

TECHNICAL SUBMITTAL SHEET

Submittal Ref No: M005 Rev 1

Project No: Olwen House, 8-20 Loman Street London

Project Reference: C10422

Date: 21/11/2018

[illegible]

Status A: Accepted

Status B: Accepted subject to comments/Amendments

Status C: Rejected/Resubmit

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PRODUCT	GRILLES & DIFFUSERS					GRILLES / DIFFUSER REFERENCE	PLENUM BOX REFERENCE	PERFORMANCE DATA	FINISH REFERENCE		
PROJECT	OLWEN HOUSE										
CONSULTANT	D&B			REP	AAL						
PROJECT NUMBER	P98565		VER	1	CODE						
PRODUCT SPEC	DB	C									
PREPARED BY	AAL										

[illegible]

PROJECT SPECIFIC NOTES

1	WE HAVE ALLOWED FOR PPC TO SATIN SILVER FINISH.
2	THE STANDARD FINISH FOR THESE ITEMS IS RAL 9010.
3	DAMPERS ARE NOT INCLUDED WITHIN THIS QUOTATION.
4	THROW FIGURES ARE BASED ON ISOTHERMAL CONDITIONS WITH A CEILING PRESENT. ACTUAL PERFORMANCE MAY VARY.

GENERAL NOTES

-	PLEASE TAKE TIME TO READ THE NOTES. FAILURE TO DO SO MAY RESULT IN DELAYS TO DELIVERY PROGRAMMES, GOODS NOT BEING SUITABLE FOR PUROSE OR EXTRA INVOICE COSTS BEING APPLIED.
-	PLEASE CHECK AND CONFIRM IF GILBERTS PRODUCT TYPE / SIZE QUOTED IS ACCEPTABLE.
-	PLEASE ENSURE THAT THE PROJECT AND QUOTE NUMBER IS CLEARLY INDICATED ON ANY ORDER PLACED AGAINST THIS QUOTATION.

