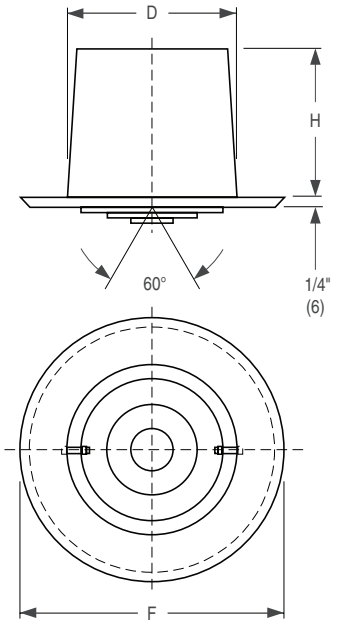
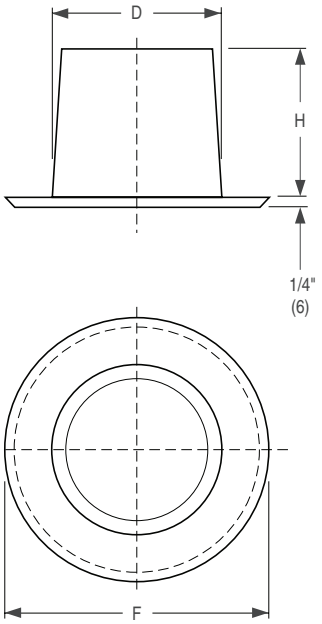
ROUND AIR NOZZLE

ALUMINUM • HIGH VELOCITY • ROUND NECK

MODELS: RANR RING DIRECTIONAL CORE
RANF FIXED (NO CORE)



❑ RANR
(Air Nozzle with Ring Directional Core)



❑ RANF
(Fixed Air Nozzle - No Core)

Nominal Size	D	F	H
3	3 (76)	5 1/4 (133)	3 1/2 (89)
4	4 (102)	6 1/4 (159)	3 1/2 (89)
5	5 (127)	7 1/4 (184)	4 (102)
6	6 (152)	8 1/4 (210)	2 1/4 (57)
8	8 (203)	10 1/4 (260)	2 1/4 (57)
10	10 (254)	12 1/4 (311)	2 1/4 (57)
12	12 (305)	14 1/4 (362)	2 1/4 (57)
14	14 (356)	16 1/4 (413)	2 1/4 (57)
16	16 (406)	18 1/4 (464)	2 1/4 (57)
18	18 (457)	20 1/4 (514)	2 1/4 (57)
20	20 (508)	22 1/4 (565)	2 1/4 (57)
22	22 (559)	24 1/4 (616)	2 1/4 (57)
24	24 (610)	26 1/4 (667)	2 1/4 (57)

Inches are measured to the nearest 1/16" (2).

DESCRIPTION:

1. Material: Aluminum construction.
2. Models RANR and RANF Round Air Nozzles have been designed to provide efficient spot cooling and heating, along with an architectural appealing appearance. Ideally suited for new construction or retrofit, the versatile products can be used in supply or exhaust applications in a vertical or horizontal pattern.
3. Low sound levels. Low pressure requirements.
4. Sizes 3" to 5" (76 to 127) are provided with concealed "EZ" Fastener mount for ceiling installation. Sizes 6" to 24" (152 to 610) are provided with concealed mounting ring for hard duct installation.
5. Easy fingertip adjustment. Directional air pattern control: ± 30° deflection in one plane (Model RANR only).
6. Standard finish is AW Appliance White.

OPTIONS:

❑ CSH Countersunk Screw Holes (on face).

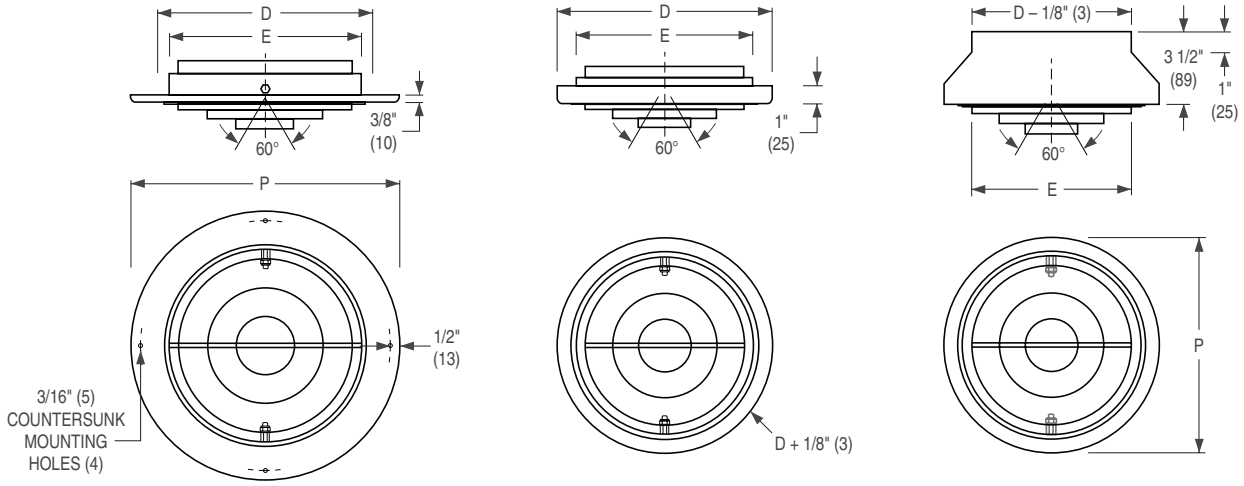
❑ FDMR Flexible Duct Mounting Ring (6" to 24" [152 to 610] only).

❑ SP Special finish. Specify: _____ .

SCHEDULE TYPE	Dimensions are in inches (mm).			
PROJECT				
ENGINEER	**DATE**	**B SERIES**	**SUPERSEDES**	**DRAWING NO.**
CONTRACTOR	**3 - 21 - 18**	**RAN**	**1 - 29 - 19**	**RAN-1**

Nailor® Industries Inc.

