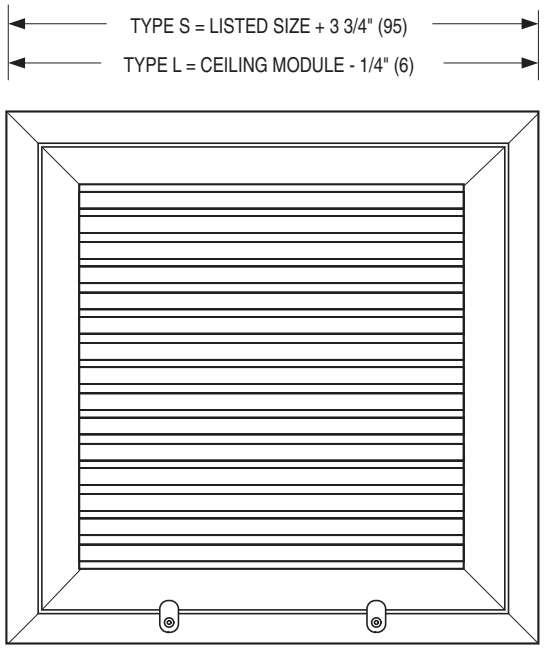
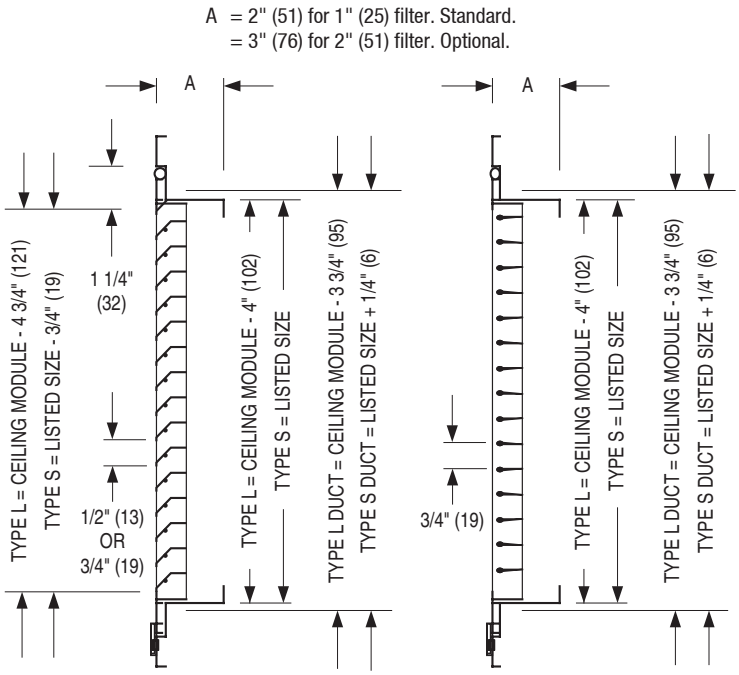
ALUMINUM FILTER RETURN GRILLES
FIXED LOUVERED BLADES
MODELS: 51FB45, 51FB55 AND 51FBS





MODELS:
51FB45, 51FB55

MODEL:
51FBS

MODELS:
- ❑ **51FB45** 45° deflection, 3/4" (19) spacing
- ❑ **51FB55** 45° deflection, 1/2" (13) spacing
- ❑ **51FBS** 0° deflection, 3/4" (19) spacing

FRAME/BORDER:
- ❑ **Type S** Surface Mount
- ❑ **Type L** Lay-in T-Bar

DESCRIPTION:
1. Material: Extruded aluminum.
2. Provision for 1" (25) filter (by others) is standard.
3. Type S available in nominal sizes 6" x 4" (152 x 102) through 48" x 36" (1219 x 914) max. in 1" (25) increments. Type L is available in ceiling module sizes: 12" x 12", 24" x 12", 20" x 20", 24" x 24", 36" x 12", 36" x 24" and 48" x 24" (305 x 305, 610 x 305, 508 x 508, 610 x 610, 914 x 305, 914 x 610 and 1219 x 610). Metric available.
4. Blades are parallel to width (first dimension).
5. Core is hinged and secured by 1/4 turn latches. Core panel is hinged on width dimension at top as standard (HT).

   For other hinging requirements, specify one of the following:

- ❑ HB Hinged Bottom
- ❑ HL Hinged Left (facing grille)
- ❑ HR Hinged Right (facing grille)

6. Type N standard fastening is with sheet metal screws, (by others), through the neck of the outer frame for Type S Surface Mount installation.
7. Standard Finish: AW Appliance White.

OPTIONS:
1. Finish:
   - ❑ SP Special _____ .
2. ❑ F2 Provision for 2" (51) filter (by others).
3. Core Fastening:
   - ❑ KK Knurled knob
   - ❑ QT 1/4 turn slotted fastener
4. Installation Fastening:
   - ❑ Type A Countersunk screwholes on face of outer frame (Type S Model).

SCHEDULE TYPE:	Page 1 of 2 Dimensions are in inches (mm).			
PROJECT:				
ENGINEER:	**DATE**	**B SERIES**	**SUPERSEDES**	**DRAWING NO.**
CONTRACTOR:	**9 - 24 - 19**	**51F**	**10 - 1 - 15**	**51F-1**

Nailor® Industries Inc.

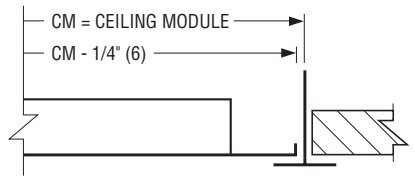
ALUMINUM FILTER RETURN GRILLES
FIXED LOUVERED BLADES
MODELS: 51FB45, 51FB55 AND 51FBS

Panel Mounted/Ceiling Modules

- ❑ **Border Type PLS: Steel Lay-in Panel**
- ❑ **Border Type PLA: Aluminum Lay-in Panel**

The grille or register is mounted in an extended panel to suit standard T-Bar Lay-in type ceilings.

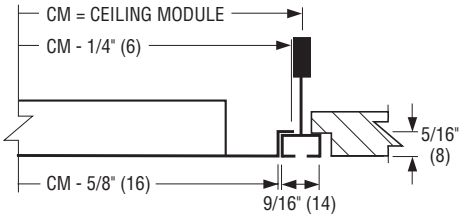
Type PL (S or A) Lay-in Panel



- ❑ **Border Type FPS: Steel Fineline® Panel**
- ❑ **Border Type FPA: Aluminum Fineline® Panel**

The grille or register is mounted in an extended panel that will fit a 9/16" (14) narrow regressed (bolt slot) T-Bar ceiling grid or 9/16" (14) Flat T-Bar with tegular ceiling tile.

Type FP (S or A) Fineline® Panel

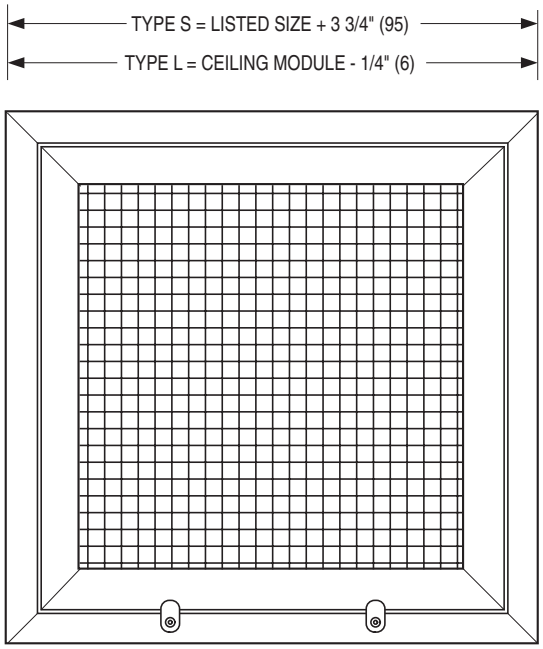


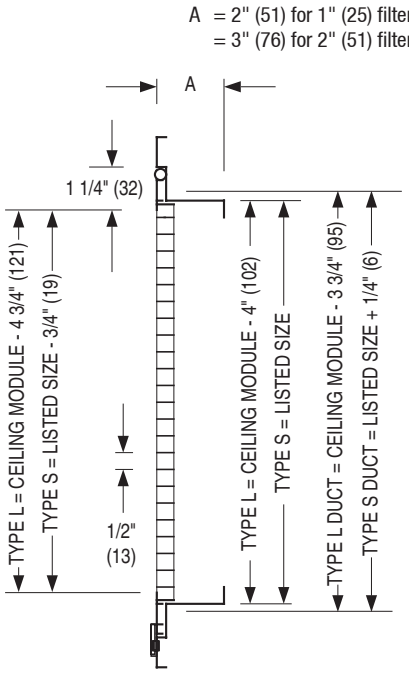
Available Border Type PL and FP Ceiling Module Sizes

Ceiling Module	
Imperial Units (in.)	**Metric Units (mm)**
12 x 12 24 x 12 36 x 12	300 x 300 600 x 300 900 x 300
48 x 12 20 x 20 24 x 24	1200 x 300 500 x 500 600 x 600
36 x 24 48 x 24	900 x 600 1200 x 600

Maximum grille neck size is CM Ceiling Module – 6" (152).

ALUMINUM FILTER RETURN GRILLES
EGGCRATE GRID CORE
MODEL: 51FE





FRAME/BORDER:

- ❑ **Type S** Surface Mount
- ❑ **Type L** Lay-in T-Bar

DESCRIPTION:

1. Material: Extruded aluminum.
2. Provision for 1" (25) filter (by others) is standard.
3. Type S available in nominal sizes 6" x 4" (152 x 102) through 48" x 36" (1219 x 914) max. in 1" (25) increments. Type L is available in ceiling module sizes: 12" x 12", 24" x 12", 20" x 20", 24" x 24", 36" x 12", 36" x 24" and 48" x 24" (305 x 305, 610 x 305, 508 x 508, 610 x 610, 914 x 305, 914 x 610 and 1219 x 610). Metric available.
4. Eggcrate core is 1/2" x 1/2" x 1/2" (13 x 13 x 13).
5. Core is hinged and secured by 1/4 turn latches. Core panel is hinged on width dimension at top as standard (HT).

   For other hinging requirements, specify one of the following:

❑ HB Hinged Bottom

❑ HL Hinged Left (facing grille)

❑ HR Hinged Right (facing grille)

6. Type N standard fastening is with sheet metal screws, (by others), through the neck of the outer frame for Type S Surface Mount installation.
7. Standard Finish: AW Appliance White.

OPTIONS:

1. Finish:
   - ❑ SP Special _____ .
2. ❑ F2 Provision for 2" (51) filter (by others).
3. Core Fastening:
   - ❑ KK Knurled knob
   - ❑ QT 1/4 turn slotted fastener
4. Installation Fastening:
   - ❑ Type A Countersunk screwholes on face of outer frame (Type S Model).

SCHEDULE TYPE:	Page 1 of 2 Dimensions are in inches (mm).			
PROJECT:				
ENGINEER:	**DATE**	**B SERIES**	**SUPERSEDES**	**DRAWING NO.**
CONTRACTOR:	**9 - 24 - 19**	**51F**	**10 - 1 - 15**	**51F-2**

Nailor® Industries Inc.

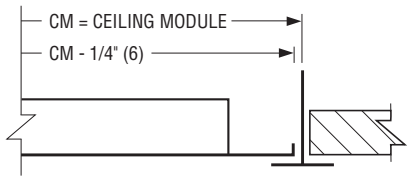
ALUMINUM FILTER RETURN GRILLES
EGGCRATE GRID CORE
MODEL: 51FE

Panel Mounted/Ceiling Modules

- ❑ **Border Type PLS: Steel Lay-in Panel**
- ❑ **Border Type PLA: Aluminum Lay-in Panel**

The grille or register is mounted in an extended panel to suit standard T-Bar Lay-in type ceilings.

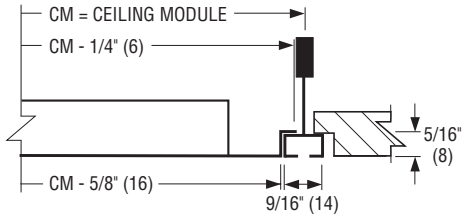
Type PL (S or A) Lay-in Panel



- ❑ **Border Type FPS: Steel Fineline® Panel**
- ❑ **Border Type FPA: Aluminum Fineline® Panel**

The grille or register is mounted in an extended panel that will fit a 9/16" (14) narrow regressed (bolt slot) T-Bar ceiling grid or 9/16" (14) Flat T-Bar with tegular ceiling tile.

Type FP (S or A) Fineline® Panel



Available Border Type PL and FP Ceiling Module Sizes

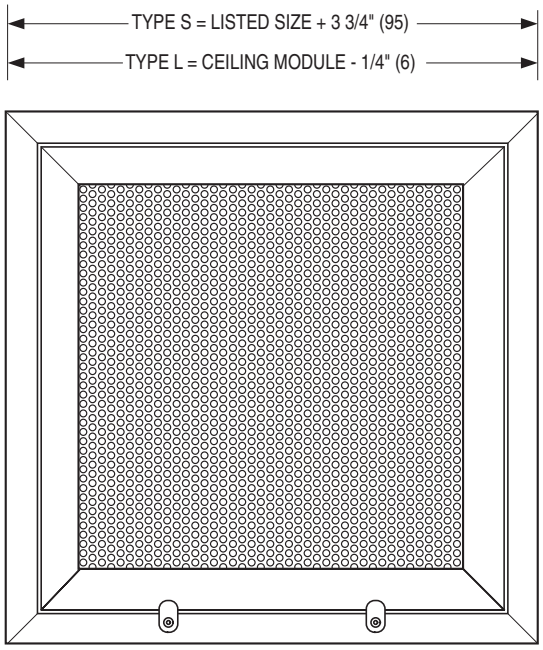
Ceiling Module	
Imperial Units (in.)	**Metric Units (mm)**
12 x 12 24 x 12 36 x 12	300 x 300 600 x 300 900 x 300
48 x 12 20 x 20 24 x 24	1200 x 300 500 x 500 600 x 600
36 x 24 48 x 24	900 x 600 1200 x 600

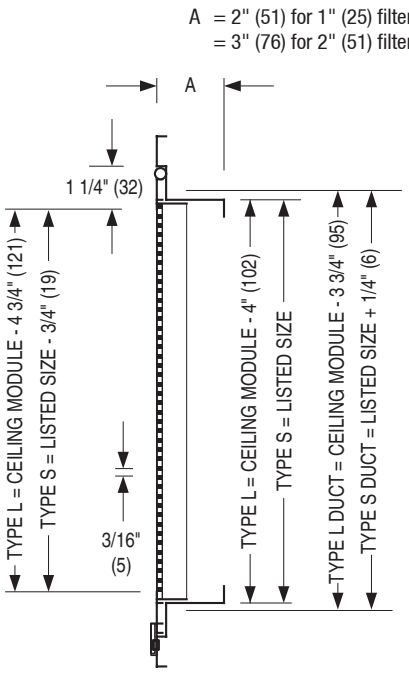
Maximum grille neck size is CM Ceiling Module – 6" (152).

SCHEDULE TYPE:	Page 2 of 2 Dimensions are in inches (mm).			
PROJECT:				
ENGINEER:	**DATE**	**B SERIES**	**SUPERSEDES**	**DRAWING NO.**
CONTRACTOR:	**9 - 24 - 19**	**51F**	**10 - 1 - 15**	**51F-2**

Nailor® Industries Inc.

ALUMINUM FILTER RETURN GRILLES
PERFORATED CORE
MODEL: 51FP





FRAME/BORDER:
- ❑ **Type S** Surface Mount
- ❑ **Type L** Lay-in T-Bar

DESCRIPTION:
1. Material: Extruded aluminum.
2. Provision for 1" (25) filter (by others) is standard.
3. Type S available in nominal sizes 6" x 4" (152 x 102) through 48" x 36" (1219 x 914) max. in 1" (25) increments. Type L is available in ceiling module sizes: 12" x 12", 24" x 12", 20" x 20", 24" x 24", 36" x 12", 36" x 24" and 48" x 24" (305 x 305, 610 x 305, 508 x 508, 610 x 610, 914 x 305, 914 x 610 and 1219 x 610). Metric available.
4. Perforated face has 3/16" (5) holes on staggered 1/4" (6) centers. 51% free area.
5. Core is hinged and secured by 1/4 turn latches. Core panel is hinged on width dimension at top as standard (HT).

