

Introduction: CRN, 5CRN

Designed for surface mount applications, this high capacity concentric ring nozzle diffuser provides a concentrated jet of air, which can be adjusted up to 60° of axial adjustment with 360° of rotation for a variety of directional control settings.

MODELS

CRN - Steel Concentric Ring Nozzle, Surface Mount

5CRN - Aluminum Concentric Ring Nozzle, Surface Mount

FEATURES

- Steel or aluminum construction.
- Directional air pattern control.
(60° Axial adjustment with 360° of rotation.)
- For use in surface mount applications.

FINISHES

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

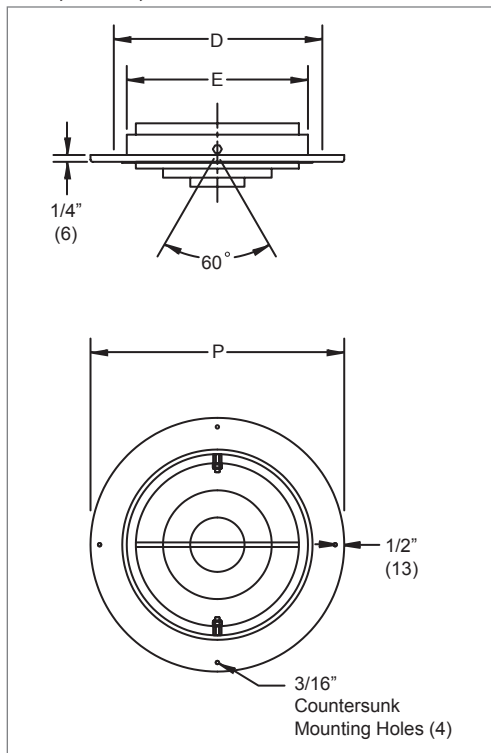


CRN (Face & Side View)



CRN, 5CRN Dimensional Information

CRN, 5CRN, FACE AND SIDE VIEWS



CRN, 5CRN, DIMENSIONAL DETAILS

Nominal Size*	Element Size E	Number of Rings	Duct Size D	P
4	4" (102)	3	6" (152)	8" (203)
6	6" (152)	3	8" (203)	10" (254)
8	8" (203)	3	10" (254)	12" (305)
10	10" (254)	3	12" (305)	14" (356)
12	12" (305)	3	14" (356)	16" (406)
14	14" (356)	4	16" (406)	18" (457)
16	16" (406)	4	18" (457)	20" (508)
18	18" (457)	4	20" (508)	22" (559)
20	20" (508)	5	22" (559)	24" (610)
22	22" (559)	5	24" (610)	26" (660)
24	24" (610)	5	26" (660)	28" (711)

NOTES: Dimensions in parentheses are mm and rounded to the nearest 1/16".

* The nominal size is 2" (51) smaller than the duct size to which it mounts.

Example: A size 10 mounts on a 12" (305) duct.



CRNRD (Face & Side View)

Introduction: CRNRD, 5CRNRD

Designed to fit cleanly over the end of spiral or round duct work, this high capacity concentric ring nozzle diffuser provides a concentrated jet of air, which can be adjusted up to 60° of axial adjustment with 360° of rotation for a variety of directional control settings. The mounting style makes this a great nozzle to use in exposed duct applications.

MODELS

- CRNRD - Steel Concentric Ring Nozzle, Round Duct Adaptor
- 5CRNRD - Aluminum Concentric Ring Nozzle, Round Duct Adaptor

FEATURES

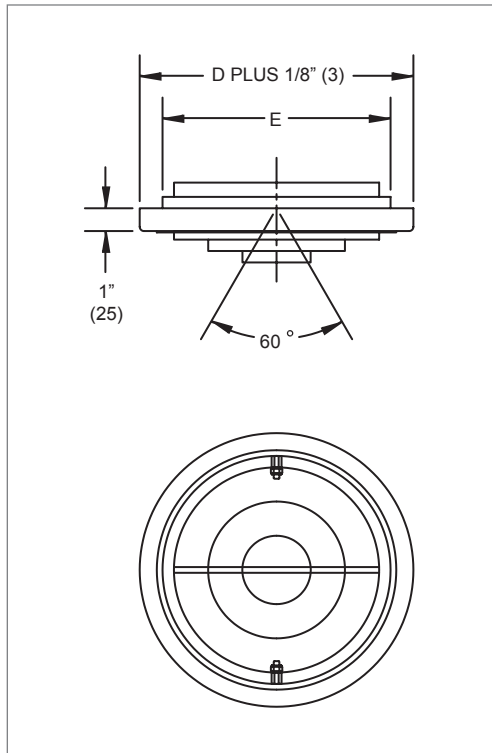
- Steel or aluminum construction.
- Directional air pattern control. (60° Axial adjustment with 360° of rotation.)
- For use in duct mount applications.

FINISHES

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

CRNRD, 5CRNRD Dimensional Information

CRNRD, 5CRNRD, FACE AND SIDE VIEWS



CRNRD, 5CRNRD, DIMENSIONAL DETAILS

Nominal Size *	Element Size E	Number of Rings	Duct Size D
4	4" (102)	3	6" (152)
5	5" (127)	3	6" (152)
6	6" (152)	3	8" (203)
8	8" (203)	3	10" (254)
10	10" (254)	3	12" (305)
12	12" (305)	3	14" (356)
14	14" (356)	4	16" (406)
16	16" (406)	4	18" (457)
18	18" (457)	4	20" (508)
20	20" (508)	5	22" (559)
22	22" (559)	5	24" (610)
24	24" (610)	5	26" (660)

NOTES: Dimensions in parentheses are mm and rounded to the nearest 1/16".

* The nominal size is 2" (51) smaller than the duct size to which it mounts.

Example: A size 10 mounts on a 12" (305) duct.

Introduction: CRNRR, 5CRNRR

This high capacity concentric ring nozzle with an integrated round duct reducer is designed to fit cleanly inside the end of spiral or round duct. The diffuser provides a concentrated jet of air, which can be adjusted up to 60° of axial adjustment with 360° of rotation for a variety of directional control settings. The mounting style makes this a great nozzle to use in exposed duct applications.

MODELS

CRNRR - Steel Concentric Ring Nozzle, Round Duct Reducer
 5CRNRR - Aluminum Concentric Ring Nozzle, Round Duct Reducer

FEATURES

- Steel or aluminum construction.
- Directional air pattern control. (60° axial adjustment with 360° of rotation.)
- For use in stub duct applications.

FINISHES

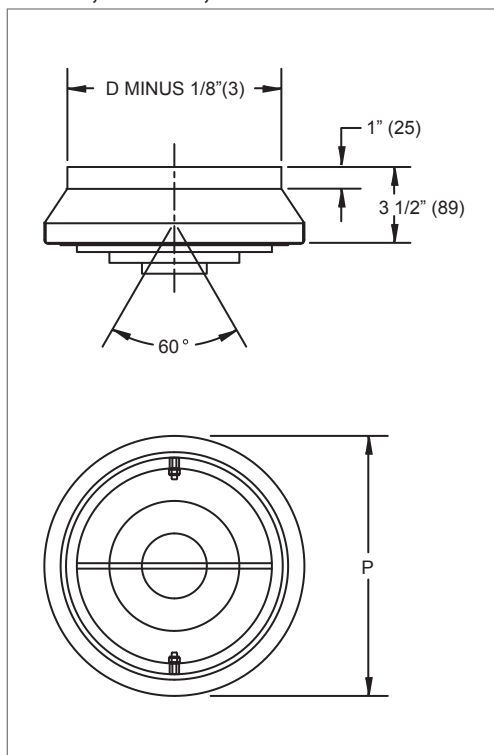
- Standard finish is #44 British White.
- Optional finishes available.



