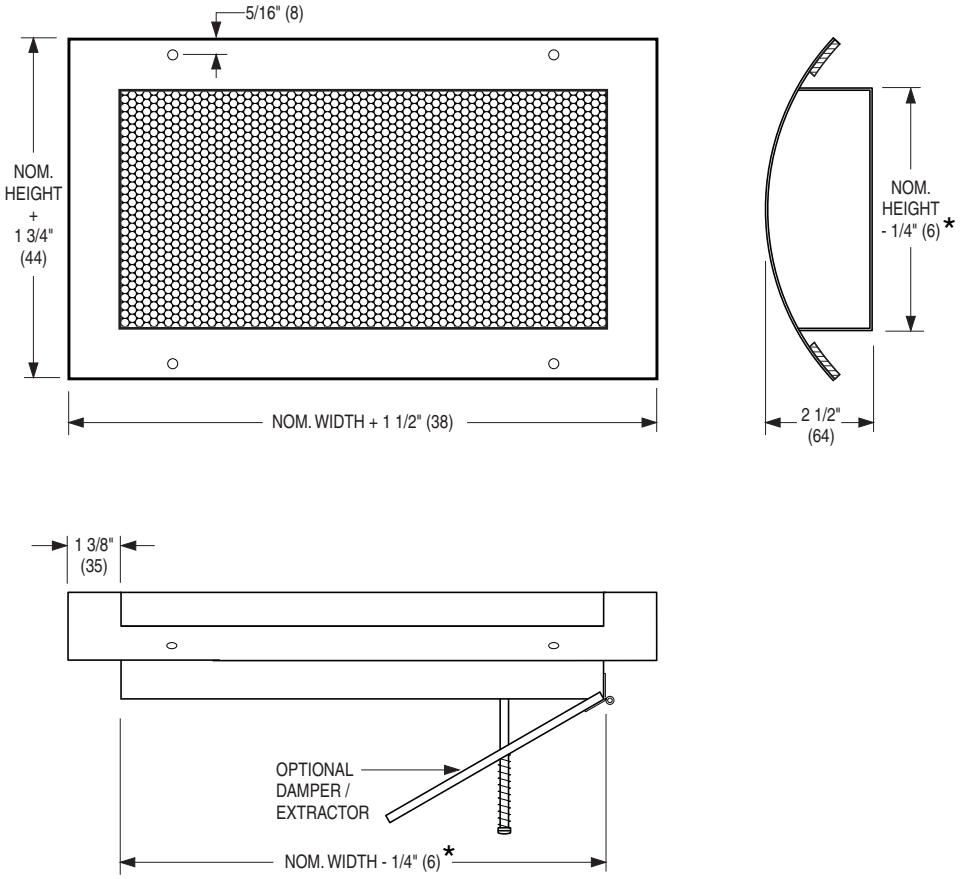
ALUMINUM CURVED SPIRAL DUCT GRILLES
TRUE FULL RADIUS DESIGN
PERFORATED FACE • RETURN
MODELS: 51PRC

❑ **MODEL 51PRC**
Perforated Face



Available Sizes

Grille Width Min. - Max.	Grille Height	Duct Diameter Min. - Max.
10 – 48 (254 – 1219)	3 (76)	6 – 36 (152 – 914)
10 – 48 (254 – 1219)	4 (102)	6 – 36 (152 – 914)
10 – 48 (254 – 1219)	6 (152)	8 – 36 (203 – 914)
10 – 48 (254 – 1219)	8 (203)	10 – 36 (254 – 914)
10 – 48 (254 – 1219)	10 (254)	12 – 36 (305 – 914)
12 – 36 (305 – 914)	12 (305)	14 – 36 (356 – 914)

Duct diameters in even sizes only. Grilles available in nominal 1" (25) increments in width.

* Opening = Nominal + 1/4" (6) with DEX Damper/Extractor option.

Important:

Grilles are custom fabricated to fit only a single specified duct diameter.

DESCRIPTION:

1. Nailor's unique curved spiral duct grille design offers an architecturally superior appearance and saves installation time and money by directly mounting to the duct and hence eliminating the need to fabricate stand-off saddles for standard grilles. The 51PRC may be used for supply and/or return air applications.
2. Construction: Unique architectural single piece aluminum frame design is rolled to match required duct radius, eliminating unsightly non-aligned butted corners. Perforated face has 3/16" (5) dia. holes on staggered 1/4" (6) centers. 51% free area.
3. A thick foam gasket is provided as standard to ensure a tight seal to duct.
4. Standard fastening is Type A screw holes.
5. Standard finish is AW Appliance White.

Options:

❑ DEX Damper/Extractor* (Air scoop) (For supply air applications).

