



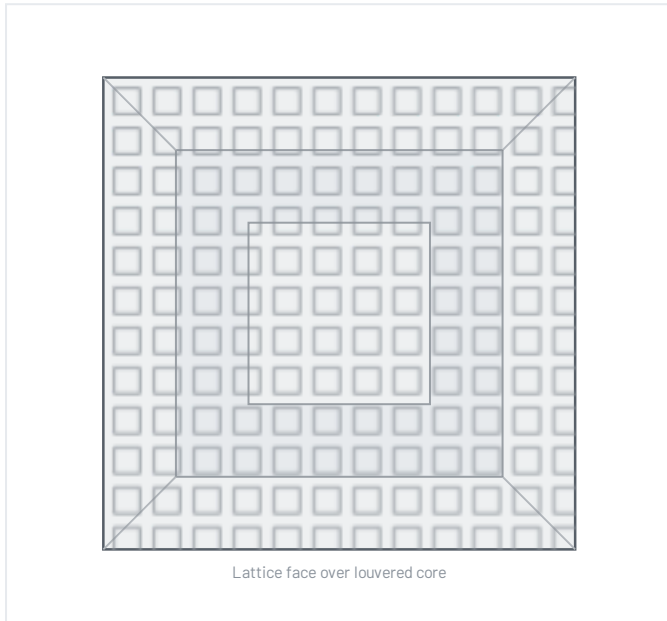
MINIMUM SECURITY · LOUVERED CORE · LATTICE FACE

SECURITY CEILING DIFFUSER

A louvered pattern diffuser combined with a heavy-gauge steel lattice face — proven air distribution with the tamper resistance required in supervised secure areas.

01 OVERVIEW

The **GSDC** combines a high-performance louvered pattern diffuser with a heavy-gauge steel lattice face, giving the proven throw of a louvered face outlet with the security of a tamper-resistant grille. The removable core carries fixed louvers in a 1-, 2-, 3- or 4-way discharge pattern; the face plate is fixed with tamperproof security screws. Suited to supervised minimum-security spaces.



LOUVERED PERFORMANCE

Fixed-louver core delivers a controlled throw pattern, supply air.

LATTICE SECURITY FACE

Heavy-gauge steel face resists tampering and disassembly.

REMOVABLE CORE

Spring-retained core lifts out for damper access and cleaning.

1 – 4 WAY DISCHARGE

Fixed 1, 2, 3 or 4-way blow pattern to suit the space.

TYPICAL APPLICATIONS

Minimum-security, constantly-supervised spaces — **lobbies and foyers, dormitory rooms, cells with night lock-down, secure visiting areas, and psychiatric & mental-health facilities.**

02 SPECIFICATIONS & CONSTRUCTION

SPECIFICATION

LATTICE FACE

2.75 mm steel · 21 mm square holes on 26 mm centres · 5 mm fret bars

CORE

Removable louvered pattern core, spring-retained

DISCHARGE PATTERN

Fixed 1, 2, 3 or 4-way (2-way diagonal available)

NECK SIZE (SQUARE)

150 × 150 mm to 600 × 600 mm, 75 mm increments

OVERALL FACE

= nominal + 141 mm · ceiling opening = nominal + 89 mm

FIXING

Face-plate holes for tamperproof security screws (by others)

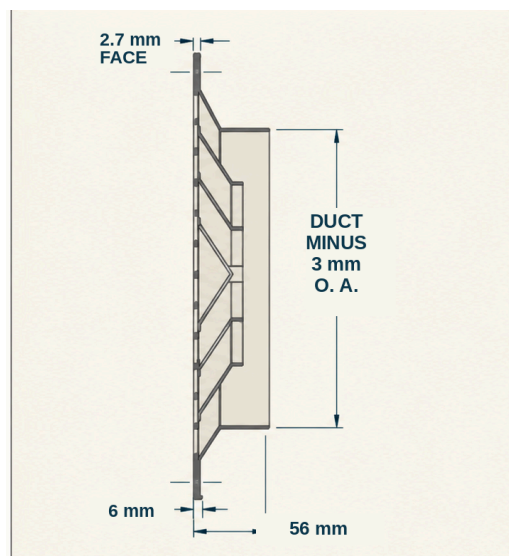
DAMPER

Optional duct-mounted opposed-blade damper (OBD)

