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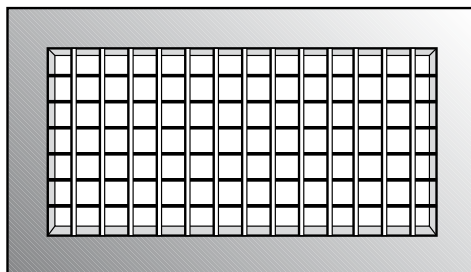
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DOUBLE DEFLECTION GRILLE

Series 5880, 5885, 56880



General

Double deflection supply air grilles include two sets of adjustable deflection vanes providing air pattern control in both horizontal and vertical planes. These grilles are primarily used in high sidewall applications where their high capacity and long throw capability enables them to provide air distribution across large open rooms, such as supermarkets, warehouses, factories, etc. Performance can be customised to suit most space requirements due to an extensive size range and multi-plane adjustment. Grilles are available with 10 mm, 20 mm and 40 mm vane spacings and have a flat surface mounting frame.

Design

Maximum air pattern control is provided by two sets of vanes, each vane individually adjustable at the face of the grille, without tools. Grilles can be specified with the front vanes horizontal or vertical. The 40 mm spaced vanes are more suited to industrial applications while the 10 mm and 20 mm spaced vanes suit lighter commercial applications.

Performance Data

Performance data is applicable to either double or single deflection vane core designs without OBD. Throws are given for a terminal velocity of 0.25 m/s at 0°, 22.5° and 45° vane settings. Note: For any given outlet size and volume, the values of throw, total pressure and sound levels will differ at each vane setting.

Sizes (mm)

Available square or rectangular.

Minimum Nominal (hole) size :	100 mm x 100 mm
Maximum Nominal (hole) size :	1800 mm x 1200 mm
Standard size increment :	25 mm width or height

When ordering, specify nominal width followed by nominal height:

e.g. 500 mm wide x 200 mm high

Finishes

Standard finish is gloss powder coat. Alternative colours and finishes are available.

Construction

Frame and vanes are of corrosion resistant aluminium construction.

Accessories

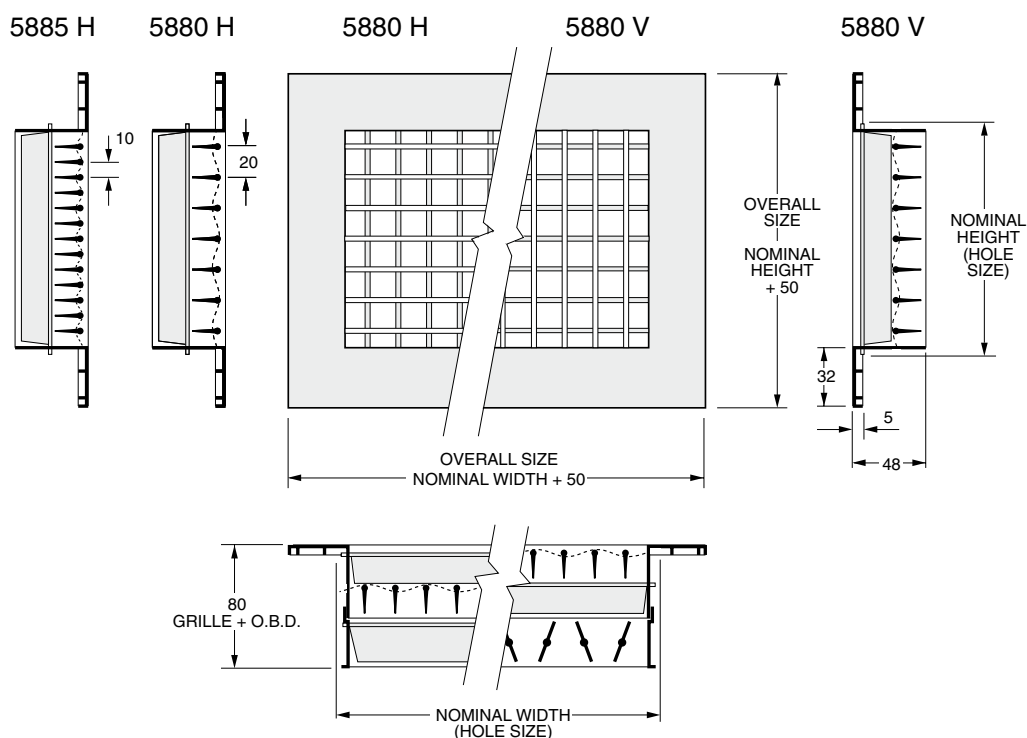
Optional accessories include opposed blade dampers (OBD), square-to-round (SRA) ducting adaptors.