Finish:

❑ AL Aluminum.
❑ MI Mill.
❑ SP Special. Specify _____.

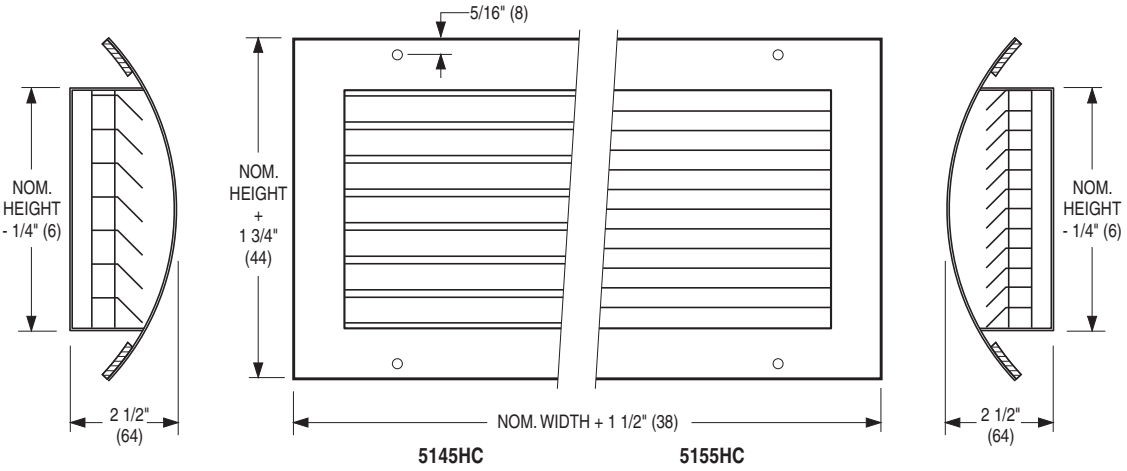
SCHEDULE TYPE	Dimensions are in inches (mm).			
PROJECT				
ENGINEER	**DATE**	**B SERIES**	**SUPERSEDES**	**DRAWING NO.**
CONTRACTOR	**9 - 22 - 11**	**5100C**	**4 - 12 - 11**	**5100C-3**

ALUMINUM CURVED SPIRAL DUCT RETURN GRILLES

TRUE FULL RADIUS DESIGN

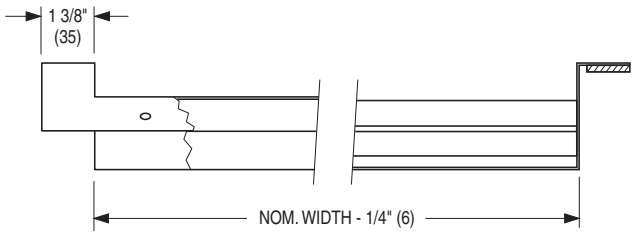
FIXED BLADES • 3/4" (19) OR 1/2" (13) SPACING

MODELS: 5145HC AND 5155HC



❑ **MODEL 5145HC**
Fixed 45° Deflection
Horizontal Blades on
3/4" (19) centers

❑ **MODEL 5155HC**
Fixed 45° Deflection
Horizontal Blades on
1/2" (13) centers



Available Sizes

Grille Width Min. - Max.	Grille Height	Duct Diameter Min. - Max.
10 – 48 (254 – 1219)	3 (76)	6 – 36 (152 – 914)
10 – 48 (254 – 1219)	4 (102)	6 – 36 (152 – 914)
10 – 48 (254 – 1219)	6 (152)	8 – 36 (203 – 914)
10 – 48 (254 – 1219)	8 (203)	10 – 36 (254 – 914)
10 – 48 (254 – 1219)	10 (254)	12 – 36 (305 – 914)
12 – 36 (305 – 914)	12 (305)	14 – 36 (356 – 914)

Duct diameters in even sizes only. Grilles available in nominal 1" (25) increments in width.

Important:

Grilles are custom fabricated to fit only a single specified duct diameter.

DESCRIPTION:

1. Nailor's unique curved spiral duct grille design offers an architecturally superior appearance and saves installation time and money by directly mounting to the duct and hence eliminating the need to fabricate stand-off saddles for standard grilles.
2. Construction: architectural. Unique frame design is rolled to match required duct radius, eliminating unsightly non-aligned butted corners. A single set of extruded aluminum "tear drop" blades on 3/4" (19) or 1/2" (13) centers are fixed at 45 degrees and utilize a concealed rear reinforcing mullion [max.16" (406) centers] and a single blade pack that provides a continuous louvered appearance. Model 5155HC provides "no see through" when viewed from straight ahead.
3. A thick foam gasket is provided as standard to ensure a tight seal to duct.
4. Standard fastening is Type A screw holes.
5. Standard finish is AW Appliance White.