   For other hinging requirements, specify one of the following:

❑ HB Hinged Bottom
❑ HL Hinged Left (facing grille)
❑ HR Hinged Right (facing grille)

6. Type N standard fastening is with sheet metal screws, (by others), through the neck of the outer frame for Type S Surface Mount installation.
7. Standard Finish: AW Appliance White.

OPTIONS:
1. Finish:
   - ❑ SP Special _____ .
2. ❑ F2 Provision for 2" (51) filter (by others).
3. Core Fastening:
   - ❑ KK Knurled knob
   - ❑ QT 1/4 turn slotted fastener
4. Installation Fastening:
   - ❑ Type A Countersunk screwholes on face of outer frame (Type S Model).

SCHEDULE TYPE:	Page 1 of 2 Dimensions are in inches (mm).			
PROJECT:				
ENGINEER:	**DATE**	**B SERIES**	**SUPERSEDES**	**DRAWING NO.**
CONTRACTOR:	**9 - 24 - 19**	**51F**	**10 - 1 - 15**	**51F-3**

Nailor® Industries Inc.

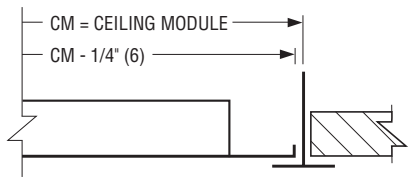
ALUMINUM FILTER RETURN GRILLES
PERFORATED CORE
MODEL: 51FP

Panel Mounted/Ceiling Modules

- ❑ **Border Type PLS: Steel Lay-in Panel**
- ❑ **Border Type PLA: Aluminum Lay-in Panel**

The grille or register is mounted in an extended panel to suit standard T-Bar Lay-in type ceilings.

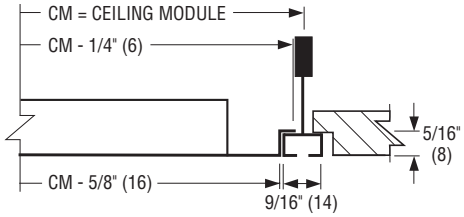
Type PL (S or A) Lay-in Panel



- ❑ **Border Type FPS: Steel Fineline® Panel**
- ❑ **Border Type FPA: Aluminum Fineline® Panel**

The grille or register is mounted in an extended panel that will fit a 9/16" (14) narrow regressed (bolt slot) T-Bar ceiling grid or 9/16" (14) Flat T-Bar with tegular ceiling tile.

Type FP (S or A) Fineline® Panel



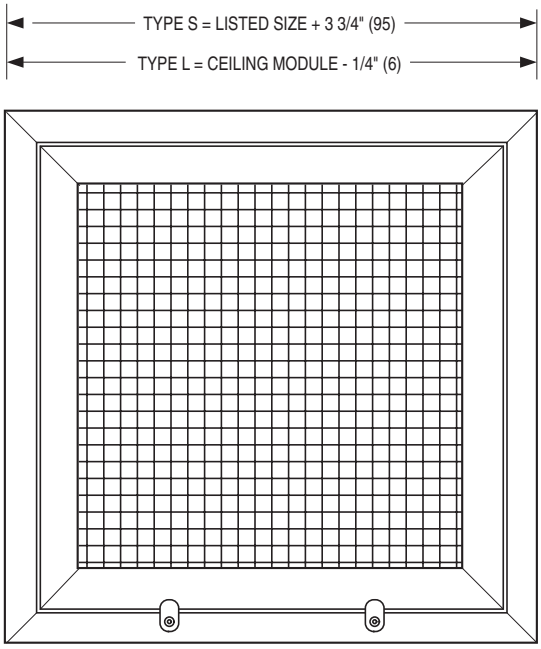
Available Border Type PL and FP Ceiling Module Sizes

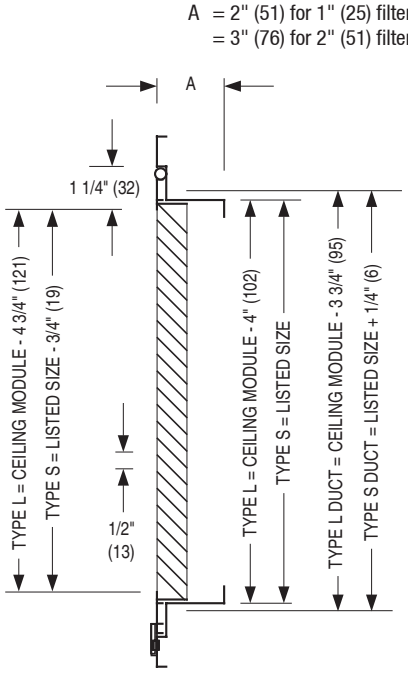
Ceiling Module	
Imperial Units (in.)	**Metric Units (mm)**
12 x 12 24 x 12 36 x 12	300 x 300 600 x 300 900 x 300
48 x 12 20 x 20 24 x 24	1200 x 300 500 x 500 600 x 600
36 x 24 48 x 24	900 x 600 1200 x 600

Maximum grille neck size is CM Ceiling Module – 6" (152).

SCHEDULE TYPE:	Page 2 of 2 Dimensions are in inches (mm).			
PROJECT:				
ENGINEER:	**DATE**	**B SERIES**	**SUPERSEDES**	**DRAWING NO.**
CONTRACTOR:	**9 - 24 - 19**	**51F**	**10 - 1 - 15**	**51F-3**

ALUMINUM FILTER RETURN GRILLES
EGGCRATE GRID CORE
45° DEFLECTION • SIGHTPROOF
MODEL: 51FE45





FRAME/BORDER:
- ❑ **Type S** Surface Mount
- ❑ **Type L** Lay-in T-Bar

DESCRIPTION:
1. Material: Extruded aluminum core and frame.
2. Provision for 1" (25) filter (by others) is standard.
3. Type S available in nominal sizes 6" x 4" (152 x 102) through 48" x 24" (1219 x 610) max. in 1" (25) increments. Type L is available in ceiling module sizes: 12" x 12", 24" x 12", 20" x 20", 24" x 24", 36" x 12", 36" x 24" and 48" x 24" (305 x 305, 610 x 305, 508 x 508, 610 x 610, 914 x 305, 914 x 610 and 1219 x 610). Fractional and metric sizes are available.
4. 1/2" x 1/2" x 1/2" (13 x 13 x 13) aluminum grid core is angled at 45° to prevent "see through" from three directions.
5. Sight resistant parallel to width/long dimension.
6. Core is hinged and secured by 1/4 turn latches. Core panel is hinged on width dimension at top as standard (HT).

   For other hinging requirements, specify one of the following:

❑ HB Hinged Bottom
❑ HL Hinged Left (facing grille)
❑ HR Hinged Right (facing grille)

7. Type N standard fastening is with sheet metal screws, (by others), through the neck of the outer frame for Type S Surface Mount installation.
8. Standard Finish: AW Appliance White.

OPTIONS:
1. Finish:
   - ❑ SP Special _____ .
2. ❑ F2 Provision for 2" (51) filter (by others).
3. Core Fastening:
   - ❑ KK Knurled knob
   - ❑ QT 1/4 turn slotted fastener
4. Installation Fastening:
   - ❑ Type A Countersunk screwholes on face of outer frame (Type S Model).
5. Accessories:
   - ❑ GK Foam Gasket
   - ❑ EQT Earthquake Tabs

SCHEDULE TYPE:	Page 1 of 2 Dimensions are in inches (mm).			
PROJECT:				
ENGINEER:	**DATE**	**B SERIES**	**SUPERSEDES**	**DRAWING NO.**
CONTRACTOR:	**9 - 24 - 19**	**51F**	**11 - 10 - 15**	**51FE45-1**

Nailor® Industries Inc.

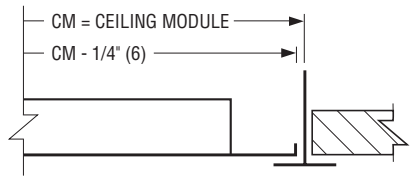
ALUMINUM FILTER RETURN GRILLES
EGGCRATE GRID CORE
45° DEFLECTION • SIGHTPROOF
MODEL: 51FE45

Panel Mounted/Ceiling Modules

- ❑ **Border Type PLS: Steel Lay-in Panel**
- ❑ **Border Type PLA: Aluminum Lay-in Panel**

The grille or register is mounted in an extended panel to suit standard T-Bar Lay-in type ceilings.

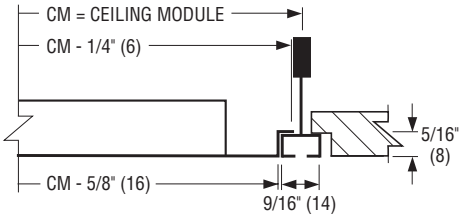
Type PL (S or A) Lay-in Panel



- ❑ **Border Type FPS: Steel Fineline® Panel**
- ❑ **Border Type FPA: Aluminum Fineline® Panel**

The grille or register is mounted in an extended panel that will fit a 9/16" (14) narrow regressed (bolt slot) T-Bar ceiling grid or 9/16" (14) Flat T-Bar with tegular ceiling tile.

Type FP (S or A) Fineline® Panel

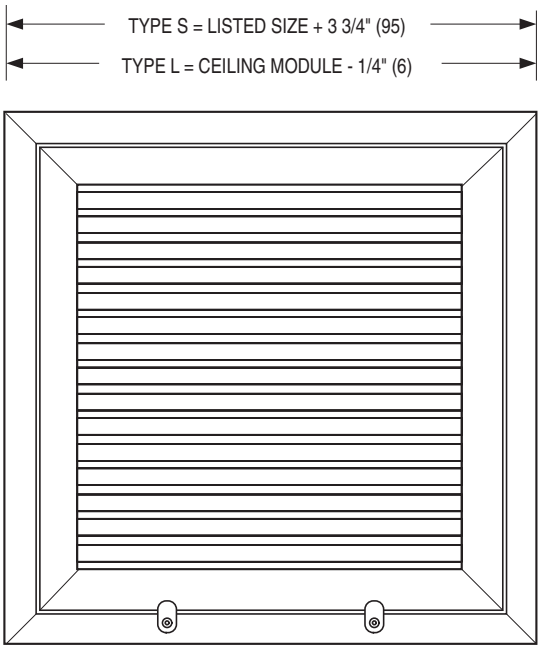


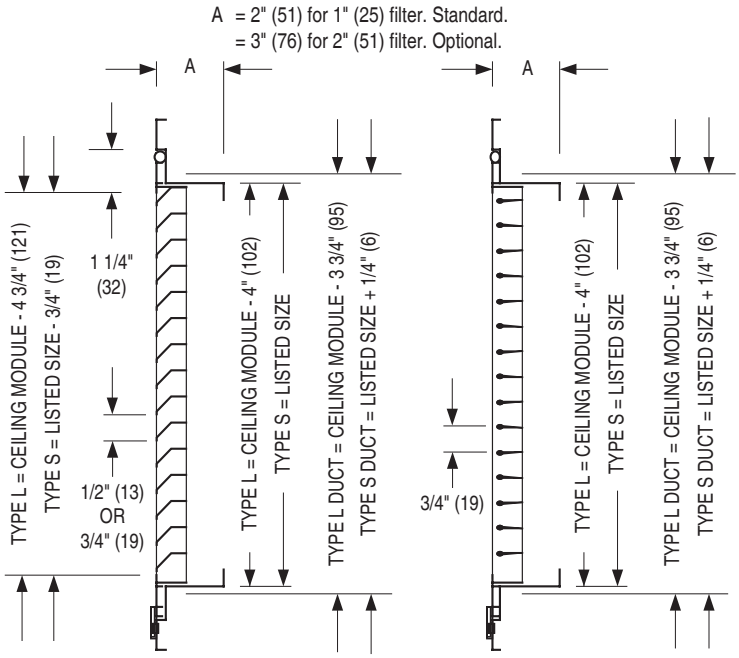
Available Border Type PL and FP Ceiling Module Sizes

Ceiling Module	
Imperial Units (in.)	**Metric Units (mm)**
12 x 12 24 x 12 36 x 12	300 x 300 600 x 300 900 x 300
48 x 12 20 x 20 24 x 24	1200 x 300 500 x 500 600 x 600
36 x 24 48 x 24	900 x 600 1200 x 600

Maximum grille neck size is CM Ceiling Module – 6" (152).

STEEL FILTER RETURN GRILLES
FIXED LOUVERED BLADES
MODELS: 61FB45, 61FB55 AND 61FBS





MODELS: 61FB45, 61FB55 | **MODEL: 61FBS**

MODELS:

- ❑ **61FB45** 45° deflection, 3/4" (19) spacing
- ❑ **61FB55** 45° deflection, 1/2" (13) spacing
- ❑ **61FBS** 0° deflection, 3/4" (19) spacing

FRAME/BORDER:

- ❑ **Type S** Surface Mount
- ❑ **Type L** Lay-in T-Bar

DESCRIPTION:

1. Material: Corrosion-resistant steel.
2. Provision for 1" (25) filter (by others) is standard.
3. Type S available in nominal sizes 6" x 4" (152 x 102) through 36" x 24" (914 x 610) maximum in 1" (25) increments. Type L is available in ceiling module sizes: 12" x 12", 24" x 12", 24" x 24", 36" x 12", 36" x 24" and 48" x 24" (305 x 305, 610 x 305, 610 x 610, 914 x 305, 914 x 610 and 1219 x 610). Metric available.
4. Blades are parallel to width (first dimension).
5. Core is hinged and secured by 1/4 turn latches. Core panel is hinged on width dimension at top as standard (HT).

   For other hinging requirements, specify one of the following:

   - ❑ HB Hinged Bottom
   - ❑ HL Hinged Left (facing grille)
   - ❑ HR Hinged Right (facing grille)
6. Type N standard fastening is with sheet metal screws, (by others), through the neck of the outer frame for Type S Surface Mount installation.
7. Standard Finish: AW Appliance White.

OPTIONS:

1. Finish:
   - ❑ SP Special _____ .
2. ❑ F2 Provision for 2" (51) filter (by others).
3. Core Fastening:
   - ❑ KK Knurled knob
   - ❑ QT 1/4 turn slotted fastener
4. Installation Fastening:
   - ❑ Type A Countersunk screwholes on face of outer frame (Type S Model).

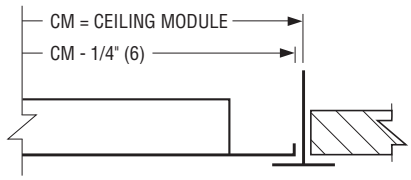
SCHEDULE TYPE:	Page 1 of 2 Dimensions are in inches (mm).			
PROJECT:				
ENGINEER:	**DATE**	**B SERIES**	**SUPERSEDES**	**DRAWING NO.**
CONTRACTOR:	**9 - 24 - 19**	**61F**	**2 - 1 - 11**	**61F-1**

Panel Mounted/Ceiling Modules

❑ Border Type PLS: Steel Lay-in Panel

The grille or register is mounted in an extended panel to suit standard T-Bar Lay-in type ceilings.

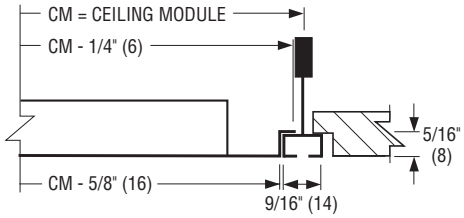
Type PLS Lay-in Panel



❑ Border Type FPS: Steel Fineline® Panel

The grille or register is mounted in an extended panel that will fit a 9/16" (14) narrow regressed (bolt slot) T-Bar ceiling grid or 9/16" (14) Flat T-Bar with tegular ceiling tile.

