

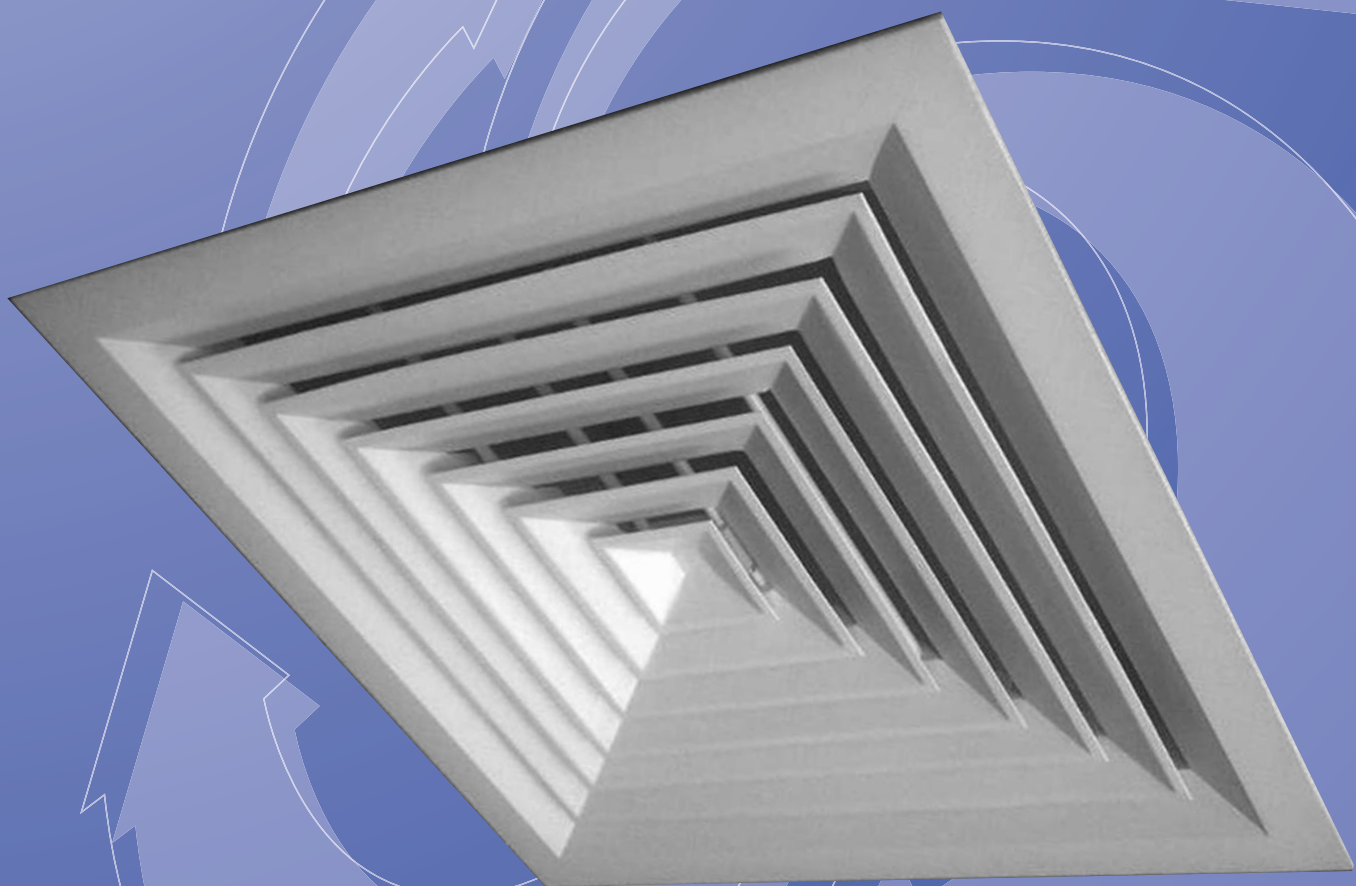
SERIES DS

Slimline Louvred
Face Diffuser

PUBLICATION

DIFFUSERS 15

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Features

- Attractive slimline Louvred Face Design.
- Spring Loaded Removable Core.
- Complementary Top & Side Entry Connection Boxes.
- Seamless Pressed Aluminium Construction.



GILBERTS

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Introduction

Gilberts DS Series of Louvred Face Diffusers complements our standard louvred face diffuser design offering a slimline, lightweight 4 way diffuser with a new slimmer frame and core profile. Combining up-to-date styling and design technology to blend with modern architecture the DS Series provides an unrivalled blend of performance and aesthetics and features a pressed aluminium blade and frame profile to give a balanced visual appearance and ensure a clean horizontal air distribution pattern.

