

COLMAN
Air Distribution

ENGINEERED AIR PRODUCTS

SWIRL DIFFUSERS

DRS SERIES



DRS
SERIES

D SERIES SWIRL DIFFUSERS



Application

The DRS, DQS, DCS and DSS series of fixed circular swirl diffusers have been designed to provide cooled or warmed air to a wide range of commercial applications.

A high level of induction can be achieved due to the angle of the swirl deflection blades and the relative free area of the diffuser. Temperature and velocity differences between supplied and room air are therefore quickly minimised.

This series of diffusers can also be used for extract applications.

Description

A circular array of deflection blades are pressed into a circular or square steel panel.

Nominal size is determined by the diameter of the diffuser neck, which is also the diameter of the swirl outlet pattern.

Options include circular or square overall format, with or without a 'bell-mouth' diffusion collar.

The diffusion collar (DRS/DQS) is designed to increase the diffuser's 'grip' on the air outlet pattern and improve coanda (ceiling effect). This option is more suitable for applications where cooled air is supplied.

The diffuser can also be supplied with a flush face (DCS/DSS). This option improves the downward spread of the air outlet pattern and is more suited to applications where warmed air is supplied. The DRS, DQS, DCS and DSS series can be supplied with a side, top entry plenum or reducer, reducer not supplied by Colman Air Distribution, please contact the office for plenum heights.

Fixing

The DRS, DQS, DCS and DSS series are suitable for installation at heights of between 2.5m and 4m from floor level.

The diffuser can be fitted directly to suitable ductwork or to side entry plenum or transition reducer. The plenum or reducer is to be

fixed via support rods or wires to suitable structural support.

The diffuser can also be fixed with screws or rivets directly through the neck, or with a central screw to matching plenum or transition reducer.

Finish

Diffusers are supplied powder coated white (RAL 9010) matt as standard. Other RAL colours are available on request.



DIFFUSER/PLENUM OPTIONS & ORDER CODES

Options and Order Codes

Diffuser Codes

1. SERIES	2. STYLE	3. CORE	4. ACCESSORIES	5. ARRANGEMENT	6. FIXING	7. FINISH
D	R Round with diffusion collar Q Square with diffusion collar C Round with flush face S Square with flush face 1 Special	S Fixed pattern 1 Special	0 None 1 Special	0 External swirl pattern 1 Special	A Neck fixing C Central screw fixing 1 Special	E RAL 9010 gloss white F RAL 9010 matt white 1 Special

DRS00CF [315]

Nominal Size

Plenum Codes

1. SERIES	2. LINING	3. INSTALLATION METHOD	4. ACCESSORIES	5. ARRANGEMENT	6. SPIGOT TYPE	7. SPIGOT DIAMETER
D	L Lined N Unlined 1 Special	S Fixed pattern (comes with supports for drop rods) 1 Special	0 None A Cord operated monoblade damper B Cord operated monoblade damper (matt black) P Internally painted (matt black) 1 Special	S Supply E Extract	R Round — Side entry T Round — Top entry 1 Special	B 125 C 150 D 200 E 250 F 300 N 315 P 280 R 225 T 175 1 Special

DNSASRE [250]

Spigot Diameter

For neck sizes up to and including 200 diameter, the square plenum size is 325 × 325mm.

For 250 diameter neck the square plenum size is 375 × 375mm.

For 315 diameter neck the square plenum size is 500 × 500mm.

For 400 diameter neck the square plenum size is 575 × 575mm.

The side entry plenum height is spigot size +55mm. Top entry height is 225mm.

Diffuser Code: DRS00CE 315

Plenum Code: DNSASRE 250

Circular fixed swirl diffuser with diffusion collar.

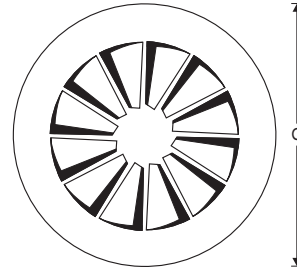
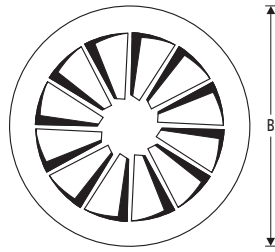
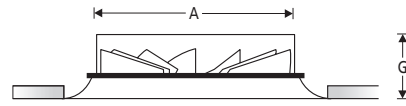
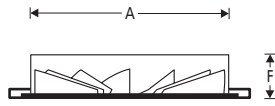
Nominal size 315mm diameter with central screw fixing to side entry plenum.

Monoblade damper in 250mm diameter plenum spigot.

Standard diffuser finish: Powder coated RAL 9010 matt finish.