Options:

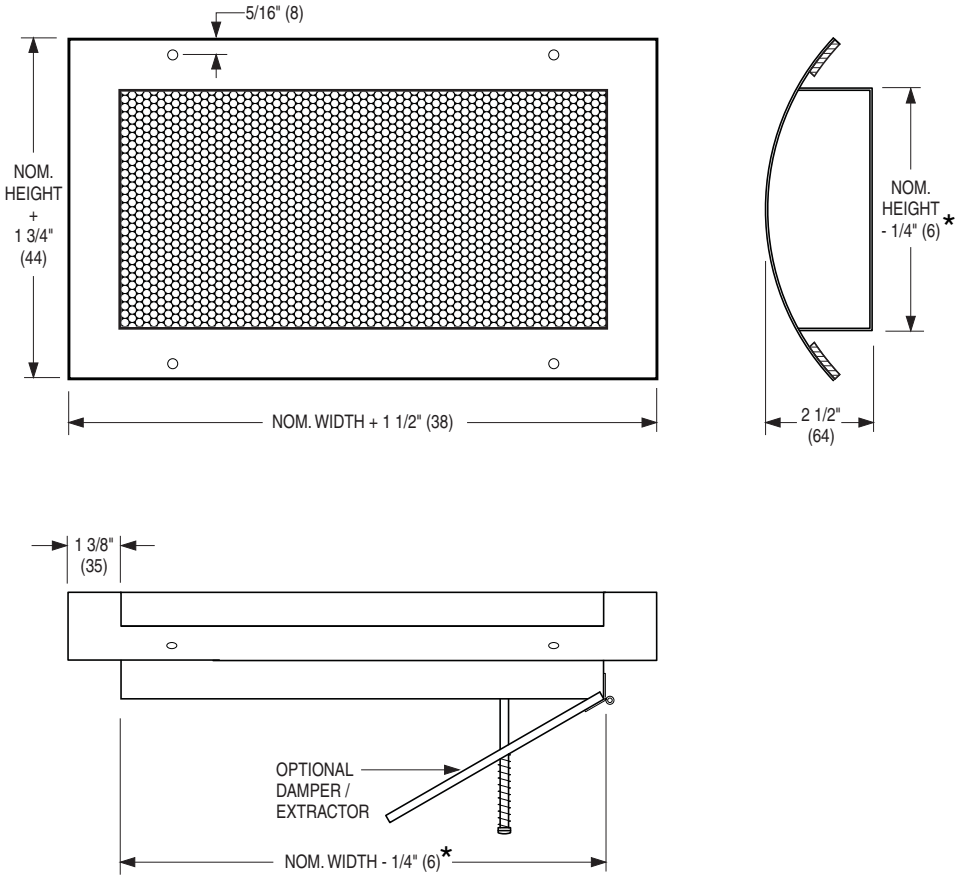
Finish:

❑ AL Aluminum.
❑ MI Mill.
❑ SP Special. Specify _____.

SCHEDULE TYPE	Dimensions are in inches (mm).			
PROJECT				
ENGINEER	**DATE**	**B SERIES**	**SUPERSEDES**	**DRAWING NO.**
CONTRACTOR	**4 - 12 - 11**	**5100C**	**NEW**	**5100C-4**

STEEL CURVED SPIRAL DUCT GRILLES
TRUE FULL RADIUS DESIGN
PERFORATED FACE • RETURN
MODELS: 61PRC

❑ **MODEL 61PRC**
Perforated Face



Available Sizes

Grille Width Min. - Max.	Grille Height	Duct Diameter Min. - Max.
10 – 48 (254 – 1219)	3 (76)	6 – 36 (152 – 914)
10 – 48 (254 – 1219)	4 (102)	6 – 36 (152 – 914)
10 – 48 (254 – 1219)	6 (152)	8 – 36 (203 – 914)
10 – 48 (254 – 1219)	8 (203)	10 – 36 (254 – 914)
10 – 48 (254 – 1219)	10 (254)	12 – 36 (305 – 914)
12 – 36 (305 – 914)	12 (305)	14 – 36 (356 – 914)

Duct diameters in even sizes only. Grilles available in nominal 1" (25) increments in width.

* Opening = Nominal + 1/4" (6) with DEX Damper/Extractor option.

Important:

Grilles are custom fabricated to fit only a single specified duct diameter.

