/s 24.6°C	0.11 m/s 24.4°C		0.49 m/s 23.4°C		0.16 m/s 24.2°C	0.05 m/s 24.4°C
500	0.02 m/s 24.7°C	0.03 m/s 24.4°C		0.07 m/s 23.3°C		0.04 m/s 24.1°C	0.03 m/s 24.4°C
300	0.01 m/s 25.8°C	0.04 m/s 24.8°C		0.58 m/s 23.2°C		0.06 m/s 24.1°C	0.01 m/s 24.7°C
200	0.02 m/s 24.7°C	0.06 m/s 24.4°C		0.43 m/s 23.5°C		0.12 m/s 23.9°C	0.02 m/s 24.6°C
100		0.08 m/s 24.5°C	1.05 m/s 23.4°C	0.58 m/s 23.4°C	1.04 m/s 23.3°C	0.14 m/s 24.1°C	
50		0.04 m/s 25.4°C	0.86 m/s 24.8°C	0.45 m/s 24.4°C	0.76 m/s 23.9°C	0.09 m/s 25.1°C	

VELOCITY AND TEMPERATURE MEASUREMENTS; BCF-250



BCF-250

Airflow rate q_v 12 l/s (43 m³/h)
 Supply temperature 20 °C
 Room temperature 23 °C
 ΔT -3°C

HEIGHT mm	DISTANCE mm						
	-325	-225	-125	0	125	225	325
700	0.03 m/s 22.9°C	0.07 m/s 22.0°C		0.07 m/s 21.1°C		0.02 m/s 23.3°C	0.01 m/s 23.3°C
500	0.03 m/s 21.67°C	0.04 m/s 21.0°C		0.05 m/s 20.3°C		0.03 m/s 21.4°C	0.03 m/s 21.5°C
300	0.01 m/s 22.0°C	0.11 m/s 21.4°C		0.20 m/s 20.1°C		0.01 m/s 21.2°C	0.06 m/s 21.7°C
200	0.02 m/s 22.2°C	0.08 m/s 21.1°C		0.18 m/s 20.2°C		0.03 m/s 21.4°C	0.05 m/s 21.8°C
100		0.06 m/s 21.7°C	0.39 m/s 19.6°C	0.38 m/s 20.2°C	0.32 m/s 19.9°C	0.03 m/s 21.6°C	
50		0.04 m/s 22.5°C	0.18 m/s 21.2°C	0.33 m/s 21.1°C	0.12 m/s 20.6°C	0.02 m/s 22.7°C	

BCF-250

Airflow rate q_v 16 l/s (58 m³/h)
 Supply temperature 20 °C
 Room temperature 23 °C
 ΔT -3°C

HEIGHT mm	DISTANCE mm						
	-325	-225	-125	0	125	225	325
700	0.08 m/s 21.6°C	0.16 m/s 20.8°C		0.10 m/s 20.6°C		0.06 m/s 21.2°C	0.05 m/s 21.7°C
500	0.02 m/s 21.5°C	0.04 m/s 21.1°C		0.15 m/s 20.3°C		0.04 m/s 21.3°C	0.02 m/s 21.8°C
300	0.01 m/s 22.1°C	0.03 m/s 21.4°C		0.22 m/s 20.3°C		0.01 m/s 21.7°C	0.01 m/s 22.5°C
200	0.02 m/s 22.06°C	0.04 m/s 21.5°C		0.37 m/s 20.3°C		0.02 m/s 21.5°C	0.03 m/s 22.3°C
100		0.07 m/s 21.9°C	0.41 m/s 20.2°C	0.39 m/s 20.3°C	0.36 m/s 20.1°C	0.04 m/s 21.9°C	
50		0.05 m/s 22.6°C	0.20 m/s 21.9°C	0.38 m/s 21.3°C	0.30 m/s 20.9°C	0.06 m/s 22.7°C	

BCF-250

Airflow rate q_v 20 l/s (72 m³/h)
Supply temperature 20 °C
Room temperature 23 °C
 ΔT -3°C

HEIGHT mm	DISTANCE mm						
	-325	-225	-125	0	125	225	325
700	0.09 m/s 21.6°C	0.18 m/s 21.5°C		0.19 m/s 20.8°C		0.08 m/s 21.5°C	0.04 m/s 21.9°C
500	0.03 m/s 21.6°C	0.04 m/s 21.5°C		0.21 m/s 20.8°C		0.03 m/s 21.5°C	0.02 m/s 22.0°C
300	0.01 m/s 22.1°C	0.02 m/s 21.8°C		0.31 m/s 20.6°C		0.01 m/s 21.8°C	0.02 m/s 22.3°C
200	0.02 m/s 22.0°C	0.04 m/s 21.7°C		0.43 m/s 20.7°C		0.02 m/s 22.1°C	0.02 m/s 22.3°C
100		0.06 m/s 21.9°C	0.69 m/s 20.4°C	0.47 m/s 20.7°C	0.61 m/s 20.4°C	0.04 m/s 22.2°C	
50		0.02 m/s 22.6°C	0.30 m/s 21.9°C	0.48 m/s 21.6°C	0.41 m/s 21.1°C	0.04 m/s 23.1°C	

INSTALLATION

The BCF floor diffuser is installed into an installation hole with a diameter of 165 mm or 225mm, (see table below). The BCF is mounted onto the floor.

