SCD

SQUARE CONE DIFFUSER

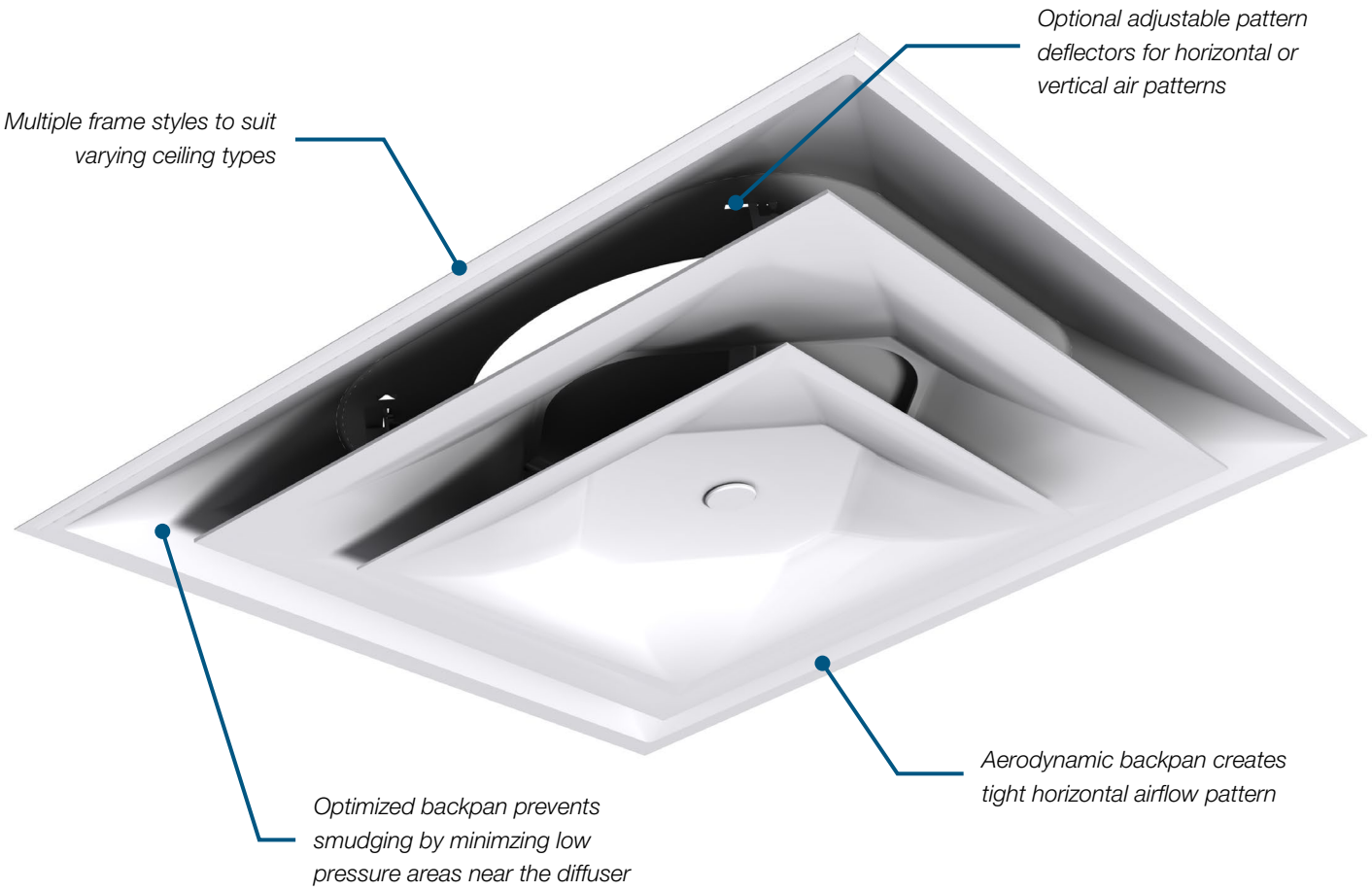




price | DIFFUSERS

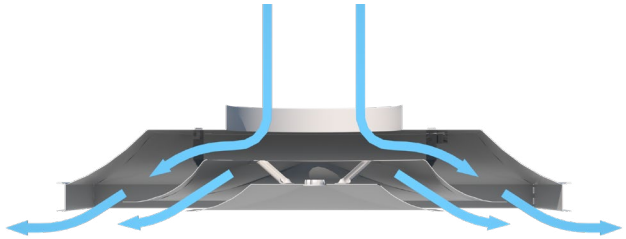
SCD
Square Cone Diffuser

The Square Cone Diffuser (SCD) features a highly engineered, aerodynamic backpan and cone assembly that creates a horizontal 360° radial air pattern. The SCD promotes rapid mixing, temperature equalization, and velocity reduction with industry-leading low pressure drop and sound generation. Ideal for VAV applications with high turndown rates, the SCD maintains a consistent, stable air pattern even as air volume is reduced, minimizing dumping and drafts.