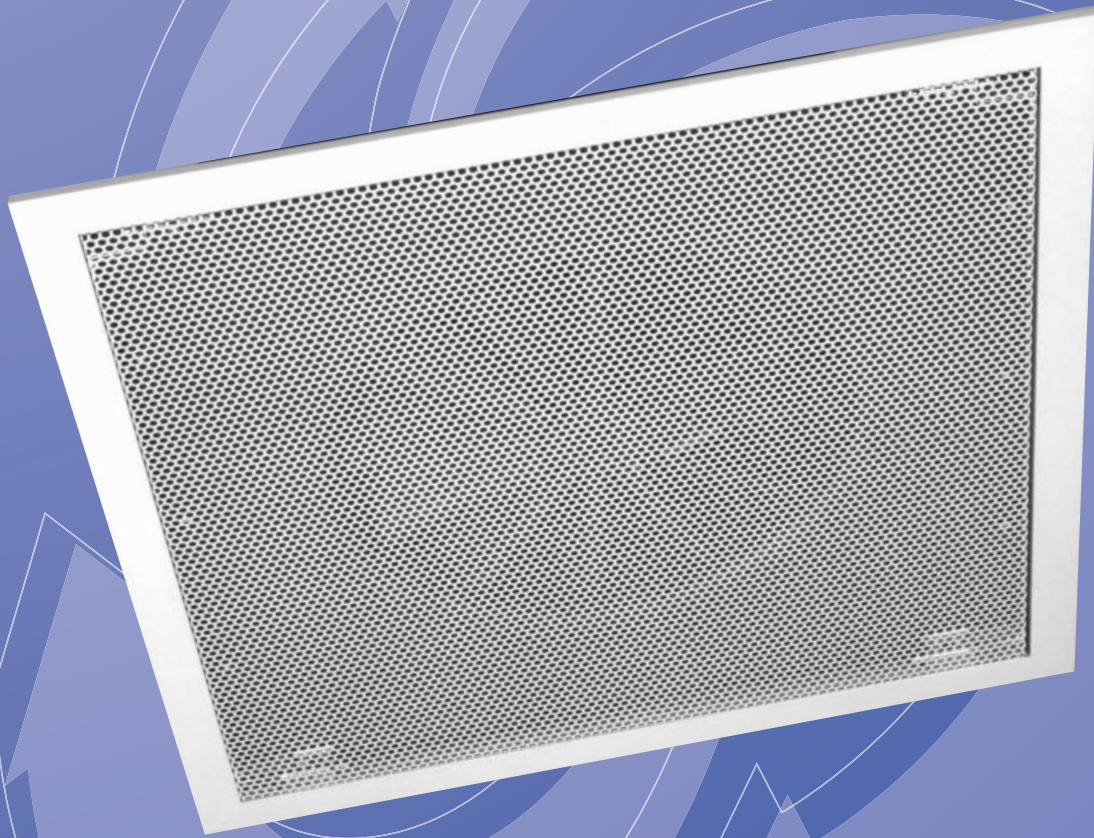
SERIES GSF

Fixed Swirl Diffusers
(Patented)

PUBLICATION

DIFFUSERS 11

JULY 2015



Features

- Omni directional, swirl effect discharge.
- Horizontal projection.
- High induction effect.
- Perforated square, perforated circular or open face circular design.
- Standard or clip-in ceiling border options.
- Suitable for high room air change rates.



GILBERTS

SERIES GSF

Fixed Swirl Diffusers

Introduction

With the **GSF Series** Gilberts introduce a contemporary and attractively designed range of Fixed Swirl Type Diffusers for ceiling supply and extract applications. The circular pattern of radial vanes featured on this unit provide the swirl, air distribution effect typically associated with this type of diffuser allowing the unit to introduce high volumes of air into the conditioned space, taking advantage of rapid entrainment and intermixing. On a Fixed Swirl Unit the distribution pattern is horizontal across the ceiling. As a result the unit can deliver high air change rates as compared to conventional diffusers. Notwithstanding the performance potential, aesthetic aspects have also been considered. The circular profile of the GSFA type unit lends itself well to

exposed ductwork and other contemporary applications but is arguably less appropriate in square ceiling grids. The GSFB and GSFC type however, which offer a perforated face diffuser type appearance lend themselves particularly well in these instances always enabling a good balance between performance and aesthetics to be maintained for all applications. Newer models, such as the GSFD, adapted for the clip-in ceiling type applications, and the GSFE with a circular perforated face offer further advancements in swirl options. For the ultimate in discretion the latest GSFH model is designed to fit fully concealed behind the standard perforated ceiling tiles of all the popular manufacturers.

THE FIXED SWIRL range comprises of 7 type options:

TYPE GSFA: Standard Swirl Diffuser comprising of fixed blades mounted in a Circular Housing Frame.

TYPE GSFB: Circular Swirl Diffuser with fixed blades fitted into a square Perforated Face Housing Frame. The perforated face is hinged for easy access from the diffuser face. For a fixed face unit select type GSKF.

TYPE GSFC: Circular Swirl Diffuser with fixed blades fitted into a square borderless Perforated Face Housing Frame.

TYPE GSFD: Circular Swirl Diffuser with fixed blades fitted into a square Perforated Fascia adapted for Clip-in Ceiling applications.

TYPE GSFE: Circular Swirl Diffuser with fixed blades fitted into a Circular Perforated Fascia with removable core.

TYPE GSFH: Circular Swirl Diffuser with fixed blades adapted for fitting behind standard perforated face ceiling tiles from the popular manufacturers.

For extract applications complementary exhaust swirl units (Type GSXB to K) are available to match supply diffuser type options.

Features

- Omni directional, swirl effect discharge.
- Horizontal projection.
- High induction effect.
- Perforated square, perforated circular or open face circular design.
- Standard or clip-in ceiling border options.
- Suitable for high room air change rates.