Dimensions (mm)

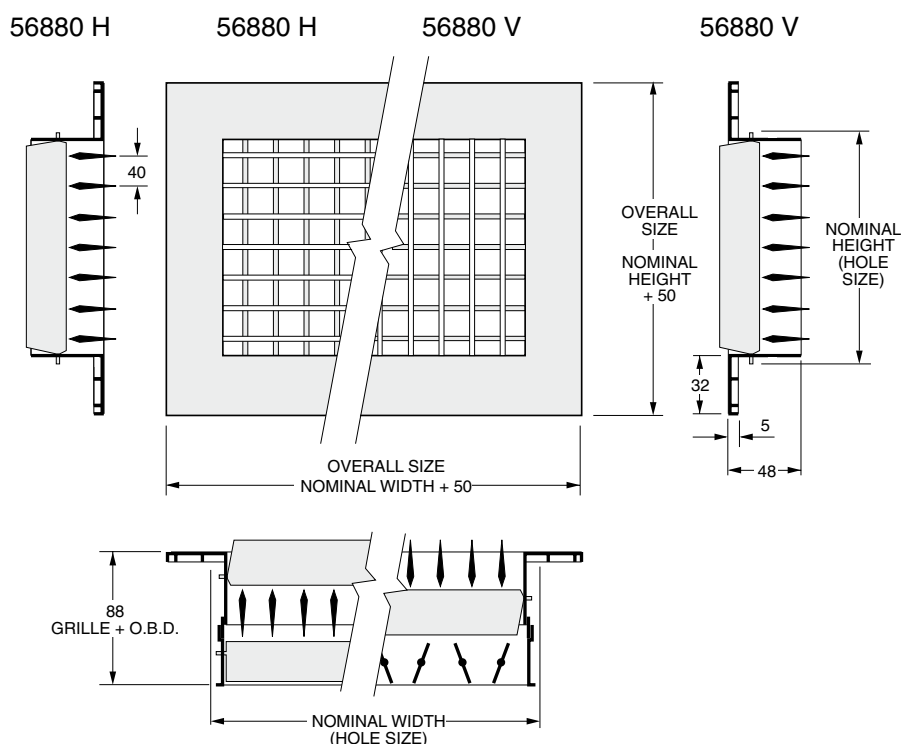
DOUBLE DEFLECTION GRILLE

Model	Front Vane	Rear Vane	Vane Spacing
5880 H	horizontal	vertical	20 mm
5880 V	vertical	horizontal	20 mm
5885 H	horizontal	vertical	10 mm
5885 V	vertical	horizontal	10 mm
56880 H	horizontal	vertical	40 mm
56880 V	vertical	horizontal	40 mm

Series 5880, 5885 H or V



Series 56880 H or V (Industrial)



Performance Data

SINGLE & DOUBLE DEFLECTION GRILLE
5880, 580, 56880

Nominal Size (mm) (W x H)	Neck Velocity m/s	2.0	2.5	3.0	3.5	4.0	5.0	6.0	8.0	9.0
	Vel. Press. Pa	0.5	2.0	3.0	5.0	7.0	9.0	14.0	20.0	32.0

