



RM1, 5RM1
 These supply ceiling diffusers discharge horizontally only. They feature three cones with two position settings to control room air induction.



RM2, 5RM2, & RA2
 These supply ceiling diffusers discharge both horizontally and vertically. They feature four cones with three position settings (RM2/5RM2) or may be fully adjustable (RA2) to control vertical discharge.



RM4, 5RM4, & RA4
 These supply ceiling diffusers discharge both horizontally and vertically. They feature four cones (outer anti-smudge cone) with three position settings (RM4/5RM4) or may be fully adjustable (RA4) to control vertical discharge.



RM2PLQ
 This supply ceiling diffuser discharges both horizontally and vertically. It features a round plaque face with three position settings available to control vertical discharge.



RM4PLQ
 This supply ceiling diffuser discharges both horizontally and vertically. It features a round plaque face with an outer anti-smudge cone. There are three position settings available to control vertical discharge.



R1DBR10
 This supply ceiling diffuser discharges both horizontally and vertically. It features a ring-operated center downblow adjustment with an anti-smudge outer cone.

RM1, 5RM1, RM2, 5RM2, RM4, 5RM4, RA2, RA4

Introduction	G1-3
RM1/5RM1 Dimensional Information & Reference Charts	G1-4
RM1/5RM1 Performance Data.....	G1-6
RM2/5RM2 Dimensional Information & Reference Chart	G1-8
RM4/5RM4 Dimensional Information & Reference Chart	G1-9
RA2 Dimensional Information & Reference Chart	G1-10
RA4 Dimensional Information & Reference Chart	G1-11
RM2/5RM2/RM4/5RM4/RA2/RA4 Reference Charts	G1-12
RM2/5RM2/RM4/5RM4/RA2/RA4 Performance Data	G1-13
Engineering Specifications.....	G1-15

RM2PLQ, RM4PLQ

Introduction	G1-17
Dimensional Information & Reference Charts	G1-18
Performance Data	G1-21
Engineering Specifications.....	G1-22

R1DBR10

Introduction & Dimensional Information	G1-23
Reference Charts.....	G1-24
Performance Data.....	G1-25
Engineering Specification	G1-26

Introduction: R1DBR10

Krueger's R1DBR10 round ceiling diffusers are designed for applications that require heavy duty construction featuring a ring operator which is fully adjustable with a pole operator. Discharge patterns can be adjusted from full horizontal to full vertical blow patterns. At the full vertical setting, the diffuser forces the air in a long downward projection. The result is effective heating and spot cooling from high mounting locations. The R1DBR10 is especially suitable for installation in factories, warehouses, convention halls, coliseums and shopping malls where ceilings are high and conditions may vary.

MODEL

R1DBR10 - Steel with Ring Operated Center
Downblow Adjustment

FEATURES

- Outer Cone is contoured to guard against ceiling smudging.
- Designed for heating and cooling applications.
- Adjustable horizontal and vertical discharge patterns.
- 360° Discharge air pattern.
- Designed for exposed duct applications and high ceilings.

