

Technical Data Sheet



AirQon Synergies

D16 Perforated face ceiling diffuser

D16s Perforated face supply ceiling diffuser

PRODUCT DESCRIPTION

- Perforated face supply ceiling diffusers with fully adjustable air pattern deflectors (1,2,3 & 4 way) with volume control damper and with round or square neck.
- The frame and blades are extruded aluminium alloy and electrostatic polyester powder coated with a white finish.
- The outer frame has a typical wall thickness of 1.5mm.
- Perforated face plate is detachable type, removable face plate, gives easy access to control deflectors or dampers.
- Air pattern control is comprised of individually adjustable angle-curved deflectors, capable of producing fully controlled air direction for greater performance and efficiency.



D16r Perforated face Return ceiling diffuser

PRODUCT DESCRIPTION

- Perforated face return ceiling diffuser is comprised of perforated face sheet and frame having square neck.
- Perforated face plate is made of polyester powder coated aluminium material with 11/64" diameter perforation, at a pitch of 15/64", 60° staggered to produce 45% of free area.
- Diffusers perforated face plate is made of polyester powder coated aluminium material with 11/64' diameter perforation, at a pitch of 15/64", 60° staggered to produce 45% free area.
- All internal portions of the diffuser is non-reflective.
- Galvanized steel adaptor having square to round or square to square is provided.
- Standard finish white color for frame, blades and perforated face. Damper and adaptor in black color. Painted under electrostatic polyester powder coated system. Other colors are also available on request. The polyester powder of highest quality are used to enhance the appearance of the units.
- Perforated ceiling diffuser is designed for heating, cooling and ventilating applications.
- Equalizing grid is provided as an option

Technical Data Sheet



AirQon Synergies

Performance data

12" x 12" Module Size

Neck Size (Inches)	Neck Area (Sqft.)	Neck Velocity, FPM		300	400	500	600	700	800	1000	1200	1400
		Velocity Pressure, in. Wg		.006	.010	.016	.023	.031	.040	.063	.090	.123
6 x 6	0.25	Total Pressure, in. W.G.		.013	.023	.037	.053	.072	.094	.147	.211	.287
		Flow Rate, CFM		75	100	125	150	175	200	250	300	350
		NC		<20	<20	<20	<20	21	24	31	39	45
		Thro w, Feet	4- way	1-1	1-2	1-3	1-4	1-5	2-6	3-8	4-9	5-11
			3- way	1-3	1-5	2-6	3-8	4-9	5-10	6-13	8-16	9-17
			2- way	1-4	1-4	3-9	4-10	6-12	7-14	9-18	10-19	12-
1- way	1-6		2-8	4-11	6-13	7-15	8-17	11-20	13-22	15-		
8 x 8	0.44	Total Pressure, in. W.G.		.018	.031	.049	.071	.096	.126	.196	.283	.385
		Flow Rate, CFM		133	177	222	266	310	355	444	532	621
		NC		<20	<20	<20	20	25	29	35	44	>50
		Thro w, Feet	4- way	1-2	1-4	1-6	2-7	3-8	4-9	6-12	7-14	8-17
			3- way	1-5	2-8	4-10	5-12	7-14	8-16	10-20	12-24	14-
			2- way	2-8	4-10	6-13	8-16	9-19	10-	13-26	16-29	19-
1- way	3-9		5-13	8-16	9-19	11-	13-	16-30	19-33	23-		
Return 10 x 10	0.69	Negative SR in. W.G.		.024	.043	.068	.098	.133	.174	.271	.391	.532
		Flow Rate, CFM		208	277	347	416	485	555	694	832	971
		NC		<20	<20	<20	<20	<20	21	28	34	40