ROUND AIR NOZZLE DIFFUSER
STEEL OR ALUMINUM • CONCENTRIC RINGS
ADJUSTABLE & ROTATING
MODEL: RANC



❑ SM Frame
(Surface Mount)

❑ RD Frame
(Exposed Round Duct)

❑ RR Frame
(Round Reducer)

Nom. Size	SM Frame †				RD Frame †			RR Frame			
	E Nozzle	Rings Per Nozzle	D (Duct)	P (Panel)	E Nozzle	Rings Per Nozzle	D (Duct)	E Nozzle	Rings Per Nozzle	D (Duct)	P (Panel)
4	4 (102)	3	6 (152)	8 (203)	4 (102)	3	6 (152)	–	–	–	–
5	5 (127)	3	6 (152)	8 (203)	5 (127)	3	6 (152)	–	–	–	–
6	6 (152)	3	8 (203)	10 (254)	6 (152)	3	8 (203)	6 (152)	3	6 (152)	8 (203)
8	8 (203)	3	10 (254)	12 (305)	8 (203)	3	10 (254)	8 (203)	3	8 (203)	10 (254)
10	10 (254)	3	12 (305)	14 (356)	10 (254)	3	12 (305)	10 (254)	3	10 (254)	12 (305)
12	12 (305)	3	14 (356)	16 (406)	12 (305)	3	14 (356)	12 (305)	3	12 (305)	14 (356)
14	14 (356)	4	16 (406)	18 (457)	14 (356)	4	16 (406)	14 (356)	3	14 (356)	16 (406)
16	16 (406)	4	18 (457)	20 (508)	16 (406)	4	18 (457)	16 (406)	4	16 (406)	18 (457)
18	18 (457)	4	20 (508)	22 (559)	18 (457)	4	20 (508)	18 (457)	4	18 (457)	20 (508)
20	20 (508)	5	22 (559)	24 (610)	20 (508)	5	22 (559)	20 (508)	5	20 (508)	22 (559)
22	22 (559)	5	24 (610)	26 (660)	22 (559)	5	24 (610)	22 (559)	5	22 (559)	24 (610)
24	24 (610)	5	26 (660)	28 (711)	24 (610)	5	26 (660)	24 (610)	5	24 (610)	26 (660)

Note:

† The SM and RD frame model nominal size is 2" (51) smaller than the duct size it mounts to.

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

Inches are measured to the nearest 1/16" (2).

DESCRIPTION:

1. Material: Heavy gauge steel construction.

2. Model RANC Round Air Nozzle Diffusers have been specially designed for hard surface installations in a wall, ceiling or exposed round duct. The high capacity concentric ring nozzle diffusers are ideally suited for industrial, institutional or commercial applications requiring accurate directional control of a concentrated column of air. The versatile design offers easy finger tip adjustment of the concentric rings and directional air pattern control ± 30° deflection with a full 360° rotation.

3. Frame Type SM –
   Surface mount system. Mounting screws are included.
   Frame Type RD –
   Frame slides cleanly over end of exposed duct work. Mounting screws are included.
   Frame Type RR –
   Frame slides cleanly into end of exposed duct work. Mounting screws are included.

4. Standard finish is AW Appliance White.

OPTIONS:

Frame:

❑ SM Surface Mount (Wall/Ceiling)

❑ RD Exposed Round Duct

❑ RR Round Reducer

❑ ALC Aluminum construction

Finish:

❑ SP Special.
Specify: _____ .

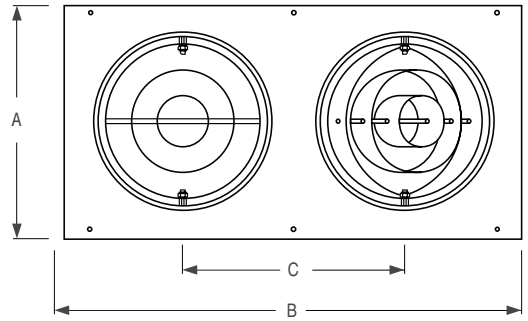
SCHEDULE TYPE	Dimensions are in inches (mm).			
PROJECT				
ENGINEER	**DATE**	**B SERIES**	**SUPERSEDES**	**DRAWING NO.**
CONTRACTOR	**4 - 27 - 21**	**RAN**	**3 - 7 - 19**	**RAN-2**

Nailor® Industries Inc.

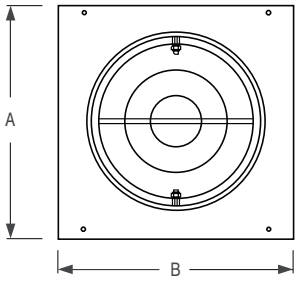
ROUND AIR NOZZLE DIFFUSER

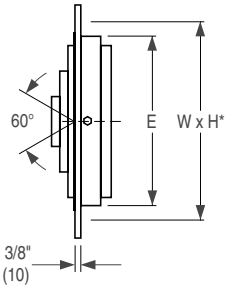
STEEL OR ALUMINUM • CONCENTRIC RINGS
PANEL MOUNTED • WALL/CEILING
MODEL: RANCP

❑ 2N



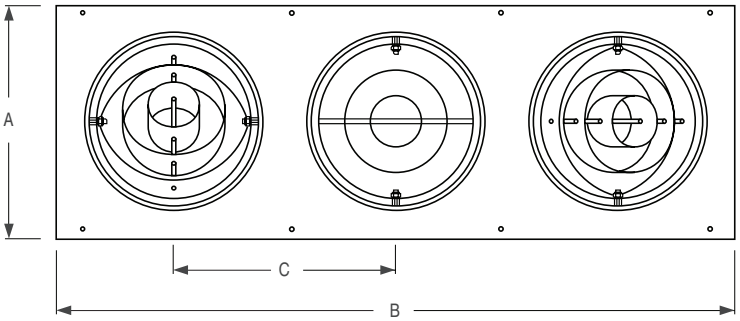
❑ 1N



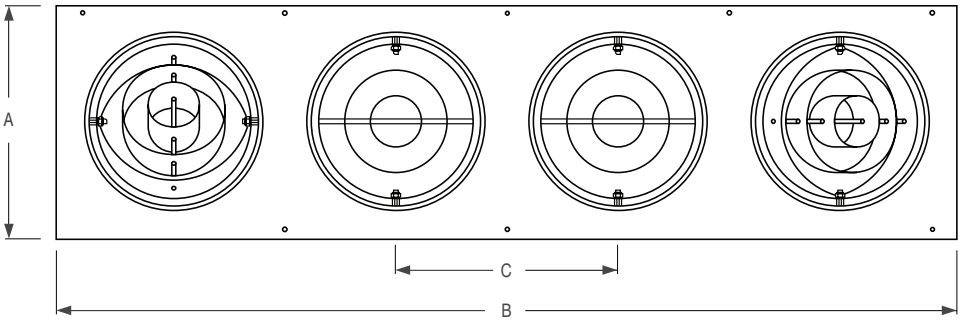


* DUCT SIZE WIDTH x HEIGHT (W x H) IS 2" (51) SMALLER THAN PANEL SIZE IN BOTH DIRECTIONS.