ACCESSORIES

- Optional Round Straightening Grid



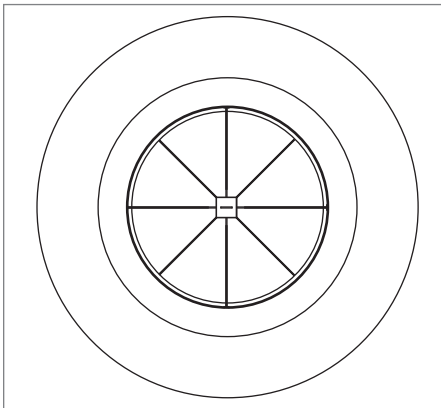
R1DBR10

FINISHES

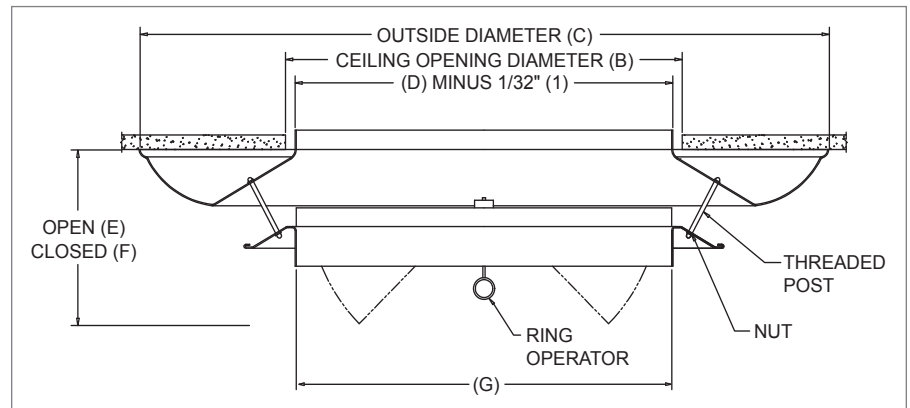
- Standard finish is #44 British White.
- Optional finishes available.

