

## INTRODUCTION

The 1100/51100 series architectural, perforated diffusers use curved blade-type pattern deflectors mounted in the neck and are available in preselected 1, 2, 3, or 4-way discharge air patterns. Individually adjustable curved blades allow field adjustment of the air pattern in each direction, which may be field set to any position between a vertical throw and a tight ceiling, long horizontal throw pattern. The pattern deflectors in the neck create aspiration of secondary air through the perforated face where it is mixed with primary air then discharged through the perforated face. This aspiration and mixing effect reduces the discharge air temperature to avoid cold air drafts. Additionally, it removes smudging material from the secondary air by impingement on the perforated face. Ceiling smudging of adjacent, hard to clean ceiling surfaces is greatly reduced. The 1100/51100 series diffusers exhibit typical isothermal throws of 10' to 18' for 4-way air distribution and 21' to 35' for 1-way air distribution making this diffuser an excellent choice for irregular room shapes. Matching returns are the 1190 and 51190 series.

## MODELS

- 1100 - Steel Backpan with Aluminum Frame, Steel Perforated Face with Aluminum Frame Supply Diffuser
- 1190 - Steel Backpan with Aluminum Frame, Steel Perforated Face with Aluminum Frame Return
- 51100 - Aluminum Backpan with Aluminum Frame, Aluminum Perforated Face with Aluminum Frame Supply Diffuser
- 51190 - Aluminum Backpan with Aluminum Frame, Aluminum Perforated Face with Aluminum Frame Return

## FEATURES

- Square or rectangular necks.
- Architectural extruded aluminum borders.
- Individually adjustable blade pattern deflectors for horizontal to vertical throw.
- Variety of discharge air patterns available.
- Removable perforated face and core for ease of cleaning.

## PANEL SIZES

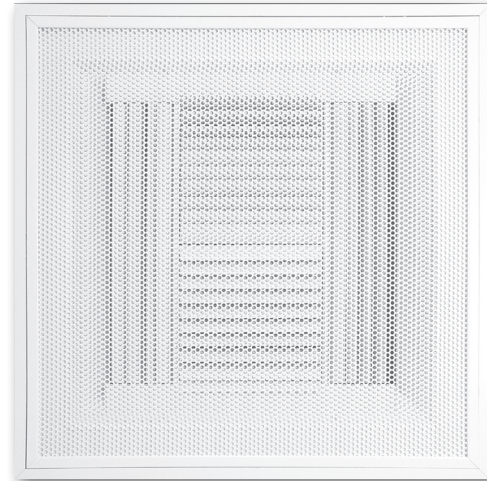
- 12"x12"                      • 12"x24"
- 24"x24"                      • 24"x48"

## ACCESSORIES

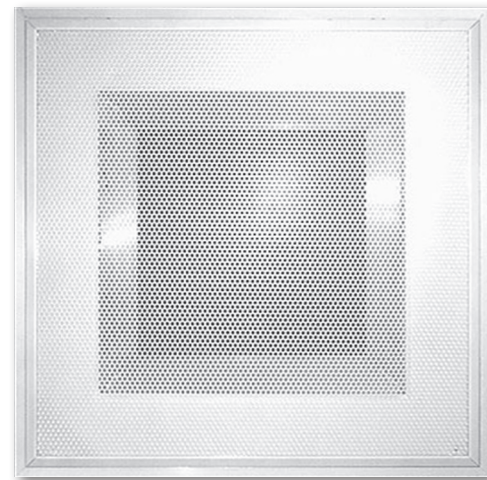
- Optional Opposed Blade Damper (Model OBD)
- Optional Straightening Grid

## FINISHES

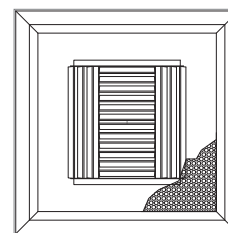
- Standard finish is #44 British White.
- Optional finishes available.



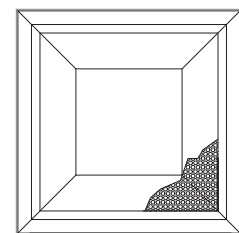
1100 (Supply)



1190 (Return)



FACE VIEW, SUPPLY



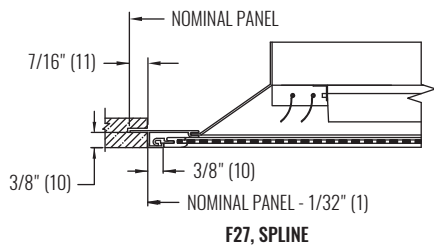
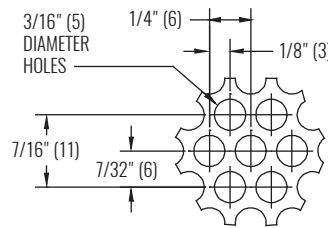
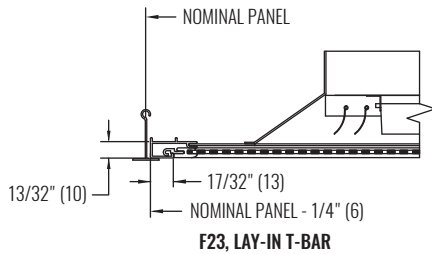
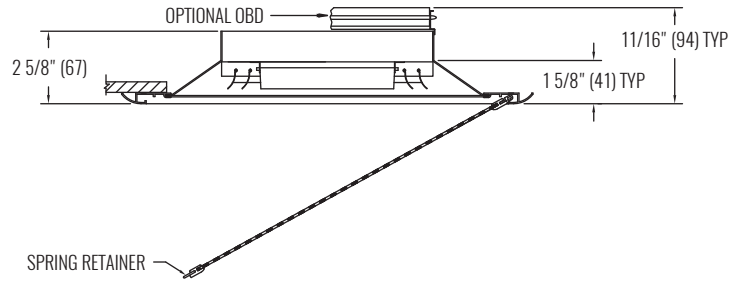
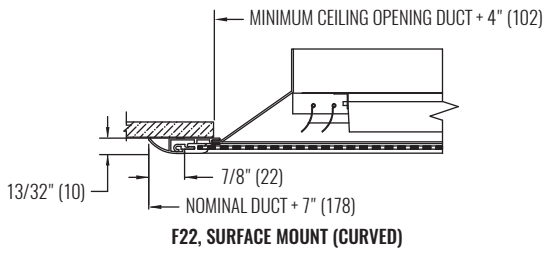
FACE VIEW, RETURN

# 1100, 1190 SERIES

Diffuser | Perforated, Architectural, Curved Blade



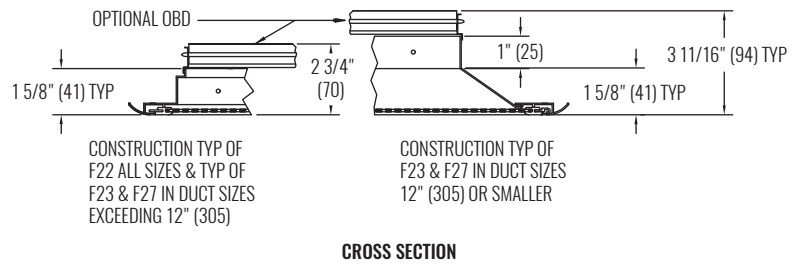
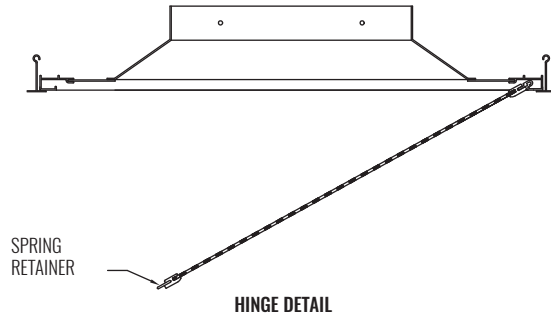
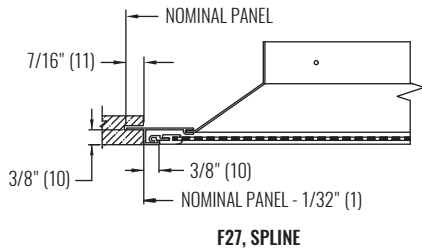
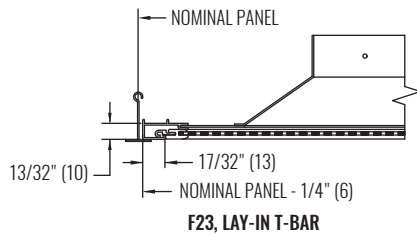
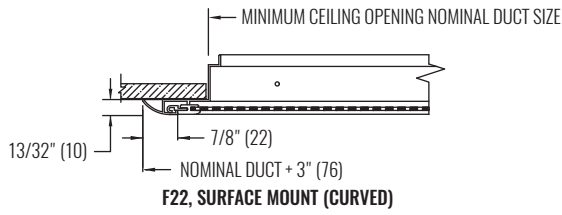
## DIMENSIONAL DATA | 1100, 51100 (SUPPLY)



AVAILABLE SIZES									
NECK SIZE	F22, SURFACE MOUNT	FRAME 23, STANDARD T-BAR				FRAME 27, SPLINE, NARROW-T			
		12"x12" (305x305)	12"x24" (305x610)	24"x24" (610x610)	24"x48" (610x1219)	12"x12" (305x305)	12"x24" (305x610)	24"x24" (610x610)	24"x48" (610x1219)
6"x6" (152x152)	.	.	.	.	.	.	.	.	.
6"x9" (152x229)	.	.	.	.	.	.	.	.	.
6"x12" (152x305)	.	.	.	.	.	.	.	.	.
6"x15" (152x381)	.	.	.	.	.	.	.	.	.
6"x18" (152x457)	.	.	.	.	.	.	.	.	.
8"x8" (203x203)	.	.	.	.	.	.	.	.	.
9"x9" (229x229)	.	.	.	.	.	.	.	.	.
9"x12" (229x305)	.	.	.	.	.	.	.	.	.
9"x15" (229x381)	.	.	.	.	.	.	.	.	.
9"x18" (229x457)	.	.	.	.	.	.	.	.	.
10"x10" (254x254)	.	.	.	.	.	.	.	.	.
12"x12" (305x305)	.	.	.	.	.	.	.	.	.
12"x15" (305x381)	.	.	.	.	.	.	.	.	.
12"x18" (305x457)	.	.	.	.	.	.	.	.	.
15"x15" (381x381)	.	.	.	.	.	.	.	.	.
15"x18" (381x457)	.	.	.	.	.	.	.	.	.
18"x18" (457x457)	.	.	.	.	.	.	.	.	.

