

Introduction: RM, RA Series

Krueger's RM/RA round ceiling diffusers provide excellent performance in variable air volume systems. The round ceiling diffusers have three or four cones depending on model selected to provide a uniform appearance regardless of design specifications. Krueger's round ceiling diffusers come in three styles.

The first style, RM1/5RM1, is used when vertical throw is not needed, but the consumer needs to adjust the room air induction. This is accomplished by utilizing the two position inner cones. At position one, capacity is maximized. In position two, room air induction is increased.

The second style, RM2/5RM2/RM4/5RM4, is used when horizontal and vertical discharge is required. This is accomplished by utilizing the three position inner cones. At position one, capacity is maximized and throw is horizontal. In position two, room air induction is increased and the throw remains horizontal. When set in position three, the air projects vertically from the diffuser.

The third style, RA2/RA4, is used when horizontal and vertical discharge is required with infinite adjustability between horizontal and vertical. In the full open setting, capacity is maximized and throw is horizontal. In the full closed setting, air projects vertically from the diffuser.

Krueger's round ceiling diffusers come with a safety cable to secure the inner cones after removal. (Safety cable is optional for 12" inlet size or smaller.)

MODELS

- RM1 - Steel, 3-Cones, 2-Position Adjustments
- 5RM1 - Aluminum, 3-Cones, 2-Position Adjustments
- RM2 - Steel, 4-Cones, 3-Position Adjustments
- 5RM2 - Aluminum, 4-Cones, 3-Position Adjustments
- RM4 - Steel, 4-Cones, 3-Position Adjustments
with Large Outer Anti-smudge Cone
- 5RM4 - Aluminum, 4-Cones, 3-Position Adjustments
with Large Outer Anti-smudge Cone
- RA2 - Steel, 4-Cones, Fully Adjustable
- RA4 - Steel, 4-Cones, Fully Adjustable,
with Large Outer Anti-smudge Cone

FEATURES

- Horizontal only (RM1/5RM1) air distribution.
- Horizontal/Vertical (RM2/5RM2/RM4/5RM4/RA2/RA4) air distribution. (Units ship in vertical position.)
- Designed for heating and cooling applications.
- 360° Discharge air pattern.
- Excellent performance in variable air volume systems.
- Designed for exposed duct or hard ceiling applications.
- Units ship with core set for vertical throw.

ACCESSORIES

- Optional Safety Cable (12" Inlets or Smaller)
- Optional Round Straightening Grid