CRNRR (Face & Side View)

CRNRR, 5CRNRR Dimensional Information

CRNRR, 5CRNRR, FACE AND SIDE VIEWS



CRNRR, 5CRNRR, DIMENSIONAL DETAILS

Nominal Size	Element Size E	Duct Size D	P
6	3" (76)	6" (152)	8 1/8" (206)
8	4 3/8" (111)	8" (203)	10 1/8" (257)
10	5 3/4" (146)	10" (254)	12 1/8" (308)
12	7 3/8" (187)	12" (305)	14 1/8" (359)
14	8 5/8" (219)	14" (356)	16 1/8" (410)
16	9 3/4" (248)	16" (406)	18 1/8" (460)
18	10 1/2" (267)	18" (457)	20 1/8" (511)

NOTE: Dimensions in parentheses are mm and rounded to the nearest 1/16".

CRNP, 5CRNP | Concentric Ring, Panel Mount

Introduction: CRNP, 5CRNP

Designed for surface mount applications that require a panel, the high capacity concentric ring nozzle diffusers provide a concentrated jet of air. The nozzles can be adjusted up to 60° of axial adjustment with 360° of rotation for a variety of directional control settings. The panel can contain up to four nozzles and can control up to four different zones.



CRNP Face View

MODELS

- CRNP - Concentric Ring Nozzle, Panel Mount
- 5CRNP - Concentric Ring Nozzle, Panel Mount

FEATURES

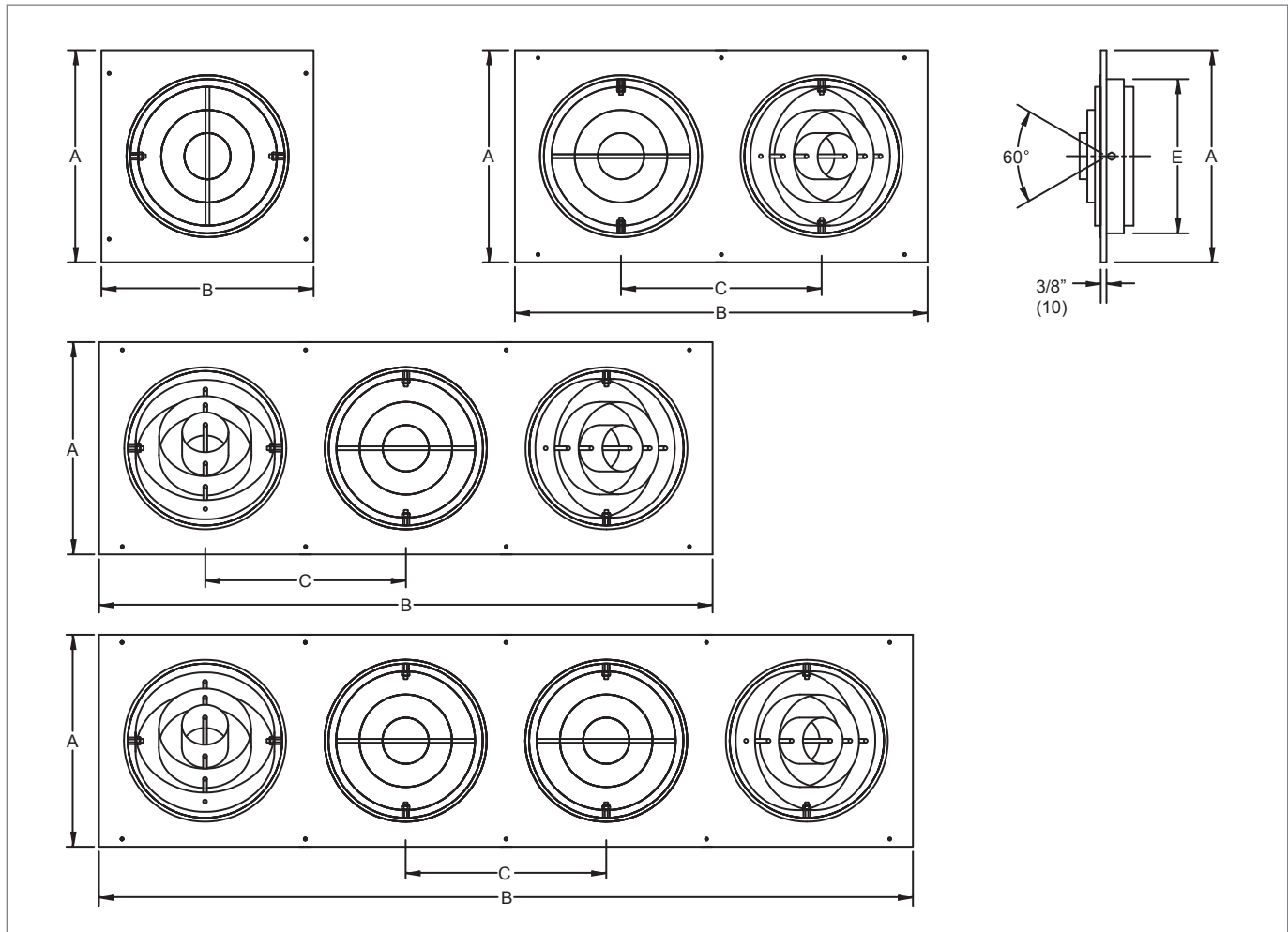
- Steel (CRNP) or aluminum (5CRNP) construction.
- Directional air pattern control. (60° Axial adjustment with 360° of rotation.)
- 1, 2, 3, or 4 nozzles per panel.
- For use in surface mount applications.

FINISHES

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

CRNP, 5CRNP Dimensional Information

RPN2P, RPN4P, FACE AND SIDE VIEWS



NOTE: Refer to the next page for additional dimensional information.

AIR NOZZLES & ROUND GRILLES

CRNP

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CRNP, 5CRNP Dimensional Information
CRNP, 5CRNP, DIMENSIONAL DETAILS

Model	E	Number of Nozzles	C	Number of Rings	A	B	H	W
(5)CRN-1P-4	4" (102)	1	-	3	8" (203)	8" (203)	6" (152)	6" (152)
(5)CRN-2P-4	4" (102)	2	6" (152)	3	8" (203)	15" (381)	6" (152)	12" (305)
(5)CRN-3P-4	4" (102)	3	6" (152)	3	8" (203)	20" (508)	6" (152)	18" (457)
(5)CRN-4P-4	4" (102)	4	6" (152)	3	8" (203)	26" (660)	6" (152)	24" (610)
(5)CRN-1P-5	5" (127)	1	-	3	10" (254)	10" (254)	8" (203)	8" (203)
(5)CRN-2P-5	5" (127)	2	8" (203)	3	10" (254)	18" (457)	8" (203)	16" (406)
(5)CRN-3P-5	5" (127)	3	8" (203)	3	10" (254)	24" (610)	8" (203)	22" (559)
(5)CRN-4P-5	5" (127)	4	8" (203)	3	10" (254)	32" (813)	8" (203)	30" (762)
(5)CRN-1P-6	6" (152)	1	-	3	10" (254)	10" (254)	8" (203)	8" (203)
(5)CRN-2P-6	6" (152)	2	9" (229)	3	10" (254)	19" (483)	8" (203)	17" (432)
(5)CRN-3P-6	6" (152)	3	9" (229)	3	10" (254)	28" (711)	8" (203)	26" (660)
(5)CRN-4P-6	6" (152)	4	9" (229)	3	10" (254)	37" (940)	8" (203)	35" (889)
(5)CRN-1P-8	8" (203)	1	-	3	12" (305)	12" (305)	10" (254)	10" (254)
(5)CRN-2P-8	8" (203)	2	12" (305)	3	12" (305)	24" (610)	10" (254)	22" (559)
(5)CRN-3P-8	8" (203)	3	12" (305)	3	12" (305)	36" (914)	10" (254)	34" (864)
(5)CRN-4P-8	8" (203)	4	12" (305)	3	12" (305)	48" (1219)	10" (254)	46" (1168)
(5)CRN-1P-10	10" (254)	1	-	3	14" (356)	14" (356)	12" (305)	12" (305)
(5)CRN-2P-10	10" (254)	2	13" (330)	3	14" (356)	27" (686)	12" (305)	25" (635)
(5)CRN-3P-10	10" (254)	3	13" (330)	3	14" (356)	40" (1016)	12" (305)	38" (965)
(5)CRN-4P-10	10" (254)	4	13" (330)	3	14" (356)	53" (1346)	12" (305)	51" (1295)
(5)CRN-1P-12	12" (305)	1	-	3	16" (406)	16" (406)	14" (356)	14" (356)
(5)CRN-2P-12	12" (305)	2	15" (381)	3	16" (406)	31" (787)	14" (356)	29" (737)
(5)CRN-3P-12	12" (305)	3	15" (381)	3	16" (406)	46" (1168)	14" (356)	44" (1118)
(5)CRN-4P-12	12" (305)	4	15" (381)	3	16" (406)	61" (1549)	14" (356)	59" (1499)
(5)CRN-1P-14	14" (356)	1	-	4	18" (457)	18" (457)	16" (406)	16" (406)
(5)CRN-2P-14	14" (356)	2	17" (432)	4	18" (457)	35" (889)	16" (406)	33" (838)
(5)CRN-3P-14	14" (356)	3	17" (432)	4	18" (457)	52" (1321)	16" (406)	50" (1270)
(5)CRN-4P-14	14" (356)	4	17" (432)	4	18" (457)	69" (1753)	16" (406)	67" (1702)
(5)CRN-1P-16	16" (406)	1	-	4	20" (508)	20" (508)	18" (457)	18" (457)
(5)CRN-2P-16	16" (406)	2	20" (508)	4	20" (508)	40" (1016)	18" (457)	38" (965)
(5)CRN-3P-16	16" (406)	3	20" (508)	4	20" (508)	60" (1524)	18" (457)	58" (1473)
(5)CRN-4P-16	16" (406)	4	20" (508)	4	20" (508)	80" (2032)	18" (457)	78" (1981)
(5)CRN-1P-18	18" (457)	1	-	4	22" (559)	22" (559)	20" (508)	20" (508)
(5)CRN-2P-18	18" (457)	2	22" (559)	4	22" (559)	46" (1168)	20" (508)	44" (1118)
(5)CRN-3P-18	18" (457)	3	22" (559)	4	22" (559)	67" (1702)	20" (508)	64" (1626)
(5)CRN-4P-18	18" (457)	4	22" (559)	4	22" (559)	90" (2286)	20" (508)	88" (2235)
(5)CRN-1P-20	20" (508)	1	-	5	24" (610)	24" (610)	22" (559)	22" (559)
(5)CRN-1P-22	22" (559)	1	-	5	26" (660)	26" (660)	24" (610)	24" (610)
(5)CRN-1P-24	24" (610)	1	-	5	28" (711)	28" (711)	26" (660)	26" (660)

