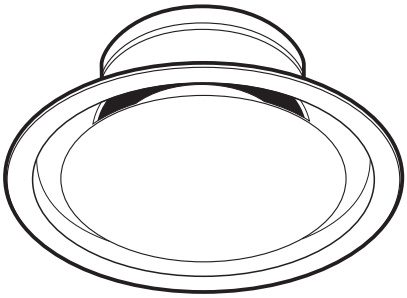


Circular flat diffusers (CFD)

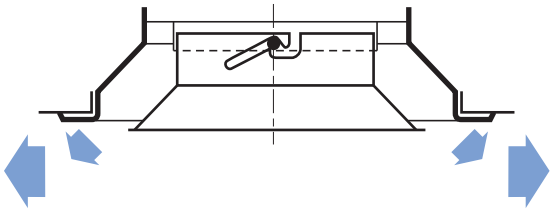
Circular flat diffusers (CFD) are suitable for supply air ceiling applications where large volumes of air are to be introduced with the maximum diffusion and minimum disturbance.

The core is adjustable to give horizontal or vertical discharge, and is removable. Seven neck sizes are available from 150mm up to 450mm dia in 50mm increments.

Available options are a Flap Damper (FD), Equalising Grid (EQD) and Ceiling Panel (CP).

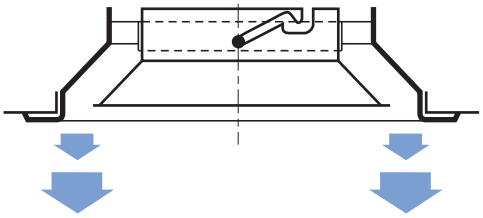
CFD diffusers are manufactured from aluminium spinnings and are stove enamelled RAL 9010 white as standard.

Other finishes are available.



Horizontal Projection

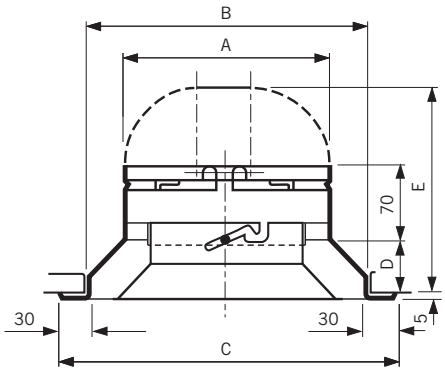
For horizontal air flow move conical ring assembly to lower position by rotating clockwise.



Vertical Projection

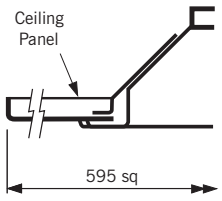
For vertical air flow move conical ring assembly to upper position by rotating anticlockwise.

Dimensions



CFD/FD

Nom. A	B	C	D	E
150	230	281	46	165
200	280	332	50	195
250	330	383	53	225
300	380	433	56	250
350	435	484	60	280
400	485	535	62	310
450	535	586	67	340



Fixing methods

FMF: Screw fixing through the duct neck (standard).

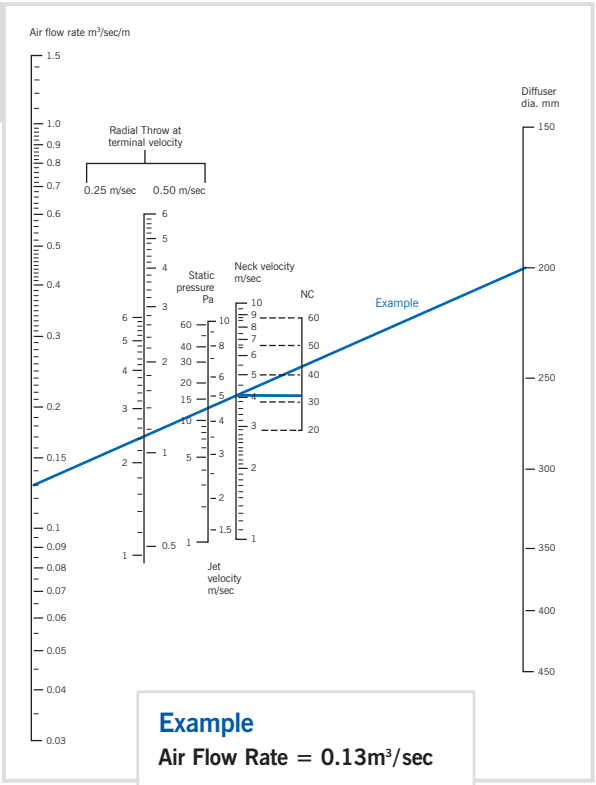
FMG: Slotted brackets for external rod or wire support.