12" x 12" Module Size

Neck Size	Neck Area (Sq. ft.)	Neck Velocity, FPM		300	400	500	600	700	800	1000	1200	1400
		Velocity Pressure, in. W.G.		.006	.010	.016	.023	.031	.040	.063	.090	.123
5 Dia.	0.136	Total Pressure, in. W.G.		.010	.017	.027	.039	.053	.070	.109	.157	.214
		Flow Rate, CFM		41	54	68	82	95	109	136	163	190
		NC		<20	<20	<20	<20	<20	<20	24	30	35
		Thro w, Feet	4- way	1-1	1-1	1-2	1-3	1-4	1-5	3-6	4-8	4-9
			3- way	1-1	1-2	1-3	2-4	3-5	4-6	5-9	6-11	7-12
			2- way	1-2	1-4	2-5	3-6	4-7	6-9	7-12	9-13	10-15
1- way	1-3		1-6	2-6	3-7	5-9	6-10	8-13	10-15	12-16		
6 Dia.	0.196	Total Pressure, in. W.G.		.012	.021	.033	.047	.064	.084	.131	.189	.257
		Flow Rate, CFM		58	78	98	117	137	156	196	235	274
		NC		<20	<20	<20	<20	<20	22	28	34	40
		Thro w, Feet	4- way	1-1	1-1	1-3	1-4	1-4	1-5	3-6	4-8	4-9
			3- way	1-2	1-4	1-5	2-6	3-7	4-8	5-11	6-13	7-14
			2- way	1-3	1-6	2-7	3-9	4-10	6-12	7-15	9-16	10-18
1- way	1-4		2-7	3-9	4-11	6-13	7-14	9-17	11-19	13-20		
8 Dia.	0.348	Total Pressure, in. W.G.		.015	.027	.043	.062	.084	.110	.171	.247	.336
		Flow Rate, CFM		104	139	174	209	244	279	349	418	488
		NC		<20	<20	<20	<20	22	25	32	38	44
		Thro w, Feet	4- way	1-2	1-3	1-5	2-6	2-7	3-8	5-10	6-12	7-14
			3- way	1-4	2-6	3-8	4-10	5-11	6-13	8-17	10-20	11-22
			2- way	1-6	3-9	4-11	6-13	8-16	9-18	11-22	13-24	16-26
1- way	2-8		4-11	6-14	8-16	9-19	11-22	14-25	16-28	19-30		

- All Pressures are in inches of water.
- Throw values are given for Terminal Velocities of 100 and 50 fpm.
- NC values are based on a room absorption of 10 dB, re 10." watts.