NOTE: Dimensions in parentheses are mm and rounded to the nearest 1/16".



CRNLP

Introduction: CRNLP, 5CRNLP

This concentric ring nozzle is designed for lay-in T-bar applications where integration into standard ceiling grid is necessary. The high capacity concentric ring nozzle provides a concentrated jet of air. With up to 60° of axial adjustment and 360° of rotation for a variety of directional control settings.

MODELS

- CRNLP - Steel Concentric Ring Nozzle, Lay-in T-Bar
- 5CRNLP - Aluminum Concentric Ring Nozzle, Lay-in T-Bar

FEATURES

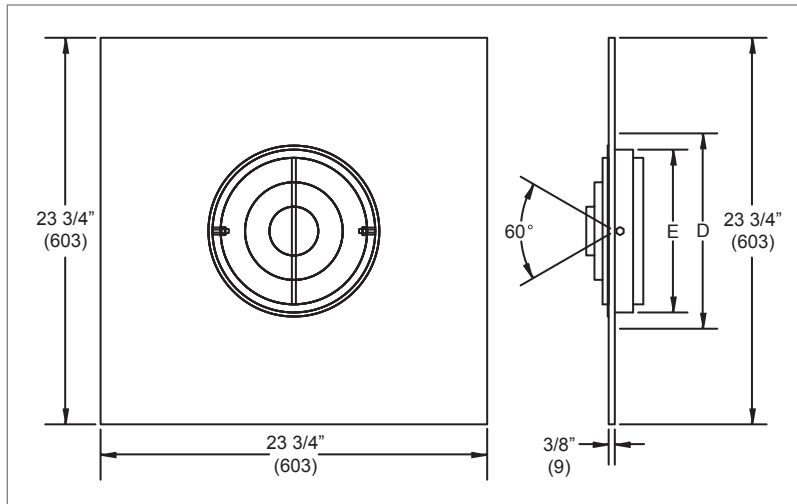
- Steel or aluminum construction.
- Directional air pattern control.
(60° Axial adjustment with 360° of rotation.)
- Lay-in T-Bar, 24"x24" panel.

FINISHES

- Standard finish is #44 British White or #81 Clear Anodized.
- Optional finishes available.

RPNLP Dimensional Information

RPNLP, FACE AND SIDE VIEWS

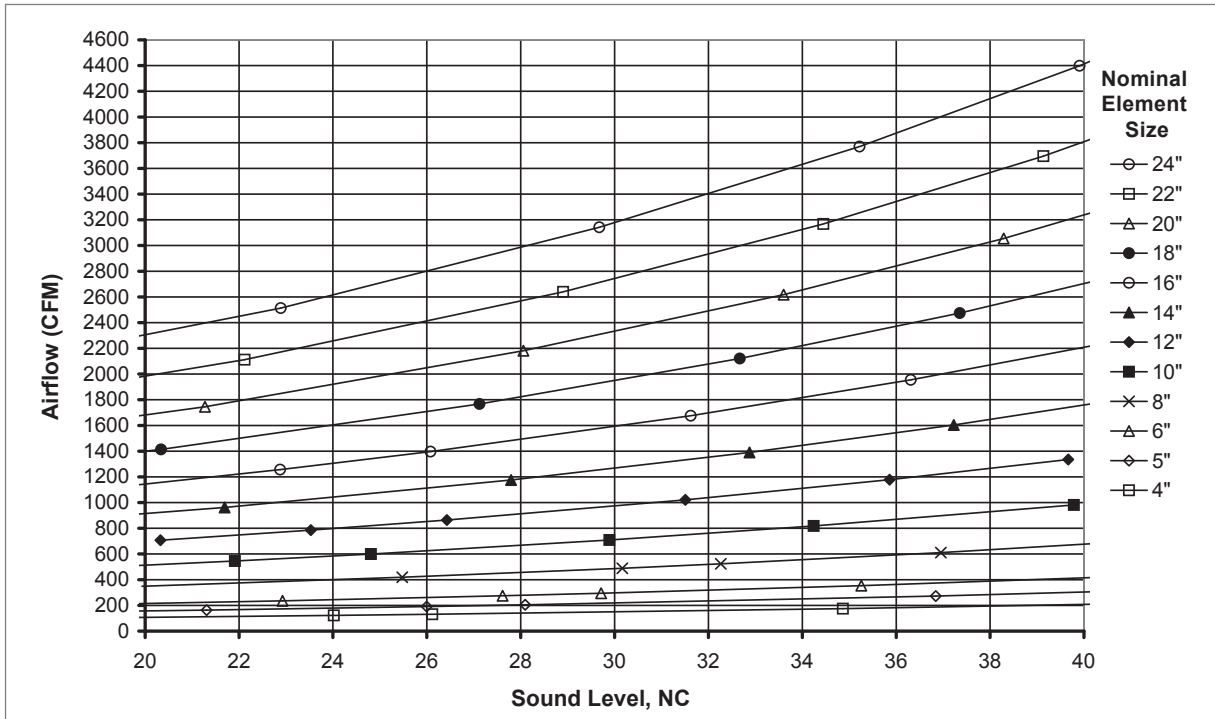


RPNLP, DIMENSIONAL DETAILS

Nominal Size *	Element Size E	Number of Rings	Duct Size D
6	6" (152)	3	8" (203)
8	8" (203)	3	10" (254)
10	10" (254)	3	12" (305)
12	12" (305)	3	14" (356)
14	14" (356)	4	16" (406)

NOTES: Dimensions in parentheses are mm and rounded to the nearest 1/16".

*The nominal size is 2" (51) smaller than the duct size to which it mounts. Example: A size 10 mounts on a 12" (305) duct.