All units are fabricated from a combination of aluminium and steel components and are available with a matching range of top and side entry plenum boxes. Volume control can be achieved using Quadrant flap type or iris dampers on the plenum inlet spigots. Swirl diffuser sizes range from 160 to 630mm dia as indicated in the dimensional data.

The performance tables illustrated in this brochure give tabulated performance data for each listed size of diffuser, together with their design. The figures given relate to Cooling, Ventilation and Heating applications and always for horizontal distribution of conditioned air.

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.

1. Try if possible to construct in plan an imaginary square ceiling grid. This will enable the designer to position each diffuser at each square centre so that distribution is even in all the directions.
2. The total volume of air is then divided by the number of outlets and a volume per diffuser is established.
3. The performance charts should then be used to select the size and type of diffuser based upon volume and throw requirements. For high ceiling applications an overblow situation can be acceptable.

Standard finish is white for type GSFA and white perforated fascia, with unexposed internals finished matt black on all other GSF types.

Stoved finishes to any BS or RAL colour are available on request.

References Used

Pressure: All pressures are in Pa (N/m²)

Throw: The horizontal distances for air streams are given for both 0.5 and 0.25 m/s terminal velocities and are based upon a ceiling effect.

Sound: The NC values are peak levels on the NC curves.

4. Check pressure loss and NC levels from design chart to confirm acceptability.

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.

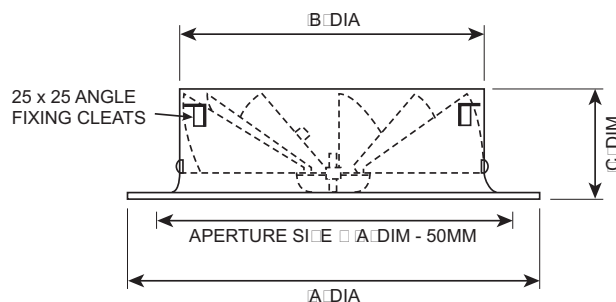
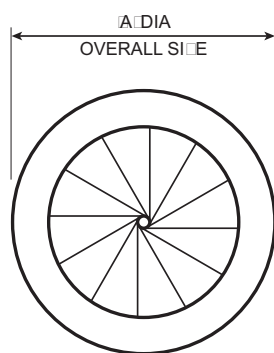
Performance Data

Selection Procedure



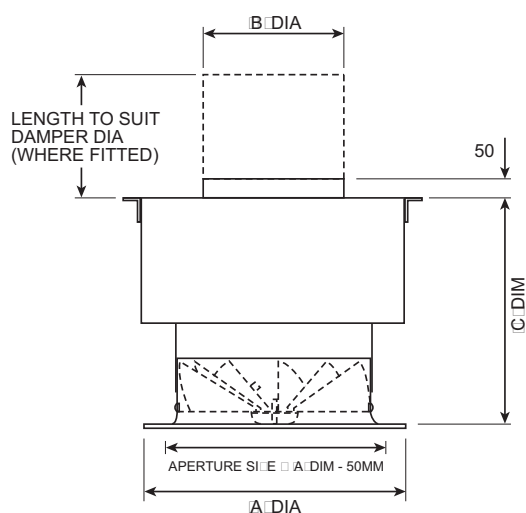
Type GSFA

DIFFUSER



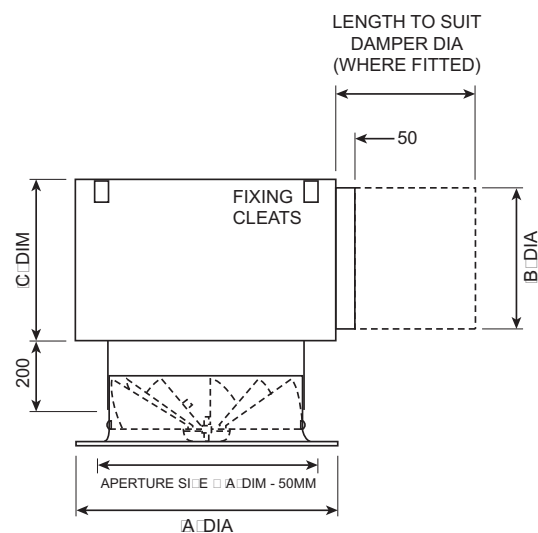
GSFA			
SIZE	A	B	C
160	240	158	90
250	330	248	100
315	425	313	110
450	560	448	155
630	740	628	220

