

Architectural Lay In Slot Diffuser (SJSM, SJRM)

The Carnes models SJSM and SJRM offer the look that architects like and the performance that engineers need. From the clean, sleek lines to the wide range of adjustability and low sound levels, these diffusers are a perfect fit for a VAV system application. Customer supplied center acoustic tiles allow the SJSM and SJRM to blend in nicely with the existing ceiling system.

The SJSM and SJRM are available with a choice of 1-4 slots and 3/4" or 1" slot widths. Each slot is equipped with an individually adjustable pattern control that controls the direction of air discharge either parallel with or perpendicular to the diffuser face. The adjustment from the face of the diffuser allows for pattern control in a full 180 degree range for either right or left parallel, intermediate or perpendicular air flow. The design of the pattern control also allows the same vane which controls the air pattern to also be adjustable for rate of air flow. This dampering is accomplished without upsetting the air pattern.

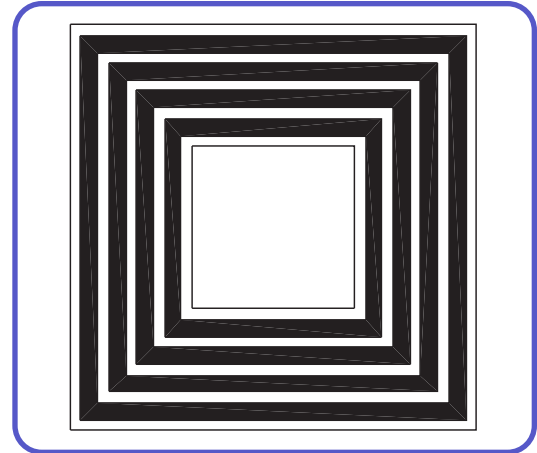


Application

Architecturally pleasing lay in slot diffuser that offers a great deal of versatility for discharge patterns, as well as air volume adjustability. The SJSM and SJRM offer a clean, sleek look while continuing the ceilings acoustic tile patterns. These units are an excellent fit for use with VAV systems.

Standard Features

- Choice of 1, 2, 3, or 4 slots.
- 3/4" or 1" slots available.
- Inlets are available in 8", 10", 12", and 14" sizes.
- The SJSM is capable of horizontal or vertical throws in 1 way, 2 way, 3 way or 4 way blow patterns.
- All diffusers are made of extruded aluminum frames and pattern controls, with steel back pans and light shields.
- Standard finish is Carnes electrocoat acrylic baked enamel.
- Standard color is Carnes #11 bright white. Other colors available upon request.
- Sizes to fit a standard 24 x 24 ceiling grid.
- Supply diffusers offer individually adjustable pattern controls for each slot, as well as a 1/8" undersized inlet for easy installation.
- Return diffusers offer similar appearance, but have no pattern controls. Returns use a light shield as standard in place of the back plate.
- Back pans are easily removable, offering easy access for installing acoustic tile.