CRN, CRNRD, CRNRR, CRNLP, CRNP Series Reference Chart
AIRFLOW VS. NC: CRN, 5CRN, CRNRD, 5CRNRD, CRNRR, 5CRNRR, CRNLP, 5CRNLP, CRNP, 5CRNP


NOTES: All models are not available in the listed sizes of the above chart. Refer to dimensional data to determine available sizes for each model.

AIR NOZZLES & ROUND GRILLES

CRN, CRNRD, CRNRR, CRNLP, CRNP Series Performance Data

IP/METRIC DATA: CRN, 5CRN, CRNRD, 5CRNRD, CRNRR, 5CRNRR, CRNLP, 5CRNLP, CRNP, 5CRNP (1 NOZZLE)

	IP Data							NC	Metric Data						
	Neck Vel.	Air Flow	Pressure		Vertical Throw				Neck Vel.	Air Flow	Pressure		Vertical Throw		
			Ps	Pt	-20°F	Isothermal	+20°F				-11°C	Isothermal	+11°C		
	FPM	CFM	"WG	"WG	ft	ft	ft		m/s	L/s	Pa	Pa	m	m	m
4"	250	22	0.003	.007	1 - 2 - 6	1 - 2 - 6	1 - 2 - 6	-	1.27	10	0.7	1.7	0.1 - 0.1 - 0.6	0.1 - 0.1 - 0.6	0.1 - 0.1 - 0.6
	500	44	0.012	.027	3 - 6 - 12	3 - 6 - 12	3 - 6 - 10	-	2.54	21	2.9	6.8	0.2 - 0.6 - 2.2	0.2 - 0.6 - 2.2	0.2 - 0.6 - 2.2
	1000	87	0.047	.110	8 - 12 - 20	8 - 12 - 18	7 - 10 - 15	14	5.08	41	11.8	27.3	1.0 - 2.2 - 5.0	1.0 - 2.2 - 5.0	1.0 - 2.2 - 4.4
	1500	131	0.106	.247	12 - 17 - 25	12 - 15 - 22	10 - 13 - 18	26	7.62	62	26.5	61.4	2.2 - 3.7 - 7.5	2.2 - 3.7 - 6.6	2.2 - 3.4 - 5.4
	2000	175	0.189	.438	16 - 20 - 28	14 - 18 - 25	12 - 15 - 21	35	10.16	82	47.0	109.1	3.3 - 5.0 - 8.6	3.3 - 5.0 - 7.6	3.0 - 4.4 - 6.3
	2500	218	0.295	.685	18 - 22 - 32	16 - 20 - 28	13 - 16 - 23	42	12.70	103	73.5	170.5	4.2 - 6.2 - 9.6	4.1 - 6.0 - 8.5	3.8 - 4.9 - 7.0
5"	250	34	0.003	.007	1 - 2 - 8	1 - 2 - 8	1 - 2 - 7	-	1.27	16	0.7	1.7	0.3 - 0.6 - 2.3	0.3 - 0.6 - 2.3	0.3 - 0.6 - 2.1
	500	68	0.012	.027	3 - 8 - 15	3 - 8 - 15	3 - 7 - 13	-	2.54	32	2.9	6.8	1.0 - 2.3 - 4.7	1.0 - 2.3 - 4.7	1.0 - 2.1 - 3.9
	1000	136	0.047	.110	10 - 15 - 25	10 - 15 - 22	9 - 13 - 18	16	5.08	64	11.8	27.3	3.1 - 4.7 - 7.6	3.1 - 4.7 - 6.7	2.8 - 3.9 - 5.5
	1500	205	0.106	.247	15 - 22 - 31	15 - 19 - 27	13 - 16 - 22	28	7.62	97	26.5	61.4	4.7 - 6.6 - 9.3	4.7 - 5.8 - 8.2	3.9 - 4.8 - 6.8
	2000	273	0.189	.438	20 - 25 - 35	18 - 22 - 31	15 - 18 - 26	37	10.16	129	47.0	109.1	6.2 - 7.6 - 10.8	5.5 - 6.7 - 9.5	4.5 - 5.5 - 7.8
	2500	341	0.295	.685	23 - 28 - 40	20 - 25 - 35	17 - 20 - 29	44	12.70	161	73.5	170.5	6.9 - 8.5 - 12.0	6.1 - 7.5 - 10.6	5.0 - 6.2 - 8.7
6"	250	49	0.003	.007	1 - 2 - 9	1 - 2 - 9	1 - 2 - 8	-	1.27	23	0.7	1.7	0.3 - 0.7 - 2.8	0.3 - 0.7 - 2.8	0.3 - 0.7 - 2.6
	500	98	0.012	.027	4 - 9 - 18	4 - 9 - 18	4 - 8 - 15	-	2.54	46	2.9	6.8	1.2 - 2.8 - 5.6	1.2 - 2.8 - 5.6	1.2 - 2.6 - 4.7
	1000	196	0.047	.110	12 - 18 - 30	12 - 18 - 26	11 - 15 - 22	17	5.08	93	11.8	27.3	3.7 - 5.6 - 9.1	3.7 - 5.6 - 8.0	3.4 - 4.7 - 6.6
	1500	295	0.106	.247	18 - 26 - 37	18 - 23 - 32	15 - 19 - 27	30	7.62	139	26.5	61.4	5.6 - 7.9 - 11.2	5.6 - 7.0 - 9.9	4.7 - 5.7 - 8.1
	2000	393	0.189	.438	25 - 30 - 42	22 - 26 - 37	18 - 22 - 31	38	10.16	185	47.0	109.1	7.5 - 9.1 - 12.9	6.6 - 8.0 - 11.4	5.4 - 6.6 - 9.4
	2500	491	0.295	.685	27 - 34 - 47	24 - 30 - 42	20 - 24 - 35	45	12.70	232	73.5	170.5	8.3 - 10.2 - 14.4	7.3 - 9.0 - 12.7	6.1 - 7.4 - 10.5
8"	250	87	0.003	.007	1 - 3 - 12	1 - 3 - 12	1 - 3 - 11	-	1.27	41	0.7	1.7	0.4 - 0.9 - 3.7	0.4 - 0.9 - 3.7	0.4 - 0.9 - 3.4
	500	175	0.012	.027	5 - 12 - 25	5 - 12 - 25	5 - 11 - 21	-	2.54	82	2.9	6.8	1.7 - 3.7 - 7.5	1.7 - 3.7 - 7.4	1.7 - 3.4 - 6.3
	1000	349	0.047	.110	16 - 25 - 40	16 - 25 - 35	15 - 21 - 29	20	5.08	165	11.8	27.3	5.0 - 7.5 - 12.2	5.0 - 7.4 - 10.7	4.5 - 6.3 - 8.8
	1500	524	0.106	.247	25 - 35 - 49	25 - 31 - 43	21 - 25 - 36	32	7.62	247	26.5	61.4	7.5 - 10.5 - 14.9	7.4 - 9.3 - 13.1	6.3 - 7.7 - 10.8
	1750	611	0.145	.336	29 - 37 - 53	27 - 33 - 47	22 - 27 - 38	37	8.89	288	36.0	83.5	8.7 - 11.4 - 16.1	8.2 - 10.0 - 14.2	6.8 - 8.3 - 11.7
	2000	698	0.189	.438	33 - 40 - 57	29 - 35 - 50	24 - 29 - 41	41	10.16	329	47.0	109.1	9.9 - 12.2 - 17.2	8.8 - 10.7 - 15.2	7.2 - 8.8 - 12.5
10"	250	136	0.003	.007	2 - 4 - 15	2 - 4 - 15	2 - 4 - 14	-	1.27	64	0.7	1.7	0.5 - 1.2 - 4.7	0.5 - 1.2 - 4.7	0.5 - 1.2 - 4.3
	500	273	0.012	.027	7 - 15 - 31	7 - 15 - 31	7 - 14 - 26	-	2.54	129	2.9	6.8	2.1 - 4.7 - 9.4	2.1 - 4.7 - 9.3	2.1 - 4.3 - 7.8
	1000	545	0.047	.110	21 - 31 - 50	20 - 31 - 44	19 - 26 - 36	22	5.08	257	11.8	27.3	6.2 - 9.4 - 15.2	6.2 - 9.3 - 13.4	5.7 - 7.8 - 11.1
	1500	818	0.106	.247	31 - 43 - 61	31 - 38 - 54	26 - 31 - 45	34	7.62	386	26.5	61.4	9.4 - 13.2 - 18.6	9.3 - 11.6 - 16.4	7.8 - 9.6 - 13.5
	1750	954	0.145	.336	36 - 47 - 66	34 - 41 - 58	28 - 34 - 48	39	8.89	450	36.0	83.5	10.9 - 14.2 - 20.1	10.2 - 12.5 - 17.7	8.4 - 10.3 - 14.6
	2000	1091	0.189	.438	41 - 50 - 71	36 - 44 - 62	30 - 36 - 51	43	10.16	515	47.0	109.1	12.4 - 15.2 - 21.5	10.9 - 13.4 - 19.0	9.0 - 11.1 - 15.6
12"	250	196	0.003	.007	2 - 5 - 18	2 - 5 - 18	2 - 5 - 17	-	1.27	93	0.7	1.7	0.6 - 1.4 - 5.6	0.6 - 1.4 - 5.6	0.6 - 1.4 - 5.1
	500	393	0.012	.027	8 - 18 - 37	8 - 18 - 37	8 - 17 - 31	-	2.54	185	2.9	6.8	2.5 - 5.6 - 11.2	2.5 - 5.6 - 11.2	2.5 - 5.1 - 9.4
	1000	785	0.047	.110	25 - 37 - 60	25 - 37 - 53	22 - 31 - 44	24	5.08	371	11.8	27.3	7.5 - 11.2 - 18.3	7.4 - 11.2 - 16.1	6.8 - 9.4 - 13.3
	1250	982	0.074	.171	31 - 46 - 67	31 - 42 - 59	28 - 35 - 49	30	6.35	463	18.4	42.6	9.4 - 14.1 - 20.4	9.3 - 12.7 - 18.0	8.5 - 10.5 - 14.8
	1500	1178	0.106	.247	37 - 52 - 74	37 - 46 - 65	31 - 38 - 53	36	7.62	556	26.5	61.4	11.2 - 15.8 - 22.4	11.2 - 13.9 - 19.7	9.4 - 11.5 - 16.3
	1750	1374	0.145	.336	43 - 56 - 79	40 - 50 - 70	33 - 41 - 58	41	8.89	649	36.0	83.5	13.1 - 17.1 - 24.2	12.3 - 15.1 - 21.3	10.1 - 12.4 - 17.6