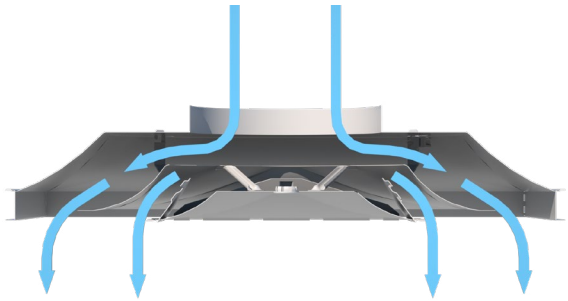


ADJUSTABLE PATTERN DEFLECTORS

+ The SCD series is available with adjustable pattern controllers to provide either a horizontal or vertical air pattern.
+ The pattern controllers allow for field adjustment of the diffuser to optimize comfort in the occupied zone.



Horizontal Air Pattern



Vertical Air Pattern

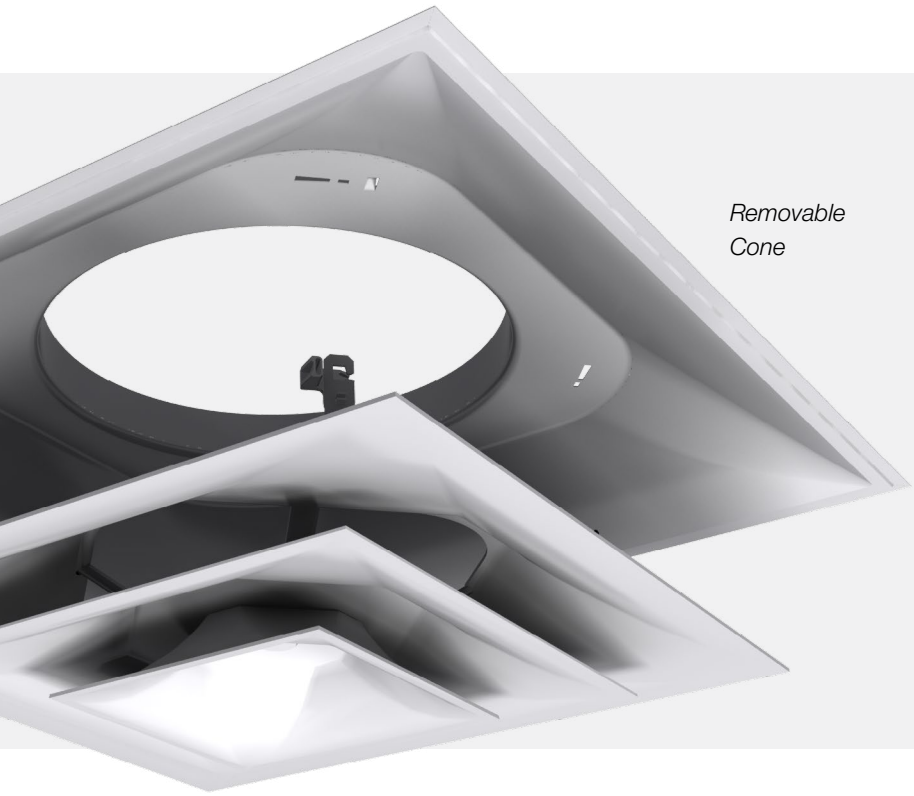
TYPICAL APPLICATIONS

The Square Cone Diffuser, or SCD, is ideal for use in ceiling applications and is compatible with most standard ceiling styles.