Type FPS Fineline® Panel



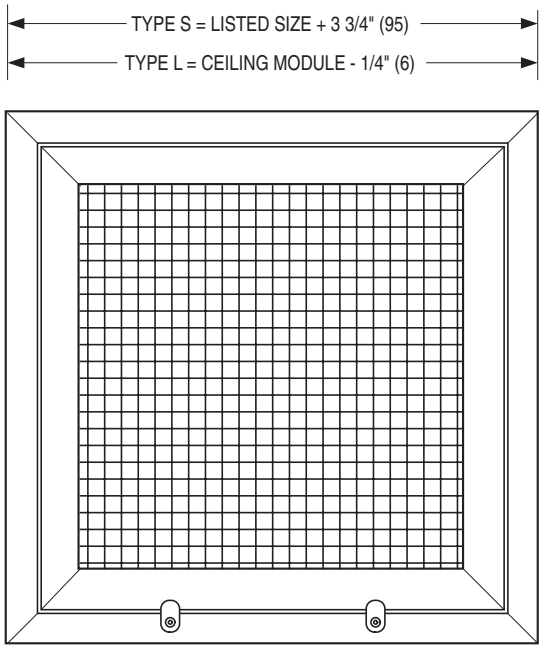
Available Border Type PLS and FPS Ceiling Module Sizes

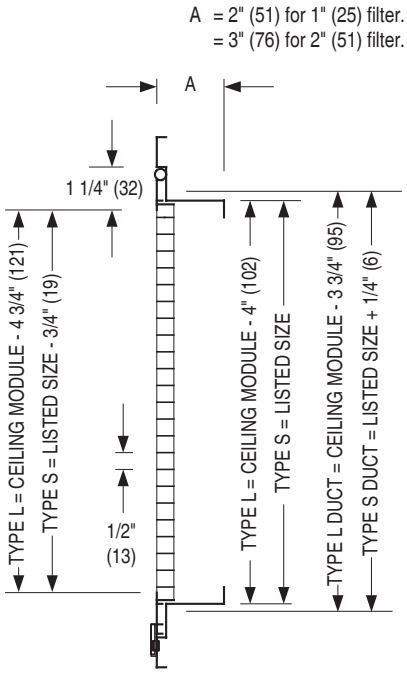
Ceiling Module	
Imperial Units (in.)	**Metric Units (mm)**
12 x 12 24 x 12 36 x 12	300 x 300 600 x 300 900 x 300
48 x 12 20 x 20 24 x 24	1200 x 300 500 x 500 600 x 600
36 x 24 48 x 24	900 x 600 1200 x 600

Maximum grille neck size is CM Ceiling Module – 6" (152).

SCHEDULE TYPE:				
PROJECT:				
ENGINEER:	DATE	B SERIES	SUPERSEDES	DRAWING NO.
CONTRACTOR:	9 - 24 - 19	61F	2 - 1 - 11	61F-1

STEEL FILTER RETURN GRILLES
EGGCRATE GRID CORE
MODEL: 61FE





FRAME/BORDER:

- ❑ **Type S** Surface Mount
- ❑ **Type L** Lay-in T-Bar

DESCRIPTION:

1. Material: Corrosion-resistant steel.
2. Provision for 1" (25) filter (by others) is standard.
3. Type S available in nominal sizes 6" x 4" (152 x 102) through 48" x 36" (1219 x 914) maximum in 1" (25) increments. Type L is available in ceiling module sizes: 12" x 12", 24" x 12", 24" x 24", 36" x 12", 36" x 24" and 48" x 24" (305 x 305, 610 x 305, 610 x 610, 914 x 305, 914 x 610 and 1219 x 610). Metric available.
4. Eggcrate core is 1/2" x 1/2" x 1/2" (13 x 13 x 13).
5. Core is hinged and secured by 1/4 turn latches. Core panel is hinged on width dimension at top as standard (HT).

   For other hinging requirements, specify one of the following:

- ❑ HB Hinged Bottom
- ❑ HL Hinged Left (facing grille)
- ❑ HR Hinged Right (facing grille)

6. Type N standard fastening is with sheet metal screws, (by others), through the neck of the outer frame for Type S Surface Mount installation.
7. Standard Finish: AW Appliance White.

OPTIONS:

1. Finish:
   - ❑ SP Special _____ .
2. ❑ F2 Provision for 2" (51) filter (by others).
3. Core Fastening:
   - ❑ KK Knurled knob
   - ❑ QT 1/4 turn slotted fastener
4. Installation Fastening:
   - ❑ Type A Countersunk screwholes on face of outer frame (Type S Model).

SCHEDULE TYPE:	Page 1 of 2 Dimensions are in inches (mm).			
PROJECT:				
ENGINEER:	**DATE**	**B SERIES**	**SUPERSEDES**	**DRAWING NO.**
CONTRACTOR:	**9 - 24 - 19**	**61F**	**2 - 1 - 11**	**61F-2**

Nailor® Industries Inc.

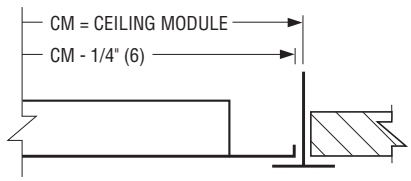
STEEL FILTER RETURN GRILLES
EGGCRATE GRID CORE
MODEL: 61FE

Panel Mounted/Ceiling Modules

❑ Border Type PLS: Steel Lay-in Panel

The grille or register is mounted in an extended panel to suit standard T-Bar Lay-in type ceilings.

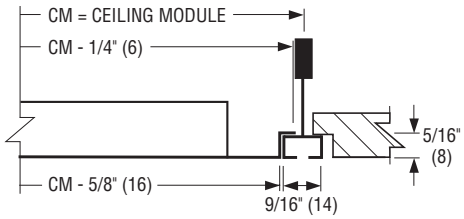
Type PLS Lay-in Panel



❑ Border Type FPS: Steel Fineline® Panel

The grille or register is mounted in an extended panel that will fit a 9/16" (14) narrow regressed (bolt slot) T-Bar ceiling grid or 9/16" (14) Flat T-Bar with tegular ceiling tile.

Type FPS Fineline® Panel



Available Border Type PLS and FPS Ceiling Module Sizes

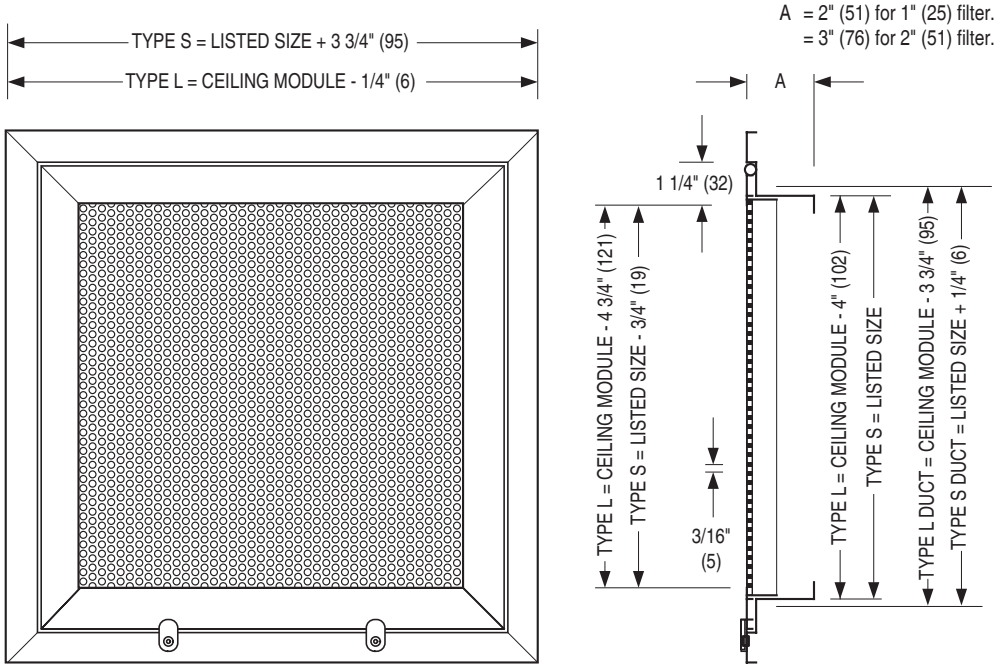
Ceiling Module	
Imperial Units (in.)	**Metric Units (mm)**
12 x 12 24 x 12 36 x 12	300 x 300 600 x 300 900 x 300
48 x 12 20 x 20 24 x 24	1200 x 300 500 x 500 600 x 600
36 x 24 48 x 24	900 x 600 1200 x 600

Maximum grille neck size is CM Ceiling Module – 6" (152).

SCHEDULE TYPE:	Page 2 of 2 Dimensions are in inches (mm).			
PROJECT:				
ENGINEER:	**DATE**	**B SERIES**	**SUPERSEDES**	**DRAWING NO.**
CONTRACTOR:	**9 - 24 - 19**	**61F**	**2 - 1 - 11**	**61F-2**

Nailor® Industries Inc.

STEEL FILTER RETURN GRILLES
PERFORATED CORE
MODEL: 61FP



FRAME/BORDER:

- ❑ **Type S** Surface Mount
- ❑ **Type L** Lay-in T-Bar

DESCRIPTION:

1. Material: Corrosion-resistant steel.
2. Provision for 1" (25) filter (by others) is standard.
3. Type S available in nominal sizes 6" x 4" (152 x 102) through 48" x 36" (1219 x 914) maximum in 1" (25) increments. Type L is available in ceiling module sizes: 12" x 12", 24" x 12", 24" x 24", 36" x 12", 36" x 24" and 48" x 24" (305 x 305, 610 x 305, 610 x 610, 914 x 305, 914 x 610 and 1219 x 610). Metric available.
4. Perforated face has 3/16" (5) holes on staggered 1/4" (6) centers. 51% free area.
5. Core is hinged and secured by 1/4 turn latches. Core panel is hinged on width dimension at top as standard (HT).

   For other hinging requirements, specify one of the following:

❑ HB Hinged Bottom

❑ HL Hinged Left (facing grille)

❑ HR Hinged Right (facing grille)

6. Type N standard fastening is with sheet metal screws, (by others), through the neck of the outer frame for Type S Surface Mount installation.
7. Standard Finish: AW Appliance White.

OPTIONS:

1. Finish:
   - ❑ SP Special _____ .
2. ❑ F2 Provision for 2" (51) filter (by others).
3. Core Fastening:
   - ❑ KK Knurled knob
   - ❑ QT 1/4 turn slotted fastener
4. Installation Fastening:
   - ❑ Type A Countersunk screwholes on face of outer frame (Type S Model).

SCHEDULE TYPE:	Page 1 of 2 Dimensions are in inches (mm).			
PROJECT:				
ENGINEER:	**DATE**	**B SERIES**	**SUPERSEDES**	**DRAWING NO.**
CONTRACTOR:	**9 - 24 - 19**	**61F**	**2 - 1 - 11**	**61F-3**

Nailor® Industries Inc.

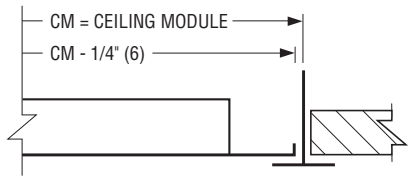
STEEL FILTER RETURN GRILLES
PERFORATED CORE
MODEL: 61FP

Panel Mounted/Ceiling Modules

❑ Border Type PLS: Steel Lay-in Panel

The grille or register is mounted in an extended panel to suit standard T-Bar Lay-in type ceilings.

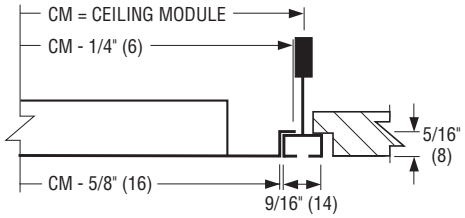
Type PLS Lay-in Panel



❑ Border Type FPS: Steel Fineline® Panel

The grille or register is mounted in an extended panel that will fit a 9/16" (14) narrow regressed (bolt slot) T-Bar ceiling grid or 9/16" (14) Flat T-Bar with tegular ceiling tile.

Type FPS Fineline® Panel



Available Border Type PLS and FPS Ceiling Module Sizes

Ceiling Module	
Imperial Units (in.)	**Metric Units (mm)**
12 x 12 24 x 12 36 x 12	300 x 300 600 x 300 900 x 300
48 x 12 20 x 20 24 x 24	1200 x 300 500 x 500 600 x 600
36 x 24 48 x 24	900 x 600 1200 x 600

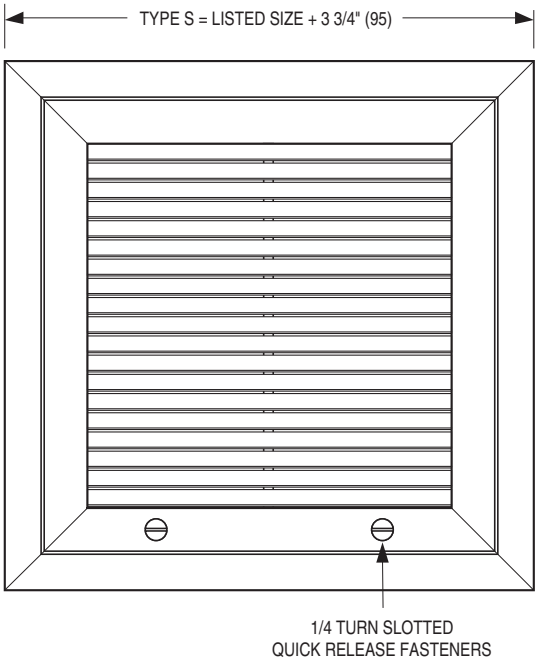
Maximum grille neck size is CM Ceiling Module – 6" (152).

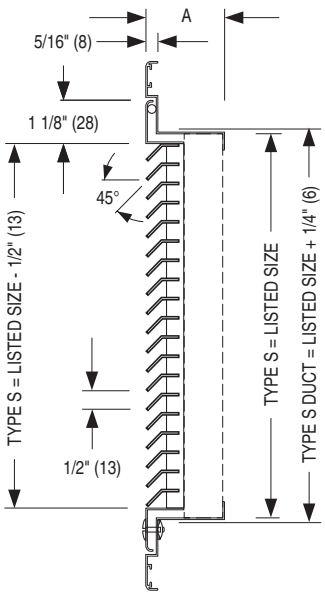
SCHEDULE TYPE:				
PROJECT:				
ENGINEER:	DATE	B SERIES	SUPERSEDES	DRAWING NO.
CONTRACTOR:	9 - 24 - 19	61F	2 - 1 - 11	61F-3

Nailor® Industries Inc.

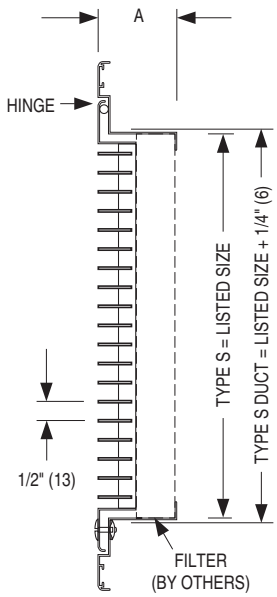
STEEL HEAVY DUTY FILTER RETURN GRILLES
FIXED LOUVERED BLADES • GYMNASIUM
MODELS: 61FB45-HD AND 61FBS-HD

A = 2" (51) for 1" (25) filter. Standard. A = 3" (76) for 2" (51) filter. Optional.





