

Technical Data Sheet

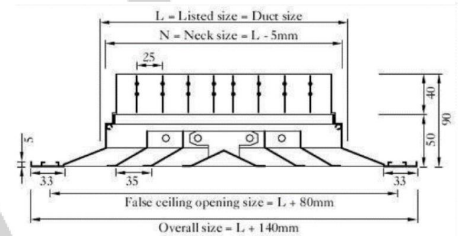
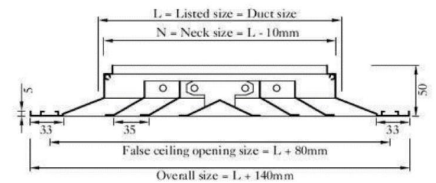


AirQon Synergies

DW Louvered Face Diffusers

Description:

- The frame & blades of Diffuser are made of extruded Aluminium profiles making it lighter in weight, and corrosion resistant.
- Diffusers are designed in a way that core is fixed and welded and its fastened with steel springs with its frame. So that it can be easily removed while maintenance/damper adjustments.
- Opposed blade dampers are constructed in a way that its louvres are made of extruded aluminium profiles and its frame is made of Galvanized iron sheet and it being operated by a Ellen Key lock or plastic gears.
- Opposed Blade Damper is connected with Diffuser frame using Rivets.
- Foam gasket is supplied as an option if required to prevent leakage.
- Air Discharge is in one direction only is D1w. Direction is to be allocated.
- Air Discharge is in Two directions only is D2w. Directions are to be allocated.
- Air Discharge is in Three directions only is D3w. Mostly used in corners.
- Air Discharge is in Four directions only is D4w. Mostly used in corners.
- Diffusers are suitable for lay-in type ceilings.
- Available in Rectangular Sizes also as per requirement.
- Unit Size increases in 3" increment.



Construction:

i) Louvered Face Diffuser

Extruded Aluminium profiles with Powder Coat Finish / Mild Steel with Powder Coat Finish / Stainless Steel

ii) Opposed Blade Damper

Extruded aluminium profile blades along with Galvanized sheet frame with raw aluminium finish or paint finish

Size (inches)	Size (mm)	CFM Range
6 x 6	152.4 x 152.4	50-225
9 x 9	228.6 x 228.6	100-500
12 x 12	304.8 x 304.8	200-900
15 x 15	381 x 381	300-1400
18 x 18	457.2 x 457.2	450-2000
21 x 21	533.4 x 533.4	600-2750
24 x 24	609.6 x 609.6	800-3600

Technical Data Sheet



AirQon Synergies

CFM Range

Diffusers Engineering data - Applications

Type of area	Average
Private home (rural and suburban)	25
Private home (Urban)	30
Apartment House	35
Individual rooms	35
Hall, corridors, lobbies	40
Garages	45
Kitchen and laundries	45
Private rooms	30
Operating rooms	35
Wards and corridors	35
Laboratories	35
Lobbies, waiting rooms	40
Washroom, toilets	45
Board rooms	25
Conference rooms	30
Executive offices	35
General offices	35
Reception rooms	35
General office rooms	40
Drafting rooms	40
Tabulation and computation areas	45
Concert opera halls	20
Sound records studios	20
Legitimate theaters	30
Multi-purpose halls	35

Type of area	Average
Movie theaters	35
TV audience studios	35
Lecture halls	35
Planetariums	35
Lobbies	40
Mosques	25
Libraries	35
Schools and class rooms	35
Laboratories	40
Recreation halls	40
Corridors and halls	40
Libraries, museums	35
Courtrooms	35
Post offices, Lobbies	40
General banking areas	40
Washroom, toilets	45
Restaurants	40
Cafeterias	45
Clothing store	40
Department stores (upper)	40
Department stores (main)	40
Small retail store	45
Supermarkets	45
Collisiums	40
Bawling alleys	40
Gymnasiums	40
Swimming pools	45

Core velocity (FPM)	Velocity Pressure (inches w.g.)
250	0.004
300	0.006
350	0.008
400	0.010
450	0.013
500	0.016
550	0.019
600	0.022
650	0.026
700	0.031
750	0.035
800	0.040

Ceiling height	Maximum Temperature Diff (°F)	Max. CFM One Direction
8	22	225
9	25	400
10	26	500
12	28	900
14	30	1400
16	30	1900

Maximum CFM on ceiling height and temperature differential

Total Pressure

Technical Data Sheet



AirQon Synergies

Performance data

Throw data is in feet based on isothermal air at 100 and 50 FPM terminal velocity.