Features

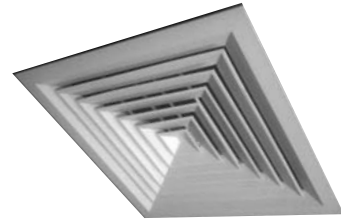
- Attractive slimline Louvred Face Design.
- Spring Loaded Removable Core.
- Complementary Top & Side Entry Connection Boxes.
- Seamless Pressed Aluminium Construction.

Standard Series Options:

Type DS4 : Standard 4 way diffuser suitable for both suspended and plaster ceiling applications.

With an overall size of 596x596mm Series DS is designed to fit both standard suspended grids or plaster ceilings and is manufactured with a 4 way discharge fascia with blanking plates available to convert to a 1,2 and 3 way air patterns where required

All Gilberts DS Units benefit from a spring loaded removable core assembly which allows easy access to dampers for initial balancing or cleaning as well as safety cords to firmly secure the core to the diffuser frame.



For volume control the standard screwdriver operated opposed blade damper is available attached directly to the diffuser. Alternative plenum volume control options of a quadrant or cord operated flap type damper can also be specified. Standard finish for all DS Series is a Polyester Powder White.

Selection Procedure

Having established the position where terminals can be sited, refer to data showing core pattern details and select the suitable direction pattern required. Knowing the volume and throw for each diffuser in question then check :

- a) Recommended limit of volume per direction according to ceiling height (table 1) with throw of air required lying between the max and min values.
- b) Note sound level from performance data and check this recommendations shown on table.
- c) Determine the total pressure drop from performance data.

Table 1

Ceiling Height	Max vol per direction (each diffuser)	Cooling Differential Maximum
2.5m	0.090 m ³ /s	12°C
3.0m	0.200 m ³ /s	12°C
3.5m	0.350 m ³ /s	12°C

Area to be served	Recommended Maximum NC Levels
Sound Broadcasting Recording Studios, TV (Audience Studios)	15 - 20 20 - 25
Lecture Theatres, Cinemas, Concert Halls, Boardroom/Ex Offices Lounge, Conference Room, Court Room, Churches, Private Bedrooms	25 - 30
Operating Theatres, Hospital Wards, Staff Room, Class Rooms, Ballroom, Banquet Room, Library, Bank, Museum, Offices	30 - 40
Restaurants, Department Stores, Computer Suite, Washroom Toilet	35 - 40
Laundries, Kitchens, Swimming Pools, Sports Arena	40 - 45
Garage, Light Engineering Workshop	45 - 50
Heavy Engineering Workshop	50 - 65

Performance Data

The performance data tables provide information for cooling, ventilation and heating applications. They are intended to be aids to heating and air conditioning engineers.

References used :

Pressure : All pressures are in Pa (N/m²) TP = Total Pressure SP = Negative Static Pressure

Throw : The first figure is the throw that corresponds to 0.5 m/s, and the second figure corresponds to 0.25 m/s.

Sound : NC values are based on a room absorption of 8db, re 10⁻¹² watts and for one diffuser, with OBD Damper fully open.

Return Factors : If the unit is used as a return inlet, the performance data is obtained by applying the factors in the following manner : a) Sound : Add factor to the NC value listed b) Negative static pressure : Multiply the factor by the total pressure listed in the tables.

Return Example : 150 x 150 DGA4 with 0.062 m³/s being returned through the unit

Return NC = 18 + 1 = 19

Return Pressure = (-SP) 20 x 1.1 = 22 Pa

Plenum Boxes : Where plenum boxes are attached to diffusers there will be an effect on both the noise and pressure drop values. Top connection boxes have little effect unless spigot connection velocities exceed 4 m/s. However for Side entry boxes an increase should be applied to the tables of 25% for supply pressure drops and 40% for extract.

The following spigot velocity figures indicate expected NC levels in the conditioned space and are based on a room absorption figure of 8db, re 10⁻¹² watts.