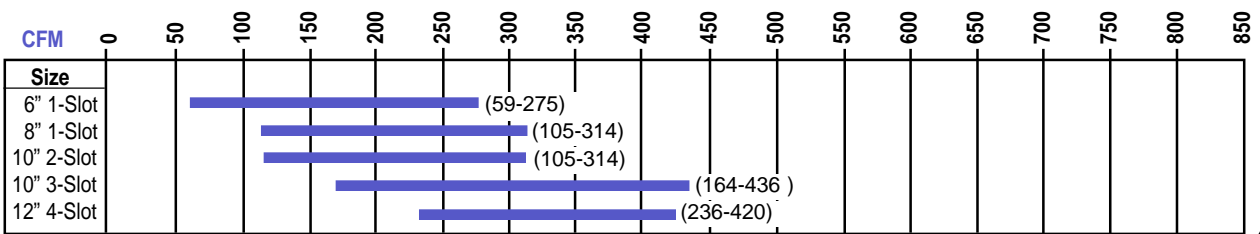


Accessories

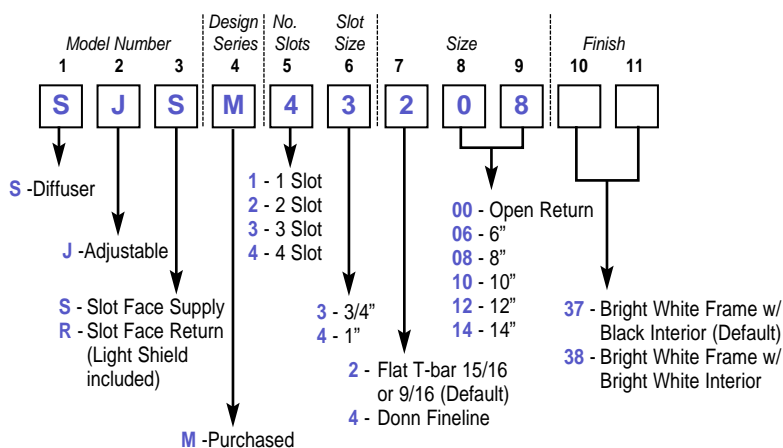
- Insulated back panels available.
- When specifying damper, use Carnes model KXMB (p. A429).

Quick Select Chart

This shows units with: • A maximum NC/RC of 35.
• A minimum face velocity of 400 FPM.



Model Numbering System



Model SJSM 1' Wide Slot • Supply

Neck velocity, FPM	300	400	500	600	700	800	900	1000	1100
Total Pressure, Inches W.G.	0.006	0.011	0.017	0.023	0.032	0.041	0.051	0.063	0.076

One Slot	8 Neck Dia.	Air Flow, CFM	105	140	175	209	244	279	314	349	384
		Total Pressure	0.032	0.057	0.090	0.130	0.177	0.232	0.294	0.363	0.440
		NC	14	20	25	29	32	35	37	40	42
		Throw, feet	3 5 10	5 7 14	6 9 17	7 10 21	8 12 24	9 14 28	10 16 31	12 17 35	13 19 38
Two Slot	8 Neck	Air Flow, CFM	105	140	175	209	244	279	314	349	384
		Total Pressure	0.013	0.024	0.038	0.055	0.074	0.099	0.125	0.154	0.187
		NC	-	-	15	19	21	25	27	29	32
		Throw, feet	1 3 8	2 5 10	3 6 13	5 8 15	6 9 18	7 10 21	8 12 23	9 13 26	9 14 28
Two Slot	10 Neck	Air Flow, CFM	164	140	175	209	244	279	314	349	384
		Total Pressure	0.025	0.045	0.071	0.103	0.141	0.184	0.234	0.289	0.350
		NC	11	18	22	26	30	32	35	37	39
		Throw, feet	3 6 12	5 8 16	7 10 20	8 12 24	9 14 28	11 16 32	12 18 36	13 20 40	15 22 44
Three Slot	8 Neck	Air Flow, CFM	105	140	175	209	244	279	314	349	384
		Total Pressure	0.008	0.015	0.025	0.036	0.050	0.065	0.082	0.102	0.124
		NC	-	11	16	20	23	26	29	31	33
		Throw, feet	1 2 7	1 3 9	2 5 11	3 7 13	4 8 16	5 9 15	7 10 22	7 11 22	8 12 24
Three Slot	10 Neck	Air Flow, CFM	164	218	273	327	282	436	491	545	600
		Total Pressure	0.014	0.025	0.039	0.057	0.078	0.103	0.132	0.162	0.195
		NC	13	19	24	28	31	34	36	39	41
		Throw, feet	2 4 10	3 7 14	5 9 17	7 10 21	8 12 24	9 14 28	10 16 31	12 17 35	13 19 38
Three Slot	12 Neck	Air Flow, CFM	236	314	393	471	550	628	707	785	864
		Total Pressure	0.023	0.042	0.066	0.096	0.131	0.171	0.217	0.268	0.324
		NC	19	25	30	34	37	40	43	45	47
		Throw, feet	4 8 15	8 10 20	8 13 25	10 15 30	12 18 35	13 20 40	15 23 45	17 25 50	18 25 55
Four Slot	8 Neck	Air Flow, CFM	105	140	175	209	244	279	314	349	384
		Total Pressure	0.007	0.014	0.022	0.032	0.044	0.057	0.073	0.090	0.109
		NC	-	-	13	17	20	23	25	28	30
		Throw, feet	1 1 5	1 2 8	2 4 10	2 5 12	3 7 14	4 8 16	5 9 18	6 10 20	7 11 22
Four Slot	10 Neck	Air Flow, CFM	164	218	273	327	382	436	491	545	600
		Total Pressure	0.011	0.020	0.032	0.047	0.064	0.084	0.106	0.131	0.159
		NC	-	16	21	25	28	31	33	35	38
		Throw, feet	1 3 10	2 6 13	4 8 16	6 10 19	7 11 22	8 13 25	10 14 29	11 16 32	12 18 35
Four Slot	12 Neck	Air Flow, CFM	236	314	393	471	550	628	707	785	864
		Total Pressure	0.018	0.032	0.051	0.074	0.101	0.132	0.167	0.207	0.250
		NC	16	22	27	31	34	37	40	42	44
		Throw, feet	3 7 14	5 9 18	8 11 23	9 14 28	11 16 32	12 18 37	14 21 41	15 23 46	17 25 50
Four Slot	14 Neck	Air Flow, CFM	321	428	535	641	748	855	962	1069	1176
		Total Pressure	0.029	0.052	0.082	0.118	0.162	0.211	0.268	0.331	0.400
		NC	21	27	32	36	40	42	45	47	49
		Throw, feet	5 9 19	8 12 25	10 16 31	12 19 37	15 22 44	17 25 50	19 28 56	21 31 62	23 34 68