FINISHES

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



RM1



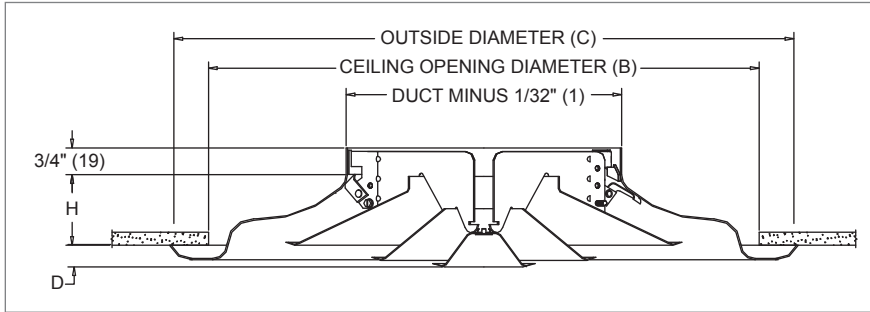
RM2



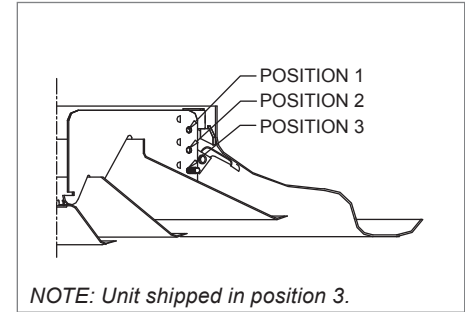
RA4

RM2, 5RM2 Dimensional Information

RM2, 5RM2, CROSS SECTION



RM2, 5RM2, POSITIONS



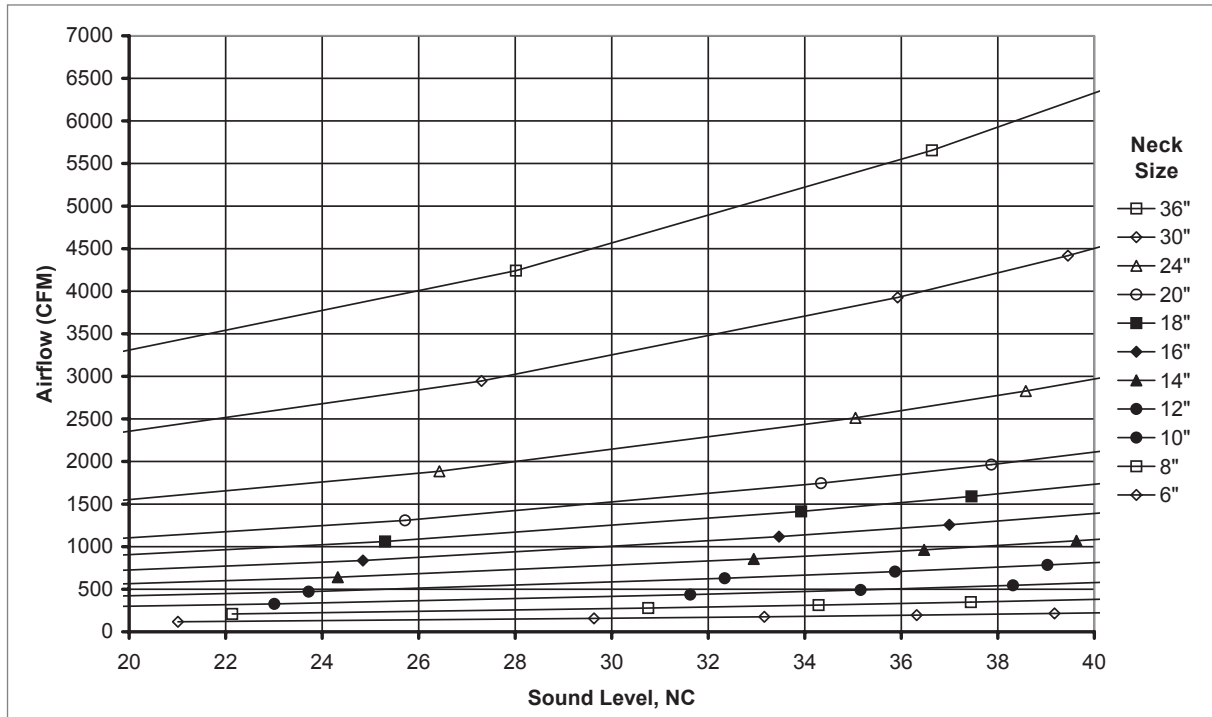
RM2, 5RM2, AVAILABLE NECK SIZES

Nominal Round Duct Size Steel (RM2)	Nominal Round Duct Size Aluminum (5RM2)	B	C	Position 1 (Horizontal) D	Position 3 (Vertical) D	H
6"	6"	12" (305)	13 1/2" (343)	1 7/16" (37)	11/16" (17)	1 5/8" (41)
8"	8"	16" (406)	18" (457)	1 13/16" (46)	7/8" (19)	2 1/8" (54)
10"	10"	20" (508)	22 1/2" (572)	2 1/4" (57)	1 1/8" (29)	2 5/8" (67)
12"	12"	24" (635)	27" (686)	2 11/16" (68)	1 1/4" (32)	3 1/4" (83)
14"	14"	28" (711)	31 1/2" (800)	3 1/8" (79)	1 3/16" (30)	3 3/4" (95)
16"	16"	32" (813)	36" (914)	3 5/16" (84)	1 5/16" (33)	4 1/4" (108)
18"	18"	36" (914)	40 1/2" (1029)	3 3/4" (95)	1 1/2" (38)	4 7/8" (124)
20"	-	40" (1016)	45" (1143)	4 1/8" (105)	1 5/8" (41)	5 3/8" (137)
24"	-	48" (1219)	54" (1372)	4 7/8" (121)	1 7/8" (48)	6 1/2" (165)
30"	-	60" (1524)	67 1/2" (1715)	5 9/16" (141)	1 7/8" (48)	8" (203)
36"	-	60" (1524)	67 1/2" (1715)	5 9/16" (141)	1 7/8" (48)	8" (203)

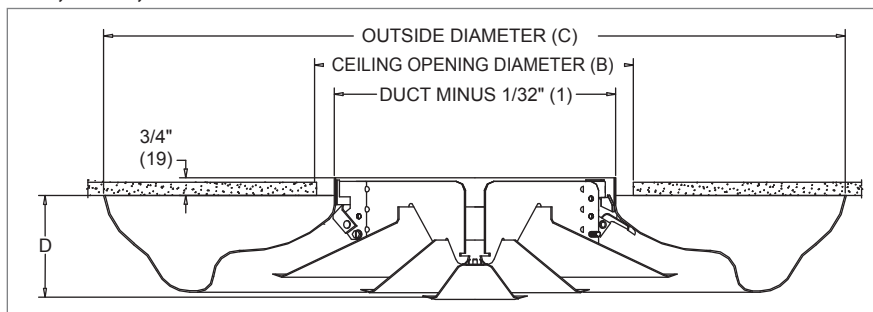
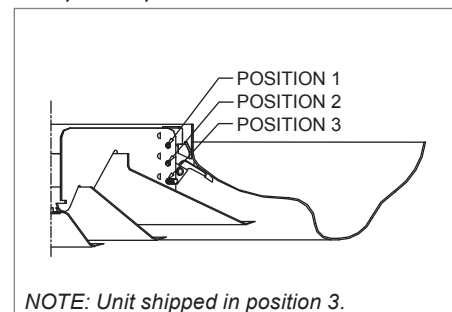
NOTE: Dimensions in parentheses are mm.

RM2, 5RM2 Reference Chart

AIRFLOW VS. NC LEVEL: RM2, 5RM2 (NO DAMPER)