CONSTRUCTION

+ Material
  - Steel (SCD)
  - Aluminum (ASCD)
+ Core
  - 3 Cone
  - 4 Cone (24 in. x 24 in. face size only)
+ Options
  - Fire rated construction (SCD-FR / SCDA-FR)
  - Adjustable pattern deflectors (SCDA/ ASCDA)

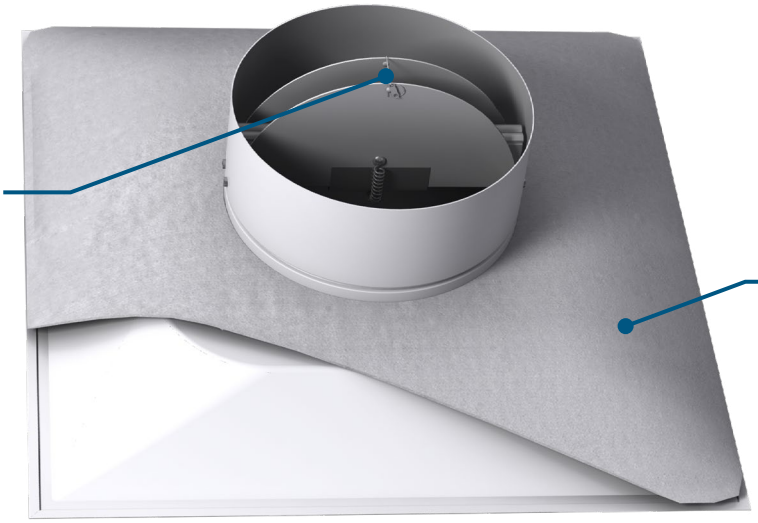




Removable Cone

EASY MAINTENANCE

The SCD is available with a fixed or removable core to accommodate a variety of maintenance requirements. The fixed core features a removable central plug button for easy damper access. The tool-free, removable core option makes installation simple by providing full access to an optional inlet damper.



165°F or 212°F fusible link controls deployment temperature

Thermal blanket minimizes radiated heat

FIRE RATED CONSTRUCTION

Optional Fire Rated Assembly listing in the UL Fire Resistance Directory. Fire rated models meet UL time vs. temperature test criteria and NFPA 90A requirements.

Fire rated construction incorporates a thermal blanket and fire damper for use in fire rated T-bar ceiling applications. The butterfly-type fire damper is available with either a 165°F or 212°F fusible link.

PERFORMANCE DATA

SCD – 12 in. x 12 in. Face Size

Listed Size	Neck Velocity (fpm)	400	500	600	700	800	900	1000	1200	1400	1600
	Velocity Pressure (in. w.g.)	.01	.016	.022	.031	.040	.050	.062	.090	.122	.160
4	Total Pressure (in. w.g.)	.013	.021	.030	.041	.054	.068	.084	.121	.165	.215
	Flow Rate (cfm)	35	44	52	61	70	78	87	104	122	139
	Sound (NC)	-	-	-	-	-	-	-	20	25	29
	Throw (ft.)	1-2-4	1-2-4	2-3-5	2-3-6	2-4-6	3-4-7	3-4-7	4-5-8	4-6-9	5-6-9
5	Total Pressure (in. w.g.)	.015	.024	.035	.047	.062	.078	.097	.139	.189	.247
	Flow Rate (cfm)	54	68	82	95	109	122	136	163	190	218
	Sound (NC)	-	-	-	-	-	16	19	25	30	34
	Throw (ft.)	2-2-5	2-3-6	2-4-7	3-4-8	3-5-8	4-5-9	4-6-9	5-7-10	5-8-11	6-8-11
6	Total Pressure (in. w.g.)	.018	.028	.040	.055	.072	.091	.112	.162	.220	.287
	Flow Rate (cfm)	78	98	118	137	157	176	196	235	274	314
	Sound (NC)	-	-	-	-	16	20	23	29	34	38
	Throw (ft.)	2-3-6	2-4-7	3-4-8	3-5-9	4-6-10	4-7-10	5-7-11	6-8-12	7-9-13	8-10-14
7	Total Pressure (in. w.g.)	.022	.035	.050	.069	.090	.114	.140	.202	.275	.359
	Flow Rate (cfm)	107	134	160	187	214	240	267	320	374	427
	Sound (NC)	-	-	-	15	19	23	26	32	37	41
	Throw (ft.)	2-4-7	3-4-9	4-5-10	4-6-11	5-7-11	5-8-12	6-9-13	7-10-14	8-11-15	9-11-16
8	Total Pressure (in. w.g.)	.029	.045	.065	.089	.116	.146	.181	.260	.354	.463
	Flow Rate (cfm)	140	175	209	244	279	314	349	419	489	558
	Sound (NC)	-	-	-	18	22	26	29	35	40	44
	Throw (ft.)	3-4-8	3-5-10	4-6-11	5-7-12	6-8-13	6-9-14	7-10-15	8-11-16	10-12-17	11-13-18