R1DBR10 Dimensional Information

R1DBR10, FACE VIEW



R1DBR10, CROSS SECTION



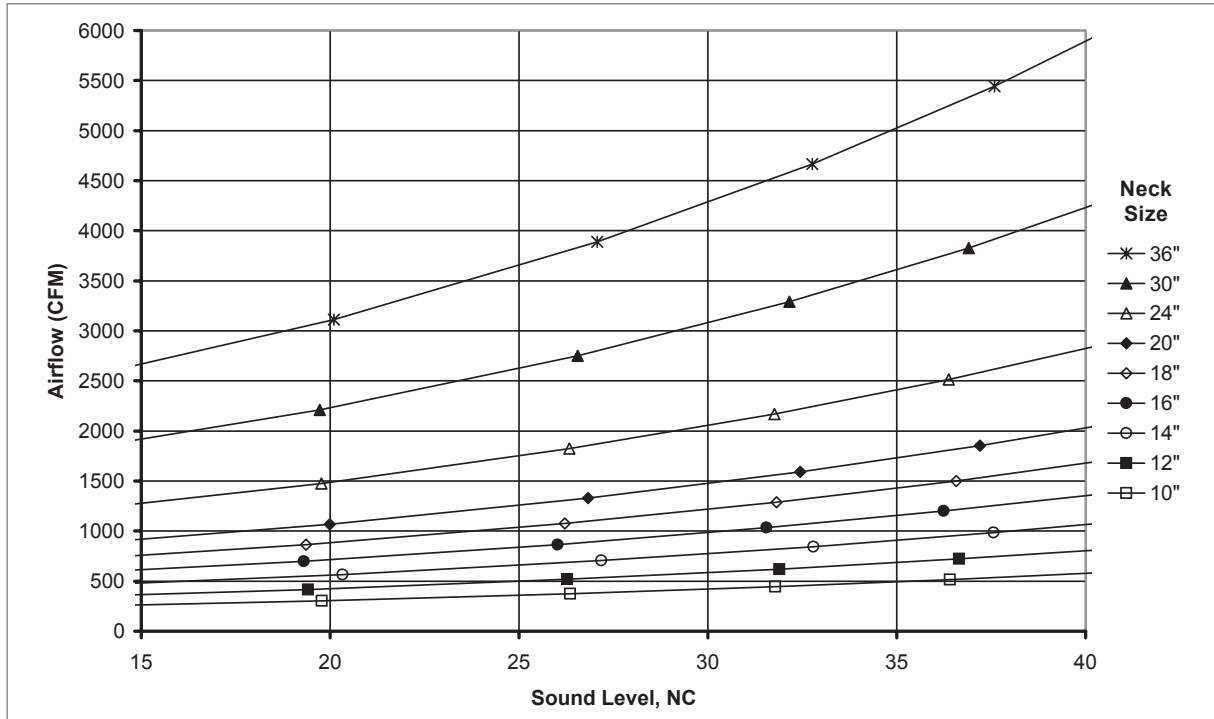
R1DBR10, AVAILABLE NECK SIZES

Nominal Round Duct Size D	B	C	E	F	G
10"	10 1/2" (267)	18 1/4" (464)	7 1/2" (191)	3" (76)	10" (254)
12"	12 1/2" (318)	22" (559)	9 3/8" (238)	4" (102)	12" (305)
14"	14 1/2" (368)	26" (660)	6 3/4" (171)	4" (102)	14" (356)
16"	16 1/2" (419)	29" (737)	8 1/2" (216)	5" (127)	16" (406)
18"	18 1/2" (470)	32 1/2" (826)	9 1/8" (232)	5" (127)	18" (457)
20"	20 1/2" (521)	36" (914)	10 3/8" (264)	5 1/2" (140)	20" (508)
24"	24 1/2" (622)	43 1/4" (1099)	12 1/4" (308)	6 5/8" (168)	24" (610)
30"	30 1/2" (775)	53 5/8" (1362)	13 7/8" (352)	8 1/4" (210)	30" (762)
36"	36 1/2" (927)	64 3/8" (1635)	15 5/8" (397)	10" (254)	36" (914)

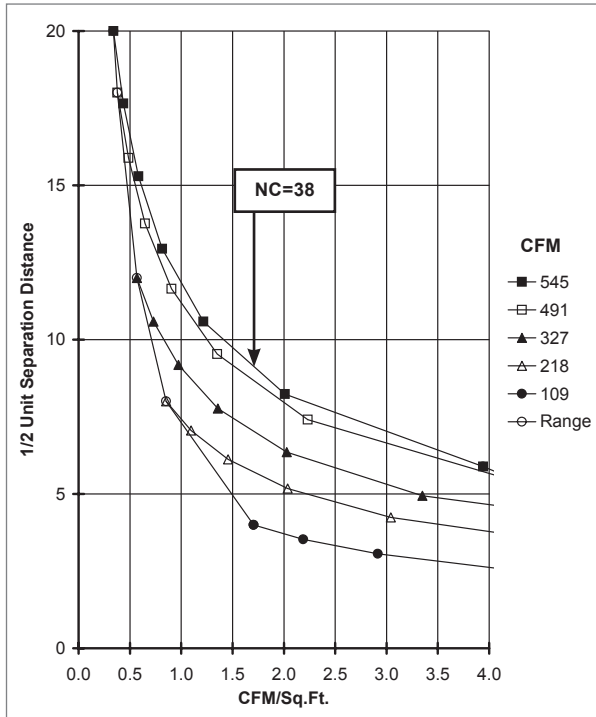
NOTE: Dimensions in parentheses are mm.

R1DBR10 Reference Charts: Horizontal Throw

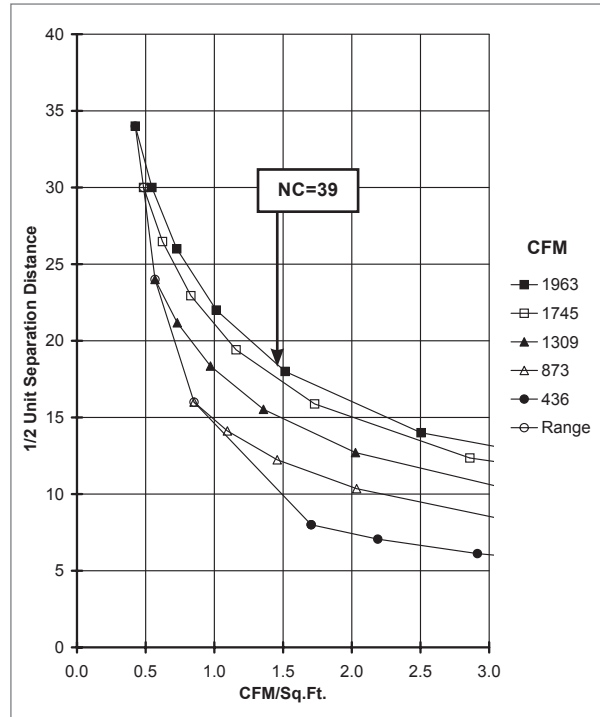
AIRFLOW VS. NC LEVEL: R1DBR10 (NO DAMPER)



**DIFFUSER SPACING FOR 80% ADPI:
R1DBR10, 10" NECK (NO DAMPER)**



**DIFFUSER SPACING FOR 80% ADPI:
R1DBR10, 20" NECK (NO DAMPER)**



NOTES: Lower 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

R1DBR10

R1DBR10 Performance Data: Horizontal/Vertical Throw
IP/METRIC DATA: R1DBR10 (NO DAMPER)