❑ 3N



❑ 4N



DESCRIPTION:

1. Material: Heavy gauge steel construction is standard.
2. Model RANCP is a Round Air Nozzle Diffuser that has been specially designed for hard surface installations in a wall, ceiling or exposed round duct. The high capacity concentric ring nozzle diffusers are ideally suited for industrial, institutional or commercial applications requiring directional control of a concentrated column of air. The versatile design offers adjustment of the nozzle up to 60° axial adjustment with a full 360° rotation for a variety of directional control settings.
3. Nominal sizes are available in 4" to 24" (102 to 610).
4. 1, 2, 3 or 4 nozzles per panel.
5. Mounting screws are provided for panels.
6. Standard finish is AW Appliance White.

OPTIONS:

❑ ALC Aluminum construction

Finish:

❑ SP Special.
Specify: _____ .

SCHEDULE TYPE	Page 1 of 2 Dimensions are in inches (mm).			
PROJECT				
ENGINEER	**DATE**	**B SERIES**	**SUPERSEDES**	**DRAWING NO.**
CONTRACTOR	**4 - 23 - 21**	**RAN**	**3 - 7 - 19**	**RAN-3**

Nailor® Industries Inc.

ROUND AIR NOZZLE DIFFUSER

STEEL OR ALUMINUM • CONCENTRIC RINGS
PANEL MOUNTED • WALL/CEILING
MODEL: RANCP

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

* Unit shipped in two sections. Assembly required with bolts supplied.

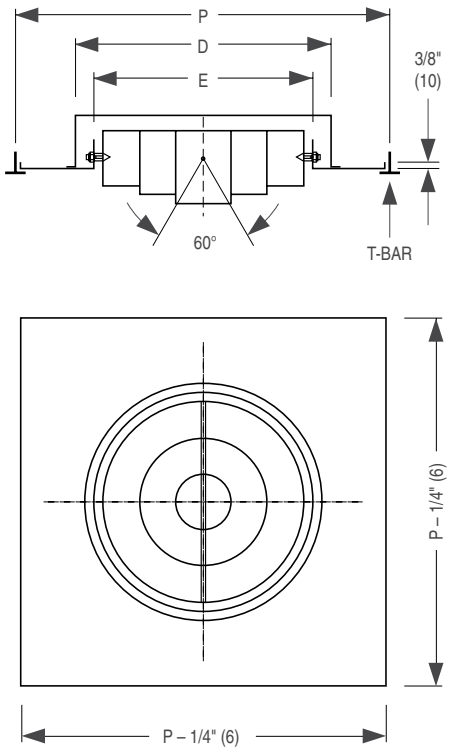
Inches are measured to the nearest 1/16" (2).

SCHEDULE TYPE	Page 2 of 2 Dimensions are in inches (mm).			
PROJECT				
ENGINEER	**DATE**	**B SERIES**	**SUPERSEDES**	**DRAWING NO.**
CONTRACTOR	**4 - 23 - 21**	**RAN**	**3 - 7 - 19**	**RAN-3**

Nailor® Industries Inc.

ROUND AIR NOZZLE DIFFUSER

STEEL OR ALUMINUM • CONCENTRIC RINGS
PANEL MOUNTED • LAY-IN T-BAR
MODEL: RANCPL



PL Frame			
E Nominal Size	**Rings Per Nozzle**	**D (Duct)**	**P (Panel)**
6	3	8 (203)	24 (610)
8	3	10 (254)	24 (610)
10	3	12 (305)	24 (610)
12	3	14 (356)	24 (610)
14	4	16 (406)	24 (610)

Inches are measured to the nearest 1/16" (2).

DESCRIPTION:

1. Material: Heavy gauge steel construction is standard.
2. Model RANCPL is a Round Air Nozzle Diffuser that has been designed for lay-in T-Bar ceiling systems. The high capacity concentric ring nozzle diffusers are housed in a panel and ideally suited for industrial, institutional or commercial applications requiring directional control of a concentrated column of air. The versatile design offers adjustment of the nozzle element with a full 360° rotation for a variety of directional control settings.
3. Nominal sizes are available in 6" to 14" (152 to 356) for a 24" (610) panel.
4. Standard finish is AW Appliance White.

OPTIONS:

- ❑ ALC Aluminum construction

Finish:

- ❑ SP Special.
  Specify: _____ .

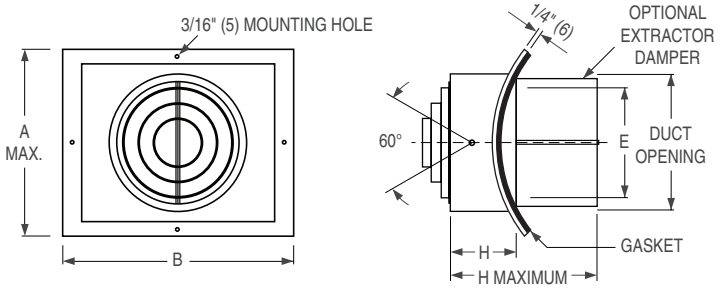
SCHEDULE TYPE	Dimensions are in inches (mm).			
PROJECT				
ENGINEER	**DATE**	**B SERIES**	**SUPERSEDES**	**DRAWING NO.**
CONTRACTOR	**3 - 7 - 19**	**RAN**	**11 - 29 - 18**	**RAN-5**

ROUND AIR NOZZLE DIFFUSER

ALUMINUM • CONCENTRIC RINGS • CURVED FRAME
SPIRAL DUCT MOUNT

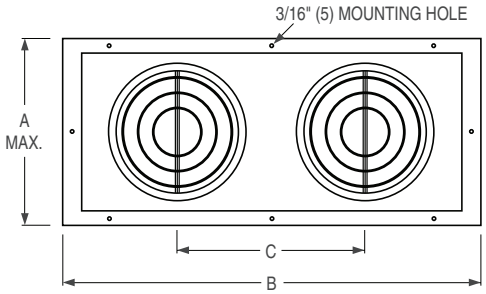
MODEL: RANCC

❑ 1N

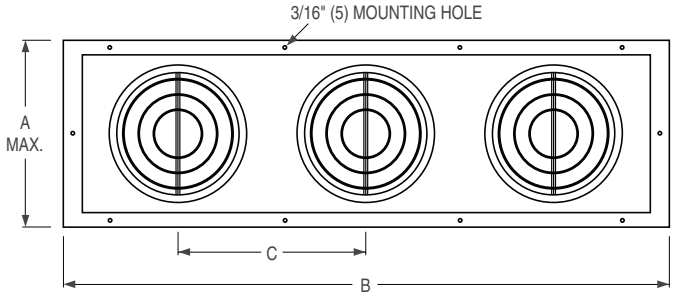


Note:
Round duct diameter **MUST** be specified.