NOTES: NC values are based on octave band 2 - 7 sound power levels minus a room absorption 10dB, re 10⁻¹² Watts. Dash in space denotes a NC value less than 10. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70. Throw values are given for terminal velocities of 150, 100, and 50 FPM (0.75, 0.50, and 0.25 m/s) free jet. Vertical throw is given for the temperature differences shown. Refer to Krueger's selection software for octave band information.

All models are not available in the listed sizes of the above table. Refer to dimensional data to determine available sizes for each model.

AIR NOZZLES & ROUND GRILLES

C
R
N

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CRN, CRNRD, CRNRR, CRNLP, CRNLP Series Performance Data

IP/METRIC DATA: CRN, 5CRN, CRNRD, 5CRNRD, CRNRR, 5CRNRR, CRNLP, 5CRNLP, CRNP, 5CRNP (1 NOZZLE)

	IP Data							NC	Metric Data						
	Neck Vel.	Air Flow	Pressure		Vertical Throw				Neck Vel.	Air Flow	Pressure		Vertical Throw		
			Ps	Pt	-20°F	Isothermal	+20°F				Ps	Pt	-11°C	Isothermal	+11°C
	FPM	CFM	"WG	"WG	ft	ft	ft		m/s	L/s	Pa	Pa	m	m	m
14"	250	267	0.003	.007	2 - 5 - 21	2 - 5 - 21	2 - 5 - 20	-	1.27	126	0.7	1.7	0.7 - 1.6 - 6.5	0.7 - 1.6 - 6.5	0.7 - 1.6 - 6.0
	500	535	0.012	.027	10 - 21 - 43	10 - 21 - 43	10 - 20 - 36	-	2.54	252	2.9	6.8	2.9 - 6.5 - 13.1	2.9 - 6.5 - 13.0	2.9 - 6.0 - 10.9
	1000	1069	0.047	.110	29 - 43 - 70	29 - 43 - 62	26 - 36 - 51	25	5.08	505	11.8	27.3	8.7 - 13.1 - 21.3	8.7 - 13.0 - 18.8	7.9 - 10.9 - 15.5
	1250	1336	0.074	.171	36 - 54 - 78	36 - 49 - 69	33 - 40 - 57	32	6.35	631	18.4	42.6	10.9 - 16.4 - 23.8	10.9 - 14.8 - 21.0	9.9 - 12.2 - 17.3
	1500	1604	0.106	.247	43 - 61 - 86	43 - 53 - 76	36 - 44 - 62	37	7.62	757	26.5	61.4	13.1 - 18.4 - 26.1	13.0 - 16.3 - 23.0	10.9 - 13.4 - 19.0
	1750	1871	0.145	.336	50 - 66 - 93	47 - 58 - 82	39 - 48 - 67	42	8.89	883	36.0	83.5	15.3 - 19.9 - 28.2	14.3 - 17.6 - 24.8	11.8 - 14.5 - 20.5
16"	250	349	0.003	.007	3 - 6 - 25	3 - 6 - 25	3 - 6 - 22	-	1.27	165	0.7	1.7	0.8 - 1.9 - 7.5	0.8 - 1.9 - 7.4	0.8 - 1.9 - 6.8
	500	698	0.012	.027	11 - 25 - 49	11 - 25 - 49	11 - 22 - 41	-	2.54	329	2.9	6.8	3.3 - 7.5 - 15.0	3.3 - 7.4 - 14.9	3.3 - 6.8 - 12.5
	1000	1396	0.047	.110	33 - 49 - 80	33 - 49 - 71	30 - 41 - 58	26	5.08	659	11.8	27.3	10.0 - 15.0 - 24.3	9.9 - 14.9 - 21.5	9.1 - 12.5 - 17.7
	1250	1745	0.074	.171	41 - 62 - 90	41 - 56 - 79	37 - 46 - 65	33	6.35	824	18.4	42.6	12.5 - 18.7 - 27.2	12.4 - 17.0 - 24.0	11.3 - 14.0 - 19.8
	1500	2094	0.106	.247	49 - 69 - 98	49 - 61 - 86	41 - 50 - 71	38	7.62	988	26.5	61.4	15.0 - 21.1 - 29.8	14.9 - 18.6 - 26.3	12.5 - 15.3 - 21.7
	1750	2443	0.145	.336	58 - 75 - 106	54 - 66 - 93	44 - 54 - 77	43	8.89	1153	36.0	83.5	17.5 - 22.8 - 32.2	16.4 - 20.1 - 28.4	13.5 - 16.5 - 23.4
18"	250	442	0.003	.007	3 - 7 - 28	3 - 7 - 28	3 - 7 - 25	-	1.27	208	0.7	1.7	0.9 - 2.1 - 8.4	0.9 - 2.1 - 8.4	0.9 - 2.1 - 7.7
	500	884	0.012	.027	12 - 28 - 55	12 - 28 - 55	12 - 25 - 46	-	2.54	417	2.9	6.8	3.7 - 8.4 - 16.9	3.7 - 8.4 - 16.8	3.7 - 7.7 - 14.1
	1000	1767	0.047	.110	37 - 55 - 90	37 - 55 - 79	34 - 46 - 65	27	5.08	834	11.8	27.3	11.2 - 16.9 - 27.4	11.2 - 16.8 - 24.1	10.2 - 14.1 - 19.9
	1250	2209	0.074	.171	46 - 69 - 101	46 - 63 - 89	42 - 52 - 73	34	6.35	1042	18.4	42.6	14.1 - 21.1 - 30.6	14.0 - 19.1 - 27.0	12.8 - 15.7 - 22.3
	1500	2651	0.106	.247	55 - 78 - 110	55 - 69 - 97	46 - 57 - 80	39	7.62	1251	26.5	61.4	16.9 - 23.7 - 33.5	16.8 - 20.9 - 29.6	14.1 - 17.2 - 24.4
	1750	3093	0.145	.336	65 - 84 - 119	61 - 74 - 105	50 - 61 - 87	44	8.89	1459	36.0	83.5	19.7 - 25.6 - 36.2	18.4 - 22.6 - 31.9	15.2 - 18.6 - 26.3
20"	250	545	0.003	.007	3 - 8 - 31	3 - 8 - 31	3 - 8 - 28	-	1.27	257	0.7	1.7	1.0 - 2.3 - 9.3	1.0 - 2.3 - 9.3	1.0 - 2.3 - 8.5
	500	1091	0.012	.027	14 - 31 - 62	14 - 31 - 61	14 - 28 - 51	-	2.54	515	2.9	6.8	4.1 - 9.3 - 18.7	4.1 - 9.3 - 18.6	4.1 - 8.5 - 15.6
	750	1636	0.027	.062	31 - 46 - 87	31 - 46 - 76	28 - 42 - 63	19	3.81	772	6.6	15.3	9.3 - 14.1 - 26.4	9.3 - 14.0 - 23.2	8.5 - 12.8 - 19.2
	1000	2182	0.047	.110	41 - 62 - 100	41 - 61 - 88	37 - 51 - 73	28	5.08	1030	11.8	27.3	12.5 - 18.7 - 30.4	12.4 - 18.6 - 26.8	11.3 - 15.6 - 22.1
	1250	2727	0.074	.171	51 - 77 - 112	51 - 70 - 99	47 - 58 - 81	35	6.35	1287	18.4	42.6	15.6 - 23.4 - 34.0	15.5 - 21.2 - 30.0	14.2 - 17.5 - 24.7
	1500	3272	0.106	.247	62 - 87 - 123	61 - 76 - 108	51 - 63 - 89	40	7.62	1544	26.5	61.4	18.7 - 26.4 - 37.3	18.6 - 23.2 - 32.8	15.6 - 19.2 - 27.1
22"	250	660	0.003	.007	4 - 8 - 34	4 - 8 - 34	4 - 8 - 31	-	1.27	311	0.7	1.7	1.1 - 2.6 - 10.2	1.1 - 2.6 - 10.2	1.1 - 2.6 - 9.4
	500	1320	0.012	.027	15 - 34 - 68	15 - 34 - 67	15 - 31 - 57	-	2.54	623	2.9	6.8	4.6 - 10.2 - 20.6	4.6 - 10.2 - 20.5	4.6 - 9.4 - 17.2
	750	1980	0.027	.062	34 - 51 - 95	34 - 51 - 84	31 - 46 - 69	20	3.81	934	6.6	15.3	10.2 - 15.5 - 29.0	10.2 - 15.4 - 25.5	9.4 - 14.0 - 21.1
	1000	2640	0.047	.110	45 - 68 - 110	45 - 67 - 97	41 - 57 - 80	29	5.08	1246	11.8	27.3	13.7 - 20.6 - 33.5	13.7 - 20.5 - 29.5	12.5 - 17.2 - 24.3
	1250	3300	0.074	.171	57 - 85 - 123	56 - 77 - 108	51 - 63 - 89	36	6.35	1557	18.4	42.6	17.2 - 25.8 - 37.4	17.1 - 23.3 - 33.0	15.6 - 19.2 - 27.2
	1500	3960	0.106	.247	68 - 95 - 135	67 - 84 - 119	57 - 69 - 98	41	7.62	1869	26.5	61.4	20.6 - 29.0 - 41.0	20.5 - 25.5 - 36.1	17.2 - 21.1 - 29.8
24"	250	785	0.003	.007	4 - 9 - 37	4 - 9 - 37	4 - 9 - 34	-	1.27	371	0.7	1.7	1.2 - 2.8 - 11.2	1.2 - 2.8 - 11.2	1.2 - 2.8 - 10.2
	500	1571	0.012	.027	16 - 37 - 74	16 - 37 - 74	16 - 34 - 62	-	2.54	741	2.9	6.8	5.0 - 11.2 - 22.5	5.0 - 11.2 - 22.3	5.0 - 10.2 - 18.8
	750	2356	0.027	.062	37 - 55 - 104	37 - 55 - 92	34 - 50 - 76	21	3.81	1112	6.6	15.3	11.2 - 16.9 - 31.6	11.2 - 16.8 - 27.9	10.2 - 15.3 - 23.0
	1000	3142	0.047	.110	49 - 74 - 120	49 - 74 - 106	45 - 62 - 87	30	5.08	1483	11.8	27.3	15.0 - 22.5 - 36.5	14.9 - 22.3 - 32.2	13.6 - 18.8 - 26.5
	1250	3927	0.074	.171	62 - 92 - 134	61 - 84 - 118	56 - 69 - 98	36	6.35	1853	18.4	42.6	18.7 - 28.1 - 40.8	18.6 - 25.4 - 36.0	17.0 - 21.0 - 29.7
	1500	4712	0.106	.247	74 - 104 - 147	74 - 92 - 130	62 - 76 - 107	42	7.62	2224	26.5	61.4	22.5 - 31.6 - 44.7	22.3 - 27.9 - 39.4	18.8 - 23.0 - 32.5

NOTES: NC values are based on octave band 2 - 7 sound power levels minus a room absorption 10dB, re 10⁻¹² Watts. Dash in space denotes a NC value less than 10. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70. Throw values are given for terminal velocities of 150, 100, and 50 FPM (0.75, 0.50, and 0.25 m/s) free jet. Vertical throw is given for the temperature differences shown. Refer to Krueger's selection software for octave band information.

All models are not available in the listed sizes of the above table. Refer to dimensional data to determine available sizes for each model.