	IP Data											Metric Data									
	Neck	Air	Horizontal		Vertical		Horizontal		Vert			Neck	Air	Horizontal		Vertical		Horizontal		Vertical	
	Vel	Flow	Ps	Pt	Ps	Pt	Throw	20°F	40°F	H	V	Vel	Flow	Ps	Pt	Ps	Pt	Throw	11°C	22°C	
	FPM	CFM	"WG	"WG	"WG	"WG	ft	ft	ft	NC	NC	m/s	L/s	Pa	Pa	Pa	Pa	m	m	m	
10" Dia	425	232	0.00	0.01	0.01	0.02	1 - 2 - 4	17	6	11	-	2.2	109	1	3	3	6	0.4 - 0.6 - 1.2	5.1	1.7	
	555	303	0.00	0.02	0.02	0.04	2 - 3 - 5	22	7	20	17	2.8	143	1	6	5	10	0.5 - 0.8 - 1.6	6.7	2.2	
	685	374	0.01	0.04	0.03	0.06	2 - 3 - 7	27	9	26	23	3.5	176	2	9	8	15	0.7 - 1.0 - 2.0	8.3	2.8	
	815	445	0.01	0.05	0.05	0.09	3 - 4 - 8	32	11	32	29	4.1	210	2	13	11	22	0.8 - 1.2 - 2.4	9.8	3.3	
	945	515	0.01	0.07	0.06	0.12	3 - 5 - 9	37	12	36	33	4.8	243	3	17	15	29	0.9 - 1.4 - 2.8	11.4	3.8	
	1075	586	0.02	0.09	0.08	0.15	3 - 5 - 10	43	14	40	37	5.5	277	4	22	20	37	1.0 - 1.6 - 3.1	13.0	4.3	
12" Dia	400	314	0.00	0.01	0.01	0.02	2 - 2 - 5	14	4	11	-	2.0	148	1	3	3	5	0.5 - 0.7 - 1.4	4.3	1.2	
	530	416	0.00	0.02	0.02	0.04	2 - 3 - 6	22	7	19	16	2.7	196	1	5	5	9	0.6 - 0.9 - 1.9	6.5	2.2	
	660	518	0.01	0.03	0.03	0.06	3 - 4 - 8	27	9	26	23	3.4	245	2	8	8	14	0.8 - 1.2 - 2.3	8.1	2.7	
	790	620	0.01	0.05	0.04	0.08	3 - 5 - 9	32	11	32	29	4.0	293	2	12	11	21	0.9 - 1.4 - 2.8	9.7	3.2	
	920	723	0.01	0.07	0.06	0.11	4 - 5 - 11	37	12	37	34	4.7	341	3	16	15	28	1.1 - 1.6 - 3.2	11.4	3.8	
	1050	825	0.02	0.09	0.08	0.15	4 - 6 - 12	43	14	41	38	5.3	389	4	21	19	36	1.2 - 1.8 - 3.7	13.0	4.3	
14" Dia	400	428	0.00	0.01	0.01	0.02	2 - 3 - 5	13	4	12	-	2.0	202	1	3	3	5	0.5 - 0.8 - 1.6	4.0	1.2	
	530	567	0.00	0.02	0.02	0.04	2 - 4 - 7	23	7	20	17	2.7	267	1	5	5	9	0.7 - 1.1 - 2.2	6.9	2.0	
	660	706	0.01	0.03	0.03	0.06	3 - 4 - 9	29	10	27	24	3.4	333	2	8	8	14	0.9 - 1.3 - 2.7	8.8	2.9	
	790	845	0.01	0.05	0.04	0.08	4 - 5 - 11	35	12	33	30	4.0	399	2	12	11	21	1.1 - 1.6 - 3.2	10.5	3.5	
	920	983	0.01	0.07	0.06	0.11	4 - 6 - 12	40	13	38	35	4.7	464	3	16	15	28	1.3 - 1.9 - 3.8	12.3	4.1	
	1050	1122	0.02	0.09	0.08	0.15	5 - 7 - 14	46	15	42	39	5.3	530	4	21	19	36	1.4 - 2.1 - 4.3	14.0	4.7	
16" Dia	380	531	0.00	0.01	0.01	0.02	2 - 3 - 6	12	3	11	-	1.9	250	1	3	3	5	0.6 - 0.9 - 1.8	3.6	1.0	
	500	698	0.00	0.02	0.02	0.03	3 - 4 - 8	20	6	19	16	2.5	329	1	5	4	8	0.8 - 1.2 - 2.3	6.2	1.8	