Size (inches)	Area factor (Ak)	Neck area (sq.ft)	Neck velocity (fpm)	200	250	300	350	400	500	600	700	800	900	
6 x 6	.085	.250	Velocity	.003	.004	.006	.008	.010	.016	.023	.031	.040	.051	
			Pressure (in.w.g)											
			Total Pressure (in. w.g)	.015	.024	.034	.046	.060	.094	.136	.184	.240	.305	
			CFM	50	63	75	88	100	125	150	175	200	225	
9 x 9	.177	.562	Throw	7-10	8-12	10-15	12-17	14-19	17-21	19-23	20-24	22-26	23-27	
			NC	<20	<20	<20	<20	<20	<23	<27	<31	<35		
			CFM	110	140	170	195	225	280	335	395	450	505	
			Throw	9-13	11-16	14-18	16-19	17-21	19-23	21-25	22-27	24-29	26-30	
12 x 12	.306	1.000	NC	<20	<20	<20	<20	<20	<21	<27	<31	<35	<39	
			CFM	200	250	300	350	400	500	600	700	800	900	
			Throw	11-16	14-18	16-19	17-21	18-22	20-25	22-27	24-29	26-31	27-33	
			NC	<20	<20	<20	<20	<20	<23	<30	<34	<38	<42	
15 x 15	.472	1.56	CFM	310	390	470	545	625	780	940	1090	1250	1405	
			Throw	13-17	15-19	17-20	18-22	19-23	22-26	24-28	25-30	27-32	29-34	
			NC	<20	<20	<20	<20	21	26	32	36	40	44	
			CFM	450	560	675	785	900	1125	1350	1575	1800	2025	
18 x 18	.674	2.25	Throw	14-18	16-19	17-21	19-23	20-24	23-27	25-30	27-32	29-34	30-36	
			NC	<20	<20	<20	21	23	28	34	38	42	45	
			CFM	610	765	920	1070	1225	1530	1835	2140	2450	2755	
			Throw	15-18	17-20	18-22	20-24	21-25	24-28	26-31	28-33	30-35	32-37	
21 x 21	.914	3.06	NC	<20	<20	<20	22	23	30	36	40	44	49	
			CFM	800	1000	1200	1400	1600	2000	2400	2800	3200	3600	
			Throw	15-19	17-21	19-23	20-25	22-26	24-29	27-32	29-34	31-37	33-39	
			NC	<20	<20	20	23	24	31	37	41	45	50	

Supply air square ceiling diffuser (one way)