CRNP, 5CRNP | Concentric Ring, Panel Mount

CRNP, 5CRNP Series Performance Data

IP/METRIC DATA: CRNP, 5CRNP, 2 NOZZLES

	IP Data							NC	Metric Data								
	Neck Vel.	Air Flow	Pressure		Vertical Throw				Neck Vel.	Air Flow	Pressure		Vertical Throw				
			Ps	Pt	-20°F	Isothermal	+20°F				-11°C	Isothermal	+11°C				
	FPM	CFM	"WG	"WG	ft	ft	ft		m/s	L/s	Pa	Pa	m	m	m		
4"	250	44	0.003	.007	1-2-9	1-2-9	1-2-8	-	1.27	21	0.7	1.7	0.1-0.2-0.8	0.1-0.2-0.8	0.1-0.2-0.8		
	500	87	0.012	.027	4-9-17	4-9-17	4-8-15	-	2.54	41	2.9	6.8	0.3-0.8-3.1	0.3-0.8-3.1	0.3-0.8-3.1		
	1000	175	0.047	.110	12-17-28	12-17-25	11-15-21	17	5.08	82	11.8	27.3	1.4-3.1-7.1	1.4-3.1-7.0	1.4-3.1-6.3		
	1500	262	0.106	.247	17-25-35	17-22-31	15-18-25	29	7.62	124	26.5	61.4	3.1-5.3-10.5	3.1-5.3-9.3	3.1-4.8-7.7		
	2000	349	0.189	.438	23-28-40	20-25-35	17-21-29	38	10.16	165	47.0	109.1	4.7-7.1-12.2	4.7-7.0-10.7	4.3-6.3-8.8		
	2500	436	0.295	.685	26-32-45	23-28-39	19-23-33	45	12.70	206	73.5	170.5	5.9-8.8-13.6	5.9-8.5-12.0	5.3-7.0-9.9		
5"	250	68	0.003	.007	1-3-11	1-3-11	1-3-10	-	1.27	32	0.7	1.7	0.4-0.8-3.3	0.4-0.8-3.3	0.4-0.8-3.0		
	500	136	0.012	.027	5-11-22	5-11-22	5-10-18	-	2.54	64	2.9	6.8	1.5-3.3-6.6	1.5-3.3-6.6	1.5-3.0-5.5		
	1000	273	0.047	.110	15-22-35	14-22-31	13-18-26	19	5.08	129	11.8	27.3	4.4-6.6-10.8	4.4-6.6-9.5	4.0-5.5-7.8		
	1500	409	0.106	.247	22-31-43	22-27-38	18-22-31	31	7.62	193	26.5	61.4	6.6-9.3-13.2	6.6-8.2-11.6	5.5-6.8-9.6		
	2000	545	0.189	.438	29-35-50	25-31-44	21-26-36	40	10.16	257	47.0	109.1	8.8-10.8-15.2	7.7-9.5-13.4	6.4-7.8-11.1		
	2500	682	0.295	.685	32-40-56	28-35-49	23-29-41	47	12.70	322	73.5	170.5	9.8-12.0-17.0	8.7-10.6-15.0	7.1-8.7-12.4		
6"	250	98	0.003	.007	1-3-13	1-3-13	1-3-12	-	1.27	46	0.7	1.7	0.4-1.0-4.0	0.4-1.0-4.0	0.4-1.0-3.6		
	500	196	0.012	.027	6-13-26	6-13-26	6-12-22	-	2.54	93	2.9	6.8	1.8-4.0-8.0	1.8-4.0-7.9	1.8-3.6-6.6		
	1000	393	0.047	.110	17-26-42	17-26-37	16-22-31	20	5.08	185	11.8	27.3	5.3-8.0-12.9	5.3-7.9-11.4	4.8-6.6-9.4		
	1500	589	0.106	.247	26-37-52	26-32-46	22-27-38	33	7.62	278	26.5	61.4	8.0-11.2-15.8	7.9-9.9-13.9	6.6-8.1-11.5		
	2000	785	0.189	.438	35-42-60	31-37-53	25-31-44	42	10.16	371	47.0	109.1	10.5-12.9-18.3	9.3-11.4-16.1	7.7-9.4-13.3		
	2500	982	0.295	.685	39-47-67	34-42-59	28-35-49	48	12.70	463	73.5	170.5	11.8-14.4-20.4	10.4-12.7-18.0	8.6-10.5-14.8		
8"	250	175	0.003	.007	2-4-17	2-4-17	2-4-16	-	1.27	82	0.7	1.7	0.6-1.3-5.3	0.6-1.3-5.3	0.6-1.3-4.8		
	500	349	0.012	.027	8-17-35	8-17-35	8-16-29	-	2.54	165	2.9	6.8	2.3-5.3-10.6	2.3-5.3-10.5	2.3-4.8-8.8		
	1000	698	0.047	.110	23-35-57	23-35-50	21-29-41	23	5.08	329	11.8	27.3	7.1-10.6-17.2	7.0-10.5-15.2	6.4-8.8-12.5		
	1500	1047	0.106	.247	35-49-69	35-43-61	29-36-50	35	7.62	494	26.5	61.4	10.6-14.9-21.1	10.5-13.1-18.6	8.8-10.8-15.3		
	1750	1222	0.145	.336	41-53-75	38-47-66	31-38-54	40	8.89	577	36.0	83.5	12.4-16.1-22.8	11.6-14.2-20.1	9.6-11.7-16.5		
	2000	1396	0.189	.438	46-57-80	41-50-71	34-41-58	44	10.16	659	47.0	109.1	14.1-17.2-24.3	12.4-15.2-21.5	10.2-12.5-17.7		
10"	250	273	0.003	.007	2-5-22	2-5-22	2-5-20	-	1.27	129	0.7	1.7	0.7-1.6-6.6	0.7-1.6-6.6	0.7-1.6-6.0		
	500	545	0.012	.027	10-22-44	10-22-43	10-20-36	-	2.54	257	2.9	6.8	2.9-6.6-13.3	2.9-6.6-13.2	2.9-6.0-11.1		