DIFFUSER C/W TOP ENTRY BOX



GSFA-TCB			
SIZE	A	B	C
160	240	125	437
250	330	200	522
315	425	250	582
450	560	350	727
630	740	400	842

DIFFUSER C/W SIDE ENTRY BOX



GSFA-SEB				
SIZE	A	B	C	D
160	240	125	187	437
250	330	200	262	522
315	425	250	312	582
450	560	350	412	727
630	740	400	462	842



Technical Performance Data Series GSFA

Type GSFA

Size 160

NECK VELOCITY (M/S)	1.25	1.5	1.75	2.0	2.25	2.5	2.75	3.0
VOLUME FLOW RATE (M ³ /S)	0.025	0.030	0.035	0.040	0.045	0.050	0.055	0.066
PRESSURE DROP (Pa)	TOP ENTRY	9.5	14	17	23	29	35	42
	SIDE ENTRY	11	15	19	24	31	38	46
	STRAIGHT CONNECTIONS	6.4	9.0	12	16	20	25	30
THROW TO 0.25 M/S (M)	AT +10 °C	1.0	1.6	2.0	2.4	2.5	2.6	2.8
	AT +5 °C	1.2	1.4	1.6	1.8	2.0	2.4	2.6
	ISOTHERMAL	1.0	1.2	1.4	1.5	1.6	1.7	1.8
	AT -5 °C	0.4	0.6	0.8	1.0	1.2	1.4	1.6
	AT -10 °C	0.4	0.6	0.8	1.0	1.3	1.5	1.6
THROW TO 0.5 M/S (M)	AT +10 °C	0.4	0.6	0.8	1.0	1.2	1.5	1.8
	AT +5 °C	0.3	0.5	0.6	0.8	1.0	1.3	1.6
	ISOTHERMAL	0.3	0.5	0.6	0.8	1.0	1.2	1.5
	AT -5 °C	0.3	0.5	0.6	0.8	1.0	1.2	1.5
	AT -10 °C	0.3	0.5	0.6	0.8	1.0	1.2	1.5
NOISE LEVEL (NC)	STRAIGHT CONNECTIONS	20	20	20	20	25	30	30
	SEB	20	20	20	20	25	30	35

TYPE GSFA

Size 250

NECK VELOCITY (M/S)	1.25	1.50	1.75	2.0	2.25	2.50	2.75	3.00
VOLUME FLOW RATE (M ³ /S)	0.061	0.073	0.085	0.098	0.11	0.122	0.134	0.147
PRESSURE DROP (Pa)	TOP ENTRY	10	15	18	23	28	34	48
	SIDE ENTRY	12	16	19	24	30	38	50
	STRAIGHT CONNECTIONS	7	10	14	18	23	27	33
THROW TO 0.25 M/S (M)	AT +10 °C	1.3	2.0	2.5	3.0	3.3	3.6	4.2
	AT +5 °C	1.6	1.9	2.3	2.7	3.0	3.3	3.8
	ISOTHERMAL	1.4	1.6	1.8	2.0	2.2	2.5	2.7
	AT -5 °C	1.3	1.5	1.6	2.0	2.0	2.3	2.7
	AT -10 °C	1.4	1.8	2.1	2.4	2.6	2.7	3.1
THROW TO 0.5 M/S (M)	AT +10 °C	0.7	1.0	1.3	1.6	1.8	2.1	2.4
	AT +5 °C	0.7	0.9	1.2	1.4	1.7	2.0	2.2
	ISOTHERMAL	0.7	0.8	0.9	1.1	1.3	1.5	1.8
	AT -5 °C	0.7	0.9	1.1	1.4	1.6	1.8	2.1
	AT -10 °C	0.8	1.1	1.2	1.4	1.7	1.9	2.3
NOISE LEVEL (NC)	STRAIGHT CONNECTIONS	20	20	20	25	30	30	35
	SEB	20	20	25	30	30	35	40