FINISH

White RAL 9010 (standard) · mill (optional)

CROSS SECTION



OPTIONS & ACCESSORIES

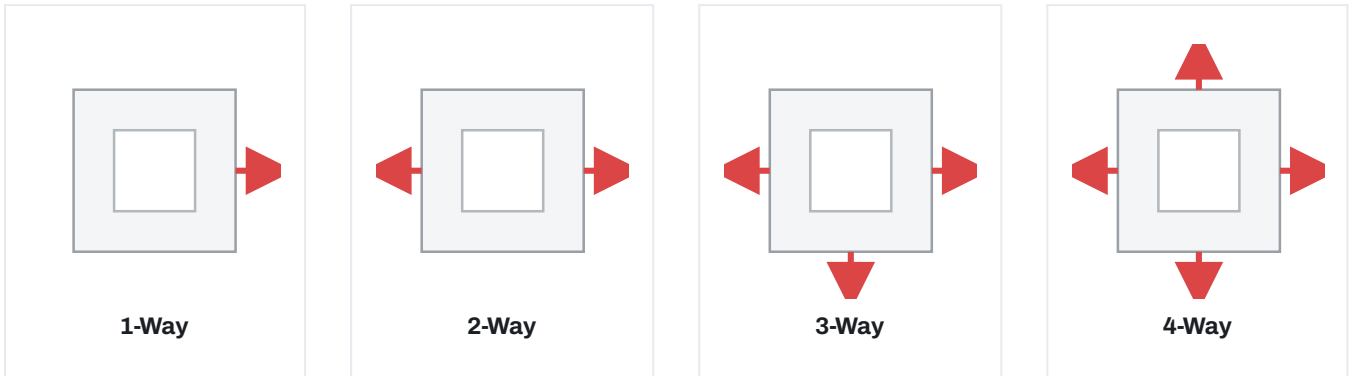
Duct-mounted OBD damper · square-to-round neck adapter · custom finish (RAL)

STANDARDS

Tested to EN 12238 / ISO 5219 · sound ISO 3741

03 DISCHARGE PATTERNS & MOUNTING

DISCHARGE AIR PATTERNS



Fixed patterns. 2-way is available as opposite-side or diagonal (D2). Pattern is set by the core and specified in the model code.

CEILING MOUNTING & FIXING

The face plate overlaps the ceiling opening and is fixed with tamperproof security screws (supplied by others) through pre-formed holes. The louver core is spring-retained and removable from the face for damper adjustment or cleaning. Frame the ceiling opening to **nominal size + 89 mm**; the visible face measures **nominal + 141 mm**.

Neck size (mm)	Security screws
150 × 150	4 · one per side (centre)
225 – 450	8 · two per side
525 – 600	12 · three per side

INSTALLATION NOTES

- Backpan neck connects to square duct; square-to-round adapter available.
- Security screws (pin-hex / one-way) supplied and set by others.

- Supporting structure to carry the diffuser weight by others.
- Confirm neck size, pattern and damper option on the project submittal.

04 PERFORMANCE DATA

AIRFLOW · PRESSURE · SOUND · THROW — GSDC (PER EN 12238)