Spigot Velocity 3.0 m/s NC Level 30-35

Spigot Velocity 2.5 m/s NC Level 30

Spigot Velocity 2.3 m/s NC Level 25-30

Spigot Velocity 2.0 m/s NC Level 25

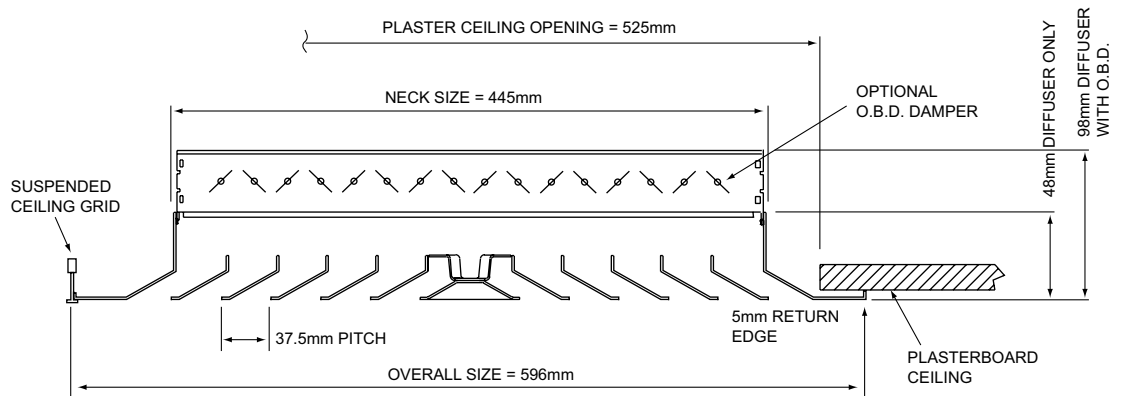
The performance data for all Gilberts products is derived using a Gilberts plenum design and specification.

Performance cannot be guaranteed where alternative plenum designs are used.

Gilberts Supply Diffusers have been tested within the range of +/- 10°C (as recommended in the HEVAC Guide to Air Distribution Technology). For any other temperature differential requirements please contact our Technical Department.

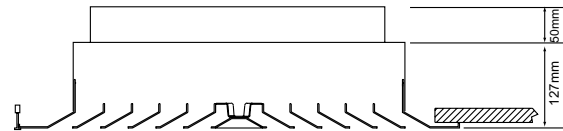
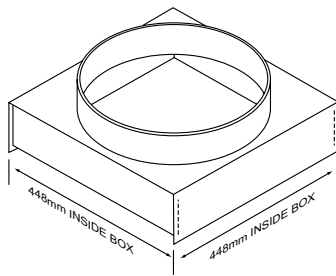


Dimensional Data

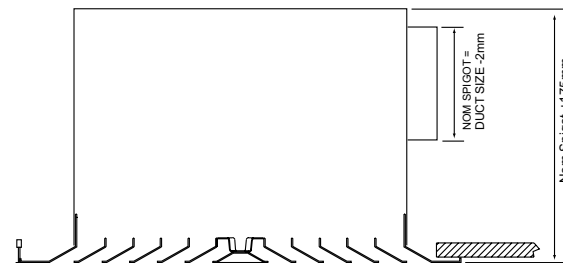
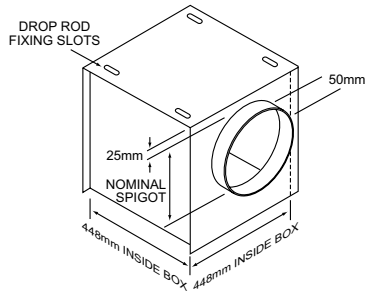


Plenum & Connection Boxes

TYPE TCB: TOP CONNECTION BOX



TYPE SEB: SIDE ENTRY BOX



General Plenum Specification

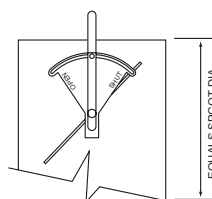
- 0.7mm Galvanised mild steel plenum.
- Spigot Construction: Standard spigots (150, 200 and 250 dia) use plastic clip in spigots. Non standard and any with volume control use a sealed screw in steel spigot.
- Twin spigot options are also available. Twin spigots can be fitted on opposed sides of the box (ref ... TSO) or adjacent sides at 90° to each other ref ... TSA).

