ALSHARQA

ROUND DIFFUSERS

AIR OUTLETS
TECHNICAL CATALOGUE

Alsharqa
Air Conditioning and Industies
المصرية الخليجية لأعمال التكييف - الشارقة
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ROUND DIFFUSERS

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ROUND DIFFUSERS

INTRODUCTION

Round Diffusers are intended for application in air conditioning and ventilation systems in civil as well as industrial zones. Employed to diffuse and extract the air from large ambient. Suitable for heating, cooling and ventilation system for wide diffusing effect Can be installed on false ceiling or exposed duct work. Diffusers with fully adjustable Aluminum sheet cores provide horizontal or vertical air pattern and longer throw. Adjustable cones offer high degree of mixing of primary air and secondary air which ensures efficient air distribution.

ROUND DIFFUSERS

GENERAL

Round Diffusers (SRD) are designed to deliver air in a reasonably uniform and horizontal pattern. The design consists of a conical core followed by continuously concentric rings to adjust the air flow pattern. This design feature will assure little turbulence in the air stream and allow for the distribution of the smudge pattern. It also provides excellent air distribution efficiency.

Round Diffuser SRD
(Standard Model)

MATERIAL & FINISH

Complete aluminum construction. Diffusers are available in white polyester powder coating finish or any other RAL standard color upon customer request.

Dampers of butterfly shapes are adjustable from the front by a lever and are made from aluminum sheets.

Butterfly Damper

Supply air Round Diffusers(SRD)

Neck Size (Inches)	Neck Area (Ft^2)	Area Factor (Ft^2)	Neck Velocity (FPM)	300	400	500	600	700	800	1000	1200	1400	1600
			Velocity Pressure (Inch W.G.)	0.007	0.011	0.016	0.023	0.031	0.041	0.064	0.091	0.123	0.161
6″	0.196	0.13	Air Flow Rate (CFM)	60	80	100	120	135	155	195	235	275	315
			Total Press.Drop	0.025	0.041	0.061	0.082	0.106	0.132	0.201	0.282	0.380	0.480
			Throw (Ft)	3-5	3-6	3-6	4-6	4-6	4-6	5-7	5-7	6-8	7-10
			NC	<20	<20	<20	<20	<20	25	30	35	39	45
8″	0.349	0.22	Air Flow Rate (CFM)	105	140	175	210	245	280	350	420	490	560
			Total Press.Drop	0.021	0.032	0.052	0.071	0.100	0.122	0.183	0.271	0.370	0.480
			Throw (Ft)	4 – 6	4 – 6	5 – 7	6 – 8	6 – 8	6 – 8	7-10	7-11	8-13	9-14
			NC	<20	<20	<20	20	25	29	33	38	42	46
10″	0.545	0.25	Air Flow Rate (CFM)	165	220	275	325	380	435	545	655	765	870
			Total Press.Drop	0.040	0.061	0.092	0.122	0.181	0.242	0.361	0.500	0.710	0.950
			Throw (Ft)	4 – 6	6 –9	7-10	7-10	7-11	8-13	9-14	10-16	12-18	15-22
			NC	<20	<20	<20	21	26	30	34	39	43	47
12″	0.785	0.38	Air Flow Rate (CFM)	225	315	395	470	550	630	785	940	1100	1255
			Total Press.Drop	0.026	0.041	0.072	0.101	0.152	0.201	0.313	0.490	0.670	0.870
			Throw (Ft)	6 –8	7-10	7-11	7-11	8-13	9-14	10-16	14-21	15-23	19-27
			NC	<20	<20	<20	22	28	32	36	41	45	48
14″	1.07	0.50	Air Flow Rate (CFM)	320	430	535	640	750	855	1070	1285	1500	1710
			Total Press.Drop	0.034	0.051	0.080	0.112	0.156	0.201	0.313	0.460	0.600	0.800
			Throw (Ft)	6 –8	8-13	9-15	10-16	11-17	12-18	15-23	19-25	19-27	21-31
			NC	<20	<20	<20	24	29	33	37	42	46	49