NOTES: Dimensions in parentheses are mm. Dot indicates available neck size.

## DIMENSIONAL DATA | 1190, 51190 (RETURN)



AVAILABLE SIZES									
NECK SIZE	F22, SURFACE MOUNT	FRAME 23, STANDARD T-BAR				FRAME 27, SPLINE, NARROW-T			
		12"x12" (305x305)	12"x24" (305x610)	24"x24" (610x610)	24"x48" (610x1219)	12"x12" (305x305)	12"x24" (305x610)	24"x24" (610x610)	24"x48" (610x1219)
6" x 6" (152 x 152)	•	•	•	•		•	•	•	
8" x 8" (203 x 203)	•			•				•	
10" x 10" (254 x 254)	•	•		•		•		•	
12" x 12" (305 x 305)	•			•				•	
14" x 14" (356 x 356)	•			•				•	
16" x 16" (406 x 406)	•			•				•	
18" x 18" (457 x 457)	•			•				•	
20" x 20" (508 x 508)	•			•				•	
10" x 22" (254 x 559)	•		•	•				•	
22" x 22" (559 x 559)	•			•				•	
12" x 24" (305 x 610)	•								
24" x 24" (610 x 610)	•								
22" x 46" (559 x 1168)	•				•				•

NOTES: Dimensions in parentheses are mm. Dot indicates available neck size.