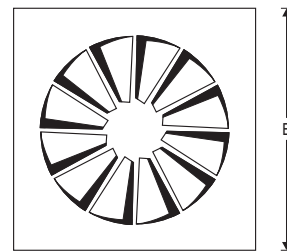
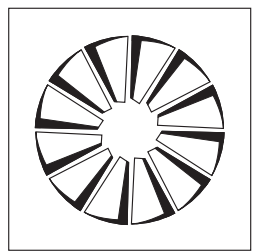
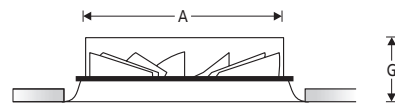
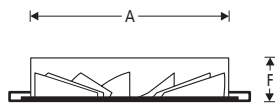
DIFFUSER DIMENSIONS

DCS, DRS, DSS and DQS Diffuser Dimensions



DCS Type

DRS Type



DSS Type

DQS Type

Nominal Size	Calculated Free Area (m ²)	A Diffuser Neck Diameter (mm)	B Overall Size DCS Type (mm)	C Overall Size DRS Type (mm)	D Overall Size DSS Type (mm)	E Overall Size DQS Type (mm)
125	0.0046	125	178	200	N/A	N/A
160	0.0078	160	198	250	N/A	N/A
200	0.0128	200	248	300	594 x 594	594 x 594
250	0.0197	250	298	350	594 x 594	594 x 594
315	0.0307	315	363	450	594 x 594	594 x 594
400	0.0506	400	448	570	594 x 594	594 x 594

PERFORMANCE DATA

Nominal Size	Volume (l/s)	Volume (m³/s)	Face Velocity (m/s)	Pressure Drop (Pa)	Throw to 0.5 m/s Velocity (m)	Noise Rating (NR)
125	20	0.020	4.3	14	0.4	16
	30	0.030	6.5	31	0.7	25
	40	0.040	8.7	55	0.9	31
	45	0.045	9.8	69	1.0	34
	55	0.055	12.0	102	1.3	38
	60	0.060	13.0	120	1.4	40
160	30	0.030	3.8	11	0.5	16
	45	0.045	5.8	25	0.7	25
	60	0.060	7.7	43	1.0	31
	70	0.070	9.0	58	1.2	34
	80	0.080	10.3	75	1.4	37
	90	0.090	11.5	94	1.5	40
200	50	0.050	4.0	12	0.6	20
	60	0.060	4.8	17	0.8	24
	70	0.070	5.6	23	0.9	27
	80	0.080	6.3	29	1.1	30
	90	0.090	7.1	37	1.2	33
	100	0.100	7.9	45	1.4	35
	110	0.110	8.7	54	1.5	37
	120	0.120	9.5	64	1.6	39
250	60	0.060	3.0	7	0.6	18
	70	0.070	3.6	10	0.7	21
	80	0.080	4.1	12	0.8	24
	100	0.100	5.1	19	1.1	28
	120	0.120	6.1	27	1.3	32
	130	0.130	6.6	32	1.4	34
	140	0.140	7.1	37	1.6	36
	150	0.150	7.6	42	1.7	37
	160	0.160	8.1	47	1.8	38
315	75	0.075	2.4	5	0.6	16
	100	0.100	3.3	9	0.8	22
	125	0.125	4.1	13	1.1	26
	150	0.150	4.9	19	1.3	30
	160	0.160	5.2	21	1.4	32
	180	0.180	5.9	27	1.6	34
	200	0.200	6.5	33	1.8	37
	220	0.220	7.2	39	2.0	39
	240	0.240	7.8	47	2.2	40
400	100	0.100	2.0	3	0.6	15
	125	0.125	2.5	5	0.8	20
	150	0.150	3.0	7	1.0	24
	175	0.175	3.5	9	1.2	27
	200	0.200	4.0	12	1.4	30
	220	0.220	4.3	14	1.6	32
	240	0.240	4.7	17	1.7	34
	260	0.260	5.1	19	1.9	36
	280	0.280	5.5	22	2.1	37
	300	0.300	5.9	26	2.2	39

Performance figures are for diffuser only and assume supply air temperature -12 to $+15^{\circ}\text{C}$ relative to room temperature.

Pressure drop shown is static pressure drop for diffuser only (without damper).

Throw value is measured horizontally with horizontal distribution setting to terminal velocity of 0.5 m/s.

All NR ratings based on room absorption of 8 dB, dampers fully open.

PRODUCT RANGES

GRILLES	DIFFUSERS	LOUVRES
Linear Bar	Linear Slot	External
Ceiling	Louvre Face	Circular
Sidewall	Sidewall	Door
Floor	Perforated Face	Screens
Computer Floor	Circular	Penthouse
Cill	Swirl	Sand Louvres
Single & Double Deflection	Ceiling	Roof Louvres
Egg Crate	Sidewall Fixed & Adjustable	
Hinged Core	Jet Flow / Nozzle	
Door Transfer	Repus Displacement Ventilation	
Security and Prison		
Supply and Extract Valves		

BESPOKE SERVICE

We offer a bespoke design service where standard products do not fit the requirements of the build, we also supply products in special colours and finishes including bronze, brass, gold and chrome to meet Architectural design specifications.



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We reserve the right to alter specifications without notice and products will sometimes be supplied with modifications which do not strictly comply with the descriptions and illustrations in this publication.