DESCRIPTION:

1. Nailor's unique curved spiral duct grille design offers an architecturally superior appearance and saves installation time and money by directly mounting to the duct and hence eliminating the need to fabricate stand-off saddles for standard grilles. The 61PRC may be used for supply and/or return air applications.
2. Construction: Unique architectural single piece corrosion-resistant steel frame design is rolled to match required duct radius, eliminating unsightly non-aligned butted corners. Perforated face has 3/16" (5) dia. holes on staggered 1/4" (6) centers. 51% free area.
3. A thick foam gasket is provided as standard to ensure a tight seal to duct.
4. Standard fastening is Type A screw holes.
5. Standard finish is AW Appliance White.

Options:

❑ DEX Damper/Extractor* (Air scoop) (For supply air applications).

Finish:

❑ AL Aluminum.
❑ MI Mill.
❑ SP Special. Specify _____.

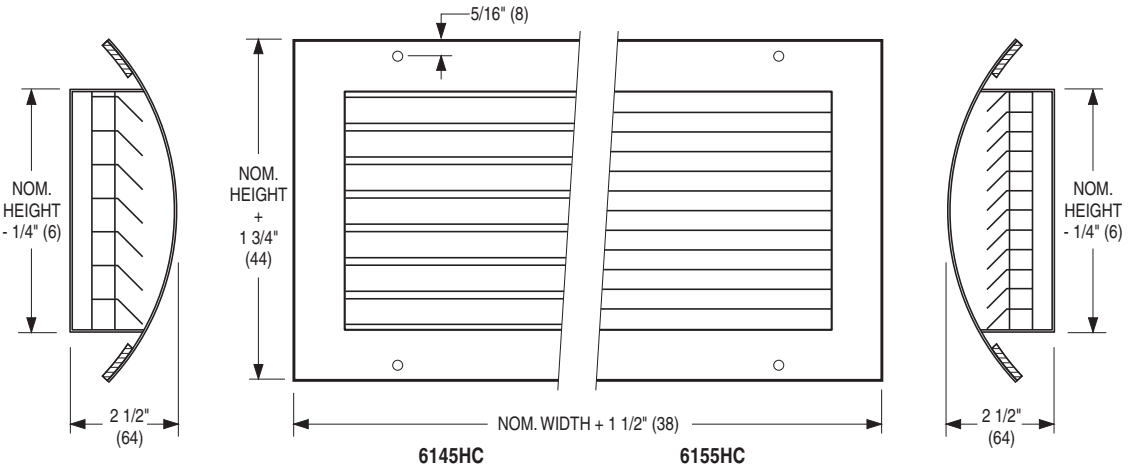
SCHEDULE TYPE	Dimensions are in inches (mm).			
PROJECT				
ENGINEER	**DATE**	**B SERIES**	**SUPERSEDES**	**DRAWING NO.**
CONTRACTOR	**9 - 22 - 11**	**6100C**	**4 - 12 - 11**	**6100C-3**

STEEL CURVED SPIRAL DUCT RETURN GRILLES

TRUE FULL RADIUS DESIGN

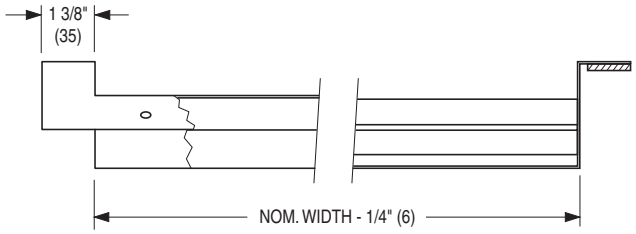
FIXED BLADES • 3/4" (19) OR 1/2" (13) SPACING

MODELS: 6145HC AND 6155HC



❑ **MODEL 6145HC**
Fixed 45° Deflection
Horizontal Blades on
3/4" (19) centers

❑ **MODEL 6155HC**
Fixed 45° Deflection
Horizontal Blades on
1/2" (13) centers



Available Sizes

Grille Width Min. - Max.	Grille Height	Duct Diameter Min. - Max.
10 – 48 (254 – 1219)	3 (76)	6 – 36 (152 – 914)
10 – 48 (254 – 1219)	4 (102)	6 – 36 (152 – 914)
10 – 48 (254 – 1219)	6 (152)	8 – 36 (203 – 914)
10 – 48 (254 – 1219)	8 (203)	10 – 36 (254 – 914)
10 – 48 (254 – 1219)	10 (254)	12 – 36 (305 – 914)
12 – 36 (305 – 914)	12 (305)	14 – 36 (356 – 914)

Duct diameters in even sizes only. Grilles available in nominal 1" (25) increments in width.

Important:

Grilles are custom fabricated to fit only a single specified duct diameter.