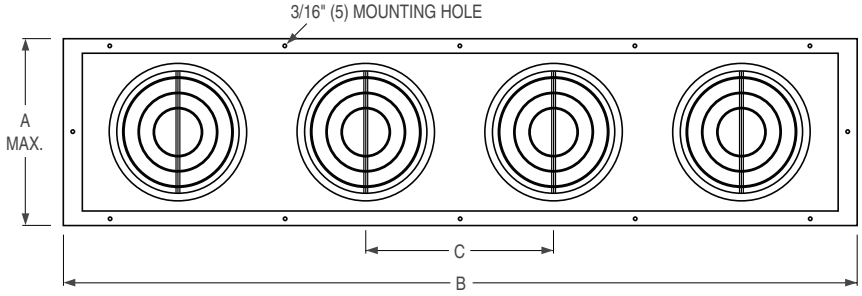
❑ 2N



❑ 3N



❑ 4N



DESCRIPTION:

1. Material: Aluminum.
2. Model RANCC is a Round Air Nozzle Diffuser that has been designed for mounting to exposed spiral duct. The high velocity concentric ring nozzle diffusers are housed in a curved frame panel and ideally suited for industrial, institutional and commercial applications where ductwork cannot be brought close to the occupants in large conditioned spaces requiring directional control of a concentrated column of air. The versatile design offers quiet operation, low pressure requirements and easy finger-tip adjustment of the nozzles, which can be adjusted for directional air pattern control 70° global rotation minimum ± 35° deflection with a full 360° rotation.
3. Nominal nozzle sizes are available in 4" to 12" (102 to 305).
4. 1, 2, 3 or 4 nozzles per panel.
5. GK Foam Gasket is provided as standard.
6. Mounting screws are provided for each panel.
7. Standard finish is AW Appliance White.

OPTIONS:

❑ DEX Damper/Extractor .
Finish:

❑ SP Special.
Specify: _____ .

SCHEDULE TYPE	Page 1 of 2 Dimensions are in inches (mm).			
PROJECT				
ENGINEER	**DATE**	**B SERIES**	**SUPERSEDES**	**DRAWING NO.**
CONTRACTOR	**4 - 22 - 21**	**RAN**	**3 - 7 - 19**	**RAN-6**

Nailor® Industries Inc.

ROUND AIR NOZZLE DIFFUSER

ALUMINUM • CONCENTRIC RINGS • CURVED FRAME
SPIRAL DUCT MOUNT

MODEL: RANCC

Nominal Nozzle Size E	Qty. Nozzles Per (Panel)	C	Rings Per Nozzle	A Max.	B	H	H Max.	Duct Opening	Min. Duct Dia.
4	1N	–	3	9 (229)	9 (229)	3 (76)	10 3/16 (259)	7 x 7 (178 x 178)	8 (203)
	2N	6 (152)			17 1/2 (445)			7 x 15 1/2 (178 x 394)	
	3N	6 (152)			22 1/2 (572)			7 x 20 1/2 (178 x 521)	
	4N	6 (152)			28 1/2 (724)			7 x 26 1/2 (178 x 673)	
5	1N	–	3	10 (254)	10 (254)	3 (76)	11 1/16 (281)	8 x 8 (203 x 203)	8 (203)
	2N	8 (203)			20 1/2 (521)			8 x 15 1/2 (203 x 394)	
	3N	8 (203)			26 1/2 (673)			8 x 20 1/2 (203 x 521)	
	4N	8 (203)			34 1/2 (876)			8 x 26 1/2 (203 x 673)	
6	1N	–	3	11 (279)	11 (279)	3 (76)	12 (305)	9 (229)	10 (254)
	2N	9 (229)			21 1/2 (546)			9 x 19 1/2 (229 x 495)	
	3N	9 (229)			30 1/2 (775)			9 x 28 1/2 (229 x 724)	
	4N	9 (229)			39 1/2 (1003)			9 x 37 1/2 (229 x 953)	
8	1N	–	3	13 (330)	13 (330)	4 (102)	12 3/4 (324)	11 x 11 (279 x 279)	12 (305)
	2N	12 (305)			26 1/2 (673)			11 x 24 1/2 (279 x 622)	
	3N	12 (305)			38 1/2 (978)			11 x 36 1/2 (279 x 927)	
	4N	12 (305)			50 1/2 (1283)			11 48 1/2 (279 x 1232)	
10	1N	–	3	15 (381)	15 (381)	4 (102)	14 1/2 (368)	13 x 13 (330 x 330)	14 (356)
	2N	13 (330)			29 1/2 (749)			13 x 27 1/2 (279 x 699)	
	3N	13 (330)			42 1/2 (1080)			13 x 40 1/2 (279 x 1029)	
	4N	13 (330)			55 1/2 (1410)			13 x 53 1/2 (279 x 1359)	
12	1N	–	3	17 (432)	17 (432)	4 (102)	16 1/8 (410)	15 x 15 (381 x 381)	18 (457)
	2N	15 (381)			33 1/2 (851)			15 x 31 1/2 (279 x 800)	
	3N	15 (381)			48 1/2 (1232)			15 x 46 1/2 (279 x 1181)	
	4N	15 (381)			63 1/2 (1613)			15 x 61 1/2 (279 x 1562)	

Inches are measured to the nearest 1/16" (2).

Notes:

1. Duct diameters are available 6" through 36" (76 - 914) in 2" (51) increments.
2. Round duct diameter must be specified on order.

SCHEDULE TYPE	Page 2 of 2 Dimensions are in inches (mm).			
PROJECT				
ENGINEER	**DATE**	**B SERIES**	**SUPERSEDES**	**DRAWING NO.**
CONTRACTOR	**4 - 22 - 21**	**RAN**	**3 - 7 - 19**	**RAN-6**

PERFORMANCE DATA:

