

# SMCD/AMCD

MODULAR CORE DIRECTIONAL DIFFUSER



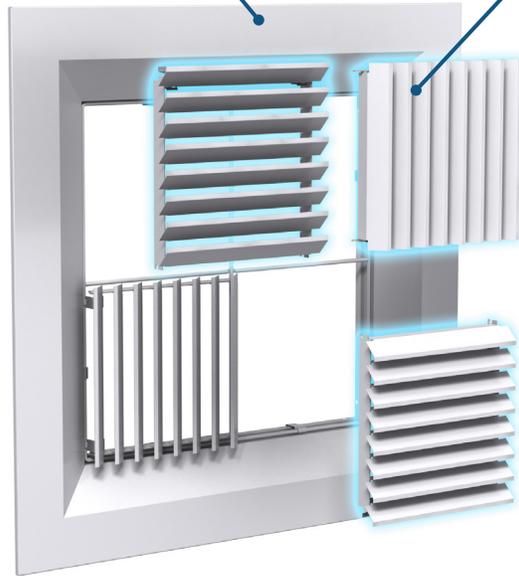
# SMCD/AMCD

## Modular Core Directional Diffuser

The modular core directional diffuser (SMCD/AMCD) supplies large volumes of air at low sound levels and pressure drops. The modular core design allows for easy, tool-free reconfiguration of the discharge pattern and easy access to ductwork for maintenance. With a tight horizontal discharge air pattern, even at low air volumes, the modular core directional diffuser is well suited to VAV applications.

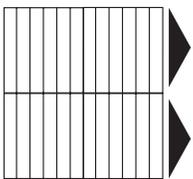
*Multiple frame styles ensure compatibility with a variety of ceiling systems*

*Individual core sections can be easily repositioned for on-site air pattern adjustment*

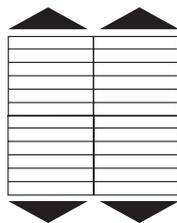


### Core configurations

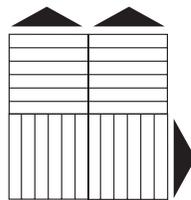
1-way



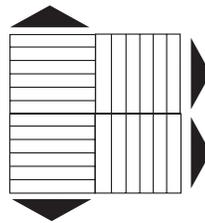
2-way



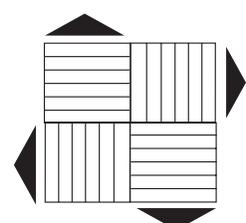
2-way corner



3-way



4-way



## CONSTRUCTION

- + Material
  - Steel (SMCD)
  - Aluminum (AMCD)