For performance notes, see end of section.

SCD – 20 in. x 20 in. Face Size

Listed Size	Neck Velocity (fpm)	400	500	600	700	800	900	1000	1200	1400	1600
	Velocity Pressure (in. w.g.)	.01	.016	.022	.031	.040	.050	.062	.090	.122	.160
6	Total Pressure (in. w.g.)	.013	.020	.029	.040	.052	.066	.081	.117	.159	.207
	Flow Rate (cfm)	78	98	118	137	157	176	196	235	274	314
	Sound (NC)	-	-	-	16	19	23	26	31	35	39
	Throw (ft.)	0-1-3	1-2-4	1-2-4	1-3-5	2-3-6	2-3-6	2-4-6	3-4-7	3-5-7	4-6-8
8	Total Pressure (in. w.g.)	.017	.026	.038	.052	.068	.086	.106	.153	.208	.271
	Flow Rate (cfm)	140	175	209	244	279	314	349	419	489	558
	Sound (NC)	-	-	-	18	22	25	28	33	37	41
	Throw (ft.)	1-2-5	2-3-6	2-4-6	3-4-7	3-5-7	4-5-8	4-6-8	5-6-9	6-7-10	6-7-11
10	Total Pressure (in. w.g.)	.022	.034	.049	.067	.088	.111	.137	.198	.269	.351
	Flow Rate (cfm)	218	273	327	382	436	491	545	654	763	872
	Sound (NC)	-	-	15	20	23	27	30	35	39	43
	Throw (ft.)	2-3-6	3-4-7	3-5-8	4-6-9	4-6-9	5-7-10	5-7-10	6-8-11	7-9-12	8-9-13

For performance notes, see end of section.