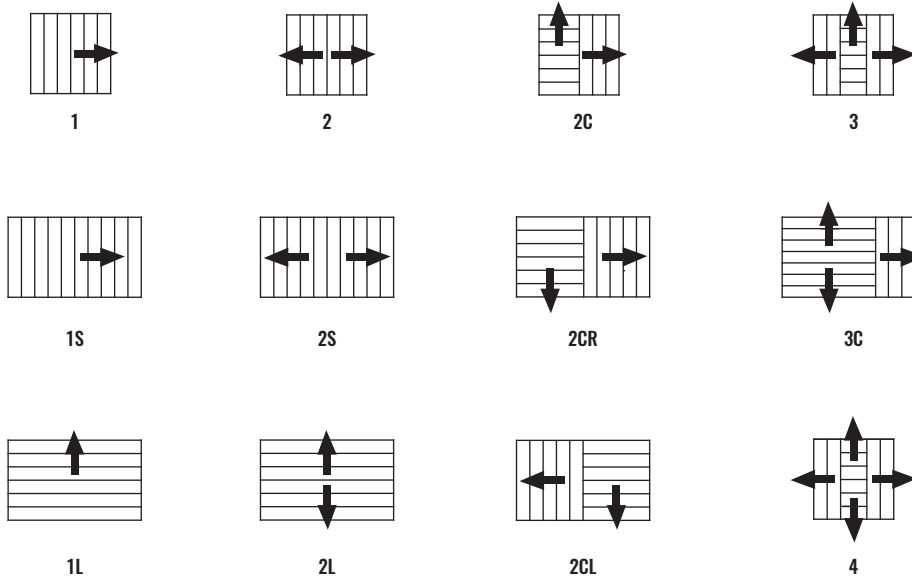
# 1100, 1190 SERIES

Diffuser | Perforated, Architectural, Curved Blade

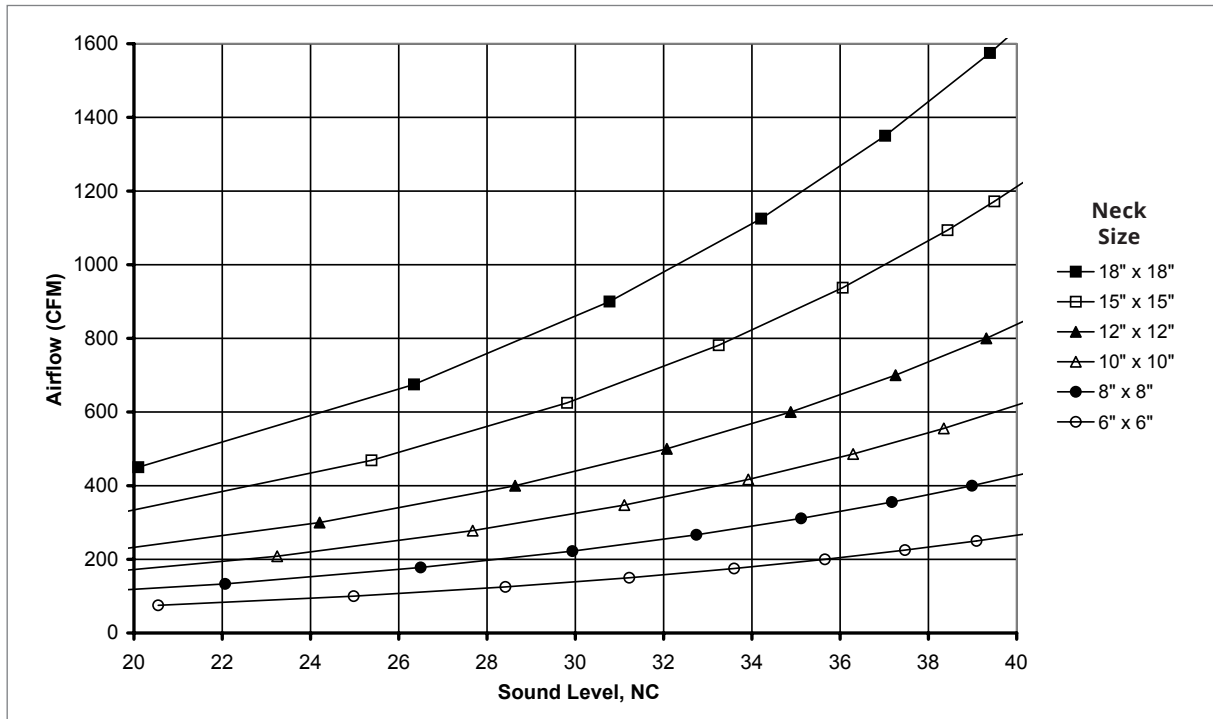


DIFFUSERS | PERFORATED

## DISCHARGE AIR PATTERNS | 1100, 51100 (SUPPLY)

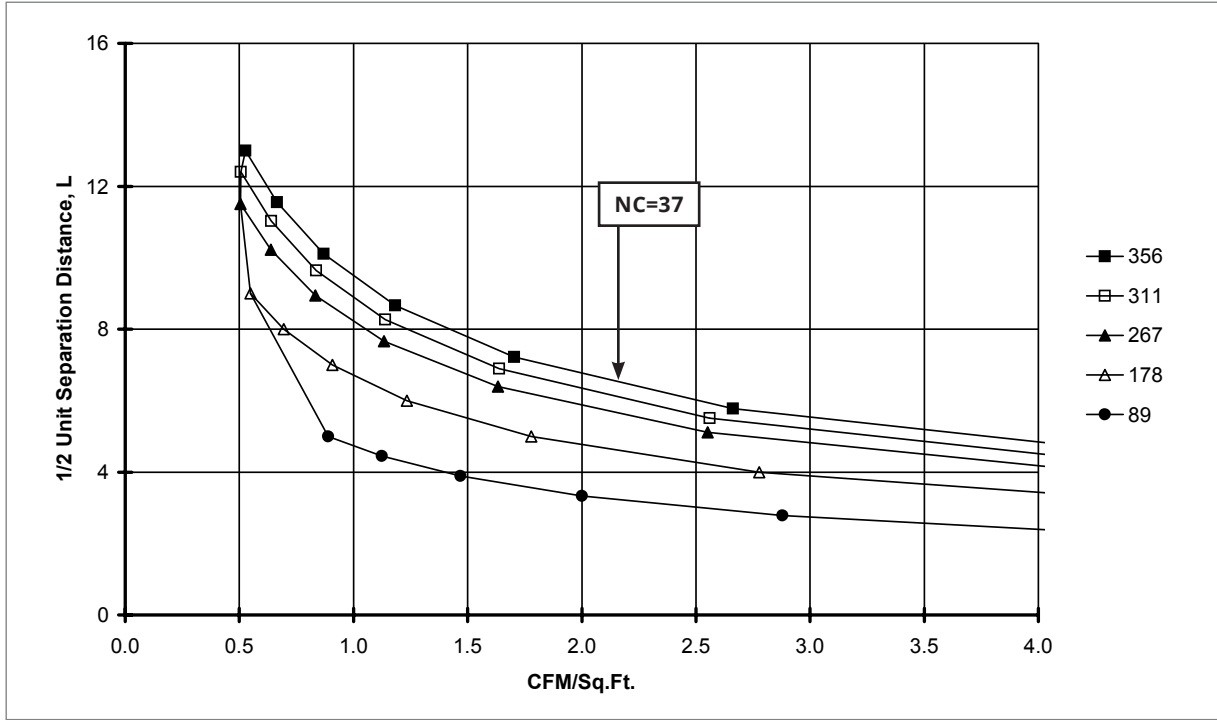


## SOUND CHART | 1100, 51100 (SUPPLY), NO DAMPER

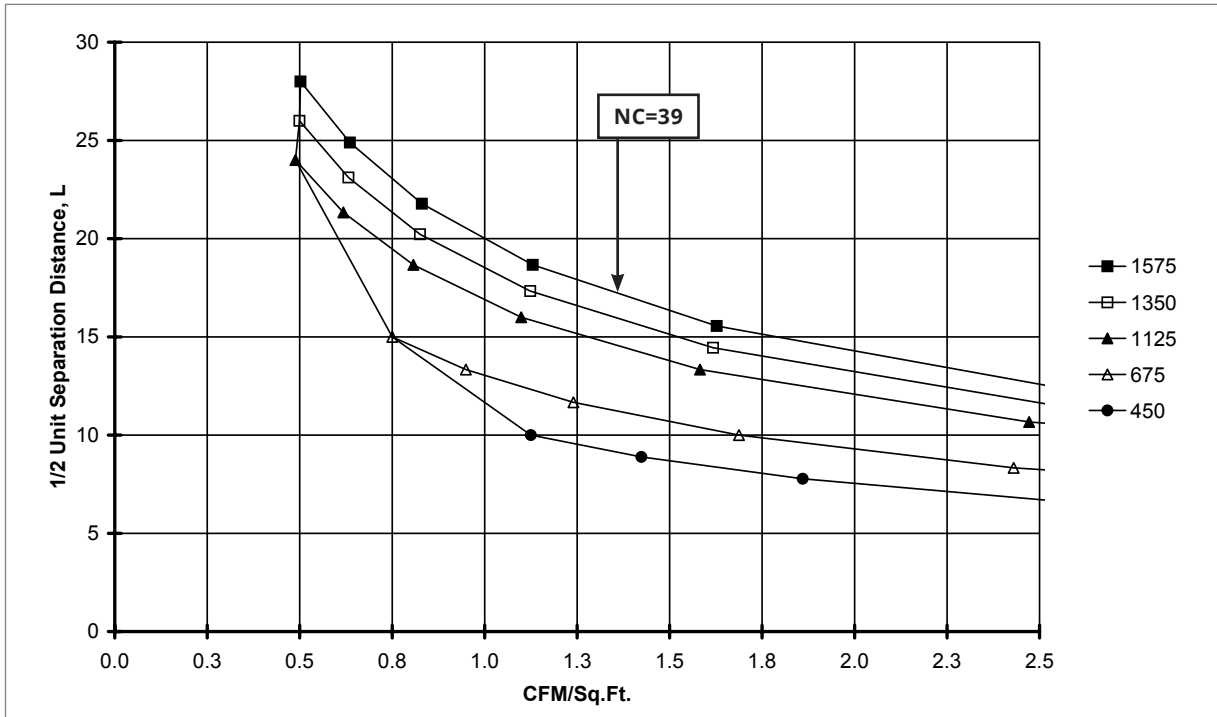


**ADPI CHARTS | 1100, 51100 (SUPPLY), NO DAMPER**

**SPACING FOR 80% ADPI: 8"x8" NECK, 4-WAY**



**SPACING FOR 80% ADPI: 18"x18" NECK, 4-WAY**



NOTES: Charts are at 20 BTUH/ft<sup>2</sup> loads. See the Engineering section of this catalog for instructions on how to read these charts and additional ADPI information.

DIFFUSERS | PERFORATED

# 1100, 1190 SERIES

Diffuser | Perforated, Architectural, Curved Blade



DIFFUSERS | PERFORATED

## PERFORMANCE DATA | 1100, 51100 (SUPPLY), NO DAMPER

12"x12" PANEL, 4-WAY																		
NECK SIZE	IP DATA					NC	METRIC DATA					OCTAVE BAND, dB						
	NECK VEL	AIR FLOW	Ps	Pt	4-WAY THROW		NECK VEL	AIR FLOW	Ps	Pt	4-WAY THROW							
	FPM	CFM	"WG	"WG	ft		m/s	L/s	Pa	Pa	m	2	3	4	5	6	7	
6" x 6"	300	75	0.028	0.034	1-3-5	21	1.52	35	7.0	8.4	0.4-0.8-1.6	33	32	35	27	16	11	
	400	100	0.050	0.060	2-3-7	25	2.03	47	12.4	14.9	0.7-1.0-2.1	35	34	38	32	22	17	
	500	125	0.078	0.094	3-4-8	28	2.54	59	19.4	23.3	0.9-1.3-2.4	37	36	40	35	27	21	
	600	150	0.112	0.135	3-5-9	31	3.05	71	27.9	33.5	1.0-1.6-2.6	39	37	42	38	30	25	
	700	175	0.153	0.183	4-6-9	34	3.56	83	38.0	45.6	1.2-1.8-2.8	40	38	43	41	34	28	
	800	200	0.200	0.239	5-7-10	36	4.06	94	49.7	59.6	1.4-2.1-3.0	41	39	44	43	36	31	
	900	225	0.253	0.303	5-8-11	37	4.57	106	62.9	75.4	1.6-2.3-3.2	42	40	45	45	39	33	
	1000	250	0.312	0.374	6-8-11	39	5.08	118	77.6	93.1	1.7-2.4-3.4	43	41	46	47	41	35	
	1100	275	0.377	0.453	6-8-12	41	5.59	130	93.9	112.7	1.9-2.5-3.6	44	42	47	49	43	37	

12"x12" PANEL, 1-3-WAY											
NECK SIZE	IP DATA					METRIC DATA					
	NECK VEL	AIR FLOW	1-WAY THROW	2-WAY THROW	3-WAY THROW	NECK VEL	AIR FLOW	1-WAY THROW	2-WAY THROW	3-WAY THROW	
	FPM	CFM	ft	ft	ft	m/s	L/s	m	m	m	
6" x 6"	300	75	3-5-10	3-4-8	1-3-7	1.52	35	1.0-1.5-2.9	0.8-1.3-2.6	0.4-1.0-2.0	
	400	100	4-6-13	4-6-11	2-4-9	2.03	47	1.3-1.9-3.9	1.1-1.7-3.4	0.8-1.3-2.7	
	500	125	5-8-16	5-7-14	4-6-11	2.54	59	1.6-2.4-4.9	1.4-2.1-4.3	1.1-1.7-3.3	
	600	150	6-10-19	6-8-16	4-7-12	3.05	71	1.9-2.9-5.8	1.7-2.6-5.0	1.3-2.0-3.7	
	700	175	7-11-21	7-10-18	5-8-13	3.56	83	2.3-3.4-6.3	2.0-3.0-5.4	1.6-2.3-4.0	
	800	200	9-13-22	7-11-19	6-9-14	4.06	94	2.6-3.9-6.7	2.3-3.4-5.8	1.8-2.7-4.3	
	900	225	10-14-23	8-13-20	7-10-15	4.57	106	2.9-4.4-7.1	2.6-3.8-6.1	2.0-3.0-4.5	
	1000	250	11-16-25	9-14-21	7-11-16	5.08	118	3.2-4.9-7.5	2.8-4.3-6.5	2.2-3.3-4.8	
	1100	275	12-18-26	10-15-22	8-12-16	5.59	130	3.6-5.4-7.8	3.1-4.7-6.8	2.5-3.5-5.0	

12"x24" PANEL, 4-WAY																		
NECK SIZE	IP DATA					NC	METRIC DATA					OCTAVE BAND, dB						
	NECK VEL	AIR FLOW	Ps	Pt	4-WAY THROW		NECK VEL	AIR FLOW	Ps	Pt	4-WAY THROW							
	FPM	CFM	"WG	"WG	ft		m/s	L/s	Pa	Pa	m	2	3	4	5	6	7	
6" x 6"	300	75	0.028	0.034	1-3-5	21	1.52	35	7.0	8.4	0.4-0.8-1.6	33	32	35	27	16	11	
	400	100	0.050	0.060	2-3-7	25	2.03	47	12.4	14.9	0.7-1.0-2.1	35	34	38	32	22	17	
	500	125	0.078	0.094	3-4-8	28	2.54	59	19.4	23.3	0.9-1.3-2.4	37	36	40	35	27	21	
	600	150	0.112	0.135	3-5-9	31	3.05	71	27.9	33.5	1.0-1.6-2.6	39	37	42	38	30	25	
	700	175	0.153	0.183	4-6-9	34	3.56	83	38.0	45.6	1.2-1.8-2.8	40	38	43	41	34	28	
	800	200	0.200	0.239	5-7-10	36	4.06	94	49.7	59.6	1.4-2.1-3.0	41	39	44	43	36	31	
	900	225	0.253	0.303	5-8-11	37	4.57	106	62.9	75.4	1.6-2.3-3.2	42	40	45	45	39	33	
	1000	250	0.312	0.374	6-8-11	39	5.08	118	77.6	93.1	1.7-2.4-3.4	43	41	46	47	41	35	
	1100	275	0.377	0.453	6-8-12	41	5.59	130	93.9	112.7	1.9-2.5-3.6	44	42	47	49	43	37	

12"x24" PANEL, 1-3-WAY											
NECK SIZE	IP DATA					METRIC DATA					
	NECK VEL	AIR FLOW	1-WAY THROW	2-WAY THROW	3-WAY THROW	NECK VEL	AIR FLOW	1-WAY THROW	2-WAY THROW	3-WAY THROW	
	FPM	CFM	ft	ft	ft	m/s	L/s	m	m	m	
6" x 6"	300	75	3-5-10	3-4-8	1-3-7	1.52	35	1.0-1.5-2.9	0.8-1.3-2.6	0.4-1.0-2.0	
	400	100	4-6-13	4-6-11	2-4-9	2.03	47	1.3-1.9-3.9	1.1-1.7-3.4	0.8-1.3-2.7	
	500	125	5-8-16	5-7-14	4-6-11	2.54	59	1.6-2.4-4.9	1.4-2.1-4.3	1.1-1.7-3.3	
	600	150	6-10-19	6-8-16	4-7-12	3.05	71	1.9-2.9-5.8	1.7-2.6-5.0	1.3-2.0-3.7	
	700	175	7-11-21	7-10-18	5-8-13	3.56	83	2.3-3.4-6.3	2.0-3.0-5.4	1.6-2.3-4.0	
	800	200	9-13-22	7-11-19	6-9-14	4.06	94	2.6-3.9-6.7	2.3-3.4-5.8	1.8-2.7-4.3	
	900	225	10-14-23	8-13-20	7-10-15	4.57	106	2.9-4.4-7.1	2.6-3.8-6.1	2.0-3.0-4.5	
	1000	250	11-16-25	9-14-21	7-11-16	5.08	118	3.2-4.9-7.5	2.8-4.3-6.5	2.2-3.3-4.8	
	1100	275	12-18-26	10-15-22	8-12-16	5.59	130	3.6-5.4-7.8	3.1-4.7-6.8	2.5-3.5-5.0	

NOTE: See page C1-112 for notes.

