

INTRODUCTION

The 9180 series curved blade grille features individually, hand adjustable blades and multiple discharge configurations. Blade settings can be adjusted to increase or decrease the throw characteristics. These grilles are an excellent choice for residential and commercial buildings where different throw characteristics are needed for the same sized grille.

MODEL

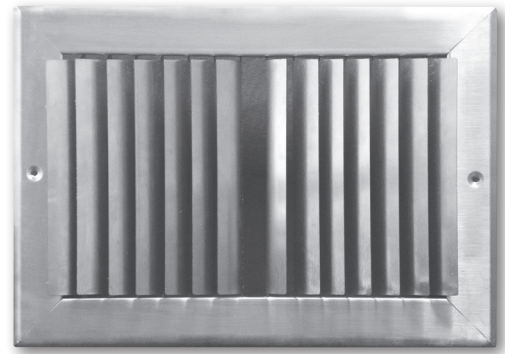
9180 - Curved blade supply grille

FEATURES

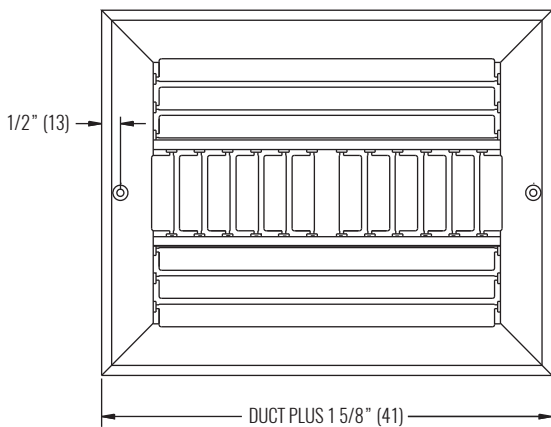
- 304 stainless steel construction (316 optional)
- 1, 2, 3, and 4-way deflection
- Adjustable blades
- Countersunk screw holes in mounting frame
- Standard finish is 90 - #4 Satin Polish or 44 - British White

ACCESSORIES

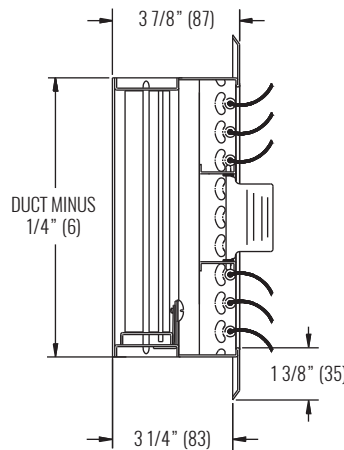
- Stainless steel OBD welded to unit, adjustable from face of grille (model 9OBD)
- Plaster frame (model 98PF)
- Square to round adapter (model 9SRA)



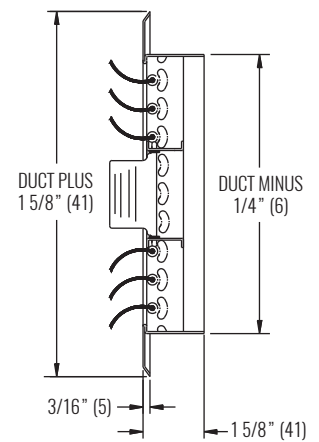
DIMENSIONAL DATA



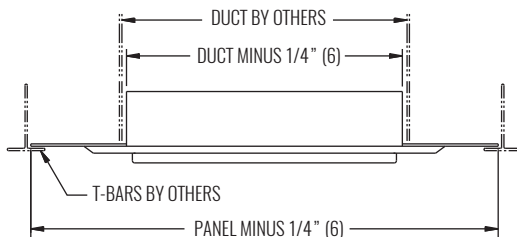
FACE VIEW, FRAME 22 SURFACE MOUNT



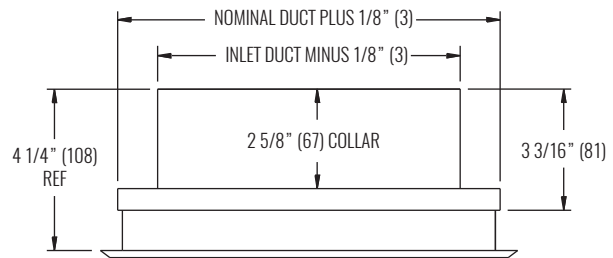
SIDE VIEW, FRAME 22 SURFACE MOUNT
9OBD SHOWN



SIDE VIEW, FRAME 22 SURFACE MOUNT
WITHOUT DAMPER



SIDE VIEW, FRAME 23 LAY-IN T-BAR

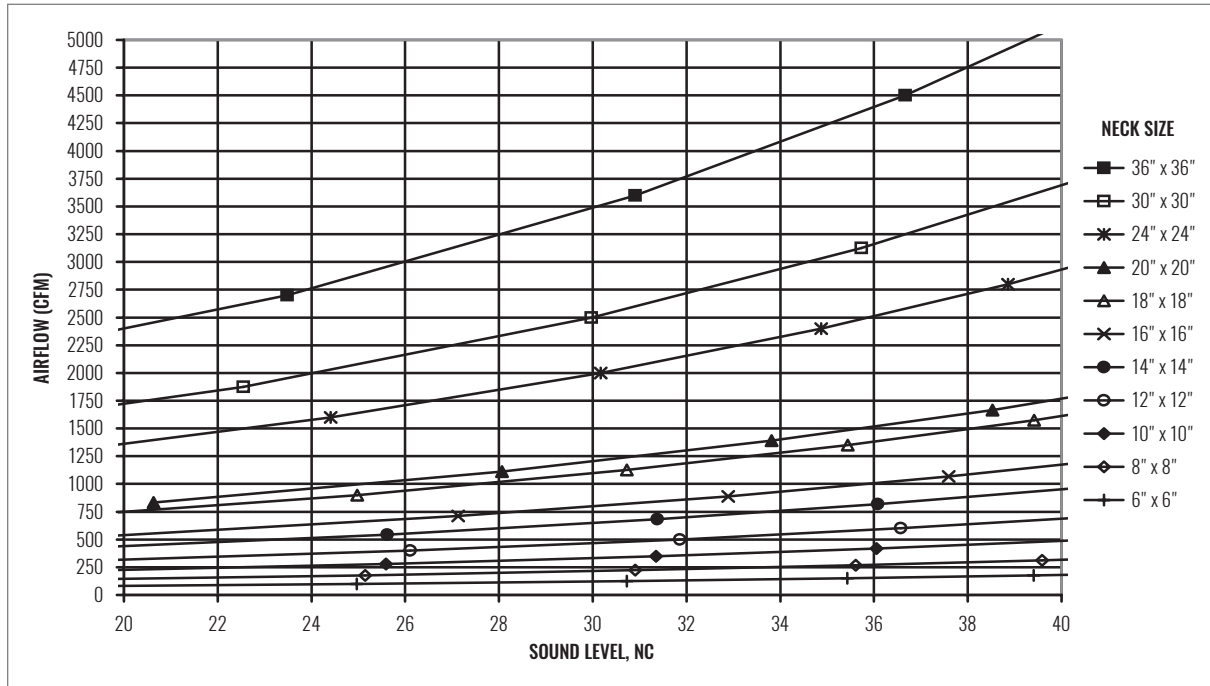


SIDE VIEW, SQUARE TO ROUND ADAPTER
MODEL 9SRA

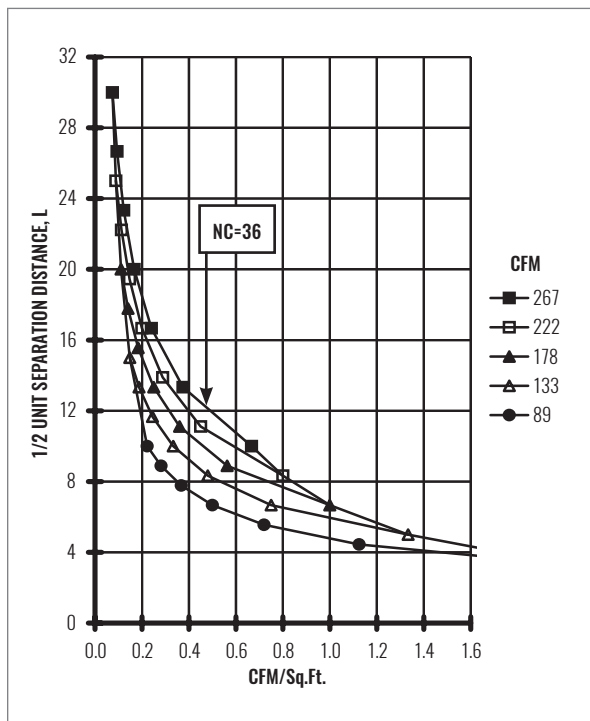
NOTE: D imensions in parentheses are millimeters (mm).

SOUND & ADPI CHARTS | HORIZONTAL THROW

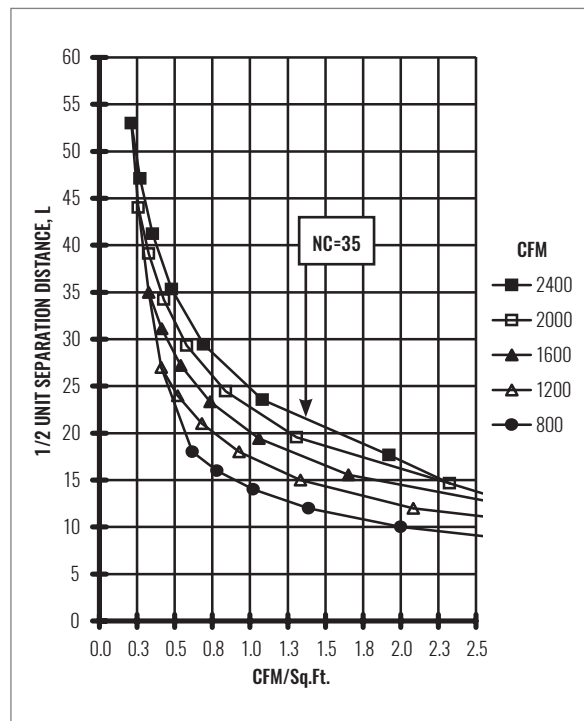
AIRFLOW VS. NC (WITH OBD/MULTILOUVER)



GRILLE SPACING FOR 80% ADPI: 8"x8" INLET, 4-WAY (WITH OBD/MULTILOUVER)



GRILLE SPACING FOR 80% ADPI: 24"x24" INLET, 4-WAY (WITH OBD/MULTILOUVER)



NOTES: Bottom two charts are at 20 BTUH/ft² loads. See the Engineering section of this catalog for instructions on how to read these charts and additional ADPI information.

PERFORMANCE DATA | IP | SQUARE, WITH OBD/MULTILOUVER

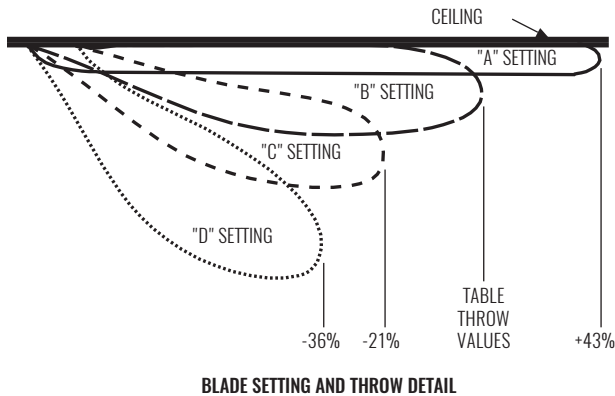
SIZE	NECK VEL	TOTAL PRES	AIR FLOW	SOUND	THROW DIRECTION				OCTAVE BAND, dB						
					1-WAY THROW	2-WAY THROW	3-WAY HROW	4-WAY THROW	2	3	4	5	6	7	
					ft	ft	ft	ft							
6 x 6	200	0.024	50	-	4 - 6 - 13	4 - 6 - 11	3 - 5 - 10	3 - 4 - 9	-	13	19	17	12	-	
	300	0.055	75	18	6 - 10 - 19	6 - 8 - 17	5 - 7 - 14	4 - 7 - 13	18	23	29	27	22	17	
	400	0.098	100	25	8 - 13 - 25	7 - 11 - 22	6 - 10 - 19	6 - 9 - 18	25	30	36	34	29	24	
	500	0.153	125	31	11 - 16 - 32	9 - 14 - 28	8 - 12 - 24	7 - 11 - 22	31	36	42	40	35	30	
	600	0.220	150	35	13 - 19 - 35	11 - 17 - 33	10 - 14 - 29	9 - 13 - 26	36	41	47	45	40	35	
	700	0.299	175	39	15 - 22 - 37	13 - 19 - 36	11 - 17 - 32	10 - 16 - 28	40	45	51	49	44	39	
	800	0.390	200	43	17 - 25 - 40	15 - 22 - 38	13 - 19 - 34	12 - 18 - 30	43	48	54	52	47	42	
8 x 8	200	0.021	89	-	5 - 7 - 14	4 - 6 - 13	4 - 5 - 11	3 - 5 - 10	-	12	18	16	11	-	
	300	0.048	133	18	7 - 11 - 22	6 - 9 - 19	5 - 8 - 16	5 - 8 - 15	17	22	28	26	21	16	
	400	0.085	178	25	10 - 14 - 29	8 - 13 - 25	7 - 11 - 22	7 - 10 - 20	24	29	35	33	28	23	
	500	0.133	222	31	12 - 18 - 36	10 - 16 - 31	9 - 13 - 27	8 - 13 - 25	30	35	41	39	34	29	
	600	0.191	267	36	14 - 22 - 43	13 - 19 - 38	11 - 16 - 32	10 - 15 - 30	35	40	46	44	39	34	
	700	0.260	311	40	17 - 25 - 50	15 - 22 - 44	13 - 19 - 38	12 - 18 - 35	39	44	50	48	43	38	
	800	0.339	356	43	19 - 29 - 53	17 - 25 - 50	14 - 22 - 43	13 - 20 - 40	42	47	53	51	46	41	
10 x 10	200	0.020	139	-	5 - 8 - 16	5 - 7 - 14	4 - 6 - 12	4 - 6 - 11	-	11	17	15	-	-	
	300	0.044	208	18	8 - 12 - 24	7 - 10 - 21	6 - 9 - 18	6 - 8 - 17	17	22	28	26	21	16	
	400	0.078	278	26	11 - 16 - 32	9 - 14 - 28	8 - 12 - 24	7 - 11 - 22	24	29	35	33	28	23	
	500	0.122	347	31	13 - 20 - 40	12 - 17 - 35	10 - 15 - 30	9 - 14 - 28	30	35	41	39	34	29	
	600	0.176	417	36	16 - 24 - 48	14 - 21 - 42	12 - 18 - 36	11 - 17 - 34	34	39	45	43	38	33	
	700	0.239	486	40	19 - 28 - 56	16 - 24 - 49	14 - 21 - 42	13 - 20 - 39	38	43	49	47	42	37	
	800	0.313	556	43	21 - 32 - 64	19 - 28 - 56	16 - 24 - 48	15 - 22 - 45	42	47	53	51	46	41	
12 x 12	200	0.019	200	-	6 - 9 - 18	5 - 8 - 15	4 - 7 - 13	4 - 6 - 12	-	11	17	15	-	-	
	300	0.042	300	19	9 - 13 - 26	8 - 11 - 23	7 - 10 - 20	6 - 9 - 18	17	22	28	26	21	16	
	400	0.074	400	26	12 - 18 - 35	10 - 15 - 31	9 - 13 - 26	8 - 12 - 25	24	29	35	33	28	23	
	500	0.116	500	32	15 - 22 - 44	13 - 19 - 38	11 - 16 - 33	10 - 15 - 31	30	35	41	39	34	29	
	600	0.167	600	37	18 - 26 - 53	15 - 23 - 46	13 - 20 - 39	12 - 18 - 37	35	40	46	44	39	34	
	700	0.227	700	41	20 - 31 - 61	18 - 27 - 54	15 - 23 - 46	14 - 21 - 43	39	44	50	48	43	38	
	800	0.296	800	44	23 - 35 - 70	20 - 31 - 61	18 - 26 - 53	16 - 25 - 49	42	47	53	51	46	41	
14 x 14	200	0.018	272	-	6 - 9 - 19	6 - 8 - 17	5 - 7 - 14	4 - 7 - 13	-	11	17	15	-	-	
	300	0.040	408	18	9 - 14 - 28	8 - 12 - 25	7 - 11 - 21	7 - 10 - 20	17	22	28	26	21	16	
	400	0.071	544	26	13 - 19 - 38	11 - 17 - 33	9 - 14 - 28	9 - 13 - 27	24	29	35	33	28	23	
	500	0.111	681	31	16 - 24 - 47	14 - 21 - 41	12 - 18 - 36	11 - 17 - 33	30	35	41	39	34	29	
	600	0.160	817	36	19 - 28 - 57	17 - 25 - 50	14 - 21 - 43	13 - 20 - 40	35	40	46	44	39	34	
	700	0.218	953	40	22 - 33 - 66	19 - 29 - 58	17 - 25 - 50	15 - 23 - 46	39	44	50	48	43	38	
	800	0.285	1089	44	25 - 38 - 76	22 - 33 - 66	19 - 28 - 57	18 - 27 - 53	42	47	53	51	46	41	
16 x 16	200	0.017	356	-	7 - 10 - 20	6 - 9 - 18	5 - 8 - 15	5 - 7 - 14	-	11	17	15	-	-	
	300	0.039	533	20	10 - 15 - 31	9 - 13 - 27	8 - 11 - 23	7 - 11 - 21	17	22	28	26	21	16	
	400	0.069	711	27	14 - 20 - 41	12 - 18 - 36	10 - 15 - 31	9 - 14 - 28	24	29	35	33	28	23	
	500	0.108	889	33	17 - 25 - 51	15 - 22 - 44	13 - 19 - 38	12 - 18 - 36	30	35	41	39	34	29	
	600	0.156	1067	38	20 - 31 - 61	18 - 27 - 53	15 - 23 - 46	14 - 21 - 43	35	40	46	44	39	34	
	700	0.212	1244	42	24 - 36 - 71	21 - 31 - 62	18 - 27 - 53	17 - 25 - 50	39	44	50	48	43	38	
	800	0.277	1422	45	27 - 41 - 81	24 - 36 - 71	20 - 31 - 61	19 - 28 - 57	42	47	53	51	46	41	
18 x 18	200	0.017	450	-	7 - 11 - 22	6 - 9 - 19	5 - 8 - 16	5 - 8 - 15	-	11	17	15	-	-	
	300	0.038	675	18	11 - 16 - 32	9 - 14 - 28	8 - 12 - 24	8 - 11 - 23	17	22	28	26	21	16	
	400	0.068	900	25	14 - 22 - 43	13 - 19 - 38	11 - 16 - 32	10 - 15 - 30	24	29	35	33	28	23	
	500	0.106	1125	31	18 - 27 - 54	16 - 24 - 47	14 - 20 - 41	13 - 19 - 38	30	35	41	39	34	29	
	600	0.153	1350	35	22 - 32 - 65	19 - 28 - 57	16 - 24 - 49	15 - 23 - 45	35	40	46	44	39	34	
	700	0.208	1575	39	25 - 38 - 76	22 - 33 - 66	19 - 28 - 57	18 - 27 - 53	39	44	50	48	43	38	
	800	0.271	1800	43	29 - 43 - 87	25 - 38 - 76	22 - 32 - 65	20 - 30 - 61	42	47	53	51	46	41	
20 x 20	200	0.017	556	-	8 - 11 - 23	7 - 10 - 20	6 - 9 - 17	5 - 8 - 16	-	-	16	14	-	-	
	300	0.038	833	21	11 - 17 - 34	10 - 15 - 30	9 - 13 - 26	8 - 12 - 24	15	20	26	24	19	14	
	400	0.067	1111	28	15 - 23 - 46	13 - 20 - 40	11 - 17 - 34	11 - 16 - 32	23	28	34	32	27	22	
	500	0.104	1389	34	19 - 29 - 57	17 - 25 - 50	14 - 22 - 43	13 - 20 - 40	29	34	40	38	33	28	
	600	0.150	1667	39	23 - 34 - 69	20 - 30 - 60	17 - 26 - 52	16 - 24 - 48	33	38	44	42	37	32	
	700	0.204	1944	43	27 - 40 - 80	23 - 35 - 70	20 - 30 - 60	19 - 28 - 56	37	42	48	46	41	36	
	800	0.267	2222	46	31 - 46 - 92	27 - 40 - 80	23 - 34 - 69	21 - 32 - 64	41	46	52	50	45	40	

NOTE: See notes and correction factors on page P1-8.