DESCRIPTION:

1. Nailor's unique curved spiral duct grille design offers an architecturally superior appearance and saves installation time and money by directly mounting to the duct and hence eliminating the need to fabricate stand-off saddles for standard grilles.
2. Construction: architectural. Unique frame design is rolled to match required duct radius, eliminating unsightly non-aligned butted corners. A single set of roll-formed blades on 3/4" (19) or 1/2" (13) centers are fixed at 45 degrees and utilize a concealed rear reinforcing mullion [max.16" (406) centers] and a single blade pack that provides a continuous louvered appearance. Model 6155HC provides "no see through" when viewed from straight ahead.
3. A thick foam gasket is provided as standard to ensure a tight seal to duct.
4. Standard fastening is Type A screw holes.
5. Standard finish is AW Appliance White.

Options:

Finish:

❑ AL Aluminum.
❑ MI Mill.
❑ SP Special. Specify _____.

SCHEDULE TYPE	Dimensions are in inches (mm).			
PROJECT				
ENGINEER	**DATE**	**B SERIES**	**SUPERSEDES**	**DRAWING NO.**
CONTRACTOR	**4 - 12 - 11**	**6100C**	**2 - 1 - 11**	**6100C-4**

Nailor Industries Inc.

Standard and Optional Finishes For Grilles and Diffusers

Nailor offers a selection of standard colors and finishes available on our grilles, registers and diffusers. For painted finishes, our state-of-the-art paint systems provide environmentally friendly finishing solutions with uniform coverage and coating thickness. The result is an exceptionally durable finish that resists scratching, corrosion and general wear. Additional facilities for special requirements, as well as a selection of anodized or brushed finishes, complete our ability to provide unmatched beauty and durability for any application.

NAILOR POWDER COAT PROPERTIES

FILM THICKNESS	2.0 to 3.0 mils
HARDNESS	2 H
IMPACT RESISTANCE	Direct: 160 inch - lbs. Reverse 160 inch - lbs.
SALT SPRAY	1000 hours

ELECTROCOATING PROPERTIES

FILM THICKNESS	.8 to 1.2 mils
HARDNESS	HB TO H
IMPACT RESISTANCE	80 inch - lbs
SALT SPRAY	100 hours

POWDER COAT

Nailor's powder coat is a high-tech thermosetting polyester powder coating with superior physical properties that provide excellent color and gloss retention. The finish offers extreme durability and hardness that resists scratching, chipping and general wear. Surface preparation includes degreasing and a chemical cleaning followed by a clean rinse before a final powder coat finish is applied and baked. The environmentally friendly Nailor powder coat system assures uniform coverage and color consistency resulting in a long lasting superior finish. Colors, including simulated anodizing, which is far more economical than color anodizing, can be selected from Nailor's standard color chart or non-standard colors and can be matched from sample chips provided to Nailor.

ELECTROCOATING

E-Coat is an environmentally friendly coating that provides complete coverage and a wide range of performance properties, formulated to meet corrosion, durability and other performance specifications. Electrocoating is a highly automated process in which paint is electrically deposited onto a metal foundation. Film build thickness is uniform and overall application efficiencies are in excess of 90%. Paint is consistent on all part-to-part surfaces, preventing sags, runs or drips. E-Coat offers flexibility, better first yield pass and quicker production times compared to other forms of paint applications. Electrocoating is an excellent solution that offers superior properties and uniform finish.

CLEAR ANODIZING (Aluminum products only)

Clear anodizing is a clear oxide coating that exemplifies an aluminum surface's natural oxide coating producing a hard, scratch resistant surface that is resistant to general wear and mild chemicals. The process provides a natural looking, virtually maintenance free finish that will endure for many years.

COLOR ANODIZING (Aluminum products only)

Color anodizing is an electrolytic process where, after standard anodizing procedures, colored metallic pigments penetrate the oxide surface pores producing a corrosion resistant, colorfast finish. The process results in a natural metallic appearance that requires little maintenance.

BRUSHED AND CLEAR COAT

Available on specific aluminum products (consult applicable product page for availability). Surface is brushed to achieve a scratch finish texture before being degreased and chemically cleaned. A clear lacquer coating is then applied to provide a durable protective finish.

#4 BRUSHED SATIN POLISHED (Stainless Steel products only)

Surface is polished to ASTM A480 #4 standard to achieve a bright durable finish that is resistant to mild chemicals and corrosion. A final coating is not required due to the inherent anti-corrosion properties of the stainless steel.

PRIME COAT

Prime coat provides a stable base for painting in the field. Surface pretreatment includes degreasing and a chemical cleaning before an alkyd prime coat is applied. After a thorough cleaning for dust, etc. that can contaminate the final finish and cause premature flaking or peeling, finish coat should be field applied as soon as possible.