# PERFORMANCE DATA

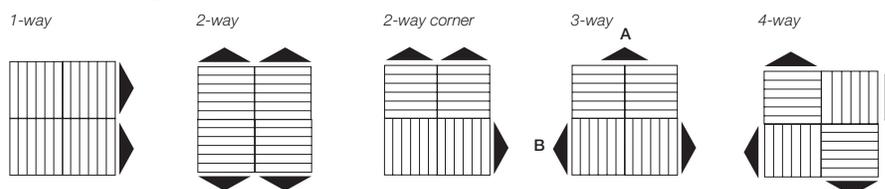
## SMCD - Steel Construction

Inlet Size	Neck Velocity (fpm)	200	300	400	500	600	700	800	900	1000	
	Velocity Pressure (in. w.g.)	.002	.006	.010	.016	.022	.031	.040	.050	.062	
	Total Pressure (in. w.g.)	.009	.020	.036	.057	.082	.112	.146	.184	.228	
6 x 6	Flow Rate (cfm)	50	75	100	125	150	175	200	225	250	
	Sound (NC)	-	-	-	-	17	22	27	30	34	
	Throw (ft.)	4 Way	0-0-1	1-3-6	4-5-9	6-8-12	7-9-14	8-11-16	9-12-17	10-13-18	11-14-20
		3 Way "A"	4-6-12	8-10-18	10-14-22	13-16-25	14-18-27	16-20-29	17-22-31	18-23-33	19-24-34
		3 Way "B"	0-0-1	1-3-6	4-5-9	6-8-12	7-9-14	8-11-16	9-12-17	10-13-18	11-14-20
		2 Way	4-6-12	8-10-18	10-14-22	13-16-25	14-18-27	16-20-29	17-22-31	18-23-33	19-24-34
1 Way		12-16-27	16-21-34	20-25-39	22-28-43	24-31-46	26-33-48	28-35-50	29-36-52	30-38-54	
8 x 8	Flow Rate (cfm)	89	133	178	222	266	311	355	400	444	
	Sound (NC)	-	-	-	-	20	25	29	33	36	
	Throw (ft.)	4 Way	1-2-5	4-6-10	6-8-13	8-10-16	10-12-18	11-14-19	12-15-21	13-16-22	14-17-24
		3 Way "A"	7-9-17	11-14-22	13-17-26	16-20-29	17-22-32	19-24-34	20-25-36	21-26-38	22-28-39
		3 Way "B"	1-2-5	4-6-10	6-8-13	8-10-16	10-12-18	11-14-19	12-15-21	13-16-22	14-17-24
		2 Way	7-9-17	11-14-22	13-17-26	16-20-29	17-22-32	19-24-34	20-25-36	21-26-38	22-28-39
1 Way		15-20-33	20-25-40	23-29-45	26-32-48	28-35-51	30-37-54	31-39-56	33-40-58	34-42-60	
10 x 10	Flow Rate (cfm)	139	208	278	347	416	486	555	625	694	
	NC Sound (NC)	-	-	-	16	22	27	31	35	38	
	Throw (ft.)	4 Way	3-4-8	6-8-13	8-11-16	10-13-19	11-14-21	13-16-23	14-17-24	15-18-25	16-19-27
		3 Way "A"	9-12-20	13-17-26	16-20-30	18-22-33	20-25-36	21-26-38	22-28-40	24-29-41	25-30-43
		3 Way "B"	3-4-8	6-8-13	8-11-16	10-13-19	11-14-21	13-16-23	14-17-24	15-18-25	16-19-27
		2 Way	9-12-20	13-17-26	16-20-30	18-22-33	20-25-36	21-26-38	22-28-40	24-29-41	25-30-43