Technical Data Sheet



AirQon Synergies

24" x 24" Module Size

Neck Size (Inches)	Neck-Area (Sq. ft.)	Neck Velocity, FPM	300	400	500	600	700	800	1000	1200	1400	
		Velocity Pressure, in. W.G.	.006	.010	.016	.023	.031	.040	.063	.090	.123	
6 x 6	0.25	Total Pressure, in. W.G.	.013	.023	.037	.053	.072	.094	.147	.211	.287	
		Flow Rate, CFM	75	100	125	150	175	200	250	300	350	
		NC	<20	<20	<20	23	26	29	37	43	48	
		Throw, Feet	4 . way	1-1	1-2	1-3	1-4	1-5	2-6	3-8	4-9	5-11
			3 . way	1-3	1-5	2-6	3-8	4-9	5-10	6-13	8-16	9-17
			2 . way	1-4	2-7	3-9	4-10	6-12	7-14	9-18	10-19	12-21
1 . way	1-6		2-8	4-11	6-13	7-15	8-17	11-20	13-22	15-24		
8 x 8	0.44	Total Pressure, in. W.G.	.018	.031	.049	.071	.096	.126	.196	.283	.385	
		Flow Rate, CFM	133	177	222	266	310	355	444	532	621	
		NC	<20	<20	23	27	31	35	43	49	>50	
		Throw, Feet	4 . way	1-2	1-4	1-6	2-7	3-8	4-9	6-12	7-14	8-17
			3 . way	1-5	2-8	4-10	5-12	7-14	8-16	10-20	12-24	14-26
			2 . way	2-8	4-10	6-13	8-16	9-19	10-21	13-26	16-29	19-31
1 . way	3-9		5-13	8-16	9-19	11-23	13-26	16-30	19-33	23-35		
10 x 10	0.69	Total Pressure, in. W.G.	.022	.039	.061	.088	.119	.156	.243	.350	.477	
		Flow Rate, CFM	208	277	347	416	485	555	694	832	971	
		NC	<20	22	27	31	35	40	47	>50	>50	
		Throw, Feet	4 . way	1-4	2-6	3-8	4-10	5-11	6-13	8-16	10-20	11-23
			3 . way	2-8	4-11	6-13	8-16	9-19	11-22	13-27	16-32	19-35
			2 . way	3-11	6-14	9-18	11-22	13-26	14-29	18-36	22-39	26-43
1 . way	5-13		9-18	11-22	13-27	16-32	18-36	22-41	27-45	32-49		
12 x 12	1.00	Total Pressure, in. W.G.	.026	.047	.073	.105	.144	.188	.293	.422	.574	
		Flow Rate, CFM	300	400	500	600	700	800	1000	1200	1400	
		NC	<20	25	30	34	39	43	>50	>50	>50	
		Throw, Feet	4 . way	1-6	3-8	4-11	6-13	7-15	8-17	11-22	13-26	15-30
			3 . way	3-10	6-14	9-18	10-21	12-25	14-28	18-36	21-42	25-45
			2 . way	5-14	9-19	12-24	14-29	17-34	19-39	24-46	29-51	34-55
1 . way	8-17		11-23	14-29	17-35	20-41	23-47	29-53	35-58	41-63		
14 x 14	1.36	Total Pressure in. W.G.	.030	.055	.085	.122	.169	.220	.343	.494	.671	
		Flow Rate, CFM	408	544	680	816	952	1088	1360	1632	1904	
		NC	<20	27	32	36	41	46	>50	>50	>50	
		Throw, Feet	4 . way	1-8	4-10	5-13	8-16	9-19	10-22	14-28	16-32	19-37
			3 . way	4-12	8-17	12-23	13-26	15-31	17-34	23-45	26-52	31-55
			2 . way	7-17	12-24	15-30	17-36	22-42	24-49	30-56	36-62	42-67
1 . way	11-21		14-28	17-36	21-43	24-50	28-58	36-65	44-67	50-77		
16 x 16	1.78	Total Pressure, in. W.G.	.034	.063	.097	.139	.194	.252	.393	.566	.768	
		Flow Rate, CFM	534	712	890	1068	1246	1424	1780	2136	2492	
		NC	22	29	34	39	44	>50	>50	>50	>50	
		Throw, Feet	4 . way	1-10	5-12	6-15	10-19	11-23	12-27	17-34	19-38	23-43
			3 . way	5-14	10-20	14-28	16-31	18-37	20-40	28-54	31-62	37-65
			2 . way	9-20	15-29	18-36	20-43	27-50	29-59	36-66	43-73	50-79
1 . way	14-25		17-33	20-43	25-51	28-59	33-69	43-77	53-84	59-94		
18 x 18	2.25	Total Pressure, in. W.G.	.036	.071	.109	.156	.209	.284	.443	.638	.865	
		Flow Rate, CFM	675	900	1125	1350	1575	1800	2250	2700	3150	
		NC	23	31	36	42	>50	>50	>50	>50	>50	
		Throw, Feet	4 . way	1-12	6-14	7-17	12-22	13-27	14-32	20-40	22-44	27-50
			3 . way	6-16	12-23	16-32	18-36	21-43	23-46	33-63	36-72	43-75
			2 . way	11-23	18-34	21-42	23-50	32-58	34-69	42-77	50-84	58-91
1 . way	17-29		20-38	23-50	29-59	32-68	38-80	50-89	62-97	68-108		
Return 22 x 22	3.36	Negative Se in. W.G.	.024	.043	.068	.098	.133	.174	.271	.391	.532	
		Flow Rate, CFM	1008	1344	1680	2016	2352	2688	3360	4032	4704	
		NC	<20	<20	<20	<20	22					

- All Pressures are in inches of water.
- Throw values are given for Terminal Velocities of 100 and 50 fpm.
- NC values are based on a room absorption of 10 dB, re 10⁻² watts.