PERFORMANCE DATA

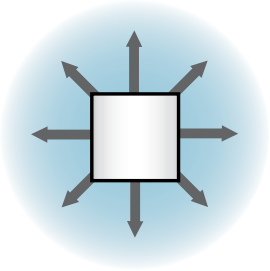
SCD – 24 in. x 24 in. Face Size

Listed Size	Neck Velocity (fpm)	400	500	600	700	800	900	1000	1200	1400	1600
	Velocity Pressure (in. w.g.)	**.01**	**.016**	**.022**	**.031**	**.040**	**.050**	**.062**	**.090**	**.122**	**.160**
6	**Total Pressure (in. w.g.)**	.015	.023	.034	.046	.060	.076	.094	.135	.183	.239
	Flow Rate (cfm)	78	98	118	137	157	176	196	235	274	314
	Sound (NC)	-	-	-	-	15	19	22	28	33	37
	Throw (ft.)	1-2-4	1-2-4	2-3-5	2-3-6	2-4-7	3-4-7	3-4-7	4-5-8	4-6-9	5-7-9
8	**Total Pressure (in. w.g.)**	.016	.025	.037	.050	.065	.082	.102	.146	.199	.260
	Flow Rate (cfm)	140	175	209	244	279	314	349	419	489	558
	Sound (NC)	-	-	-	-	19	22	26	31	36	40
	Throw (ft.)	2-2-5	2-3-6	2-4-7	3-4-8	3-5-9	4-6-9	4-6-10	5-7-11	6-8-12	7-9-12
10	**Total Pressure (in. w.g.)**	.019	.030	.044	.060	.078	.098	.122	.175	.238	.311
	Flow Rate (cfm)	218	273	327	382	436	491	545	654	763	872
	Sound (NC)	-	-	-	17	21	25	28	34	39	43
	Throw (ft.)	2-3-6	3-4-8	3-5-9	4-6-10	4-6-11	5-7-12	5-8-12	6-9-13	8-10-14	9-11-15
12	**Total Pressure (in. w.g.)**	.023	.036	.051	.070	.091	.115	.142	.205	.279	.364
	Flow Rate (cfm)	314	393	471	550	628	707	785	942	1099	1256
	Sound (NC)	-	-	-	19	24	27	30	36	41	45
	Throw (ft.)	3-4-8	3-5-10	4-6-11	5-7-12	5-8-13	6-9-14	7-10-15	8-11-16	9-12-17	11-13-19
14	**Total Pressure (in. w.g.)**	.026	.041	.058	.079	.104	.131	.162	.233	.318	.415
	Flow Rate (cfm)	428	535	641	748	855	962	1069	1283	1497	1710
	Sound (NC)	-	-	16	21	25	29	32	38	43	47
	Throw (ft.)	3-5-10	4-6-12	5-7-13	6-9-14	6-10-15	7-11-16	8-12-17	10-13-19	11-14-20	12-15-22
15	**Total Pressure (in. w.g.)**	.028	.044	.064	.087	.114	.144	.178	.256	.348	.455
	Flow Rate (cfm)	491	614	736	859	982	1104	1227	1472	1718	1963
	Sound (NC)	-	-	17	22	26	30	33	39	43	47
	Throw (ft.)	4-5-11	4-7-13	5-8-14	6-9-15	7-11-16	8-12-17	9-13-18	11-14-20	12-15-22	13-16-23

Performance Notes:

1. Tested in accordance with ASHRAE Standard 70 - 2023 *Method of Testing for Rating the Performance of Air Outlets and Inlets.*
2. Airflow is in cubic feet per minute [cfm].
3. NC, sound pressure levels, are based on a room absorption of 10 dB re 10^{-12} Watts, and a single diffuser/grille.
4. Blanks "-" indicate an NC level below 15.
5. All pressures are in inches of water column [in. w.g.].
6. Pressures not listed can be calculated using the following formula: $P_{total} = P_{static} + P_{velocity}$
7. Throw data is based on supply air and room air being at isothermal conditions.
8. Throw data is given in feet [ft] to terminal velocities of:
   150 fpm (minimum)
   100 fpm (middle)
   50 fpm (maximum).
9. Diffuser tested with a ceiling. If the diffuser is mounted on an exposed duct, multiply the throw in the performance table by 0.70
10. Does not include effects of ceiling radiation damper (SCD-FR)