## PERFORMANCE DATA | 1100, 51100 (SUPPLY), 24"x24" PANEL, 4-WAY, NO DAMPER

NECK SIZE	IP DATA					NC	METRIC DATA					OCTAVE BAND, dB					
	NECK VEL	AIR FLOW	Ps	Pt	4-WAY THROW		NECK VEL	AIR FLOW	Ps	Pt	4-WAY THROW	2	3	4	5	6	7
	FPM	CFM	"WG	"WG	ft		m/s	L/s	Pa	Pa	m						
6" x 6"	300	75	0.028	0.034	1-3-5	21	1.52	35	7.0	8.4	0.4-0.8-1.6	33	32	35	27	16	11
	400	100	0.050	0.060	2-3-7	25	2.03	47	12.4	14.9	0.7-1.0-2.1	35	34	38	32	22	17
	500	125	0.078	0.094	3-4-8	28	2.54	59	19.4	23.3	0.9-1.3-2.4	37	36	40	35	27	21
	600	150	0.112	0.135	3-5-9	31	3.05	71	27.9	33.5	1.0-1.6-2.6	39	37	42	38	30	25
	700	175	0.153	0.183	4-6-9	34	3.56	83	38.0	45.6	1.2-1.8-2.8	40	38	43	41	34	28
	800	200	0.200	0.239	5-7-10	36	4.06	94	49.7	59.6	1.4-2.1-3.0	41	39	44	43	36	31
	900	225	0.253	0.303	5-8-11	37	4.57	106	62.9	75.4	1.6-2.3-3.2	42	40	45	45	39	33
	1000	250	0.312	0.374	6-8-11	39	5.08	118	77.6	93.1	1.7-2.4-3.4	43	41	46	47	41	35
8" x 8"	1100	275	0.377	0.453	6-8-12	41	5.59	130	93.9	112.7	1.9-2.5-3.6	44	42	47	49	43	37
	200	89	0.012	0.015	1-2-5	16	1.02	42	3.1	3.7	0.2-0.5-1.4	30	30	33	21	-	-
	300	133	0.028	0.034	2-3-7	22	1.52	63	7.0	8.4	0.5-1.0-2.1	34	33	36	28	18	13
	400	178	0.050	0.060	3-5-9	26	2.03	84	12.4	14.9	0.9-1.4-2.8	36	35	39	33	24	19
	500	222	0.078	0.094	4-6-11	30	2.54	105	19.4	23.3	1.1-1.7-3.2	38	37	41	36	28	23
	600	267	0.112	0.135	5-7-12	33	3.05	126	27.9	33.5	1.4-2.1-3.5	39	39	43	40	32	27
	700	311	0.153	0.183	5-8-12	35	3.56	147	38.0	45.6	1.6-2.4-3.8	41	40	44	42	35	30
	800	356	0.200	0.239	6-9-13	37	4.06	168	49.7	59.6	1.8-2.8-4.1	42	41	45	44	38	33
10" x 10"	900	400	0.253	0.303	7-10-14	39	4.57	189	62.9	75.4	2.1-3.0-4.3	43	42	47	46	40	35
	1000	444	0.312	0.374	8-11-15	41	5.08	210	77.6	93.1	2.3-3.2-4.5	44	42	48	48	43	37
	200	139	0.012	0.015	1-2-6	17	1.02	66	3.1	3.7	0.3-0.7-1.7	31	31	33	22	11	-
	300	208	0.028	0.034	2-4-9	23	1.52	98	7.0	8.4	0.7-1.3-2.6	34	34	37	29	19	14
	400	278	0.050	0.060	4-6-11	28	2.03	131	12.4	14.9	1.1-1.7-3.4	37	36	40	33	25	20
	500	347	0.078	0.094	5-7-13	31	2.54	164	19.4	23.3	1.4-2.2-4.0	39	38	42	37	30	25
	600	417	0.112	0.135	6-9-14	34	3.05	197	27.9	33.5	1.7-2.6-4.4	40	40	44	40	34	28
	700	486	0.153	0.183	7-10-16	36	3.56	229	38.0	45.6	2.0-3.0-4.7	42	41	45	43	37	31
12" x 12"	800	556	0.200	0.239	8-11-17	38	4.06	262	49.7	59.6	2.3-3.4-5.1	43	42	46	45	39	34
	900	625	0.253	0.303	9-13-18	40	4.57	295	62.9	75.4	2.6-3.8-5.4	44	43	47	47	42	37
	1000	694	0.312	0.374	9-13-19	42	5.08	328	77.6	93.1	2.9-4.0-5.7	45	44	48	49	44	39
	100	100	0.003	0.004	0-1-3	-	0.51	47	0.8	0.9	0.1-0.2-0.8	26	27	28	11	-	-
	200	200	0.012	0.015	1-3-7	18	1.02	94	3.1	3.7	0.4-0.8-2.1	31	32	34	22	12	-
	300	300	0.028	0.034	3-5-10	24	1.52	142	7.0	8.4	0.8-1.6-3.1	35	35	38	29	20	16
	400	400	0.050	0.060	5-7-14	29	2.03	189	12.4	14.9	1.4-2.1-4.1	37	37	41	34	26	21
	500	500	0.078	0.094	6-9-16	32	2.54	236	19.4	23.3	1.7-2.6-4.8	39	39	43	38	31	26
15" x 15"	600	600	0.112	0.135	7-10-17	35	3.05	283	27.9	33.5	2.1-3.1-5.3	41	40	44	41	35	30
	700	700	0.153	0.183	8-12-19	37	3.56	330	38.0	45.6	2.4-3.6-5.7	42	42	46	44	38	33
	800	800	0.200	0.239	9-14-20	39	4.06	378	49.7	59.6	2.8-4.1-6.1	43	43	47	46	40	35
	900	900	0.253	0.303	10-15-21	41	4.57	425	62.9	75.4	3.1-4.6-6.4	44	44	48	48	43	38
	100	156	0.003	0.004	0-1-3	-	0.51	74	0.8	0.9	0.1-0.2-1.0	26	28	29	11	-	-
	200	313	0.012	0.015	1-3-9	19	1.02	147	3.1	3.7	0.4-1.0-2.6	32	33	35	23	14	-
	300	469	0.028	0.034	3-6-13	25	1.52	221	7.0	8.4	1.0-1.9-3.9	36	36	39	30	22	17
	400	625	0.050	0.060	6-9-17	30	2.03	295	12.4	14.9	1.7-2.6-5.2	38	38	41	35	28	23
18" x 18"	500	781	0.078	0.094	7-11-20	33	2.54	369	19.4	23.3	2.2-3.2-6.0	40	40	44	39	32	28
	600	938	0.112	0.135	9-13-22	36	3.05	442	27.9	33.5	2.6-3.9-6.6	42	41	45	42	36	31
	700	1094	0.153	0.183	10-15-23	38	3.56	516	38.0	45.6	3.0-4.5-7.1	43	43	47	44	39	34
	750	1172	0.175	0.210	11-16-24	39	3.81	553	43.7	52.4	3.2-4.8-7.4	43	43	47	46	41	36
	800	1250	0.200	0.239	11-17-25	40	4.06	590	49.7	59.6	3.4-5.2-7.6	44	44	48	47	42	37
	100	225	0.003	0.004	0-1-4	-	0.51	106	0.8	0.9	0.1-0.3-1.2	27	28	29	12	-	-
	200	450	0.012	0.015	2-4-10	20	1.02	212	3.1	3.7	0.5-1.2-3.1	33	34	36	24	15	-
	300	675	0.028	0.034	4-8-15	26	1.52	319	7.0	8.4	1.2-2.3-4.7	36	37	39	31	23	18
18" x 18"	400	900	0.050	0.060	7-10-20	31	2.03	425	12.4	14.9	2.1-3.1-6.2	39	39	42	36	29	24
	500	1125	0.078	0.094	9-13-24	34	2.54	531	19.4	23.3	2.6-3.9-7.2	41	41	44	39	33	29
	600	1350	0.112	0.135	10-15-26	37	3.05	637	27.9	33.5	3.1-4.7-7.9	42	42	46	42	37	33
	700	1575	0.153	0.183	12-18-28	39	3.56	743	38.0	45.6	3.6-5.4-8.5	43	44	47	45	40	36
	750	1688	0.175	0.210	13-19-29	40	3.81	796	43.7	52.4	3.9-5.8-8.8	44	44	48	46	42	37
800	1800	0.200	0.239	14-20-30	41	4.06	850	49.7	59.6	4.1-6.2-9.1	45	45	49	47	43	38	

NOTE: See page C1-112 for notes.