250 x 250 300 x 200 400 x 150 500 x 125 650 x 100	Volume l/s	85		110		145		170		195		225		280		340		450		500										
		Deflection °	0	22.5	45	0	22.5	45	0	22.5	45	0	22.5	45	0	22.5	45	0	22.5	45	0	22.5	45							
		Total Press. Pa	4	5	5	7	8	11	10	12	15	15	16	21	23	28	26	28	38	42	46	61	58	61	83	80	85	112	128	138
300 x 250 500 x 150 600 x 125 750 x 100	Volume l/s	100		135		170		200		240		270		340		410		490		655		740								
		Deflection °	0	22.5	45	0	22.5	45	0	22.5	45	0	22.5	45	0	22.5	45	0	22.5	45	0	22.5	45							
		Total Press. Pa	4	5	6	6	7	9	9	10	13	14	15	20	19	21	27	25	28	38	38	40	52	60	64	80	100	112	152	128
300 x 300 350 x 250 450 x 200 600 x 150	Volume l/s	125		165		205		245		290		330		410		490		655		740										
		Deflection °	0	22.5	45	0	22.5	45	0	22.5	45	0	22.5	45	0	22.5	45	0	22.5	45	0	22.5	45							
		Total Press. Pa	3	4	5	6	7	9	10	11	13	14	16	20	18	20	26	25	27	36	38	43	58	49	54	73	98	106	142	126
350 x 300 400 x 250 500 x 200 700 x 150	Volume l/s	145		195		240		290		340		390		485		580		775		875										
		Deflection °	0	22.5	45	0	22.5	45	0	22.5	45	0	22.5	45	0	22.5	45	0	22.5	45	0	22.5	45							
		Total Press. Pa	4	4	5	6	7	9	10	10	13	14	15	19	19	20	26	25	26	34	38	41	53	53	58	75	99	103	134	126
350 x 350 400 x 300 500 x 250 600 x 200 850 x 150	Volume l/s	170		230		285		340		400		455		570		685		900		1025										
		Deflection °	0	22.5	45	0	22.5	45	0	22.5	45	0	22.5	45	0	22.5	45	0	22.5	45	0	22.5	45							
		Total Press. Pa	4	4	5	6	8	9	10	11	13	13	15	19	20	23	30	26	29	37	36	40	53	52	58	77	90	100	132	116
400 x 400 450 x 350 550 x 300 650 x 250 800 x 200	Volume l/s	225		300		375		450		530		600		750		900		1200		1350										
		Deflection °	0	22.5	45	0	22.5	45	0	22.5	45	0	22.5	45	0	22.5	45	0	22.5	45	0	22.5	45							
		Total Press. Pa	4	4	5	6	7	10	11	14	15	17	22	18	20	27	26	28	38	41	44	60	59	63	86	104	112	152	132	142
400 x 400 450 x 350 550 x 300 650 x 250 800 x 200	Volume l/s	225		300		375		450		530		600		750		900		1200		1350										
		Deflection °	0	22.5	45	0	22.5	45	0	22.5	45	0	22.5	45	0	22.5	45	0	22.5	45	0	22.5	45							
		Total Press. Pa	4	4	5	6	7	10	11	14	15	17	22	18	20	27	26	28	38	41	44	60	59	63	86	104	112	152	132	142

Note: Throw value given is for a terminal velocity of 0.25 m/s.