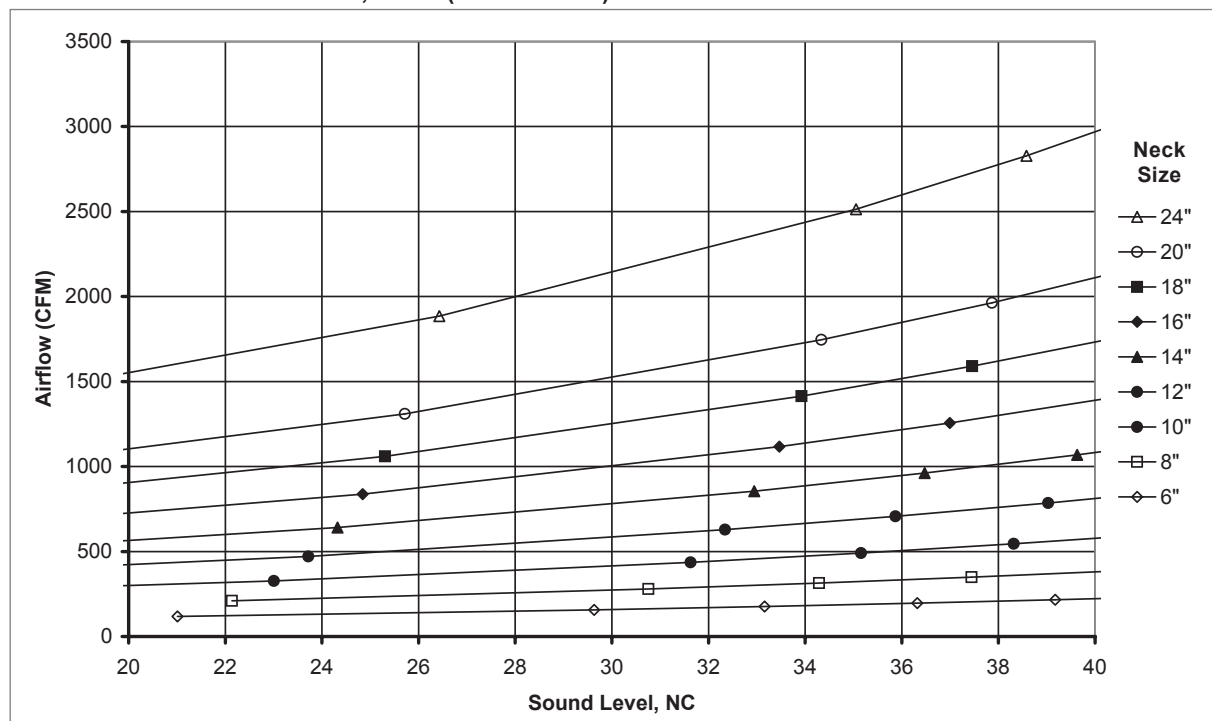


© KRUEGER 2012

RM4, 5RM4 Dimensional Information
RM4, 5RM4, CROSS SECTION

RM4, 5RM4, POSITIONS

RM4, 5RM4, AVAILABLE NECK SIZES

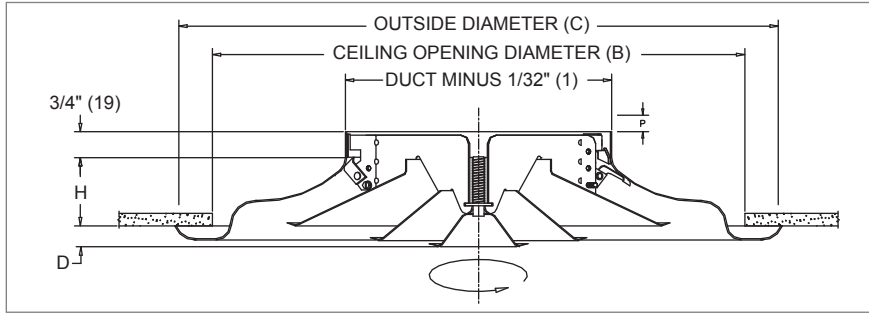
Nominal Round Duct Size Steel (RM4)	Nominal Round Duct Size Aluminum (5RM4)	Position 1 (Horizontal) D	Position 3 (Vertical) D	Ceiling Opening Diameter B	Outside Diameter C
6"	6"	3 1/16" (78)	2 5/16" (59)	7" (178)	17 3/8" (441)
8"	8"	3 15/16" (100)	3" (76)	9" (229)	23 1/4" (591)
10"	10"	4 7/8" (124)	3 3/4" (95)	11" (279)	29" (737)
12"	12"	5 15/16" (151)	4 1/2" (114)	13" (330)	34 7/8" (886)
14"	14"	6 7/8" (175)	4 15/16" (125)	15" (381)	40 5/8" (1032)
16"	16"	7 9/16" (192)	5 9/16" (141)	17" (432)	46 3/8" (1178)
18"	18"	8 5/8" (219)	6 3/8" (162)	19" (483)	51 3/8" (1305)
20"	-	9 1/2" (241)	7" (178)	21" (533)	56 1/4" (1429)
24"	-	11 3/8" (289)	8 3/8" (213)	25" (635)	67 1/2" (1715)

NOTE: Dimensions in parentheses are mm.

RM4, 5RM4 Reference Chart
AIRFLOW VS. NC LEVEL: RM4, 5RM4 (NO DAMPER)