# 1100, 1190 SERIES



Diffuser | Perforated, Architectural, Curved Blade

## PERFORMANCE DATA | 1100, 51100 (SUPPLY), 24"x24" PANEL, 1 - 3-WAY, NO DAMPER

DIFFUSERS | PERFORATED

NECK SIZE	IP DATA					METRIC DATA				
	NECK VEL	AIR FLOW	1-WAY THROW	2-WAY THROW	3-WAY THROW	NECK VEL	AIR FLOW	1-WAY THROW	2-WAY THROW	3-WAY THROW
	FPM	CFM	ft	ft	ft	m/s	L/s	m	m	m
6" x 6"	300	75	3-5-10	3-4-8	1-3-7	1.52	35	1.0-1.5-2.9	0.8-1.3-2.6	0.4-1.0-2.0
	400	100	4-6-13	4-6-11	2-4-9	2.03	47	1.3-1.9-3.9	1.1-1.7-3.4	0.8-1.3-2.7
	500	125	5-8-16	5-7-14	4-6-11	2.54	59	1.6-2.4-4.9	1.4-2.1-4.3	1.1-1.7-3.3
	600	150	6-10-19	6-8-16	4-7-12	3.05	71	1.9-2.9-5.8	1.7-2.6-5.0	1.3-2.0-3.7
	700	175	7-11-21	7-10-18	5-8-13	3.56	83	2.3-3.4-6.3	2.0-3.0-5.4	1.6-2.3-4.0
	800	200	9-13-22	7-11-19	6-9-14	4.06	94	2.6-3.9-6.7	2.3-3.4-5.8	1.8-2.7-4.3
	900	225	10-14-23	8-13-20	7-10-15	4.57	106	2.9-4.4-7.1	2.6-3.8-6.1	2.0-3.0-4.5
	1000	250	11-16-25	9-14-21	7-11-16	5.08	118	3.2-4.9-7.5	2.8-4.3-6.5	2.2-3.3-4.8
8" x 8"	1100	275	12-18-26	10-15-22	8-12-16	5.59	130	3.6-5.4-7.8	3.1-4.7-6.8	2.5-3.5-5.0
	200	89	2-4-9	2-3-7	1-2-6	1.02	42	0.6-1.3-2.6	0.5-1.1-2.3	0.3-0.6-1.8
	300	133	4-6-13	3-6-11	2-4-9	1.52	63	1.3-1.9-3.9	1.1-1.7-3.4	0.6-1.3-2.7
	400	178	6-9-17	5-7-15	3-6-12	2.03	84	1.7-2.6-5.2	1.5-2.3-4.5	1.0-1.8-3.6
	500	222	7-11-21	6-9-19	5-7-15	2.54	105	2.2-3.2-6.5	1.9-2.8-5.7	1.5-2.2-4.5
	600	267	9-13-25	7-11-22	6-9-16	3.05	126	2.6-3.9-7.7	2.3-3.4-6.7	1.8-2.7-4.9
	700	311	10-15-27	9-13-24	7-10-17	3.56	147	3.0-4.5-8.3	2.6-4.0-7.2	2.1-3.1-5.3
	800	356	11-17-29	10-15-25	8-12-19	4.06	168	3.5-5.2-8.9	3.0-4.5-7.7	2.4-3.6-5.7
10" x 10"	900	400	13-19-31	11-17-27	9-13-20	4.57	189	3.9-5.8-9.5	3.4-5.1-8.2	2.7-4.0-6.0
	1000	444	14-21-33	12-19-28	10-15-21	5.08	210	4.3-6.5-10.0	3.8-5.7-8.6	3.0-4.5-6.3
	200	139	2-5-11	2-4-9	1-2-7	1.02	66	0.7-1.6-3.2	0.6-1.3-2.8	0.3-0.7-2.2
	300	208	5-8-16	4-7-14	2-5-11	1.52	98	1.6-2.4-4.9	1.3-2.1-4.3	0.7-1.6-3.3
	400	278	7-11-21	6-9-19	4-7-15	2.03	131	2.2-3.2-6.5	1.9-2.8-5.7	1.3-2.2-4.5
	500	347	9-13-27	8-12-23	6-9-18	2.54	164	2.7-4.1-8.1	2.4-3.5-7.1	1.9-2.8-5.6
	600	417	11-16-32	9-14-27	7-11-20	3.05	197	3.2-4.9-9.7	2.8-4.3-8.3	2.2-3.3-6.1
	700	486	12-19-34	11-16-30	9-13-22	3.56	229	3.8-5.7-10.4	3.3-5.0-9.0	2.6-3.9-6.6
12" x 12"	800	556	14-21-37	12-19-32	10-15-23	4.06	262	4.3-6.5-11.1	3.8-5.7-9.6	3.0-4.5-7.1
	900	625	16-24-39	14-21-34	11-17-25	4.57	295	4.9-7.3-11.8	4.3-6.4-10.2	3.3-5.0-7.5
	1000	694	18-27-41	16-23-35	12-18-26	5.08	328	5.4-8.1-12.5	4.7-7.1-10.8	3.7-5.6-7.9
	100	100	1-2-6	1-1-5	0-1-3	0.51	47	0.2-0.5-1.9	0.2-0.4-1.6	0.1-0.2-0.9
	200	200	3-6-13	2-5-11	1-3-9	1.02	94	0.9-1.9-3.9	0.7-1.6-3.4	0.4-0.9-2.7
	300	300	6-10-19	5-8-17	3-6-13	1.52	142	1.9-2.9-5.8	1.6-2.6-5.1	0.9-1.9-4.0
	400	400	9-13-26	7-11-22	5-9-18	2.03	189	2.6-3.9-7.8	2.3-3.4-6.8	1.5-2.7-5.4
	500	500	11-16-32	9-14-28	7-11-22	2.54	236	3.2-4.9-9.7	2.8-4.3-8.5	2.2-3.3-6.7
15" x 15"	600	600	13-19-38	11-17-33	9-13-24	3.05	283	3.9-5.8-11.6	3.4-5.1-10.0	2.7-4.0-7.4
	700	700	15-22-41	13-20-36	10-15-26	3.56	330	4.5-6.8-12.5	4.0-6.0-10.8	3.1-4.7-8.0
	800	800	17-26-44	15-22-38	12-18-28	4.06	378	5.2-7.8-13.4	4.5-6.8-11.6	3.6-5.4-8.5
	900	900	19-29-47	17-25-40	13-20-30	4.57	425	5.8-8.8-14.2	5.1-7.7-12.3	4.0-6.0-9.0
	100	156	1-2-8	1-2-7	0-1-4	0.51	74	0.3-0.6-2.4	0.2-0.5-2.0	0.1-0.3-1.1
	200	313	4-8-16	3-7-14	2-4-11	1.02	147	1.1-2.4-4.9	0.9-2.0-4.3	0.5-1.1-3.3
	300	469	8-12-24	7-11-21	4-8-17	1.52	221	2.4-3.6-7.3	2.0-3.2-6.4	1.1-2.4-5.0
	400	625	11-16-32	9-14-28	6-11-22	2.03	295	3.2-4.9-9.7	2.8-4.3-8.5	1.9-3.3-6.7
18" x 18"	500	781	13-20-40	12-18-35	9-14-28	2.54	369	4.1-6.1-12.2	3.5-5.3-10.6	2.8-4.2-8.4
	600	938	16-24-48	14-21-41	11-17-30	3.05	442	4.9-7.3-14.5	4.3-6.4-12.5	3.3-5.0-9.2
	700	1094	19-28-51	16-25-44	13-19-33	3.56	516	5.7-8.5-15.6	5.0-7.4-13.5	3.9-5.9-10.0
	750	1172	20-30-53	18-26-46	14-21-34	3.81	553	6.1-9.1-16.2	5.3-8.0-14.0	4.2-6.3-10.3
	800	1250	21-32-55	19-28-48	15-22-35	4.06	590	6.5-9.7-16.7	5.7-8.5-14.4	4.5-6.7-10.6
	100	225	1-2-10	1-2-8	0-1-4	0.51	106	0.3-0.7-2.9	0.3-0.6-2.4	0.1-0.3-1.3
	200	450	4-10-19	3-8-17	2-4-13	1.02	212	1.3-2.9-5.8	1.1-2.4-5.1	0.6-1.3-4.0
	300	675	10-14-29	8-13-25	4-9-20	1.52	319	2.9-4.4-8.8	2.4-3.8-7.7	1.3-2.9-6.0
18" x 18"	400	900	13-19-38	11-17-34	7-13-26	2.03	425	3.9-5.8-11.7	3.4-5.1-10.2	2.3-4.0-8.0
	500	1125	16-24-48	14-21-42	11-17-33	2.54	531	4.9-7.3-14.6	4.3-6.4-12.8	3.3-5.0-10.0
	600	1350	19-29-57	17-25-49	13-20-36	3.05	637	5.8-8.8-17.4	5.1-7.7-15.0	4.0-6.0-11.1
	700	1575	22-34-62	20-29-53	15-23-39	3.56	743	6.8-10.2-18.8	6.0-8.9-16.2	4.7-7.0-11.9
	750	1688	24-36-64	21-32-55	17-25-41	3.81	796	7.3-10.9-19.4	6.4-9.6-16.8	5.0-7.5-12.4
800	1800	26-38-66	22-34-57	18-26-42	4.06	850	7.8-11.7-20.1	6.8-10.2-17.3	5.4-8.0-12.8	

NOTE: See page C1-112 for notes.