Performance data

Circular flat diffusers (CFD) horizontal

To select a diffuser for a given volume of air. Project a line from the airflow rate line passing through a point on the vertical throw line to intersect the diffuser size required.

Total pressure, jet velocity and neck velocity can be determined at the relevant points of intersection. Sound power levels can be determined by projecting across horizontally from the point of intersection with the neck velocity scale.



Example

Air Flow Rate = 0.13m³/sec

At points of intersection:

Throw (terminal velocity 0.5m/sec) = 1.15m

Jet Velocity = 4.5m/sec

Neck Velocity = 4.2m/sec

Pressure Drop = 13Pa

Diffuser Size = 200mm dia

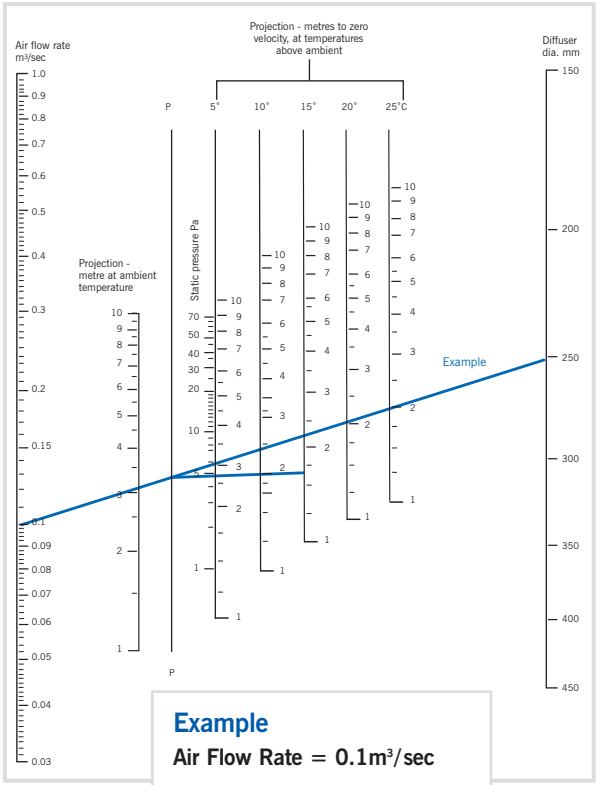
By projecting horizontally:

Sound Power Level = 32NC

1. If fitted with damper multiply total pressure by 1.3
2. If used as an extract diffuser multiply by 1.6
3. For NC use horizontal + 5

Circular flat diffusers (CFD) Vertical

To select a diffuser for a given volume of air. Project a line from the airflow rate line passing through a point on the vertical throw line to intersect the diffuser size required.



Example

Air Flow Rate = 0.1m³/sec

At points of intersection:

Vertical Projection (ambient temperature) = 3.3m

Pressure Drop = 5Pa

Diffuser Size = 250mm dia

By projecting horizontally:

Vertical Projection (15°C above room temp) =1.65m

1. If fitted with damper multiply total pressure by 1.3
2. If used as an extract diffuser multiply by 1.4
3. For NC use horizontal + 2

Selection

The nomograms provide the data regarding air volume, neck velocity, pressure drop and radius of diffusion on throw, for horizontal and vertical projection, with approximate sound power levels. Throws for horizontal projection are for ceiling mounted diffusers. The throw is decreased by approximately 30% when mounted below the ceiling.

The minimum radial throw can be decreased by 300mm, for each additional 300mm of mounting height above 2.8m. Maximum decrease decrease 50% irrespective of mounting height. The resistances are those measured in the neck of the diffuser. The static pressure required in the supply duct is equal to the total pressure at the diffuser plus the duct take-off loss.