MODEL:
61FB45-HD



MODEL:
61FBS-HD

MODELS:
- ❑ **61FB45-HD** 45° deflection, 1/2" (13) spacing
- ❑ **61FBS-HD** 0° deflection, 1/2" (13) spacing

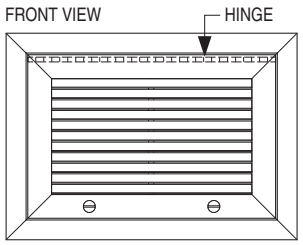
FRAME/BORDER:
- ❑ **Type S** Surface Mount

DESCRIPTION:
1. Material: Corrosion-resistant steel. Aluminum filter frame.
2. Grille Construction: Fixed blade angles in 45° or 0° deflection are 14 gauge material welded in position with support mullions on maximum 6" (152) centers. Frame is heavy duty 16 gauge material with welded and reinforced mitered corners.
3. Provision for 1" (25) filter (by others) is standard.
4. Type S available in nominal sizes 6" x 4" (152 x 102) through 36" x 24" (914 x 610) maximum with hinge. 48" x 36" (1219 x 914) maximum with QTO fasteners on all four sides.
5. Blades are parallel to width (first dimension).
6. Core is hinged and secured by 1/4 turn fasteners.
7. Hinge Orientation (blade deflection for 45 model shown by arrow).

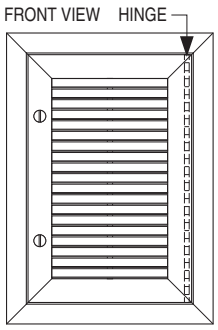
   Rectangular grilles: Parallel to long dimension on right hand side.

   Square grilles: Parallel to width/blade orientation on top side.

W > H OR EQUAL:



W < H:



8. Type N standard fastening is with sheet metal screws, (by others), through the neck of the outer frame for Type S Surface Mount installation.
9. Standard Finish: AW Appliance White.

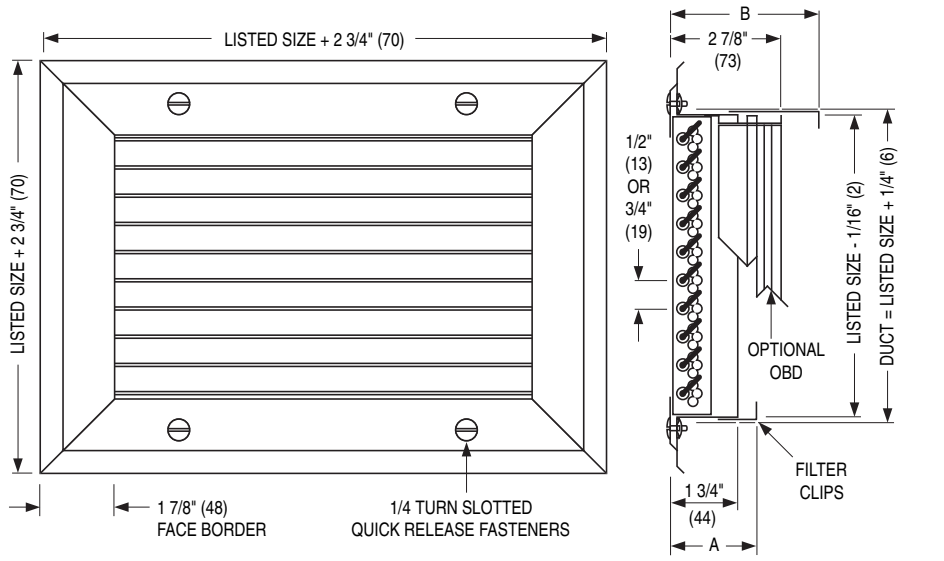
OPTIONS:
1. Finish:
   - ❑ SP Special _____ .
2. ❑ F2 Provision for 2" (51) filter (by others).
3. Core Fastening:
   - ❑ QTO 1/4 turn slotted fasteners only (no hinge).

SCHEDULE TYPE:	Dimensions are in inches (mm).			
PROJECT:				
ENGINEER:	**DATE**	**B SERIES**	**SUPERSEDES**	**DRAWING NO.**
CONTRACTOR:	**8 - 27 - 21**	**61F**	**NEW**	**61F-HD**

Nailor® Industries Inc.

STAINLESS STEEL FILTER RETURN GRILLES
FIXED LOUVERED BLADES • REMOVABLE FACE
MODELS: 67FB45(-O) AND 67FB55(-O)
TYPE S OR L

Frame/Border: Type S Surface Mount



❑ **MODEL 67FB45**
45° Deflection Horizontal Blades on 3/4" (19) centers

❑ **MODEL 67FB45-O**
45° Deflection Horizontal Blades on 3/4" (19) centers (with O. B. Damper)

❑ **MODEL 67FB55**
45° Deflection Horizontal Blades on 1/2" (13) centers

❑ **MODEL 67FB55-O**
45° Deflection Horizontal Blades on 1/2" (13) centers (with O. B. Damper)

DESCRIPTION:

1. Construction: Type 304 stainless steel welded and reinforced frame features hairline mitered corners. Streamlined shaped grille blades on 3/4" (19) or 1/2" (13) centers are fixed at 45 degrees to match and compliment the supply grilles and registers.
2. Provision for 1" (25) filter (by others) is standard.
3. Optional roll-formed Type 304 stainless steel opposed blade damper has a screw driver operator accessible through face of register. Opposed blade damper is attached to removable grille.
4. Type S Surface Mount: Minimum size is 4" x 4" (102 x 102). Maximum size is 60" x 48" (1524 x 1219). For Lay-in T-Bar applications, order a listed size that is 3" (76) smaller than ceiling module size.
5. Standard frame has a 1 7/8" (48) face border.
6. Standard fastening is Type A countersunk screw holes on the inside neck of the outer frame. Grille is secured to the face of the outer subframe with Type QT stainless steel 1/4 turn slotted fasteners and is designed to be easily removable for access and cleaning.
7. For cleanroom applications where a quick release removable return grille with mounting frame is required, but a filter is not, the grille may be ordered without filter clips.
8. Standard finish is #4 Brushed Satin Polished.

OPTIONS:

1. Construction:
   - ❑ 316 — Type 316 stainless steel.
2. Finish:
   - ❑ AW — Appliance White.
   - ❑ SP — Special _____ .
3. Filter clips:
   - ❑ F2 — Provision for 2" (51) filter (by others).
   - ❑ FN — No filter clips.
4. Core fastening:
   - ❑ WT — 1/4 turn 'wingnut' fasteners.
   - ❑ HTQT — Hinged at top with 1/4 turn slotted fasteners on opposite side.
5. ❑ Other — _____ .

Lay-in sizes (Imperial Ceiling Modules):

Ceiling Module	Listed/Filter Size
12 x 12 (305 x 305)	9 x 9 (229 x 229)
24 x 12 (610 x 305)	21 x 9 (533 x 229)
24 x 24 (610 x 610)	21 x 21 (533 x 533)
36 x 24 (914 x 610)	33 x 21 (838 x 533)
48 x 24 (1219 x 610)	45 x 21 (1143x 533)

SCHEDULE TYPE:	Dimensions are in inches (mm).			
PROJECT:				
ENGINEER:	**DATE**	**B SERIES**	**SUPERSEDES**	**DRAWING NO.**
CONTRACTOR:	**6 - 14 - 16**	**6700**	**5 - 11 - 15**	**67F-1**

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.

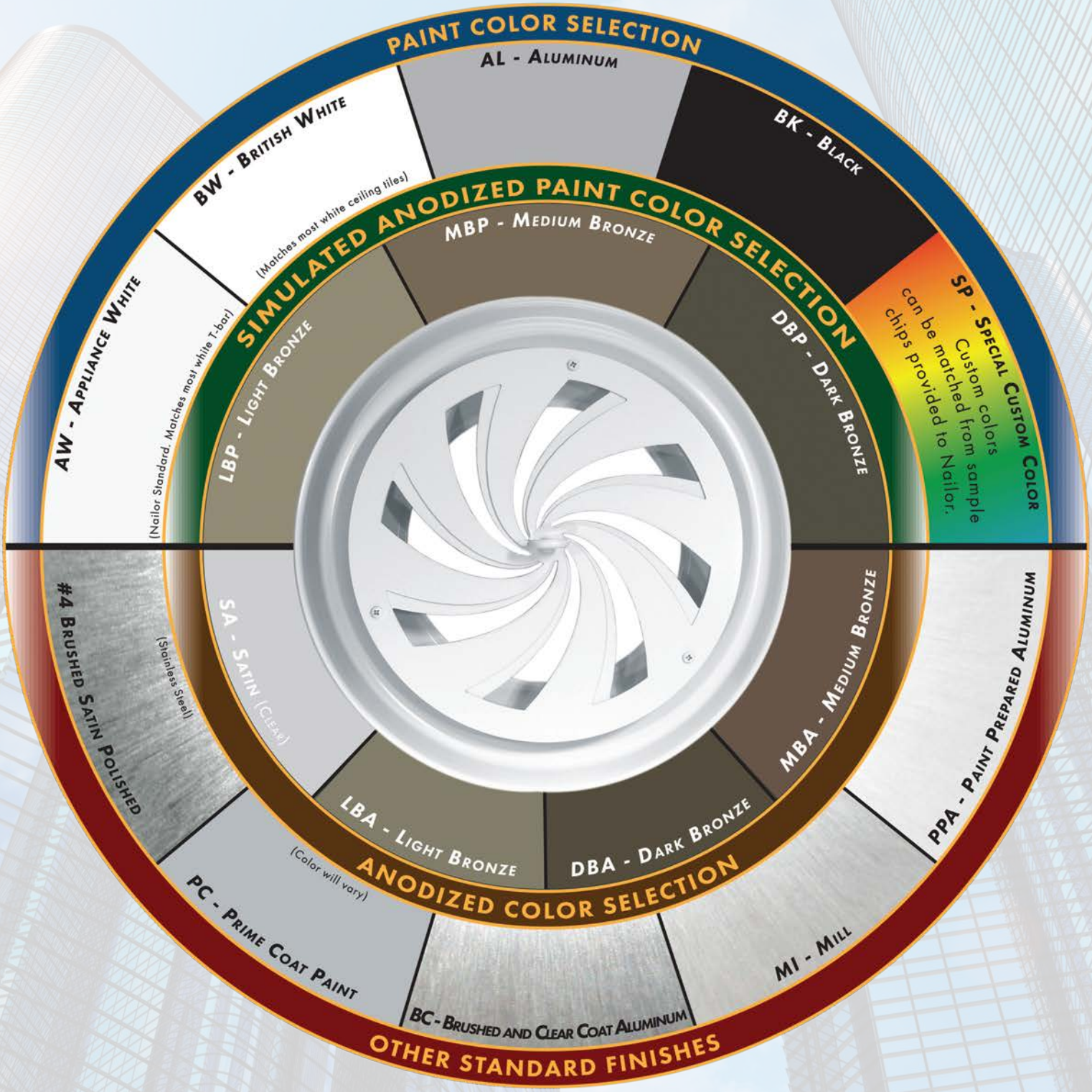
MILL FINISH

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:

FIXED BLADE RETURN GRILLES AND REGISTERS • 5100, 6100 AND 6700 SERIES

MODELS: 5145H, 6145H, 6745H, 5145V, 6145V, 6745V, 51FB45, 61FB45, 67FB45

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity Velocity Pressure Neg. Static Pressure	100 .001 .003	200 .002 .014	300 .006 .031	400 .010 .055	500 .016 .086	600 .022 .124	700 .031 .168	800 .040 .220	900 .050 .278	1000 .062 .344
6 x 6	8 x 4 10 x 4	0.20	0.23	**CFM** Noise Criteria	**20** –	**40** –	**60** –	**80** –	**100** –	**120** 19	**140** 24	**160** 28	**180** 32	**200** 36
8 x 6	10 x 5 12 x 4	0.28	0.30	**CFM** Noise Criteria	**28** –	**56** –	**84** –	**112** –	**140** 15	**168** 20	**196** 25	**224** 29	**252** 33	**280** 37
10 x 6	12 x 5 16 x 4	0.35	0.37	**CFM** Noise Criteria	**35** –	**70** –	**105** –	**140** –	**175** 16	**210** 21	**245** 26	**280** 30	**315** 34	**350** 38
8 x 8	14 x 5	0.38	0.40	**CFM** Noise Criteria	**38** –	**76** –	**114** –	**152** –	**190** 17	**228** 22	**266** 27	**304** 31	**342** 35	**380** 39
12 x 6	18 x 4	0.42	0.45	**CFM** Noise Criteria	**42** –	**84** –	**126** –	**168** –	**210** 18	**252** 23	**294** 27	**336** 32	**378** 36	**420** 40
12 x 8	16 x 6 24 x 4	0.58	0.59	**CFM** Noise Criteria	**58** –	**116** –	**174** –	**232** –	**290** 19	**348** 24	**406** 28	**464** 33	**522** 37	**580** 41
10 x 10	14 x 7 26 x 4	0.61	0.62	**CFM** Noise Criteria	**61** –	**122** –	**183** –	**244** –	**305** 19	**366** 24	**427** 29	**488** 34	**549** 37	**610** 41
18 x 6	14 x 8 28 x 4	30 x 4	0.65	0.67	**CFM** Noise Criteria	**65** –	**130** –	**195** –	**260** 15	**325** 20	**390** 25	**455** 30	**520** 34	**585** 38	**650** 41
12 x 10	16 x 8 24 x 5	20 x 6	0.74	0.74	**CFM** Noise Criteria	**74** –	**148** –	**222** –	**296** 15	**370** 20	**444** 25	**518** 30	**592** 35	**666** 39	**740** 42
12 x 12	14 x 10 18 x 8	24 x 6 38 x 4	0.90	0.89	**CFM** Noise Criteria	**90** –	**180** –	**270** –	**360** 16	**450** 21	**540** 26	**630** 31	**720** 36	**810** 39	**900** 42
14 x 14	16 x 12 20 x 10	24 x 8 34 x 6	1.24	1.22	**CFM** Noise Criteria	**124** –	**248** –	**372** –	**496** 16	**620** 21	**744** 26	**868** 31	**992** 36	**1116** 40	**1240** 43
18 x 12	16 x 14 22 x 10	28 x 8 38 x 6	1.37	1.34	**CFM** Noise Criteria	**137** –	**274** –	**411** –	**548** 17	**685** 22	**822** 27	**959** 32	**1096** 37	**1233** 40	**1370** 43
24 x 10	20 x 12 30 x 8	1.52	1.49	**CFM** Noise Criteria	**152** –	**304** –	**456** –	**608** 17	**760** 22	**912** 27	**1064** 32	**1216** 38	**1368** 41	**1520** 44
16 x 16	18 x 14 22 x 12	30 x 8	1.64	1.58	**CFM** Noise Criteria	**164** –	**328** –	**492** –	**656** 18	**820** 23	**984** 28	**1148** 33	**1312** 38	**1476** 41	**1640** 44
24 x 12	18 x 16 20 x 14	30 x 10 36 x 8	1.85	1.78	**CFM** Noise Criteria	**185** –	**370** –	**555** –	**740** 18	**925** 23	**1110** 28	**1295** 33	**1480** 38	**1665** 41	**1850** 45
18 x 18	20 x 16 24 x 14	28 x 12 32 x 10	2.10	2.01	**CFM** Noise Criteria	**210** –	**420** –	**630** –	**840** 18	**1050** 23	**1260** 29	**1470** 34	**1680** 39	**1890** 42	**2100** 45
30 x 12	20 x 18 22 x 16	26 x 14 36 x 10	2.32	2.23	**CFM** Noise Criteria	**232** –	**464** –	**696** –	**928** 19	**1160** 24	**1392** 29	**1624** 34	**1856** 39	**2088** 42	**2320** 46
20 x 20	24 x 18 26 x 16	30 x 14 36 x 12	2.61	2.48	**CFM** Noise Criteria	**261** –	**522** –	**783** –	**1044** 19	**1305** 24	**1566** 30	**1827** 35	**2088** 40	**2349** 43	**2610** 46
22 x 22	24 x 20 26 x 18	30 x 16 36 x 14	3.17	3.00	**CFM** Noise Criteria	**317** –	**634** –	**951** –	**1268** 20	**1585** 25	**1902** 31	**2219** 35	**2536** 40	**2853** 43	**3170** 47
30 x 18	24 x 22 34 x 16	40 x 14	3.54	3.34	**CFM** Noise Criteria	**354** –	**708** –	**1062** –	**1416** 20	**1770** 25	**2124** 31	**2478** 36	**2832** 41	**3186** 44	**3540** 48
24 x 24	26 x 22 28 x 20	32 x 18 36 x 16	3.79	3.56	**CFM** Noise Criteria	**379** –	**758** –	**1137** –	**1516** 20	**1895** 25	**2274** 31	**2653** 36	**3032** 41	**3411** 44	**3790** 48
36 x 18	32 x 20 40 x 16	46 x 14	4.27	4.01	**CFM** Noise Criteria	**427** –	**854** –	**1281** –	**1708** 21	**2135** 26	**2562** 32	**2989** 37	**3416** 42	**3843** 45	**4270** 49
26 x 26	28 x 24 48 x 14	4.47	4.19	**CFM** Noise Criteria	**447** –	**894** –	**1341** –	**1788** 21	**2235** 26	**2682** 32	**3129** 37	**3576** 42	**4023** 45	**4470** 49
30 x 24	28 x 26 32 x 22	36 x 20 40 x 18	4.77	4.46	**CFM** Noise Criteria	**477** –	**954** –	**1431** 15	**1908** 22	**2385** 27	**2862** 33	**3339** 38	**3816** 42	**4293** 46	**4770** 50
28 x 28	30 x 26 36 x 22	40 x 20	5.20	4.85	**CFM** Noise Criteria	**520** –	**1040** –	**1560** 15	**2080** 22	**2600** 27	**3120** 33	**3640** 38	**4160** 43	**4680** 46	**5200** 50
36 x 24	30 x 28 40 x 22	44 x 20	5.74	5.35	**CFM** Noise Criteria	**574** –	**1148** –	**1722** 15	**2296** 22	**2870** 28	**3444** 34	**4018** 38	**4592** 43	**5166** 47	**5740** 51
30 x 30	34 x 26 38 x 24	48 x 20	5.99	5.57	**CFM** Noise Criteria	**599** –	**1198** –	**1797** 15	**2396** 22	**2995** 28	**3594** 34	**4193** 39	**4792** 43	**5391** 47	**5990** 51

For performance data notes, see F42.