MODELS: RANC, RANCC, RANCP, RANCPL

Nom. Size	Nozzle Velocity, FPM	573	860	1147	1433	1720	2007	2294
4 [1 Unit]	Airflow, CFM	50	75	100	125	150	175	200
	Total Pressure	0.036	0.081	0.144	0.225	0.324	0.441	0.576
	Noise Criteria	<20	<20	<20	25	30	35	39
	Throw	4-8-13	6-12-16	8-13-19	10-15-21	12-16-23	13-18-25	13-19-27
4 [2 Units]	Airflow, CFM	100	150	200	250	300	350	400
	Total Pressure	0.036	0.081	0.144	0.225	0.324	0.441	0.576
	Noise Criteria	<20	<20	21	28	33	38	42
	Throw	6-11-19	9-16-23	11-19-27	14-21-30	16-23-33	18-25-36	19-27-38
4 [3 Units]	Airflow, CFM	150	225	300	375	450	525	600
	Total Pressure	0.036	0.081	0.144	0.225	0.324	0.441	0.576
	Noise Criteria	<20	<20	23	30	35	40	44
	Throw	8-16-27	12-23-33	16-27-38	20-30-43	23-33-47	25-36-50	27-38-54
4 [4 Units]	Airflow, CFM	200	300	400	500	600	700	800
	Total Pressure	0.036	0.081	0.144	0.225	0.324	0.441	0.576
	Noise Criteria	<20	<20	24	31	36	41	45
	Throw	7-14-23	11-20-29	14-23-33	18-26-37	20-29-40	22-31-44	23-33-47
Nom. Size	**Nozzle Velocity, FPM**	**807**	**1028**	**1248**	**1468**	**1688**	**1908**	**2128**
5 [1 Unit]	Airflow, CFM	110	140	170	200	230	260	290
	Total Pressure	0.071	0.116	0.170	0.236	0.312	0.399	0.496
	Noise Criteria	<20	<20	23	28	32	36	39
	Throw	7-14-20	9-16-23	11-18-25	13-19-27	14-20-29	15-22-31	16-23-32
5 [2 Units]	Airflow, CFM	220	280	340	400	460	520	580
	Total Pressure	0.071	0.116	0.170	0.236	0.312	0.399	0.496
	Noise Criteria	<20	20	26	31	35	39	42
	Throw	10-20-28	13-23-32	16-25-35	18-27-38	20-29-41	22-31-43	23-32-46
5 [3 Units]	Airflow, CFM	330	420	510	600	690	780	870
	Total Pressure	0.071	0.116	0.170	0.236	0.312	0.399	0.496
	Noise Criteria	<20	22	27	32	37	40	44
	Throw	12-24-35	16-28-39	19-30-43	22-33-47	25-35-50	27-38-53	28-40-56
5 [4 Units]	Airflow, CFM	440	560	680	800	920	1040	1160
	Total Pressure	0.071	0.116	0.170	0.236	0.312	0.399	0.496
	Noise Criteria	<20	23	29	34	38	42	45
	Throw	14-28-40	18-32-45	22-35-50	26-38-54	29-41-58	31-43-61	32-46-65
Nom. Size	**Nozzle Velocity, FPM**	**714**	**917**	**1121**	**1352**	**1529**	**1733**	**1937**
6 [1 Unit]	Airflow, CFM	140	180	220	260	300	340	380
	Total Pressure	0.056	0.092	0.138	0.192	0.256	0.329	0.411
	Noise Criteria	<20	<20	21	26	30	34	38
	Throw	8-15-23	10-18-26	12-20-28	14-22-31	16-23-33	18-25-35	19-26-37
6 [2 Units]	Airflow, CFM	280	360	440	520	600	680	760
	Total Pressure	0.056	0.092	0.138	0.192	0.256	0.329	0.411
	Noise Criteria	<20	<20	24	29	33	37	41
	Throw	11-21-32	14-26-36	17-28-40	20-31-43	23-33-47	25-35-50	26-37-53

PERFORMANCE DATA:

MODELS: RANC, RANCC, RANCP, RANCPL

Nom. Size	Nozzle Velocity, FPM	714	917	1121	1352	1529	1733	1937
6 [3 Units]	Airflow, CFM	420	540	660	780	900	1020	1140
	Total Pressure	0.056	0.092	0.138	0.192	0.256	0.329	0.411
	Noise Criteria	<20	20	26	31	35	39	42
	Throw	13-26-39	17-31-44	21-35-49	24-38-53	28-40-57	30-43-61	32-45-64
6 [4 Units]	Airflow, CFM	560	720	880	1040	1200	1360	1520
	Total Pressure	0.056	0.092	0.138	0.192	0.256	0.329	0.411
	Noise Criteria	<20	21	27	32	36	40	44
	Throw	15-30-45	19-36-51	24-40-57	28-43-61	32-47-66	35-50-70	37-53-74
Nom. Size	Nozzle Velocity, FPM	573	717	860	1003	1147	1290	1433
8 [1 Unit]	Airflow, CFM	200	250	300	350	400	450	500
	Total Pressure	0.036	0.056	0.081	0.110	0.144	0.182	0.225
	Noise Criteria	<20	<20	<20	20	24	38	31
	Throw	8-16-27	10-20-30	12-23-33	14-25-36	16-27-38	18-29-40	20-30-43
8 [2 Units]	Airflow, CFM	400	500	600	700	800	900	1000
	Total Pressure	0.036	0.056	0.081	0.110	0.144	0.182	0.225
	Noise Criteria	<20	<20	<20	23	27	31	34
	Throw	11-23-38	14-29-43	17-33-47	20-36-50	23-38-54	26-40-57	29-43-60
8 [3 Units]	Airflow, CFM	600	750	900	1050	1200	1350	1500
	Total Pressure	0.036	0.056	0.081	0.110	0.144	0.182	0.225
	Noise Criteria	<20	<20	20	25	29	32	36
	Throw	14-28-47	18-35-52	21-40-57	25-44-62	28-47-66	32-49-70	35-52-74
8 [4 Units]	Airflow, CFM	800	1000	1200	1400	1600	1800	2000
	Total Pressure	0.036	0.056	0.081	0.110	0.144	0.182	0.225
	Noise Criteria	<20	<20	21	26	30	34	37
	Throw	16-32-54	20-40-60	24-47-66	28-50-71	32-54-76	36-57-81	40-60-85
Nom. Size	Nozzle Velocity, FPM	550	734	917	1101	1284	1468	1651
10 [1 Unit]	Airflow, CFM	300	400	500	600	700	800	900
	Total Pressure	0.033	0.059	0.092	0.133	0.181	0.236	0.299
	Noise Criteria	<20	<20	<20	25	30	34	37
	Throw	10-19-33	13-26-38	16-30-43	19-33-47	23-36-50	26-38-54	29-40-57
10 [2 Units]	Airflow, CFM	600	800	1000	1200	1400	1600	1800
	Total Pressure	0.033	0.059	0.092	0.133	0.181	0.236	0.299
	Noise Criteria	<20	<20	22	28	32	37	40
	Throw	14-27-47	18-37-54	23-43-60	27-47-66	32-50-71	37-54-76	40-57-81
10 [3 Units]	Airflow, CFM	900	1200	1500	1800	2100	2400	2700
	Total Pressure	0.033	0.059	0.092	0.133	0.181	0.236	0.299
	Noise Criteria	<20	<20	24	30	34	38	42
	Throw	17-34-57	22-45-66	28-52-74	34-57-81	39-62-87	45-66-93	49-70-99
10 [4 Units]	Airflow, CFM	1200	1600	2000	2400	2800	3200	3600
	Total Pressure	0.033	0.059	0.092	0.133	0.181	0.236	0.299
	Noise Criteria	<20	20	25	31	35	40	43
	Throw	19-39-66	26-52-76	32-60-85	39-66-93	45-71-101	52-76-108	57-81-114