Notes on Performance Data

- Performance data is based on tests conducted in accordance with ANSI/ASHRAE Standard 70-1991.
- Actual performance in the field may vary.
- Tests were conducted in isothermal conditions.
- Sound levels are based on a room absorption of 10 db re 10⁻¹² watts.

Notes on Units of Measure Used

- Air flow is given in cubic feet per minute (CFM).
- Static Pressure is given in inches of water (w.g.).
- Sound data is given in NC.
- Throws are given in feet to terminal velocities of 150, 100 and 50 fpm, respectively.

Model SJSM 3/4' Wide Slot • Supply

Neck velocity, FPM	300	400	500	600	700	800	900	1000	1100
Total Pressure, Inches W.G.	0.006	0.011	0.017	0.023	0.032	0.041	0.051	0.063	0.076

One Slot	8 Neck Dia.	Air Flow, CFM	105	140	175	209	244	279	314	349	384
		Total Pressure	0.046	0.083	0.130	0.187	0.256	0.334	0.424	0.523	0.633
		NC	18	23	29	33	36	39	42	43	46
		Throw, feet	4 6 12	5 8 16	7 10 20	8 12 24	9 14 28	11 16 32	12 18 35	13 20 37	15 22 39
Two Slot	8 Neck	Air Flow, CFM	105	140	175	209	244	279	314	349	384
		Total Pressure	0.017	0.031	0.048	0.070	0.096	0.125	0.159	0.196	0.237
		NC	-	13	18	22	26	28	31	33	35
		Throw, feet	2 4 9	3 6 12	5 7 15	6 9 18	7 10 21	8 12 24	9 13 26	10 15 29	11 16 32
Two Slot	10 Neck	Air Flow, CFM	105	140	175	209	244	279	314	349	384
		Total Pressure	0.034	0.062	0.097	0.140	0.191	0.249	0.316	0.390	0.473
		NC	15	21	26	30	33	36	39	41	43
		Throw, feet	4 7 14	6 9 18	8 11 23	9 14 28	11 16 32	12 18 37	14 21 41	15 23 46	17 25 48
Three Slot	8 Neck	Air Flow, CFM	105	140	175	209	244	279	314	349	384
		Total Pressure	0.010	0.018	0.029	0.042	0.057	0.075	0.095	0.117	0.142
		NC	-	14	19	23	26	29	32	34	36
		Throw, feet	1 2 7	2 4 10	3 6 12	4 7 15	6 9 17	7 10 20	7 11 22	8 12 25	9 14 27
Three Slot	10 Neck	Air Flow, CFM	164	218	273	327	382	436	491	545	600
		Total Pressure	0.017	0.031	0.049	0.070	0.096	0.126	0.160	0.197	0.239
		NC	17	23	28	32	35	38	40	43	45
		Throw, feet	3 6 12	5 8 16	7 10 20	8 12 23	9 14 27	10 16 31	12 18 35	13 20 25	14 21 43
Three Slot	12 Neck	Air Flow, CFM	236	314	393	471	550	628	707	785	864
		Total Pressure	0.030	0.054	0.085	0.123	0.168	0.220	0.278	0.344	0.416
		NC	22	28	33	37	40	43	46	48	50
		Throw, feet	1 2 7	2 4 10	3 6 12	4 7 15	6 9 17	7 10 20	7 11 22	8 12 25	9 14 27
Four Slot	8 Neck	Air Flow, CFM	105	140	175	209	244	279	314	349	384
		Total Pressure	0.008	0.015	0.024	0.035	0.048	0.063	0.080	0.099	0.120
		NC	-	11	16	20	23	26	28	31	33
		Throw, feet	1 2 7	1 2 9	2 5 11	3 7 14	4 8 16	6 9 18	7 10 20	8 11 23	8 12 25
Four Slot	10 Neck	Air Flow, CFM	164	218	273	327	382	436	491	545	600
		Total Pressure	0.130	0.024	0.037	0.054	0.074	0.097	0.124	0.153	0.185
		NC	12	19	23	27	31	34	36	38	40
		Throw, feet	2 4 11	3 7 14	5 9 18	7 11 21	8 12 25	9 14 28	11 16 28	12 18 35	13 19 39
Four Slot	12 Neck	Air Flow, CFM	236	314	393	471	550	628	707	785	864
		Total Pressure	0.022	0.039	0.062	0.090	0.123	0.160	0.203	0.251	0.304
		NC	19	25	30	34	37	40	42	45	47
		Throw, feet	4 8 15	7 10 20	8 13 25	10 15 31	12 18 36	14 20 41	15 23 46	17 25 51	19 28 56
Four Slot	14 Neck	Air Flow, CFM	321	428	535	641	748	855	962	1069	1176
		Total Pressure	0.130	0.024	0.037	0.054	0.074	0.097	0.124	0.153	0.185
		NC	12	19	23	27	31	34	36	38	40
		Throw, feet	2 4 11	3 7 14	5 9 18	7 11 21	8 12 25	9 14 28	11 16 28	12 18 35	13 19 39