PERFORMANCE DATA:

FIXED BLADE RETURN GRILLES AND REGISTERS • 5100, 6100 AND 6700 SERIES

MODELS: 5145H, 6145H, 6745H, 5145V, 6145V, 6745V, 51FB45, 61FB45, 67FB45

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity Velocity Pressure Neg. Static Pressure	100 .001 .003	200 .002 .014	300 .006 .031	400 .010 .055	500 .016 .086	600 .022 .124	700 .031 .168	800 .040 .220	900 .050 .278	1000 .062 .344
32 x 32	36 x 30 46 x 22 38 x 28	6.84	6.34	**CFM** Noise Criteria	**684** –	**1368** –	**2052** 16	**2736** 23	**3420** 29	**4104** 35	**4788** 39	**5472** 44	**6156** 48	**6840** 52
48 x 24	34 x 34 38 x 30 36 x 32 48 x 28	7.69	7.13	**CFM** Noise Criteria	**769** –	**1538** –	**2307** 17	**3076** 23	**3845** 29	**4614** 35	**5383** 40	**6152** 44	**6921** 48	**7690** 52
36 x 36	38 x 34 46 x 28 42 x 30 48 x 26	8.69	8.02	**CFM** Noise Criteria	**869** –	**1738** –	**2607** 17	**3476** 24	**4345** 29	**5214** 36	**6083** 41	**6952** 45	**7821** 49	**8690** 53
38 x 38	42 x 34 48 x 30 44 x 34	9.70	8.94	**CFM** Noise Criteria	**970** –	**1940** –	**2910** 18	**3880** 24	**4850** 30	**5820** 36	**6790** 41	**7760** 45	**8730** 49	**9700** 53
40 x 40	42 x 36 48 x 32 46 x 34	10.77	9.90	**CFM** Noise Criteria	**1077** –	**2154** –	**3231** 18	**4308** 24	**5385** 30	**6462** 36	**7539** 42	**8616** 45	**9693** 50	**10770** 54
42 x 42	46 x 42	11.89	10.92	**CFM** Noise Criteria	**1189** –	**2378** –	**3567** 19	**4756** 25	**5945** 31	**7134** 37	**8323** 42	**9512** 46	**10701** 50	**11890** 54
44 x 44		13.07	11.98	**CFM** Noise Criteria	**1307** –	**2614** –	**3921** 19	**5228** 25	**6535** 31	**7842** 37	**9149** 42	**10456** 46	**11763** 50	**13070** 54
46 x 46		14.30	13.10	**CFM** Noise Criteria	**1430** –	**2860** –	**4290** 20	**5720** 26	**7150** 32	**8580** 38	**10010** 43	**11440** 47	**12870** 51	**14300** 55
48 x 48		15.59	14.26	**CFM** Noise Criteria	**1559** –	**3118** –	**4677** 20	**6236** 26	**7795** 32	**9354** 38	**10913** 43	**12472** 47	**14031** 51	**15590** 55

Performance Notes:

1. All pressures are in inches w.g..

2. Core Velocity is in feet per minute.

3. Performance data is for grille with opposed blade damper. Apply the following correction factors for grille without damper.

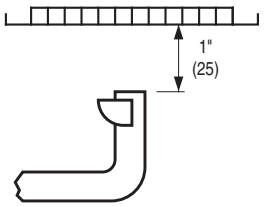
Negative Static Pressure Listed Value x 0.91.

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.

Performance Data – Metric

Fixed Blade Return Grilles and Registers • 5100, 6100 and 6700 Series
Models: 5145H, 6145H, 6745H, 5145V, 6145V, 6745V, 51FB45, 61FB45, 67FB45

Listed Duct Size (mm)	Alternate Size (mm)	Core Area (m^2)	Ak Factor	Core Velocity, M/S	30	61	91	122	152	183	213	244	274	305
				VP	0.2	0.5	1.5	2.5	4.0	5.5	7.7	9.9	12.4	15.4
				Negative SP	0.7	3.5	7.7	13.7	21.4	30.8	41.8	54.7	69.1	85.5
152 x 152	203 x 102 254 x 102	0.02	0.23	**L/S** NC	**9** —	**19** —	**28** —	**38** —	**47** —	**57** 19	**66** 24	**76** 28	**85** 32	**94** 36
203 x 152	254 x 127 305 x 102	0.03	0.30	**L/S** NC	**13** —	**26** —	**40** —	**53** —	**66** 15	**79** 20	**92** 25	**106** 29	**119** 33	**132** 37
254 x 152	305 x 127 406 x 102	0.03	0.37	**L/S** NC	**17** —	**33** —	**50** —	**66** —	**83** 16	**99** 21	**116** 26	**132** 30	**149** 34	**165** 38
203 x 203	356 x 127	0.04	0.4	**L/S** NC	**18** —	**36** —	**54** —	**72** —	**90** 17	**108** 22	**126** 27	**143** 31	**161** 35	**179** 39
305 x 152	457 x 102	0.04	0.45	**L/S** NC	**20** —	**40** —	**59** —	**79** —	**99** 18	**119** 23	**139** 27	**159** 32	**178** 36	**198** 40
305 x 203	406 x 152 610 x 102	0.05	0.59	**L/S** NC	**27** —	**55** —	**82** —	**109** —	**137** 19	**164** 24	**192** 29	**219** 34	**246** 37	**274** 41
254 x 254	356 x 178 660 x 102	0.06	0.62	**L/S** NC	**29** —	**58** —	**86** —	**115** —	**144** 19	**173** 24	**202** 29	**230** 34	**259** 37	**288** 41
457 x 152	356 x 203 762 x 102 711 x 102	0.06	0.67	**L/S** NC	**31** —	**61** —	**92** —	**123** 15	**153** 20	**184** 25	**215** 30	**245** 34	**276** 38	**307** 41
305 x 254	406 x 203 508 x 152 610 x 127	0.07	0.74	**L/S** NC	**35** —	**70** —	**105** —	**140** 15	**175** 20	**210** 25	**244** 30	**279** 35	**314** 39	**349** 42
305 x 305	356 x 254 610 x 152 457 x 203 965 x 102	0.08	0.89	**L/S** NC	**42** —	**85** —	**127** —	**170** 16	**212** 21	**255** 26	**297** 31	**340** 36	**382** 39	**425** 42
356 x 356	406 x 305 610 x 203 508 x 254 864 x 152	0.12	1.22	**L/S** NC	**59** —	**117** —	**176** —	**234** 16	**293** 21	**351** 26	**410** 31	**468** 36	**527** 40	**585** 43
457 x 305	406 x 356 711 x 203 559 x 254 965 x 152	0.13	1.34	**L/S** NC	**65** —	**129** —	**194** —	**259** 17	**323** 22	**388** 27	**453** 32	**517** 37	**582** 40	**647** 43
610 x 254	508 x 305 762 x 203	0.14	1.49	**L/S** NC	**72** —	**143** —	**215** —	**287** 17	**359** 22	**430** 27	**502** 32	**574** 38	**646** 41	**717** 44
406 x 406	457 x 356 762 x 203 559 x 305	0.15	1.58	**L/S** NC	**77** —	**155** —	**232** —	**310** 18	**387** 23	**464** 28	**542** 33	**619** 38	**697** 41	**774** 44
610 x 305	457 x 406 762 x 254 508 x 356 813 x 203	0.17	1.78	**L/S** NC	**87** —	**175** —	**262** —	**349** 18	**437** 23	**524** 28	**611** 33	**698** 38	**786** 41	**873** 45
457 x 457	508 x 406 711 x 305 610 x 356 813 x 254	0.20	2.01	**L/S** NC	**99** —	**198** —	**297** —	**396** 18	**495** 23	**595** 28	**694** 33	**793** 38	**892** 41	**991** 45
762 x 305	508 x 457 660 x 356 559 x 406 914 x 254	0.22	2.23	**L/S** NC	**109** —	**219** —	**328** —	**438** 19	**547** 24	**657** 29	**766** 34	**876** 39	**985** 42	**1095** 46
508 x 508	610 x 457 762 x 356 660 x 406 914 x 305	0.24	2.48	**L/S** NC	**123** —	**246** —	**369** —	**493** 19	**616** 24	**739** 30	**862** 35	**985** 40	**1108** 43	**1232** 46
559 x 559	610 x 508 762 x 406 660 x 457 914 x 356	0.29	3.00	**L/S** NC	**150** —	**299** —	**449** —	**598** 20	**748** 25	**898** 31	**1047** 35	**1197** 40	**1346** 43	**1496** 47
762 x 457	610 x 559 1016 x 356 864 x 406	0.33	3.34	**L/S** NC	**167** —	**334** —	**501** —	**668** 20	**835** 25	**1002** 31	**1169** 36	**1336** 41	**1503** 44	**1671** 48
610 x 610	660 x 559 813 x 458 711 x 508 914 x 406	0.35	3.56	**L/S** NC	**179** —	**358** —	**537** —	**715** 20	**894** 25	**1073** 31	**1252** 36	**1431** 41	**1610** 44	**1789** 48
914 x 457	812 x 508 1168 x 356 1016 x 406	0.40	4.01	**L/S** NC	**202** —	**403** —	**605** —	**806** 21	**1008** 26	**1209** 32	**1411** 37	**1612** 42	**1814** 45	**2015** 49
660 x 660	711 x 610 1219 x 356	0.42	4.19	**L/S** NC	**211** —	**422** —	**633** —	**844** 21	**1055** 26	**1266** 32	**1477** 37	**1688** 42	**1898** 45	**2109** 49

Performance Data – Metric

Fixed Blade Return Grilles and Registers • 5100, 6100 and 6700 Series
Models: 5145H, 6145H, 6745H, 5145V, 6145V, 6745V
51FB45, 61FB45, 67FB45

Listed Duct Size (mm)	Alternate Size (mm)	Core Area (m^2)	Ak Factor	Core Velocity, M/S VP Negative SP	30 0.2 0.7	61 0.5 3.5	91 1.5 7.7	122 2.5 13.7	152 4.0 21.4	183 5.5 30.8	213 7.7 41.8	244 9.9 54.7	274 12.4 69.1	305 15.4 85.5
762 x 610	711 x 660 914 x 508 812 x 559 1016 x 457	0.02	4.46	**L/S** NC	**225** —	**450** —	**675** 15	**900** 22	**1125** 27	**1351** 33	**1576** 38	**1801** 42	**2026** 46	**2251** 50
711 x 711	762 x 660 1016 x 508 914 x 559	0.03	4.85	**L/S** NC	**245** —	**491** —	**736** 15	**982** 22	**1227** 27	**1472** 33	**1718** 38	**1963** 43	**2208** 46	**2454** 50
914 x 610	762 x 711 1118 x 508 1016 x 559	0.03	5.35	**L/S** NC	**271** —	**542** —	**813** 15	**1083** 22	**1354** 28	**1625** 34	**1896** 38	**2167** 43	**2438** 47	**2709** 51
762 x 762	864 x 660 1219 x 508 965 x 610	0.04	5.57	**L/S** NC	**283** —	**565** —	**848** 15	**1131** 22	**1413** 28	**1696** 34	**1979** 39	**2261** 43	**2544** 47	**2827** 51
813 x 813	914 x 559 1168 x 559 965 x 711	0.04	6.34	**L/S** NC	**323** —	**646** —	**968** 16	**1291** 23	**1614** 29	**1937** 35	**2259** 39	**2582** 44	**2905** 48	**3228** 52
1219 x 610	864 x 864 965 x 762 914 x 813 1219 x 711	0.05	7.13	**L/S** NC	**363** —	**726** —	**1089** 17	**1452** 23	**1814** 29	**2177** 35	**2540** 40	**2903** 44	**3266** 48	**3629** 52
914 x 914	965 x 865 1168 x 711 1067 x 762 1219 x 660	0.06	8.02	**L/S** NC	**410** —	**820** —	**1230** 17	**1640** 24	**2050** 29	**2460** 36	**2871** 41	**3281** 45	**3691** 49	**4101** 53
965 x 965	1067 x 914 1219 x 762 1117 x 864	0.06	8.94	**L/S** NC	**458** —	**915** —	**1373** 18	**1831** 24	**2289** 30	**2746** 36	**3204** 41	**3662** 45	**4120** 49	**4577** 53
1016 x 1016	1067 x 914 1219 x 813 1168 x 965	0.07	9.90	**L/S** NC	**508** —	**1016** —	**1525** 18	**2033** 24	**2541** 30	**3049** 36	**3558** 42	**4066** 45	**4574** 50	**5082** 54
1067 x 1067	1118 x 1016 1219 x 914 1168 x 965	0.08	10.92	**L/S** NC	**561** —	**1122** —	**1683** 19	**2244** 25	**2805** 31	**3367** 37	**3928** 42	**4489** 46	**5050** 50	**5611** 54
1118 x 1118	1168 x 1067	0.12	11.98	**L/S** NC	**617** —	**1234** —	**1850** 19	**2467** 25	**3084** 31	**3701** 37	**4317** 42	**4934** 46	**5551** 50	**6168** 54
1168 x 1168		0.13	13.10	**L/S** NC	**675** —	**1350** —	**2024** 20	**2699** 26	**3374** 32	**4049** 38	**4724** 43	**5399** 47	**6073** 51	**6748** 55
1219 x 1219		0.14	14.26	**L/S** NC	**736** —	**1471** —	**2207** 20	**2943** 26	**3678** 32	**4414** 38	**5150** 43	**5886** 47	**6621** 51	**7357** 55

L/S - liters per second

M/S - meters per second (velocity)

VP - velocity pressure - Pa

Neg. SP - negative static pressure - Pa

NC - Noise Criteria (values) based on 10 dB room absorption, re 10^{-12} watts.