PERFORMANCE DATA | IP | SQUARE, WITH OBD/MULTILOUVER

SIZE	NECK VEL	TOTAL PRES	AIR FLOW	SOUND	THROW DIRECTION				OCTAVE BAND, dB						
					1-WAY THROW	2-WAY THROW	3-WAY HROW	4-WAY THROW	2	3	4	5	6	7	
in	fpm	in wg	cfm	NC	ft	ft	ft	ft							
24 x 24	200	0.016	800	-	7-13-25	6-11-22	5-10-19	5-9-18	-	-	16	14	-	-	
	300	0.037	1200	17	13-19-38	11-17-33	10-14-29	9-13-27	16	21	27	25	20	15	
	400	0.065	1600	24	17-25-51	15-22-44	13-19-38	12-18-35	23	28	34	32	27	22	
	500	0.102	2000	30	21-32-63	18-28-55	16-24-48	15-22-44	29	34	40	38	33	28	
	600	0.146	2400	35	25-38-76	22-33-67	19-29-57	18-27-53	34	39	45	43	38	33	
	700	0.199	2800	39	30-44-89	26-39-78	22-33-67	21-31-62	38	43	49	47	42	37	
30 x 30	200	0.016	1250	12	7-14-29	6-13-25	5-11-22	5-10-20	-	-	16	14	-	-	
	300	0.036	1875	23	14-22-43	13-19-38	11-16-32	10-15-30	16	21	27	25	20	15	
	400	0.063	2500	30	19-29-57	17-25-50	14-22-43	13-20-40	23	28	34	32	27	22	
	500	0.099	3125	36	24-36-72	21-31-63	18-27-54	17-25-50	29	34	40	38	33	28	
	600	0.142	3750	40	29-43-86	25-38-75	22-32-65	20-30-60	34	39	45	43	38	33	
	700	0.194	4375	44	34-50-101	29-44-88	25-38-75	23-35-70	38	43	49	47	42	37	
36 x 36	200	0.016	1800	13	6-14-32	12-18-36	10-16-31	10-14-29	-	11	17	15	-	-	
	300	0.035	2700	23	14-24-48	18-27-54	16-23-47	14-22-43	16	21	27	25	20	15	
	400	0.062	3600	31	21-32-64	24-36-72	21-31-62	19-29-58	23	28	34	32	27	22	
	500	0.097	4500	37	27-40-80	30-45-90	26-39-78	24-36-72	29	34	40	38	33	28	
	600	0.140	5400	41	32-48-96	36-54-109	31-47-93	29-43-87	34	39	45	43	38	33	
	700	0.191	6300	45	37-56-111	42-63-127	36-54-109	34-51-101	38	43	49	47	42	37	
	800	0.249	7200	49	42-64-127	48-72-145	41-62-124	39-58-116	41	46	52	50	45	40	

NOTES: Throw values are given for terminal velocities of 150, 100, and 50 FPM. Throw values are given for isothermal conditions. NC values are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Dash in space denotes a 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. The throw values given for 1-Way Throw is for [Total CFM] CFM per side. The throw values given for 2-Way Throw is for [Total CFM/2] CFM per side. The throw values given for 3-Way Throw is for [Total CFM/3] CFM per side. The throw values given for 4-Way Throw is for [Total CFM/4] CFM per side. See Krueger's selection software for performance data not shown, including octave band data.



NOTE: Reference page P1-5 for blade setting detail.

CORRECTION FACTOR (WITH OBD)			
BLADE SETTING	THROWS (MULTIPLY)	P _s (MULTIPLY)	NC (ADD)
A	1.43	1.30	+2
B	1.00	1.00	+0
C	0.79	0.72	-3
D	0.64	0.52	-4

CORRECTION FACTOR (WITHOUT OBD)			
BLADE SETTING	THROWS (MULTIPLY)	P _s (MULTIPLY)	NC (ADD)
A	1.43	1.20	+0
B	1.00	0.85	-3
C	0.70	0.61	-4
D	0.64	0.33	-6

PERFORMANCE DATA | IP | RECTANGULAR, WITH OBD/MULTILOUVER

SIZE	NECK VEL	TOTAL PRES	AIR FLOW	SOUND	THROW DIRECTION				OCTAVE BAND, dB						
					1-WAY THROW	2-WAY THROW	3-WAY HROW	4-WAY THROW	2	3	4	5	6	7	
					ft	ft	ft	ft							
4 x 6	200	0.028	33	-	4-6-12	3-4-8	3-4-9	3-4-8	-	15	21	19	14	-	
	300	0.064	50	18	6-9-18	4-6-12	4-7-13	4-6-12	20	25	31	29	24	19	
	400	0.113	67	25	8-12-23	6-8-17	6-9-18	6-8-17	27	32	38	36	31	26	
	500	0.177	83	31	10-15-26	7-10-21	7-11-22	7-10-19	33	38	44	42	37	32	
	600	0.255	100	36	12-18-28	8-12-25	9-13-24	8-12-21	38	43	49	47	42	37	
	700	0.347	117	40	14-21-31	10-14-29	10-16-26	10-15-23	42	47	53	51	46	41	
	800	0.453	133	43	16-23-33	11-17-31	12-18-28	11-17-24	45	50	56	54	49	44	
4 x 8	200	0.026	44	-	4-6-13	5-7-14	3-5-9	3-4-9	-	14	20	18	13	-	
	300	0.059	67	18	6-9-19	7-10-21	5-7-14	4-7-13	20	25	31	29	24	19	
	400	0.106	89	25	8-13-25	9-14-25	6-9-19	6-9-18	27	32	38	36	31	26	
	500	0.165	111	31	11-16-30	12-17-28	8-12-24	7-11-22	33	38	44	42	37	32	
	600	0.237	133	36	13-19-33	14-21-31	9-14-28	9-13-24	38	43	49	47	42	37	
	700	0.323	156	40	15-22-35	16-24-34	11-17-30	10-15-26	42	47	53	51	46	41	
	800	0.422	178	43	17-25-38	18-25-36	13-19-32	12-18-28	45	50	56	54	49	44	
4 x 10	200	0.025	56	-	4-7-13	4-6-12	3-5-10	3-5-9	-	14	20	18	13	-	
	300	0.057	83	18	7-10-20	6-9-17	5-7-15	5-7-14	20	25	31	29	24	19	
	400	0.101	111	26	9-13-27	8-12-23	7-10-20	6-9-19	27	32	38	36	31	26	
	500	0.158	139	31	11-17-33	10-15-29	8-12-25	8-12-23	33	38	44	42	37	32	
	600	0.228	167	36	13-20-37	12-17-35	10-15-30	9-14-27	38	43	49	47	42	37	
	700	0.310	194	40	16-23-39	14-20-37	12-17-34	11-16-30	42	47	53	51	46	41	
	800	0.405	222	44	18-27-42	16-23-40	13-20-36	12-19-32	45	50	56	54	49	44	
4 x 12	200	0.025	67	-	5-7-14	4-6-12	3-5-10	3-5-10	-	15	21	19	14	-	
	300	0.055	100	19	7-10-21	6-9-18	5-8-16	5-7-15	20	25	31	29	24	19	
	400	0.099	133	26	9-14-28	8-12-24	7-10-21	6-10-19	28	33	39	37	32	27	
	500	0.154	167	32	12-17-35	10-15-30	9-13-26	8-12-24	34	39	45	43	38	33	
	600	0.222	200	36	14-21-40	12-18-37	10-16-31	10-15-29	38	43	49	47	42	37	
	700	0.302	233	40	16-24-43	14-21-41	12-18-37	11-17-32	42	47	53	51	46	41	
	800	0.394	267	44	19-28-46	16-24-44	14-21-39	13-19-35	46	51	57	55	50	45	
4 x 14	200	0.024	78	-	5-8-16	4-6-11	4-6-12	4-6-11	-	15	21	19	14	-	
	300	0.054	117	19	8-12-24	6-9-17	6-9-18	6-9-17	21	26	32	30	25	20	
	400	0.097	156	26	11-16-32	8-11-23	8-12-24	8-11-23	28	33	39	37	32	27	
	500	0.151	194	32	14-20-39	10-14-29	10-15-30	9-14-28	34	39	45	43	38	33	
	600	0.218	233	37	16-24-43	11-17-34	12-18-37	11-17-32	39	44	50	48	43	38	
	700	0.296	272	41	19-28-47	13-20-40	14-21-40	13-20-35	42	47	53	51	46	41	
	800	0.387	311	44	22-32-50	15-23-46	16-24-42	15-23-37	46	51	57	55	50	45	
4 x 16	200	0.024	89	-	5-8-15	4-7-13	4-6-11	4-5-11	-	15	21	19	14	-	
	300	0.054	133	19	8-11-23	7-10-20	6-8-17	5-8-16	21	26	32	30	25	20	
	400	0.095	178	26	10-15-30	9-13-26	8-11-23	7-11-21	28	33	39	37	32	27	
	500	0.149	222	32	13-19-38	11-16-33	9-14-28	9-13-26	34	39	45	43	38	33	
	600	0.215	267	37	15-23-45	13-20-39	11-17-34	11-16-32	39	44	50	48	43	38	
	700	0.292	311	41	18-26-50	15-23-46	13-20-39	12-18-37	43	48	54	52	47	42	
	800	0.382	356	44	20-30-53	18-26-51	15-23-45	14-21-40	46	51	57	55	50	45	
4 x 18	200	0.024	100	-	5-8-15	5-7-14	4-6-12	4-5-11	11	16	22	20	15	-	
	300	0.053	150	19	8-12-23	7-10-20	6-9-17	5-8-16	21	26	32	30	25	20	
	400	0.094	200	27	10-15-31	9-14-27	8-12-23	7-11-22	29	34	40	38	33	28	
	500	0.147	250	32	13-19-39	11-17-34	10-15-29	9-14-27	34	39	45	43	38	33	
	600	0.212	300	37	15-23-46	14-20-41	12-17-35	11-16-33	39	44	50	48	43	38	
	700	0.289	350	41	18-27-53	16-24-47	14-20-41	13-19-38	43	48	54	52	47	42	
	800	0.377	400	45	21-31-57	18-27-54	15-23-46	14-22-42	47	52	58	56	51	46	
4 x 20	200	0.023	111	-	5-8-16	5-7-14	4-6-12	4-6-11	-	14	20	18	13	-	
	300	0.053	167	20	8-12-24	7-10-21	6-9-18	6-8-17	20	25	31	29	24	19	
	400	0.094	222	27	11-16-32	9-14-28	8-12-24	7-11-22	27	32	38	36	31	26	
	500	0.146	278	33	13-20-40	12-17-35	10-15-30	9-14-28	33	38	44	42	37	32	
	600	0.211	333	37	16-24-48	14-21-42	12-18-36	11-17-33	38	43	49	47	42	37	
	700	0.287	389	41	19-28-56	16-24-49	14-21-42	13-20-39	42	47	53	51	46	41	
	800	0.374	444	45	21-32-60	19-28-56	16-24-48	15-22-45	45	50	56	54	49	44	

NOTE: See notes and correction factors on page P1-15.

PERFORMANCE DATA | IP | RECTANGULAR, WITH OBD/MULTILOUVER

SIZE	NECK VEL	TOTAL PRES	AIR FLOW	SOUND	THROW DIRECTION				OCTAVE BAND, dB						
					1-WAY THROW	2-WAY THROW	3-WAY HROW	4-WAY THROW	2	3	4	5	6	7	
in	fpm	in wg	cfm	NC	ft	ft	ft	ft							
4 x 24	200	0.023	133	-	6-8-17	5-7-15	4-6-13	4-6-12	-	15	21	19	14	-	
	300	0.052	200	20	8-13-25	7-11-22	6-9-19	6-9-18	20	25	31	29	24	19	
	400	0.092	267	27	11-17-34	10-15-29	8-13-25	8-12-23	28	33	39	37	32	27	
	500	0.144	333	33	14-21-42	12-18-37	10-16-31	10-15-29	33	38	44	42	37	32	
	600	0.208	400	38	17-25-50	15-22-44	13-19-38	12-18-35	38	43	49	47	42	37	
	700	0.283	467	42	20-29-59	17-26-51	15-22-44	14-21-41	42	47	53	51	46	41	
6 x 10	800	0.369	533	45	22-34-65	20-29-59	17-25-50	16-23-47	45	50	56	54	49	44	
	200	0.022	83	-	5-7-14	4-6-12	4-5-11	3-5-10	-	15	21	19	14	-	
	300	0.049	125	18	7-11-21	6-9-19	5-8-16	5-7-15	20	25	31	29	24	19	
	400	0.087	167	25	10-14-29	8-12-25	7-11-21	7-10-20	27	32	38	36	31	26	
	500	0.136	208	31	12-18-36	10-16-31	9-13-27	8-12-25	33	38	44	42	37	32	
	600	0.197	250	36	14-21-43	12-19-37	11-16-32	10-15-30	38	43	49	47	42	37	
6 x 12	700	0.267	292	40	17-25-48	15-22-44	12-19-37	12-17-35	42	47	53	51	46	41	
	800	0.349	333	43	19-29-52	17-25-49	14-21-43	13-20-39	45	50	56	54	49	44	
	200	0.021	100	-	5-7-15	4-7-13	4-6-11	3-5-10	-	15	21	19	14	-	
	300	0.048	150	18	7-11-22	7-10-20	6-8-17	5-8-16	20	25	31	29	24	19	
	400	0.085	200	26	10-15-30	9-13-26	7-11-22	7-10-21	27	32	38	36	31	26	
	500	0.133	250	31	12-19-37	11-16-33	9-14-28	9-13-26	33	38	44	42	37	32	
6 x 14	600	0.191	300	36	15-22-45	13-20-39	11-17-34	10-16-31	38	43	49	47	42	37	
	700	0.260	350	40	17-26-52	15-23-46	13-20-39	12-18-37	42	47	53	51	46	41	
	800	0.340	400	43	20-30-57	17-26-52	15-22-45	14-21-42	45	50	56	54	49	44	
	200	0.021	117	-	5-8-16	5-7-14	4-6-12	4-5-11	-	15	21	19	14	-	
	300	0.047	175	18	8-12-23	7-10-20	6-9-17	5-8-16	20	25	31	29	24	19	
	400	0.083	233	26	10-16-31	9-14-27	8-12-23	7-11-22	28	33	39	37	32	27	
6 x 16	500	0.130	292	32	13-19-39	11-17-34	10-15-29	9-14-27	33	38	44	42	37	32	
	600	0.188	350	36	16-23-47	14-20-41	12-17-35	11-16-33	38	43	49	47	42	37	
	700	0.256	408	40	18-27-54	16-24-48	14-20-41	13-19-38	42	47	53	51	46	41	
	800	0.334	467	44	21-31-61	18-27-54	16-23-47	14-22-43	45	50	56	54	49	44	
	200	0.021	133	-	5-8-16	5-7-14	4-6-12	4-6-11	-	14	20	18	13	-	
	300	0.046	200	19	8-12-24	7-11-21	6-9-18	6-8-17	20	25	31	29	24	19	
6 x 18	400	0.082	267	26	11-16-32	9-14-28	8-12-24	8-11-23	27	32	38	36	31	26	
	500	0.129	333	32	13-20-40	12-18-35	10-15-30	9-14-28	33	38	44	42	37	32	
	600	0.185	400	37	16-24-48	14-21-42	12-18-36	11-17-34	38	43	49	47	42	37	
	700	0.252	467	40	19-28-56	16-25-49	14-21-42	13-20-39	41	46	52	50	45	40	
	800	0.329	533	44	21-32-64	19-28-56	16-24-48	15-23-45	45	50	56	54	49	44	
	200	0.020	150	-	6-8-17	5-7-15	4-6-12	4-6-12	-	14	20	18	13	-	
6 x 20	300	0.046	225	19	8-12-25	7-11-22	6-9-19	6-9-17	20	25	31	29	24	19	
	400	0.081	300	26	11-17-33	10-15-29	8-12-25	8-12-23	27	32	38	36	31	26	
	500	0.127	375	32	14-21-42	12-18-36	10-16-31	10-15-29	33	38	44	42	37	32	
	600	0.183	450	37	17-25-50	15-22-44	12-19-37	12-17-35	38	43	49	47	42	37	
	700	0.249	525	41	19-29-58	17-25-51	15-22-44	14-20-41	42	47	53	51	46	41	
	800	0.325	600	44	22-33-66	19-29-58	17-25-50	15-23-46	45	50	56	54	49	44	
6 x 24	200	0.314	167	-	6-9-17	5-7-15	4-6-13	4-6-12	-	15	21	19	14	-	
	300	0.020	250	19	9-13-26	7-11-22	6-10-19	6-9-18	20	25	31	29	24	19	
	400	0.046	333	27	11-17-34	10-15-30	9-13-26	8-12-24	28	33	39	37	32	27	
	500	0.081	417	32	14-21-43	12-19-37	11-16-32	10-15-30	33	38	44	42	37	32	
	600	0.127	500	37	17-26-51	15-22-45	13-19-38	12-18-36	38	43	49	47	42	37	
	700	0.183	583	41	20-30-60	17-26-52	15-22-45	14-21-42	42	47	53	51	46	41	
6 x 24	800	0.249	667	44	23-34-68	20-30-60	17-26-51	16-24-48	45	50	56	54	49	44	
	200	0.326	200	-	6-9-18	5-8-16	4-7-13	4-6-13	-	15	21	19	14	-	
	300	0.045	300	20	9-13-27	8-12-24	7-10-20	6-9-19	21	26	32	30	25	20	
	400	0.080	400	27	12-18-36	10-16-31	9-13-27	8-13-25	28	33	39	37	32	27	
	500	0.124	500	33	15-22-45	13-20-39	11-17-34	10-16-31	34	39	45	43	38	33	
	600	0.179	600	37	18-27-54	16-24-47	13-20-40	13-19-38	38	43	49	47	42	37	
6 x 24	700	0.244	700	41	21-31-63	18-28-55	16-24-47	15-22-44	42	47	53	51	46	41	
	800	0.319	800	45	24-36-72	21-31-63	18-27-54	17-25-50	46	51	57	55	50	45	

NOTE: See notes and correction factors on page P1-15.