Technical Data Sheet



AirQon Synergies

24" x 24" Module Size

Neck Size (Inches)	Neck Area (Sq. ft.)	Neck Velocity, FPM	300	400	500	600	700	800	1000	1200	1400		
6 Dia.	0.196	Velocity Pressure, in. W.G.	.006	.010	.016	.023	.031	.040	.063	.090	.123		
		Total Pressure, in. W.G.	.012	.021	.033	.047	.064	.084	.131	.189	.257		
		Flow Rate, CFM	58	78	98	117	137	156	196	235	274		
		NC	<20	<20	<20	21	24	27	34	40	46		
		Throw, 4 - way	1-1	1-1	1-3	1-4	1-4	1-5	3-6	4-8	4-9		
		3 - way	1-2	1-4	1-5	2-6	3-7	4-8	5-11	6-13	7-14		
		2 - way	1-3	1-6	2-7	3-9	4-10	6-12	7-15	9-16	10-18		
		1 - way	1-4	2-7	3-9	4-11	6-13	7-14	9-17	11-19	13-20		
		Feet											
		8 Dia.	0.348	Total Pressure, in. W.G.	.015	.027	.043	.062	.084	.110	.171	.247	.336
Flow Rate, CFM	104			139	174	209	244	279	349	418	488		
NC	<20			<20	21	25	29	33	40	46	50		
Throw, 4 - way	1-2			1-3	1-5	2-6	2-7	3-8	5-10	6-12	7-14		
3 - way	1-4			2-6	3-8	4-10	5-11	6-13	8-17	10-20	11-22		
2 - way	1-6			3-9	4-11	6-13	8-16	9-1B	11-22	13-24	16-26		
1 - way	2-8			4-11	6-14	8-16	9-19	11-22	14-25	16-28	19-30		
Feet													
10 Dia.	0.545			Total Pressure, in. W.G.	.019	.034	.054	.077	.105	.138	.215	.310	.422
				Flow Rate, CFM	163	218	272	327	381	436	545	654	763
		NC	<20	20	25	29	33	37	45	>50	>50		
		Throw, 4 - way	1-3	1-5	2-7	3-8	4-10	5-11	7-14	8-17	10-20		
		3 - way	1-7	3-9	5-11	7-14	8-16	9-18	11-23	14-27	16-29		
		2 - way	2-9	5-12	7-15	9-19	11-22	12-25	15-31	19-33	22-36		
		1 - way	3-11	7-15	9-19	11-23	13-27	15-30	19-35	23-38	27-41		
		Feet											
		12 Dia.	0.785	Total Pressure, in. W.G.	.023	.041	.065	.093	.127	.166	.259	.373	.507
				Flow Rate, CFM	235	314	392	471	549	628	785	942	1099
NC	<20			23	28	32	36	41	48	>50	>50		
Throw, 4 - way	1-5			2-7	3-9	5-11	6-13	7-14	9-18	11-22	13-26		
3 - way	2-9			5-12	7-15	9-18	10-21	12-24	15-30	18-35	21-38		
2 - way	4-12			7-16	10-20	12-24	14-28	16-32	20-40	24-43	28-47		
1 - way	6-14			9-19	12-24	14-29	17-34	19-39	24-45	29-49	32-49		
Feet													
14 Dia.	1.06			Total Pressure, in. W.G.	.027	.048	.075	.108	.147	.192	.299	.431	.587
				Flow Rate, CFM	318	424	530	636	742	848	1060	1272	1484
		NC	<20	25	30	34	39	44	>50	>50	>50		
		Throw, 4 - way	1-6	3-9	5-11	6-13	8-16	9-18	11-23	13-27	16-32		
		3 - way	4-11	7-14	9-18	11-22	13-26	14-29	18-37	22-43	26-47		
		2 - way	6-15	10-20	12-25	15-30	17-35	20-40	25-49	30-53	35-58		
		1 - way	8-18	12-24	15-30	18-37	21-43	24-49	30-56	37-61	43-66		
		Feet											
		16 Dia.	1.39	Total Pressure in. W.G.	.032	.056	.088	.127	.172	.225	.351	.506	.689
				Flow Rate, CFM	417	556	695	834	973	1112	1390	1668	1946
NC	20			27	32	37	42	48	>50	>50	>50		
Throw, 4 - way	1-7			4-11	7-13	8-15	10-19	11-21	13-27	15-32	19-38		
3 - way	6-13			9-16	11-21	13-26	16-31	17-34	21-44	24-51	31-56		
2 - way	8-18			13-24	14-30	18-35	20-41	24-47	30-58	36-63	41-69		
1 - way	10-			15-28	18-35	22-44	25-52	29-59	36-60	43-72	51-79		
Feet													
18 Dia.	1.76			Total Pressure in. W.G.	.038	.066	.104	.150	.204	.266	.414	.597	.813
				Flow Rate, CFM	528	704	880	1056	1232	1408	1760	2112	2464
		NC	21	29	34	40	45	>50	>50	>50	>50		
		Throw, 4 - way	1-8	5-13	9-15	10-17	12-22	13-24	15-31	17-37	22-44		
		3 - way	8-15	11-18	13-23	15-30	19-36	20-39	24-51	28-59	36-65		
		2 - way	10-21	15-28	16-35	21-40	23-46	28-54	35-67	42-73	47-80		
		1 - way	12-24	18-32	21-40	26-50	29-61	34-69	42-65	49-83	60-92		
		Feet											