PAINT PREPARED ALUMINUM (Aluminum products only)

Allows for field applied paint. Surface preparation includes degreasing and a chemical cleaning followed by a clean rinse. Finish coat should be field applied as soon as possible.

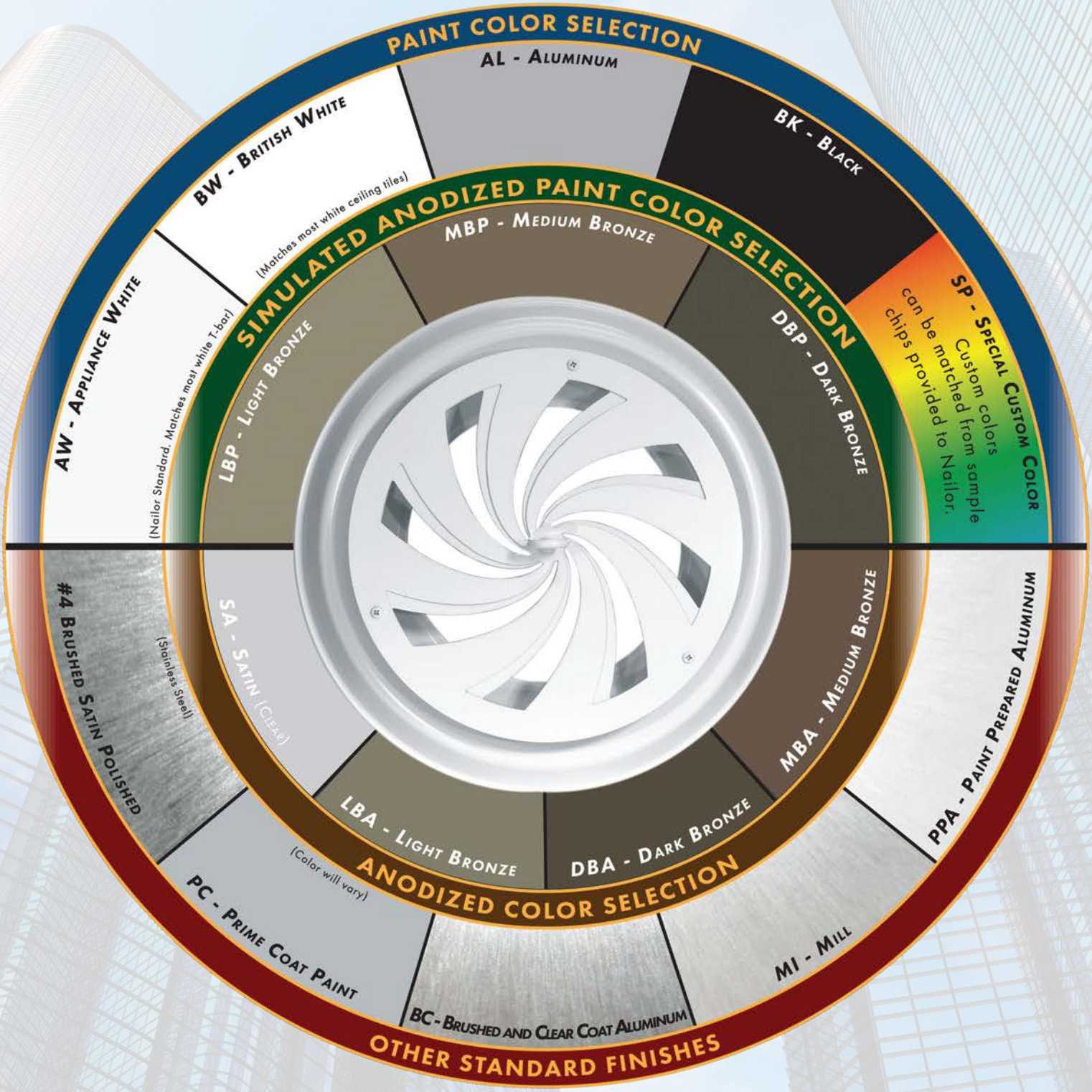
MILL FINISH

Surface is left untreated and requires cleaning, degreasing, etc. in the field before final finish can be applied if required.

Nailor® Industries Inc.

Standard and Optional Finishes For Grilles and Diffusers

The following standard colors and finishes are available on applicable Nailor air distribution products. Consult individual product pages for availability



The pictured finishes have been represented as best as possible within printing limitations. However, actual finish may vary. Contact your Nailor representative for a color chip sample on the material specified for a more accurate representation.

DBK - Black (for registers ordered with factory mounted dampers) - ***BA*** - Perforated Diffusers (4300 series only) Appliance White (AW) face with black back pan and pattern controllers.