PERFORMANCE DATA | IP | RECTANGULAR, WITH OBD/MULTILOUVER

SIZE	NECK VEL	TOTAL PRES	AIR FLOW	SOUND	THROW DIRECTION				OCTAVE BAND, dB						
					1-WAY THROW	2-WAY THROW	3-WAY HROW	4-WAY THROW	2	3	4	5	6	7	
					ft	ft	ft	ft							
6 x 30	200	0.020	250	-	6-10-19	6-8-17	5-7-14	4-7-13	11	16	22	20	15	-	
	300	0.044	375	20	10-14-29	8-13-25	7-11-22	7-10-20	21	26	32	30	25	20	
	400	0.079	500	27	13-19-38	11-17-33	10-14-29	9-13-27	28	33	39	37	32	27	
	500	0.123	625	33	16-24-48	14-21-42	12-18-36	11-17-33	34	39	45	43	38	33	
	600	0.177	750	38	19-29-57	17-25-50	14-22-43	13-20-40	39	44	50	48	43	38	
	700	0.241	875	42	22-33-67	20-29-59	17-25-50	16-23-47	43	48	54	52	47	42	
	800	0.314	1000	45	25-38-76	22-33-67	19-29-57	18-27-54	46	51	57	55	50	45	
8 x 10	200	0.020	111	-	5-8-15	4-7-13	4-6-11	4-5-11	-	13	19	17	12	-	
	300	0.046	167	18	8-11-23	7-10-20	6-9-17	5-8-16	19	24	30	28	23	18	
	400	0.081	222	25	10-15-30	9-13-27	8-11-23	7-11-21	26	31	37	35	30	25	
	500	0.127	278	31	13-19-38	11-17-33	9-14-28	9-13-27	32	37	43	41	36	31	
	600	0.183	333	36	15-23-46	13-20-40	11-17-34	11-16-32	37	42	48	46	41	36	
	700	0.249	389	40	18-27-53	15-23-46	13-20-40	12-19-37	41	46	52	50	45	40	
	800	0.326	444	43	20-30-60	18-27-53	15-23-46	14-21-42	44	49	55	53	48	43	
8 x 12	200	0.020	133	-	5-8-16	5-7-14	4-6-12	4-6-11	-	14	20	18	13	-	
	300	0.045	200	18	8-12-24	7-10-21	6-9-18	6-8-17	19	24	30	28	23	18	
	400	0.079	267	26	11-16-32	9-14-28	8-12-24	7-11-22	27	32	38	36	31	26	
	500	0.124	333	31	13-20-40	12-17-35	10-15-30	9-14-28	32	37	43	41	36	31	
	600	0.178	400	36	16-24-48	14-21-42	12-18-36	11-17-33	37	42	48	46	41	36	
	700	0.243	467	40	19-28-56	16-24-49	14-21-42	13-19-39	41	46	52	50	45	40	
	800	0.317	533	44	21-32-64	19-28-56	16-24-48	15-22-44	45	50	56	54	49	44	
8 x 14	200	0.019	156	-	6-8-17	5-7-14	4-6-12	4-6-12	-	14	20	18	13	-	
	300	0.044	233	18	8-12-25	7-11-22	6-9-19	6-9-17	19	24	30	28	23	18	
	400	0.078	311	26	11-17-33	10-14-29	8-12-25	8-12-23	27	32	38	36	31	26	
	500	0.122	389	32	14-21-41	12-18-36	10-15-31	10-14-29	33	38	44	42	37	32	
	600	0.175	467	36	17-25-50	14-22-43	12-19-37	12-17-35	37	42	48	46	41	36	
	700	0.238	544	40	19-29-58	17-25-51	14-22-43	13-20-40	41	46	52	50	45	40	
	800	0.311	622	44	22-33-66	19-29-58	17-25-50	15-23-46	45	50	56	54	49	44	
8 x 16	200	0.019	178	-	6-9-17	5-7-15	4-6-13	4-6-12	-	14	20	18	13	-	
	300	0.043	267	19	9-13-26	7-11-22	6-10-19	6-9-18	20	25	31	29	24	19	
	400	0.077	356	26	11-17-34	10-15-30	9-13-26	8-12-24	27	32	38	36	31	26	
	500	0.120	444	32	14-21-43	12-19-37	11-16-32	10-15-30	33	38	44	42	37	32	
	600	0.173	533	37	17-26-51	15-22-45	13-19-39	12-18-36	38	43	49	47	42	37	
	700	0.235	622	41	20-30-60	17-26-52	15-22-45	14-21-42	42	47	53	51	46	41	
	800	0.307	711	44	23-34-68	20-30-60	17-26-51	16-24-48	45	50	56	54	49	44	
8 x 18	200	0.019	200	-	6-9-18	5-8-15	4-7-13	4-6-12	-	14	20	18	13	-	
	300	0.043	300	19	9-13-26	8-12-23	7-10-20	6-9-19	20	25	31	29	24	19	
	400	0.076	400	26	12-18-35	10-15-31	9-13-26	8-12-25	27	32	38	36	31	26	
	500	0.119	500	32	15-22-44	13-19-39	11-17-33	10-15-31	33	38	44	42	37	32	
	600	0.171	600	37	18-26-53	15-23-46	13-20-40	12-19-37	38	43	49	47	42	37	
	700	0.232	700	41	21-31-62	18-27-54	15-23-46	14-22-43	42	47	53	51	46	41	
	800	0.303	800	44	24-35-71	21-31-62	18-26-53	16-25-49	45	50	56	54	49	44	
8 x 20	200	0.019	222	-	6-9-18	5-8-16	5-7-14	4-6-13	-	15	21	19	14	-	
	300	0.042	333	19	9-14-27	8-12-24	7-10-20	6-10-19	20	25	31	29	24	19	
	400	0.075	444	27	12-18-36	11-16-32	9-14-27	8-13-25	28	33	39	37	32	27	
	500	0.118	556	32	15-23-45	13-20-40	11-17-34	11-16-32	33	38	44	42	37	32	
	600	0.169	667	37	18-27-55	16-24-48	14-20-41	13-19-38	38	43	49	47	42	37	
	700	0.230	778	41	21-32-64	19-28-56	16-24-48	15-22-45	42	47	53	51	46	41	
	800	0.301	889	44	24-36-73	21-32-64	18-27-55	17-25-51	45	50	56	54	49	44	
8 x 30	200	0.018	333	-	7-10-20	6-9-18	5-8-15	5-7-14	11	16	22	20	15	-	
	300	0.041	500	20	10-15-31	9-13-27	8-11-23	7-11-21	21	26	32	30	25	20	
	400	0.073	667	28	14-20-41	12-18-36	10-15-31	9-14-28	29	34	40	38	33	28	
	500	0.115	833	33	17-25-51	15-22-44	13-19-38	12-18-36	34	39	45	43	38	33	
	600	0.165	1000	38	20-31-61	18-27-53	15-23-46	14-21-43	39	44	50	48	43	38	
	700	0.224	1167	42	24-36-71	21-31-62	18-27-53	17-25-50	43	48	54	52	47	42	
	800	0.293	1333	45	27-41-81	24-36-71	20-31-61	19-28-57	46	51	57	55	50	45	

NOTE: See notes and correction factors on page P1-15.

PERFORMANCE DATA | IP | RECTANGULAR, WITH OBD/MULTILOUVER

SIZE	NECK VEL	TOTAL PRES	AIR FLOW	SOUND	THROW DIRECTION				OCTAVE BAND, dB						
					1-WAY THROW	2-WAY THROW	3-WAY HROW	4-WAY THROW	2	3	4	5	6	7	
in	fpm	in wg	cfm	NC	ft	ft	ft	ft							
8 x 36	200	0.018	400	-	8-12-23	7-10-20	6-9-17	5-8-16	11	16	22	20	15	-	
	300	0.041	600	21	12-17-35	10-15-30	9-13-26	8-12-24	22	27	33	31	26	21	
	400	0.073	800	28	15-23-46	14-20-41	12-17-35	11-16-32	29	34	40	38	33	28	
	500	0.114	1000	34	19-29-58	17-25-51	15-22-44	14-20-41	35	40	46	44	39	34	
	600	0.164	1200	38	23-35-70	20-30-61	17-26-52	16-24-49	39	44	50	48	43	38	
	700	0.223	1400	42	27-41-81	24-36-71	20-30-61	19-28-57	43	48	54	52	47	42	
	800	0.291	1600	46	31-46-93	27-41-81	23-35-70	22-32-65	47	52	58	56	51	46	
10 x 12	200	0.019	167	-	5-8-16	5-7-14	4-6-12	4-6-11	-	14	20	18	13	-	
	300	0.043	250	18	8-12-24	7-10-21	6-9-18	6-8-17	19	24	30	28	23	18	
	400	0.076	333	26	11-16-32	9-14-28	8-12-24	7-11-22	27	32	38	36	31	26	
	500	0.119	417	32	13-20-40	12-17-35	10-15-30	9-14-28	33	38	44	42	37	32	
	600	0.171	500	36	16-24-48	14-21-42	12-18-36	11-17-34	37	42	48	46	41	36	
	700	0.233	583	40	19-28-56	16-24-49	14-21-42	13-20-39	41	46	52	50	45	40	
	800	0.304	667	44	21-32-64	19-28-56	16-24-48	15-22-45	45	50	56	54	49	44	
10 x 14	200	0.019	194	-	6-9-17	5-7-15	4-6-13	4-6-12	-	14	20	18	13	-	
	300	0.042	292	19	9-13-26	7-11-22	6-10-19	6-9-18	20	25	31	29	24	19	
	400	0.075	389	26	11-17-34	10-15-30	9-13-26	8-12-24	27	32	38	36	31	26	
	500	0.117	486	32	14-21-43	12-19-37	11-16-32	10-15-30	33	38	44	42	37	32	
	600	0.168	583	37	17-26-51	15-22-45	13-19-38	12-18-36	38	43	49	47	42	37	
	700	0.229	681	41	20-30-60	17-26-52	15-22-45	14-21-42	42	47	53	51	46	41	
	800	0.299	778	44	23-34-68	20-30-60	17-26-51	16-24-48	45	50	56	54	49	44	
10 x 16	200	0.018	222	-	6-9-18	5-8-16	4-7-13	4-6-13	-	14	20	18	13	-	
	300	0.041	333	19	9-13-27	8-12-24	7-10-20	6-9-19	20	25	31	29	24	19	
	400	0.074	444	26	12-18-36	10-16-31	9-13-27	8-13-25	27	32	38	36	31	26	
	500	0.115	556	32	15-22-45	13-20-39	11-17-34	10-16-31	33	38	44	42	37	32	
	600	0.166	667	37	18-27-54	16-24-47	13-20-40	13-19-38	38	43	49	47	42	37	
	700	0.225	778	41	21-31-63	18-28-55	16-24-47	15-22-44	42	47	53	51	46	41	
	800	0.294	889	44	24-36-72	21-31-63	18-27-54	17-25-50	45	50	56	54	49	44	
10 x 24	200	0.018	333	-	7-11-21	6-9-19	5-8-16	5-7-15	-	15	21	19	14	-	
	300	0.040	500	20	11-16-32	9-14-28	8-12-24	7-11-22	21	26	32	30	25	20	
	400	0.071	667	27	14-21-43	12-19-37	11-16-32	10-15-30	28	33	39	37	32	27	
	500	0.111	833	33	18-27-53	16-23-47	13-20-40	12-19-37	34	39	45	43	38	33	
	600	0.160	1000	38	21-32-64	19-28-56	16-24-48	15-22-45	39	44	50	48	43	38	
	700	0.218	1167	42	25-37-75	22-33-65	19-28-56	17-26-52	43	48	54	52	47	42	
	800	0.285	1333	45	28-43-85	25-37-75	21-32-64	20-30-60	46	51	57	55	50	45	
10 x 30	200	0.018	417	-	8-12-23	7-10-20	6-9-18	5-8-16	11	16	22	20	15	-	
	300	0.040	625	20	12-18-35	10-15-31	9-13-26	8-12-25	21	26	32	30	25	20	
	400	0.070	833	28	16-23-47	14-20-41	12-18-35	11-16-33	29	34	40	38	33	28	
	500	0.110	1042	34	20-29-59	17-26-51	15-22-44	14-20-41	35	40	46	44	39	34	
	600	0.158	1250	38	23-35-70	20-31-61	18-26-53	16-25-49	39	44	50	48	43	38	
	700	0.215	1458	42	27-41-82	24-36-72	20-31-61	19-29-57	43	48	54	52	47	42	
	800	0.281	1667	46	31-47-94	27-41-82	23-35-70	22-33-66	47	52	58	56	51	46	
10 x 36	200	0.017	500	-	8-13-25	7-11-22	6-9-19	6-9-18	11	16	22	20	15	-	
	300	0.039	750	21	13-19-38	11-17-33	9-14-28	9-13-27	22	27	33	31	26	21	
	400	0.070	1000	28	17-25-51	15-22-44	13-19-38	12-18-35	29	34	40	38	33	28	
	500	0.109	1250	34	21-32-63	18-28-55	16-24-47	15-22-44	35	40	46	44	39	34	
	600	0.157	1500	39	25-38-76	22-33-66	19-28-57	18-27-53	40	45	51	49	44	39	
	700	0.214	1750	43	30-44-89	26-39-78	22-33-66	21-31-62	44	49	55	53	48	43	
	800	0.279	2000	46	34-51-101	30-44-89	25-38-76	24-35-71	47	52	58	56	51	46	
12 x 14	200	0.018	233	-	6-9-18	5-8-16	5-7-14	4-6-13	-	14	20	18	13	-	
	300	0.041	350	19	9-14-27	8-12-24	7-10-21	6-10-19	20	25	31	29	24	19	
	400	0.073	467	26	12-18-37	11-16-32	9-14-27	9-13-26	27	32	38	36	31	26	
	500	0.114	583	32	15-23-46	13-20-40	11-17-34	11-16-32	33	38	44	42	37	32	
	600	0.164	700	37	18-27-55	16-24-48	14-21-41	13-19-38	38	43	49	47	42	37	
	700	0.223	817	41	21-32-64	19-28-56	16-24-48	15-22-45	42	47	53	51	46	41	
	800	0.291	933	44	24-37-73	21-32-64	18-27-55	17-26-51	45	50	56	54	49	44	

NOTE: See notes and correction factors on page P1-15.

PERFORMANCE DATA | IP | RECTANGULAR, WITH OBD/MULTILOUVER

SIZE	NECK VEL	TOTAL PRES	AIR FLOW	SOUND	THROW DIRECTION				OCTAVE BAND, dB						
					1-WAY THROW	2-WAY THROW	3-WAY HROW	4-WAY THROW	2	3	4	5	6	7	
					ft	ft	ft	ft							
12" x 20"	200	0.018	333	-	7-11-21	6-9-19	5-8-16	5-7-15	-	15	21	19	14	-	
	300	0.040	500	20	11-16-32	9-14-28	8-12-24	7-11-22	21	26	32	30	25	20	
	400	0.070	667	27	14-21-42	12-19-37	11-16-32	10-15-30	28	33	39	37	32	27	
	500	0.110	833	33	18-27-53	15-23-46	13-20-40	12-19-37	34	39	45	43	38	33	
	600	0.158	1000	38	21-32-64	19-28-56	16-24-48	15-22-45	39	44	50	48	43	38	
	700	0.215	1167	42	25-37-74	22-32-65	19-28-56	17-26-52	43	48	54	52	47	42	
	800	0.281	1333	45	28-42-85	25-37-74	21-32-64	20-30-59	46	51	57	55	50	45	
12" x 24"	200	0.017	400	-	8-11-23	7-10-20	6-9-17	5-8-16	11	16	22	20	15	-	
	300	0.039	600	20	11-17-34	10-15-30	9-13-26	8-12-24	21	26	32	30	25	20	
	400	0.069	800	27	15-23-46	13-20-40	11-17-34	11-16-32	28	33	39	37	32	27	
	500	0.108	1000	33	19-29-57	17-25-50	14-21-43	13-20-40	34	39	45	43	38	33	
	600	0.156	1200	38	23-34-69	20-30-60	17-26-52	16-24-48	39	44	50	48	43	38	
	700	0.212	1400	42	27-40-80	23-35-70	20-30-60	19-28-56	43	48	54	52	47	42	
	800	0.277	1600	45	31-46-92	27-40-80	23-34-69	21-32-64	46	51	57	55	50	45	
12" x 36"	200	0.017	600	11	9-14-27	8-12-24	7-10-20	6-10-19	12	17	23	21	16	11	
	300	0.038	900	21	14-20-41	12-18-36	10-15-31	10-14-29	22	27	33	31	26	21	
	400	0.068	1200	29	18-27-54	16-24-48	14-20-41	13-19-38	30	35	41	39	34	29	
	500	0.106	1500	34	23-34-68	20-30-60	17-26-51	16-24-48	35	40	46	44	39	34	
	600	0.153	1800	39	27-41-82	24-36-71	20-31-61	19-29-57	40	45	51	49	44	39	
	700	0.208	2100	43	32-48-95	28-42-83	24-36-71	22-33-67	44	49	55	53	48	43	
	800	0.272	2400	46	36-54-109	32-48-95	27-41-82	25-38-76	47	52	58	56	51	46	
14" x 18"	200	0.017	350	-	7-11-22	6-9-19	5-8-16	5-8-15	-	15	21	19	14	-	
	300	0.039	525	20	11-16-32	9-14-28	8-12-24	8-11-23	21	26	32	30	25	20	
	400	0.070	700	27	14-22-43	13-19-38	11-16-32	10-15-30	28	33	39	37	32	27	
	500	0.109	875	33	18-27-54	16-24-47	14-20-41	13-19-38	34	39	45	43	38	33	
	600	0.157	1050	38	22-32-65	19-28-57	16-24-49	15-23-45	39	44	50	48	43	38	
	700	0.213	1225	42	25-38-76	22-33-66	19-28-57	18-26-53	43	48	54	52	47	42	
	800	0.278	1400	45	29-43-86	25-38-76	22-32-65	20-30-61	46	51	57	55	50	45	
14" x 24"	200	0.017	467	-	8-12-24	7-11-21	6-9-18	6-9-17	11	16	22	20	15	-	
	300	0.038	700	20	12-18-37	11-16-32	9-14-27	9-13-26	21	26	32	30	25	20	
	400	0.068	933	28	16-24-49	14-21-43	12-18-37	11-17-34	29	34	40	38	33	28	
	500	0.106	1167	34	20-30-61	18-27-53	15-23-46	14-21-43	35	40	46	44	39	34	
	600	0.153	1400	38	24-37-73	21-32-64	18-27-55	17-26-51	39	44	50	48	43	38	
	700	0.208	1633	42	28-43-85	25-37-75	21-32-64	20-30-60	43	48	54	52	47	42	
	800	0.272	1867	46	33-49-98	28-43-85	24-37-73	23-34-68	47	52	58	56	51	46	
14" x 36"	200	0.017	700	11	9-14-29	8-13-25	7-11-22	6-10-20	12	17	23	21	16	11	
	300	0.037	1050	21	14-22-43	13-19-38	11-16-33	10-15-30	22	27	33	31	26	21	
	400	0.067	1400	29	19-29-58	17-25-51	14-22-43	14-20-41	30	35	41	39	34	29	
	500	0.104	1750	35	24-36-72	21-32-63	18-27-54	17-25-51	36	41	47	45	40	35	
	600	0.150	2100	39	29-43-87	25-38-76	22-33-65	20-30-61	40	45	51	49	44	39	
	700	0.204	2450	43	34-51-101	30-44-89	25-38-76	24-35-71	44	49	55	53	48	43	
	800	0.267	2800	47	39-58-116	34-51-101	29-43-87	27-41-81	48	53	59	57	52	47	
16" x 18"	200	0.017	400	-	8-11-23	7-10-20	6-9-17	5-8-16	-	15	21	19	14	-	
	300	0.039	600	20	11-17-34	10-15-30	9-13-26	8-12-24	21	26	32	30	25	20	
	400	0.069	800	27	15-23-46	13-20-40	11-17-34	11-16-32	28	33	39	37	32	27	
	500	0.107	1000	33	19-29-57	17-25-50	14-21-43	13-20-40	34	39	45	43	38	33	
	600	0.154	1200	38	23-34-69	20-30-60	17-26-51	16-24-48	39	44	50	48	43	38	
	700	0.210	1400	42	27-40-80	23-35-70	20-30-60	19-28-56	43	48	54	52	47	42	
	800	0.274	1600	45	30-46-91	27-40-80	23-34-69	21-32-64	46	51	57	55	50	45	
16" x 20"	200	0.017	444	-	8-12-24	7-10-21	6-9-18	6-8-17	11	16	22	20	15	-	
	300	0.038	667	20	12-18-36	10-16-31	9-13-27	8-13-25	21	26	32	30	25	20	
	400	0.068	889	28	16-24-48	14-21-42	12-18-36	11-17-33	29	34	40	38	33	28	
	500	0.106	1111	33	20-30-60	17-26-52	15-22-45	14-21-42	34	39	45	43	38	33	
	600	0.153	1333	38	24-36-72	21-31-63	18-27-54	17-25-50	39	44	50	48	43	38	
	700	0.208	1556	42	28-42-84	24-37-73	21-31-63	19-29-58	43	48	54	52	47	42	
	800	0.272	1778	45	32-48-95	28-42-84	24-36-72	22-33-67	46	51	57	55	50	45	

NOTE: See notes and correction factors on page P1-15.