Throw Diagram



Plan View - Horizontal Radial Pattern

PERFORMANCE DATA

SCDA – Adjustable Pattern Controllers, 12 in. x 12 in. Face Size

Listed Size	Neck Velocity (fpm) / Velocity Pressure (in. w.g.)		400 / .01	500 / .016	600 / .022	700 / .031	800 / .040	900 / .050	1000 / .062	1200 / .090	1400 / .122	1600 / .160
4	Total Pressure (in. w.g.)	H	.016	.026	.037	.050	.066	.083	.103	.148	.202	.263
		V	.019	.030	.043	.058	.076	.096	.118	.171	.232	.303
	Flow Rate (cfm)		35	44	52	61	70	78	87	104	122	139
	Sound (NC)	H	-	-	-	-	-	16	19	24	29	33
		V	-	-	-	-	-	-	17	23	29	33
	Radius of Diffusion (ft)	H	1-2-3	1-2-4	2-3-5	2-3-6	2-3-6	3-4-7	3-4-7	3-5-8	4-6-9	5-6-9
	Vertical Throw (ft)	V	3	4	5	5	6	6	6	7	7	8
5	Total Pressure (in. w.g.)	H	.021	.034	.048	.066	.086	.109	.134	.193	.263	.343
		V	.031	.048	.070	.095	.124	.157	.193	.278	.379	.495
	Flow Rate (cfm)		54	68	82	95	109	122	136	163	190	218
	Sound (NC)	H	-	-	-	-	17	21	24	29	34	38
		V	-	-	-	-	18	23	26	32	38	42
	Radius of Diffusion (ft)	H	2-2-5	2-3-6	2-4-7	3-4-8	3-5-8	4-6-9	4-6-9	5-7-10	6-8-11	7-8-11
	Vertical Throw (ft)	V	4	5	6	6	7	7	8	9	9	10
6	Total Pressure (in. w.g.)	H	.027	.042	.061	.082	.108	.136	.168	.242	.330	.431
		V	.047	.074	.107	.145	.190	.240	.296	.426	.580	.758
	Flow Rate (cfm)		78	98	118	137	157	176	196	235	274	314
	Sound (NC)	H	-	-	-	18	22	25	28	33	38	42
		V	-	-	16	21	26	30	33	40	45	50
	Radius of Diffusion (ft)	H	2-3-7	3-4-8	3-5-8	4-6-9	4-7-10	5-7-10	5-8-11	7-8-12	7-9-13	8-10-14
	Vertical Throw (ft)	V	6	7	7	8	8	9	9	10	11	12
7	Total Pressure (in. w.g.)	H	.032	.050	.073	.099	.129	.164	.202	.291	.396	.517
		V	.066	.104	.149	.203	.265	.336	.415	.597	.813	1.061
	Flow Rate (cfm)		107	134	160	187	214	241	267	321	374	428
	Sound (NC)	H	-	-	17	21	25	28	32	37	42	45
		V	-	16	22	27	32	36	40	46	51	56
	Radius of Diffusion (ft)	H	2-4-7	3-5-9	4-6-10	4-7-11	5-7-11	6-8-12	6-9-13	7-10-14	9-11-15	9-11-16
	Vertical Throw (ft)	V	7	8	8	9	10	10	11	12	13	14
8	Total Pressure (in. w.g.)	H	.038	.059	.085	.116	.152	.192	.237	.341	.464	.606
		V	.090	.140	.202	.275	.359	.454	.561	.808	1.100	1.436
	Flow Rate (cfm)		140	175	209	244	279	314	349	419	489	558
	Sound (NC)	H	-	-	20	24	28	32	35	40	45	48
		V	-	21	27	33	37	41	45	51	57	61
	Radius of Diffusion (ft)	H	3-5-9	4-6-10	5-7-11	6-9-12	6-9-13	7-10-14	8-10-15	9-11-16	10-12-17	11-13-18
	Vertical Throw (ft)	V	8	9	9	10	11	12	12	13	14	15

For performance notes, see end of section.