1 Way		18-23-37	23-29-44	26-33-49	28-36-53	31-38-56	32-40-58	34-42-60	35-44-62	37-45-64	
12 x 12	Flow Rate (cfm)	200	300	400	500	600	700	800	900	1000	
	Sound (NC)	-	-	-	18	24	28	33	36	40	
	Throw (ft.)	4 Way	4-6-11	7-10-15	10-12-19	12-14-21	13-16-23	14-18-25	15-19-27	16-20-28	17-21-29
		3 Way "A"	11-14-23	15-19-29	18-22-33	20-25-36	21-27-39	23-28-41	24-30-43	25-31-44	26-33-46
		3 Way "B"	4-6-11	7-10-15	10-12-19	12-14-21	13-16-23	14-18-25	15-19-27	16-20-28	17-21-29
		2 Way	11-14-23	15-19-29	18-22-33	20-25-36	21-27-39	23-28-41	24-30-43	25-31-44	26-33-46
1 Way		20-26-41	25-31-48	28-35-53	31-38-56	33-41-59	35-43-62	36-45-64	38-46-66	39-48-68	
14 x 14	Flow Rate (cfm)	272	408	544	681	817	953	1089	1225	1361	
	Sound (NC)	-	-	-	19	25	30	34	38	41	
	Throw (ft.)	4 Way	5-7-13	9-11-17	11-14-21	13-16-23	14-18-25	16-19-27	17-20-29	18-22-30	18-23-31
		3 Way "A"	12-16-26	16-21-32	19-24-36	21-26-39	23-29-41	25-30-43	26-32-45	27-33-47	28-34-48
		3 Way "B"	5-7-13	9-11-17	11-14-21	13-16-23	14-18-25	16-19-27	17-20-29	18-22-30	18-23-31
		2 Way	12-16-26	16-21-32	19-24-36	21-26-39	23-29-41	25-30-43	26-32-45	27-33-47	28-34-48
1 Way		22-28-44	27-34-51	30-37-56	33-40-59	35-43-62	37-45-65	38-47-67	39-48-69	41-50-71	

**Performance Notes:**

1. Tested in accordance with ASHRAE Standard 70 – 2023 Method of Testing for Rating the Performance of Air Outlets and Inlets.
2. Air flow is in cfm.
3. All pressures are in in. w.g.
4. Throw values are measured in feet for terminal velocities of 150 fpm (minimum), 100 fpm (middle) and 50 fpm (maximum).
5. Throw data is based on supply air and room air at isothermal conditions.
6. NC values are based on a room absorption of 10 dB re 10<sup>-12</sup> watts and one diffuser.
7. Blanks "-" indicate an NC level below 15.