PERFORMANCE DATA | IP | RECTANGULAR, WITH OBD/MULTILOUVER

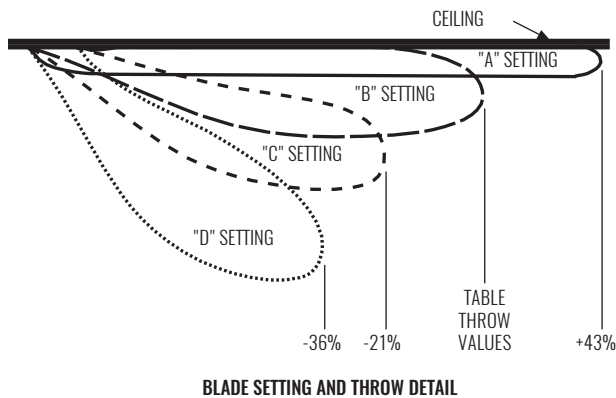
SIZE	NECK VEL	TOTAL PRES	AIR FLOW	SOUND	THROW DIRECTION				OCTAVE BAND, dB						
					1-WAY THROW	2-WAY THROW	3-WAY HROW	4-WAY THROW	2	3	4	5	6	7	
in	fpm	in wg	cfm	NC	ft	ft	ft	ft							
16" x 24"	200	0.017	533	-	9-13-26	8-11-23	6-10-19	6-9-18	11	16	22	20	15	-	
	300	0.038	800	21	13-19-39	11-17-34	10-14-29	9-14-27	22	27	33	31	26	21	
	400	0.067	1067	28	17-26-52	15-23-45	13-19-39	12-18-36	29	34	40	38	33	28	
	500	0.105	1333	34	21-32-64	19-28-56	16-24-48	15-23-45	35	40	46	44	39	34	
	600	0.151	1600	38	26-39-77	23-34-68	19-29-58	18-27-54	39	44	50	48	43	38	
	700	0.206	1867	42	30-45-90	26-39-79	23-34-68	21-32-63	43	48	54	52	47	42	
16" x 30"	800	0.268	2133	46	34-52-103	30-45-90	26-39-77	24-36-72	47	52	58	56	51	46	
	200	0.066	667	11	9-14-28	8-12-25	6-11-21	6-10-20	12	17	23	21	16	11	
	300	0.037	1000	21	14-21-42	12-19-37	11-16-32	10-15-30	22	27	33	31	26	21	
	400	0.066	1333	29	19-28-57	17-25-50	14-21-42	13-20-40	30	35	41	39	34	29	
	500	0.104	1667	34	24-35-71	21-31-62	18-27-53	17-25-50	35	40	46	44	39	34	
	600	0.149	2000	39	28-42-85	25-37-74	21-32-64	20-30-59	40	45	51	49	44	39	
16" x 36"	700	0.203	2333	43	33-50-99	29-43-87	25-37-74	23-35-69	44	49	55	53	48	43	
	800	0.265	2667	46	38-57-113	33-50-99	28-42-85	26-40-79	47	52	58	56	51	46	
	200	0.016	800	11	9-15-31	8-13-27	6-11-23	6-11-21	12	17	23	21	16	11	
	300	0.037	1200	22	15-23-46	13-20-40	11-17-34	11-16-32	23	28	34	32	27	22	
	400	0.066	1600	29	20-31-61	18-27-54	15-23-46	14-21-43	30	35	41	39	34	29	
	500	0.103	2000	35	26-38-77	22-33-67	19-29-57	18-27-54	36	41	47	45	40	35	
18" x 20"	600	0.148	2400	39	31-46-92	27-40-80	23-34-69	21-32-64	40	45	51	49	44	39	
	700	0.201	2800	43	36-54-107	31-47-94	27-40-80	25-37-75	44	49	55	53	48	43	
	800	0.263	3200	47	41-61-122	36-54-107	31-46-92	29-43-86	48	53	59	57	52	47	
	200	0.017	500	-	8-13-25	7-11-22	6-9-19	6-9-18	11	16	22	20	15	-	
	300	0.038	750	20	13-19-38	11-16-33	9-14-28	9-13-26	21	26	32	30	25	20	
	400	0.067	1000	28	17-25-50	15-22-44	13-19-38	12-18-35	29	34	40	38	33	28	
18" x 24"	500	0.105	1250	34	21-31-63	18-27-55	16-23-47	15-22-44	35	40	46	44	39	34	
	600	0.151	1500	38	25-38-75	22-33-66	19-28-56	18-26-53	39	44	50	48	43	38	
	700	0.206	1750	42	29-44-88	26-38-77	22-33-66	20-31-61	43	48	54	52	47	42	
	800	0.269	2000	46	33-50-100	29-44-88	25-38-75	23-35-70	47	52	58	56	51	46	
	200	0.017	600	-	9-14-27	8-12-24	6-10-20	6-9-19	11	16	22	20	15	-	
	300	0.037	900	21	14-20-41	12-18-35	10-15-30	9-14-28	22	27	33	31	26	21	
18" x 36"	400	0.066	1200	28	18-27-54	16-24-47	14-20-41	13-19-38	29	34	40	38	33	28	
	500	0.104	1500	34	23-34-68	20-30-59	17-25-51	16-24-47	35	40	46	44	39	34	
	600	0.149	1800	39	27-41-81	24-35-71	20-30-61	19-28-57	40	45	51	49	44	39	
	700	0.203	2100	43	32-47-95	28-41-83	24-35-71	22-33-66	44	49	55	53	48	43	
	800	0.266	2400	46	36-54-108	32-47-95	27-41-81	25-38-76	47	52	58	56	51	46	
	200	0.016	900	11	9-16-32	7-14-28	6-12-24	6-11-22	12	17	23	21	16	11	
20" x 24"	300	0.037	1350	22	16-24-48	14-21-42	12-18-36	11-17-34	23	28	34	32	27	22	
	400	0.065	1800	29	21-32-64	19-28-56	16-24-48	15-22-45	30	35	41	39	34	29	
	500	0.102	2250	35	27-40-80	23-35-70	20-30-60	19-28-56	36	41	47	45	40	35	
	600	0.146	2700	40	32-48-96	28-42-84	24-36-72	22-34-67	41	46	52	50	45	40	
	700	0.199	3150	44	37-56-112	33-49-98	28-42-84	26-39-79	45	50	56	54	49	44	
	800	0.260	3600	47	43-64-129	37-56-112	32-48-96	30-45-90	48	53	59	57	52	47	
20" x 36"	200	0.016	667	11	9-14-28	7-12-25	6-11-21	6-10-20	12	17	23	21	16	11	
	300	0.037	1000	21	14-21-42	12-19-37	11-16-32	10-15-30	22	27	33	31	26	21	
	400	0.066	1333	28	19-28-57	16-25-49	14-21-42	13-20-40	29	34	40	38	33	28	
	500	0.103	1667	34	24-35-71	21-31-62	18-26-53	16-25-49	35	40	46	44	39	34	
	600	0.148	2000	39	28-42-85	25-37-74	21-32-64	20-30-59	40	45	51	49	44	39	
	700	0.202	2333	43	33-49-99	29-43-87	25-37-74	23-35-69	44	49	55	53	48	43	
20" x 36"	800	0.263	2667	46	38-57-113	33-49-99	28-42-85	26-40-79	47	52	58	56	51	46	
	200	0.016	1000	12	9-17-34	7-15-29	6-13-25	6-12-24	13	18	24	22	17	12	
	300	0.036	1500	22	17-25-50	15-22-44	13-19-38	12-18-35	23	28	34	32	27	22	
	400	0.064	2000	29	22-34-67	20-29-59	17-25-50	16-24-47	30	35	41	39	34	29	
	500	0.101	2500	35	28-42-84	24-37-73	21-31-63	20-29-59	36	41	47	45	40	35	
	600	0.145	3000	40	34-50-101	29-44-88	25-38-76	24-35-71	41	46	52	50	45	40	
20" x 36"	700	0.197	3500	44	39-59-118	34-51-103	29-44-88	27-41-82	45	50	56	54	49	44	
	800	0.258	4000	47	45-67-134	39-59-118	34-50-101	31-47-94	48	53	59	57	52	47	

NOTE: See notes and correction factors on page P1-15.

PERFORMANCE DATA | IP | RECTANGULAR, WITH OBD/MULTILOUVER

SIZE	NECK VEL	TOTAL PRES	AIR FLOW	SOUND	THROW DIRECTION				OCTAVE BAND, dB						
					1-WAY THROW	2-WAY THROW	3-WAY HROW	4-WAY THROW	2	3	4	5	6	7	
					ft	ft	ft	ft							
24" x 30"	200	0.016	1000	12	8 - 17 - 34	7 - 15 - 29	6 - 13 - 25	6 - 12 - 23	13	18	24	22	17	12	
	300	0.036	1500	22	17 - 25 - 50	15 - 22 - 44	13 - 19 - 38	12 - 18 - 35	23	28	34	32	27	22	
	400	0.064	2000	29	22 - 34 - 67	20 - 29 - 59	17 - 25 - 50	16 - 23 - 47	30	35	41	39	34	29	
	500	0.100	2500	35	28 - 42 - 84	24 - 37 - 73	21 - 31 - 63	20 - 29 - 59	36	41	47	45	40	35	
	600	0.144	3000	40	34 - 50 - 101	29 - 44 - 88	25 - 38 - 75	23 - 35 - 70	41	46	52	50	45	40	
	700	0.196	3500	44	39 - 59 - 117	34 - 51 - 103	29 - 44 - 88	27 - 41 - 82	45	50	56	54	49	44	
	800	0.257	4000	47	45 - 67 - 134	39 - 59 - 117	34 - 50 - 101	31 - 47 - 94	48	53	59	57	52	47	
24" x 36"	200	0.016	1200	12	8 - 18 - 36	7 - 16 - 32	6 - 14 - 27	6 - 13 - 25	13	18	24	22	17	12	
	300	0.036	1800	22	18 - 27 - 54	16 - 24 - 48	14 - 20 - 41	13 - 19 - 38	23	28	34	32	27	22	
	400	0.064	2400	30	24 - 36 - 73	21 - 32 - 63	18 - 27 - 54	17 - 25 - 51	31	36	42	40	35	30	
	500	0.099	3000	36	30 - 45 - 91	26 - 40 - 79	23 - 34 - 68	21 - 32 - 63	37	42	48	46	41	36	
	600	0.143	3600	40	36 - 54 - 109	32 - 48 - 95	27 - 41 - 82	25 - 38 - 76	41	46	52	50	45	40	
	700	0.195	4200	44	42 - 63 - 127	37 - 56 - 111	32 - 48 - 95	30 - 44 - 89	45	50	56	54	49	44	
	800	0.254	4800	48	48 - 73 - 145	42 - 63 - 127	36 - 54 - 109	34 - 51 - 102	49	54	60	58	53	48	
30" x 36"	200	0.016	1500	13	8 - 19 - 40	7 - 17 - 35	6 - 14 - 30	6 - 13 - 28	14	19	25	23	18	13	
	300	0.035	2250	23	19 - 30 - 60	17 - 26 - 52	14 - 22 - 45	13 - 21 - 42	24	29	35	33	28	23	
	400	0.063	3000	30	27 - 40 - 80	23 - 35 - 70	20 - 30 - 60	19 - 28 - 56	31	36	42	40	35	30	
	500	0.098	3750	36	33 - 50 - 100	29 - 44 - 87	25 - 37 - 75	23 - 35 - 70	37	42	48	46	41	36	
	600	0.141	4500	41	40 - 60 - 120	35 - 52 - 105	30 - 45 - 90	28 - 42 - 84	42	47	53	51	46	41	
	700	0.192	5250	45	46 - 70 - 139	41 - 61 - 122	35 - 52 - 105	33 - 49 - 98	46	51	57	55	50	45	
	800	0.251	6000	48	53 - 80 - 159	46 - 70 - 139	40 - 60 - 120	37 - 56 - 112	49	54	60	58	53	48	

NOTES: Throw values are given for terminal velocities of 150, 100, and 50 FPM. Throw values are given for isothermal conditions. NC values are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Dash in space denotes a 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. The throw values given for 1-Way Throw is for [Total CFM] CFM per side. The throw values given for 2-Way Throw is for [Total CFM/2] CFM per side. The throw values given for 3-Way Throw is for [Total CFM/3] CFM per side. The throw values given for 4-Way Throw is for [Total CFM/4] CFM per side. See Krueger's selection software for performance data not shown, including octave band data.



NOTE: Reference page P1-5 for blade setting detail.

CORRECTION FACTOR (WITH OBD)			
BLADE SETTING	THROWS (MULTIPLY)	PS (MULTIPLY)	NC (ADD)
A	1.43	1.30	+2
B	1.00	1.00	+0
C	0.79	0.72	-3
D	0.64	0.52	-4

CORRECTION FACTOR (WITHOUT OBD)			
BLADE SETTING	THROWS (MULTIPLY)	PS (MULTIPLY)	NC (ADD)
A	1.43	1.20	+0
B	1.00	0.85	-3
C	0.70	0.61	-4
D	0.64	0.33	-6

GRILLES | STAINLESS STEEL

PERFORMANCE DATA | METRIC | SQUARE, WITH OBD/MULTILOUVER

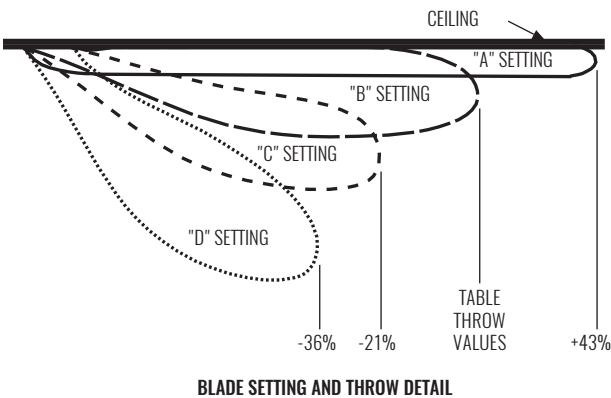
SIZE	NECK VEL	TOTAL PRES	AIR FLOW	SOUND	THROW DIRECTION				OCTAVE BAND, dB						
					1-WAY THROW	2-WAY THROW	3-WAY HROW	4-WAY THROW	2	3	4	5	6	7	
cm	m/s	Pa	L/s	NC	m	m	m	m							
152 x 152	1.02	6.1	24	-	1.3-1.9-3.9	1.1-1.7-3.4	1.0-1.5-2.9	0.9-1.4-2.7	-	13	19	17	12	-	
	1.52	13.7	35	18	1.9-2.9-5.8	1.7-2.5-5.1	1.5-2.2-4.4	1.4-2.0-4.1	18	23	29	27	22	17	
	2.03	24.3	47	25	2.6-3.9-7.7	2.3-3.4-6.8	1.9-2.9-5.8	1.8-2.7-5.4	25	30	36	34	29	24	
	2.54	38.0	59	31	3.2-4.8-9.6	2.8-4.2-8.5	2.4-3.6-7.3	2.3-3.4-6.8	31	36	42	40	35	30	
	3.05	54.7	71	35	3.9-5.8-10.5	3.4-5.1-10.0	2.9-4.4-8.7	2.7-4.1-7.9	36	41	47	45	40	35	
	3.56	74.4	83	39	4.5-6.8-11.4	3.9-5.9-10.8	3.4-5.1-9.7	3.2-4.7-8.5	40	45	51	49	44	39	
4.06	97.2	94	43	5.2-7.7-12.2	4.5-6.8-11.6	3.9-5.8-10.3	3.6-5.4-9.1	43	48	54	52	47	42		
203 x 203	1.02	5.3	42	-	1.5-2.2-4.4	1.3-1.9-3.8	1.1-1.6-3.3	1.0-1.5-3.1	-	12	18	16	11	-	
	1.52	11.9	63	18	2.2-3.3-6.6	1.9-2.9-5.7	1.6-2.5-4.9	1.5-2.3-4.6	17	22	28	26	21	16	
	2.03	21.1	84	25	2.9-4.4-8.8	2.6-3.8-7.7	2.2-3.3-6.6	2.0-3.1-6.1	24	29	35	33	28	23	
	2.54	33.0	105	31	3.6-5.5-10.9	3.2-4.8-9.6	2.7-4.1-8.2	2.6-3.8-7.7	30	35	41	39	34	29	
	3.05	47.5	126	36	4.4-6.6-13.1	3.8-5.7-11.5	3.3-4.9-9.8	3.1-4.6-9.2	35	40	46	44	39	34	
	3.56	64.7	147	40	5.1-7.7-15.2	4.5-6.7-13.4	3.8-5.7-11.5	3.6-5.4-10.7	39	44	50	48	43	38	
4.06	84.5	168	43	5.8-8.8-16.2	5.1-7.7-15.3	4.4-6.6-13.1	4.1-6.1-12.2	42	47	53	51	46	41		
254 x 254	1.02	4.9	66	-	1.6-2.4-4.9	1.4-2.1-4.3	1.2-1.8-3.6	1.1-1.7-3.4	-	11	17	15	-	-	
	1.52	10.9	98	18	2.4-3.6-7.3	2.1-3.2-6.4	1.8-2.7-5.5	1.7-2.6-5.1	17	22	28	26	21	16	
	2.03	19.5	131	26	3.2-4.9-9.7	2.8-4.3-8.5	2.4-3.6-7.3	2.3-3.4-6.8	24	29	35	33	28	23	
	2.54	30.4	164	31	4.1-6.1-12.2	3.5-5.3-10.6	3.0-4.6-9.1	2.8-4.3-8.5	30	35	41	39	34	29	
	3.05	43.8	197	36	4.9-7.3-14.6	4.3-6.4-12.8	3.6-5.5-10.9	3.4-5.1-10.2	34	39	45	43	38	33	
	3.56	59.6	229	40	5.7-8.5-17.0	5.0-7.4-14.9	4.3-6.4-12.8	4.0-6.0-11.9	38	43	49	47	42	37	
4.06	77.8	262	43	6.5-9.7-19.5	5.7-8.5-17.0	4.9-7.3-14.6	4.5-6.8-13.6	42	47	53	51	46	41		
305 x 305	1.02	4.6	94	-	1.8-2.7-5.3	1.6-2.3-4.7	1.3-2.0-4.0	1.2-1.9-3.7	-	11	17	15	-	-	
	1.52	10.4	142	19	2.7-4.0-8.0	2.3-3.5-7.0	2.0-3.0-6.0	1.9-2.8-5.6	17	22	28	26	21	16	
	2.03	18.4	189	26	3.5-5.3-10.6	3.1-4.7-9.3	2.7-4.0-8.0	2.5-3.7-7.5	24	29	35	33	28	23	
	2.54	28.8	236	32	4.4-6.7-13.3	3.9-5.8-11.6	3.3-5.0-10.0	3.1-4.7-9.3	30	35	41	39	34	29	
	3.05	41.5	283	37	5.3-8.0-16.0	4.7-7.0-14.0	4.0-6.0-12.0	3.7-5.6-11.2	35	40	46	44	39	34	
	3.56	56.5	330	41	6.2-9.3-18.6	5.4-8.2-16.3	4.7-7.0-14.0	4.3-6.5-13.0	39	44	50	48	43	38	
4.06	73.8	378	44	7.1-10.6-21.3	6.2-9.3-18.6	5.3-8.0-16.0	5.0-7.5-14.9	42	47	53	51	46	41		
356 x 356	1.02	4.4	128	-	1.9-2.9-5.8	1.7-2.5-5.0	1.4-2.2-4.3	1.3-2.0-4.0	-	11	17	15	-	-	
	1.52	10.0	193	18	2.9-4.3-8.6	2.5-3.8-7.6	2.2-3.2-6.5	2.0-3.0-6.1	17	22	28	26	21	16	
	2.03	17.8	257	26	3.8-5.8-11.5	3.4-5.0-10.1	2.9-4.3-8.6	2.7-4.0-8.1	24	29	35	33	28	23	
	2.54	27.7	321	31	4.8-7.2-14.4	4.2-6.3-12.6	3.6-5.4-10.8	3.4-5.0-10.1	30	35	41	39	34	29	
	3.05	40.0	385	36	5.8-8.6-17.3	5.0-7.6-15.1	4.3-6.5-13.0	4.0-6.1-12.1	35	40	46	44	39	34	
	3.56	54.4	450	40	6.7-10.1-20.2	5.9-8.8-17.6	5.0-7.6-15.1	4.7-7.1-14.1	39	44	50	48	43	38	
4.06	71.0	514	44	7.7-11.5-23.1	6.7-10.1-20.2	5.8-8.6-17.3	5.4-8.1-16.1	42	47	53	51	46	41		
406 x 406	1.02	4.3	168	-	2.1-3.1-6.2	1.8-2.7-5.4	1.5-2.3-4.6	1.4-2.2-4.3	-	11	17	15	-	-	
	1.52	9.7	252	20	3.1-4.6-9.3	2.7-4.1-8.1	2.3-3.5-7.0	2.2-3.2-6.5	17	22	28	26	21	16	
	2.03	17.3	336	27	4.1-6.2-12.4	3.6-5.4-10.8	3.1-4.6-9.3	2.9-4.3-8.7	24	29	35	33	28	23	
	2.54	27.0	420	33	5.2-7.7-15.5	4.5-6.8-13.5	3.9-5.8-11.6	3.6-5.4-10.8	30	35	41	39	34	29	
	3.05	38.8	503	38	6.2-9.3-18.5	5.4-8.1-16.2	4.6-7.0-13.9	4.3-6.5-13.0	35	40	46	44	39	34	
	3.56	52.9	587	42	7.2-10.8-21.6	6.3-9.5-18.9	5.4-8.1-16.2	5.0-7.6-15.1	39	44	50	48	43	38	
4.06	69.1	671	45	8.2-12.4-24.7	7.2-10.8-21.6	6.2-9.3-18.5	5.8-8.7-17.3	42	47	53	51	46	41		
457 x 457	1.02	4.2	212	-	2.2-3.3-6.6	1.9-2.9-5.8	1.6-2.5-4.9	1.5-2.3-4.6	-	11	17	15	-	-	
	1.52	9.5	319	18	3.3-4.9-9.9	2.9-4.3-8.6	2.5-3.7-7.4	2.3-3.5-6.9	17	22	28	26	21	16	
	2.03	16.9	425	25	4.4-6.6-13.2	3.8-5.8-11.5	3.3-4.9-9.9	3.1-4.6-9.2	24	29	35	33	28	23	
	2.54	26.4	531	31	5.5-8.2-16.5	4.8-7.2-14.4	4.1-6.2-12.3	3.8-5.8-11.5	30	35	41	39	34	29	
	3.05	38.0	637	35	6.6-9.9-19.8	5.8-8.6-17.3	4.9-7.4-14.8	4.6-6.9-13.8	35	40	46	44	39	34	
	3.56	51.7	743	39	7.7-11.5-23.0	6.7-10.1-20.2	5.8-8.6-17.3	5.4-8.1-16.1	39	44	50	48	43	38	
4.06	67.6	850	43	8.8-13.2-26.3	7.7-11.5-23.0	6.6-9.9-19.8	6.1-9.2-18.4	42	47	53	51	46	41		
508 x 508	1.02	4.2	262	-	2.3-3.5-7.0	2.0-3.1-6.1	1.7-2.6-5.2	1.6-2.4-4.9	-	-	16	14	-	-	
	1.52	9.3	393	21	3.5-5.2-10.5	3.1-4.6-9.2	2.6-3.9-7.8	2.4-3.7-7.3	15	20	26	24	19	14	
	2.03	16.6	524	28	4.6-7.0-13.9	4.1-6.1-12.2	3.5-5.2-10.5	3.3-4.9-9.8	23	28	34	32	27	22	
	2.54	25.9	655	34	5.8-8.7-17.4	5.1-7.6-15.3	4.4-6.5-13.1	4.1-6.1-12.2	29	34	40	38	33	28	
	3.05	37.4	787	39	7.0-10.5-20.9	6.1-9.2-18.3	5.2-7.8-15.7	4.9-7.3-14.6	33	38	44	42	37	32	
	3.56	50.8	918	43	8.1-12.2-24.4	7.1-10.7-21.4	6.1-9.2-18.3	5.7-8.5-17.1	37	42	48	46	41	36	
4.06	66.4	1049	46	9.3-13.9-27.9	8.1-12.2-24.4	7.0-10.5-20.9	6.5-9.8-19.5	41	46	52	50	45	40		

NOTE: See notes and correction factors on page P1-17.