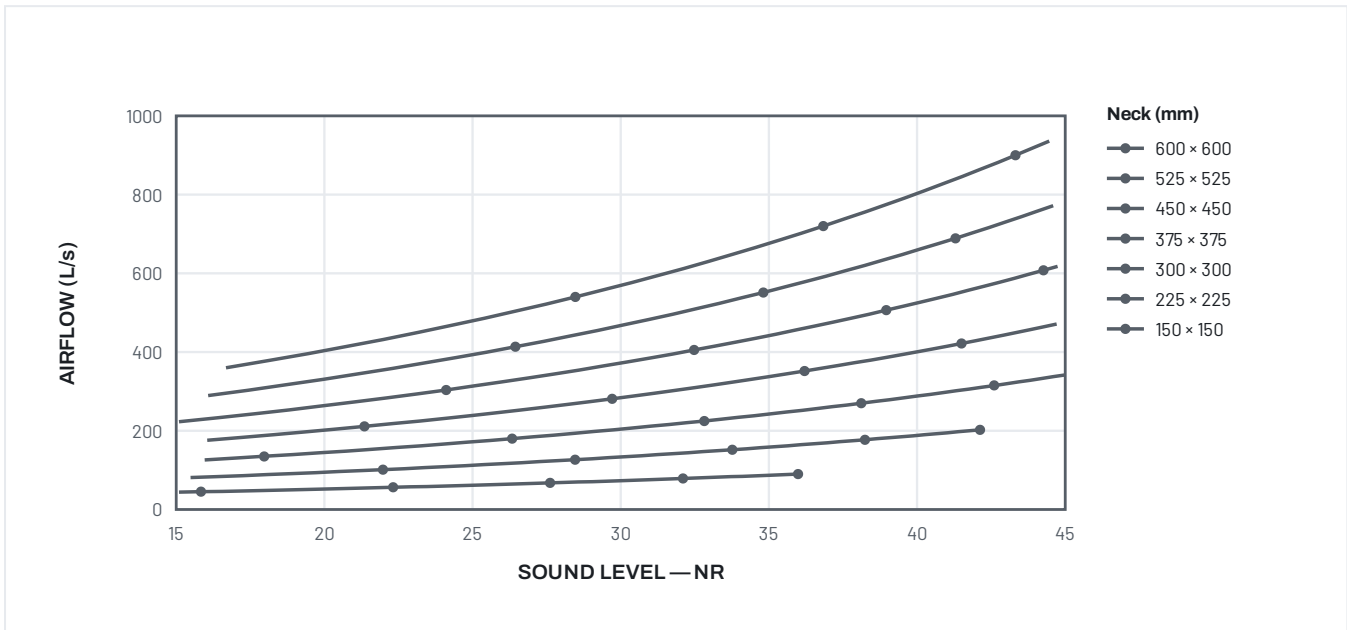
SI · NR · EN 12238 / ISO 5219 / ISO 3741

Neck (mm)	Neck vel	Total pres	Static pres	Total flow	NR	1-way	2-way	3-way	4-way
	m/s	Pa	Pa	L/s	—	Throw to 0.50 m/s terminal — m			
150 × 150	1.0	6	5	22	—	1.3	0.6	0.8	0.4
	1.5	12	11	34	—	1.7	0.9	1.1	0.6
	2.0	22	20	45	16	2.0	1.0	1.4	0.7
	2.5	34	31	56	22	2.4	1.2	1.6	0.8
	3.0	50	44	68	28	2.7	1.4	1.8	0.9
	3.5	68	60	79	32	3.0	1.6	2.0	1.0
	4.0	88	79	90	36	3.3	1.7	2.2	1.1
225 × 225	1.0	6	5	51	—	1.9	1.0	1.3	0.6
	1.5	12	11	76	14	2.5	1.3	1.7	0.8
	2.0	22	20	101	22	3.1	1.6	2.1	1.0
	2.5	34	31	127	28	3.6	1.9	2.4	1.2
	3.0	50	44	152	34	4.1	2.1	2.8	1.4
	3.5	68	60	177	38	4.6	2.3	3.1	1.5
	4.0	88	79	202	42	5.1	2.6	3.4	1.7
300 × 300	1.0	6	5	90	—	2.6	1.3	1.7	0.8
	1.5	12	11	135	18	3.4	1.7	2.3	1.1
	2.0	22	20	180	26	4.2	2.1	2.8	1.4
	2.5	34	31	225	33	4.9	2.5	3.3	1.6
	3.0	50	44	270	38	5.5	2.8	3.7	1.8
	3.5	68	60	315	43	6.2	3.2	4.1	2.0
	4.0	88	79	360	46	6.8	3.5	4.5	2.2
375 × 375	1.0	6	5	141	—	3.2	1.6	2.1	1.1
	1.5	12	11	211	21	4.3	2.2	2.9	1.4
	2.0	22	20	281	30	5.2	2.7	3.5	1.7
	2.5	34	31	352	36	6.1	3.1	4.1	2.0
	3.0	50	44	422	42	7.0	3.5	4.7	2.3
	3.5	68	60	492	46	7.8	4.0	5.2	2.6
	4.0	88	79	562	50	8.5	4.3	5.7	2.8
450 × 450	1.0	6	5	202	—	3.9	2.0	2.6	1.3
	1.5	12	11	304	24	5.1	2.6	3.4	1.7
	2.0	22	20	405	32	6.3	3.2	4.2	2.1
	2.5	34	31	506	39	7.4	3.8	4.9	2.4
	3.0	50	44	608	44	8.4	4.3	5.6	2.8
	3.5	68	60	709	49	9.3	4.8	6.3	3.1
	4.0	88	79	810	53	10.3	5.2	6.9	3.4
525 × 525	1.0	6	5	276	15	4.5	2.3	3.0	1.5
	1.5	12	11	413	26	6.0	3.1	4.0	2.0
	2.0	22	20	551	35	7.4	3.8	4.9	2.4
	2.5	34	31	689	41	8.6	4.4	5.8	2.8
	3.0	50	44	827	47	9.8	5.0	6.6	3.2
	3.5	68	60	965	51	10.9	5.6	7.3	3.6
	4.0	88	79	1102	55	12.0	6.1	8.1	4.0
600 × 600	1.0	6	5	360	17	5.2	2.6	3.5	1.7
	1.5	12	11	540	28	6.9	3.5	4.6	2.3
	2.0	22	20	720	37	8.4	4.3	5.7	2.8
	2.5	34	31	900	43	9.9	5.0	6.6	3.3
	3.0	50	44	1080	49	11.2	5.7	7.5	3.7
	3.5	68	60	1260	53	12.5	6.4	8.4	4.1
	4.0	88	79	1440	57	13.8	7.0	9.2	4.5