**Core Style Legend**



# PERFORMANCE DATA

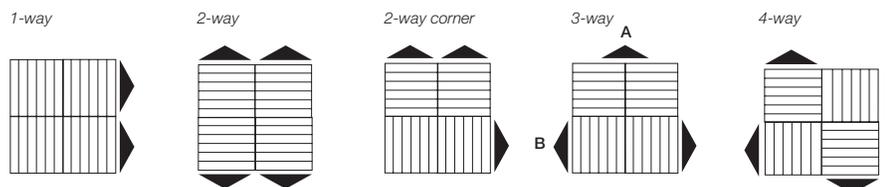
## SMCD - Steel Construction

Inlet Size	Neck Velocity (fpm)	200	300	400	500	600	700	800	900	1000	
	Velocity Pressure (in. w.g.)	.002	.006	.010	.016	.022	.031	.040	.050	.062	
	Total Pressure (in. w.g.)	.009	.020	.036	.057	.082	.112	.146	.184	.228	
16 x 16	Flow Rate (cfm)	356	533	711	889	1067	1244	1422	1600	1778	
	Sound (NC)	-	-	-	20	26	31	35	39	42	
	Throw (ft.)	4 Way	7-9-14	10-13-19	12-15-22	14-17-25	15-19-27	17-21-29	18-22-31	19-23-32	20-24-33
		3 Way "A"	14-18-28	18-22-34	20-26-38	23-28-41	24-30-43	26-32-46	27-33-47	28-35-49	29-36-50
		3 Way "B"	7-9-14	10-13-19	12-15-22	14-17-25	15-19-27	17-21-29	18-22-31	19-23-32	20-24-33
		2 Way	14-18-28	18-22-34	20-26-38	23-28-41	24-30-43	26-32-46	27-33-47	28-35-49	29-36-50
1 Way	24-30-47	28-35-53	32-39-58	34-42-62	36-45-65	38-47-68	40-49-70	41-50-72	42-52-73		
18 x 18	Flow Rate (cfm)	450	675	900	1125	1350	1575	1800	2025	2250	
	Sound (NC)	-	-	-	21	27	32	36	40	43	
	Throw (ft.)	4 Way	8-10-16	11-14-21	13-16-24	15-19-27	16-20-29	18-22-31	19-23-32	20-24-33	21-25-35
		3 Way "A"	15-19-30	19-24-36	22-27-40	24-30-43	26-32-45	27-33-47	28-35-49	30-36-51	31-37-52
		3 Way "B"	8-10-16	11-14-21	13-16-24	15-19-27	16-20-29	18-22-31	19-23-32	20-24-33	21-25-35
		2 Way	15-19-30	19-24-36	22-27-40	24-30-43	26-32-45	27-33-47	28-35-49	30-36-51	31-37-52
1 Way	25-32-49	30-37-56	33-41-61	36-44-64	38-47-67	40-49-70	41-51-72	43-52-74	44-54-76		
20 x 20	Flow Rate (cfm)	556	833	1111	1389	1667	1944	2222	2500	2778	
	Sound (NC)	-	-	15	22	28	33	37	41	44	
	Throw (ft.)	4 Way	8-11-18	12-15-22	14-17-26	16-20-28	17-21-30	19-23-32	20-24-34	21-25-35	21-26-36
		3 Way "A"	16-20-32	20-25-37	23-28-41	25-31-45	27-33-47	28-35-49	29-36-51	31-37-53	32-39-54
		3 Way "B"	8-11-18	12-15-22	14-17-26	16-20-28	17-21-30	19-23-32	20-24-34	21-25-35	21-26-36
		2 Way	16-20-32	20-25-37	23-28-41	25-31-45	27-33-47	28-35-49	29-36-51	31-37-53	32-39-54
1 Way	26-33-51	31-39-58	34-43-63	37-46-66	39-48-69	41-50-72	42-52-74	44-54-76	45-55-78		
22 x 22	Flow Rate (cfm)	672	1008	1344	1681	2017	2353	2689	3025	3361	
	Sound (NC)	-	-	16	23	29	34	38	42	45	
	Throw (ft.)	4 Way	9-12-19	13-16-24	15-18-27	17-21-29	18-22-32	19-24-33	20-25-35	21-26-36	22-27-37
		3 Way "A"	17-21-33	21-26-39	24-29-43	26-32-46	28-34-49	29-36-51	30-37-53	32-39-54	33-40-56
		3 Way "B"	9-12-19	13-16-24	15-18-27	17-21-29	18-22-32	19-24-33	20-25-35	21-26-36	22-27-37
		2 Way	17-21-33	21-26-39	24-29-43	26-32-46	28-34-49	29-36-51	30-37-53	32-39-54	33-40-56
1 Way	27-34-53	32-40-60	35-44-64	38-47-68	40-49-71	42-52-74	44-53-76	45-55-78	46-56-80		
24 x 24	Flow Rate (cfm)	800	1200	1600	2000	2400	2800	3200	3600	4000	
	Sound (NC)	-	-	17	24	30	35	39	42	46	
	Throw (ft.)	4 Way	10-13-20	13-17-25	16-19-28	17-21-31	19-23-33	20-25-35	21-26-36	22-27-37	23-28-39
		3 Way "A"	18-23-35	22-27-40	25-30-44	27-33-47	29-35-50	30-37-52	31-38-54	32-40-56	34-41-57
		3 Way "B"	10-13-20	13-17-25	16-19-28	17-21-31	19-23-33	20-25-35	21-26-36	22-27-37	23-28-39
		2 Way	18-23-35	22-27-40	25-30-44	27-33-47	29-35-50	30-37-52	31-38-54	32-40-56	34-41-57
1 Way	28-36-55	33-41-61	37-45-66	39-48-70	41-51-73	43-53-75	45-55-78	46-56-80	47-58-81		