PERFORMANCE DATA | METRIC | SQUARE, WITH OBD/MULTILOUVER

SIZE	NECK VEL	TOTAL PRES	AIR FLOW	SOUND	THROW DIRECTION				OCTAVE BAND, dB						
					1-WAY THROW	2-WAY THROW	3-WAY HROW	4-WAY THROW	OCTAVE BAND, dB						
					m	m	m	m	2	3	4	5	6	7	
cm	m/s	Pa	L/s	NC											
610 x 610	1.02	4.0	378	-	2.2 - 3.9 - 7.7	1.9 - 3.4 - 6.7	1.6 - 2.9 - 5.8	1.5 - 2.7 - 5.4	-	-	16	14	-	-	
	1.52	9.1	566	17	3.9 - 5.8 - 11.6	3.4 - 5.1 - 10.1	2.9 - 4.3 - 8.7	2.7 - 4.0 - 8.1	16	21	27	25	20	15	
	2.03	16.2	755	24	5.1 - 7.7 - 15.4	4.5 - 6.7 - 13.5	3.9 - 5.8 - 11.6	3.6 - 5.4 - 10.8	23	28	34	32	27	22	
	2.54	25.3	944	30	6.4 - 9.6 - 19.3	5.6 - 8.4 - 16.9	4.8 - 7.2 - 14.5	4.5 - 6.7 - 13.5	29	34	40	38	33	28	
	3.05	36.4	1133	35	7.7 - 11.6 - 23.1	6.7 - 10.1 - 20.2	5.8 - 8.7 - 17.3	5.4 - 8.1 - 16.2	34	39	45	43	38	33	
	3.56	49.5	1321	39	9.0 - 13.5 - 27.0	7.9 - 11.8 - 23.6	6.7 - 10.1 - 20.2	6.3 - 9.4 - 18.9	38	43	49	47	42	37	
	4.06	64.7	1510	42	10.3 - 15.4 - 30.8	9.0 - 13.5 - 27.0	7.7 - 11.6 - 23.1	7.2 - 10.8 - 21.6	41	46	52	50	45	40	
762 x 762	1.02	3.9	590	12	2.0 - 4.4 - 8.7	1.8 - 3.8 - 7.6	1.5 - 3.3 - 6.5	1.4 - 3.1 - 6.1	-	-	16	14	-	-	
	1.52	8.9	885	23	4.4 - 6.5 - 13.1	3.8 - 5.7 - 11.5	3.3 - 4.9 - 9.8	3.1 - 4.6 - 9.2	16	21	27	25	20	15	
	2.03	15.8	1180	30	5.8 - 8.7 - 17.5	5.1 - 7.6 - 15.3	4.4 - 6.5 - 13.1	4.1 - 6.1 - 12.2	23	28	34	32	27	22	
	2.54	24.6	1475	36	7.3 - 10.9 - 21.8	6.4 - 9.6 - 19.1	5.5 - 8.2 - 16.4	5.1 - 7.6 - 15.3	29	34	40	38	33	28	
	3.05	35.5	1770	40	8.7 - 13.1 - 26.2	7.6 - 11.5 - 22.9	6.5 - 9.8 - 19.6	6.1 - 9.2 - 18.3	34	39	45	43	38	33	
	3.56	48.3	2065	44	10.2 - 15.3 - 30.6	8.9 - 13.4 - 26.7	7.6 - 11.5 - 22.9	7.1 - 10.7 - 21.4	38	43	49	47	42	37	
	4.06	63.1	2360	48	11.6 - 17.5 - 34.9	10.2 - 15.3 - 30.6	8.7 - 13.1 - 26.2	8.2 - 12.2 - 24.5	41	46	52	50	45	40	
914 x 914	1.02	3.9	850	13	1.9 - 4.3 - 9.7	3.6 - 5.5 - 11.0	3.1 - 4.7 - 9.4	2.9 - 4.4 - 8.8	-	11	17	15	-	-	
	1.52	8.7	1274	23	4.3 - 7.3 - 14.5	5.5 - 8.3 - 16.5	4.7 - 7.1 - 14.1	4.4 - 6.6 - 13.2	16	21	27	25	20	15	
	2.03	15.5	1699	31	6.5 - 9.7 - 19.4	7.3 - 11.0 - 22.0	6.3 - 9.4 - 18.9	5.9 - 8.8 - 17.6	23	28	34	32	27	22	
	2.54	24.2	2124	37	8.1 - 12.1 - 24.2	9.2 - 13.8 - 27.5	7.9 - 11.8 - 23.6	7.3 - 11.0 - 22.0	29	34	40	38	33	28	
	3.05	34.9	2549	41	9.7 - 14.5 - 29.1	11.0 - 16.5 - 33.0	9.4 - 14.1 - 28.3	8.8 - 13.2 - 26.4	34	39	45	43	38	33	
	3.56	47.5	2973	45	11.3 - 16.9 - 33.9	12.8 - 19.3 - 38.5	11.0 - 16.5 - 33.0	10.3 - 15.4 - 30.8	38	43	49	47	42	37	
	4.06	62.0	3398	49	12.9 - 19.4 - 38.7	14.7 - 22.0 - 44.0	12.6 - 18.9 - 37.7	11.7 - 17.6 - 35.2	41	46	52	50	45	40	

NOTES: Throw values are given for terminal velocities of 0.75, 0.50, and 0.25 m/s. Throw values are given for isothermal conditions. NC values are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Dash in space denotes a 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. The throw values given for 1-Way Throw is for [(Total L/s) L/s per side. The throw values given for 2-Way Throw is for [(Total L/s)/2] L/s per side. The throw values given for 3-Way Throw is for [(Total L/s)/3] L/s per side. The throw values given for 4-Way Throw is for [(Total L/s)/4] L/s per side. See Krueger's selection software for performance data not shown, including octave band data.



NOTE: Reference page P1-5 for blade setting detail.

CORRECTION FACTOR (WITH OBD)			
BLADE SETTING	THROWS (MULTIPLY)	Ps (MULTIPLY)	NC (ADD)
A	1.43	1.30	+2
B	1.00	1.00	+0
C	0.79	0.72	-3
D	0.64	0.52	-4

CORRECTION FACTOR (WITHOUT OBD)			
BLADE SETTING	THROWS (MULTIPLY)	Ps (MULTIPLY)	NC (ADD)
A	1.43	1.20	+0
B	1.00	0.85	-3
C	0.70	0.61	-4
D	0.64	0.33	-6

GRILLES | STAINLESS STEEL

PERFORMANCE DATA | METRIC | RECTANGULAR, WITH OBD/MULTILOUVER

SIZE	NECK VEL	TOTAL PRES	AIR FLOW	SOUND	THROW DIRECTION				OCTAVE BAND, dB						
					1-WAY THROW	2-WAY THROW	3-WAY HROW	4-WAY THROW	2	3	4	5	6	7	
cm	m/s	Pa	L/s	NC	m	m	m	m							
102 x 152	1.016	7.0	16	-	0.6-0.9-1.7	0.4-0.6-1.2	0.4-0.6-1.3	0.4-0.6-1.2	-	15	21	19	14	-	
	1.524	15.9	24	18	0.9-1.3-2.6	0.6-0.9-1.8	0.6-1.0-1.9	0.6-0.9-1.8	20	25	31	29	24	19	
	2.032	28.2	31	25	1.1-1.7-3.4	0.8-1.2-2.4	0.9-1.3-2.6	0.8-1.2-2.4	27	32	38	36	31	26	
	2.54	44.0	39	31	1.4-2.1-4.3	1.0-1.5-3.0	1.1-1.6-3.2	1.0-1.5-3.0	33	38	44	42	37	32	
	3.048	63.4	47	36	1.7-2.6-5.1	1.2-1.8-3.6	1.3-1.9-3.8	1.2-1.8-3.6	38	43	49	47	42	37	
	3.556	86.3	55	40	2.0-3.0-6.0	1.4-2.1-4.2	1.5-2.2-4.5	1.4-2.1-4.2	42	47	53	51	46	41	
4.064	112.8	63	43	2.3-3.4-6.8	1.6-2.4-4.8	1.7-2.6-5.1	1.6-2.4-4.8	45	50	56	54	49	44		
102 x 203	1.016	6.6	21	-	0.6-0.9-1.8	0.7-1.0-2.0	0.5-0.7-1.4	0.4-0.6-1.3	-	14	20	18	13	-	
	1.524	14.8	31	18	0.9-1.4-2.7	1.0-1.5-3.0	0.7-1.0-2.0	0.6-1.0-1.9	20	25	31	29	24	19	
	2.032	26.3	42	25	1.2-1.8-3.6	1.3-2.0-4.0	0.9-1.4-2.7	0.8-1.3-2.5	27	32	38	36	31	26	
	2.54	41.1	52	31	1.5-2.3-4.5	1.7-2.5-5.0	1.1-1.7-3.4	1.1-1.6-3.2	33	38	44	42	37	32	
	3.048	59.1	63	36	1.8-2.7-5.4	2.0-3.0-6.0	1.4-2.0-4.1	1.3-1.9-3.8	38	43	49	47	42	37	
	3.556	80.5	73	40	2.1-3.2-6.3	2.3-3.5-7.0	1.6-2.4-4.8	1.5-2.2-4.4	42	47	53	51	46	41	
4.064	105.1	84	43	2.4-3.6-7.2	2.6-4.0-7.5	1.8-2.7-5.4	1.7-2.5-5.1	45	50	56	54	49	44		
102 x 254	1.016	6.3	26	-	0.6-1.0-1.9	0.6-0.8-1.7	0.5-0.7-1.4	0.4-0.7-1.3	-	14	20	18	13	-	
	1.524	14.2	39	18	1.0-1.4-2.9	0.8-1.3-2.5	0.7-1.1-2.1	0.7-1.0-2.0	20	25	31	29	24	19	
	2.032	25.2	52	26	1.3-1.9-3.8	1.1-1.7-3.3	1.0-1.4-2.9	0.9-1.3-2.7	27	32	38	36	31	26	
	2.54	39.4	66	31	1.6-2.4-4.8	1.4-2.1-4.2	1.2-1.8-3.6	1.1-1.7-3.3	33	38	44	42	37	32	
	3.048	56.8	79	36	1.9-2.9-5.7	1.7-2.5-5.0	1.4-2.1-4.3	1.3-2.0-4.0	38	43	49	47	42	37	
	3.556	77.2	92	40	2.2-3.3-6.7	1.9-2.9-5.8	1.7-2.5-5.0	1.6-2.3-4.7	42	47	53	51	46	41	
4.064	100.9	105	44	2.5-3.8-7.6	2.2-3.3-6.7	1.9-2.9-5.7	1.8-2.7-5.3	45	50	56	54	49	44		
102 x 305	1.016	6.1	31	-	0.7-1.0-2.0	0.6-0.9-1.7	0.5-0.7-1.5	0.5-0.7-1.4	-	15	21	19	14	-	
	1.524	13.8	47	19	1.0-1.5-3.0	0.9-1.3-2.6	0.7-1.1-2.2	0.7-1.0-2.1	20	25	31	29	24	19	
	2.032	24.6	63	26	1.3-2.0-4.0	1.2-1.7-3.5	1.0-1.5-3.0	0.9-1.4-2.8	28	33	39	37	32	27	
	2.54	38.4	79	32	1.7-2.5-5.0	1.5-2.2-4.4	1.2-1.9-3.7	1.2-1.7-3.5	34	39	45	43	38	33	
	3.048	55.2	94	36	2.0-3.0-6.0	1.7-2.6-5.2	1.5-2.2-4.5	1.4-2.1-4.2	38	43	49	47	42	37	
	3.556	75.2	110	40	2.3-3.5-7.0	2.0-3.1-6.1	1.7-2.6-5.2	1.6-2.4-4.9	42	47	53	51	46	41	
4.064	98.2	126	44	2.7-4.0-8.0	2.3-3.5-7.0	2.0-3.0-6.0	1.9-2.8-5.6	46	51	57	55	50	45		
102 x 356	1.016	6.0	37	-	0.8-1.2-2.3	0.5-0.8-1.6	0.6-0.9-1.7	0.5-0.8-1.6	-	15	21	19	14	-	
	1.524	13.6	55	19	1.2-1.7-3.5	0.8-1.2-2.5	0.9-1.3-2.6	0.8-1.2-2.4	21	26	32	30	25	20	
	2.032	24.1	73	26	1.6-2.3-4.7	1.1-1.6-3.3	1.2-1.7-3.5	1.1-1.6-3.3	28	33	39	37	32	27	
	2.54	37.6	92	32	1.9-2.9-5.8	1.4-2.1-4.1	1.5-2.2-4.4	1.4-2.0-4.1	34	39	45	43	38	33	
	3.048	54.2	110	37	2.3-3.5-7.0	1.6-2.5-4.9	1.7-2.6-5.2	1.6-2.4-4.9	39	44	50	48	43	38	
	3.556	73.8	128	41	2.7-4.1-8.2	1.9-2.9-5.8	2.0-3.1-6.1	1.9-2.9-5.7	42	47	53	51	46	41	
4.064	96.4	147	44	3.1-4.7-9.3	2.2-3.3-6.6	2.3-3.5-7.0	2.2-3.3-6.5	46	51	57	55	50	45		
102 x 406	1.016	5.9	42	-	0.7-1.1-2.2	0.6-0.9-1.9	0.5-0.8-1.6	0.5-0.8-1.5	-	15	21	19	14	-	
	1.524	13.4	63	19	1.1-1.6-3.2	0.9-1.4-2.8	0.8-1.2-2.4	0.8-1.1-2.3	21	26	32	30	25	20	
	2.032	23.8	84	26	1.4-2.2-4.3	1.3-1.9-3.8	1.1-1.6-3.2	1.0-1.5-3.0	28	33	39	37	32	27	
	2.54	37.1	105	32	1.8-2.7-5.4	1.6-2.4-4.7	1.3-2.0-4.0	1.3-1.9-3.8	34	39	45	43	38	33	
	3.048	53.5	126	37	2.2-3.2-6.5	1.9-2.8-5.7	1.6-2.4-4.8	1.5-2.3-4.5	39	44	50	48	43	38	
	3.556	72.8	147	41	2.5-3.8-7.5	2.2-3.3-6.6	1.9-2.8-5.7	1.8-2.6-5.3	43	48	54	52	47	42	
4.064	95.0	168	44	2.9-4.3-8.6	2.5-3.8-7.5	2.2-3.2-6.5	2.0-3.0-6.0	46	51	57	55	50	45		
102 x 457	1.016	5.9	47	-	0.7-1.1-2.2	0.6-1.0-1.9	0.6-0.8-1.7	0.5-0.8-1.6	11	16	22	20	15	-	
	1.524	13.2	71	19	1.1-1.7-3.3	1.0-1.5-2.9	0.8-1.2-2.5	0.8-1.2-2.3	21	26	32	30	25	20	
	2.032	23.5	94	27	1.5-2.2-4.4	1.3-1.9-3.9	1.1-1.7-3.3	1.0-1.6-3.1	29	34	40	38	33	28	
	2.54	36.7	118	32	1.9-2.8-5.6	1.6-2.4-4.9	1.4-2.1-4.2	1.3-1.9-3.9	34	39	45	43	38	33	
	3.048	52.9	142	37	2.2-3.3-6.7	1.9-2.9-5.8	1.7-2.5-5.0	1.6-2.3-4.7	39	44	50	48	43	38	
	3.556	72.0	165	41	2.6-3.9-7.8	2.3-3.4-6.8	1.9-2.9-5.8	1.8-2.7-5.4	43	48	54	52	47	42	
4.064	94.0	189	45	3.0-4.4-8.9	2.6-3.9-7.8	2.2-3.3-6.7	2.1-3.1-6.2	47	52	58	56	51	46		
102 x 508	1.016	5.8	52	-	0.8-1.1-2.3	0.7-1.0-2.0	0.6-0.9-1.7	0.5-0.8-1.6	-	14	20	18	13	-	
	1.524	13.1	79	20	1.1-1.7-3.4	1.0-1.5-3.0	0.9-1.3-2.6	0.8-1.2-2.4	20	25	31	29	24	19	
	2.032	23.3	105	27	1.5-2.3-4.6	1.3-2.0-4.0	1.1-1.7-3.4	1.1-1.6-3.2	27	32	38	36	31	26	
	2.54	36.4	131	33	1.9-2.9-5.7	1.7-2.5-5.0	1.4-2.1-4.3	1.3-2.0-4.0	33	38	44	42	37	32	
	3.048	52.4	157	37	2.3-3.4-6.9	2.0-3.0-6.0	1.7-2.6-5.1	1.6-2.4-4.8	38	43	49	47	42	37	
	3.556	71.3	184	41	2.7-4.0-8.0	2.3-3.5-7.0	2.0-3.0-6.0	1.9-2.8-5.6	42	47	53	51	46	41	
4.064	93.2	210	45	3.0-4.6-9.1	2.7-4.0-8.0	2.3-3.4-6.9	2.1-3.2-6.4	45	50	56	54	49	44		

NOTE: See notes and correction factors on page P1-24.