RA2 Dimensional Information

RA2, CROSS SECTION



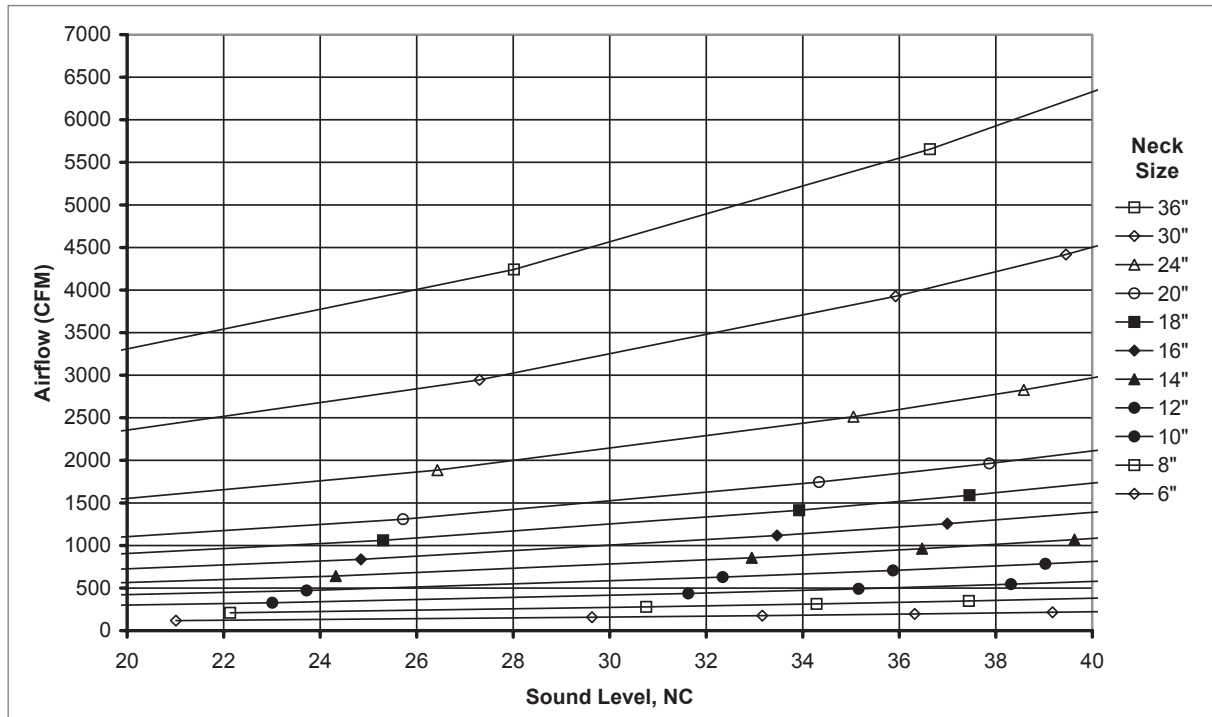
RA2, AVAILABLE NECK SIZES

Nominal Round Duct Size	Ceiling Opening Diameter B	Outside Diameter C	Position 1 (Horizontal) D	Position 3 (Vertical) D	H	P
6"	12" (305)	13 1/2" (343)	1 7/16" (37)	11/16" (17)	1 5/8" (41)	-
8"	16" (406)	18" (457)	1 13/16" (46)	7/8" (19)	2 1/8" (54)	-
10"	20" (508)	22 1/2" (572)	2 1/4" (57)	1 1/8" (29)	2 5/8" (67)	-
12"	24" (635)	27" (686)	2 11/16" (68)	1 1/4" (32)	3 1/4" (83)	-
14"	28" (711)	31 1/2" (800)	3 1/8" (79)	1 3/16" (30)	3 3/4" (95)	2 1/2" (64)
16"	32" (813)	36" (914)	3 5/16" (84)	1 5/16" (33)	4 1/4" (108)	2 5/8" (67)
18"	36" (914)	40 1/2" (1029)	3 3/4" (95)	1 1/2" (38)	4 7/8" (124)	2 3/4" (70)
20"	40" (1016)	45" (1143)	4 1/8" (105)	1 5/8" (41)	5 3/8" (137)	3" (76)
24"	48" (1219)	54" (1372)	4 7/8" (121)	1 7/8" (48)	6 1/2" (165)	3 1/8" (79)
30"	60" (1524)	67 1/2" (1715)	5 9/16" (141)	1 7/8" (48)	8" (203)	4 3/8" (111)
36"	60" (1524)	67 1/2" (1715)	5 9/16" (141)	1 7/8" (48)	8" (203)	4 3/8" (111)

NOTE: Dimensions in parentheses are mm.

RA2 Reference Chart

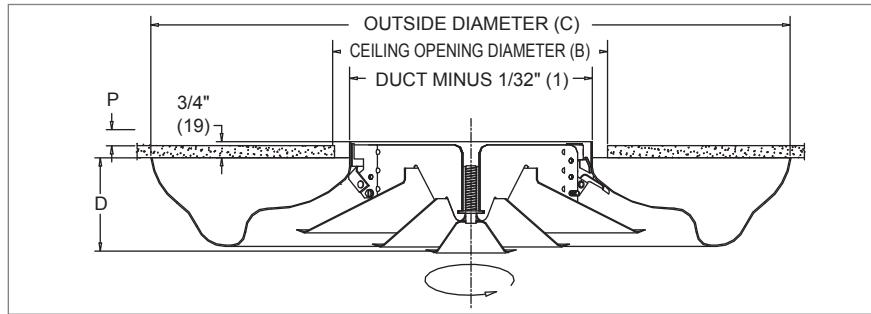
AIRFLOW VS. NC LEVEL: RA2 (NO DAMPER)