**Performance Notes:**

1. Tested in accordance with ASHRAE Standard 70 – 2023 Method of Testing for Rating the Performance of Air Outlets and Inlets.
2. Air flow is in cfm.
3. All pressures are in in. w.g.
4. Throw values are measured in feet for terminal velocities of 150 fpm (minimum), 100 fpm (middle) and 50 fpm (maximum).
5. Throw data is based on supply air and room air at isothermal conditions.
6. NC values are based on a room absorption of 10 dB re 10<sup>-12</sup> watts and one diffuser.
7. Blanks "-" indicate an NC level below 15.

**Core Style Legend**



# PERFORMANCE DATA

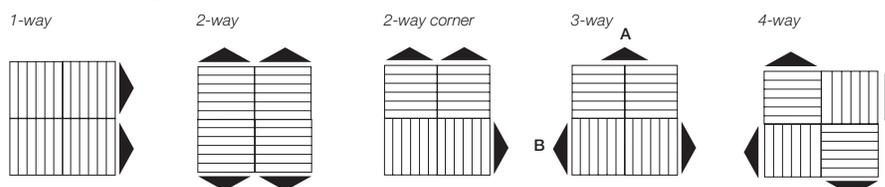
## AMCD - Aluminum Construction

Inlet Size	Neck Velocity (fpm)	200	300	400	500	600	700	800	900	1000	
	Velocity Pressure (in. w.g.)	.002	.006	.010	.016	.022	.031	.040	.050	.062	
	Total Pressure (in. w.g.)	.013	.040	.066	.106	.145	.205	.264	.330	.409	
6 x 6	Flow Rate (cfm)	50	75	100	125	150	175	200	225	250	
	Sound (NC)	-	-	15	21	26	30	33	36	39	
	Throw (ft.)	4 Way	1-1-6	1-3-7	2-6-8	4-6-9	6-7-10	6-7-10	6-8-11	7-8-12	7-9-12
		3 Way	1-2-8	2-4-10	3-8-11	5-9-12	8-10-14	8-10-15	9-11-16	10-12-17	10-12-17
		2 Way	1-2-8	2-4-10	3-8-11	5-9-12	8-10-14	8-10-15	9-11-16	10-12-17	10-12-17
1 Way		1-3-11	3-6-14	5-11-16	8-12-18	11-14-19	12-15-21	13-16-22	14-17-24	14-18-25	
8 x 8	Flow Rate (cfm)	89	133	178	222	266	311	355	400	444	
	Sound (NC)	-	-	16	22	27	31	35	38	41	
	Throw (ft.)	4 Way	1-2-7	2-5-9	4-7-10	6-8-12	7-9-13	8-10-14	9-10-15	9-11-16	10-12-17
		3 Way	1-3-10	3-7-13	5-10-15	8-12-16	10-13-18	11-14-19	12-15-21	13-16-22	13-16-23
		2 Way	1-3-10	3-7-13	5-10-15	8-12-16	10-13-18	11-14-19	12-15-21	13-16-22	13-16-23
1 Way		2-4-15	4-10-18	8-15-21	12-17-23	15-18-26	16-20-28	17-21-30	18-22-31	19-23-33	
10 x 10	Flow Rate (cfm)	139	208	278	347	416	486	555	625	694	
	Sound (NC)	-	-	18	24	29	33	36	40	42	
	Throw (ft.)	4 Way	1-2-7	2-5-10	4-7-12	6-9-13	7-10-14	9-11-16	10-12-17	10-12-18	11-13-19
		3 Way	1-3-10	3-6-14	5-10-16	8-13-18	10-14-20	12-15-22	13-16-23	14-17-25	15-18-26
		2 Way	1-3-10	3-6-14	5-10-16	8-13-18	10-14-20	12-15-22	13-16-23	14-17-25	15-18-26
1 Way		2-4-15	4-9-20	7-15-23	11-18-26	15-20-29	17-22-31	19-23-33	20-25-35	21-26-37	
12 x 12	Flow Rate (cfm)	200	300	400	500	600	700	800	900	1000	
	Sound (NC)	-	-	19	25	30	34	38	41	44	
	Throw (ft.)	4 Way	2-4-11	4-8-14	7-11-16	9-12-18	11-14-19	12-15-21	13-16-22	14-17-24	14-18-25
		3 Way	3-6-15	6-11-19	10-15-22	13-17-25	15-19-27	17-21-29	18-22-31	19-23-33	20-25-35
		2 Way	3-6-15	6-11-19	10-15-22	13-17-25	15-19-27	17-21-29	18-22-31	19-23-33	20-25-35
1 Way		4-8-22	8-16-27	14-22-31	18-25-35	22-27-38	24-29-42	26-31-44	27-33-47	29-35-50	
14 x 14	Flow Rate (cfm)	272	408	544	681	817	953	1089	1225	1361	
	Sound (NC)	-	-	20	26	31	35	39	42	45	
	Throw (ft.)	4 Way	2-5-13	5-9-16	8-13-18	10-14-20	13-16-22	14-17-24	15-18-26	16-19-27	17-20-29
		3 Way	3-7-18	7-13-22	12-18-26	15-20-29	18-22-31	20-24-34	21-26-36	22-27-38	23-29-41
		2 Way	3-7-18	7-13-22	12-18-26	15-20-29	18-22-31	20-24-34	21-26-36	22-27-38	23-29-41
1 Way		5-11-25	11-19-32	17-25-37	21-29-41	25-32-45	28-34-48	30-37-52	32-39-55	33-41-58	

**Performance Notes:**

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3. All pressures are in in. w.g.
4. Throw values are measured in feet for terminal velocities of 150 fpm (minimum), 100 fpm (middle) and 50 fpm (maximum).
5. Throw data is based on supply air and room air at isothermal conditions.
6. NC values are based on a room absorption of 10 dB re 10<sup>-12</sup> watts and one diffuser.
7. Blanks “-” indicate an NC level below 15.