## PERFORMANCE DATA | 1100, 51100 (SUPPLY), 24"x48" PANEL, 4-WAY, NO DAMPER

NECK SIZE	IP DATA					NC	METRIC DATA					OCTAVE BAND, dB					
	NECK VEL	AIR FLOW	Ps	Pt	4-WAY THROW		NECK VEL	AIR FLOW	Ps	Pt	4-WAY THROW	2	3	4	5	6	7
	FPM	CFM	"WG	"WG	ft		m/s	L/s	Pa	Pa	m						
6" x 6"	300	75	0.028	0.034	1-3-5	21	1.52	35	7.0	8.4	0.4-0.8-1.6	33	32	35	27	16	11
	400	100	0.050	0.060	2-3-7	25	2.03	47	12.4	14.9	0.7-1.0-2.1	35	34	38	32	22	17
	500	125	0.078	0.094	3-4-8	28	2.54	59	19.4	23.3	0.9-1.3-2.4	37	36	40	35	27	21
	600	150	0.112	0.135	3-5-9	31	3.05	71	27.9	33.5	1.0-1.6-2.6	39	37	42	38	30	25
	700	175	0.153	0.183	4-6-9	34	3.56	83	38.0	45.6	1.2-1.8-2.8	40	38	43	41	34	28
	800	200	0.200	0.239	5-7-10	36	4.06	94	49.7	59.6	1.4-2.1-3.0	41	39	44	43	36	31
	900	225	0.253	0.303	5-8-11	37	4.57	106	62.9	75.4	1.6-2.3-3.2	42	40	45	45	39	33
	1000	250	0.312	0.374	6-8-11	39	5.08	118	77.6	93.1	1.7-2.4-3.4	43	41	46	47	41	35
8" x 8"	1100	275	0.377	0.453	6-8-12	41	5.59	130	93.9	112.7	1.9-2.5-3.6	44	42	47	49	43	37
	200	89	0.012	0.015	1-2-5	16	1.02	42	3.1	3.7	0.2-0.5-1.4	30	30	33	21	-	-
	300	133	0.028	0.034	2-3-7	22	1.52	63	7.0	8.4	0.5-1.0-2.1	34	33	36	28	18	13
	400	178	0.050	0.060	3-5-9	26	2.03	84	12.4	14.9	0.9-1.4-2.8	36	35	39	33	24	19
	500	222	0.078	0.094	4-6-11	30	2.54	105	19.4	23.3	1.1-1.7-3.2	38	37	41	36	28	23
	600	267	0.112	0.135	5-7-12	33	3.05	126	27.9	33.5	1.4-2.1-3.5	39	39	43	40	32	27
	700	311	0.153	0.183	5-8-12	35	3.56	147	38.0	45.6	1.6-2.4-3.8	41	40	44	42	35	30
	800	356	0.200	0.239	6-9-13	37	4.06	168	49.7	59.6	1.8-2.8-4.1	42	41	45	44	38	33
10" x 10"	900	400	0.253	0.303	7-10-14	39	4.57	189	62.9	75.4	2.1-3.0-4.3	43	42	47	46	40	35
	1000	444	0.312	0.374	8-11-15	41	5.08	210	77.6	93.1	2.3-3.2-4.5	44	42	48	48	43	37
	200	139	0.012	0.015	1-2-6	17	1.02	66	3.1	3.7	0.3-0.7-1.7	31	31	33	22	11	-
	300	208	0.028	0.034	2-4-9	23	1.52	98	7.0	8.4	0.7-1.3-2.6	34	34	37	29	19	14
	400	278	0.050	0.060	4-6-11	28	2.03	131	12.4	14.9	1.1-1.7-3.4	37	36	40	33	25	20
	500	347	0.078	0.094	5-7-13	31	2.54	164	19.4	23.3	1.4-2.2-4.0	39	38	42	37	30	25
	600	417	0.112	0.135	6-9-14	34	3.05	197	27.9	33.5	1.7-2.6-4.4	40	40	44	40	34	28
	700	486	0.153	0.183	7-10-16	36	3.56	229	38.0	45.6	2.0-3.0-4.7	42	41	45	43	37	31
12" x 12"	800	556	0.200	0.239	8-11-17	38	4.06	262	49.7	59.6	2.3-3.4-5.1	43	42	46	45	39	34
	900	625	0.253	0.303	9-13-18	40	4.57	295	62.9	75.4	2.6-3.8-5.4	44	43	47	47	42	37
	1000	694	0.312	0.374	9-13-19	42	5.08	328	77.6	93.1	2.9-4.0-5.7	45	44	48	49	44	39
	100	100	0.003	0.004	0-1-3	-	0.51	47	0.8	0.9	0.1-0.2-0.8	26	27	28	11	-	-
	200	200	0.012	0.015	1-3-7	18	1.02	94	3.1	3.7	0.4-0.8-2.1	31	32	34	22	12	-
	300	300	0.028	0.034	3-5-10	24	1.52	142	7.0	8.4	0.8-1.6-3.1	35	35	38	29	20	16
	400	400	0.050	0.060	5-7-14	29	2.03	189	12.4	14.9	1.4-2.1-4.1	37	37	41	34	26	21
	500	500	0.078	0.094	6-9-16	32	2.54	236	19.4	23.3	1.7-2.6-4.8	39	39	43	38	31	26
15" x 15"	600	600	0.112	0.135	7-10-17	35	3.05	283	27.9	33.5	2.1-3.1-5.3	41	40	44	41	35	30
	700	700	0.153	0.183	8-12-19	37	3.56	330	38.0	45.6	2.4-3.6-5.7	42	42	46	44	38	33
	800	800	0.200	0.239	9-14-20	39	4.06	378	49.7	59.6	2.8-4.1-6.1	43	43	47	46	40	35
	900	900	0.253	0.303	10-15-21	41	4.57	425	62.9	75.4	3.1-4.6-6.4	44	44	48	48	43	38
	100	156	0.003	0.004	0-1-3	-	0.51	74	0.8	0.9	0.1-0.2-1.0	26	28	29	11	-	-
	200	313	0.012	0.015	1-3-9	19	1.02	147	3.1	3.7	0.4-1.0-2.6	32	33	35	23	14	-
	300	469	0.028	0.034	3-6-13	25	1.52	221	7.0	8.4	1.0-1.9-3.9	36	36	39	30	22	17
	400	625	0.050	0.060	6-9-17	30	2.03	295	12.4	14.9	1.7-2.6-5.2	38	38	41	35	28	23
18" x 18"	500	781	0.078	0.094	7-11-20	33	2.54	369	19.4	23.3	2.2-3.2-6.0	40	40	44	39	32	28
	600	938	0.112	0.135	9-13-22	36	3.05	442	27.9	33.5	2.6-3.9-6.6	42	41	45	42	36	31
	700	1094	0.153	0.183	10-15-23	38	3.56	516	38.0	45.6	3.0-4.5-7.1	43	43	47	44	39	34
	750	1172	0.175	0.210	11-16-24	39	3.81	553	43.7	52.4	3.2-4.8-7.4	43	43	47	46	41	36
	800	1250	0.200	0.239	11-17-25	40	4.06	590	49.7	59.6	3.4-5.2-7.6	44	44	48	47	42	37
	100	225	0.003	0.004	0-1-4	-	0.51	106	0.8	0.9	0.1-0.3-1.2	27	28	29	12	-	-
	200	450	0.012	0.015	2-4-10	20	1.02	212	3.1	3.7	0.5-1.2-3.1	33	34	36	24	15	-
	300	675	0.028	0.034	4-8-15	26	1.52	319	7.0	8.4	1.2-2.3-4.7	36	37	39	31	23	18
18" x 18"	400	900	0.050	0.060	7-10-20	31	2.03	425	12.4	14.9	2.1-3.1-6.2	39	39	42	36	29	24
	500	1125	0.078	0.094	9-13-24	34	2.54	531	19.4	23.3	2.6-3.9-7.2	41	41	44	39	33	29
	600	1350	0.112	0.135	10-15-26	37	3.05	637	27.9	33.5	3.1-4.7-7.9	42	42	46	42	37	33
	700	1575	0.153	0.183	12-18-28	39	3.56	743	38.0	45.6	3.6-5.4-8.5	43	44	47	45	40	36
	750	1688	0.175	0.210	13-19-29	40	3.81	796	43.7	52.4	3.9-5.8-8.8	44	44	48	46	42	37
800	1800	0.200	0.239	14-20-30	41	4.06	850	49.7	59.6	4.1-6.2-9.1	45	45	49	47	43	38	

NOTE: See page C1-112 for notes.

# 1100, 1190 SERIES



Diffuser | Perforated, Architectural, Curved Blade

## PERFORMANCE DATA | 1100, 51100 (SUPPLY), 24"x24" PANEL, 1 - 3-WAY, NO DAMPER

DIFFUSERS | PERFORATED

NECK SIZE	IP DATA					METRIC DATA				
	NECK VEL	AIR FLOW	1-WAY THROW	2-WAY THROW	3-WAY THROW	NECK VEL	AIR FLOW	1-WAY THROW	2-WAY THROW	3-WAY THROW
	FPM	CFM	ft	ft	ft	m/s	L/s	m	m	m
6" x 6"	300	75	3-5-10	3-4-8	1-3-7	1.52	35	1.0-1.5-2.9	0.8-1.3-2.6	0.4-1.0-2.0
	400	100	4-6-13	4-6-11	2-4-9	2.03	47	1.3-1.9-3.9	1.1-1.7-3.4	0.8-1.3-2.7
	500	125	5-8-16	5-7-14	4-6-11	2.54	59	1.6-2.4-4.9	1.4-2.1-4.3	1.1-1.7-3.3
	600	150	6-10-19	6-8-16	4-7-12	3.05	71	1.9-2.9-5.8	1.7-2.6-5.0	1.3-2.0-3.7
	700	175	7-11-21	7-10-18	5-8-13	3.56	83	2.3-3.4-6.3	2.0-3.0-5.4	1.6-2.3-4.0
	800	200	9-13-22	7-11-19	6-9-14	4.06	94	2.6-3.9-6.7	2.3-3.4-5.8	1.8-2.7-4.3
	900	225	10-14-23	8-13-20	7-10-15	4.57	106	2.9-4.4-7.1	2.6-3.8-6.1	2.0-3.0-4.5
	1000	250	11-16-25	9-14-21	7-11-16	5.08	118	3.2-4.9-7.5	2.8-4.3-6.5	2.2-3.3-4.8
	1100	275	12-18-26	10-15-22	8-12-16	5.59	130	3.6-5.4-7.8	3.1-4.7-6.8	2.5-3.5-5.0
8" x 8"	200	89	2-4-9	2-3-7	1-2-6	1.02	42	0.6-1.3-2.6	0.5-1.1-2.3	0.3-0.6-1.8
	300	133	4-6-13	3-6-11	2-4-9	1.52	63	1.1-1.9-3.9	1.1-1.7-3.4	0.6-1.3-2.7
	400	178	6-9-17	5-7-15	3-6-12	2.03	84	1.7-2.6-5.2	1.5-2.3-4.5	1.0-1.8-3.6
	500	222	7-11-21	6-9-19	5-7-15	2.54	105	2.2-3.2-6.5	1.9-2.8-5.7	1.5-2.2-4.5
	600	267	9-13-25	7-11-22	6-9-16	3.05	126	2.6-3.9-7.7	2.3-3.4-6.7	1.8-2.7-4.9
	700	311	10-15-27	9-13-24	7-10-17	3.56	147	3.0-4.5-8.3	2.6-4.0-7.2	2.1-3.1-5.3
	800	356	11-17-29	10-15-25	8-12-19	4.06	168	3.5-5.2-8.9	3.0-4.5-7.7	2.4-3.6-5.7
	900	400	13-19-31	11-17-27	9-13-20	4.57	189	3.9-5.8-9.5	3.4-5.1-8.2	2.7-4.0-6.0
	1000	444	14-21-33	12-19-28	10-15-21	5.08	210	4.3-6.5-10.0	3.8-5.7-8.6	3.0-4.5-6.3
10" x 10"	200	139	2-5-11	2-4-9	1-2-7	1.02	66	0.7-1.6-3.2	0.6-1.3-2.8	0.3-0.7-2.2
	300	208	5-8-16	4-7-14	2-5-11	1.52	98	1.6-2.4-4.9	1.3-2.1-4.3	0.7-1.6-3.3
	400	278	7-11-21	6-9-19	4-7-15	2.03	131	2.2-3.2-6.5	1.9-2.8-5.7	1.3-2.2-4.5
	500	347	9-13-27	8-12-23	6-9-18	2.54	164	2.7-4.1-8.1	2.4-3.5-7.1	1.9-2.8-5.6
	600	417	11-16-32	9-14-27	7-11-20	3.05	197	3.2-4.9-9.7	2.8-4.3-8.3	2.2-3.3-6.1
	700	486	12-19-34	11-16-30	9-13-22	3.56	229	3.8-5.7-10.4	3.3-5.0-9.0	2.6-3.9-6.6
	800	556	14-21-37	12-19-32	10-15-23	4.06	262	4.3-6.5-11.1	3.8-5.7-9.6	3.0-4.5-7.1
	900	625	16-24-39	14-21-34	11-17-25	4.57	295	4.9-7.3-11.8	4.3-6.4-10.2	3.3-5.0-7.5
	1000	694	18-27-41	16-23-35	12-18-26	5.08	328	5.4-8.1-12.5	4.7-7.1-10.8	3.7-5.6-7.9
12" x 12"	100	100	1-2-6	1-1-5	0-1-3	0.51	47	0.2-0.5-1.9	0.2-0.4-1.6	0.1-0.2-0.9
	200	200	3-6-13	2-5-11	1-3-9	1.02	94	0.9-1.9-3.9	0.7-1.6-3.4	0.4-0.9-2.7
	300	300	6-10-19	5-8-17	3-6-13	1.52	142	1.9-2.9-5.8	1.6-2.6-5.1	0.9-1.9-4.0
	400	400	9-13-26	7-11-22	5-9-18	2.03	189	2.6-3.9-7.8	2.3-3.4-6.8	1.5-2.7-5.4
	500	500	11-16-32	9-14-28	7-11-22	2.54	236	3.2-4.9-9.7	2.8-4.3-8.5	2.2-3.3-6.7
	600	600	13-19-38	11-17-33	9-13-24	3.05	283	3.9-5.8-11.6	3.4-5.1-10.0	2.7-4.0-7.4
	700	700	15-22-41	13-20-36	10-15-26	3.56	330	4.5-6.8-12.5	4.0-6.0-10.8	3.1-4.7-8.0
	800	800	17-26-44	15-22-38	12-18-28	4.06	378	5.2-7.8-13.4	4.5-6.8-11.6	3.6-5.4-8.5
	900	900	19-29-47	17-25-40	13-20-30	4.57	425	5.8-8.8-14.2	5.1-7.7-12.3	4.0-6.0-9.0
15" x 15"	100	156	1-2-8	1-2-7	0-1-4	0.51	74	0.3-0.6-2.4	0.2-0.5-2.0	0.1-0.3-1.1
	200	313	4-8-16	3-7-14	2-4-11	1.02	147	1.1-2.4-4.9	0.9-2.0-4.3	0.5-1.1-3.3
	300	469	8-12-24	7-11-21	4-8-17	1.52	221	2.4-3.6-7.3	2.0-3.2-6.4	1.1-2.4-5.0
	400	625	11-16-32	9-14-28	6-11-22	2.03	295	3.2-4.9-9.7	2.8-4.3-8.5	1.9-3.3-6.7
	500	781	13-20-40	12-18-35	9-14-28	2.54	369	4.1-6.1-12.2	3.5-5.3-10.6	2.8-4.2-8.4
	600	938	16-24-48	14-21-41	11-17-30	3.05	442	4.9-7.3-14.5	4.3-6.4-12.5	3.3-5.0-9.2
	700	1094	19-28-51	16-25-44	13-19-33	3.56	516	5.7-8.5-15.6	5.0-7.4-13.5	3.9-5.9-10.0
	750	1172	20-30-53	18-26-46	14-21-34	3.81	553	6.1-9.1-16.2	5.3-8.0-14.0	4.2-6.3-10.3
	800	1250	21-32-55	19-28-48	15-22-35	4.06	590	6.5-9.7-16.7	5.7-8.5-14.4	4.5-6.7-10.6
18" x 18"	100	225	1-2-10	1-2-8	0-1-4	0.51	106	0.3-0.7-2.9	0.3-0.6-2.4	0.1-0.3-1.3
	200	450	4-10-19	3-8-17	2-4-13	1.02	212	1.3-2.9-5.8	1.1-2.4-5.1	0.6-1.3-4.0
	300	675	10-14-29	8-13-25	4-9-20	1.52	319	2.9-4.4-8.8	2.4-3.8-7.7	1.3-2.9-6.0
	400	900	13-19-38	11-17-34	7-13-26	2.03	425	3.9-5.8-11.7	3.4-5.1-10.2	2.3-4.0-8.0
	500	1125	16-24-48	14-21-42	11-17-33	2.54	531	4.9-7.3-14.6	4.3-6.4-12.8	3.3-5.0-10.0
	600	1350	19-29-57	17-25-49	13-20-36	3.05	637	5.8-8.8-17.4	5.1-7.7-15.0	4.0-6.0-11.1
	700	1575	22-34-62	20-29-53	15-23-39	3.56	743	6.8-10.2-18.8	6.0-8.9-16.2	4.7-7.0-11.9
	750	1688	24-36-64	21-32-55	17-25-41	3.81	796	7.3-10.9-19.4	6.4-9.6-16.8	5.0-7.5-12.4
	800	1800	26-38-66	22-34-57	18-26-42	4.06	850	7.8-11.7-20.1	6.8-10.2-17.3	5.4-8.0-12.8