Performance Data

SINGLE & DOUBLE DEFLECTION GRILLE

5880, 580, 56880

Nominal Size (mm) (W x H)	Neck Velocity m/s	2.0	2.5	3.0	3.5	4.0	5.0	6.0	8.0	9.0
	Vel. Press. Pa	0.5	2.0	3.0	5.0	7.0	9.0	14.0	20.0	32.0

Nominal Size (mm) (W x H)	Volume l/s	245		330			410			490			575			655			820			985			1310			1475					
		Deflection °		0	22.5	45	0	22.5	45	0	22.5	45	0	22.5	45	0	22.5	45	0	22.5	45	0	22.5	45	0	22.5	45	0	22.5	45			
		Total Press. Pa		4	5	5	6	9	6	9	10	12	16	15	17	23	18	20	27	25	28	38	37	40	56	54	58	81	95	102	143	120	130
500 x 350 600 x 300 700 x 250 900 x 200 1200 x 150	N.C.	Throw m		7.6	6.0	4.8	10.0	8.9	6.9	11.7	10.8	8.0	13.4	12.5	9.2	14.6	13.4	10.1	16.8	15.0	11.8	20.0	17.4	12.5	23.1	19.6	14.8	28.5	24.2	18.5	32.0	27.2	22.4
		N.C.		<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
		N.C.		<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
450 x 450 500 x 400 800 x 250 1000 x 200	Volume l/s	285		380			480			575			670			765			955			1145			1530			1720					
		Deflection °		0	22.5	45	0	22.5	45	0	22.5	45	0	22.5	45	0	22.5	45	0	22.5	45	0	22.5	45	0	22.5	45	0	22.5	45	0	22.5	45
		Total Press. Pa		4	4	6	6	7	9	10	11	15	13	15	19	18	20	26	24	25	34	38	39	53	54	56	76	96	100	136	121	126	172
500 x 500 550 x 450 700 x 350 850 x 300 1000 x 250	Volume l/s	360		475			600			720			840			960			1200			1440			1920			2160					
		Deflection °		0	22.5	45	0	22.5	45	0	22.5	45	0	22.5	45	0	22.5	45	0	22.5	45	0	22.5	45	0	22.5	45	0	22.5	45	0	22.5	45
		Total Press. Pa		4	4	5	6	7	9	10	11	14	15	17	22	19	21	28	23	25	33	38	49	57	56	62	82	99	110	146	116	127	167
700 x 450 800 x 400 900 x 350 1000 x 300 1250 x 250	Volume l/s	450		600			750			900			1050			1200			1500			1800			2400			2700					
		Deflection °		0	22.5	45	0	22.5	45	0	22.5	45	0	22.5	45	0	22.5	45	0	22.5	45	0	22.5	45	0	22.5	45	0	22.5	45	0	22.5	45
		Total Press. Pa		4	5	6	7	7	9	9.5	11	13	13	15	19	20	23	25	25	27	30	41	47	51	59	68	74	105	120	131	127	137	152
600 x 600 900 x 400 1200 x 300 1450 x 250 1800 x 200	Volume l/s	500		670			850			1020			1120			1360			1700			2040			2720			3060					
		Deflection °		0	22.5	45	0	22.5	45	0	22.5	45	0	22.5	45	0	22.5	45	0	22.5	45	0	22.5	45	0	22.5	45	0	22.5	45	0	22.5	45
		Total Press. Pa		4	4	5	6	7	8	9	11	13	13	15	18	16	18	23	23	26	33	37	42	53	53	60	76	94	106	136	116	132	167
1800 x 200	N.C.	Throw m		8.2	7.3	6.4	10.7	9.5	7.9	14.9	12.2	9.5	19.3	13.7	10.7	19.4	16.2	12.9	19.8	17.4	14.0	25.3	21.5	17.7	32.8	27.9	23.0	33.6	28.6	23.4	40.2	34.2	28.2
		N.C.		<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
		N.C.		<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20

Note: Throw value given is for a terminal velocity of 0.25 m/s.

GRILLES & DIFFUSERS

PERFORMANCE DATA

The data in the Performance Tables was obtained from tests conducted in accordance with ISO Standard 5219, ISO Standard 3741 and ADC Test Code 1062 GRD84.

Additional performance details are included, where applicable, within each product section.