Technical Data Sheet



AirQon Synergies

Size (inches)	Area factor (Ak)	Neck area (sq.ft)	Neck velocity (fpm)	200	250	300	350	400	500	600	700	800	900
6 x 6	.085	.250	Velocity Pressure (in.w.g)	.003	.004	.006	.008	.010	.016	.023	.031	.040	.051
			Total Pressure (in. w.g)	.014	.022	.032	.43	.057	.088	.128	.174	.226	.286
			CFM	50	63	75	88	100	125	150	175	200	225
			Throw	5-9	6-9	8-11	9-13	10-14	12-17	15-21	18-23	20-25	22-27
9 x 9	.177	.562	NC	<20	<20	<20	<20	<20	<20	<23	<27	<31	<35
			CFM	110	140	170	195	225	280	335	395	450	505
			Throw	7-10	8-12	10-15	12-16	14-19	17-22	20-24	21-26	23-27	24-29
			NC	<20	<20	<20	<20	<20	<21	<27	<31	<35	<39
12 x 12	.306	1.000	CFM	200	250	300	350	400	500	600	700	800	900
			Throw	9-12	11-15	13-18	15-20	17-21	20-24	22-26	23-28	25-30	26-32
			NC	<20	<20	<20	<20	<20	<23	<30	<34	<38	<42
			CFM	310	390	470	545	625	780	940	1090	1250	1405
15 x 15	.472	1.56	Throw	10-14	12-18	15-20	17-21	19-22	21-25	23-27	25-29	26-31	28-33
			NC	<20	<20	<20	<20	21	26	32	36	40	44
			CFM	450	560	675	785	900	1125	1350	1575	1800	2025
			Throw	12-16	14-19	17-21	18-22	20-24	22-26	24-29	26-31	28-33	29-35
18 x 18	.674	2.25	NC	<20	<20	<20	<20	21	23	28	34	38	42
			CFM	610	765	920	1070	1225	1530	1835	2140	2450	2755
			Throw	13-18	16-20	18-21	19-23	20-25	23-27	25-30	27-32	29-34	31-36
			NC	<20	<20	<20	22	23	30	36	40	44	49
21 x 21	.914	3.06	CFM	800	1000	1200	1400	1600	2000	2400	2800	3200	3600
			Throw	14-18	17-20	18-22	20-24	21-25	24-28	26-31	28-33	30-36	32-38
			NC	<20	<20	<20	22	23	30	36	40	44	49
			CFM	800	1000	1200	1400	1600	2000	2400	2800	3200	3600
24 x 24	1.22	4.00	Throw	14-18	17-20	18-22	20-24	21-25	24-28	26-31	28-33	30-36	32-38
			NC	<20	<20	20	23	24	31	37	41	45	50
			CFM	800	1000	1200	1400	1600	2000	2400	2800	3200	3600
			Throw	14-18	17-20	18-22	20-24	21-25	24-28	26-31	28-33	30-36	32-38

Supply air square ceiling diffuser (two way)

Technical Data Sheet



Size (inches)	Area factor (Ak),	Neck area (sq.ft)	Neck velocity (fpm)	200	250	300	350	400	500	600	700	800	900	
6 x 6	.085	.250	Velocity	.003	.004	.006	.008	.010	.016	.023	.031	.040	.051	
			Pressure (in.w.g)											
			Total Pressure (in. w.g)	.14	.022	.032	.043	.057	.088	.128	.174	.226	.286	
			CFM	50	63	75	88	100	125	150	175	200	225	
9 x 9	.177	.562	Throw	3-5	4-6	4-7	5-8	6-9	8-11	9-13	10-15	12-17	14-19	
			NC	<20	<20	<20	<20	<20	<20	<23	<27	<31	<35	
			CFM	110	140	170	195	225	280	335	395	450	505	
			Throw	4-7	5-8	6-9	7-11	8-12	10-15	13-18	15-21	17-22	19-23	
12 x 12	.306	1.000	NC	<20	<20	<20	<20	<20	<21	<27	<31	<35	<39	
			CFM	200	250	300	350	400	500	600	700	800	900	
			Throw	5-8	6-10	8-11	9-13	10-15	13-19	16-21	18-22	20-24	21-25	
			NC	<20	<20	<20	<20	<20	<23	<30	<34	<38	<42	
15 x 15	.472	1.56	CFM	310	390	470	545	625	780	940	1090	1250	1405	
			Throw	6-9	8-11	9-13	11-15	12-17	16-20	18-22	20-24	21-26	22-27	
			NC	<20	<20	<20	<20	21	26	32	36	40	44	
			CFM	450	560	675	785	900	1125	1350	1575	1800	2025	
18 x 18	.674	2.25	Throw	7-11	9-13	11-15	13-18	14-19	18-22	20-24	21-25	23-27	24-29	
			NC	<20	<20	<20	21	23	28	34	38	42	45	
			CFM	610	765	920	1070	1225	1530	1835	2140	2450	2755	
			Throw	8-12	10-14	12-17	14-19	16-20	19-23	21-25	22-27	24-28	25-30	
21 x 21	.914	3.06	NC	<20	<20	<20	22	23	30	36	40	44	49	
			CFM	800	1000	1200	1400	1600	2000	2400	2800	3200	3600	
			Throw	9-13	11-16	13-18	15-20	17-21	19-23	21-25	23-27	25-29	26-31	
			NC	<20	<20	20	23	24	31	37	41	45	50	
24 x 24	1.22	4.00	CFM	800	1000	1200	1400	1600	2000	2400	2800	3200	3600	
			Throw	9-13	11-16	13-18	15-20	17-21	19-23	21-25	23-27	25-29	26-31	
			NC	<20	<20	20	23	24	31	37	41	45	50	
			CFM	800	1000	1200	1400	1600	2000	2400	2800	3200	3600	