The front panel is fastened with screws.

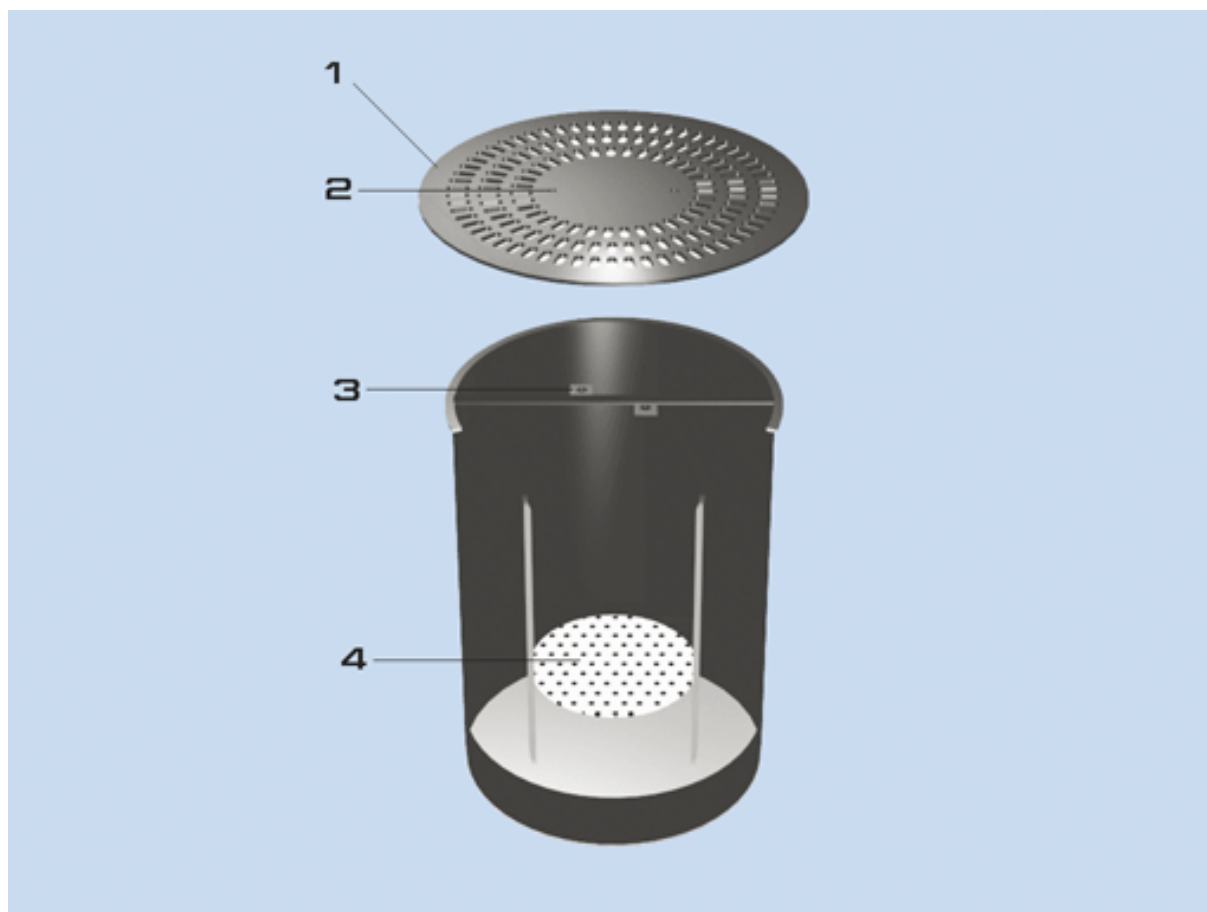
Installation hole dimension

NS	Diameter
BCF-190	165 mm
BCF-250	225 mm

ADJUSTMENT

The airflow rate is adjusted by setting the static pressure in the plenum chamber to the required pressure level.

SERVICING



CODE	DESCRIPTION
1	FRONT PANEL
2	HOLES FOR FIXING SCREWS
3	PLENUM BOX
4	PERFORATED PLATE

Detach the front panel by unscrewing the fixing screws.
Clean the parts by wiping them with a damp cloth, instead of immersing in water.
Remove impurities and dust regularly using a vacuum cleaner.
Reattach front panel by screwing it back onto the plenum box.

SUGGESTED SPECIFICATIONS

The floor diffuser shall have a robust construction of galvanised steel, with black (RAL 9005) as standard colour.

The perforated plate inside the plenum box shall create sufficient pressure loss to enable self-balancing in ductless applications. The space beneath the raised floor shall be used as a plenum chamber.

The floor diffuser shall provide low velocity air distribution.

PRODUCT CODE

BCF-D

D = Diameter of duct connection
190, 250

Specifics and accessories

CO = Colour
B Black

Code example

BCF-190, CO=B