Type GSFA

Size 315

NECK VELOCITY (M/S)	1.25	1.5	1.75	2.0	2.25	2.5	2.75	3.0
VOLUME FLOW RATE (M ³ /S)	0.097	0.116	0.136	0.155	0.175	0.194	0.214	0.233
PRESSURE DROP (Pa)	TOP ENTRY	8	12	15	19	24	29	34
	SIDE ENTRY	9	13	16	21	26	31	36
	STRAIGHT CONNECTIONS	6	9	12	15	22	25	32
THROW TO 0.25 M/S (M)	AT +10 °C	1.8	2.4	3.0	3.6	4.0	4.4	5.3
	AT +5 °C	2.0	2.4	3.0	3.6	4.0	4.2	4.5
	ISOTHERMAL	1.8	2.0	2.4	2.6	3.0	3.3	3.6
	AT -5 °C	2.1	2.5	2.8	3.0	3.2	3.4	3.6
	AT -10 °C	2.4	3.0	3.5	3.8	3.9	4.1	4.2
THROW TO 0.5 M/S (M)	AT +10 °C	1.0	1.5	1.8	2.2	2.4	2.8	3.0
	AT +5 °C	1.0	1.2	1.8	2.0	2.4	2.6	2.8
	ISOTHERMAL	0.8	1.0	1.2	1.4	1.8	2.0	2.4
	AT -5 °C	1.0	1.2	1.5	2.0	2.2	2.4	2.6
	AT -10 °C	1.2	1.6	1.8	2.0	2.4	2.5	2.6
NOISE LEVEL (NC)	STRAIGHT CONNECTIONS	20	20	20	20	25	30	35
	SEB	20	20	20	25	30	35	40

TYPE GSFA

Size 450

NECK VELOCITY (M/S)	1.25	1.5	1.75	2.0	2.25	2.5	2.75	3.0
VOLUME FLOW RATE (M ³ /S)	0.198	0.238	0.278	0.318	0.357	0.397	0.437	0.477
PRESSURE DROP (Pa)	TOP ENTRY	4	6.5	7.8	9	12	17	20
	SIDE ENTRY	5	7	8	11	14	18	21
	STRAIGHT CONNECTIONS	4	6	7.4	10	13	16	18
THROW TO 0.25 M/S (M)	AT +10 °C	2.8	3.0	4.0	4.8	5.5	6.2	7.0
	AT +5 °C	2.4	2.8	3.6	4.0	4.6	5.2	5.8
	ISOTHERMAL	2.0	2.2	2.5	3.0	3.5	3.8	4.3
	AT -5 °C	2.4	2.6	2.8	3.2	4.0	4.4	5.3
	AT -10 °C	2.6	2.8	3.0	3.9	4.3	4.8	5.7
THROW TO 0.5 M/S (M)	AT +10 °C	1.5	2.4	2.6	3.2	3.6	4.2	4.8
	AT +5 °C	1.5	1.8	2.2	2.4	2.8	3.2	3.6
	ISOTHERMAL	0.8	1.0	1.2	1.5	1.8	2.4	3.0
	AT -5 °C	1.2	1.5	1.8	2.0	2.4	2.6	3.0
	AT -10 °C	1.7	2.0	2.4	2.8	3.0	3.5	4.2
NOISE LEVEL (NC)	STRAIGHT CONNECTIONS	20	20	20	20	20	25	25
	SEB	20	20	20	20	25	25	30