Supply air square ceiling diffuser (three way)

Technical Data Sheet



AirQon Synergies

Size (inches)	Area factor (Ak)	Neck area (sq.ft)	Neck velocity (fpm)	200	250	300	350	400	500	600	700	800	900	
6 x 6	.085	.250	Velocity	.003	.004	.006	.008	.010	.016	.023	.031	.040	.051	
			Pressure (in.w.g)											
			Total Pressure (in. w.g)	.011	.017	.024	.032	.042	.066	.096	.130	.170	.215	
			CFM	50	63	75	88	100	125	150	175	200	225	
			Throw	2-4	3-6	4-7	5-8	6-9	7-11	8-12	10-14	11-16	13-18	
9 x 9	.177	.562	NC	<20	<20	<20	<20	<20	<20	<23	<27	<31	<35	
			CFM	110	140	170	195	225	280	335	395	450	505	
			Throw	4-6	5-7	6-9	7-10	8-11	10-13	11-16	13-19	15-20	17-21	
12 x 12	.306	1.000	NC	<20	<20	<20	<20	<20	<21	<27	<31	<35	<39	
			CFM	200	250	300	350	400	500	600	700	800	900	
			Throw	5-7	6-9	7-11	8-12	10-14	12-17	14-20	17-21	18-23	20-24	
15 x 15	.472	1.56	NC	<20	<20	<20	<20	<20	<23	<30	<34	<38	<42	
			CFM	310	390	470	545	625	780	940	1090	1250	1405	
			Throw	6-9	7-11	9-13	10-15	12-17	14-19	17-21	18-22	20-24	21-25	
18 x 18	.674	2.25	NC	<20	<20	<20	<20	21	26	32	36	40	44	
			CFM	450	560	675	785	900	1125	1350	1575	1800	2025	
			Throw	7-10	8-12	10-14	12-16	13-18	16-20	18-22	20-24	21-26	22-27	
21 x 21	.914	3.06	NC	<20	<20	<20	21	23	28	34	38	42	45	
			CFM	610	765	920	1070	1225	1530	1835	2140	2450	2755	
			Throw	7-11	9-13	11-16	13-18	15-19	18-22	20-24	21-25	23-27	24-29	
24 x 24	1.22	4.00	NC	<20	<20	<20	22	23	30	36	40	44	49	
			CFM	800	1000	1200	1400	1600	2000	2400	2800	3200	3600	
			Throw	8-12	10-15	12-18	14-19	16-20	19-23	20-25	22-26	23-28	25-30	
			NC	<20	<20	20	23	24	31	37	41	45	50	

Supply air square ceiling diffuser (four way)