PERFORMANCE DATA:

CURVED SPIRAL DUCT RETURN GRILLES • 6100C/5100C SERIES

MODELS: 6145HC, 6155HC, 5145HC, 5155HC

Listed Duct Size (inches)	Alternate Size (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity Velocity Pressure Neg. Static Pressure	100 .001 .003	200 .002 .013	300 .006 .028	400 .010 .050	500 .016 .078	600 .022 .113	700 .031 .153	800 .040 .200	900 .050 .253	1000 .062 .313
10 x 3		0.15	0.18	**CFM**	**15**	**30**	**45**	**60**	**75**	**90**	**105**	**120**	**135**	**150**
				Noise Criteria	–	–	–	–	–	15	20	24	28	32
12 x 3		0.19	0.22	**CFM**	**19**	**38**	**57**	**76**	**95**	**114**	**133**	**152**	**171**	**190**
				Noise Criteria	–	–	–	–	–	15	20	24	28	32
10 x 4	14 x 3	0.22	0.25	**CFM**	**22**	**44**	**66**	**88**	**110**	**132**	**154**	**176**	**198**	**220**
				Noise Criteria	–	–	–	–	–	16	21	25	29	33
12 x 4	16 x 3	0.27	0.29	**CFM**	**27**	**54**	**81**	**108**	**135**	**162**	**189**	**216**	**243**	**270**
				Noise Criteria	–	–	–	–	–	16	21	25	29	33
18 x 3		0.29	0.31	**CFM**	**29**	**58**	**87**	**116**	**145**	**174**	**203**	**232**	**261**	**290**
				Noise Criteria	–	–	–	–	–	17	22	26	30	34
20 x 3	10 x 6 14 x 4	0.32	0.34	**CFM**	**32**	**64**	**96**	**128**	**160**	**192**	**224**	**256**	**288**	**320**
				Noise Criteria	–	–	–	–	–	17	22	26	30	34
16 x 4	22 x 3	0.36	0.38	**CFM**	**36**	**72**	**108**	**144**	**180**	**216**	**252**	**288**	**324**	**360**
				Noise Criteria	–	–	–	–	–	18	23	27	31	35
12 x 6	18 x 4 24 x 3	0.42	0.45	**CFM**	**42**	**84**	**126**	**168**	**210**	**252**	**294**	**336**	**378**	**420**
				Noise Criteria	–	–	–	–	–	19	23	28	32	36
20 x 4	28 x 3	0.45	0.47	**CFM**	**45**	**90**	**135**	**180**	**225**	**270**	**315**	**360**	**405**	**450**
				Noise Criteria	–	–	–	–	–	19	23	28	32	36
14 x 6	10 x 8 22 x 4	0.50	0.51	**CFM**	**50**	**100**	**150**	**200**	**250**	**300**	**350**	**400**	**450**	**500**
				Noise Criteria	–	–	–	–	15	20	24	29	33	37
12 x 8	16 x 6 24 x 4 32 x 3	0.58	0.59	**CFM**	**58**	**116**	**174**	**232**	**290**	**348**	**406**	**464**	**522**	**580**
				Noise Criteria	–	–	–	–	15	20	24	29	33	37
10 x 10	26 x 4 34 x 3	0.61	0.62	**CFM**	**61**	**122**	**183**	**244**	**305**	**366**	**427**	**488**	**549**	**610**
				Noise Criteria	–	–	–	–	15	20	25	30	33	37
18 x 6	14 x 8 28 x 4 30 x 4 36 x 3	0.65	0.67	**CFM**	**65**	**130**	**195**	**260**	**325**	**390**	**455**	**520**	**585**	**650**
				Noise Criteria	–	–	–	–	16	21	26	30	34	37
12 x 10	20 x 6 30 x 4	0.74	0.74	**CFM**	**74**	**148**	**222**	**296**	**370**	**444**	**518**	**592**	**666**	**740**
				Noise Criteria	–	–	–	–	16	21	26	31	35	38
22 x 6	16 x 8 34 x 4	0.80	0.80	**CFM**	**80**	**160**	**240**	**320**	**400**	**480**	**560**	**640**	**720**	**800**
				Noise Criteria	–	–	–	–	16	21	26	31	35	38
12 x 12	14 x 10 18 x 8 24 x 6 36 x 4	0.90	0.89	**CFM**	**90**	**180**	**270**	**360**	**450**	**540**	**630**	**720**	**810**	**900**
				Noise Criteria	–	–	–	–	17	22	27	32	35	38
18 x 10	30 x 6	1.13	1.12	**CFM**	**113**	**226**	**339**	**452**	**565**	**678**	**791**	**904**	**1017**	**1130**
				Noise Criteria	–	–	–	–	17	22	27	32	36	39
24 x 8	16 x 12 20 x 10 24 x 8 34 x 6	1.20	1.19	**CFM**	**120**	**240**	**360**	**480**	**600**	**720**	**840**	**960**	**1080**	**1200**
				Noise Criteria	–	–	–	–	17	22	27	32	36	39

For performance table notes, see page F62.