Type GSFA

Size 630

NECK VELOCITY (M/S)	1.25	1.5	1.75	2.0	2.25	2.5	2.75	3.0
VOLUME FLOW RATE (M ³ /S)	0.390	0.467	0.546	0.623	0.701	0.779	0.857	0.935
PRESSURE DROP (Pa)	TOP ENTRY	6.5	10	13	17	22	28	33
	SIDE ENTRY	7	11	15	19	23	29	36
	STRAIGHT CONNECTIONS	6	8	12	15	20	24	29
THROW TO 0.25 M/S (M)	AT +10 °C	5.0	5.7	6.4	7.2	7.9	8.7	9.4
	AT +5 °C	4.6	5.2	6.0	6.8	7.5	8.3	9.0
	ISOTHERMAL	4.1	4.8	5.6	6.4	7.1	7.9	8.6
	AT -5 °C	4.2	5.0	5.8	6.6	7.3	8.1	8.8
	AT -10 °C	4.4	5.2	6.0	6.8	7.5	8.3	9.0
THROW TO 0.5 M/S (M)	AT +10 °C	3.0	3.7	4.5	5.2	5.6	6.2	7.1
	AT +5 °C	2.2	3.6	4.3	4.9	5.5	6.1	7.0
	ISOTHERMAL	2.4	3.6	4.0	4.7	5.4	6.1	7.0
	AT -5 °C	2.4	3.4	3.9	4.4	5.0	5.7	6.4
	AT -10 °C	2.5	3.0	3.4	3.9	4.5	5.1	5.8
NOISE LEVEL (NC)	STRAIGHT CONNECTIONS	20	20	25	30	35	40	45
	SEB	20	20	25	30	40	40	50

Note: All noise data based on standard catalogue spigot sizes

SERIES GSF

Fixed Swirl Diffusers

Ordering Specification DIFFUSER

SERIES: GSFA to K	GSFC	160	594	TD8	P1	PIP 19	SB	PPC RAL 9010 20% GLOSS (STANDARD FINISH)	15
LIST SIZE (Dia) mm									
OVERALL SIZE mm (Applies to GSFB, C & K only)									
REGULAR DROP DEPTH (mm) (GSFB only):.....TD + DEPTH									
BLANKING PLATE OPTIONS P1, P2, P3.									
PIP HEIGHT (mm): (GSF only)PIP + HEIGHT									
SUPPORT BRACKETS (Required without plenum)SB									
FINISH (Please Specify)									
NUMBER REQUIRED									

Ordering Specification PLENUM

SERIES : TCB/GSFA to K SEB/GSFA to K	SEB/ GSFE	AT1	EP	160-594	BH500	BB	DQ 150 DIA	TSO	DQ 150 DIA	15
THERMAL / ACOUSTIC INSULATION (SEB ONLY) 12mm Pyro (Standard)AT1 25mm PyroAT2 12mm ArmaflexAT3										
PLENUM BOX FIXING TYPE : External (Standard) EP Internal IP										
TO FIT DIFFUSER SIZE (List size + Overall size)										
BOX HEIGHT (Where Different From Standard)										
MATT BLACK INTERNALS OPTION :BB										
SPIGOT & DAMPER OPTIONS (Plus NOMINAL Spigot Size): No Damper.....SS + SIZE QuadrantDQ + SIZE Cord OperatedDC + SIZE Iris.DI + SIZE										
TWIN SPIGOT OPTIONS : AdjacentTSA OppositeTSO										
2nd SPIGOT & DAMPER OPTION (See Above)										
NUMBER REQUIRED										

Fixing

Standard fixing for all units is via drop rods (by others) to 20 x 9mm elongated slots in 25 x 25mm angle cleats at the rear.
alternatively an internal fixing where the drop rods locate inside the plenum can be specified where required.

Finish

Standard finish: PPC White RAL 9010 20% gloss
(Type GSFH - Matt Black)

Special Finishes: PPC to Stock BS or RAL colour

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