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Specialty Products

Model SJRM 3/4' Wide Slot • Return

Size One Slot	Negative Static Pressure	0.007	0.028	0.063	0.108	0.170	0.250	0.345	0.450
	Air Flow, CFM	75	150	225	300	375	450	525	600
	NC (Noise Criteria)	-	-	15	23	29	34	38	42
Size Two Slot	Negative Static Pressure	0.007	0.028	0.063	0.108	0.170	0.250	0.345	0.450
	Air Flow, CFM	145	290	435	580	725	870	1015	1160
	NC (Noise Criteria)	-	11	19	27	33	38	42	46
Size Three Slot	Negative Static Pressure	0.007	0.028	0.063	0.108	0.170	0.250	0.345	0.450
	Air Flow, CFM	210	420	630	840	1050	1260	1470	1680
	NC (Noise Criteria)	-	14	20	28	34	39	43	47
Size Four Slot	Negative Static Pressure	0.007	0.028	0.063	0.108	0.170	0.250	0.345	0.450
	Air Flow, CFM	270	540	810	1080	1350	1620	1890	2160
	NC (Noise Criteria)	-	16	21	29	35	39	44	48

Model SJRM 1' Wide Slot • Return

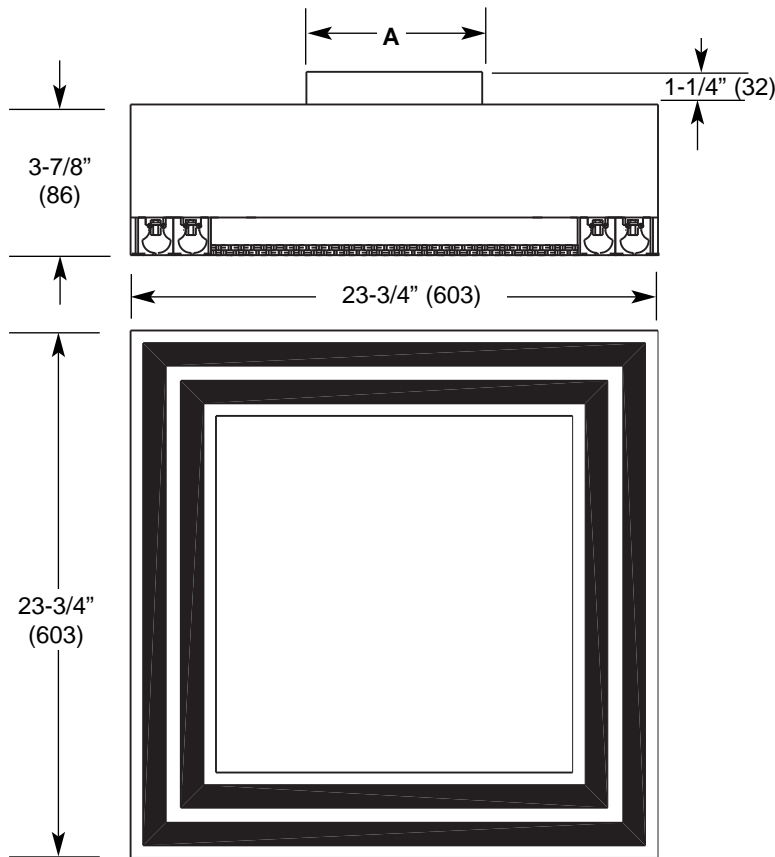
Size One Slot	Negative Static Pressure	0.018	0.040	0.070	0.108	0.160	0.215	0.280	0.450
	Air Flow, CFM	147	220	293	367	440	513	586	733
	NC (Noise Criteria)	-	-	16	22	27	31	35	41