PERFORMANCE DATA:

MODELS: RANC, RANCC, RANCP, RANCPL

Nom. Size	Nozzle Velocity, FPM	573	765	956	1147	1338	1529	1720
12 [1 Unit]	Airflow, CFM	450	600	750	900	1050	1200	1350
	Total Pressure	0.036	0.064	0.100	0.144	0.196	0.256	0.324
	Noise Criteria	<20	<20	22	28	32	39	40
	Throw	12-24-40	16-32-47	20-37-52	24-40-57	28-44-62	32-47-66	35-49-70
12 [2 Units]	Airflow, CFM	900	1200	1500	1800	2100	2400	2700
	Total Pressure	0.036	0.064	0.100	0.144	0.196	0.256	0.324
	Noise Criteria	<20	<20	25	31	35	39	43
	Throw	17-34-57	23-46-66	29-52-74	34-57-81	40-62-87	46-66-93	49-70-99
12 [3 Units]	Airflow, CFM	1350	1800	2250	2700	3150	3600	4050
	Total Pressure	0.036	0.064	0.100	0.144	0.196	0.256	0.324
	Noise Criteria	<20	21	27	32	37	41	45
	Throw	21-42-70	28-56-81	35-64-90	42-70-99	49-76-107	56-81-114	61-86-121
12 [4 Units]	Airflow, CFM	1800	2400	3000	3600	4200	4800	5400
	Total Pressure	0.036	0.064	0.100	0.144	0.196	0.256	0.324
	Noise Criteria	<20	22	28	34	38	42	46
	Throw	24-49-81	32-65-93	40-74-104	49-81-114	57-87-123	65-93-132	70-99-140
Nom. Size	Nozzle Velocity, FPM	562	749	936	1123	1311	1498	1685
14 [1 Unit]	Airflow, CFM	600	800	1000	1200	1400	1600	1800
	Total Pressure	0.035	0.061	0.096	0.138	0.188	0.246	0.311
	Noise Criteria	<20	<20	23	28	33	37	41
	Throw	14-28-47	18-37-54	23-43-60	28-47-66	32-50-71	37-54-76	40-57-81
14 [2 Units]	Airflow, CFM	1200	1600	2000	2400	2800	3200	3600
	Total Pressure	0.035	0.061	0.096	0.138	0.188	0.246	0.311
	Noise Criteria	<20	20	26	31	36	40	44
	Throw	20-39-66	26-52-76	33-60-85	39-66-93	46-71-101	52-76-108	57-81-114
14 [3 Units]	Airflow, CFM	1800	2400	3000	3600	4200	4800	5400
	Total Pressure	0.035	0.061	0.096	0.138	0.188	0.246	0.311
	Noise Criteria	<20	22	28	33	38	42	45
	Throw	24-48-81	32-64-93	40-74-104	48-81-114	56-87-123	64-93-132	70-99-140
14 [4 Units]	Airflow, CFM	2400	3200	4000	4800	5600	6400	7200
	Total Pressure	0.035	0.061	0.096	0.138	0.188	0.246	0.311
	Noise Criteria	<20	23	29	34	39	43	47
	Throw	28-55-93	37-74-108	46-85-120	55-93-132	65-101-143	74-108-152	81-114-162
Nom. Size	Nozzle Velocity, FPM	538	717	896	1075	1245	1433	1613
16 [1 Unit]	Airflow, CFM	750	1000	1250	1500	1750	2000	2250
	Total Pressure	0.032	0.056	0.088	0.127	0.172	0.225	0.285
	Noise Criteria	<20	<20	23	28	33	37	40
	Throw	15-30-52	20-40-60	25-48-67	30-52-74	35-56-80	40-60-85	45-64-90
16 [2 Units]	Airflow, CFM	1500	2000	2500	3000	3500	4000	4500
	Total Pressure	0.032	0.056	0.088	0.127	0.172	0.225	0.285
	Noise Criteria	<20	20	26	31	36	40	43
	Throw	21-43-74	29-57-85	36-67-95	43-74-104	50-80-113	57-85-120	64-90-128

PERFORMANCE DATA:

MODELS: RANC, RANCC, RANCP, RANCPL

Nom. Size	Nozzle Velocity, FPM	538	717	896	1075	1245	1433	1613
16 [3 Units]	Airflow, CFM	2250	3000	3750	4500	5250	6000	6750
	Total Pressure	0.032	0.056	0.088	0.127	0.172	0.225	0.285
	Noise Criteria	<20	22	27	33	38	42	45
	Throw	26-53-90	35-70-104	44-82-117	53-90-128	61-98-138	70-104-148	78-111-157
16 [4 Units]	Airflow, CFM	3000	4000	5000	6000	7000	8000	9000
	Total Pressure	0.032	0.056	0.088	0.127	0.172	0.225	0.285
	Noise Criteria	<20	23	29	34	39	43	46
	Throw	30-61-104	40-81-120	51-95-135	61-104-148	71-113-159	81-120-170	90-128-181
Nom. Size	Nozzle Velocity, FPM	566	736	906	1076	1246	1416	1586
18 [1 Unit]	Airflow, CFM	1000	1300	1600	1900	2200	2500	2800
	Total Pressure	0.035	0.059	0.090	0.127	0.170	0.219	0.275
	Noise Criteria	<20	<20	<20	29	34	38	41
	Throw	18-36-60	23-47-69	29-54-76	34-59-83	40-63-89	45-67-95	50-71-101
18 [2 Units]	Airflow, CFM	2000	2600	3200	3800	4400	5000	5600
	Total Pressure	0.035	0.059	0.090	0.127	0.170	0.219	0.275
	Noise Criteria	<20	22	27	32	34	41	44
	Throw	25-51-85	33-66-97	41-76-108	48-83-117	56-89-126	64-95-135	71-101-143
18 [3 Units]	Airflow, CFM	3000	3900	4800	5700	6600	7500	8400
	Total Pressure	0.035	0.059	0.090	0.127	0.170	0.219	0.275
	Noise Criteria	<20	24	29	34	38	42	46
	Throw	31-62-104	40-81-119	50-93-132	59-102-144	68-109-155	78-117-165	87-123-175
18 [4 Units]	Airflow, CFM	4000	5200	6400	7600	8800	10000	11200
	Total Pressure	0.035	0.059	0.090	0.127	0.170	0.219	0.275
	Noise Criteria	<20	25	30	35	40	44	47
	Throw	36-72-120	47-93-137	57-108-152	68-117-166	79-126-179	90-135-190	101-143-202
Nom. Size	Nozzle Velocity, FPM	458	596	733	871	1008	1146	1283
20 [1 Unit]	Airflow, CFM	1000	1300	1600	1900	2200	2500	2800
	Total Pressure	0.025	0.042	0.064	0.090	0.120	0.160	0.200
	Noise Criteria	<20	<20	<20	23	26	28	31
	Throw	16-33-60	21-42-69	26-52-76	31-59-83	36-63-89	41-67-95	46-71-101
Nom. Size	Nozzle Velocity, FPM	454	606	758	909	1061	1212	1364
22 [1 Unit]	Airflow, CFM	1200	1600	2000	2400	2800	3200	3600
	Total Pressure	0.025	0.042	0.068	0.096	0.130	0.170	0.220
	Noise Criteria	<20	<20	21	25	30	34	39
	Throw	17-34-66	23-46-76	29-57-85	34-66-93	40-71-101	46-76-108	51-81-114
Nom. Size	Nozzle Velocity, FPM	477	636	796	955	1114	1273	1432
24 [1 Unit]	Airflow, CFM	1500	2000	2500	3000	3500	4000	4500
	Total Pressure	0.028	0.046	0.070	0.110	0.140	0.190	0.230
	Noise Criteria	<20	<20	22	27	32	37	42
	Throw	20-40-74	27-53-85	33-67-95	40-74-104	47-80-113	53-85-120	60-90-128