NOTE: See page C1-112 for notes.

## PERFORMANCE DATA | 1190, 51190 (RETURN), NO DAMPER

NECK SIZE	IP DATA				NC	METRIC DATA				OCTAVE BAND, dB						
	NECK VEL	AIR FLOW	Pv	Ps		NECK VEL	AIR FLOW	Pv	Ps	2	3	4	5	6	7	
	FPM	CFM	"WG	"WG		m/s	L/s	Pa	Pa							
10" x 10"	300	208	0.006	-0.010	-	1.52	98	1.4	-2.5	48	18	-	-	-	-	
	400	278	0.010	-0.018	-	2.03	131	2.5	-4.4	49	22	14	12	-	-	
	500	347	0.016	-0.028	11	2.54	164	3.9	-6.9	50	25	19	17	13	-	
	600	417	0.022	-0.040	16	3.05	197	5.6	-10.0	51	28	23	21	18	-	
	700	486	0.031	-0.055	20	3.56	229	7.6	-13.6	52	31	26	24	22	13	
	800	556	0.040	-0.071	24	4.06	262	9.9	-17.8	52	33	28	27	26	19	
	900	625	0.051	-0.090	27	4.57	295	12.6	-22.5	53	34	31	30	29	24	
	1000	694	0.062	-0.112	30	5.08	328	15.5	-27.8	53	36	33	32	32	28	
	1100	764	0.075	-0.135	32	5.59	361	18.8	-33.6	54	37	35	34	34	32	
12" x 12"	300	300	0.006	-0.012	-	1.52	142	1.4	-3.11	46	20	11	-	-	-	
	400	400	0.010	-0.022	-	2.03	189	2.5	-5.53	47	24	17	15	11	-	
	500	500	0.016	-0.035	14	2.54	236	3.9	-8.63	48	28	22	20	17	-	
	600	600	0.022	-0.050	18	3.05	283	5.6	-12.43	49	31	26	24	22	12	
	700	700	0.031	-0.068	22	3.56	330	7.6	-16.92	50	33	29	27	26	19	
	800	800	0.040	-0.089	26	4.06	378	9.9	-22.10	51	35	31	30	30	24	
	900	900	0.051	-0.112	29	4.57	425	12.6	-27.97	51	37	34	33	33	29	
	1000	1000	0.062	-0.139	32	5.08	472	15.5	-34.54	52	39	36	35	36	33	
	1100	1100	0.075	-0.168	34	5.59	519	18.8	-41.79	52	40	38	37	39	37	
14" x 14"	300	408	0.006	-0.015	-	1.52	193	1.4	-3.83	45	22	14	11	-	-	
	400	544	0.010	-0.027	-	2.03	257	2.5	-6.80	46	27	20	17	14	-	
	500	681	0.016	-0.043	15	2.54	321	3.9	-10.63	47	30	24	22	20	-	
	600	817	0.022	-0.061	20	3.05	385	5.6	-15.31	48	33	28	26	25	17	
	700	953	0.031	-0.084	24	3.56	450	7.6	-20.84	48	35	31	29	30	23	
	800	1089	0.040	-0.109	28	4.06	514	9.9	-27.22	49	37	34	32	33	28	
	900	1225	0.051	-0.138	31	4.57	578	12.6	-34.45	50	39	36	35	37	33	
	1000	1361	0.062	-0.171	34	5.08	642	15.5	-42.53	50	41	39	37	40	37	
	1100	1497	0.075	-0.207	36	5.59	707	18.8	-51.46	50	42	41	39	42	41	
10" x 22"	300	458	0.006	-0.017	-	1.52	216	1.4	-4.16	44	23	15	12	-	-	
	400	611	0.010	-0.030	-	2.03	288	2.5	-7.39	45	27	21	18	16	-	
	500	764	0.016	-0.046	16	2.54	361	3.9	-11.55	46	31	25	23	22	11	
	600	917	0.022	-0.067	21	3.05	433	5.6	-16.64	47	34	29	27	27	18	
	700	1069	0.031	-0.091	25	3.56	505	7.6	-22.65	48	36	32	30	31	24	
	800	1222	0.040	-0.119	29	4.06	577	9.9	-29.58	48	38	35	33	35	30	
	900	1375	0.051	-0.150	32	4.57	649	12.6	-37.43	49	40	37	36	38	35	
	1000	1528	0.062	-0.186	34	5.08	721	15.5	-46.22	49	41	40	38	41	39	
	1100	1681	0.075	-0.225	37	5.59	793	18.8	-55.92	50	43	42	40	43	43	
16" x 16"	300	533	0.006	-0.019	-	1.52	252	1.4	-4.66	43	24	16	13	-	-	
	400	711	0.010	-0.033	11	2.03	336	2.5	-8.28	45	28	22	19	17	-	
	500	889	0.016	-0.052	17	2.54	420	3.9	-12.94	46	32	27	24	24	13	
	600	1067	0.022	-0.075	22	3.05	503	5.6	-18.63	46	35	30	28	29	20	
	700	1244	0.031	-0.102	26	3.56	587	7.6	-25.36	47	37	34	31	33	27	
	800	1422	0.040	-0.133	30	4.06	671	9.9	-33.12	48	39	36	34	36	32	
	900	1600	0.051	-0.168	33	4.57	755	12.6	-41.92	48	41	39	37	40	37	
	1000	1778	0.062	-0.208	35	5.08	839	15.5	-51.75	49	42	41	39	43	41	
	1100	1956	0.075	-0.251	38	5.59	923	18.8	-62.61	49	44	43	41	45	45	
18" x 18"	300	675	0.006	-0.022	-	1.52	319	1.4	-5.60	42	26	18	15	12	-	
	400	900	0.010	-0.040	13	2.03	425	2.5	-9.95	43	30	24	21	20	-	
	500	1125	0.016	-0.062	19	2.54	531	3.9	-15.55	44	33	29	26	26	16	
	600	1350	0.022	-0.090	23	3.05	637	5.6	-22.39	45	36	32	30	31	24	
	700	1575	0.031	-0.122	27	3.56	743	7.6	-30.48	46	39	36	33	36	30	
	800	1800	0.040	-0.160	31	4.06	850	9.9	-39.81	47	41	38	36	39	35	
	900	2025	0.051	-0.202	34	4.57	956	12.6	-50.38	47	42	41	39	42	40	
	1000	2250	0.062	-0.250	37	5.08	1062	15.5	-62.20	48	44	43	41	45	44	
	1100	2475	0.075	-0.302	39	5.59	1168	18.8	-75.26	48	46	45	43	48	48	

NOTE: See page C1-112 for notes.