Core Style Legend



# PERFORMANCE DATA

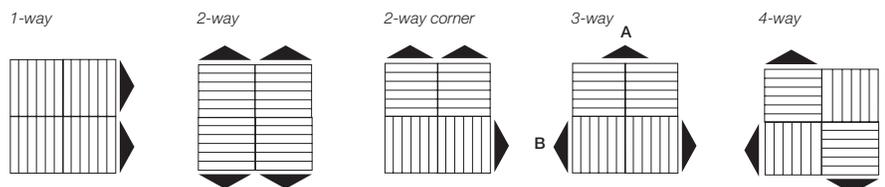
## AMCD - Aluminum Construction

Inlet Size	Neck Velocity (fpm)	200	300	400	500	600	700	800	900	1000	
	Velocity Pressure (in. w.g.)	.002	.006	.010	.016	.022	.031	.040	.050	.062	
	Total Pressure (in. w.g.)	.013	.040	.066	.106	.145	.205	.264	.330	.409	
16 x 16	Flow Rate (cfm)	356	533	711	889	1067	1245	1422	1600	1778	
	Sound (NC)	-	-	21	27	32	36	39	43	45	
	Throw (ft.)	4 Way	3-7-14	7-11-18	10-14-21	12-17-23	14-18-26	16-20-28	17-21-30	18-22-31	19-23-33
		3 Way	4-9-20	9-15-25	13-20-29	17-23-33	20-25-36	22-27-39	24-29-41	25-31-44	27-33-46
		2 Way	4-9-20	9-15-25	13-20-29	17-23-33	20-25-36	22-27-39	24-29-41	25-31-44	27-33-46
1 Way		6-13-29	13-21-36	19-29-42	24-33-47	29-36-51	32-39-55	34-42-59	36-44-63	38-47-66	
18 x 18	Flow Rate (cfm)	450	675	900	1125	1350	1575	1800	2025	2250	
	Sound (NC)	-	-	21	27	32	37	40	43	46	
	Throw (ft.)	4 Way	3-8-16	8-12-20	11-16-24	13-19-26	16-20-29	18-22-31	19-24-33	20-25-35	22-26-37
		3 Way	5-11-22	11-17-29	15-22-33	19-26-37	22-29-40	25-31-44	27-33-47	29-35-49	30-37-52
		2 Way	5-11-22	11-17-29	15-22-33	19-26-37	22-29-40	25-31-44	27-33-47	29-35-49	30-37-52
1 Way		7-16-32	16-24-41	21-32-47	27-37-53	32-41-58	36-44-62	38-47-67	41-50-71	43-53-74	
20 x 20	Flow Rate (cfm)	556	833	1111	1389	1667	1945	2222	2500	2778	
	Sound (NC)	-	-	22	28	33	37	41	44	47	
	Throw (ft.)	4 Way	4-9-18	9-13-23	12-18-26	15-21-29	18-23-32	20-24-35	21-26-37	23-28-39	24-29-41
		3 Way	6-12-25	12-19-32	16-25-37	21-29-41	25-32-45	28-34-48	30-37-52	32-39-55	33-41-58
		2 Way	6-12-25	12-19-32	16-25-37	21-29-41	25-32-45	28-34-48	30-37-52	32-39-55	33-41-58
1 Way		8-18-35	18-26-45	24-35-52	29-41-58	35-45-64	40-49-69	43-52-74	45-55-78	48-58-83	
22 x 22	Flow Rate (cfm)	672	1008	1344	1681	2017	2353	2689	3025	3361	
	Sound (NC)	-	15	23	29	34	38	41	45	47	
	Throw (ft.)	4 Way	4-10-19	10-15-25	13-19-29	16-23-32	19-25-35	22-27-38	23-29-41	25-31-43	26-32-45
		3 Way	6-14-27	14-20-35	18-27-40	23-32-45	27-35-49	31-38-53	33-40-57	35-43-60	37-45-64
		2 Way	6-14-27	14-20-35	18-27-40	23-32-45	27-35-49	31-38-53	33-40-57	35-43-60	37-45-64
1 Way		9-19-39	19-29-50	26-39-58	32-45-64	39-50-70	44-54-76	47-58-81	50-61-86	53-64-91	
24 x 24	Flow Rate (cfm)	800	1200	1600	2000	2400	2800	3200	3600	4000	
	Sound (NC)	-	16	23	29	34	38	42	45	48	
	Throw (ft.)	4 Way	5-11-21	11-16-27	14-21-31	18-25-35	21-27-38	24-29-42	26-31-44	27-33-47	29-35-50
		3 Way	8-15-29	15-22-38	20-29-44	25-35-49	29-38-54	34-41-58	36-44-62	38-47-66	40-49-69
		2 Way	8-15-29	15-22-38	20-29-44	25-35-49	29-38-54	34-41-58	36-44-62	38-47-66	40-49-69
1 Way		11-21-42	21-32-54	28-42-63	35-50-70	42-54-77	48-59-83	51-63-89	54-67-94	57-70-99	

**Performance Notes:**

1. Tested in accordance with ASHRAE Standard 70 – 2023 Method of Testing for Rating the Performance of Air Outlets and Inlets.
2. Air flow is in cfm.
3. All pressures are in in. w.g.
4. Throw values are measured in feet for terminal velocities of 150 fpm (minimum), 100 fpm (middle) and 50 fpm (maximum).
5. Throw data is based on supply air and room air at isothermal conditions.
6. NC values are based on a room absorption of 10 dB re 10<sup>-12</sup> watts and one diffuser.
7. Blanks "-" indicate an NC level below 15.

**Core Style Legend**





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