For performance data beyond the tables' range, consult your nearest temperzone sales office.

Definitions:

Core Area (m²)

The total plane area within the frame opening through which air passes.

Isothermal Air

Air with a nil temperature difference between primary (supply) air and secondary (room) air.

Neck Velocity (m/s)

Neck Velocity = Volume (flow rate) ÷ Neck Core Area.

Measured in metres per second at the neck - the point where the grille/diffuser attaches to the duct.

Noise Criteria (NC)

The Noise Criteria (NC) system curves define the limits which the octave band spectrum of a continuous noise source must not exceed to achieve compliance with the design goal and a level of occupant acceptance.

Standard (Dry) Air

Density of 1.2 kg/m³ at 21°C and 760 mm Hg (barometric pressure).

Static Pressure (Pa)

The Static pressure (of an air stream) is the force per unit area exerted in all directions, irrespective of the air flow direction. Can be positive or negative. Measured in pascals, perpendicular to the air flow direction.

Terminal Velocity (m/s)

The specific velocity in metres per second used to define the throw distance.

Throw (m)

The horizontal or vertical distance, in metres, that the air stream travels from the outlet face to where the specific terminal velocity occurs. Each Performance Data Chart states throw values in metres at the terminal velocities noted. Throw distances are based on isothermal air, for grilles/diffusers flush mounted in a wall, sill or ceiling. For grilles/diffusers, mounted on exposed ductwork, throws will be approximately 70% of performance data values.

Total Pressure (Pa)

The Total Pressure (of an air stream) equals the sum of its Static Pressure and its Velocity Pressure. Measured in pascals, parallel and counter to the air flow direction. Tabled values do not include allowance for Opposed Blade Dampers (OBDs), except Series 5180.

Velocity (Dynamic) Pressure (Pa)

The Velocity pressure (of an air stream) is the force per unit area equivalent to the transformation of the kinetic energy into pressure energy. Always positive. Obtained from the difference between Total and Static pressure.

Volume (l/s)

Volume of air per unit of time (flow rate) entering or leaving the grille or diffuser. Measured in litres per second.

GRILLES & DIFFUSERS

Noise Criteria (Sound)

The information presented below is included to assist in the design and/or selection of air distribution equipment for the intended end-use environment. 'NC' curves are shown, together with the suggested design goal NC range table.

The NC levels in the performance data tables are for the grille/diffuser alone, and assume a room attenuation of 10 dB across the octave band spectrum with a single outlet operating. Upstream duct-generated noise is not considered in the data. By selecting grille/diffuser sizes in accordance with the performance data tables and at the appropriate NC level, there will be no significant contribution to the overall system sound levels by the grille/diffuser. All data presented is in accordance with international standards, i.e. SWL re: 10^{-12} watts.

Sound level measurements, taken in a calibrated reverberant room, can be read directly as Sound Power Levels (SWL) in decibels (dB) whereas measurements taken in the installed environment are Sound Pressure Levels (SPL) in decibels (dB) which can be plotted on the NC curves.

By utilising the NC curves and NC range table, compliance with the design goal can be confirmed by:

- (i) predicting the Sound Pressure Levels (SPL) which can be calculated from published Sound Power Level (SWL) data and specified room characteristics,
- (ii) measuring Sound Pressure Levels (SPL) directly in an existing installation - preferably using an octave band sound pressure level meter.