# 1100, 1190 SERIES

Diffuser | Perforated, Architectural, Curved Blade



DIFFUSERS | PERFORATED

## PERFORMANCE DATA | 1190, 51190 (RETURN), NO DAMPER

NECK SIZE	IP DATA				NC	METRIC DATA				OCTAVE BAND, dB						
	NECK VEL	AIR FLOW	P <sub>v</sub>	P <sub>s</sub>		NECK VEL	AIR FLOW	P <sub>v</sub>	P <sub>s</sub>							
	FPM	CFM	"WG	"WG		m/s	L/s	Pa	Pa	2	3	4	5	6	7	
20" x 20"	300	833	0.006	-0.027	-	1.52	393	1.4	-6.65	41	27	20	16	15	-	
	400	1111	0.010	-0.047	14	2.03	524	2.5	-11.82	42	32	26	23	23	-	
	500	1389	0.016	-0.074	20	2.54	655	3.9	-18.47	43	35	31	28	29	19	
	600	1667	0.022	-0.107	25	3.05	787	5.6	-26.60	44	38	34	32	34	27	
	700	1944	0.031	-0.145	29	3.56	918	7.6	-36.20	45	40	37	35	38	33	
	800	2222	0.040	-0.190	32	4.06	1049	9.9	-47.28	45	42	40	38	42	38	
	900	2500	0.051	-0.240	35	4.57	1180	12.6	-59.84	46	44	42	41	45	43	
	1000	2778	0.062	-0.297	38	5.08	1311	15.5	-73.88	46	46	45	43	48	47	
	1100	3056	0.075	-0.359	41	5.59	1442	18.8	-89.39	47	47	47	45	50	51	
22" x 22"	300	1008	0.006	-0.031	-	1.52	476	1.4	-7.81	40	28	22	18	17	-	
	400	1344	0.010	-0.056	15	2.03	635	2.5	-13.89	41	33	28	24	25	13	
	500	1681	0.016	-0.087	21	2.54	793	3.9	-21.70	42	36	32	29	31	22	
	600	2017	0.022	-0.125	26	3.05	952	5.6	-31.24	43	39	36	33	36	29	
	700	2353	0.031	-0.171	30	3.56	1110	7.6	-42.52	44	41	39	36	40	35	
	800	2689	0.040	-0.223	33	4.06	1269	9.9	-55.54	45	43	42	39	44	41	
	900	3025	0.051	-0.282	37	4.57	1428	12.6	-70.30	45	45	44	42	47	46	
	1000	3361	0.062	-0.349	39	5.08	1586	15.5	-86.78	46	47	46	44	50	50	
	1100	3697	0.075	-0.422	42	5.59	1745	18.8	-105.01	46	48	48	46	53	54	
22" x 46"	100	703	0.001	-0.003	-	0.51	332	0.2	-0.87	32	17	-	-	-	-	
	200	1406	0.003	-0.014	-	1.02	663	0.6	-3.47	35	27	20	14	14	-	
	300	2108	0.006	-0.031	12	1.52	995	1.4	-7.81	37	34	28	23	25	12	
	400	2811	0.010	-0.056	20	2.03	1327	2.5	-13.89	38	38	34	30	33	23	
	500	3514	0.016	-0.087	26	2.54	1658	3.9	-21.70	39	41	38	35	39	32	
	600	4217	0.022	-0.125	30	3.05	1990	5.6	-31.24	40	44	42	39	44	40	
	700	4919	0.031	-0.171	35	3.56	2322	7.6	-42.52	40	46	45	42	49	46	
	800	5622	0.040	-0.223	38	4.06	2653	9.9	-55.54	41	49	48	45	52	51	
	900	6325	0.051	-0.282	41	4.57	2985	12.6	-70.30	41	50	50	48	56	56	

### NOTES: SUPPLY

Throw values are given for terminal velocities of 150, 100, and 50 FPM (0.75, 0.5, and 0.25 m/s). Throw values are given for isothermal conditions. Dash in space denotes NC or dB value of less than 10. NC values are based on octave band, 2 - 7 sound power levels minus a room absorption of 10dB, re 10<sup>-12</sup> Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741. The throw values given for 1-Way Throw is for [Total CFM] CFM per side (L/s). The throw values given for 2-Way Throw is for [Total CFM/2] CFM per side (L/s). The throw values given for 3-Way Throw is for [Total CFM/3] CFM per side (L/s). The throw values given for 4-Way Throw is for [Total CFM/4] CFM per side (L/s). See Krueger's selection software for performance data not shown, including octave band data.

### NOTES: RETURN

NC values are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10<sup>-12</sup> Watts. Dash in space denotes NC or dB value of less than 10. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741. See Krueger's selection software for performance data not shown, including octave band data.

## ENGINEERING SPECIFICATION & CONFIGURATION

### 1100, 51100

The perforated face supply diffuser shall be Krueger model 1100 (steel perforated face and backpan) or 51100 (aluminum perforated face and backpan). The diffusers shall have a perforated face with 3/16" diameter holes on 1/4" centers resulting in a 51% free area. The perimeter of the perforated face and backpan shall be an aluminum extrusion resulting in an aesthetic appearance. The diffuser shall have a tapered backpan made up of four individual pieces resulting in a square neck.

The diffuser shall have individually adjustable curved blade deflectors mounted at the neck of the diffuser. The curved blade deflectors shall allow vertical or 1, 2, 3, or 4-way horizontal projection of air into the room. The perforated face must be easily removable from the backpan for access to the adjustable curved blades for adjustments and access to the damper.

Optional opposed-blade damper (OBD) shall be constructed of heavy gage steel. Damper shall be operable from the face of the diffuser.

### PERFORMANCE

The manufacturer shall provide published (printed or electronic) performance data for the diffuser. Performance data shall include 2 - 7 octave band sound power levels. The diffuser shall be tested in accordance to the data standards at the time of product introduction or ANSI/ASHRAE Standard 70.

### FINISH

The paint finish shall be #44 British White and be an anodic acrylic paint, baked at 315°F for 30 minutes. The paint thickness shall be 0.8 - 1.0 mils, gloss at 60° per ASTM D523-89 of 50 - 85%, pencil hardness per ASTM D3363-92A of HB - H, crosshatch adhesion per ASTM D3359-83 of 4B - 5B, impact per ASTM D2794-93 of direct impact >100 in/lb and reverse impact >80 in/lb, salt spray per ASTM B117-9048 of 96 hours, humidity per ASTM D2247-92 of >500 hours and water soak per ASTM D870-92 of 250 hours.

### 1. SERIES: (XXXXX)

1100 - Perforated, Steel Supply Diffuser  
51100 - Perforated, Aluminum Supply Diffuser

### 2. PATTERN: (XX)

01 - 1-Way  
02 - 2-Way  
03 - 3-Way  
04 - 4-Way

### 3. WIDTH: (XX) \*

6", 8", 9", 10", 12", 15", or 18"

### 4. HEIGHT: (XX) \*

#### IF WIDTH =

6" - Select 6", 9", 12", 15", or 18"  
8" - Select 8"  
9" - Select 9", 12", 15", or 18"  
10" - Select 10"  
12" - Select 12", 15", or 18"  
15" - Select 15" or 18"  
18" - Select 18"

### 5. FRAME: (XXX)

F22 - Surface Mount - Curved  
F23 - Lay-in T-Bar  
F27 - Spline

### 6. PANEL: (XX)x(XX)

NONE  
12"x12"  
12"x24"  
24"x24"  
24"x48"

### 7. DAMPERS: (XX)

00 - No Damper  
01 - Steel Opposed Blade Damper (Model OBD)  
15 - Aluminum Opposed Blade Damper (Model 5OBD)

### 8. ACCESSORIES: (XX)

00 - No Accessories  
S - Straightening Grid

### 9. FINISH: (XX)

01 - Mill  
03 - Black Backpan with British White Face  
10 - Alumican  
35 - Black  
44 - British White

\* See chart on page C1-102 for available neck sizes.

**SAMPLE CONFIGURATION:** 51100 - 03 - 09x12 - F23 - 24x24 - 15 - 00 - 44

# 1100, 1190 SERIES

Diffuser | Perforated, Architectural, Curved Blade



## ENGINEERING SPECIFICATION & CONFIGURATION

### 1190, 51190

The perforated face return diffuser shall be Krueger model 1190 (steel perforated face and backpan) or 51190 (aluminum perforated face and backpan). The diffusers shall have a perforated face with 3/16" diameter holes on 1/4" centers resulting in a 51% free area. The perimeter of the perforated face and backpan shall be an aluminum extrusion resulting in an aesthetic appearance. The diffuser shall have a tapered backpan made up of four individual pieces resulting in a square neck.

The perforated face must be easily removable from the backpan for access to the damper.

Optional opposed-blade damper (OBD) shall be constructed of heavy gage steel. Damper shall be operable from the face of the diffuser.

### PERFORMANCE

The manufacturer shall provide published (printed or electronic) performance data for the diffuser. Performance data shall include 2 - 7 octave band sound power levels. The diffuser shall be tested in accordance to the data standards at the time of product introduction or ANSI/ASHRAE Standard 70.

### FINISH

The paint finish shall be #44 British White and be an anodic acrylic paint, baked at 315°F for 30 minutes. The paint thickness shall be 0.8 - 1.0 mils, gloss at 60° per ASTM D523-89 of 50 - 85%, pencil hardness per ASTM D3363-92A of HB - H, crosshatch adhesion per ASTM D3359-83 of 4B - 5B, impact per ASTM D2794-93 of direct impact >100 in/lb and reverse impact >80 in/lb, salt spray per ASTM B117-9048 of 96 hours, humidity per ASTM D2247-92 of >500 hours and water soak per ASTM D870-92 of 250 hours.

### 1. SERIES: (XXXXX)

1190 - Perforated, Steel Return Diffuser  
51190 - Perforated, Aluminum Return Diffuser

### 2. PATTERN: (XX)

90 - Return

### 3. WIDTH: (XX) \*

6" - 24" in 2" Increments

### 4. HEIGHT: (XX) \*

IF WIDTH =

6" - Select 6"  
8" - Select 8"  
10" - Select 10" or 22"  
12" - Select 12" or 24"  
14" - Select 14"  
16" - Select 16"  
18" - Select 18"  
20" - Select 20"  
22" - Select 22" or 46"  
24" - Select 24"

### 5. FRAME: (XXX)

F22 - Surface Mount - Curved  
F23 - Lay-in T-Bar  
F27 - Spline

### 6. PANEL: (XX)x(XX)

NONE  
12"x12"  
12"x24"  
24"x24"  
24"x48"

### 7. DAMPERS: (XX)

00 - No Damper  
01 - Steel Opposed Blade Damper (Model OBD)  
15 - Aluminum Opposed Blade Damper (Model 5OBD)

### 8. ACCESSORIES: (XX)

00 - No Accessories  
S - Straightening Grid

### 9. FINISH: (XX)

01 - Mill  
03 - Black Backpan with British White Face  
10 - Alumican  
35 - Black  
44 - British White

\* See chart on page C1-103 for available neck sizes.

**SAMPLE CONFIGURATION:** 51190 - 90 - 12x24 - F22 - NONE - 00 - 00 - 10