Technical Data Sheet



AirQon Synergies

Size (inches)	Neck area (sq.ft)	Neck velocity (fpm)	200	250	300	350	400	500	600	700	800	900
		Velocity	.003	.004	.006	.008	.010	.016	.023	.031	.040	.051
		Pressure (in. w.g)										
		Negative static pressure (in. w.g)	.037	.058	.083	.112	.148	.230	.332	.450	.590	.752
6 x 6	.250	CFM	50	63	75	88	100	125	150	175	200	225
		NC	<20	<20	<20	<20	<20	<20	22	26	30	34
9 x 9	.562	CFM	110	140	170	195	225	280	335	395	450	505
		NC	<20	<20	<20	<20	<20	20	26	30	34	38
12 x 12	1.00	CFM	200	250	300	350	400	500	600	700	800	900
		NC	<20	<20	<20	<20	<20	22	29	33	37	41
15 x 15	1.56	CFM	310	390	470	545	625	780	940	1090	1250	1405
		NC	<20	<20	<20	<20	20	25	31	35	39	43
18 x 18	2.25	CFM	450	560	675	785	900	1125	1350	1575	1800	2025
		NC	<20	<20	<20	20	22	27	33	37	41	44
21 x 21	3.06	CFM	610	765	920	1070	1225	1530	1835	2140	2450	2755
		NC	<20	<20	<20	21	22	29	35	39	43	48
24 x 24	4.00	CFM	800	1000	1200	1400	1600	2000	2400	2800	3200	3600
		NC	<20	<20	<20	22	23	30	36	40	44	49

Return air square ceiling diffusers (one way)

Technical Data Sheet



AirQon Synergies

Size (inches)	Neck area (sq.ft)	Neck velocity (fpm)	200	250	300	350	400	500	600	700	800	900
		Velocity	.003	.004	.006	.008	.010	.016	.023	.031	.040	.051
		Pressure (in.w.g)										
		Negative static pressure (in. w.g)	.042	.066	.096	.130	.170	.265	.381	.518	.680	.852
6 x 6	.250	CFM	50	63	75	88	100	125	150	175	200	225
		NC	<20	<20	<20	<20	<20	<20	22	26	30	34
9 x 9	.562	CFM	110	140	170	195	225	280	335	395	450	505
		NC	<20	<20	<20	<20	<20	20	26	30	34	38
12 x 12	1.00	CFM	200	250	300	350	400	500	600	700	800	900
		NC	<20	<20	<20	<20	<20	22	29	33	37	41
15 x 15	1.56	CFM	310	390	470	545	625	780	940	1090	1250	1405
		NC	<20	<20	<20	<20	20	25	31	35	39	43
18 x 18	2.25	CFM	450	560	675	785	900	1125	1350	1575	1800	2025
		NC	<20	<20	<20	20	22	27	33	37	41	44
21 x 21	3.06	CFM	610	765	920	1070	1225	1530	1835	2140	2450	2755
		NC	<20	<20	<20	21	22	29	35	39	43	48
24 x 24	4.00	CFM	800	1000	1200	1400	1600	2000	2400	2800	3200	3600
		NC	<20	<20	<20	22	23	30	36	40	44	49

Return air square ceiling diffusers (two way)

Technical Data Sheet



AirQon Synergies

Size (inches)	Neck area (sq.ft)	Neck velocity (fpm)	200	250	300	350	400	500	600	700	800	900
		Velocity Pressure (in.w.g)	.003	.004	.006	.008	.010	.016	.023	.031	.040	.051
		Negative static pressure (in. w.g)	.038	.059	.085	.107	.154	.235	.336	.460	.600	.757
6 x 6	.250	CFM	50	63	75	88	100	125	150	175	200	225
		NC	<20	<20	<20	<20	<20	<20	22	26	30	34
9 x 9	.562	CFM	110	140	170	195	225	280	335	395	450	505
		NC	<20	<20	<20	<20	<20	20	26	30	34	38
12 x 12	1.00	CFM	200	250	300	350	400	500	600	700	800	900
		NC	<20	<20	<20	<20	<20	22	29	33	37	41
15 x 15	1.56	CFM	310	390	470	545	625	780	940	1090	1250	1405
		NC	<20	<20	<20	<20	20	25	31	35	39	43
18 x 18	2.25	CFM	450	560	675	785	900	1125	1350	1575	1800	2025
		NC	<20	<20	<20	20	22	27	33	37	41	44
21 x 21	3.06	CFM	610	765	920	1070	1225	1530	1835	2140	2450	2755
		NC	<20	<20	<20	21	22	29	35	39	43	48
24 x 24	4.00	CFM	800	1000	1200	1400	1600	2000	2400	2800	3200	3600
		NC	<20	<20	<20	22	23	30	36	40	44	49