PERFORMANCE DATA:

CURVED SPIRAL DUCT RETURN GRILLES • 6100C/5100C SERIES

MODELS: 6145HC, 6155HC, 5145HC, 5155HC

Listed Duct Size (inches)	Alternate Size (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity Velocity Pressure Neg. Static Pressure	100 .001 .003	200 .002 .013	300 .006 .028	400 .010 .050	500 .016 .078	600 .022 .113	700 .031 .153	800 .040 .200	900 .050 .253	1000 .062 .313
18 x 12	22 x 10 28 x 8 36 x 6	1.37	1.34	**CFM**	**137**	**274**	**411**	**548**	**685**	**822**	**959**	**1096**	**1233**	**1370**
				Noise Criteria	–	–	–	–	18	23	28	33	36	39
24 x 10	20 x 12 30 x 8	1.52	1.49	**CFM**	**152**	**304**	**456**	**608**	**760**	**912**	**1064**	**1216**	**1368**	**1520**
				Noise Criteria	–	–	–	–	18	23	28	34	37	40
32 x 8	22 x 12 26 x 10	1.61	1.59	**CFM**	**161**	**322**	**483**	**644**	**805**	**966**	**1127**	**1288**	**1449**	**1610**
				Noise Criteria	–	–	–	–	19	24	29	34	37	40
24 x 12	30 x 10 36 x 8	1.85	1.78	**CFM**	**185**	**370**	**555**	**740**	**925**	**1110**	**1295**	**1480**	**1665**	**1850**
				Noise Criteria	–	–	–	–	19	24	29	34	37	41
32 x 10	28 x 12	2.04	1.96	**CFM**	**204**	**408**	**612**	**816**	**1020**	**1224**	**1428**	**1632**	**1836**	**2040**
				Noise Criteria	–	–	–	–	19	25	30	35	38	41
30 x 12	36 x 10	2.32	2.23	**CFM**	**232**	**464**	**696**	**928**	**1160**	**1392**	**1624**	**1856**	**2088**	**2320**
				Noise Criteria	–	–	–	15	20	25	30	35	38	42
32 x 12	38 x 10 48 x 8	2.48	2.38	**CFM**	**248**	**496**	**744**	**992**	**1240**	**1488**	**1736**	**1984**	**2232**	**2480**
				Noise Criteria	–	–	–	15	20	26	31	36	39	42
40 x 10		2.56	2.44	**CFM**	**256**	**512**	**768**	**1024**	**1280**	**1536**	**1792**	**2048**	**2304**	**2560**
				Noise Criteria	–	–	–	15	20	26	31	36	39	42
36 x 12	44 x 10	2.79	2.66	**CFM**	**279**	**558**	**837**	**1116**	**1395**	**1674**	**1953**	**2232**	**2511**	**2790**
				Noise Criteria	–	–	–	16	21	27	31	36	39	43
48 x 10		3.08	2.92	**CFM**	**308**	**616**	**924**	**1232**	**1540**	**1848**	**2156**	**2464**	**2772**	**3080**
				Noise Criteria	–	–	–	16	21	27	31	36	39	43

Performance Notes:

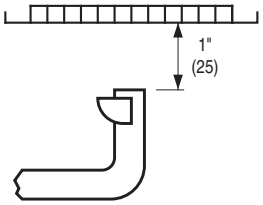
1. All pressure are in inches w.g..
2. Core Velocity is in feet per minute.
3. Performance data is based on Model 6145HC. For Model 6155HC apply the following correction factors:

Negative Static Pressure Listed Value x 1.3.

Noise Criteria Listed value + 4.

4. Noise Criteria (NC) values are based upon 10dB room absorption, re 10^{-12} watts. Dash (–) in space indicates an Noise Criteria of less than 15.
5. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

Air Measurement



Alnor Velometer with 2220A or 6070P Jet Probe

Airflow Measurements:

1. Balancing factors are applicable with or without dampers, providing uniform airflow exists into grille or register.
2. Take velocity readings at a number of locations on the inlet face (a minimum of 4), while positioning probe as shown above, one inch out from the face.
3. Total the various velocity readings and divide by the number of readings taken to arrive at an average inlet velocity (Vk in FPM).
4. Calculate the airflow (CFM) by multiplying the average velocity by the appropriate Ak factor.
Airflow (CFM) = Average velocity (Vk) x Ak.