	620	866	0.01	0.03	0.03	0.05	3 - 5 - 10	30	9	26	23	3.2	409	2	7	7	13	1.0 - 1.4 - 2.9	9.0	2.8	
	740	1033	0.01	0.04	0.04	0.07	4 - 6 - 11	36	12	32	29	3.8	488	2	11	10	18	1.2 - 1.7 - 3.5	10.8	3.6	
	860	1201	0.01	0.06	0.05	0.10	4 - 7 - 13	41	14	36	33	4.4	567	3	14	13	24	1.3 - 2.0 - 4.0	12.6	4.2	
	980	1368	0.02	0.08	0.07	0.13	5 - 8 - 15	47	16	40	37	5.0	646	4	19	17	32	1.5 - 2.3 - 4.6	14.3	4.8	
18" Dia	370	654	0.00	0.01	0.01	0.02	2 - 3 - 6	12	3	11	-	1.9	309	1	3	2	5	0.6 - 1.0 - 1.9	3.5	1.0	
	490	866	0.00	0.02	0.02	0.03	3 - 4 - 8	20	6	19	16	2.5	409	1	5	4	8	0.9 - 1.3 - 2.6	6.2	1.8	
	610	1078	0.01	0.03	0.03	0.05	4 - 5 - 11	31	9	26	23	3.1	509	1	7	7	12	1.1 - 1.6 - 3.2	9.5	2.8	
	730	1290	0.01	0.04	0.04	0.07	4 - 6 - 13	38	13	32	29	3.7	609	2	10	9	18	1.3 - 1.9 - 3.8	11.7	3.9	
	850	1502	0.01	0.06	0.05	0.10	5 - 7 - 15	45	15	37	34	4.3	709	3	14	13	24	1.5 - 2.2 - 4.5	13.6	4.5	
	970	1714	0.01	0.07	0.07	0.13	6 - 8 - 17	51	17	41	38	4.9	809	4	18	17	31	1.7 - 2.5 - 5.1	15.5	5.2	
20" Dia	370	807	0.00	0.01	0.01	0.02	2 - 4 - 7	12	4	11	-	1.9	381	1	3	2	5	0.7 - 1.1 - 2.2	3.7	1.1	
	490	1069	0.00	0.02	0.02	0.03	3 - 5 - 9	21	6	20	17	2.5	505	1	5	4	8	1.0 - 1.4 - 2.9	6.5	1.9	
	610	1331	0.01	0.03	0.03	0.05	4 - 6 - 12	33	10	27	24	3.1	628	1	7	7	12	1.2 - 1.8 - 3.6	10.0	2.9	
	730	1593	0.01	0.04	0.04	0.07	5 - 7 - 14	42	14	32	29	3.7	752	2	10	9	18	1.4 - 2.1 - 4.3	12.7	4.2	
	850	1854	0.01	0.06	0.05	0.10	5 - 8 - 16	49	16	37	34	4.3	875	3	14	13	24	1.7 - 2.5 - 5.0	14.8	4.9	
	970	2116	0.01	0.07	0.07	0.13	6 - 9 - 19	56	19	41	38	4.9	999	4	18	17	31	1.9 - 2.8 - 5.7	16.9	5.6	
24" Dia	360	1131	0.00	0.01	0.01	0.02	3 - 4 - 8	13	4	11	-	1.8	534	1	3	2	4	0.8 - 1.3 - 2.5	3.9	1.1	
	470	1477	0.00	0.02	0.02	0.03	4 - 5 - 11	22	6	20	17	2.4	697	1	4	4	7	1.1 - 1.6 - 3.3	6.6	1.9	
	580	1822	0.01	0.03	0.02	0.04	4 - 7 - 13	33	10	26	23	2.9	860	1	7	6	11	1.4 - 2.0 - 4.1	10.1	3.0	
	690	2168	0.01	0.04	0.03	0.06	5 - 8 - 16	46	14	32	29	3.5	1023	2	9	8	16	1.6 - 2.4 - 4.8	14.1	4.2	
	800	2513	0.01	0.05	0.05	0.09	6 - 9 - 18	54	18	36	33	4.1	1186	3	12	11	21	1.9 - 2.8 - 5.6	16.3	5.4	
	910	2859	0.01	0.06	0.06	0.11	7 - 10 - 21	61	20	40	37	4.6	1349	3	16	15	27	2.1 - 3.2 - 6.4	18.6	6.2	