	1000	1091	0.047	.110	29-44-71	29-43-62	26-36-51	25	5.08	515	11.8	27.3	8.8-13.3-21.5	8.8-13.2-19.0	8.0-11.1-15.6		
	1500	1636	0.106	.247	44-61-87	43-54-76	36-45-63	37	7.62	772	26.5	61.4	13.3-18.6-26.4	13.2-16.4-23.2	11.1-13.5-19.2		
	1750	1909	0.145	.336	51-66-94	48-58-83	39-48-68	42	8.89	901	36.0	83.5	15.5-20.1-28.5	14.5-17.7-25.1	11.9-14.6-20.7		
	2000	2182	0.189	.438	58-71-100	51-62-88	42-51-73	46	10.16	1030	47.0	109.1	17.6-21.5-30.4	15.5-19.0-26.8	12.8-15.6-22.1		
12"	250	393	0.003	.007	3-7-26	3-7-26	3-7-24	-	1.27	185	0.7	1.7	0.9-2.0-7.9	0.9-2.0-7.9	0.9-2.0-7.2		
	500	785	0.012	.027	12-26-52	12-26-52	12-24-44	-	2.54	371	2.9	6.8	3.5-7.9-15.9	3.5-7.9-15.8	3.5-7.2-13.3		
	1000	1571	0.047	.110	35-52-85	35-52-75	32-44-62	27	5.08	741	11.8	27.3	10.6-15.9-25.8	10.5-15.8-22.8	9.6-13.3-18.8		
	1250	1963	0.074	.171	44-65-95	43-59-84	40-49-69	33	6.35	927	18.4	42.6	13.3-19.9-28.9	13.2-18.0-25.4	12.0-14.8-21.0		
	1500	2356	0.106	.247	52-74-104	52-65-92	44-53-76	39	7.62	1112	26.5	61.4	15.9-22.4-31.6	15.8-19.7-27.9	13.3-16.3-23.0		
	1750	2749	0.145	.336	61-79-112	57-70-99	47-58-82	44	8.89	1297	36.0	83.5	18.6-24.2-34.2	17.4-21.3-30.1	14.3-17.6-24.8		
14"	250	535	0.003	.007	3-8-30	3-8-30	3-8-28	-	1.27	252	0.7	1.7	1.0-2.3-9.2	1.0-2.3-9.2	1.0-2.3-8.4		
	500	1069	0.012	.027	13-30-61	13-30-61	13-28-51	-	2.54	505	2.9	6.8	4.1-9.2-18.6	4.1-9.2-18.4	4.1-8.4-15.5		
	1000	2138	0.047	.110	41-61-99	40-61-87	37-51-72	28	5.08	1009	11.8	27.3	12.4-18.6-30.1	12.3-18.4-26.5	11.2-15.5-21.9		
	1250	2673	0.074	.171	51-76-111	51-69-98	46-57-81	35	6.35	1261	18.4	42.6	15.5-23.2-33.7	15.4-21.0-29.7	14.0-17.3-24.5		
	1500	3207	0.106	.247	61-86-121	61-76-107	51-62-88	40	7.62	1514	26.5	61.4	18.6-26.1-36.9	18.4-23.0-32.5	15.5-19.0-26.8		
	1750	3742	0.145	.336	71-93-131	67-82-116	55-67-95	45	8.89	1766	36.0	83.5	21.6-28.2-39.8	20.3-24.8-35.1	16.7-20.5-29.0		
16"	250	698	0.003	.007	4-9-35	4-9-35	4-9-32	-	1.27	329	0.7	1.7	1.2-2.6-10.5	1.2-2.6-10.5	1.2-2.6-9.6		
	500	1396	0.012	.027	15-35-70	15-35-69	15-32-58	-	2.54	659	2.9	6.8	4.7-10.5-21.2	4.7-10.5-21.1	4.7-9.6-17.7		
	1000	2793	0.047	.110	47-70-113	46-69-100	42-58-82	29	5.08	1318	11.8	27.3	14.1-21.2-34.4	14.0-21.1-30.3	12.8-17.7-25.0		
	1250	3491	0.074	.171	58-87-127	58-79-112	53-65-92	36	6.35	1647	18.4	42.6	17.7-26.5-38.5	17.6-24.0-33.9	16.0-19.8-28.0		
	1500	4189	0.106	.247	70-98-139	69-86-122	58-71-101	41	7.62	1977	26.5	61.4	21.2-29.8-42.2	21.1-26.3-37.2	17.7-21.7-30.6		
	1750	4887	0.145	.336	81-106-150	76-93-132	63-77-109	46	8.89	2306	36.0	83.5	24.7-32.2-45.5	23.2-28.4-40.1	19.1-23.4-33.1		
18"	250	884	0.003	.007	4-10-39	4-10-39	4-10-36	-	1.27	417	0.7	1.7	1.3-3.0-11.9	1.3-3.0-11.9	1.3-3.0-10.8		
	500	1767	0.012	.027	17-39-78	17-39-78	17-36-65	-	2.54	834	2.9	6.8	5.3-11.9-23.9	5.3-11.9-23.7	5.3-10.8-19.9		
	1000	3534	0.047	.110	52-78-127	52-78-112	47-65-93	30	5.08	1668	11.8	27.3	15.9-23.9-38.7	15.8-23.7-34.1	14.4-19.9-28.1		
	1250	4418	0.074	.171	65-98-142	65-89-126	59-73-104	37	6.35	2085	18.4	42.6	19.9-29.8-43.3	19.8-27.0-38.2	18.0-22.3-31.5		
	1500	5301	0.106	.247	78-110-156	78-97-138	65-80-113	43	7.62	2502	26.5	61.4	23.9-33.5-47.4	23.7-29.6-41.8	19.9-24.4-34.5		
	1750	6185	0.145	.336	92-119-169	86-105-149	71-87-122	47	8.89	2919	36.0	83.5	27.8-36.2-51.2	26.1-31.9-45.2	21.5-26.3-37.2		