Performance Notes:

1. Performance data is for grille with opposed blade damper. Apply the following correction factors for grille without damper.

Neg. SP Listed Value x 0.91.

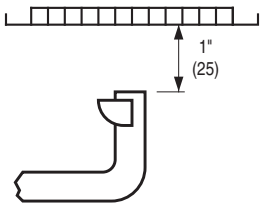
NC Listed value – 4.

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

Airflow Measurements

1. Balancing factors are applicable with or without dampers, providing uniform airflow exists into grille or register.

Air Measurement



Alnor Velometer with 2220A or 6070P Jet Probe

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 M/S).

4. Calculate the airflow (L/S) by multiplying the average velocity by the appropriate Ak factor.
Airflow (L/S) = Average velocity (Vk) x Ak.

PERFORMANCE DATA:

FIXED BLADE RETURN GRILLES AND REGISTERS • 5100, 6100 AND 6700 SERIES

MODELS: 5155H, 6155H, 6755H, 5155V, 6155V, 6755V, 51FB55, 61FB55, 67FB55

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity Velocity Pressure Neg. Static Pressure	100 .001 .005	200 .002 .018	300 .006 .041	400 .010 .073	500 .016 .114	600 .022 .164	700 .031 .223	800 .040 .292	900 .050 .369	1000 .062 .456
6 x 6	8 x 4 10 x 4	0.20	0.23	**CFM** Noise Criteria	**20** –	**40** –	**60** –	**80** –	**100** 16	**120** 21	**140** 26	**160** 30	**180** 34	**200** 38
8 x 6	10 x 5 12 x 4	0.28	0.30	**CFM** Noise Criteria	**28** –	**56** –	**84** –	**112** –	**140** 17	**168** 22	**196** 27	**224** 31	**252** 35	**280** 39
10 x 6	12 x 5 16 x 4	0.35	0.37	**CFM** Noise Criteria	**35** –	**70** –	**105** –	**140** –	**175** 18	**210** 23	**245** 28	**280** 32	**315** 36	**350** 40
8 x 8	14 x 5	0.38	0.40	**CFM** Noise Criteria	**38** –	**76** –	**114** –	**152** –	**190** 19	**228** 24	**266** 29	**304** 33	**342** 37	**380** 41
12 x 6	18 x 4	0.42	0.45	**CFM** Noise Criteria	**42** –	**84** –	**126** –	**168** 15	**210** 20	**252** 25	**294** 29	**336** 34	**378** 38	**420** 42
12 x 8	16 x 6 24 x 4	0.58	0.59	**CFM** Noise Criteria	**58** –	**116** –	**174** –	**232** 16	**290** 21	**348** 26	**406** 30	**464** 35	**522** 39	**580** 43
10 x 10	14 x 7 26 x 4	0.61	0.62	**CFM** Noise Criteria	**61** –	**122** –	**183** –	**244** 16	**305** 21	**366** 26	**427** 31	**488** 36	**549** 39	**610** 43
18 x 6	14 x 8 30 x 4 28 x 4	0.65	0.67	**CFM** Noise Criteria	**65** –	**130** –	**195** –	**260** 17	**325** 22	**390** 27	**455** 32	**520** 36	**585** 40	**650** 43
12 x 10	16 x 8 20 x 6 24 x 5	0.74	0.74	**CFM** Noise Criteria	**74** –	**148** –	**222** –	**296** 17	**370** 22	**444** 27	**518** 32	**592** 37	**666** 41	**740** 44
12 x 12	14 x 10 24 x 6 18 x 8 38 x 4	0.90	0.89	**CFM** Noise Criteria	**90** –	**180** –	**270** –	**360** 18	**450** 23	**540** 28	**630** 33	**720** 38	**810** 41	**900** 44
14 x 14	16 x 12 24 x 8 20 x 10 34 x 6	1.24	1.22	**CFM** Noise Criteria	**124** –	**248** –	**372** –	**496** 18	**620** 23	**744** 28	**868** 33	**992** 38	**1116** 42	**1240** 45
18 x 12	16 x 14 28 x 8 22 x 10 38 x 6	1.37	1.34	**CFM** Noise Criteria	**137** –	**274** –	**411** 15	**548** 20	**685** 25	**822** 30	**959** 35	**1096** 40	**1233** 43	**1370** 46
24 x 10	20 x 12 30 x 8	1.52	1.49	**CFM** Noise Criteria	**152** –	**304** –	**456** 15	**608** 20	**760** 25	**912** 30	**1064** 35	**1216** 41	**1368** 44	**1520** 47
16 x 16	18 x 14 30 x 8 22 x 12	1.64	1.58	**CFM** Noise Criteria	**164** –	**328** –	**492** 16	**656** 21	**820** 26	**984** 31	**1148** 36	**1312** 41	**1476** 44	**1640** 47
24 x 12	18 x 16 30 x 10 20 x 14 36 x 8	1.85	1.78	**CFM** Noise Criteria	**185** –	**370** –	**555** 16	**740** 21	**925** 26	**1110** 31	**1295** 36	**1480** 41	**1665** 44	**1850** 48
18 x 18	20 x 16 28 x 12 24 x 14 32 x 10	2.10	2.01	**CFM** Noise Criteria	**210** –	**420** –	**630** 16	**840** 21	**1050** 26	**1260** 32	**1470** 37	**1680** 42	**1890** 45	**2100** 48
30 x 12	20 x 18 26 x 14 22 x 16 36 x 10	2.32	2.23	**CFM** Noise Criteria	**232** –	**464** –	**696** 16	**928** 22	**1160** 27	**1392** 32	**1624** 37	**1856** 42	**2088** 45	**2320** 49
20 x 20	24 x 18 30 x 14 26 x 16 36 x 12	2.61	2.48	**CFM** Noise Criteria	**261** –	**522** –	**783** 16	**1044** 22	**1305** 27	**1566** 33	**1827** 38	**2088** 43	**2349** 46	**2610** 49
22 x 22	24 x 20 30 x 16 26 x 18 36 x 14	3.17	3.00	**CFM** Noise Criteria	**317** –	**634** –	**951** 17	**1268** 23	**1585** 28	**1902** 34	**2219** 38	**2536** 43	**2853** 46	**3170** 50
30 x 18	24 x 22 40 x 14 34 x 16	3.54	3.34	**CFM** Noise Criteria	**354** –	**708** –	**1062** 17	**1416** 23	**1770** 28	**2124** 34	**2478** 39	**2832** 44	**3186** 47	**3540** 51
24 x 24	26 x 22 32 x 18 28 x 20 36 x 16	3.79	3.56	**CFM** Noise Criteria	**379** –	**758** –	**1137** 17	**1516** 23	**1895** 28	**2274** 34	**2653** 39	**3032** 44	**3411** 47	**3790** 51
36 x 18	32 x 20 46 x 14 40 x 16	4.27	4.01	**CFM** Noise Criteria	**427** –	**854** –	**1281** 18	**1708** 25	**2135** 29	**2562** 36	**2989** 41	**3416** 46	**3843** 49	**4270** 53
26 x 26	28 x 24 48 x 14	4.47	4.19	**CFM** Noise Criteria	**447** –	**894** –	**1341** 18	**1788** 25	**2235** 30	**2682** 36	**3129** 41	**3576** 46	**4023** 49	**4470** 53
30 x 24	28 x 26 36 x 20 32 x 22 40 x 18	4.77	4.46	**CFM** Noise Criteria	**477** –	**954** –	**1431** 19	**1908** 26	**2385** 31	**2862** 37	**3339** 42	**3816** 46	**4293** 50	**4770** 54
28 x 28	30 x 26 40 x 20 36 x 22	5.20	4.85	**CFM** Noise Criteria	**520** –	**1040** –	**1560** 19	**2080** 26	**2600** 31	**3120** 37	**3640** 42	**4160** 47	**4680** 50	**5200** 54
36 x 24	30 x 28 44 x 20 40 x 22	5.74	5.35	**CFM** Noise Criteria	**574** –	**1148** –	**1722** 19	**2296** 26	**2870** 32	**3444** 38	**4018** 42	**4592** 47	**5166** 51	**5740** 55
30 x 30	34 x 26 48 x 20 38 x 24	5.99	5.57	**CFM** Noise Criteria	**599** –	**1198** –	**1797** 19	**2396** 26	**2995** 32	**3594** 38	**4193** 43	**4792** 47	**5391** 51	**5990** 55

For performance data notes, see F46.

PERFORMANCE DATA:

FIXED BLADE RETURN GRILLES AND REGISTERS • 5100, 6100 AND 6700 SERIES

MODELS: 5155H, 6155H, 6755H, 5155V, 6155V, 6755V, 51FB55, 61FB55, 67FB55

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity Velocity Pressure Neg. Static Pressure	100 .001 .005	200 .002 .018	300 .006 .041	400 .010 .073	500 .016 .114	600 .022 .164	700 .031 .223	800 .040 .292	900 .050 .369	1000 .062 .456
32 x 32	36 x 30 46 x 22 38 x 28	6.84	6.34	**CFM** Noise Criteria	**684** –	**1368** 15	**2052** 20	**2736** 27	**3420** 33	**4104** 39	**4788** 43	**5472** 48	**6156** 52	**6840** 56
48 x 24	34 x 34 38 x 30 36 x 32 48 x 28	7.69	7.13	**CFM** Noise Criteria	**769** –	**1538** 16	**2307** 21	**3076** 27	**3845** 33	**4614** 39	**5383** 44	**6152** 48	**6921** 52	**7690** 56
36 x 36	38 x 34 46 x 28 42 x 30 48 x 26	8.69	8.02	**CFM** Noise Criteria	**869** –	**1738** 17	**2607** 21	**3476** 28	**4345** 33	**5214** 40	**6083** 45	**6952** 49	**7821** 53	**8690** 57
38 x 38	42 x 34 48 x 30 44 x 34	9.70	8.94	**CFM** Noise Criteria	**970** –	**1940** 18	**2910** 22	**3880** 28	**4850** 34	**5820** 40	**6790** 45	**7760** 49	**8730** 53	**9700** 57
40 x 40	42 x 36 48 x 32 46 x 34	10.77	9.90	**CFM** Noise Criteria	**1077** –	**2154** 18	**3231** 23	**4308** 29	**5385** 35	**6462** 41	**7539** 47	**8616** 50	**9693** 55	**10770** 59
42 x 42	44 x 40 48 x 36 46 x 38	11.89	10.92	**CFM** Noise Criteria	**1189** –	**2378** 19	**3567** 24	**4756** 30	**5945** 36	**7134** 42	**8323** 47	**9512** 51	**10701** 55	**11890** 59
44 x 44	46 x 42	13.07	11.98	**CFM** Noise Criteria	**1307** –	**2614** 19	**3921** 24	**5228** 30	**6535** 36	**7842** 42	**9149** 47	**10456** 51	**11763** 55	**13070** 59
46 x 46		14.30	13.10	**CFM** Noise Criteria	**1430** 15	**2860** 20	**4290** 25	**5720** 31	**7150** 37	**8580** 43	**10010** 48	**11440** 52	**12870** 56	**14300** 60
48 x 48		15.59	14.26	**CFM** Noise Criteria	**1559** 15	**3118** 20	**4677** 25	**6236** 31	**7795** 37	**9354** 43	**10913** 48	**12472** 52	**14031** 56	**15590** 60

Performance Notes:

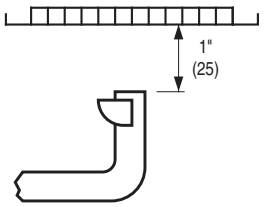
1. All pressures are in inches w.g..
2. Core Velocity is in feet per minute.
3. Performance data is for grille with opposed blade damper. Apply the following correction factors for grille without damper.

Negative Static Pressure Listed Value x 0.91.

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.

PERFORMANCE DATA:

FIXED BLADE RETURN GRILLES AND REGISTERS • 5100, 6100 AND 6700 SERIES

MODELS: 51FH, 61FH, 67FH, 51FV, 61FV, 67FV, 51FBS, 61FBS

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity Velocity Pressure Neg. Static Pressure	100 .001 .002	200 .002 .009	300 .006 .020	400 .010 .035	500 .016 .055	600 .022 079	700 .031 .107	800 .040 .140	900 .050 .177	1000 .062 .219
6 x 6	8 x 4 10 x 4	0.20	0.23	**CFM** Noise Criteria	**20** –	**40** –	**60** –	**80** –	**100** –	**120** 16	**140** 18	**160** 21	**180** 25	**200** 30
8 x 6	10 x 5 12 x 4	0.28	0.30	**CFM** Noise Criteria	**28** –	**56** –	**84** –	**112** –	**140** –	**168** 17	**196** 19	**224** 22	**252** 26	**280** 31
10 x 6	12 x 5 16 x 4	0.35	0.37	**CFM** Noise Criteria	**35** –	**70** –	**105** –	**140** –	**175** –	**210** 18	**245** 20	**280** 23	**315** 27	**350** 32
8 x 8	14 x 5	0.38	0.40	**CFM** Noise Criteria	**38** –	**76** –	**114** –	**152** –	**190** –	**228** 19	**266** 21	**304** 24	**342** 28	**380** 32
12 x 6	18 x 4	0.42	0.45	**CFM** Noise Criteria	**42** –	**84** –	**126** –	**168** –	**210** 15	**252** 19	**294** 22	**336** 25	**378** 29	**420** 33
12 x 8	16 x 6 24 x 4	0.58	0.59	**CFM** Noise Criteria	**58** –	**116** –	**174** –	**232** –	**290** 15	**348** 19	**406** 22	**464** 26	**522** 30	**580** 34
10 x 10	14 x 7 26 x 4	0.61	0.62	**CFM** Noise Criteria	**61** –	**122** –	**183** –	**244** –	**305** 15	**366** 19	**427** 22	**488** 27	**549** 30	**610** 35
18 x 6	14 x 8 30 x 4 28 x 4	0.65	0.67	**CFM** Noise Criteria	**65** –	**130** –	**195** –	**260** –	**325** 16	**390** 20	**455** 23	**520** 27	**585** 31	**650** 35
12 x 10	16 x 8 20 x 6 24 x 5	0.74	0.74	**CFM** Noise Criteria	**74** –	**148** –	**222** –	**296** –	**370** 16	**444** 21	**518** 24	**592** 28	**666** 32	**740** 35
12 x 12	14 x 10 24 x 6 18 x 8 38 x 4	0.90	0.89	**CFM** Noise Criteria	**90** –	**180** –	**270** –	**360** –	**450** 17	**540** 21	**630** 24	**720** 29	**810** 32	**900** 35
14 x 14	16 x 12 24 x 8 20 x 10 34 x 6	1.24	1.22	**CFM** Noise Criteria	**124** –	**248** –	**372** –	**496** –	**620** 17	**744** 22	**868** 25	**992** 29	**1116** 33	**1240** 36
18 x 12	16 x 14 28 x 8 22 x 10 38 x 6	1.37	1.34	**CFM** Noise Criteria	**137** –	**274** –	**411** –	**548** –	**685** 18	**822** 23	**959** 26	**1096** 31	**1233** 34	**1370** 37
24 x 10	20 x 12 30 x 8	1.52	1.49	**CFM** Noise Criteria	**152** –	**304** –	**456** –	**608** –	**760** 18	**912** 23	**1064** 27	**1216** 32	**1368** 35	**1520** 38
16 x 16	18 x 14 30 x 8 22 x 12	1.64	1.58	**CFM** Noise Criteria	**164** –	**328** –	**492** –	**656** –	**820** 19	**984** 23	**1148** 27	**1312** 32	**1476** 35	**1640** 38
24 x 12	18 x 16 30 x 10 20 x 14 36 x 8	1.85	1.78	**CFM** Noise Criteria	**185** –	**370** –	**555** –	**740** –	**925** 19	**1110** 24	**1295** 27	**1480** 32	**1665** 35	**1850** 39
18 x 18	20 x 16 28 x 12 24 x 14 32 x 10	2.10	2.01	**CFM** Noise Criteria	**210** –	**420** –	**630** –	**840** –	**1050** 19	**1260** 24	**1470** 28	**1680** 33	**1890** 36	**2100** 39
30 x 12	20 x 18 26 x 14 22 x 16 36 x 10	2.32	2.23	**CFM** Noise Criteria	**232** –	**464** –	**696** –	**928** –	**1160** 19	**1392** 24	**1624** 28	**1856** 33	**2088** 36	**2320** 40
20 x 20	24 x 18 30 x 14 26 x 16 36 x 12	2.61	2.48	**CFM** Noise Criteria	**261** –	**522** –	**783** –	**1044** –	**1305** 19	**1566** 24	**1827** 28	**2088** 33	**2349** 36	**2610** 40
22 x 22	24 x 20 30 x 16 26 x 18 36 x 14	3.17	3.00	**CFM** Noise Criteria	**317** –	**634** –	**951** –	**1268** 15	**1585** 20	**1902** 25	**2219** 29	**2536** 33	**2853** 36	**3170** 40
30 x 18	24 x 22 40 x 14 34 x 16	3.54	3.34	**CFM** Noise Criteria	**354** –	**708** –	**1062** –	**1416** 15	**1770** 20	**2124** 25	**2478** 29	**2832** 34	**3186** 37	**3540** 41
24 x 24	26 x 22 32 x 18 28 x 20 36 x 16	3.79	3.56	**CFM** Noise Criteria	**379** –	**758** –	**1137** –	**1516** 15	**1895** 20	**2274** 25	**2653** 30	**3032** 34	**3411** 37	**3790** 41
36 x 18	32 x 20 46 x 14 40 x 16	4.27	4.01	**CFM** Noise Criteria	**427** –	**854** –	**1281** –	**1708** 17	**2135** 22	**2562** 26	**2989** 30	**3416** 35	**3843** 38	**4270** 42
26 x 26	28 x 24 48 x 14	4.47	4.19	**CFM** Noise Criteria	**447** –	**894** –	**1341** –	**1788** 17	**2235** 22	**2682** 26	**3129** 30	**3576** 35	**4023** 38	**4470** 42
30 x 24	28 x 26 36 x 20 32 x 22 40 x 18	4.77	4.46	**CFM** Noise Criteria	**477** –	**954** –	**1431** –	**1908** 18	**2385** 23	**2862** 27	**3339** 31	**3816** 35	**4293** 39	**4770** 43
28 x 28	30 x 26 40 x 20 36 x 22	5.20	4.85	**CFM** Noise Criteria	**520** –	**1040** –	**1560** –	**2080** 18	**2600** 23	**3120** 27	**3640** 31	**4160** 36	**4680** 39	**5200** 43
36 x 24	30 x 28 44 x 20 40 x 22	5.74	5.35	**CFM** Noise Criteria	**574** –	**1148** –	**1722** –	**2296** 18	**2870** 23	**3444** 27	**4018** 31	**4592** 36	**5166** 40	**5740** 44
30 x 30	34 x 26 48 x 20 38 x 24	5.99	5.57	**CFM** Noise Criteria	**599** –	**1198** –	**1797** –	**2396** 18	**2995** 23	**3594** 28	**4193** 32	**4792** 36	**5391** 40	**5990** 44