Total airflow = neck area × neck velocity; total pressure follows the neck-velocity curve; static pressure = total – velocity pressure. Sound rating **NR**; “-” denotes NR below 13. Throw is the distance to a terminal velocity of 0.50 m/s (isothermal). Throw by pattern: 1-way full neck flow; 2-way = 0.51, 3-way = 0.67, 4-way = 0.33 of the 1-way throw (flow split per side). Values adapted to SI from EN 12238 / ISO 5219 / ISO 3741 reference data; final ratings subject to Gerhman verification.

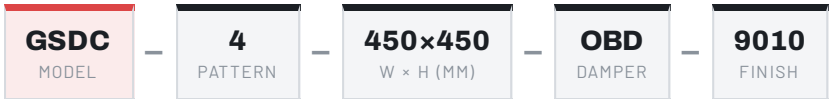
05 SOUND LEVEL & ORDERING

AIRFLOW VS SOUND LEVEL (NR) — BY NECK SIZE



Total airflow (L/s) against sound rating NR for each square neck size, no damper. Curves plotted over the 1.0–4.0 m/s neck-velocity range; markers at 0.5 m/s steps. Adapted to SI (NR) from EN 12238 / ISO 5219 / ISO 3741 reference data.

HOW TO SPECIFY — MODEL CODE



Example: **GSDC-4-450x450-OBD-9010** — 4-way pattern, 450 × 450 mm, with opposed-blade damper, white RAL 9010.

PATTERN	1 / 2 / D2 diagonal / 3 / 4-way
SIZE	150–600 mm, 75 mm increments(square)

DAMPER	00 none · OBD duct-mounted opposed blade
FINISH	9010 white (RAL) · ML mill



Engineered ventilation and air-management products for demanding environments.

PRODUCT

Security Ceiling Diffuser · GSDC

Louvered Core · Lattice Face · 1/2/3/4-Way · Removable Core

Gerhman Global GmbH

www.gerhman.com

Continuous product improvement is our policy; specifications may change without notice. Diffusers are supplied to order — confirm neck size, discharge pattern, damper and finish with your Gerhman representative before ordering. Performance data is issued from Gerhman testing. Not all options are available in every market.

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