NOTE: See page H1-25 for notes.

AIR NOZZLES & ROUND GRILLES

CRNP

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CRN, 5CRN, CRNRD, 5CRNRD, CRNRR, 5CRNRR Suggested Specification & Configuration
1. SERIES: (XXXXXX)

- CRN - Steel Concentric Ring Nozzle
Surface Mount
- 5CRN - Aluminum Concentric Ring Nozzle
Surface Mount
- CRNRD - Steel Concentric Ring Nozzle
Round Duct Adapter
- 5CRNRD - Aluminum Concentric Ring Nozzle
Round Duct Adapter
- CRNRR - Steel Concentric Ring Nozzle
Round Duct Reducer
- 5CRNRR - Aluminum Concentric Ring Nozzle
Round Duct Reducer

2. SIZE: (XX)

- 04 - 4" Element Size *
- 05 - 5" Element Size **
- 06 - 6" Element Size
- 08 - 8" Element Size
- 10 - 10" Element Size
- 12 - 12" Element Size
- 14 - 14" Element Size
- 16 - 16" Element Size
- 18 - 18" Element Size
- 20 - 20" Element Size *
- 22 - 22" Element Size *
- 24 - 24" Element Size *

3. FINISH: (XX)

- 01 - Mill
- 36 - Gloss Black
- 44 - British White
- 50 - Bright White
- 61 - Gray Prime
- 70 - Silver Metallic
- 99 - Custom Color

* CRNRR and 5CRNRR not available in sizes 04, 20, 22, or 24.

** CRN, 5CRN, CRNRR, and 5CRNRR not available in size 05. Element and duct size are not the same except for the CRNR and 5CRNRR series.

CRN, 5CRN

The supply concentric ring nozzle shall be a Krueger model CRN constructed of steel or 5CRN constructed of aluminum. This nozzle must have directional axial control no less than 60° and be able to rotate 360°. The flange of the CRN/5CRN shall have a minimum of 4 screw holes on the face of the flange for surface mounting.

CRNRD, 5CRNRD

The supply concentric ring nozzle shall be a Krueger model CRNRD constructed of steel or 5CRNRD constructed of aluminum. This nozzle must have directional axial control no less than 60° and be able to rotate 360°. The flange of the CRN/5CRN shall have a minimum of 4 screw holes on the side of the flange for mounting to the end of a stub duct.

CRNRR, 5CRNRR

The supply concentric ring nozzle shall be a Krueger model CRNRR constructed of steel or 5CRNRR constructed of aluminum. This nozzle must have directional axial control no less than 60° and be able to rotate 360°. The flange of the CRNRR/5CRNRR shall be designed to reduce the size of duct required to supply air to the nozzle. The CRNRR/5CRNRR was designed to fit directly to the end of a stub duct.

PERFORMANCE

The manufacturer shall provide published performance data for the grille. The nozzle 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 White and be a P-Series Powder Coating finish, baked at 400°F for 7 minutes. The paint thickness shall be 1.8 – 2.2 mils, pencil hardness per ASTM D3363 of H – 2H, crosshatch adhesion per ASTM D3359 of 4B, impact per ASTM D2794 of direct and reverse impact range of 40 to 160 in/lb depending on formulation, salt spray per ASTM B117 of 1000 hours, humidity per ASTM D2247 of 1000 hours and water soak per ASTM D8702 of 500 hours.

CRNP, 5CRNP & CRNLP, 5CRNLP Suggested Specification & Configuration

CRNP, 5CRNP

The supply concentric ring nozzle shall be a Krueger model CRNP constructed of steel or 5CRNP constructed of aluminum. This nozzle must have directional axial control no less than 60° and be able to rotate 360°. The flange of the CRNP/5CRNP shall make a panel that can contain up to 4 separate elements each individually adjustable.

CRNLP, 5CRNLP

The supply concentric ring nozzle shall be a Krueger model CRNLP constructed of steel or 5CRNLP constructed of aluminum. This nozzle must have directional axial control no less than 60° and be able to rotate 360°. The CRNLP/5CRNLP shall be sized to lay in a standard 15/16" Tee-bar grid with a grid size of 24"x24".

PERFORMANCE

The manufacturer shall provide published performance data for the grille. The nozzle 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 White and be a P-Series Powder Coating finish, baked at 400°F for 7 minutes. The paint thickness shall be 1.8 – 2.2 mils, pencil hardness per ASTM D3363 of H – 2H, crosshatch adhesion per ASTM D3359 of 4B, impact per ASTM D2794 of direct and reverse impact range of 40 to 160 in/lb depending on formulation, salt spray per ASTM B117 of 1000 hours, humidity per ASTM D2247 of 1000 hours and water soak per ASTM D8702 of 500 hours.

1. SERIES: (XXXXXX)

- CRNP - Steel Concentric Ring Nozzle
Panel Mount
- 5CRNP - Aluminum Concentric Ring Nozzle
Panel Mount

2. SIZE: (XX)

- | | |
|-----------------------|-------------------------|
| 04 - 4" Element Size | 14 - 14" Element Size |
| 05 - 5" Element Size | 16 - 16" Element Size |
| 06 - 6" Element Size | 18 - 18" Element Size |
| 08 - 8" Element Size | 20 - 20" Element Size * |
| 10 - 10" Element Size | 22 - 22" Element Size * |
| 12 - 12" Element Size | 24 - 24" Element Size * |

3. PANEL: (X)

- 1 - Single Unit per Panel *
- 2 - Two Units per Panel
- 3 - Three Units per Panel
- 4 - Four Units per Panel

4. FINISH: (XX)

- | | |
|--------------------|----------------------|
| 01 - Mill | 61 - Gray Prime |
| 36 - Gloss Black | 70 - Silver Metallic |
| 44 - British White | 99 - Custom Color |
| 50 - Bright White | |

* Sizes 20, 22, and 24 only available with Panel 1. Element and duct size are not the same.

1. SERIES: (XXXXXXX)

- CRNLP - Steel Concentric Ring Nozzle,
Lay-in T-Bar
- 5CRNLP - Aluminum Concentric Ring Nozzle,
Lay-in T-Bar

2. SIZE: (XX)

- 06 - 6" Element Size
- 08 - 8" Element Size
- 10 - 10" Element Size
- 12 - 12" Element Size
- 14 - 14" Element Size

3. FRAME: (XXX)

- F23 - Lay-in T-Bar

4. PANEL: (XX)x(XX)

- 24"x24"

5. FINISH: (XX)

- | | |
|--------------------|----------------------|
| 01 - Mill | 61 - Gray Prime |
| 36 - Gloss Black | 70 - Silver Metallic |
| 44 - British White | 99 - Custom Color |
| 50 - Bright White | |

Element and duct size are not the same.

SAMPLE CONFIGURATIONS: CRNP - 12 - 3 - 44 OR CRNLP - 08 - F23 - 24x24 - 50