ROUND DIFFUSERS

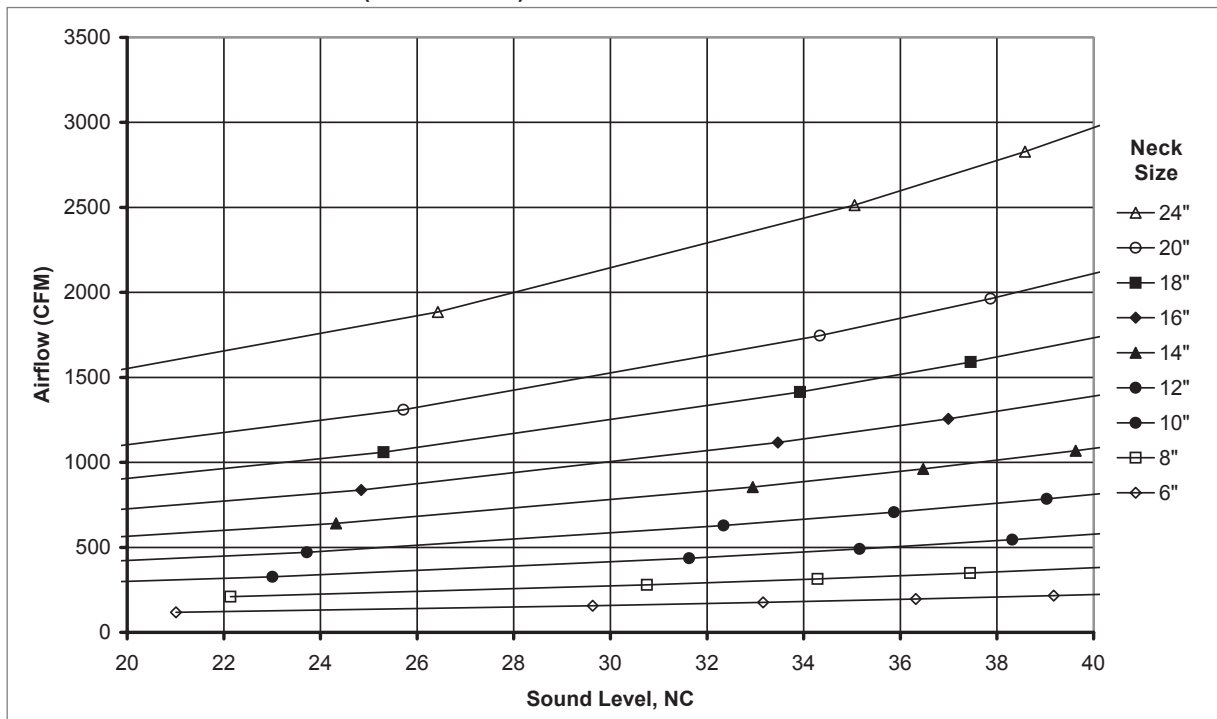
RA2

© KRUEGER 2012

RA4 Dimensional Information
RA4, CROSS SECTION

RA4, AVAILABLE NECK SIZES

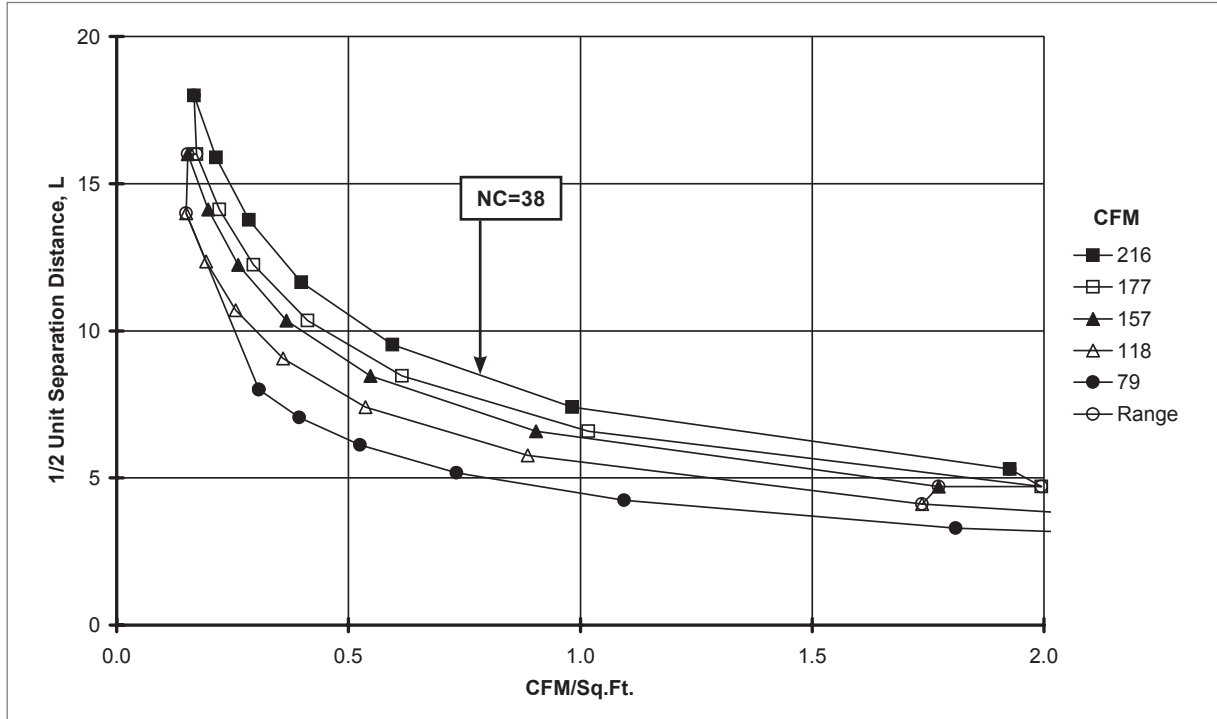
Nominal Round Duct Size	Position 1 (Horizontal) D	Position 3 (Vertical) D	P	Ceiling Opening Diameter B	Outside Diameter C
6"	3 1/16" (78)	2 5/16" (59)	-	7" (178)	17 3/8" (441)
8"	3 15/16" (100)	3" (76)	-	9" (229)	23 1/4" (591)
10"	4 7/8" (124)	3 3/4" (95)	-	11" (279)	29" (737)
12"	5 15/16" (151)	4 1/2" (114)	-	13" (330)	34 7/8" (886)
14"	6 7/8" (175)	4 15/16" (125)	2 1/2" (64)	15" (381)	40 5/8" (1032)
16"	7 9/16" (192)	5 9/16" (141)	2 5/8" (67)	17" (432)	46 3/8" (1178)
18"	8 5/8" (219)	6 3/8" (162)	2 3/4" (70)	19" (483)	51 3/8" (1305)
20"	9 1/2" (241)	7" (178)	3 1/2" (89)	21" (533)	56 1/4" (1429)
24"	11 3/8" (289)	8 3/8" (213)	3 1/8" (79)	25" (635)	67 1/2" (1715)

NOTE: Dimensions in parentheses are mm.