Performance Notes:

1. **AIRFLOW CFM:** Standard air density and isothermal conditions.

2. **STATIC PRESSURE:** Inches of water gauge required.

3. **NOISE CRITERIA:** Noise Criteria [NC] curve which is not exceeded with a Room Attenuation of 10 dB and based on Sound Power Level, re 10^{-12} watts.

4. **THROW:** Projection distance in feet from outlet at which the maximum velocity has reduced to 200, 100 and 50 fpm respectively.

5. **NOZZLE VELOCITY:** Nozzle Discharge Velocity in feet per minute [fpm].

6. Data derived from tests conducted in accordance with ANSI/ ASHRAE Standard 70 – 2006.

PERFORMANCE DATA:

MODEL RANF [FIXED - NO CORE]

Nominal Size	Duct Velocity [fpm] Velocity Pressure	400 0.010	600 0.022	800 0.040	1000 0.062	1200 0.090	1400 0.122	1600 0.160
3	Airflow, CFM	20	29	39	49	59	69	79
	Total Pressure	0.012	0.026	0.047	0.074	0.106	0.144	0.188
	Noise Criteria	<15	<15	<15	<15	17	21	25
	Throw	1-3-7	2-5-10	3-7-12	5-9-13	6-10-14	6-11-16	7-12-17
4	Airflow, CFM	35	52	70	87	105	122	140
	Total Pressure	0.012	0.026	0.047	0.076	0.106	0.144	0.188
	Noise Criteria	<15	<15	<15	19	23	27	31
	Throw	2-4-10	3-7-14	4-10-16	6-12-18	7-14-19	9-15-21	10-13-18
5	Airflow, CFM	55	82	109	136	164	191	218
	Total Pressure	0.012	0.026	0.047	0.074	0.106	0.144	0.188
	Noise Criteria	<15	<15	16	22	27	31	35
	Throw	2-5-11	3-6-15	5-10-20	8-13-22	9-15-24	11-18-26	12-16-23
6	Airflow, CFM	79	118	157	196	236	275	314
	Total Pressure	0.012	0.026	0.047	0.074	0.106	0.144	0.188
	Noise Criteria	<15	<15	20	26	31	35	39
	Throw	4-8-15	5-11-20	6-15-24	9-18-26	11-20-29	13-22-31	15-24-33
8	Airflow, CFM	140	210	280	350	420	490	560
	Total Pressure	0.012	0.029	0.052	0.080	0.116	0.158	0.207
	Noise Criteria	<15	<15	<15	15	20	25	29
	Throw	5-11-23	8-17-28	11-23-32	14-25-36	17-28-39	20-30-42	23-32-45
10	Airflow, CFM	218	327	436	545	654	763	872
	Total Pressure	0.012	0.029	0.052	0.080	0.116	0.158	0.207
	Noise Criteria	<15	<15	<15	17	22	27	31
	Throw	7-14-28	11-21-34	14-28-40	18-31-44	21-34-49	25-37-53	28-40-56
12	Airflow, CFM	314	471	628	785	942	1100	1256
	Total Pressure	0.012	0.029	0.052	0.08	0.116	0.159	0.207
	Noise Criteria	<15	<15	<15	17	23	27	32
	Throw	8-17-34	13-25-41	17-34-48	21-38-53	25-41-58	30-45-63	38-54-76
14	Airflow, CFM	428	641	855	1069	1283	1497	1710
	Total Pressure	0.012	0.029	0.052	0.08	0.117	0.158	0.207
	Noise Criteria	<15	<15	<15	19	24	29	33
	Throw	9-20-39	15-30-48	20-39-56	25-44-62	30-48-68	35-52-74	39-56-79
16	Airflow, CFM	558	838	1117	1396	1675	1954	2234
	Total Pressure	0.012	0.029	0.052	0.08	0.117	0.158	0.207
	Noise Criteria	<15	<15	<15	19	25	30	34
	Throw	11-23-45	17-34-55	23-45-64	28-50-71	34-55-78	39-60-84	45-64-90
18	Airflow, CFM	707	1060	1414	1767	2120	2474	2827
	Total Pressure	0.013	0.029	0.052	0.08	0.117	0.158	0.207
	Noise Criteria	<15	<15	15	22	28	32	36
	Throw	12-25-51	19-38-62	25-51-72	32-57-80	38-62-88	44-67-95	51-72-101
20	Airflow, CFM	872	1309	1745	2181	2617	3053	3490
	Total Pressure	0.013	0.029	0.052	0.08	0.117	0.158	0.207
	Noise Criteria	<15	<15	17	23	28	33	38
	Throw	14-28-56	21-43-69	28-56-80	36-63-89	43-69-97	50-74-105	56-80-113
22	Airflow, CFM	1056	1583	2111	2639	3167	3695	4222
	Total Pressure	0.012	0.029	0.052	0.08	0.117	0.158	0.207
	Noise Criteria	<15	<15	16	22	28	34	36
	Throw	15-30-60	23-45-76	30-60-88	38-69-58	45-76-107	53-82-116	60-88-124
24	Airflow, CFM	1256	1884	2513	3141	3769	4397	5026
	Total Pressure	0.012	0.029	0.052	0.08	0.117	0.158	0.207
	Noise Criteria	<15	<15	18	23	29	34	38
	Throw	16-33-67	25-50-83	34-67-95	42-75-107	50-83-117	59-89-126	67-95-135