ROUND DIFFUSERS

BASIC PERFORMANCE DATA

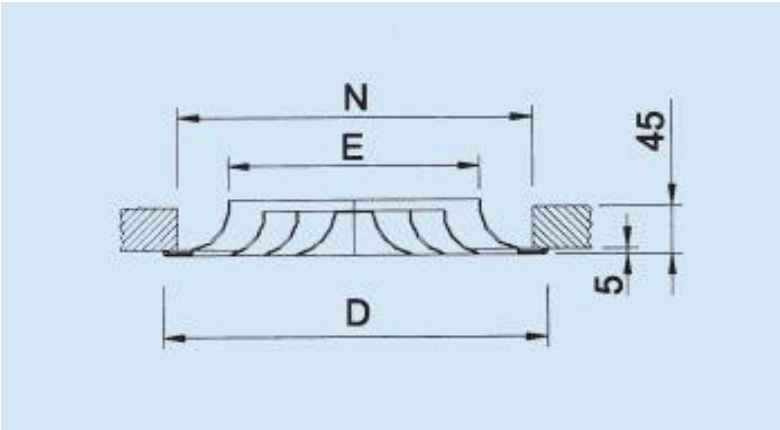
Supply air Round Diffusers(SRD)

Neck Size (Inches)	Neck Area (Ft^2)	Area Factor (Ft^2)
16″	1.40	0.59

Neck Velocity (FPM)	300	400	500	600	700	800	1000	1200	1400	1600
Velocity Pressure (Inch W.G.)	0.007	0.011	0.016	0.023	0.031	0.041	0.064	0.091	0.123	0.161
Air Flow Rate (CFM)	420	560	700	840	980	1120	1400	1680	1960	2240
Total Press.Drop	0.043	0.075	0.106	0.140	0.202	0.262	0.413	0.593	0.800	0.980
Throw (Ft)	7-11	9-14	9-15	11-17	12-18	15-23	16-25	19-27	21-31	25-36
NC	<20	<20	20	25	30	34	38	43	47	50

Return air Round Diffusers(RRD)

Neck Size (Inches)	Neck Area (Ft^2)	Neck Velocity (FPM)	300	400	500	600	700	800	1000	1200	1400	1600
		Velocity Pressure (Inch W.G.)	0.007	0.011	0.016	0.023	0.031	0.041	0.064	0.091	0.123	0.161
6″	0.196	Air Flow Rate (CFM)	60	80	100	120	135	155	195	235	275	315
		Total Press.Drop	0.029	0.048	0.076	0.108	0.146	0.188	0.294	0.421	0.569	0.749
		NC	<20	<20	<20	<20	21	26	32	37	41	46
8″	0.349	Air Flow Rate (CFM)	105	140	175	210	245	280	350	420	490	560
		Total Press.Drop	0.020	0.034	0.053	0.077	0.100	0.123	0.207	0.293	0.394	0.519
		NC	< 20	<20	< 20	21	26	30	34	39	43	47
10″	0.545	Air Flow Rate (CFM)	165	220	275	325	380	435	545	655	765	870
		Total Press.Drop	0.019	0.033	0.050	0.071	0.096	0.120	0.196	0.281	0.379	0.477
		NC	<20	<20	<20	22	27	31	36	41	45	48
12″	0.785	Air Flow Rate (CFM)	225	315	395	470	550	630	785	940	1100	1255
		Total Press.Drop	0.018	0.029	0.045	0.064	0.086	0.112	0.176	0.249	0.339	0.443
		NC	<20	<20	<20	23	29	33	37	42	46	49
14″	1.07	Air Flow Rate (CFM)	320	430	535	640	750	855	1070	1285	1500	1710
		Total Press.Drop	0.017	0.028	0.042	0.061	0.083	0.108	0.170	0.242	0.328	0.430
		NC	<20	<20	20	25	30	34	38	43	47	50
16″	1.40	Air Flow Rate (CFM)	420	560	700	840	980	1120	1400	1680	1960	2240
		Total Press.Drop	0.016	0.025	0.041	0.059	0.079	0.103	0.162	0.231	0.314	0.411
		NC	<20	<20	21	26	31	35	39	44	48	51



Round Diffuser Dimensional Data

Dimension				
Inch	(mm)	D	N	E
6 ”	(160)	263	223	154
8 ”	(200)	303	263	194
10 ”	(250)	353	313	244
12 ”	(315)	418	378	309
14 ”	(355)	458	418	349
16 ”	(400)	503	463	394

Dimensional data for the available listed sizes.