Plenum Volume Control

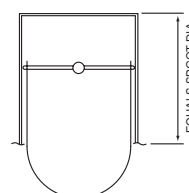
PLENUM TYPE TCB & SEB

SIZE OPTIONS
150, 160, 200, 225
250, 300, 350, 400
& 450 Dia

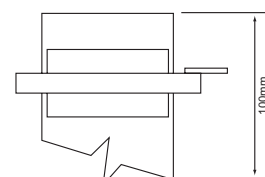
QUADRANT DAMPER - REF:DQ



CORD OP DAMPER - REF:DC



IRIS DAMPER - REF:DI



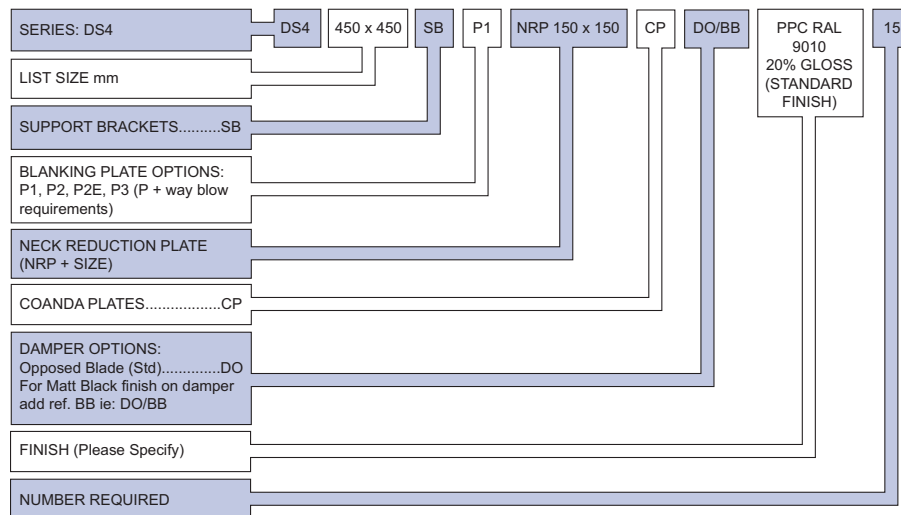
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Sizing Data

TYPE DS4		FOUR- WAY BLOW							
NECK SIZE AREA m ² RETURN - SP RETURN N.C.	NECK VEL m/s TOTAL PRESSURE Pa	1.5 6	1.75 8	2.0 11	2.25 14	2.5 17	2.75 20	3.0 24	
150 x 150 0.0225 (1.1) x T.P. SUPPLY N.C. + 1	TOTAL m ³ /s m ³ /s PER SIDE N.C. LEVEL THROW m	A .034 B .008 -	A .04 B .01 -	A .045 B .011 -	A .051 B .013 -	A .056 B .014 -	A .062 B .016 -	A .067 B .017 -	B -
225 x 225 0.05 (1.2) x T.P. SUPPLY N.C. + 2	TOTAL m ³ /s m ³ /s PER SIDE N.C. LEVEL THROW m	A .075 B .019 -	A .087 B .021 -	A .1 B .025 -	A .112 B .026 -	A .125 B .031 -	A .135 B .034 -	A .15 B .038 -	B -
300 x 300 0.09 (1.3) x T.P. SUPPLY N.C. + 4	TOTAL m ³ /s m ³ /s PER SIDE N.C. LEVEL THROW m	A .135 B .033 -	A .157 B .04 -	A .18 B .045 -	A .202 B .05 -	A .225 B .057 -	A .247 B .062 -	A .27 B .069 -	B -
375 x 375 0.14 (1.8) x T.P. SUPPLY N.C. + 5	TOTAL m ³ /s m ³ /s PER SIDE N.C. LEVEL THROW m	A .21 B .052 -	A .245 B .062 -	A .28 B .072 -	A .315 B .08 -	A .35 B .088 -	A .385 B .097 -	A .42 B .105 -	B -
450 x 450 0.2025 (2.1) x T.P. SUPPLY N.C. + 6	TOTAL m ³ /s m ³ /s PER SIDE N.C. LEVEL THROW m	A .303 B .077 -	A .354 B .09 -	A .405 B .104 -	A .455 B .116 -	A .506 B .129 -	A .556 B .141 -	A .607 B .155 -	B -

Ordering Specification



LIST SIZE RANGE

Type DS4 450 x 450 only
(596mm O/A)

FIXING

Diffuser only (solid duct connection):
Drill & rivet through diffuser neck
Diffuser with Plenum: (flexible duct connection)
Standard support is via drop rods
(by others) to slots on diffuser plenum

FINISH

Standard Finish:
Standard finish for all units is a PPC
White RAL 9010 20% gloss.
Dampers: Mill Finish Aluminium.

SUPPORT BRACKETS

Fitted to diffuser for drop rod fixing on units without plenum connection box.

COANDA PLATES

Fitted to diffuser border to maintain ceiling effect.

BLANKING PLATES

Clip on quarter core blanking available to modify air pattern on 4 way diffuser:
P1 = 4 Way Down to 1 Way
P2 = 4 Way Down to 2 Way
P2E = 4 Way Down to 2 Way corner
P3 = 4 Way Down to 3 Way

NECK REDUCTION PLATES

Fitted to diffuser neck to reduce inlet size and maintain diffuser performance.

GILBERTS

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