

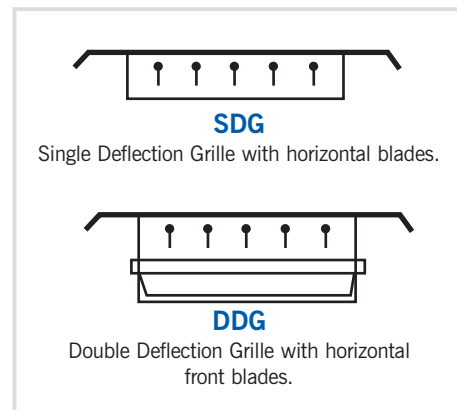
## Single and double deflection adjustable grilles SDG/DDG

**Adjustable grilles** (SDG Single Deflection and DDG Double Deflection) are suitable for supply air for either sidewall or exposed duct applications. The single or double row of blades permit up to 45° deflection of the air, in either one or two planes. Link Blade (LB) and fixed blade applications are available (front blade only).

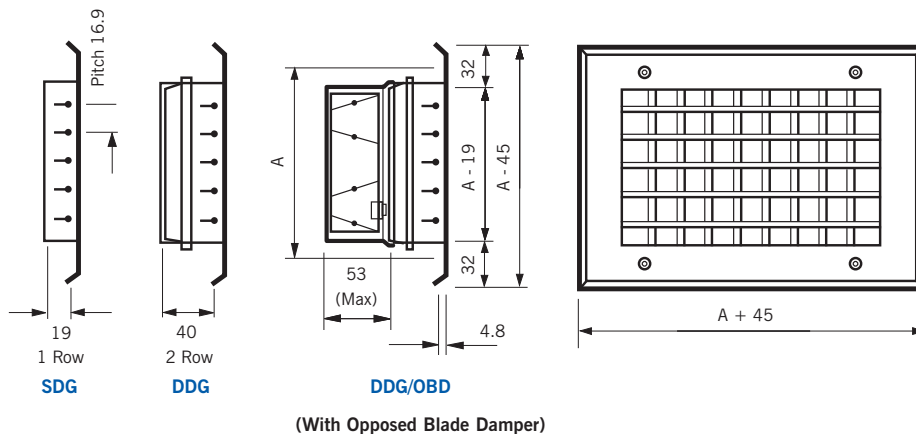
SDG and DDG grilles are manufactured from extruded aluminium sections, the mitred

corners being fully welded and finished. Finally they are stove enamelled RAL 9010 white as standard.

Other finishes are available.



### Dimensions



Grilles are available to fit duct sizes from 100mm x 100mm up to 1200mm x 750mm as a single unit. Larger units may be produced by reduction of flanges to give internal mullion appearance. The front blades are always parallel to the first dimension. Thus a grille ordered as 600mm x 300mm will not be the same as a grille 300mm x 600mm.