PERFORMANCE DATA

SCDA – Adjustable Pattern Controllers, 20 in. x 20 in. Face Size

Listed Size	Neck Velocity (fpm) / Velocity Pressure (in. w.g.)		400 / .01	500 / .016	600 / .022	700 / .031	800 / .040	900 / .050	1000 / .062	1200 / .090	1400 / .122	1600 / .160
6	Total Pressure (in. w.g.)	H	.015	.024	.035	.047	.062	.078	.097	.139	.189	.247
		V	.018	.028	.040	.055	.072	.091	.112	.162	.220	.287
	Flow Rate (cfm)		78	98	118	137	157	176	196	235	274	314
	Sound (NC)	H	-	-	-	-	-	18	22	27	32	36
		V	-	-	-	-	-	-	28	33	37	40
	Radius of Diffusion (ft)	H	1-2-4	2-2-5	2-3-6	2-3-6	3-4-7	3-4-7	3-5-7	4-6-8	4-6-9	5-7-9
	Vertical Throw (ft)	V	4	6	7	8	8	9	9	10	11	11
8	Total Pressure (in. w.g.)	H	.019	.030	.043	.058	.076	.096	.118	.171	.232	.303
		V	.027	.042	.061	.082	.108	.136	.168	.242	.330	.431
	Flow Rate (cfm)		140	175	209	244	279	314	349	419	489	558
	Sound (NC)	H	-	-	-	-	18	21	25	30	35	39
		V	-	-	19	23	26	29	32	37	41	45
	Radius of Diffusion (ft)	H	2-3-5	2-3-7	3-4-8	3-5-8	3-5-9	4-6-9	4-7-10	5-8-11	6-8-12	7-9-12
	Vertical Throw (ft)	V	6	7	9	9	10	11	11	12	13	14
10	Total Pressure (in. w.g.)	H	.022	.035	.050	.069	.090	.114	.140	.202	.275	.359
		V	.038	.059	.085	.116	.152	.192	.237	.341	.464	.606
	Flow Rate (cfm)		218	273	327	382	436	491	545	654	763	872
	Sound (NC)	H	-	-	-	16	20	24	27	33	37	42
		V	-	17	22	26	30	33	36	41	45	48
	Radius of Diffusion (ft)	H	2-3-7	3-4-8	3-5-9	4-6-10	4-7-11	5-8-12	6-8-12	7-9-13	8-10-14	9-11-15
	Vertical Throw (ft)	V	7	9	10	11	12	12	13	14	15	16

For performance notes, see end of section.

PERFORMANCE DATA

SCDA – Adjustable Pattern Controllers, 24 in. x 24 in. Face Size

Listed Size	Neck Velocity (fpm) / Velocity Pressure (in. w.g.)		400 .01	500 .016	600 .022	700 .031	800 .040	900 .050	1000 .062	1200 .090	1400 .122	1600 .160
6	Total Pressure (in. w.g.)	H	.016	.026	.037	.050	.066	.083	.103	.148	.202	.263
		V	.027	.043	.062	.084	.110	.139	.171	.247	.336	.439
	Flow Rate (cfm)		78	98	118	137	157	176	196	235	274	314
	Sound (NC)	H	-	-	-	-	19	23	27	33	38	43
		V	-	16	21	25	28	31	34	39	43	46
	Radius of Diffusion	H	1-2-4	2-2-5	2-3-6	2-3-6	3-4-7	3-4-7	3-5-7	4-6-8	4-6-9	5-7-9
	Vertical Throw	V	4	6	7	8	8	9	9	10	11	11
8	Total Pressure (in. w.g.)	H	.020	.032	.046	.063	.082	.104	.128	.184	.250	.327
		V	.034	.053	.076	.104	.136	.172	.212	.305	.415	.543
	Flow Rate (cfm)		140	175	209	244	279	314	349	419	489	558
	Sound (NC)	H	-	-	-	17	22	26	30	36	41	46
		V	-	18	23	27	31	34	36	41	45	49
	Radius of Diffusion	H	2-3-5	2-3-7	3-4-8	3-5-8	3-5-9	4-6-9	4-7-10	5-8-11	6-8-12	7-9-12
	Vertical Throw	V	6	7	9	9	10	11	11	12	13	14
10	Total Pressure (in. w.g.)	H	.024	.038	.055	.075	.098	.124	.153	.220	.299	.391
		V	.040	.062	.090	.122	.160	.202	.249	.359	.489	.638
	Flow Rate (cfm)		218	273	327	382	436	491	545	654	763	872
	Sound (NC)	H	-	-	-	20	24	28	32	38	43	48
		V	-	20	25	29	33	36	38	43	47	51
	Radius of Diffusion	H	2-3-7	3-4-8	3-5-9	4-6-10	4-7-11	5-8-12	6-8-12	7-9-13	8-10-14	9-11-15
	Vertical Throw	V	7	9	10	11	12	12	13	14	15	16
12	Total Pressure (in. w.g.)	H	.028	.044	.063	.086	.112	.141	.175	.251	.342	.447
		V	.046	.072	.103	.141	.184	.232	.287	.413	.562	.734
	Flow Rate (cfm)		314	393	471	550	628	707	785	942	1099	1256
	Sound (NC)	H	-	-	16	22	26	30	34	40	45	50
		V	16	22	27	31	34	37	40	45	49	52
	Radius of Diffusion	H	3-4-8	3-5-10	4-6-11	5-7-12	5-8-13	6-9-14	7-10-15	8-11-16	10-12-17	11-13-19
	Vertical Throw	V	9	10	11	12	12	13	14	15	16	17
14	Total Pressure (in. w.g.)	H	.032	.050	.072	.098	.128	.162	.200	.287	.391	.511
		V	.052	.082	.118	.160	.209	.265	.327	.471	.642	.838
	Flow Rate (cfm)		428	535	641	748	855	962	1069	1283	1497	1710
	Sound (NC)	H	-	-	18	23	28	32	35	42	47	51
		V	17	23	28	32	35	39	41	46	50	54
	Radius of Diffusion	H	3-5-10	4-6-12	5-7-13	6-9-14	6-10-15	7-11-16	8-12-17	10-13-19	11-14-20	12-15-22
	Vertical Throw	V	9	10	11	12	12	13	14	15	16	17
15	Total Pressure (in. w.g.)	H	.034	.053	.076	.104	.136	.172	.212	.305	.415	.543
		V	.069	.108	.155	.211	.275	.348	.430	.619	.843	1.101
	Flow Rate (cfm)		491	614	736	859	982	1104	1227	1472	1718	1963
	Sound (NC)	H	-	-	19	24	28	32	36	42	48	52
		V	18	24	29	33	36	39	42	47	51	54
	Radius of Diffusion	H	4-5-11	4-7-13	5-8-14	6-9-15	7-11-16	8-12-17	9-13-18	11-14-20	12-15-22	13-16-23
	Vertical Throw	V	8	9	10	11	12	13	13	14	16	17