PERFORMANCE DATA | METRIC | RECTANGULAR, WITH OBD/MULTILOUVER

SIZE	NECK VEL	TOTAL PRES	AIR FLOW	SOUND	THROW DIRECTION				OCTAVE BAND, dB						
					1-WAY THROW	2-WAY THROW	3-WAY HROW	4-WAY THROW	2	3	4	5	6	7	
					m	m	m	m							
cm	m/s	Pa	L/s	NC											
102 x 610	1.016	5.7	63	-	1.7-2.5-5.1	1.5-2.2-4.5	1.3-1.9-3.8	1.2-1.8-3.6	-	15	21	19	14	-	
	1.524	12.9	94	20	2.5-3.8-7.6	2.2-3.3-6.7	1.9-2.9-5.7	1.8-2.7-5.3	20	25	31	29	24	19	
	2.032	23.0	126	27	3.4-5.1-10.2	3.0-4.5-8.9	2.5-3.8-7.6	2.4-3.6-7.1	28	33	39	37	32	27	
	2.54	35.9	157	33	4.2-6.4-12.7	3.7-5.6-11.1	3.2-4.8-9.5	3.0-4.5-8.9	33	38	44	42	37	32	
	3.048	51.7	189	38	5.1-7.6-15.3	4.5-6.7-13.4	3.8-5.7-11.5	3.6-5.3-10.7	38	43	49	47	42	37	
	3.556	70.4	220	42	5.9-8.9-17.8	5.2-7.8-15.6	4.5-6.7-13.4	4.2-6.2-12.5	42	47	53	51	46	41	
	4.064	92.0	252	45	6.8-10.2-19.9	5.9-8.9-17.8	5.1-7.6-15.3	4.8-7.1-14.3	45	50	56	54	49	44	
152 x 254	1.016	5.4	39	-	1.4-2.2-4.3	1.3-1.9-3.8	1.1-1.6-3.3	1.0-1.5-3.0	-	15	21	19	14	-	
	1.524	12.2	59	18	2.2-3.3-6.5	1.9-2.8-5.7	1.6-2.4-4.9	1.5-2.3-4.6	20	25	31	29	24	19	
	2.032	21.7	79	25	2.9-4.3-8.7	2.5-3.8-7.6	2.2-3.3-6.5	2.0-3.0-6.1	27	32	38	36	31	26	
	2.54	34.0	98	31	3.6-5.4-10.8	3.2-4.7-9.5	2.7-4.1-8.1	2.5-3.8-7.6	33	38	44	42	37	32	
	3.048	48.9	118	36	4.3-6.5-13.0	3.8-5.7-11.4	3.3-4.9-9.8	3.0-4.6-9.1	38	43	49	47	42	37	
	3.556	66.6	138	40	5.1-7.6-14.7	4.4-6.6-13.3	3.8-5.7-11.4	3.5-5.3-10.6	42	47	53	51	46	41	
	4.064	87.0	157	43	5.8-8.7-15.7	5.1-7.6-14.9	4.3-6.5-13.0	4.0-6.1-11.8	45	50	56	54	49	44	
152 x 305	1.016	5.3	47	-	1.5-2.3-4.5	1.3-2.0-4.0	1.1-1.7-3.4	1.1-1.6-3.2	-	15	21	19	14	-	
	1.524	11.9	71	18	2.3-3.4-6.8	2.0-3.0-6.0	1.7-2.6-5.1	1.6-2.4-4.8	20	25	31	29	24	19	
	2.032	21.2	94	26	3.0-4.5-9.1	2.6-4.0-7.9	2.3-3.4-6.8	2.1-3.2-6.4	27	32	38	36	31	26	
	2.54	33.1	118	31	3.8-5.7-11.3	3.3-5.0-9.9	2.8-4.3-8.5	2.6-4.0-7.9	33	38	44	42	37	32	
	3.048	47.6	142	36	4.5-6.8-13.6	4.0-6.0-11.9	3.4-5.1-10.2	3.2-4.8-9.5	38	43	49	47	42	37	
	3.556	64.8	165	40	5.3-7.9-15.9	4.6-6.9-13.9	4.0-6.0-11.9	3.7-5.6-11.1	42	47	53	51	46	41	
	4.064	84.7	189	43	6.1-9.1-17.2	5.3-7.9-15.9	4.5-6.8-13.6	4.2-6.4-12.7	45	50	56	54	49	44	
152 x 356	1.016	5.2	55	-	1.6-2.4-4.7	1.4-2.1-4.1	1.2-1.8-3.5	1.1-1.7-3.3	-	15	21	19	14	-	
	1.524	11.7	83	18	2.4-3.5-7.1	2.1-3.1-6.2	1.8-2.7-5.3	1.7-2.5-5.0	20	25	31	29	24	19	
	2.032	20.8	110	26	3.1-4.7-9.4	2.8-4.1-8.3	2.4-3.5-7.1	2.2-3.3-6.6	28	33	39	37	32	27	
	2.54	32.5	138	32	3.9-5.9-11.8	3.4-5.2-10.3	3.0-4.4-8.9	2.8-4.1-8.3	33	38	44	42	37	32	
	3.048	46.7	165	36	4.7-7.1-14.2	4.1-6.2-12.4	3.5-5.3-10.6	3.3-5.0-9.9	38	43	49	47	42	37	
	3.556	63.6	193	40	5.5-8.3-16.5	4.8-7.2-14.5	4.1-6.2-12.4	3.9-5.8-11.6	42	47	53	51	46	41	
	4.064	83.1	220	44	6.3-9.4-18.6	5.5-8.3-16.5	4.7-7.1-14.2	4.4-6.6-13.2	45	50	56	54	49	44	
152 x 406	1.016	5.1	63	-	1.6-2.4-4.9	1.4-2.1-4.3	1.2-1.8-3.7	1.1-1.7-3.4	-	14	20	18	13	-	
	1.524	11.5	94	19	2.4-3.7-7.3	2.1-3.2-6.4	1.8-2.8-5.5	1.7-2.6-5.1	20	25	31	29	24	19	
	2.032	20.5	126	26	3.3-4.9-9.8	2.9-4.3-8.6	2.4-3.7-7.3	2.3-3.4-6.8	27	32	38	36	31	26	
	2.54	32.0	157	32	4.1-6.1-12.2	3.6-5.3-10.7	3.1-4.6-9.2	2.9-4.3-8.6	33	38	44	42	37	32	
	3.048	46.1	189	37	4.9-7.3-14.7	4.3-6.4-12.8	3.7-5.5-11.0	3.4-5.1-10.3	38	43	49	47	42	37	
	3.556	62.7	220	40	5.7-8.6-17.1	5.0-7.5-15.0	4.3-6.4-12.8	4.0-6.0-12.0	41	46	52	50	45	40	
	4.064	81.9	252	44	6.5-9.8-19.6	5.7-8.6-17.1	4.9-7.3-14.7	4.6-6.8-13.7	45	50	56	54	49	44	
152 x 457	1.016	5.1	71	-	1.7-2.5-5.0	1.5-2.2-4.4	1.3-1.9-3.8	1.2-1.8-3.5	-	14	20	18	13	-	
	1.524	11.4	106	19	2.5-3.8-7.6	2.2-3.3-6.6	1.9-2.8-5.7	1.8-2.6-5.3	20	25	31	29	24	19	
	2.032	20.3	142	26	3.4-5.0-10.1	2.9-4.4-8.8	2.5-3.8-7.6	2.4-3.5-7.1	27	32	38	36	31	26	
	2.54	31.7	177	32	4.2-6.3-12.6	3.7-5.5-11.0	3.2-4.7-9.5	2.9-4.4-8.8	33	38	44	42	37	32	
	3.048	45.6	212	37	5.0-7.6-15.1	4.4-6.6-13.2	3.8-5.7-11.4	3.5-5.3-10.6	38	43	49	47	42	37	
	3.556	62.1	248	41	5.9-8.8-17.7	5.2-7.7-15.5	4.4-6.6-13.2	4.1-6.2-12.4	42	47	53	51	46	41	
	4.064	81.0	283	44	6.7-10.1-20.2	5.9-8.8-17.7	5.0-7.6-15.1	4.7-7.1-14.1	45	50	56	54	49	44	
152 x 508	1.016	78.3	79	-	1.7-2.6-5.2	1.5-2.3-4.5	1.3-1.9-3.9	1.2-1.8-3.6	-	15	21	19	14	-	
	1.524	5.1	118	19	2.6-3.9-7.8	2.3-3.4-6.8	1.9-2.9-5.8	1.8-2.7-5.5	20	25	31	29	24	19	
	2.032	11.4	157	27	3.5-5.2-10.4	3.0-4.5-9.1	2.6-3.9-7.8	2.4-3.6-7.3	28	33	39	37	32	27	
	2.54	20.3	197	32	4.3-6.5-13.0	3.8-5.7-11.4	3.2-4.9-9.7	3.0-4.5-9.1	33	38	44	42	37	32	
	3.048	31.7	236	37	5.2-7.8-15.6	4.5-6.8-13.6	3.9-5.8-11.7	3.6-5.5-10.9	38	43	49	47	42	37	
	3.556	45.6	275	41	6.1-9.1-18.2	5.3-8.0-15.9	4.5-6.8-13.6	4.2-6.4-12.7	42	47	53	51	46	41	
	4.064	62.1	315	44	6.9-10.4-20.8	6.1-9.1-18.2	5.2-7.8-15.6	4.8-7.3-14.5	45	50	56	54	49	44	
152 x 610	1.016	81.1	94	-	1.8-2.7-5.5	1.6-2.4-4.8	1.4-2.0-4.1	1.3-1.9-3.8	-	15	21	19	14	-	
	1.524	11.2	142	20	2.7-4.1-8.2	2.4-3.6-7.2	2.0-3.1-6.1	1.9-2.9-5.7	21	26	32	30	25	20	
	2.032	19.8	189	27	3.6-5.5-10.9	3.2-4.8-9.6	2.7-4.1-8.2	2.5-3.8-7.6	28	33	39	37	32	27	
	2.54	31.0	236	33	4.6-6.8-13.7	4.0-6.0-11.9	3.4-5.1-10.2	3.2-4.8-9.6	34	39	45	43	38	33	
	3.048	44.6	283	37	5.5-8.2-16.4	4.8-7.2-14.3	4.1-6.1-12.3	3.8-5.7-11.5	38	43	49	47	42	37	
	3.556	60.7	330	41	6.4-9.6-19.1	5.6-8.4-16.7	4.8-7.2-14.3	4.5-6.7-13.4	42	47	53	51	46	41	
	4.064	79.3	378	45	7.3-10.9-21.8	6.4-9.6-19.1	5.5-8.2-16.4	5.1-7.6-15.3	46	51	57	55	50	45	

NOTE: See notes and correction factors on page P1-24.

PERFORMANCE DATA | METRIC | RECTANGULAR, WITH OBD/MULTILOUVER

SIZE	NECK VEL	TOTAL PRES	AIR FLOW	SOUND	THROW DIRECTION				OCTAVE BAND, dB						
					1-WAY THROW	2-WAY THROW	3-WAY THROW	4-WAY THROW	2	3	4	5	6	7	
cm	m/s	Pa	L/s	NC	m	m	m	m							
152 x 762	1.016	4.9	118	-	1.9-2.9-5.8	1.7-2.5-5.1	1.5-2.2-4.4	1.4-2.0-4.1	11	16	22	20	15	-	
	1.524	11.0	177	20	2.9-4.4-8.7	2.5-3.8-7.6	2.2-3.3-6.5	2.0-3.1-6.1	21	26	32	30	25	20	
	2.032	19.6	236	27	3.9-5.8-11.6	3.4-5.1-10.2	2.9-4.4-8.7	2.7-4.1-8.1	28	33	39	37	32	27	
	2.54	30.6	295	33	4.8-7.3-14.5	4.2-6.4-12.7	3.6-5.4-10.9	3.4-5.1-10.2	34	39	45	43	38	33	
	3.048	44.0	354	38	5.8-8.7-17.4	5.1-7.6-15.3	4.4-6.5-13.1	4.1-6.1-12.2	39	44	50	48	43	38	
	3.556	59.9	413	42	6.8-10.2-20.3	5.9-8.9-17.8	5.1-7.6-15.3	4.7-7.1-14.2	43	48	54	52	47	42	
4.064	78.3	472	45	7.7-11.6-23.2	6.8-10.2-20.3	5.8-8.7-17.4	5.4-8.1-16.3	46	51	57	55	50	45		
203 x 254	1.016	5.1	52	-	1.5-2.3-4.6	1.3-2.0-4.0	1.2-1.7-3.5	1.1-1.6-3.2	-	13	19	17	12	-	
	1.524	11.4	79	18	2.3-3.5-6.9	2.0-3.0-6.1	1.7-2.6-5.2	1.6-2.4-4.8	19	24	30	28	23	18	
	2.032	20.3	105	25	3.1-4.6-9.2	2.7-4.0-8.1	2.3-3.5-6.9	2.2-3.2-6.5	26	31	37	35	30	25	
	2.54	31.7	131	31	3.8-5.8-11.5	3.4-5.0-10.1	2.9-4.3-8.7	2.7-4.0-8.1	32	37	43	41	36	31	
	3.048	45.6	157	36	4.6-6.9-13.8	4.0-6.1-12.1	3.5-5.2-10.4	3.2-4.8-9.7	37	42	48	46	41	36	
	3.556	62.1	184	40	5.4-8.1-16.1	4.7-7.1-14.1	4.0-6.1-12.1	3.8-5.7-11.3	41	46	52	50	45	40	
4.064	81.1	210	43	6.2-9.2-18.1	5.4-8.1-16.1	4.6-6.9-13.8	4.3-6.5-12.9	44	49	55	53	48	43		
203 x 305	1.016	4.9	63	-	1.6-2.4-4.8	1.4-2.1-4.2	1.2-1.8-3.6	1.1-1.7-3.4	-	14	20	18	13	-	
	1.524	11.1	94	18	2.4-3.6-7.2	2.1-3.2-6.3	1.8-2.7-5.4	1.7-2.5-5.1	19	24	30	28	23	18	
	2.032	19.7	126	26	3.2-4.8-9.7	2.8-4.2-8.4	2.4-3.6-7.2	2.3-3.4-6.8	27	32	38	36	31	26	
	2.54	30.8	157	31	4.0-6.0-12.1	3.5-5.3-10.6	3.0-4.5-9.1	2.8-4.2-8.4	32	37	43	41	36	31	
	3.048	44.4	189	36	4.8-7.2-14.5	4.2-6.3-12.7	3.6-5.4-10.9	3.4-5.1-10.1	37	42	48	46	41	36	
	3.556	60.4	220	40	5.6-8.4-16.9	4.9-7.4-14.8	4.2-6.3-12.7	3.9-5.9-11.8	41	46	52	50	45	40	
4.064	78.9	252	44	6.4-9.7-19.3	5.6-8.4-16.9	4.8-7.2-14.5	4.5-6.8-13.5	45	50	56	54	49	44		
203 x 356	1.016	4.8	73	-	1.7-2.5-5.0	1.5-2.2-4.4	1.3-1.9-3.8	1.2-1.8-3.5	-	14	20	18	13	-	
	1.524	10.9	110	18	2.5-3.8-7.5	2.2-3.3-6.6	1.9-2.8-5.7	1.8-2.6-5.3	19	24	30	28	23	18	
	2.032	19.4	147	26	3.3-5.0-10.0	2.9-4.4-8.8	2.5-3.8-7.5	2.3-3.5-7.0	27	32	38	36	31	26	
	2.54	30.3	184	32	4.2-6.3-12.6	3.7-5.5-11.0	3.1-4.7-9.4	2.9-4.4-8.8	33	38	44	42	37	32	
	3.048	43.6	220	36	5.0-7.5-15.1	4.4-6.6-13.2	3.8-5.7-11.3	3.5-5.3-10.5	37	42	48	46	41	36	
	3.556	59.3	257	40	5.9-8.8-17.6	5.1-7.7-15.4	4.4-6.6-13.2	4.1-6.2-12.3	41	46	52	50	45	40	
4.064	77.5	294	44	6.7-10.0-20.1	5.9-8.8-17.6	5.0-7.5-15.1	4.7-7.0-14.1	45	50	56	54	49	44		
203 x 406	1.016	4.8	84	-	1.7-2.6-5.2	1.5-2.3-4.6	1.3-2.0-3.9	1.2-1.8-3.6	-	14	20	18	13	-	
	1.524	10.7	126	19	2.6-3.9-7.8	2.3-3.4-6.8	2.0-2.9-5.9	1.8-2.7-5.5	20	25	31	29	24	19	
	2.032	19.1	168	26	3.5-5.2-10.4	3.0-4.6-9.1	2.6-3.9-7.8	2.4-3.6-7.3	27	32	38	36	31	26	
	2.54	29.8	210	32	4.3-6.5-13.0	3.8-5.7-11.4	3.3-4.9-9.8	3.0-4.6-9.1	33	38	44	42	37	32	
	3.048	43.0	252	37	5.2-7.8-15.6	4.6-6.8-13.7	3.9-5.9-11.7	3.6-5.5-10.9	38	43	49	47	42	37	
	3.556	58.5	294	41	6.1-9.1-18.2	5.3-8.0-15.9	4.6-6.8-13.7	4.2-6.4-12.7	42	47	53	51	46	41	
4.064	76.4	336	44	6.9-10.4-20.8	6.1-9.1-18.2	5.2-7.8-15.6	4.9-7.3-14.6	45	50	56	54	49	44		
203 x 457	1.016	4.7	94	-	1.8-2.7-5.4	1.6-2.3-4.7	1.3-2.0-4.0	1.3-1.9-3.8	-	14	20	18	13	-	
	1.524	10.6	142	19	2.7-4.0-8.1	2.3-3.5-7.0	2.0-3.0-6.0	1.9-2.8-5.6	20	25	31	29	24	19	
	2.032	18.9	189	26	3.6-5.4-10.7	3.1-4.7-9.4	2.7-4.0-8.1	2.5-3.8-7.5	27	32	38	36	31	26	
	2.54	29.5	236	32	4.5-6.7-13.4	3.9-5.9-11.7	3.4-5.0-10.1	3.1-4.7-9.4	33	38	44	42	37	32	
	3.048	42.5	283	37	5.4-8.1-16.1	4.7-7.0-14.1	4.0-6.0-12.1	3.8-5.6-11.3	38	43	49	47	42	37	
	3.556	57.8	330	41	6.3-9.4-18.8	5.5-8.2-16.4	4.7-7.0-14.1	4.4-6.6-13.2	42	47	53	51	46	41	
4.064	75.6	378	44	7.2-10.7-21.5	6.3-9.4-18.8	5.4-8.1-16.1	5.0-7.5-15.0	45	50	56	54	49	44		
203 x 508	1.016	4.7	105	-	1.8-2.8-5.5	1.6-2.4-4.8	1.4-2.1-4.1	1.3-1.9-3.9	-	15	21	19	14	-	
	1.524	10.5	157	19	2.8-4.1-8.3	2.4-3.6-7.3	2.1-3.1-6.2	1.9-2.9-5.8	20	25	31	29	24	19	
	2.032	18.7	210	27	3.7-5.5-11.0	3.2-4.8-9.7	2.8-4.1-8.3	2.6-3.9-7.7	28	33	39	37	32	27	
	2.54	29.3	262	32	4.6-6.9-13.8	4.0-6.0-12.1	3.5-5.2-10.4	3.2-4.8-9.7	33	38	44	42	37	32	
	3.048	42.1	315	37	5.5-8.3-16.6	4.8-7.3-14.5	4.1-6.2-12.4	3.9-5.8-11.6	38	43	49	47	42	37	
	3.556	57.3	367	41	6.4-9.7-19.3	5.6-8.5-16.9	4.8-7.3-14.5	4.5-6.8-13.5	42	47	53	51	46	41	
4.064	74.9	420	44	7.4-11.0-22.1	6.4-9.7-19.3	5.5-8.3-16.6	5.2-7.7-15.5	45	50	56	54	49	44		
203 x 762	1.016	4.6	157	-	2.1-3.1-6.2	1.8-2.7-5.4	1.5-2.3-4.6	1.4-2.2-4.3	11	16	22	20	15	-	
	1.524	10.3	236	20	3.1-4.6-9.3	2.7-4.1-8.1	2.3-3.5-7.0	2.2-3.2-6.5	21	26	32	30	25	20	
	2.032	18.2	315	28	4.1-6.2-12.4	3.6-5.4-10.8	3.1-4.6-9.3	2.9-4.3-8.7	29	34	40	38	33	28	
	2.54	28.5	393	33	5.2-7.7-15.5	4.5-6.8-13.5	3.9-5.8-11.6	3.6-5.4-10.8	34	39	45	43	38	33	
	3.048	41.1	472	38	6.2-9.3-18.5	5.4-8.1-16.2	4.6-7.0-13.9	4.3-6.5-13.0	39	44	50	48	43	38	
	3.556	55.9	551	42	7.2-10.8-21.6	6.3-9.5-18.9	5.4-8.1-16.2	5.0-7.6-15.1	43	48	54	52	47	42	
4.064	73.0	629	45	8.2-12.4-24.7	7.2-10.8-21.6	6.2-9.3-18.5	5.8-8.7-17.3	46	51	57	55	50	45		

NOTE: See notes and correction factors on page P1-24.