### Fixing methods

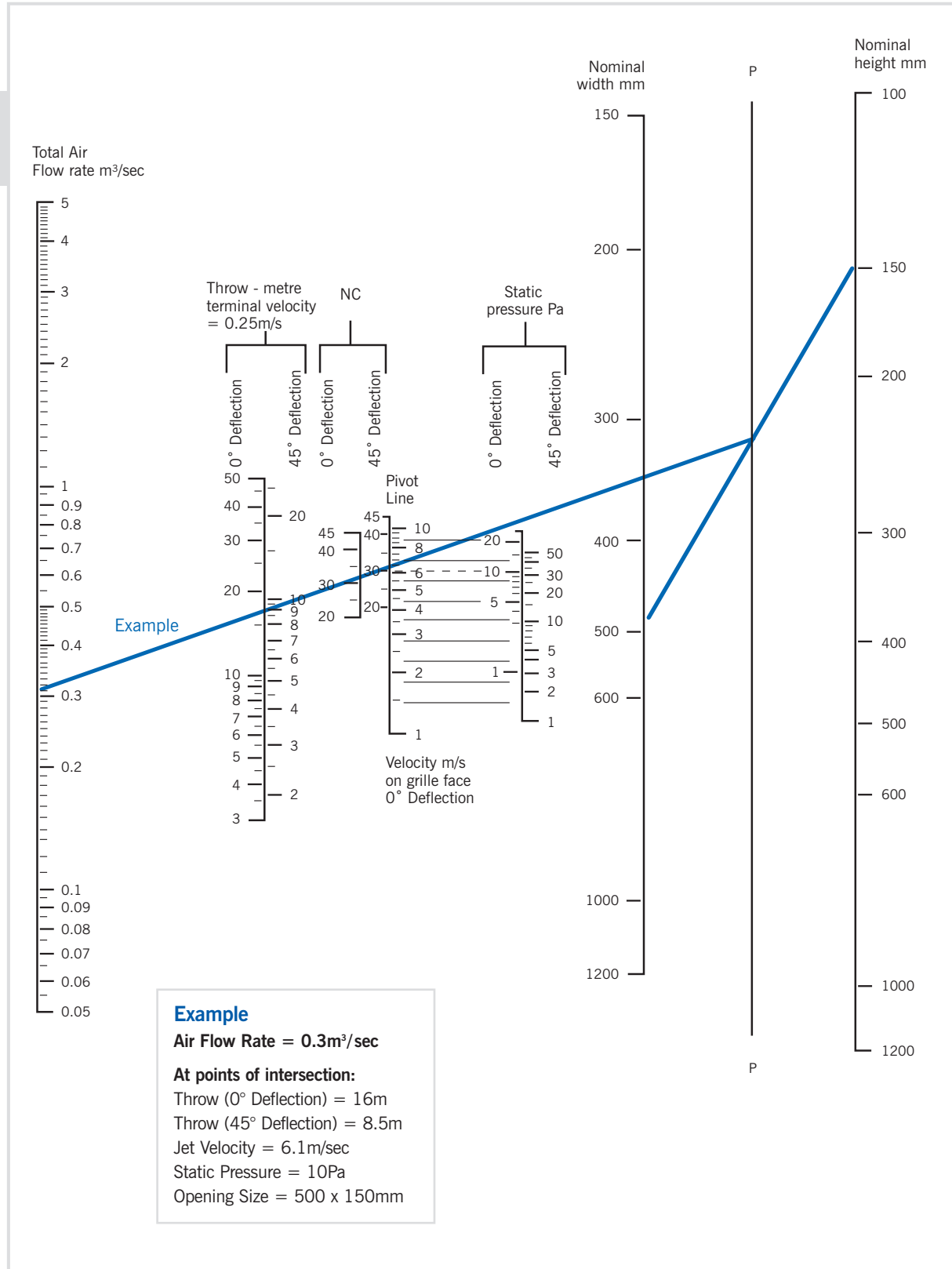
- FMA:** Screw fixing (standard)
- FMB:** Subframe with concealed screw fixings (suitable for a maximum face area of 0.36m<sup>2</sup>)
- FMC:** Subframe and spring clip
- FMD:** Spring clip only
- FML:** Yoke and bracket concealed screw fixing

## Performance data

# Single and double deflection adjustable grilles (SDG & DDG)

To select an opening size suitable for a given air volume. Project a line from the known airflow through the throw required at either 0° or 45° deflection and

intersect line P-P. Preferred opening sizes can be obtained by pivoting around this point.



## Performance Data

# Single and double deflection adjustable grilles (SDG & DDG)

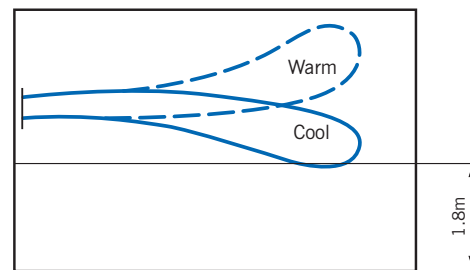
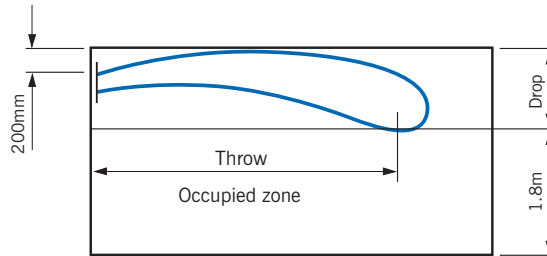
### Throw

The selection data is based on grilles located within 200mm of the ceiling.

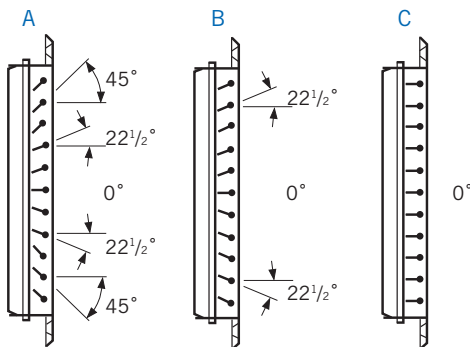
The proximity of the ceiling surface reduces the induction of room air above the grille, so that the air stream clings to the ceiling and increases the throw. Throw should be 0.75 to 0.9 room width.