Vertical Throw Factors

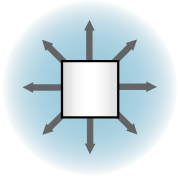
Ceiling Module	Listed Size	Cooling ΔT -10 °F	Cooling ΔT 0 °F	Heating ΔT 20 °F	Heating ΔT 40 °F
12"x12" /300 x 300	4	1.6	1.3	1.0	0.7
	5	1.6	1.3	1.0	0.7
	6	1.6	1.3	1.0	0.7
	7	1.6	1.3	1.0	0.7
	8	1.6	1.3	1.0	0.7
20"x20" /500 x 500	6	1.7	1.3	1.0	0.7
	8	1.7	1.3	1.0	0.7
	10	1.7	1.3	1.0	0.6
24"x24" /600 x 600	6	1.7	1.3	1.0	0.7
	8	1.7	1.3	1.0	.0.7
	10	1.7	1.4	1.0	0.6
	12	1.8	1.4	1.0	0.6
	14	2.0	1.5	1.0	0.5
	15	2.1	1.5	1.0	0.5

The table lists throw factors to be applied to the vertical projections listed in the performance tables for temperature differentials other than 20 °F heating differential.

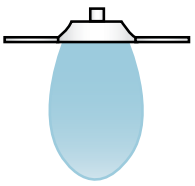
Performance Notes:

1. Tested in accordance with ASHRAE Standard 70 - 2023 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Airflow is in cubic feet per minute [cfm].
3. NC, sound pressure levels, are based on a room absorption of 10 dB re 10^{-12} Watts, and a single diffuser/grille.
4. Blanks "-" indicate an NC level below 15.
5. All pressures are in inches of water column [in. w.g.].
6. Pressures not listed can be calculated using the following formula: $P_{total} = P_{static} + P_{velocity}$
7. Horizontal throw data is based on supply air and room air being at isothermal conditions.
8. Vertical throws are based on 20°F heating differential and 50 fpm terminal velocity.
9. Throw data is given in feet [ft] to terminal velocities of:
   150 fpm (minimum)
   100 fpm (middle)
   50 fpm (maximum).
10. Diffuser tested with a ceiling. If the diffuser is mounted on an exposed duct, multiply the throw in the performance table by 0.70.
11. Does not include effects of ceiling radiation damper (SCDA-FR)

Throw Diagram



Plan View - Horizontal Radial Pattern



Elevation View - Vertical Pattern

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