PERFORMANCE DATA | METRIC | RECTANGULAR, WITH OBD/MULTILOUVER

SIZE	NECK VEL	TOTAL PRES	AIR FLOW	SOUND	THROW DIRECTION				OCTAVE BAND, dB										
					1-WAY THROW	2-WAY THROW	3-WAY HROW	4-WAY THROW	2	3	4	5	6	7					
					m	m	m	m											
cm	m/s	Pa	L/s	NC															
203 x 914	1.016	4.5	189	-	2.4 - 3.5 - 7.1	2.1 - 3.1 - 6.2	1.8 - 2.6 - 5.3	1.6 - 2.5 - 4.9	11	16	22	20	15	-					
	1.524	10.2	283	21	3.5 - 5.3 - 10.6	3.1 - 4.6 - 9.3	2.6 - 4.0 - 7.9	2.5 - 3.7 - 7.4	22	27	33	31	26	21					
	2.032	18.1	378	28	4.7 - 7.1 - 14.1	4.1 - 6.2 - 12.3	3.5 - 5.3 - 10.6	3.3 - 4.9 - 9.9	29	34	40	38	33	28					
	2.54	28.3	472	34	5.9 - 8.8 - 17.6	5.1 - 7.7 - 15.4	4.4 - 6.6 - 13.2	4.1 - 6.2 - 12.3	35	40	46	44	39	34					
	3.048	40.7	566	38	7.1 - 10.6 - 21.2	6.2 - 9.3 - 18.5	5.3 - 7.9 - 15.9	4.9 - 7.4 - 14.8	39	44	50	48	43	38					
	3.556	55.4	661	42	8.2 - 12.3 - 24.7	7.2 - 10.8 - 21.6	6.2 - 9.3 - 18.5	5.8 - 8.6 - 17.3	43	48	54	52	47	42					
	4.064	72.4	755	46	9.4 - 14.1 - 28.2	8.2 - 12.3 - 24.7	7.1 - 10.6 - 21.2	6.6 - 9.9 - 19.8	47	52	58	56	51	46					
254 x 305	1.016	4.7	79	-	1.6 - 2.4 - 4.9	1.4 - 2.1 - 4.3	1.2 - 1.8 - 3.6	1.1 - 1.7 - 3.4	-	14	20	18	13	-					
	1.524	10.7	118	18	2.4 - 3.6 - 7.3	2.1 - 3.2 - 6.4	1.8 - 2.7 - 5.5	1.7 - 2.6 - 5.1	19	24	30	28	23	18					
	2.032	18.9	157	26	3.2 - 4.9 - 9.7	2.8 - 4.3 - 8.5	2.4 - 3.6 - 7.3	2.3 - 3.4 - 6.8	27	32	38	36	31	26					
	2.54	29.6	197	32	4.1 - 6.1 - 12.2	3.5 - 5.3 - 10.6	3.0 - 4.6 - 9.1	2.8 - 4.3 - 8.5	33	38	44	42	37	32					
	3.048	42.6	236	36	4.9 - 7.3 - 14.6	4.3 - 6.4 - 12.8	3.6 - 5.5 - 10.9	3.4 - 5.1 - 10.2	37	42	48	46	41	36					
	3.556	58.0	275	40	5.7 - 8.5 - 17.0	5.0 - 7.4 - 14.9	4.3 - 6.4 - 12.8	4.0 - 6.0 - 11.9	41	46	52	50	45	40					
	4.064	75.8	315	44	6.5 - 9.7 - 19.4	5.7 - 8.5 - 17.0	4.9 - 7.3 - 14.6	4.5 - 6.8 - 13.6	45	50	56	54	49	44					
254 x 356	1.016	4.6	92	-	1.7 - 2.6 - 5.2	1.5 - 2.3 - 4.5	1.3 - 1.9 - 3.9	1.2 - 1.8 - 3.6	-	14	20	18	13	-					
	1.524	10.5	138	19	2.6 - 3.9 - 7.8	2.3 - 3.4 - 6.8	1.9 - 2.9 - 5.8	1.8 - 2.7 - 5.4	20	25	31	29	24	19					
	2.032	18.6	184	26	3.5 - 5.2 - 10.4	3.0 - 4.5 - 9.1	2.6 - 3.9 - 7.8	2.4 - 3.6 - 7.2	27	32	38	36	31	26					
	2.54	29.0	229	32	4.3 - 6.5 - 12.9	3.8 - 5.7 - 11.3	3.2 - 4.9 - 9.7	3.0 - 4.5 - 9.1	33	38	44	42	37	32					
	3.048	41.8	275	37	5.2 - 7.8 - 15.5	4.5 - 6.8 - 13.6	3.9 - 5.8 - 11.6	3.6 - 5.4 - 10.9	38	43	49	47	42	37					
	3.556	56.9	321	41	6.0 - 9.1 - 18.1	5.3 - 7.9 - 15.9	4.5 - 6.8 - 13.6	4.2 - 6.3 - 12.7	42	47	53	51	46	41					
	4.064	74.4	367	44	6.9 - 10.4 - 20.7	6.0 - 9.1 - 18.1	5.2 - 7.8 - 15.5	4.8 - 7.2 - 14.5	45	50	56	54	49	44					
254 x 406	1.016	4.6	105	-	1.8 - 2.7 - 5.5	1.6 - 2.4 - 4.8	1.4 - 2.1 - 4.1	1.3 - 1.9 - 3.8	-	14	20	18	13	-					
	1.524	10.3	157	19	2.7 - 4.1 - 8.2	2.4 - 3.6 - 7.2	2.1 - 3.1 - 6.2	1.9 - 2.9 - 5.7	20	25	31	29	24	19					
	2.032	18.3	210	26	3.6 - 5.5 - 10.9	3.2 - 4.8 - 9.6	2.7 - 4.1 - 8.2	2.6 - 3.8 - 7.7	27	32	38	36	31	26					
	2.54	28.6	262	32	4.6 - 6.8 - 13.7	4.0 - 6.0 - 12.0	3.4 - 5.1 - 10.3	3.2 - 4.8 - 9.6	33	38	44	42	37	32					
	3.048	41.2	315	37	5.5 - 8.2 - 16.4	4.8 - 7.2 - 14.4	4.1 - 6.2 - 12.3	3.8 - 5.7 - 11.5	38	43	49	47	42	37					
	3.556	56.1	367	41	6.4 - 9.6 - 19.1	5.6 - 8.4 - 16.7	4.8 - 7.2 - 14.4	4.5 - 6.7 - 13.4	42	47	53	51	46	41					
	4.064	73.3	420	44	7.3 - 10.9 - 21.9	6.4 - 9.6 - 19.1	5.5 - 8.2 - 16.4	5.1 - 7.7 - 15.3	45	50	56	54	49	44					
254 x 610	1.016	4.4	157	-	2.2 - 3.2 - 6.5	1.9 - 2.8 - 5.7	1.6 - 2.4 - 4.9	1.5 - 2.3 - 4.5	-	15	21	19	14	-					
	1.524	10.0	236	20	3.2 - 4.9 - 9.7	2.8 - 4.2 - 8.5	2.4 - 3.6 - 7.3	2.3 - 3.4 - 6.8	21	26	32	30	25	20					
	2.032	17.7	315	27	4.3 - 6.5 - 13.0	3.8 - 5.7 - 11.3	3.2 - 4.9 - 9.7	3.0 - 4.5 - 9.1	28	33	39	37	32	27					
	2.54	27.7	393	33	5.4 - 8.1 - 16.2	4.7 - 7.1 - 14.2	4.0 - 6.1 - 12.1	3.8 - 5.7 - 11.3	34	39	45	43	38	33					
	3.048	39.9	472	38	6.5 - 9.7 - 19.4	5.7 - 8.5 - 17.0	4.9 - 7.3 - 14.6	4.5 - 6.8 - 13.6	39	44	50	48	43	38					
	3.556	54.3	551	42	7.6 - 11.3 - 22.7	6.6 - 9.9 - 19.8	5.7 - 8.5 - 17.0	5.3 - 7.9 - 15.9	43	48	54	52	47	42					
	4.064	71.0	629	45	8.6 - 13.0 - 25.9	7.6 - 11.3 - 22.7	6.5 - 9.7 - 19.4	6.0 - 9.1 - 18.1	46	51	57	55	50	45					
254 x 762	1.016	4.4	197	-	2.4 - 3.6 - 7.1	2.1 - 3.1 - 6.2	1.8 - 2.7 - 5.3	1.7 - 2.5 - 5.0	11	16	22	20	15	-					
	1.524	9.9	295	20	3.6 - 5.3 - 10.7	3.1 - 4.7 - 9.3	2.7 - 4.0 - 8.0	2.5 - 3.7 - 7.5	21	26	32	30	25	20					
	2.032	17.5	393	28	4.7 - 7.1 - 14.2	4.2 - 6.2 - 12.5	3.6 - 5.3 - 10.7	3.3 - 5.0 - 10.0	29	34	40	38	33	28					
	2.54	27.4	492	34	5.9 - 8.9 - 17.8	5.2 - 7.8 - 15.6	4.4 - 6.7 - 13.3	4.2 - 6.2 - 12.5	35	40	46	44	39	34					
	3.048	39.4	590	38	7.1 - 10.7 - 21.4	6.2 - 9.3 - 18.7	5.3 - 8.0 - 16.0	5.0 - 7.5 - 14.9	39	44	50	48	43	38					
	3.556	53.6	688	42	8.3 - 12.5 - 24.9	7.3 - 10.9 - 21.8	6.2 - 9.3 - 18.7	5.8 - 8.7 - 17.4	43	48	54	52	47	42					
	4.064	70.1	787	46	9.5 - 14.2 - 28.5	8.3 - 12.5 - 24.9	7.1 - 10.7 - 21.4	6.6 - 10.0 - 19.9	47	52	58	56	51	46					
254 x 914	1.016	4.3	236	-	2.6 - 3.8 - 7.7	2.2 - 3.4 - 6.7	1.9 - 2.9 - 5.8	1.8 - 2.7 - 5.4	11	16	22	20	15	-					
	1.524	9.8	354	21	3.8 - 5.8 - 11.5	3.4 - 5.0 - 10.1	2.9 - 4.3 - 8.7	2.7 - 4.0 - 8.1	22	27	33	31	26	21					
	2.032	17.4	472	28	5.1 - 7.7 - 15.4	4.5 - 6.7 - 13.5	3.8 - 5.8 - 11.5	3.6 - 5.4 - 10.8	29	34	40	38	33	28					
	2.54	27.1	590	34	6.4 - 9.6 - 19.2	5.6 - 8.4 - 16.8	4.8 - 7.2 - 14.4	4.5 - 6.7 - 13.5	35	40	46	44	39	34					
	3.048	39.1	708	39	7.7 - 11.5 - 23.1	6.7 - 10.1 - 20.2	5.8 - 8.7 - 17.3	5.4 - 8.1 - 16.2	40	45	51	49	44	39					
	3.556	53.2	826	43	9.0 - 13.5 - 26.9	7.9 - 11.8 - 23.6	6.7 - 10.1 - 20.2	6.3 - 9.4 - 18.9	44	49	55	53	48	43					
	4.064	69.5	944	46	10.3 - 15.4 - 30.8	9.0 - 13.5 - 26.9	7.7 - 11.5 - 23.1	7.2 - 10.8 - 21.5	47	52	58	56	51	46					
305 x 356	1.016	4.5	110	-	1.9 - 2.8 - 5.6	1.6 - 2.4 - 4.9	1.4 - 2.1 - 4.2	1.3 - 1.9 - 3.9	-	14	20	18	13	-					
	1.524	10.2	165	19	2.8 - 4.2 - 8.3	2.4 - 3.7 - 7.3	2.1 - 3.1 - 6.3	1.9 - 2.9 - 5.8	20	25	31	29	24	19					
	2.032	18.1	220	26	3.7 - 5.6 - 11.1	3.2 - 4.9 - 9.7	2.8 - 4.2 - 8.3	2.6 - 3.9 - 7.8	27	32	38	36	31	26					
	2.54	28.3	275	32	4.6 - 7.0 - 13.9	4.1 - 6.1 - 12.2	3.5 - 5.2 - 10.4	3.2 - 4.9 - 9.7	33	38	44	42	37	32					
	3.048	40.7	330	37	5.6 - 8.3 - 16.7	4.9 - 7.3 - 14.6	4.2 - 6.3 - 12.5	3.9 - 5.8 - 11.7	38	43	49	47	42	37					
	3.556	55.4	385	41	6.5 - 9.7 - 19.5	5.7 - 8.5 - 17.0	4.9 - 7.3 - 14.6	4.5 - 6.8 - 13.6	42	47	53	51	46	41					
	4.064	72.4	440	44	7.4 - 11.1 - 22.3	6.5 - 9.7 - 19.5	5.6 - 8.3 - 16.7	5.2 - 7.8 - 15.6	45	50	56	54	49	44					

NOTE: See notes and correction factors on page P1-24.

PERFORMANCE DATA | METRIC | RECTANGULAR, WITH OBD/MULTILOUVER

SIZE	NECK VEL	TOTAL PRES	AIR FLOW	SOUND	THROW DIRECTION				OCTAVE BAND, dB						
					1-WAY THROW	2-WAY THROW	3-WAY HROW	4-WAY THROW	2	3	4	5	6	7	
cm	m/s	Pa	L/s	NC	m	m	m	m							
305 x 508	1.016	4.4	157	-	2.2-3.2-6.5	1.9-2.8-5.6	1.6-2.4-4.8	1.5-2.3-4.5	-	15	21	19	14	-	
	1.524	9.8	236	20	3.2-4.8-9.7	2.8-4.2-8.5	2.4-3.6-7.3	2.3-3.4-6.8	21	26	32	30	25	20	
	2.032	17.5	315	27	4.3-6.5-12.9	3.8-5.6-11.3	3.2-4.8-9.7	3.0-4.5-9.0	28	33	39	37	32	27	
	2.54	27.3	393	33	5.4-8.1-16.1	4.7-7.1-14.1	4.0-6.0-12.1	3.8-5.6-11.3	34	39	45	43	38	33	
	3.048	39.4	472	38	6.5-9.7-19.4	5.6-8.5-16.9	4.8-7.3-14.5	4.5-6.8-13.5	39	44	50	48	43	38	
	3.556	53.6	551	42	7.5-11.3-22.6	6.6-9.9-19.8	5.6-8.5-16.9	5.3-7.9-15.8	43	48	54	52	47	42	
4.064	70.0	629	45	8.6-12.9-25.8	7.5-11.3-22.6	6.5-9.7-19.4	6.0-9.0-18.1	46	51	57	55	50	45		
305 x 610	1.016	4.3	189	-	2.3-3.5-7.0	2.0-3.0-6.1	1.7-2.6-5.2	1.6-2.4-4.9	11	16	22	20	15	-	
	1.524	9.7	283	20	3.5-5.2-10.4	3.0-4.6-9.1	2.6-3.9-7.8	2.4-3.7-7.3	21	26	32	30	25	20	
	2.032	17.3	378	27	4.6-7.0-13.9	4.1-6.1-12.2	3.5-5.2-10.4	3.2-4.9-9.7	28	33	39	37	32	27	
	2.54	27.0	472	33	5.8-8.7-17.4	5.1-7.6-15.2	4.4-6.5-13.1	4.1-6.1-12.2	34	39	45	43	38	33	
	3.048	38.9	566	38	7.0-10.4-20.9	6.1-9.1-18.3	5.2-7.8-15.7	4.9-7.3-14.6	39	44	50	48	43	38	
	3.556	52.9	661	42	8.1-12.2-24.4	7.1-10.7-21.3	6.1-9.1-18.3	5.7-8.5-17.1	43	48	54	52	47	42	
4.064	69.1	755	45	9.3-13.9-27.9	8.1-12.2-24.4	7.0-10.4-20.9	6.5-9.7-19.5	46	51	57	55	50	45		
305 x 914	1.016	4.2	283	11	2.7-4.1-8.3	2.3-3.6-7.2	2.0-3.1-6.2	1.9-2.9-5.8	12	17	23	21	16	11	
	1.524	9.5	425	21	4.1-6.2-12.4	3.6-5.4-10.9	3.1-4.7-9.3	2.9-4.3-8.7	22	27	33	31	26	21	
	2.032	16.9	566	29	5.5-8.3-16.5	4.8-7.2-14.5	4.1-6.2-12.4	3.9-5.8-11.6	30	35	41	39	34	29	
	2.54	26.4	708	34	6.9-10.3-20.7	6.0-9.1-18.1	5.2-7.8-15.5	4.8-7.2-14.5	35	40	46	44	39	34	
	3.048	38.0	850	39	8.3-12.4-24.8	7.2-10.9-21.7	6.2-9.3-18.6	5.8-8.7-17.4	40	45	51	49	44	39	
	3.556	51.8	991	43	9.7-14.5-29.0	8.4-12.7-25.3	7.2-10.9-21.7	6.8-10.1-20.3	44	49	55	53	48	43	
4.064	67.6	1133	46	11.0-16.5-33.1	9.7-14.5-29.0	8.3-12.4-24.8	7.7-11.6-23.2	47	52	58	56	51	46		
356 x 457	1.016	4.3	165	-	2.2-3.3-6.6	1.9-2.9-5.8	1.6-2.5-4.9	1.5-2.3-4.6	-	15	21	19	14	-	
	1.524	9.7	248	20	3.3-4.9-9.9	2.9-4.3-8.6	2.5-3.7-7.4	2.3-3.5-6.9	21	26	32	30	25	20	
	2.032	17.3	330	27	4.4-6.6-13.1	3.8-5.8-11.5	3.3-4.9-9.9	3.1-4.6-9.2	28	33	39	37	32	27	
	2.54	27.1	413	33	5.5-8.2-16.4	4.8-7.2-14.4	4.1-6.2-12.3	3.8-5.8-11.5	34	39	45	43	38	33	
	3.048	39.0	496	38	6.6-9.9-19.7	5.8-8.6-17.3	4.9-7.4-14.8	4.6-6.9-13.8	39	44	50	48	43	38	
	3.556	53.0	578	42	7.7-11.5-23.0	6.7-10.1-20.1	5.8-8.6-17.3	5.4-8.1-16.1	43	48	54	52	47	42	
4.064	69.3	661	45	8.8-13.1-26.3	7.7-11.5-23.0	6.6-9.9-19.7	6.1-9.2-18.4	46	51	57	55	50	45		
356 x 610	1.016	4.2	220	-	2.5-3.7-7.4	2.2-3.2-6.5	1.9-2.8-5.6	1.7-2.6-5.2	11	16	22	20	15	-	
	1.524	9.5	330	20	3.7-5.6-11.1	3.2-4.9-9.7	2.8-4.2-8.3	2.6-3.9-7.8	21	26	32	30	25	20	
	2.032	16.9	440	28	4.9-7.4-14.8	4.3-6.5-13.0	3.7-5.6-11.1	3.5-5.2-10.4	29	34	40	38	33	28	
	2.54	26.5	551	34	6.2-9.3-18.5	5.4-8.1-16.2	4.6-7.0-13.9	4.3-6.5-13.0	35	40	46	44	39	34	
	3.048	38.1	661	38	7.4-11.1-22.2	6.5-9.7-19.5	5.6-8.3-16.7	5.2-7.8-15.6	39	44	50	48	43	38	
	3.556	51.9	771	42	8.6-13.0-25.9	7.6-11.4-22.7	6.5-9.7-19.5	6.1-9.1-18.2	43	48	54	52	47	42	
4.064	67.8	881	46	9.9-14.8-29.7	8.6-13.0-25.9	7.4-11.1-22.2	6.9-10.4-20.8	47	52	58	56	51	46		
356 x 914	1.016	4.1	330	11	2.6-4.4-8.8	2.3-3.9-7.7	2.0-3.3-6.6	1.8-3.1-6.2	12	17	23	21	16	11	
	1.524	9.3	496	21	4.4-6.6-13.2	3.9-5.8-11.6	3.3-5.0-9.9	3.1-4.6-9.2	22	27	33	31	26	21	
	2.032	16.6	661	29	5.9-8.8-17.6	5.1-7.7-15.4	4.4-6.6-13.2	4.1-6.2-12.3	30	35	41	39	34	29	
	2.54	25.9	826	35	7.3-11.0-22.0	6.4-9.6-19.3	5.5-8.3-16.5	5.1-7.7-15.4	36	41	47	45	40	35	
	3.048	37.3	991	39	8.8-13.2-26.4	7.7-11.6-23.1	6.6-9.9-19.8	6.2-9.2-18.5	40	45	51	49	44	39	
	3.556	50.8	1156	43	10.3-15.4-30.8	9.0-13.5-27.0	7.7-11.6-23.1	7.2-10.8-21.6	44	49	55	53	48	43	
4.064	66.4	1321	47	11.7-17.6-35.2	10.3-15.4-30.8	8.8-13.2-26.4	8.2-12.3-24.7	48	53	59	57	52	47		
406 x 457	1.016	4.3	189	-	2.3-3.5-6.9	2.0-3.0-6.1	1.7-2.6-5.2	1.6-2.4-4.9	-	15	21	19	14	-	
	1.524	9.6	283	20	3.5-5.2-10.4	3.0-4.6-9.1	2.6-3.9-7.8	2.4-3.6-7.3	21	26	32	30	25	20	
	2.032	17.1	378	27	4.6-6.9-13.9	4.0-6.1-12.1	3.5-5.2-10.4	3.2-4.9-9.7	28	33	39	37	32	27	
	2.54	26.7	472	33	5.8-8.7-17.4	5.1-7.6-15.2	4.3-6.5-13.0	4.0-6.1-12.1	34	39	45	43	38	33	
	3.048	38.4	566	38	6.9-10.4-20.8	6.1-9.1-18.2	5.2-7.8-15.6	4.9-7.3-14.6	39	44	50	48	43	38	
	3.556	52.3	661	42	8.1-12.1-24.3	7.1-10.6-21.3	6.1-9.1-18.2	5.7-8.5-17.0	43	48	54	52	47	42	
4.064	68.3	755	45	9.3-13.9-27.8	8.1-12.1-24.3	6.9-10.4-20.8	6.5-9.7-19.4	46	51	57	55	50	45		
406 x 508	1.016	4.2	210	-	2.4-3.6-7.3	2.1-3.2-6.3	1.8-2.7-5.4	1.7-2.5-5.1	11	16	22	20	15	-	
	1.524	9.5	315	20	3.6-5.4-10.9	3.2-4.8-9.5	2.7-4.1-8.2	2.5-3.8-7.6	21	26	32	30	25	20	
	2.032	16.9	420	28	4.8-7.3-14.5	4.2-6.3-12.7	3.6-5.4-10.9	3.4-5.1-10.2	29	34	40	38	33	28	
	2.54	26.5	524	33	6.0-9.1-18.1	5.3-7.9-15.9	4.5-6.8-13.6	4.2-6.3-12.7	34	39	45	43	38	33	
	3.048	38.1	629	38	7.3-10.9-21.8	6.3-9.5-19.0	5.4-8.2-16.3	5.1-7.6-15.2	39	44	50	48	43	38	
	3.556	51.8	734	42	8.5-12.7-25.4	7.4-11.1-22.2	6.3-9.5-19.0	5.9-8.9-17.8	43	48	54	52	47	42	
4.064	67.7	839	45	9.7-14.5-29.0	8.5-12.7-25.4	7.3-10.9-21.8	6.8-10.2-20.3	46	51	57	55	50	45		

NOTE: See notes and correction factors on page P1-24.