For performance data notes, see F44.

PERFORMANCE DATA:

FIXED BLADE RETURN GRILLES AND REGISTERS • 5100, 6100 AND 6700 SERIES

MODELS: 51FH, 61FH, 67FH, 51FV, 61FV, 67FV, 51FBS, 61FBS

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity Velocity Pressure Neg. Static Pressure	100 .001 .003	200 .002 .014	300 .006 .031	400 .010 .055	500 .016 .086	600 .022 .124	700 .031 .168	800 .040 .220	900 .050 .278	1000 .062 .344
32 x 32	36 x 30 46 x 22 38 x 28	6.84	6.34	**CFM** Noise Criteria	**684** –	**1368** –	**2052** –	**2736** 18	**3420** 24	**4104** 28	**4788** 32	**5472** 37	**6156** 41	**6840** 45
48 x 24	34 x 34 38 x 30 36 x 32 48 x 28	7.69	7.13	**CFM** Noise Criteria	**769** –	**1538** –	**2307** –	**3076** 18	**3845** 24	**4614** 29	**5383** 33	**6152** 37	**6921** 41	**7690** 45
36 x 36	38 x 34 46 x 28 42 x 30 48 x 26	8.69	8.02	**CFM** Noise Criteria	**869** –	**1738** –	**2607** –	**3476** 19	**4345** 24	**5214** 29	**6083** 34	**6952** 38	**7821** 42	**8690** 46
38 x 38	42 x 34 48 x 30 44 x 34	9.70	8.94	**CFM** Noise Criteria	**970** –	**1940** –	**2910** –	**3880** 19	**4850** 25	**5820** 30	**6790** 34	**7760** 38	**8730** 42	**9700** 46
40 x 40	42 x 36 48 x 32 46 x 34	10.77	9.90	**CFM** Noise Criteria	**1077** –	**2154** –	**3231** –	**4308** 20	**5385** 26	**6462** 30	**7539** 35	**8616** 38	**9693** 43	**10770** 47
42 x 42	46 x 42	11.89	10.92	**CFM** Noise Criteria	**1189** –	**2378** –	**3567** –	**4756** 20	**5945** 26	**7134** 31	**8323** 35	**9512** 39	**10701** 43	**11890** 47
44 x 44		13.07	11.98	**CFM** Noise Criteria	**1307** –	**2614** –	**3921** 15	**5228** 20	**6535** 26	**7842** 31	**9149** 35	**10456** 39	**11763** 43	**13070** 47
46 x 46		14.30	13.10	**CFM** Noise Criteria	**1430** –	**2860** –	**4290** 15	**5720** 21	**7150** 27	**8580** 32	**10010** 36	**11440** 40	**12870** 44	**14300** 48
48 x 48		15.59	14.26	**CFM** Noise Criteria	**1559** –	**3118** –	**4677** 16	**6236** 21	**7795** 27	**9354** 32	**10913** 36	**12472** 40	**14031** 44	**15590** 48

Performance Notes:

1. All pressures are in inches w.g..

2. Core Velocity is in feet per minute.

3. Performance data is for grille with opposed blade damper. Apply the following correction factors for grille without damper.

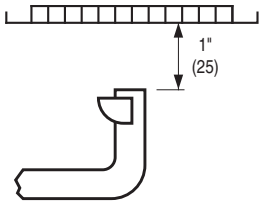
Negative Static Pressure Listed Value x 0.91.

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.

PERFORMANCE DATA:

EGGCRATE RETURN AND EXHAUST GRILLES AND REGISTERS • 5100, 6100 & 6700 SERIES

MODELS: 51EC, 61EC, 67EC, 51FE, 61FE

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity Velocity Pressure Neg. Static Pressure	300 .006 .012	400 .010 .021	500 .016 .033	600 .022 .048	700 .031 .065	800 .040 .085	900 .050 .107	1000 .062 .132	1200 .090 .190	1400 .122 .259
6 x 6	8 x 4 10 x 4	0.20	0.25	**CFM** Noise Criteria	**60** –	**80** –	**100** –	**120** –	**140** –	**160** 15	**180** 20	**200** 23	**240** 29	**280** 34
8 x 6	10 x 5 12 x 4	0.27	0.33	**CFM** Noise Criteria	**81** –	**108** –	**135** –	**162** –	**189** –	**216** 17	**243** 21	**270** 24	**324** 30	**378** 35
10 x 6	12 x 5 16 x 4	0.35	0.41	**CFM** Noise Criteria	**105** –	**140** –	**175** –	**210** –	**245** –	**280** 18	**315** 22	**350** 25	**420** 31	**490** 36
8 x 8	14 x 5	0.38	0.44	**CFM** Noise Criteria	**114** –	**152** –	**190** –	**228** –	**266** 15	**304** 18	**342** 23	**380** 26	**456** 32	**532** 37
12 x 6	18 x 4	0.42	0.50	**CFM** Noise Criteria	**126** –	**168** –	**210** –	**252** –	**294** 15	**336** 19	**378** 23	**420** 26	**504** 32	**588** 37
12 x 8	16 x 6 24 x 4	0.58	0.66	**CFM** Noise Criteria	**174** –	**232** –	**290** –	**348** –	**406** 17	**464** 20	**522** 24	**580** 27	**696** 33	**812** 38
10 x 10	14 x 7 26 x 4	0.61	0.69	**CFM** Noise Criteria	**183** –	**244** –	**305** –	**366** –	**427** 17	**488** 20	**549** 25	**610** 28	**732** 34	**854** 39
18 x 6	14 x 8 30 x 4 28 x 4	0.65	0.74	**CFM** Noise Criteria	**195** –	**260** –	**325** –	**390** –	**455** 17	**520** 21	**585** 25	**650** 28	**780** 34	**910** 39
12 x 10	16 x 8 20 x 6 24 x 5	0.74	0.82	**CFM** Noise Criteria	**222** –	**296** –	**370** –	**444** –	**518** 18	**592** 21	**666** 25	**740** 29	**888** 35	**1036** 40
12 x 12	14 x 10 24 x 6 18 x 8 38 x 4	0.90	0.99	**CFM** Noise Criteria	**270** –	**360** –	**450** –	**540** –	**630** 18	**720** 22	**810** 26	**900** 30	**1080** 36	**1260** 41
14 x 14	16 x 12 24 x 8 20 x 10 34 x 6	1.24	1.35	**CFM** Noise Criteria	**372** –	**496** –	**620** –	**744** –	**868** 19	**992** 23	**1116** 27	**1240** 31	**1488** 37	**1736** 42
18 x 12	16 x 14 28 x 8 20 x 10 38 x 6	1.37	1.49	**CFM** Noise Criteria	**411** –	**548** –	**685** –	**822** –	**959** 20	**1096** 24	**1233** 27	**1370** 31	**1644** 37	**1918** 42
24 x 10	20 x 12 30 x 8	1.52	1.65	**CFM** Noise Criteria	**456** –	**608** –	**760** –	**912** 15	**1064** 20	**1216** 24	**1368** 28	**1520** 32	**1824** 38	**420** 43
16 x 16	18 x 14 30 x 8 22 x 12	1.64	1.76	**CFM** Noise Criteria	**492** –	**656** –	**820** –	**984** 15	**1148** 20	**1312** 24	**1476** 28	**1640** 32	**1968** 38	**2296** 43
24 x 12	18 x 16 30 x 10 20 x 14 36 x 8	1.85	1.98	**CFM** Noise Criteria	**555** –	**740** –	**925** –	**1110** 15	**1295** 20	**1480** 24	**1665** 28	**1850** 32	**2220** 38	**2590** 43
18 x 18	20 x 16 28 x 12 24 x 14 32 x 10	2.10	2.23	**CFM** Noise Criteria	**630** –	**840** –	**1050** –	**1260** 15	**1470** 20	**1680** 25	**1890** 28	**2100** 32	**2520** 38	**2940** 43
30 x 12	20 x 18 26 x 14 22 x 16 36 x 10	2.32	2.48	**CFM** Noise Criteria	**696** –	**928** –	**1160** –	**1392** 16	**1624** 20	**1856** 26	**2088** 29	**2320** 33	**2784** 39	**3248** 44
20 x 20	24 x 18 30 x 14 26 x 16 36 x 12	2.61	2.75	**CFM** Noise Criteria	**783** –	**1044** –	**1305** –	**1566** 16	**1827** 20	**2088** 26	**2349** 29	**2610** 33	**3132** 39	**3654** 44
22 x 22	24 x 20 30 x 16 26 x 18 36 x 14	3.17	3.33	**CFM** Noise Criteria	**951** –	**1268** –	**1585** –	**1902** 17	**2219** 21	**2536** 26	**2853** 30	**3170** 34	**3804** 40	**4438** 45
30 x 18	24 x 22 40 x 14 34 x 16	3.54	3.71	**CFM** Noise Criteria	**1062** –	**1416** –	**1770** –	**2124** 17	**2478** 22	**2832** 26	**3186** 30	**3540** 34	**4248** 40	**4956** 45
24 x 24	26 x 22 32 x 18 28 x 20 36 x 16	3.79	3.96	**CFM** Noise Criteria	**1137** –	**1516** –	**1895** –	**2274** 18	**2653** 23	**3032** 27	**3411** 31	**3790** 35	**4548** 41	**5306** 46
36 x 18	32 x 20 46 x 14 40 x 16	4.29	4.46	**CFM** Noise Criteria	**1287** –	**1716** –	**2145** –	**2574** 18	**3003** 23	**3432** 27	**3861** 31	**4290** 35	**5148** 41	**6006** 46
26 x 26	28 x 24 48 x 14	4.47	4.65	**CFM** Noise Criteria	**1341** –	**1788** –	**2235** –	**2682** 19	**3129** 24	**3576** 28	**4023** 32	**4470** 36	**5364** 42	**6258** 47
30 x 24	28 x 26 36 x 20 32 x 22 40 x 18	4.77	4.95	**CFM** Noise Criteria	**1431** –	**1908** –	**2385** 15	**2862** 19	**3339** 24	**3816** 29	**4293** 32	**4770** 36	**5724** 42	**6678** 47
28 x 28	30 x 26 40 x 20 36 x 22	5.20	5.39	**CFM** Noise Criteria	**1560** –	**2080** –	**2600** –	**3120** 19	**3640** 24	**4160** 29	**4680** 32	**5200** 36	**6240** 41	**7280** 46
36 x 24	30 x 28 44 x 20 40 x 22	5.74	5.94	**CFM** Noise Criteria	**1722** –	**2296** –	**2870** –	**3444** 20	**4018** 25	**4592** 29	**5166** 33	**5740** 37	**6888** 43	**8036** 48
30 x 30	34 x 26 48 x 20 38 x 24	5.99	6.19	**CFM** Noise Criteria	**1797** –	**2396** –	**2995** –	**3594** 20	**4193** 25	**4792** 29	**5391** 33	**5990** 37	**7188** 43	**8386** 48

For performance data notes, see F107.

PERFORMANCE DATA:

EGGCRATE RETURN AND EXHAUST GRILLES AND REGISTERS • 5100, 6100 & 6700 SERIES

MODELS: 51EC, 61EC, 67EC, 51FE, 61FE

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity Velocity Pressure Neg. Static Pressure	300 .006 .012	400 .010 .021	500 .016 .033	600 .022 .048	700 .031 .065	800 .040 .085	900 .050 .107	1000 .062 .132	1200 .090 .190	1400 .122 .259
32 x 32	36 x 30 46 x 22 38 x 28	6.84	7.0	**CFM** Noise Criteria	**2052** –	**2736** –	**3420** 15	**4104** 20	**4788** 26	**5472** 30	**6156** 34	**6840** 37	**8208** 44	**9576** 49
48 x 24	34 x 34 38 x 30 36 x 32 48 x 28	7.69	7.92	**CFM** Noise Criteria	**2307** –	**3076** –	**3845** 16	**4614** 21	**5383** 26	**6152** 30	**6921** 35	**7690** 38	**9228** 44	**10776** 49
36 x 36	38 x 34 46 x 28 42 x 30 48 x 26	8.69	8.91	**CFM** Noise Criteria	**2607** –	**3476** –	**4345** 16	**5214** 22	**6083** 27	**6952** 31	**7821** 35	**8690** 38	**10428** 44	**12166** 49
38 x 38	42 x 34 48 x 30 44 x 34	9.70	9.93	**CFM** Noise Criteria	**2910** –	**3880** –	**4850** 16	**5820** 22	**6790** 27	**7760** 31	**8730** 36	**9700** 39	**11640** 45	**13580** 50
40 x 40	42 x 36 48 x 32 46 x 34	10.77	11.00	**CFM** Noise Criteria	**3231** –	**4308** –	**5385** 16	**6462** 22	**7539** 28	**8616** 32	**9693** 37	**10770** 40	**12924** 46	**15078** 51
42 x 42	44 x 40 48 x 36 46 x 38	11.89	12.13	**CFM** Noise Criteria	**3567** –	**4756** –	**5945** 17	**7134** 23	**8323** 28	**9512** 32	**10701** 37	**11890** 40	**14260** 46	**16646** 51
44 x 44	46 x 42	13.07	13.31	**CFM** Noise Criteria	**3921** –	**5228** –	**6535** 17	**7842** 23	**9149** 28	**10456** 33	**11763** 37	**13070** 40	**15684** 46	**18298** 51
46 x 46		14.30	14.55	**CFM** Noise Criteria	**4290** –	**5720** –	**7150** 18	**8580** 24	**10010** 29	**11440** 33	**12870** 37	**14300** 40	**17160** 46	**20020** 52
48 x 48		15.59	15.84	**CFM** Noise Criteria	**4677** –	**6236** –	**7795** 18	**9354** 24	**10913** 29	**12472** 33	**14031** 37	**15590** 40	**18708** 46	**21826** 52

Performance Notes:

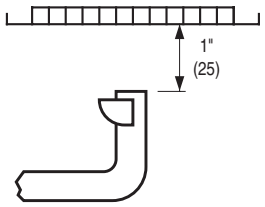
1. All pressures are in inches w.g..
2. Core Velocity is in feet per minute.
3. Performance data is for grille tested without damper. Apply the following correction factors for addition of opposed blade damper to grille.