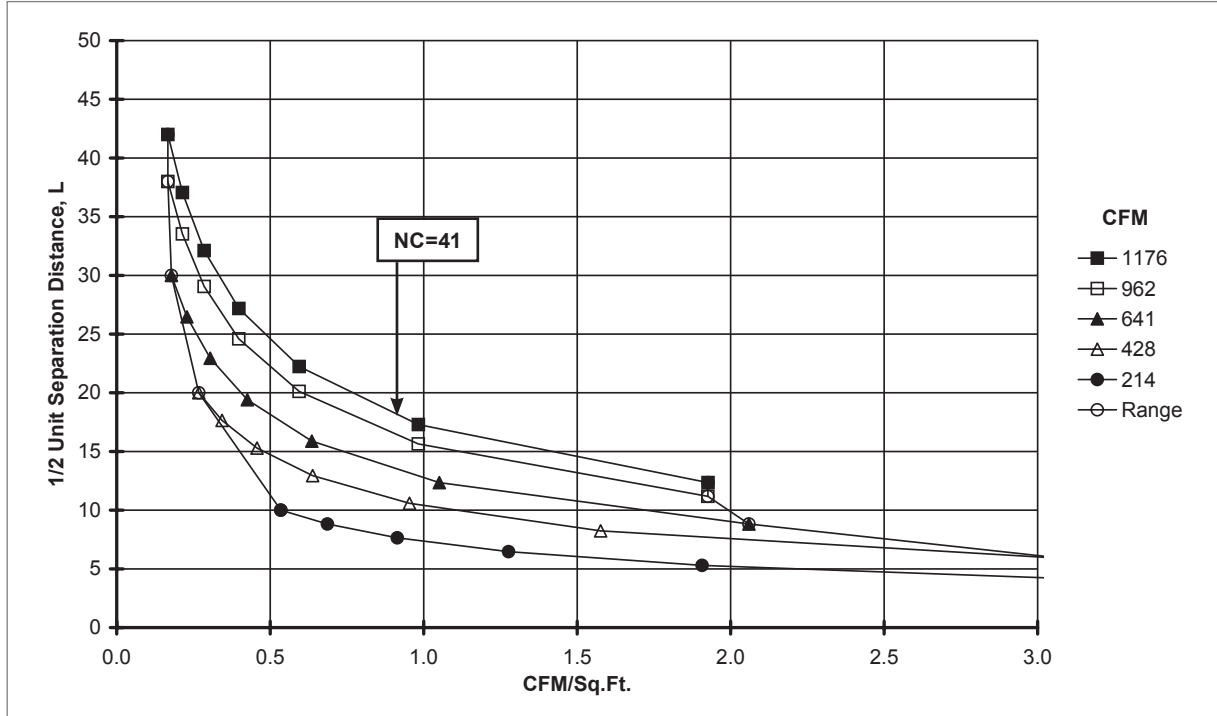
RA4 Reference Chart
AIRFLOW VS. NC LEVEL: RA4 (NO DAMPER)


RM2, 5RM2, RM4, 5RM4, RA2, RA4 Reference Charts: Horizontal Throw

DIFFUSER SPACING FOR 80% ADPI: RM2, 5RM2, RM4, 5RM4, RA2, RA4, 6" NECK (NO DAMPER)



DIFFUSER SPACING FOR 80% ADPI: RM2, 5RM2, RM4, 5RM4, RA2, RA4, 14" NECK (NO DAMPER)



NOTES: 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.

ROUND DIFFUSERS

RM2 - RM4 - RA2 - RA4

RM2, 5RM2, RM4, 5RM4, RA2, RA4 Performance Data: Horizontal/Vertical Throw

IP/METRIC DATA: RM2, 5RM2, RM4, 5RM4, RA2, RA4 (NO DAMPER)