Size Two Slot	Negative Static Pressure	0.018	0.040	0.070	0.108	0.160	0.215	0.280	0.450
	Air Flow, CFM	280	420	560	700	840	980	1120	1400
	NC (Noise Criteria)	-	15	23	29	34	38	42	48
Size Three Slot	Negative Static Pressure	0.018	0.040	0.070	0.108	0.160	0.215	0.280	0.450
	Air Flow, CFM	400	600	800	1000	1200	1400	1600	2000
	NC (Noise Criteria)	-	18	26	32	37	41	45	51
Size Four Slot	Negative Static Pressure	0.018	0.040	0.070	0.108	0.160	0.215	0.280	0.450
	Air Flow, CFM	507	760	1013	1267	1520	1773	2026	2533
	NC (Noise Criteria)	-	20	28	34	39	43	47	53

Notes on Performance Data

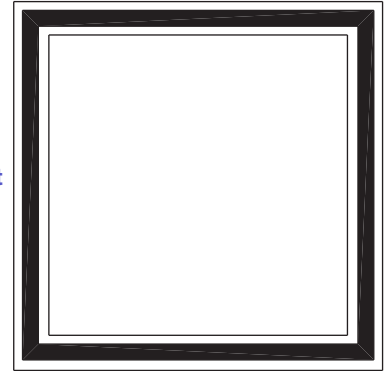
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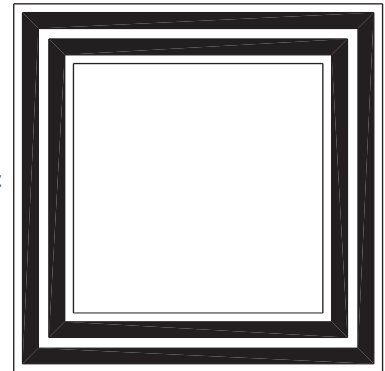
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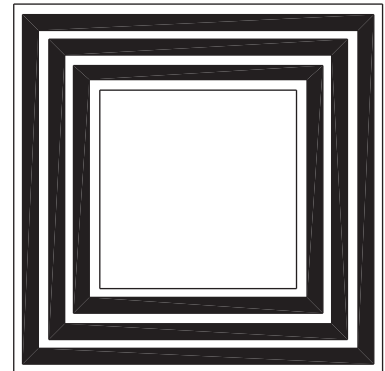
1-Slot



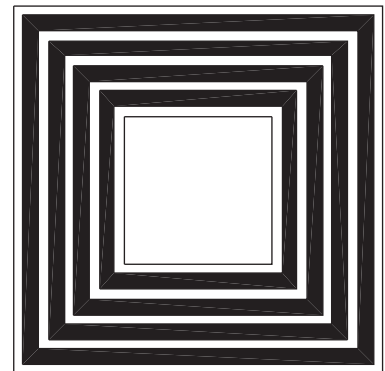
2-Slot



3-Slot



4-Slot



Metric Dimensions are in Millimeters		
Model	Nominal Neck Size	Neck O. D. (Dim. A)
SJSM_021211108	8" (203)	7-7/8" (200)
SJSM_021211110	10" (254)	9-7/8" (251)
SJSM_021211112	12" (305)	11-7/8" (302)
SJSM_021211114	14" (356)	13-7/8" (352)