The throw from grille located clear of the ceiling is reduced to approximately 0.7 of the nomograph value. In this location temperature differences between the supply air and the room air affect the air flow to a greater extent.

The drop assessment on the chart for cooled air is applicable in reverse, giving the rise for warm air. Increasing the aspect ratio of grille will have little influence on the throw, but will reduce the drop due to temperature differences.

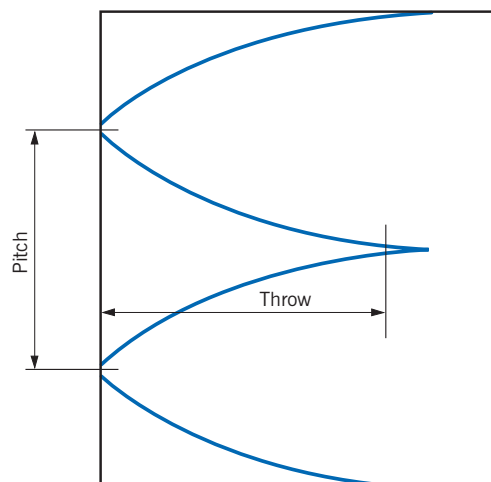
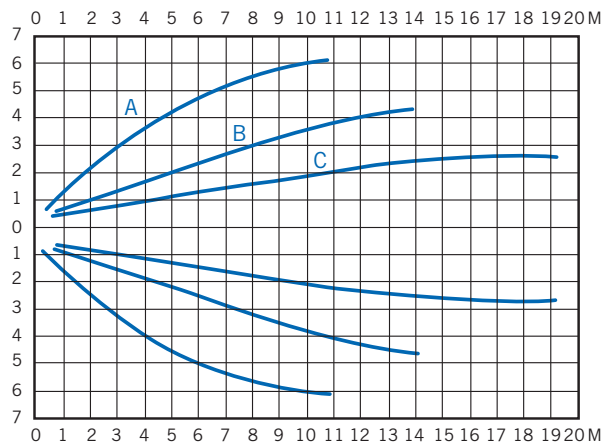


### Spread



- A:** Blades set a maximum divergence (max 45°)
- B:** Blades set a medium divergence (22.5°)
- C:** Blades set parallel to air flow (0°)

Grilles selected for spread at 45° deflection, to be effective require to be spaced at a pitch equal to the throw.



## Performance data

# Single and double deflection adjustable grilles (SDG & DDG)

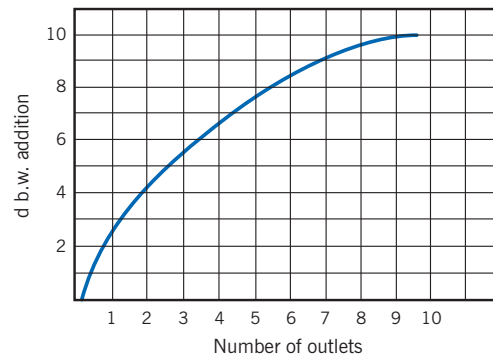
Addition for Multiple Grilles

### Sound Data

It is possible to predict with reasonable accuracy only, the Sound Power level ( $L_w$ ) of a grille.

The noise criteria or N.C. level depends upon the type of room in which it is installed, e.g. whether the walls and furnishings are hard or soft, i.e. reflective or absorbent to sound.

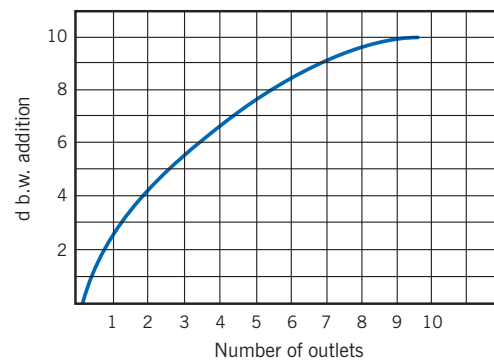
For general use a reduction of 5 to 8 from ( $L_w$ ) will give an approximation of the sound pressure or N.C. level.



Addition for Throttled Damper

### Pressure

The pressure ratio is that ratio between the total pressure behind the grille – with the damper fully open – and the total pressure when the damper is partially closed.



## Air stream drop assessment

# Single and double deflection adjustable grilles (SDG & DDG)

Project a line between the known Throw and Jet Velocity. Drop due to spread is directly related to Throw. Drop due to Temperature Differential (T.D) can be determined

by projecting a line from the known Temperature Differential through the point of intersection of line P-P. Total Drop + Drop due to spread + Drop due to T.D.