ROUND DIFFUSERS

	IP Data												Metric Data													
	Neck Vel	Air Flow	Horizontal		Vertical		Horizontal Throw				HZ	VT	Neck Vel	Air Flow	Horizontal		Vertical		Horizontal Throw				Vertical Projection			
			Ps	Pt	Ps	Pt	10°F	20°F	30°F	40°F					Pa	Pv	Pt	Pt	5°C	11°C	17°C	22°C				
	FPM	CFM	"WG	"WG	"WG	"WG	ft	ft	ft	ft	ft	NC	NC	m/s	L/s	Pa	Pa	Pa	Pa	m	m	m	m	m	m	
18" Dia.	200	353	0.00	0.01	0.00	0.01	2-3-7	1	1	1	1	-	-	1.0	167	1	1	1	2	0.7-1.0-2.0	0.5	0.4	0.3	0.2		
	400	707	0.01	0.02	0.02	0.03	4-7-13	6	5	4	3	12	13	2.0	334	3	5	4	7	1.4-2.0-4.1	1.8	1.5	1.3	1.0		
	600	1060	0.02	0.05	0.04	0.06	7-10-20	13	11	9	7	24	25	3.0	500	6	12	10	15	2.0-3.1-6.0	4.1	3.3	2.9	2.2		
	800	1414	0.04	0.08	0.07	0.11	9-13-23	24	19	17	13	33	34	4.1	667	11	21	17	27	2.7-4.1-7.0	7.3	5.8	5.1	4.0		
	900	1590	0.06	0.11	0.09	0.14	10-15-24	28	21	19	16	36	37	4.6	751	14	26	22	34	3.1-4.6-7.4	8.7	6.5	5.8	5.0		
	1000	1767	0.07	0.13	0.11	0.17	11-17-26	32	24	21	19	40	41	5.1	834	17	33	27	42	3.4-5.1-7.8	9.6	7.2	6.5	5.8		
	1100	1944	0.08	0.16	0.13	0.21	12-18-27	35	26	23	21	42	43	5.6	917	21	39	32	51	3.7-5.6-8.2	10.6	7.9	7.1	6.4		
	1200	2121	0.10	0.19	0.16	0.25	13-20-28	38	28	26	23	45	46	6.1	1001	25	47	39	61	4.1-6.0-8.5	11.5	8.6	7.8	7.0		
1300	2297	0.12	0.22	0.18	0.29	15-21-29	41	31	28	25	47	48	6.6	1084	29	55	45	72	4.4-6.3-8.9	12.5	9.4	8.4	7.5			
20" Dia.	200	436	0.00	0.01	0.00	0.01	2-4-7	2	1	1	1	-	-	1.0	206	1	1	1	2	0.8-1.1-2.3	0.5	0.4	0.4	0.3		
	400	873	0.01	0.02	0.02	0.03	5-7-15	7	5	5	4	13	14	2.0	412	3	5	4	7	1.5-2.3-4.5	2.0	1.6	1.4	1.1		
	600	1309	0.02	0.05	0.04	0.06	7-11-22	15	12	10	8	25	26	3.0	618	6	12	10	15	2.3-3.4-6.7	4.5	3.6	3.2	2.5		
	800	1745	0.04	0.08	0.07	0.11	10-15-25	26	21	19	14	33	34	4.1	824	11	21	17	27	3.0-4.5-7.8	8.0	6.4	5.7	4.4		
	900	1963	0.06	0.11	0.09	0.14	11-17-27	32	24	21	18	37	38	4.6	927	14	26	22	34	3.4-5.1-8.2	9.6	7.2	6.5	5.5		
	1000	2182	0.07	0.13	0.11	0.17	12-19-28	35	26	24	21	40	41	5.1	1030	17	33	27	42	3.8-5.7-8.6	10.7	8.0	7.2	6.4		
	1100	2400	0.08	0.16	0.13	0.21	14-20-30	39	29	26	23	43	44	5.6	1133	21	39	32	51	4.1-6.2-9.1	11.7	8.8	7.9	7.1		
	1200	2618	0.10	0.19	0.16	0.25	15-22-31	42	32	28	25	45	46	6.1	1236	25	47	39	61	4.5-6.7-9.5	12.8	9.6	8.6	7.7		
1300	2836	0.12	0.22	0.18	0.29	16-23-32	46	34	31	27	48	49	6.6	1339	29	55	45	72	4.9-7.0-9.8	13.9	10.4	9.3	8.4			
24" Dia.	200	628	0.00	0.01	0.00	0.01	3-4-9	2	2	1	1	-	-	1.0	297	1	1	1	2	0.9-1.4-2.7	0.6	0.5	0.4	0.3		
	400	1257	0.01	0.02	0.02	0.03	6-9-18	8	6	6	4	13	14	2.0	593	3	5	4	7	1.8-2.7-5.4	2.4	1.9	1.7	1.3		
	600	1885	0.02	0.05	0.04	0.06	9-13-26	18	14	12	10	25	26	3.0	890	6	12	10	15	2.7-4.1-8.0	5.4	4.3	3.8	2.9		
	800	2513	0.04	0.08	0.07	0.11	12-18-30	31	25	22	17	34	35	4.1	1186	11	21	17	27	3.6-5.4-9.3	9.5	7.6	6.7	5.2		
	900	2827	0.06	0.11	0.09	0.14	13-20-32	38	28	25	22	38	39	4.6	1334	14	26	22	34	4.1-6.1-9.8	11.5	8.6	7.7	6.6		
	1000	3142	0.07	0.13	0.11	0.17	15-22-34	42	31	28	25	41	42	5.1	1483	17	33	27	42	4.5-6.8-10.4	12.8	9.6	8.6	7.7		
	1100	3456	0.08	0.16	0.13	0.21	16-25-36	46	35	31	28	44	45	5.6	1631	21	39	32	51	5.0-7.5-10.9	14.0	10.5	9.5	8.5		
	1200	3770	0.10	0.19	0.16	0.25	18-26-37	50	38	34	30	46	47	6.1	1779	25	47	39	61	5.4-8.0-11.4	15.3	11.5	10.3	9.2		
1300	4084	0.12	0.22	0.18	0.29	19-27-39	55	41	37	33	49	50	6.6	1927	29	55	45	72	5.9-8.4-11.8	16.6	12.4	11.2	10.0			
30" Dia.	200	982	0.00	0.01	0.00	0.01	4-6-11	2	2	2	1	-	-	1.0	463	1	1	1	2	1.1-1.7-3.4	0.7	0.6	0.5	0.4		
	400	1963	0.01	0.02	0.02	0.03	7-11-22	10	8	7	5	14	15	2.0	927	3	5	4	7	2.3-3.4-6.8	2.9	2.4	2.1	1.6		
	600	2945	0.02	0.05	0.04	0.06	11-17-33	22	18	15	12	26	27	3.0	1390	6	12	10	15	3.4-5.1-10.0	6.6	5.4	4.7	3.6		
	800	3927	0.04	0.08	0.07	0.11	15-22-38	39	31	27	21	35	36	4.1	1853	11	21	17	27	4.5-6.8-11.6	11.8	9.5	8.3	6.4		
	900	4418	0.06	0.11	0.09	0.14	17-25-40	47	35	32	27	38	39	4.6	2085	14	26	22	34	5.1-7.6-12.3	14.3	10.7	9.6	8.1		
	1000	4909	0.07	0.13	0.11	0.17	19-28-43	52	39	35	32	42	43	5.1	2317	17	33	27	42	5.7-8.5-13.0	15.9	11.9	10.7	9.6		
	1100	5400	0.08	0.16	0.13	0.21	20-31-45	58	43	39	35	44	45	5.6	2548	21	39	32	51	6.2-9.3-13.6	17.5	13.1	11.8	10.5		
	1200	5890	0.10	0.19	0.16	0.25	22-33-47	63	47	42	38	47	48	6.1	2780	25	47	39	61	6.8-10.0-14.2	19.1	14.3	12.9	11.5		
1300	6381	0.12	0.22	0.18	0.29	24-34-49	68	51	46	41	49	50	6.6	3012	29	55	45	72	7.4-10.4-14.8	20.7	15.5	13.9	12.5			
36" Dia.	200	1414	0.00	0.01	0.00	0.01	4-7-13	3	2	2	2	-	-	1.0	667	1	1	1	2	1.4-2.0-4.1	0.9	0.7	0.6	0.5		
	400	2827	0.01	0.02	0.02	0.03	9-13-27	12	9	8	6	15	16	2.0	1334	3	5	4	7	2.7-4.1-8.1	3.5	2.8	2.5	1.9		
	600	4241	0.02	0.05	0.04	0.06	13-20-40	26	21	18	14	27	28	3.0	2002	6	12	10	15	4.1-6.1-12.0	7.9	6.4	5.6	4.3		
	800	5655	0.04	0.08	0.07	0.11	18-27-46	46	37	33	25	36	37	4.1	2669	11	21	17	27	5.4-8.1-13.9	14.1	11.4	10.0	7.7		
	900	6362	0.06	0.11	0.09	0.14	20-30-49	56	42	38	32	39	40	4.6	3002	14	26	22	34	6.1-9.2-14.7	17.1	12.8	11.6	9.7		
	1000	7069	0.07	0.13	0.11	0.17	22-33-51	63	47	42	38	42	43	5.1	3336	17	33	27	42	6.8-10.2-15.5	19.1	14.3	12.8	11.5		
	1100	7775	0.08	0.16	0.13	0.21	25-37-54	69	52	46	42	45	46	5.6	3670	21	39	32	51	7.5-11.2-16.3	21.0	15.7	14.1	12.6		
	1200	8482	0.10	0.19	0.16	0.25	27-40-56	75	56	51	45	48	49	6.1	4003	25	47	39	61	8.1-12.0-17.0	22.9	17.1	15.4	13.8		
1300	9189	0.12	0.22	0.18	0.29	29-41-58	81	61	55	49	50	51	6.6	4337	29	55	45	72	8.8-12.5-17.7	24.8	18.6	16.7	14.9			