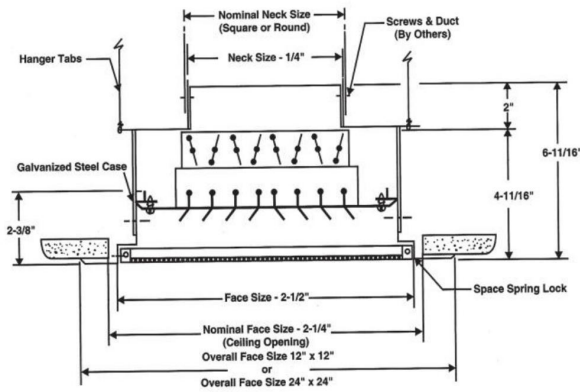
- All Pressures are in inches of water.
- Throw values are given for Terminal Velocities of 100 and 50 fpm.
- NC values are based on a room absorption of 10 dB, re 10-12 watts.

Technical Data Sheet

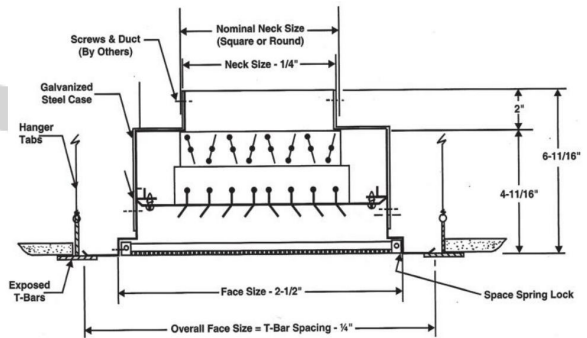


AirQon Synergies

Installation details



Sink-in Flat Border Type



Exposed Collar Border Type