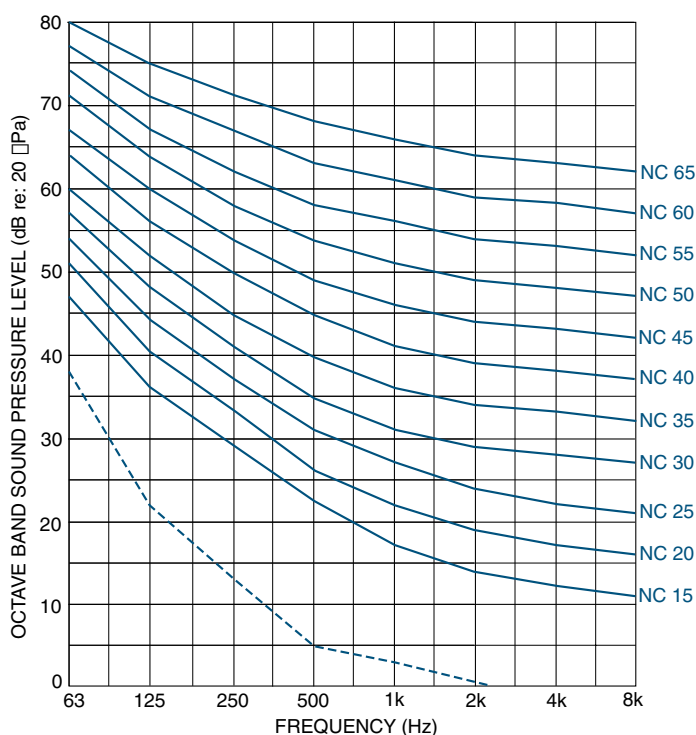
Where measurements cannot be carried out with an octave-band sound level meter, an approximation of an NC level can be calculated from an 'A' scale sound level meter reading, as follows:

$$\text{NC Level} = \text{'A' scale reading in dB} - 6 \pm 2$$

Guide for Environmental Sound Level Design

<i>Environment</i>	<i>Suggested NC Range</i>
Broadcast, Recording Studios	15 - 20
Concert / Opera Halls	20 - 25
Residences, Bedrooms	25 - 35
Hospitals	25 - 35
Theatres, Halls, Churches	25 - 30
Cinemas	30 - 35
Private Offices, Libraries	30 - 35
Restaurants, Bars	35 - 45
Retail Stores & Shops	35 - 45
General Offices, Schools	35 - 45
Swimming Centres, Gymnasiums	35 - 50
Kitchens	40 - 50
Factories	
- Light Engineering	45 - 65
- Heavy Engineering	55 - 75

NC Curves



For more specific information on allowable noise levels, consult the latest issue of 'ASHRAE Guide and Data Book - Fundamentals and Equipment'.

SUGGESTED SPECIFICATIONS

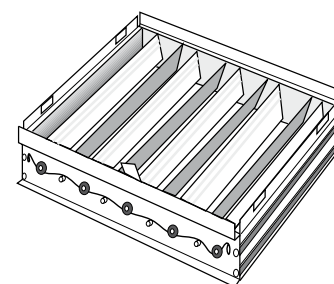
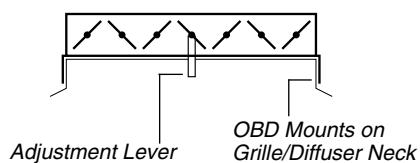
Double-Deflection Grille - Series 5880, 5885, 56880

All side wall supply air grilles shall have individually adjustable deflection vanes for 'double' deflection air pattern control. Frames and vanes shall be of aluminium alloy sections, finished in commercial grade powder or stoving enamel coating all as manufactured by **temperzone** Limited. Where grilles (registers) are fitted with opposed blade volume regulating dampers (OBD), the adjustment lever shall be accessible from the register face.

ACCESSORIES

Opposed Blade Damper (OBD)

- Controls air volume for balancing and fine adjustment
- Installs directly to neck with clip fasteners
- Lever operated from the face of the grille/diffuser
- Not intended for use as a shut-off damper
- Aluminium construction
- Sized to suit grilles/diffusers



Square to Round Adaptor (SRA)

- Adapts square neck grilles/diffusers to round flexible or rigid ducting
- Black Satin enamel finish on inside surfaces
- Galvanised steel construction;
black polyethylene construction for
size 300 sq. to 200/250 round
- Sized to suit grilles/diffusers and ducting