NOTES: Throw values are given terminal velocities of 150, 100, and 50 FPM (0.75, 0.50, and 0.25 m/s). Horizontal throw values are given for isothermal conditions. Vertical throw values are for a terminal velocity of 50 FPM, free jet, at the temperature differences shown. 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 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 selection software for performance data not shown, including octave band data.

R
M
2
-
R
M
4
-
R
A
2
-
R
A
4

RM2, 5RM2, RM4, 5RM4, RA2, RA4 Suggested Specification & Configuration

ROUND DIFFUSERS

RM2, 5RM2, RM4, 5RM4

The round ceiling diffuser shall be Krueger model RM2 (steel) or 5RM2 (aluminum). The RM2 and 5RM2 models shall be constructed of 4-cones. The inner 3-cone assembly shall be adjustable to provide 3 different discharge settings from horizontal to vertical and be easily removable using a spring locking mechanism. The removable core shall be supported by a safety cable to provide ease of installation and maintenance for neck sizes 14" and larger. Diffusers shall be constructed of 18 gage steel (RM2) or 0.051" aluminum (5RM2).

A deep, one-piece outer cone shall be provided for the enhancement to the anti-smudge characteristics of the RM4 (steel) and 5RM4 (aluminum) series.

Optional round damper shall be constructed of heavy gage steel. Damper shall be operable from the face of the diffuser.

RA2, RA4

The round ceiling diffuser shall be Krueger model RA2. The RA2 model shall be constructed of 4-cones. The inner 3-cone assembly shall be fully adjustable by rotating the center cone to modify the discharge air setting from horizontal to vertical and be easily removable using a spring locking mechanism. The removable core shall be supported by a safety cable to provide ease of installation and maintenance for neck sizes 14" and larger. Diffusers shall be constructed of 18 gage steel.

A deep, one-piece outer cone shall be provided for the enhancement to the anti-smudge characteristics of the RA4 series.

Optional round damper 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: (XXXX)

- RM2 - 3-Position Round, Steel Diffuser
- RM4 - 3-Position Round, Anti-smudge Steel Diffuser
- 5RM2 - 3-Position Round, Aluminum Diffuser
- 5RM4 - 3-Position Round, Anti-smudge Aluminum Diffuser
- RA2 - Adjustable Round, Steel Diffuser
- RA4 - Adjustable Round, Anti-smudge Steel Diffuser

2. INLET: (XX) *

- 6" - 20" in 2" Increments, 24", 30", or 36"

3. DAMPER: (XX)

- 00 - NONE
- 03 - PR10
- 04 - PRD10
- 06 - PR12
- 08 - PRN100

4. ACCESSORIES: (X) **

- 0 - No Accessories
- C - Safety Cable
- R - Round Straightening Grid

5. FINISH: (XX)

- 01 - Mill
- 10 - Alumican
- 35 - Black
- 44 - British White

* Largest inlet size available for RM4 & RA4 is 24".

Largest inlet size available for 5RM2 & 5RM4 is 18".

** Safety cable included on all units with 12" or greater neck size.

SAMPLE CONFIGURATION: RM2 - 10 - 00 - 0 - 44