PERFORMANCE DATA:

MODEL RANF [FIXED - NO CORE]

Performance Notes:

1. **AIRFLOW CFM:** Standard air density and isothermal conditions.
2. **STATIC PRESSURE:** Inches of water gauge required.
3. **NOISE CRITERIA:** Noise Criteria [NC] curve which is not exceeded with a Room Attenuation of 10 dB and based on Sound Power Level, re 10^{-12} watts.
4. **THROW:** Projection distance in feet from outlet at which the maximum velocity has reduced to 200, 100 and 50 fpm respectively.
5. **NOZZLE VELOCITY:** Nozzle Discharge Velocity in feet per minute [fpm].
6. Data derived from tests conducted in accordance with ANSI/ ASHRAE Standard 70 – 2006.

PERFORMANCE DATA:

MODEL RANR [WITH RING DIRECTIONAL CORE]

Nominal Size	Duct Velocity [fpm] Velocity Pressure	400 0.010	600 0.022	800 0.040	1000 0.062	1200 0.090	1400 0.122	1600 0.160
3	Airflow, CFM	20	29	39	49	59	69	79
	Total Pressure	0.016	0.036	0.064	0.100	0.144	0.196	0.256
	Noise Criteria	<15	<15	<15	16	21	25	29
	Throw	1-3-7	2-5-10	3-7-12	5-9-13	6-10-14	6-11-16	7-12-17
4	Airflow, CFM	35	52	70	87	105	122	140
	Total Pressure	0.016	0.036	0.064	0.100	0.144	0.196	0.256
	Noise Criteria	<15	<15	16	22	28	32	36
	Throw	2-4-10	3-7-14	4-10-16	6-12-18	7-14-19	9-15-21	10-13-18
5	Airflow, CFM	55	82	109	136	164	191	218
	Total Pressure	0.016	0.036	0.064	0.100	0.144	0.196	0.256
	Noise Criteria	<15	<15	21	28	33	37	41
	Throw	2-5-11	3-6-15	5-10-20	8-13-22	9-15-24	11-18-26	12-16-23
6	Airflow, CFM	79	118	157	196	236	275	314
	Total Pressure	0.016	0.036	0.064	0.100	0.144	0.196	0.256
	Noise Criteria	<15	17	25	32	37	42	46
	Throw	4-8-15	5-11-20	6-15-24	9-18-26	11-20-29	13-22-31	15-24-33
8	Airflow, CFM	140	210	280	350	420	490	560
	Total Pressure	0.017	0.039	0.07	0.109	0.157	0.214	0.28
	Noise Criteria	<15	<15	15	20	25	30	34
	Throw	5-11-23	8-17-28	11-23-32	14-25-36	17-28-39	20-30-42	23-32-45
10	Airflow, CFM	218	327	436	545	654	763	872
	Total Pressure	0.017	0.039	0.07	0.109	0.157	0.214	0.28
	Noise Criteria	<15	<15	17	22	27	32	36
	Throw	7-14-28	11-21-34	14-28-40	18-31-44	21-34-49	25-37-53	28-40-56
12	Airflow, CFM	314	471	628	785	942	1100	1256
	Total Pressure	0.017	0.039	0.07	0.109	0.157	0.215	0.28
	Noise Criteria	<15	<15	19	23	29	33	38
	Throw	8-17-34	13-25-41	17-34-48	21-38-53	25-41-58	30-45-63	38-54-76
14	Airflow, CFM	428	641	855	1069	1283	1497	1710
	Total Pressure	0.017	0.039	0.07	0.109	0.158	0.214	0.28
	Noise Criteria	<15	15	20	25	30	35	39
	Throw	9-20-39	15-30-48	20-39-56	25-44-62	30-48-68	35-52-74	39-56-79
16	Airflow, CFM	558	838	1117	1396	1675	1954	2234
	Total Pressure	0.017	0.039	0.07	0.109	0.158	0.214	0.28
	Noise Criteria	<15	15	20	25	31	36	40
	Throw	11-23-45	17-34-55	23-45-64	28-50-71	34-55-78	39-60-84	45-64-90
18	Airflow, CFM	707	1060	1414	1767	2120	2474	2827
	Total Pressure	0.018	0.039	0.07	0.109	0.158	0.215	0.28
	Noise Criteria	<15	<15	20	27	33	37	41
	Throw	12-25-51	19-38-62	25-51-72	32-57-80	38-62-88	44-67-95	51-72-101
20	Airflow, CFM	872	1309	1745	2181	2617	3053	3490
	Total Pressure	0.018	0.041	0.073	0.114	0.164	0.223	0.292
	Noise Criteria	<15	16	22	28	33	38	43
	Throw	14-28-56	21-43-69	28-56-80	36-63-89	43-69-97	50-74-105	56-80-113
22	Airflow, CFM	1056	1583	2111	2639	3167	3695	4222
	Total Pressure	0.016	0.035	0.063	0.098	0.141	0.192	0.25
	Noise Criteria	<15	15	21	27	33	37	41
	Throw	15-30-60	23-45-76	30-60-88	38-69-58	45-76-107	53-82-116	60-88-124
24	Airflow, CFM	1256	1884	2513	3141	3769	4397	5026
	Total Pressure	0.017	0.038	0.067	0.105	0.151	0.206	0.269
	Noise Criteria	<15	17	23	28	34	39	43
	Throw	16-33-67	25-50-83	34-67-95	42-75-107	50-83-117	59-89-126	67-95-135

PERFORMANCE DATA:

MODEL RANR [WITH RING DIRECTIONAL CORE]

Performance Notes:

1. **AIRFLOW CFM:** Standard air density and isothermal conditions.
2. **STATIC PRESSURE:** Inches of water gauge required.
3. **NOISE CRITERIA:** Noise Criteria [NC] curve which is not exceeded with a Room Attenuation of 10 dB and based on Sound Power Level, re 10^{-12} watts.
4. **THROW:** Projection distance in feet from outlet at which the maximum velocity has reduced to 200, 100 and 50 fpm respectively.
5. **NOZZLE VELOCITY:** Nozzle Discharge Velocity in feet per minute [fpm].
6. Data derived from tests conducted in accordance with ANSI/ ASHRAE Standard 70 – 2006.