Return air square ceiling diffusers (three way)

Technical Data Sheet



AirQon Synergies

Size (inches)	Neck area (sq.ft)	Neck velocity (fpm)	200	250	300	350	400	500	600	700	800	900
		Velocity Pressure (in.w.g)	.003	.004	.006	.008	.010	.016	.023	.031	.040	.051
		Negative static pressure (in. w.g)	.043	.067	.097	.132	.172	.269	.388	.525	.690	.864
6 x 6	.250	CFM	50	63	75	88	100	125	150	175	200	225
		NC	<20	<20	<20	<20	<20	<20	22	26	30	34
9 x 9	.562	CFM	110	140	170	195	225	280	335	395	450	505
		NC	<20	<20	<20	<20	<20	20	26	30	34	38
12 x 12	1.00	CFM	200	250	300	350	400	500	600	700	800	900
		NC	<20	<20	<20	<20	<20	22	29	33	37	41
15 x 15	1.56	CFM	310	390	470	545	625	780	940	1090	1250	1405
		NC	<20	<20	<20	<20	20	25	31	35	39	43
18 x 18	2.25	CFM	450	560	675	785	900	1125	1350	1575	1800	2025
		NC	<20	<20	<20	20	22	27	33	37	41	44
21 x 21	3.06	CFM	610	765	920	1070	1225	1530	1835	2140	2450	2755
		NC	<20	<20	<20	21	22	29	35	39	43	48
24 x 24	4.00	CFM	800	1000	1200	1400	1600	2000	2400	2800	3200	3600
		NC	<20	<20	<20	22	23	30	36	40	44	49

Return air square ceiling diffusers (four way)

Diffuser Accessories

DG7 Opposed blade dampers

Features and installations

It controls air to the minimum amount and also reduces noise.

It could be connected with the frame via screws/rivets and is and can be with the built-in lever. It is painted extruded aluminum in black color.

Applications

It controls the volume.



Technical Data Sheet



Operation & Maintenance

Installation Procedure:

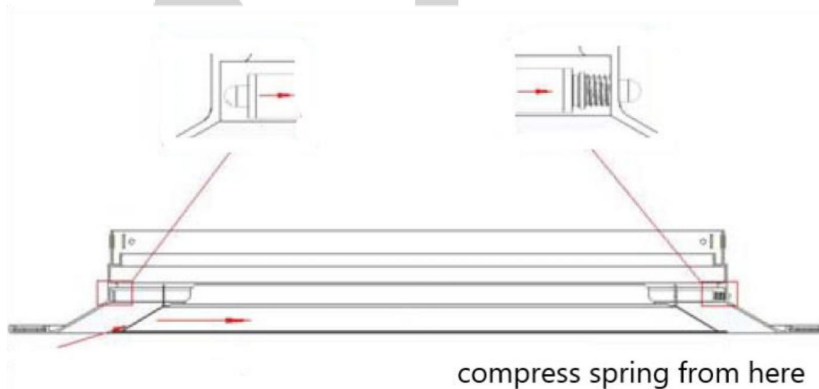
Diffusers can be Installed with Duct or Plenum in a way that the face of Diffuser comes in front and neck is fastened with screws.

Bottom Neck of Diffuser is drilled with desired drill bit (8mmØ) recommended along with Duct edge to be hung with.

Taking all consideration, ceiling clearance of 75mm is to be given for easy and sound installation work.

For Installation, Core is to be removed for easy access from inside. For that purpose, utilize springs on edges and push those towards edge and separate core from frame.

Graphical Representation for removing core is as follows:



Place hands on springs and compress gently towards frame & rotate core outside to remove and for installing it again, simply place springs in place and compress it towards frame and close it while placing other corner lids in place.