PERFORMANCE DATA | METRIC | RECTANGULAR, WITH OBD/MULTILOUVER

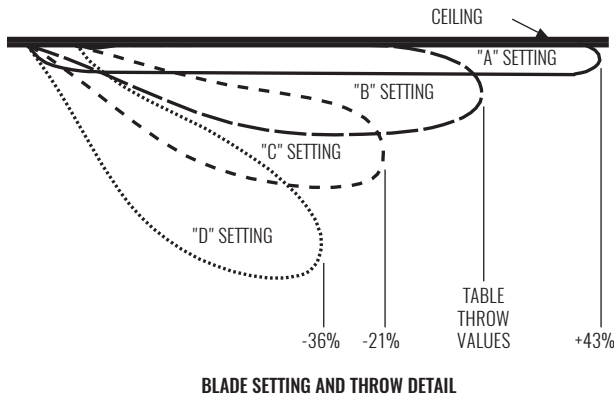
SIZE	NECK VEL	TOTAL PRES	AIR FLOW	SOUND	THROW DIRECTION				OCTAVE BAND, dB										
					1-WAY THROW	2-WAY THROW	3-WAY HROW	4-WAY THROW	2	3	4	5	6	7					
					m	m	m	m											
cm	m/s	Pa	L/s	NC															
406 x 610	1.016	4.2	252	-	2.6-3.9-7.8	2.3-3.4-6.9	2.0-2.9-5.9	1.8-2.7-5.5	11	16	22	20	15	-					
	1.524	9.4	378	21	3.9-5.9-11.7	3.4-5.1-10.3	2.9-4.4-8.8	2.7-4.1-8.2	22	27	33	31	26	21					
	2.032	16.7	503	28	5.2-7.8-15.7	4.6-6.9-13.7	3.9-5.9-11.7	3.7-5.5-11.0	29	34	40	38	33	28					
	2.54	26.1	629	34	6.5-9.8-19.6	5.7-8.6-17.1	4.9-7.3-14.7	4.6-6.9-13.7	35	40	46	44	39	34					
	3.048	37.6	755	38	7.8-11.7-23.5	6.9-10.3-20.6	5.9-8.8-17.6	5.5-8.2-16.4	39	44	50	48	43	38					
	3.556	51.2	881	42	9.1-13.7-27.4	8.0-12.0-24.0	6.9-10.3-20.6	6.4-9.6-19.2	43	48	54	52	47	42					
	4.064	66.8	1007	46	10.4-15.7-31.3	9.1-13.7-27.4	7.8-11.7-23.5	7.3-11.0-21.9	47	52	58	56	51	46					
406 x 762	1.016	16.5	315	11	2.6-4.3-8.6	2.3-3.8-7.5	2.0-3.2-6.5	1.8-3.0-6.0	12	17	23	21	16	11					
	1.524	9.3	472	21	4.3-6.5-12.9	3.8-5.6-11.3	3.2-4.8-9.7	3.0-4.5-9.0	22	27	33	31	26	21					
	2.032	16.5	629	29	5.7-8.6-17.2	5.0-7.5-15.1	4.3-6.5-12.9	4.0-6.0-12.1	30	35	41	39	34	29					
	2.54	25.8	787	34	7.2-10.8-21.5	6.3-9.4-18.8	5.4-8.1-16.1	5.0-7.5-15.1	35	40	46	44	39	34					
	3.048	37.1	944	39	8.6-12.9-25.8	7.5-11.3-22.6	6.5-9.7-19.4	6.0-9.0-18.1	40	45	51	49	44	39					
	3.556	50.5	1101	43	10.0-15.1-30.1	8.8-13.2-26.4	7.5-11.3-22.6	7.0-10.5-21.1	44	49	55	53	48	43					
	4.064	66.0	1259	46	11.5-17.2-34.4	10.0-15.1-30.1	8.6-12.9-25.8	8.0-12.1-24.1	47	52	58	56	51	46					
406 x 914	1.016	4.1	378	11	2.6-4.7-9.3	2.3-4.1-8.1	2.0-3.5-7.0	1.8-3.3-6.5	12	17	23	21	16	11					
	1.524	9.2	566	22	4.7-7.0-14.0	4.1-6.1-12.2	3.5-5.2-10.5	3.3-4.9-9.8	23	28	34	32	27	22					
	2.032	16.4	755	29	6.2-9.3-18.6	5.4-8.1-16.3	4.7-7.0-14.0	4.3-6.5-13.0	30	35	41	39	34	29					
	2.54	25.6	944	35	7.8-11.6-23.3	6.8-10.2-20.4	5.8-8.7-17.4	5.4-8.1-16.3	36	41	47	45	40	35					
	3.048	36.8	1133	39	9.3-14.0-27.9	8.1-12.2-24.4	7.0-10.5-20.9	6.5-9.8-19.5	40	45	51	49	44	39					
	3.556	50.1	1321	43	10.9-16.3-32.6	9.5-14.2-28.5	8.1-12.2-24.4	7.6-11.4-22.8	44	49	55	53	48	43					
	4.064	65.4	1510	47	12.4-18.6-37.2	10.9-16.3-32.6	9.3-14.0-27.9	8.7-13.0-26.1	48	53	59	57	52	47					
457 x 508	1.016	4.2	236	-	2.5-3.8-7.6	2.2-3.3-6.7	1.9-2.9-5.7	1.8-2.7-5.3	11	16	22	20	15	-					
	1.524	9.4	354	20	3.8-5.7-11.4	3.3-5.0-10.0	2.9-4.3-8.6	2.7-4.0-8.0	21	26	32	30	25	20					
	2.032	16.7	472	28	5.1-7.6-15.2	4.4-6.7-13.3	3.8-5.7-11.4	3.6-5.3-10.7	29	34	40	38	33	28					
	2.54	26.2	590	34	6.3-9.5-19.0	5.6-8.3-16.7	4.8-7.1-14.3	4.4-6.7-13.3	35	40	46	44	39	34					
	3.048	37.7	708	38	7.6-11.4-22.8	6.7-10.0-20.0	5.7-8.6-17.1	5.3-8.0-16.0	39	44	50	48	43	38					
	3.556	51.3	826	42	8.9-13.3-26.7	7.8-11.7-23.3	6.7-10.0-20.0	6.2-9.3-18.7	43	48	54	52	47	42					
	4.064	67.0	944	46	10.2-15.2-30.5	8.9-13.3-26.7	7.6-11.4-22.8	7.1-10.7-21.3	47	52	58	56	51	46					
457 x 610	1.016	4.1	283	-	2.6-4.1-8.2	2.3-3.6-7.2	2.0-3.1-6.2	1.8-2.9-5.8	11	16	22	20	15	-					
	1.524	9.3	425	21	4.1-6.2-12.3	3.6-5.4-10.8	3.1-4.6-9.3	2.9-4.3-8.6	22	27	33	31	26	21					
	2.032	16.5	566	28	5.5-8.2-16.4	4.8-7.2-14.4	4.1-6.2-12.3	3.8-5.8-11.5	29	34	40	38	33	28					
	2.54	25.8	708	34	6.9-10.3-20.6	6.0-9.0-18.0	5.1-7.7-15.4	4.8-7.2-14.4	35	40	46	44	39	34					
	3.048	37.2	850	39	8.2-12.3-24.7	7.2-10.8-21.6	6.2-9.3-18.5	5.8-8.6-17.3	40	45	51	49	44	39					
	3.556	50.6	991	43	9.6-14.4-28.8	8.4-12.6-25.2	7.2-10.8-21.6	6.7-10.1-20.1	44	49	55	53	48	43					
	4.064	66.1	1133	46	11.0-16.4-32.9	9.6-14.4-28.8	8.2-12.3-24.7	7.7-11.5-23.0	47	52	58	56	51	46					
457 x 914	1.016	4.0	425	11	2.6-4.9-9.8	2.3-4.3-8.5	2.0-3.7-7.3	1.8-3.4-6.8	12	17	23	21	16	11					
	1.524	9.1	637	22	4.9-7.3-14.7	4.3-6.4-12.8	3.7-5.5-11.0	3.4-5.1-10.3	23	28	34	32	27	22					
	2.032	16.2	850	29	6.5-9.8-19.5	5.7-8.5-17.1	4.9-7.3-14.7	4.6-6.8-13.7	30	35	41	39	34	29					
	2.54	25.3	1062	35	8.1-12.2-24.4	7.1-10.7-21.4	6.1-9.2-18.3	5.7-8.5-17.1	36	41	47	45	40	35					
	3.048	36.4	1274	40	9.8-14.7-29.3	8.5-12.8-25.6	7.3-11.0-22.0	6.8-10.3-20.5	41	46	52	50	45	40					
	3.556	49.6	1487	44	11.4-17.1-34.2	10.0-15.0-29.9	8.5-12.8-25.6	8.0-12.0-23.9	45	50	56	54	49	44					
	4.064	64.7	1699	47	13.0-19.5-39.1	11.4-17.1-34.2	9.8-14.7-29.3	9.1-13.7-27.4	48	53	59	57	52	47					
508 x 610	1.016	4.1	315	11	2.6-4.3-8.6	2.3-3.8-7.5	2.0-3.2-6.4	1.8-3.0-6.0	12	17	23	21	16	11					
	1.524	9.2	472	21	4.3-6.4-12.9	3.8-5.6-11.3	3.2-4.8-9.7	3.0-4.5-9.0	22	27	33	31	26	21					
	2.032	16.4	629	28	5.7-8.6-17.2	5.0-7.5-15.0	4.3-6.4-12.9	4.0-6.0-12.0	29	34	40	38	33	28					
	2.54	25.6	787	34	7.2-10.7-21.5	6.3-9.4-18.8	5.4-8.1-16.1	5.0-7.5-15.0	35	40	46	44	39	34					
	3.048	36.9	944	39	8.6-12.9-25.8	7.5-11.3-22.6	6.4-9.7-19.3	6.0-9.0-18.0	40	45	51	49	44	39					
	3.556	50.2	1101	43	10.0-15.0-30.1	8.8-13.2-26.3	7.5-11.3-22.6	7.0-10.5-21.0	44	49	55	53	48	43					
	4.064	65.5	1259	46	11.5-17.2-34.4	10.0-15.0-30.1	8.6-12.9-25.8	8.0-12.0-24.1	47	52	58	56	51	46					
508 x 914	1.016	4.0	472	12	2.6-5.1-10.2	2.3-4.5-8.9	1.9-3.8-7.7	1.8-3.6-7.1	13	18	24	22	17	12					
	1.524	9.0	708	22	5.1-7.7-15.3	4.5-6.7-13.4	3.8-5.7-11.5	3.6-5.4-10.7	23	28	34	32	27	22					
	2.032	16.0	944	29	6.8-10.2-20.4	6.0-8.9-17.9	5.1-7.7-15.3	4.8-7.1-14.3	30	35	41	39	34	29					
	2.54	25.1	1180	35	8.5-12.8-25.5	7.4-11.2-22.3	6.4-9.6-19.1	6.0-8.9-17.9	36	41	47	45	40	35					
	3.048	36.1	1416	40	10.2-15.3-30.6	8.9-13.4-26.8	7.7-11.5-23.0	7.1-10.7-21.4	41	46	52	50	45	40					
	3.556	49.1	1652	44	11.9-17.9-35.7	10.4-15.6-31.3	8.9-13.4-26.8	8.3-12.5-25.0	45	50	56	54	49	44					
	4.064	64.2	1888	47	13.6-20.4-40.8	11.9-17.9-35.7	10.2-15.3-30.6	9.5-14.3-28.6	48	53	59	57	52	47					

NOTE: See notes and correction factors on page P1-24.

PERFORMANCE DATA | METRIC | RECTANGULAR, WITH OBD/MULTILOUVER

SIZE	NECK VEL	TOTAL PRES	AIR FLOW	SOUND	THROW DIRECTION				OCTAVE BAND, dB						
					1-WAY THROW	2-WAY THROW	3-WAY HROW	4-WAY THROW	2	3	4	5	6	7	
cm	m/s	Pa	L/s	NC	m	m	m	m							
610 x 762	1.016	4.0	472	12	2.6 - 5.1 - 10.2	2.3 - 4.5 - 8.9	1.9 - 3.8 - 7.6	1.8 - 3.6 - 7.1	13	18	24	22	17	12	
	1.524	9.0	708	22	5.1 - 7.6 - 15.3	4.5 - 6.7 - 13.4	3.8 - 5.7 - 11.5	3.6 - 5.4 - 10.7	23	28	34	32	27	22	
	2.032	16.0	944	29	6.8 - 10.2 - 20.4	5.9 - 8.9 - 17.8	5.1 - 7.6 - 15.3	4.8 - 7.1 - 14.3	30	35	41	39	34	29	
	2.54	25.0	1180	35	8.5 - 12.7 - 25.5	7.4 - 11.2 - 22.3	6.4 - 9.6 - 19.1	5.9 - 8.9 - 17.8	36	41	47	45	40	35	
	3.048	35.9	1416	40	10.2 - 15.3 - 30.6	8.9 - 13.4 - 26.8	7.6 - 11.5 - 22.9	7.1 - 10.7 - 21.4	41	46	52	50	45	40	
	3.556	48.9	1652	44	11.9 - 17.8 - 35.7	10.4 - 15.6 - 31.2	8.9 - 13.4 - 26.8	8.3 - 12.5 - 25.0	45	50	56	54	49	44	
4.064	63.9	1888	47	13.6 - 20.4 - 40.8	11.9 - 17.8 - 35.7	10.2 - 15.3 - 30.6	9.5 - 14.3 - 28.5	48	53	59	57	52	47		
610 x 914	1.016	4.0	566	12	2.6 - 5.5 - 11.0	2.3 - 4.8 - 9.6	1.9 - 4.1 - 8.3	1.8 - 3.9 - 7.7	13	18	24	22	17	12	
	1.524	8.9	850	22	5.5 - 8.3 - 16.5	4.8 - 7.2 - 14.5	4.1 - 6.2 - 12.4	3.9 - 5.8 - 11.6	23	28	34	32	27	22	
	2.032	15.8	1133	30	7.3 - 11.0 - 22.0	6.4 - 9.6 - 19.3	5.5 - 8.3 - 16.5	5.1 - 7.7 - 15.4	31	36	42	40	35	30	
	2.54	24.7	1416	36	9.2 - 13.8 - 27.6	8.0 - 12.1 - 24.1	6.9 - 10.3 - 20.7	6.4 - 9.6 - 19.3	37	42	48	46	41	36	
	3.048	35.6	1699	40	11.0 - 16.5 - 33.1	9.6 - 14.5 - 28.9	8.3 - 12.4 - 24.8	7.7 - 11.6 - 23.1	41	46	52	50	45	40	
	3.556	48.5	1982	44	12.9 - 19.3 - 38.6	11.3 - 16.9 - 33.8	9.6 - 14.5 - 28.9	9.0 - 13.5 - 27.0	45	50	56	54	49	44	
4.064	63.3	2265	48	14.7 - 22.0 - 44.1	12.9 - 19.3 - 38.6	11.0 - 16.5 - 33.1	10.3 - 15.4 - 30.9	49	54	60	58	53	48		
762 x 914	1.016	3.9	708	13	2.6 - 5.8 - 12.1	2.2 - 5.1 - 10.6	1.9 - 4.3 - 9.1	1.8 - 4.0 - 8.5	14	19	25	23	18	13	
	1.524	8.8	1062	23	5.8 - 9.1 - 18.2	5.1 - 8.0 - 15.9	4.3 - 6.8 - 13.6	4.0 - 6.4 - 12.7	24	29	35	33	28	23	
	2.032	15.6	1416	30	8.1 - 12.1 - 24.2	7.1 - 10.6 - 21.2	6.1 - 9.1 - 18.2	5.7 - 8.5 - 17.0	31	36	42	40	35	30	
	2.54	24.4	1770	36	10.1 - 15.1 - 30.3	8.8 - 13.3 - 26.5	7.6 - 11.4 - 22.7	7.1 - 10.6 - 21.2	37	42	48	46	41	36	
	3.048	35.2	2124	41	12.1 - 18.2 - 36.3	10.6 - 15.9 - 31.8	9.1 - 13.6 - 27.3	8.5 - 12.7 - 25.4	42	47	53	51	46	41	
	3.556	47.9	2478	45	14.1 - 21.2 - 42.4	12.4 - 18.6 - 37.1	10.6 - 15.9 - 31.8	9.9 - 14.8 - 29.7	46	51	57	55	50	45	
4.064	62.5	2832	48	16.2 - 24.2 - 48.5	14.1 - 21.2 - 42.4	12.1 - 18.2 - 36.3	11.3 - 17.0 - 33.9	49	54	60	58	53	48		

NOTES: Throw values are given for terminal velocities of 0.75, 0.50, and 0.25 m/s. Throw values are given for isothermal conditions. NC values are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Dash in space denotes a 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. The throw values given for 1-Way Throw is for [(Total L/s)/2] L/s per side. The throw values given for 2-Way Throw is for [(Total L/s)/2] L/s per side. The throw values given for 3-Way Throw is for [(Total L/s)/3] L/s per side. The throw values given for 4-Way Throw is for [(Total L/s)/4] L/s per side. See Krueger's selection software for performance data not shown, including octave band data.



NOTE: Reference page P1-5 for blade setting detail.

CORRECTION FACTOR (WITH OBD)			
BLADE SETTING	THROWS (MULTIPLY)	Ps (MULTIPLY)	NC (ADD)
A	1.43	1.30	+2
B	1.00	1.00	+0
C	0.79	0.72	-3
D	0.64	0.52	-4

CORRECTION FACTOR (WITHOUT OBD)			
BLADE SETTING	THROWS (MULTIPLY)	Ps (MULTIPLY)	NC (ADD)
A	1.43	1.20	+0
B	1.00	0.85	-3
C	0.70	0.61	-4
D	0.64	0.33	-6

ENGINEERING SPECIFICATION & CONFIGURATION

9180

The supply grille shall be a Krueger model 9180. This grille must have curved deflectors made of 20 gage 304 stainless steel that are individually adjustable from the face allowing the volume and discharge angle of air to be adjusted. The grille shall be built in 1, 2, 3 and 4-way blow patterns. The frame of the grille must be constructed of 20 gage 304 stainless steel with countersunk screw holes (#6x1 1/4" stainless sheet metal screws provided by manufacturer). This frame must also produce a border of 1-3/8" around all sides of the grille with mitered corners. Optional 304 stainless steel damper available made of 20 gage stainless steel welded to the supply grille and operable from the face.

Optional 316 stainless steel construction available.

FINISH

The finish shall be 90 - #4 Satin Polish, obtained by finishing with a 120-grit abrasive, or 44 - British White.

1. SERIES: (XXXX)

9180 - Curved Blade Supply Grille

2. PATTERN: (XX)

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

3. WIDTH: (XX)

4" - 48" in 2" Increments

4. HEIGHT: (XX)

4" - 48" in 2" Increments

5. MATERIAL: (XXX)

304 - Stainless Steel Grade 304
316 - Stainless Steel Grade 316

6. FRAME STYLE: (XXX)

F22 - Surface Mount
F23 - Lay-in T-Bar

7. PANEL: (XX)x(XX)

None
24"x24" *
24"x48" *

8. FASTENING METHOD: (XX)

00 - No Screw Holes
01 - Countersunk Screw Holes **

9. DAMPER: (XX)

00 - No Damper
01 - Stainless Steel OBD †

10. ACCESSORIES: (XX) (XX)

00 - No Accessories
01 - Plaster Frame
XX - Square to Round Adapter ‡
(Specify size from 04 - 18" in increments of 2", depending on neck size)

11. FINISH: (XX)

90 - #4 Satin Polish
44 - British White

* Only available with Frame 23.

** Unit shipped with #6x1 1/4" stainless steel sheet metal screws.

† Damper is welded to unit.

‡ Square to Round Adapter is not available with OBD.

SAMPLE CONFIGURATION: 9180 - 04 - 20x20 - 304 - F22 - NONE - 01 - 00 - 00 - 90