30" Dia	340	1669	0.00	0.01	0.01	0.02	3 - 5 - 10	14	4	11	-	1.7	788	0	2	2	4	1.0 - 1.5 - 3.0	4.1	1.2	
	450	2209	0.00	0.02	0.01	0.03	4 - 6 - 13	24	7	20	17	2.3	1042	1	4	4	7	1.3 - 2.0 - 3.9	7.2	2.1	
	560	2749	0.01	0.02	0.02	0.04	5 - 8 - 16	37	11	27	24	2.8	1297	1	6	6	10	1.6 - 2.5 - 4.9	11.1	3.3	
	670	3289	0.01	0.04	0.03	0.06	6 - 10 - 19	52	15	32	29	3.4	1552	2	9	8	15	2.0 - 2.9 - 5.9	16.0	4.7	
	780	3829	0.01	0.05	0.04	0.08	7 - 11 - 22	64	21	37	34	4.0	1807	2	12	11	20	2.3 - 3.4 - 6.8	19.5	6.3	
	890	4369	0.01	0.06	0.06	0.11	9 - 13 - 26	73	24	41	38	4.5	2062	3	15	14	26	2.6 - 3.9 - 7.8	22.3	7.4	
36" Dia	330	2333	0.00	0.01	0.01	0.01	4 - 6 - 11	15	4	11	-	1.7	1101	0	2	2	4	1.2 - 1.7 - 3.5	4.5	1.3	
	440	3110	0.00	0.02	0.01	0.03	5 - 8 - 15	26	8	20	17	2.2	1468	1	4	3	6	1.5 - 2.3 - 4.6	8.0	2.3	
	550	3888	0.00	0.02	0.02	0.04	6 - 10 - 19	41	12	27	24	2.8	1835	1	6	5	10	1.9 - 2.9 - 5.8	12.5	3.7	
	660	4665	0.01	0.03	0.03	0.06	8 - 11 - 23	59	17	33	30	3.4	2202	2	8	8	14	2.3 - 3.5 - 6.9	18.0	5.3	
	770	5443	0.01	0.05	0.04	0.08	9 - 13 - 27	75	24	38	35	3.9	2569	2	12	10	20	2.7 - 4.0 - 8.1	22.9	7.2	
	880	6220	0.01	0.06	0.05	0.10	10 - 15 - 30	86	29	42	39	4.5	2936	3	15	14	26	3.1 - 4.6 - 9.2	26.2	8.7	

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.

Suggested Specification & Configuration: R1DBR10

R1DBR10

The round ceiling diffuser shall be Krueger model R1DBR10. The R1DBR10 model shall be constructed of a contoured outer cone for reduction of smudging and an adjustable inner vane assembly. The inner vane assembly shall be fully adjustable by rotating a ring operator to modify the discharge air setting from horizontal to vertical and be easily removable. The ring operator shall be adjustable with a pole operator for remote access. Diffusers shall be constructed of 18 gage steel.

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: (XXXXXXX)

R1DBR10 - Heavy Duty, Ring Operator
Round Steel Diffuser

2. INLET: (XX)

10" - 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
R - Round Straightening Grid

5. FINISH: (XX)

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

ROUND DIFFUSERS

R
1
D
B
R
1
0

SAMPLE CONFIGURATION: R1DBR10 - 14 - 00 - 0 - 44