ROUND DIFFUSERS

RECOMENDED NOISE CRITERIA FOR ROOMS

Type of Area	NC Level (dB)	Type of Area	NC Level (dB)
AUDITO RIUMS		**SPORT ACTIVITIES INDOOR**	
Concert and Opera Halls.	20 to 25	Coliseums	30 to 40
Studios for sound Reproduction	25 To 30	Bowling alleys. Gymnasiums	35 to 45
Legitimate Theaters. Multi-purpose Halls, Movie Theatres . Lecture halls, Planetarium, TV audience studios	30 To 35	Swimming pools	40 to 55
Lobbies	35 To 40		
CHURCHES AND SCHOOLS		**TRANSPORTATION**	
Sanctuaries	20 to 30	Ticket sales office	30 to 40
Libraries . schools and classrooms	30 to 40	Lounges, waiting rooms	35 To 50
Laboratories	35 to 45	**HOTELS**	
Recreation halls .corridors and halls	35 to 50	Individual rooms or suites .bell rooms.	
kitchens	40 to 50	Banquet rooms	30 to 40
HOSPITALS AND CLINICS		Halls and corridors lobbies	35 to 45
Private rooms	25 to 35	Garages . Kitchens and laundries	40 to 50
Operating rooms. Wards	30 to 40	**MANUFACTURING AREAS**	
Halls and corridors. Laboratories		foreman's office	40 to 50
Lobbies and waiting rooms	35 to 45	Assembly lines .light machinery	55 to 75
Washrooms and toilets	40 to 50	Foundries . Heavy machinery.	55 to 75
RESTAURANTS & LOUNGES		**OFFICES**	
Restaurants	35 to 45	Board room	20 to 30
Cocktail lounges	35 to 50	Conference room	25 to 35
Night clubs	35 to 45	Executive office	30 to 40
cafeterias	40 to 50	Supervisor office . Reception room	30 to 45
STORES RETAIL		General open office. Drafting rooms	35 to 50
Clothing stores . Department Stores(upper floors)	35 to 45	Halls and corridors	
		Tabulation and computation	40 to 60
Department store (main floor).		**PUBLIC BUILDING**	
Small retail store, supermarkets	40 to 50	Public libraries. Museums.	
		Court rooms	30 to 40
		Post offices. General banking area	
		Lobbies	35 to 45
		Wash rooms and toilets	40 to 50

Quantity	Imperial Unit	Metric Unit	From Imperial To Metric Multiply By	From Metric To Imperial Multiply By
Area	Square foot	Square meter (m^2)	0.0929	10.764
	Square inch	Square millimeter (mm^2)	645.16	0.00155
Density	Pounds per cubic foot	Kilograms per cubic meter (kg/m^3)	16.018	0.624
Length	inch	millimeter (mm)	25.4	0.0394
	foot	millimeter (mm)	304 .8	0.00328
	foot	meter (m)	0.3048	3.2808
	yard	meter (m)	0.9144	1.0938
Pressure	inch of water column	Kilopascal (kPa)	0.2486	4.0219
	foot of water column	Kilopascal (kPa)	2.9837	0.3252
	inch of mercury column	Kilopascal (kPa)	3.3741	0.2964
	ounces per square inch	Kilopascal (kPa)	0.4309	2.3206
	pounds per square inch	Kilopascal (kPa)	6.8948	0.145
Temperature	fahrenheit	celcius (°C)	5/9 (°F-32)	(9/5 °C) + 32
Velocity	feet per second	meters per second (m/s)	0.3048	3.2808
	feet per minute (fpm)	meters per second (m/s)	0.00508	196.85
	miles per hour	meters per second (m/s)	0.44704	2.2369
Volume Flow	Cubic feet per minute (cfm)	Liters per second (L/s)	0.4719	2.119
	Cubic feet per minute (cfm)	Cubic meters per second (m^3/s)	0.0004719	2119.0
	Cubic feet per hour (cfh)	Milliliters per second(ml/s)	7.8658	0.127133
	Gallons per minute(U.S.)	Liters per second(L/s)	0.6309	15.850
	Gallons per minute(imperial)	Liters per second(L/s)	0.7577	13.198

Metric guide conversion factors

NOTES

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