Fixed Circular Diffusers

Description
For supply or extract air, fixed blade multicone ceiling diffuser with countersunk flange holes for easy fixing. Suitable for ceiling and duct mounting.

Construction
From pressed mild steel outer frame and inner cores. Optional damper has twin blades with opposed action operated via screwdriver through the face of the diffuser.

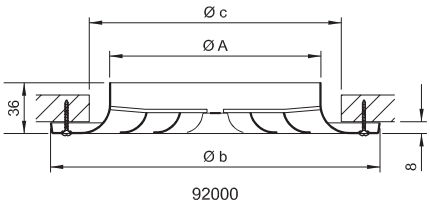
Size
From 160Ø to 315Ø neck sizes.

How to Specify
STATE QUANTITY, THE PRODUCT CODING AND THE SIZE WIDTH X HEIGHT
e.g. 10 Qty. 9210R+1B 315Ø.

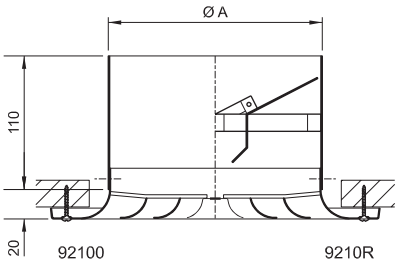
Frame Style	Options	Options	Accessories
92 Circular Steel	0 None	0 None	0 None
	1 Extended Neck Collar	P Square Duct Plenum	R Twin Blade Damper
		S Spiral Duct Plenum	F Flat Plate Damper

+

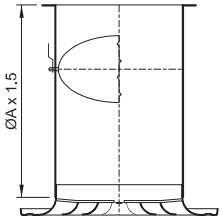
Fixings	Finish
1 Flange Holes	B PPC RAL 9010 Gloss White
	C PPC BS/RAL Colour



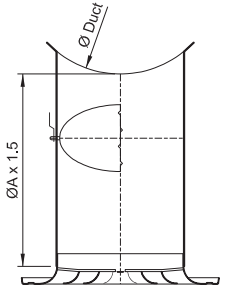
92000



92100 9210R



920PF 920P0



920SF 920S0

Size	Dimensions (mm)		
	Ø A	Ø b	Ø c
Ø 160	158	248	190
Ø 200	198	298	230
Ø 250	248	363	280
Ø 315	313	448	350

Technical Data Fixed Pattern Circular Diffusers 92000 / 92100

Fixed pattern diffuser

The '92000'series is an effective and efficient 'low-cost' ceiling diffuser. Suitable for cooling temperature differentials (Td) to -14° and heating Td to +30°. An ideal product for low ceiling installations. Fixed tamperproof cone assembly. The optional twin blade opposed action volume control damper is allen key operated via the diffuser centre cone.

Performance data

Values are based upon a 2.7 metre high ceiling flush and free of obtrusions, a temperature differential of 10°C and the rear volume control damper set in the fully open position.

Noise criteria

Noise ratings in the form of 'NC' levels are given in the performance tables and are based on an 8dB deduction for average room absorption and sound power level (LW) 10^{-12} W.

Damper influence

Data includes the fitting of a rear twin bladed (opposed action) damper set in the fully open position. Harsh throttling of the damper may adversely affect pressure drop and noise and should be avoided.
Should a rear volume control damper not be required the resultant reduction in pressure drop and noise rating will be:

Ps x 0.85
NC -5

Throw (Lt) and terminal velocity (Vt)

Throw values 'Lt' given in the table Fig. 1. is the radial distance in metres from the diffuser centre. The shorter 'Lt' distance shown is that point at which the airstream has been reduced to a terminal velocity (Vt) of 0.5M/s and the longer throw 'Lt' is that distance at which the 'Vt' is 0.25M/s.

No ceiling effect

For applications where there is no ceiling effect, ie. when diffusers are to be mounted on exposed ducting, the throw will be reduced by approximately 33%. the designer should multiply the required throw by 1.5 and select from the table in the normal manner.

Ak factors

Outlet areas in M^2 are given in Fig. 1. below in the form of Ak values.

q (l/s) = Vk x Ak x 1000

Fig. 1.

Ø A	An (M^2)	Ak (M^2)	Nomenclature	Vn (M/s)						
				2.0	2.5	3.0	3.5	4.0	4.5	5.0
Ø 160	0.016	0.011	q (l/s)	30	40	50	60	70	80	-
			Lt (metres)	0.7	0.9 - 1.5	1.0 - 1.8	1.2 - 1.8	1.5 - 2.0	1.7 - 2.6	-
			Ps (Pascals)	6	9	12	17	23	32	-
			NC	-	16	21	26	32	40	-
Ø 200	0.028	0.020	q (l/s)	70	80	90	100	110	120	140
			Lt (metres)	0.9 - 1.5	1.2 - 1.8	1.4 - 2.2	1.5 - 2.4	1.8 - 2.6	2.0 - 3.0	2.3 - 3.4
			Ps (Pascals)	8	11	14	17	21	25	33
			NC	15	21	25	28	32	37	42
Ø 250	0.045	0.031	q (l/s)	100	120	140	160	180	200	220
			Lt (metres)	1.0 - 1.7	1.4 - 2.2	1.7 - 2.6	1.8 - 3.0	2.2 - 3.3	2.4 - 3.8	2.6 - 4.2
			Ps (Pascals)	7	9	13	17	19	23	27
			NC	16	22	27	32	35	39	42
Ø 315	0.067	0.046	q (l/s)	140	170	210	240	270	300	330
			Lt (metres)	1.5 - 2.1	1.8 - 2.7	2.1 - 3.0	2.4 - 3.3	2.6 - 3.7	2.9 - 4.3	3.5 - 5.0
			Ps (Pascals)	6	8	14	18	21	28	33
			NC	17	24	28	34	36	41	44

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