Neg. Static Pressure Listed Value x 1.25.

Noise Criteria Add + 6 to listed value.

4. Noise Criteria (NC) values are based on a room absorption of 10 dB, re 10^{-12} watts. Dash (—) in space denotes a Noise Criteria level 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.

PERFORMANCE DATA:

SIGHT-PROOF EGGCRATE RETURN AND EXHAUST GRILLES AND REGISTERS • 5100

MODEL: 51EC45

Listed Duct Size (inches)	Nominal Duct Area (sq. ft.)	Duct Velocity, FPM Velocity Pressure Neg. Static Pressure	200 .002 .016	250 .004 .025	300 .006 .037	350 .008 .050	400 .010 .065	450 .013 .082	500 .016 .101	550 .019 .123	600 .022 .146	650 .026 .171
10 x 10	0.69	**Airflow, CFM** Noise Criteria	**139** –	**174** –	**208** 16	**243** 20	**278** 24	**313** 27	**347** 30	**382** 33	**417** 35	**451** 37
22 x 10	1.53	**Airflow, CFM** Noise Criteria	**306** –	**382** –	**458** 18	**535** 22	**611** 26	**688** 30	**764** 33	**840** 36	**917** 38	**993** 41
22 x 22	3.36	**Airflow, CFM** Noise Criteria	**672** –	**840** 16	**1008** 22	**1176** 27	**1344** 31	**1513** 34	**1681** 38	**1849** 41	**2017** 43	**2185** 46
46 x 22	7.03	**Airflow, CFM** Noise Criteria	**1406** 21	**1757** 26	**2108** 30	**2460** 34	**2811** 37	**3163** 40	**3514** 42	**3865** 45	**4217** 47	**4568** 49

Performance Notes:

1. All pressures are in inches w.g..
2. Core Velocity is in feet per minute.
3. Performance data is for grille tested without damper. Apply the following correction factors for addition of opposed blade damper to grille.

Neg. Static Pressure Listed Value x 1.10.

Noise Criteria Add 5 dB to listed value.

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

PERFORMANCE DATA:

PERFORATED RETURN GRILLES AND REGISTERS • 5100, 6100 AND 6700 SERIES

MODELS: 51PR, 51FP, 61PR, 61FP, 67PR, 51PRC, 61PRC

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity Velocity Pressure Neg. Static Pressure	300 .006 .024	400 .010 .042	500 .016 .067	600 .022 .095	700 .031 .130	800 .040 .170	900 .051 .215	1000 .062 .265	1200 .090 .382
6 x 6	8 x 4 10 x 4	0.20	0.20	**CFM** Noise Criteria	**60** –	**80** –	**100** –	**120** 15	**140** 21	**160** 26	**180** 32	**200** 37	**240** 44
8 x 6	10 x 5 12 x 4	0.27	0.27	**CFM** Noise Criteria	**81** –	**108** –	**135** –	**162** 16	**189** 22	**216** 28	**243** 33	**270** 38	**324** 45
10 x 6	12 x 5 16 x 4	0.35	0.33	**CFM** Noise Criteria	**105** –	**140** –	**175** –	**210** 17	**245** 24	**280** 29	**315** 34	**350** 39	**420** 46
8 x 8	14 x 5	0.38	0.36	**CFM** Noise Criteria	**114** –	**152** –	**190** –	**228** 18	**266** 25	**304** 29	**342** 35	**380** 40	**456** 47
12 x 6	18 x 4	0.42	0.40	**CFM** Noise Criteria	**126** –	**168** –	**210** –	**252** 18	**294** 25	**336** 30	**378** 35	**420** 40	**504** 47
12 x 8	16 x 6 24 x 4	0.58	0.53	**CFM** Noise Criteria	**174** –	**232** –	**290** –	**348** 20	**406** 27	**464** 31	**522** 36	**580** 41	**696** 48
10 x 10	14 x 7	0.61	0.56	**CFM** Noise Criteria	**183** –	**244** –	**305** –	**366** 20	**427** 27	**488** 31	**549** 37	**610** 42	**732** 49
18 x 6	14 x 8 30 x 4 28 x 4	0.65	0.60	**CFM** Noise Criteria	**195** –	**260** –	**325** –	**390** 20	**455** 27	**520** 32	**585** 37	**650** 42	**780** 49
12 x 10	16 x 8 20 x 6 24 x 5	0.74	0.67	**CFM** Noise Criteria	**222** –	**296** –	**370** –	**444** 21	**518** 28	**592** 32	**666** 37	**740** 43	**888** 50
12 x 12	14 x 10 24 x 6 18 x 8 38 x 4	0.90	0.80	**CFM** Noise Criteria	**270** –	**360** –	**450** 15	**540** 22	**630** 28	**720** 33	**810** 38	**900** 44	**1080** 51
14 x 14	16 x 12 24 x 8 20 x 10 34 x 6	1.24	1.09	**CFM** Noise Criteria	**372** –	**496** –	**620** 16	**744** 23	**868** 29	**992** 34	**1116** 39	**1240** 45	**1488** 52
18 x 12	16 x 14 28 x 8 22 x 10 38 x 6	1.37	1.20	**CFM** Noise Criteria	**411** –	**548** –	**685** 17	**822** 23	**959** 30	**1096** 35	**1233** 39	**1370** 45	**1644** 52
24 x 10	20 x 12 30 x 8	1.52	1.33	**CFM** Noise Criteria	**456** –	**608** –	**760** 17	**912** 24	**1064** 30	**1216** 35	**1368** 40	**1520** 46	**1824** 53
16 x 16	18 x 14 30 x 8 22 x 12	1.64	1.42	**CFM** Noise Criteria	**492** –	**656** –	**820** 17	**984** 24	**1148** 30	**1312** 35	**1476** 40	**1640** 46	**1968** 53
24 x 12	18 x 16 30 x 10 20 x 14 36 x 8	1.85	1.60	**CFM** Noise Criteria	**555** –	**740** –	**925** 17	**1110** 24	**1295** 30	**1480** 35	**1665** 40	**1850** 46	**2220** 53
18 x 18	20 x 16 28 x 12 24 x 14 32 x 10	2.10	1.80	**CFM** Noise Criteria	**630** –	**840** –	**1050** 17	**1260** 24	**1470** 30	**1680** 36	**1890** 40	**2100** 46	**2520** 53
30 x 12	20 x 18 26 x 14 22 x 16 36 x 10	2.32	2.00	**CFM** Noise Criteria	**696** –	**928** –	**1160** 17	**1392** 25	**1624** 30	**1856** 37	**2088** 41	**2320** 47	**2784** 54
20 x 20	24 x 18 30 x 14 26 x 16 36 x 12	2.61	2.22	**CFM** Noise Criteria	**783** –	**1044** –	**1305** 18	**1566** 25	**1827** 30	**2088** 37	**2349** 41	**2610** 47	**3132** 54
22 x 22	24 x 20 30 x 16 26 x 18 36 x 14	3.17	2.69	**CFM** Noise Criteria	**951** –	**1268** –	**1585** 18	**1902** 26	**2219** 31	**2536** 37	**2853** 42	**3170** 48	**3804** 55
30 x 18	24 x 22 40 x 14 34 x 16	3.54	3.00	**CFM** Noise Criteria	**1062** –	**1416** –	**1770** 19	**2124** 26	**2478** 32	**2832** 37	**3186** 42	**3540** 48	**4248** 55
24 x 24	26 x 22 32 x 18 28 x 20 36 x 16	3.79	3.20	**CFM** Noise Criteria	**1137** –	**1516** –	**1895** 19	**2274** 27	**2653** 33	**3032** 38	**3411** 43	**3790** 49	**4548** 56
36 x 18	32 x 20 46 x 14 40 x 16	4.29	3.60	**CFM** Noise Criteria	**1287** –	**1716** –	**2145** 19	**2574** 27	**3003** 33	**3432** 38	**3861** 43	**4290** 49	**5148** 56
26 x 26	28 x 24 48 x 14	4.47	3.76	**CFM** Noise Criteria	**1341** –	**1788** –	**2235** 20	**2682** 28	**3129** 34	**3576** 39	**4025** 44	**4470** 50	**5364** 57
30 x 24	28 x 26 36 x 20 32 x 22 40 x 18	4.77	4.00	**CFM** Noise Criteria	**1431** –	**1908** –	**2385** 21	**2862** 28	**3339** 34	**3816** 39	**4293** 44	**4770** 50	**5724** 57
28 x 28	30 x 26 40 x 20 36 x 22	5.20	4.36	**CFM** Noise Criteria	**1560** –	**2080** –	**2600** 21	**3120** 28	**3640** 34	**4160** 40	**4680** 44	**5200** 50	**6240** 57
36 x 24	30 x 28 44 x 20 40 x 22	5.74	4.80	**CFM** Noise Criteria	**1722** –	**2296** –	**2870** 22	**3444** 29	**4018** 35	**4592** 40	**5166** 45	**5740** 50	**6888** 58
30 x 30	34 x 26 48 x 20 38 x 24	5.99	5.00	**CFM** Noise Criteria	**1797** –	**2396** –	**2995** 22	**3594** 29	**4193** 35	**4792** 40	**5391** 45	**5990** 51	**7188** 58

For performance data notes, see F118.

PERFORMANCE DATA:

PERFORATED RETURN GRILLES AND REGISTERS • 5100, 6100 AND 6700 SERIES

MODELS: 51PR, 51FP, 61PR, 61FP, 67PR, 51PRC, 61PRC

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity Velocity Pressure Neg. Static Pressure	300 .006 .024	400 .010 .042	500 .016 .067	600 .022 .095	700 .031 .130	800 .040 .170	900 .051 .215	1000 .062 .265	1200 .090 .382
32 x 32	36 x 30 46 x 22 38 x 28	6.84	5.69	**CFM** Noise Criteria	**2052** –	**2736** 15	**3420** 23	**4104** 29	**4788** 36	**5472** 41	**6156** 46	**6840** 51	**8208** 58
48 x 24	34 x 34 38 x 30 36 x 32 48 x 28	7.69	6.40	**CFM** Noise Criteria	**2307** –	**3076** 16	**3845** 24	**4614** 30	**5383** 36	**6152** 41	**6921** 47	**7690** 52	**9228** 59
36 x 36	38 x 34 26 x 28 42 x 30 48 x 26	8.69	7.20	**CFM** Noise Criteria	**2607** –	**3476** 16	**4345** 24	**5214** 31	**6083** 37	**6952** 42	**7821** 47	**8690** 52	**10428** 59
38 x 38	42 x 34 48 x 30 44 x 34	9.70	8.02	**CFM** Noise Criteria	**2910** –	**3880** 17	**4850** 24	**5820** 31	**6790** 37	**7760** 42	**8730** 48	**9700** 53	**11640** 60
40 x 40	42 x 36 48 x 32 46 x 34	10.77	8.89	**CFM** Noise Criteria	**3231** –	**4308** 17	**5385** 24	**6462** 31	**7539** 38	**8616** 43	**9693** 49	**10770** 54	**12924** 61
42 x 42	44 x 40 48 x 36 46 x 38	11.89	9.80	**CFM** Noise Criteria	**3567** –	**4756** 18	**5945** 25	**7134** 32	**8323** 38	**9512** 43	**10701** 49	**11890** 54	**14268** 61
44 x 44	46 x 42	13.07	10.76	**CFM** Noise Criteria	**3921** –	**5228** 18	**6535** 25	**7842** 32	**9149** 38	**10456** 44	**11763** 49	**13070** 54	**15684** 61
46 x 46		14.30	11.76	**CFM** Noise Criteria	**4290** –	**5720** 19	**7150** 26	**8580** 33	**10010** 39	**11440** 44	**12870** 49	**14300** 54	**17160** 61
48 x 48		15.59	12.80	**CFM** Noise Criteria	**4677** –	**6236** 19	**7795** 26	**9354** 33	**10913** 39	**12472** 44	**14031** 49	**15590** 54	**18708** 61

Performance Notes:

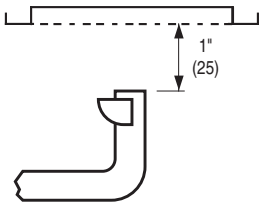
1. All pressures are in inches w.g..
2. Core Velocity is in feet per minute.
3. Performance data is for grille tested without damper. Apply the following correction factors for addition of opposed blade damper to grille.

Neg. Static Pressure Listed Value x 1.10.

Noise Criteria Add 5 dB to listed value.

4. Noise Criteria (NC) values are based on a room absorption of 10 dB, re 10^{-12} watts. Dash (–) in space denotes a Noise Criteria level 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.

Performance Data

Model 67FB45 Fixed Blade Return Grilles and Registers

Imperial Units

Listed Duct Size (inches)	Alternate Size (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity VP Neg. SP	100 .001 .003	200 .002 .014	300 .006 .031	400 .010 .055	500 .016 .086	600 .022 .124	700 .031 .168	800 .040 .220	900 .050 .278	1000 .062 .344
6 x 6	8 x 4 10 x 4	0.20	0.23	**CFM** NC	**20** –	**40** –	**60** –	**80** –	**100** –	**120** 19	**140** 24	**160** 28	**180** 32	**200** 36
8 x 6	10 x 5 12 x 4	0.28	0.30	**CFM** NC	**28** –	**56** –	**84** –	**112** –	**140** 15	**168** 20	**196** 25	**224** 29	**252** 33	**280** 37
10 x 6	12 x 5 16 x 4	0.35	0.37	**CFM** NC	**35** –	**70** –	**105** –	**140** –	**175** 16	**210** 21	**245** 26	**280** 30	**315** 34	**350** 38
8 x 8	14 x 5	0.38	0.40	**CFM** NC	**38** –	**76** –	**114** –	**152** –	**190** 17	**228** 22	**266** 27	**304** 31	**342** 35	**380** 39
12 x 6	18 x 4	0.42	0.45	**CFM** NC	**42** –	**84** –	**126** –	**168** –	**210** 18	**252** 23	**294** 27	**336** 32	**378** 36	**420** 40
12 x 8	16 x 6 24 x 4	0.58	0.59	**CFM** NC	**58** –	**116** –	**174** –	**232** –	**290** 19	**348** 24	**406** 28	**464** 33	**522** 37	**580** 41
10 x 10	14 x 7 26 x 4	0.61	0.62	**CFM** NC	**61** –	**122** –	**183** –	**244** –	**305** 19	**366** 24	**427** 29	**488** 34	**549** 37	**610** 41
18 x 6	14 x 8 28 x 4	30 x 4	0.65	0.67	**CFM** NC	**65** –	**130** –	**195** –	**260** 15	**325** 20	**390** 25	**455** 30	**520** 34	**585** 38	**650** 41
12 x 10	16 x 8 24 x 5	20 x 6	0.74	0.74	**CFM** NC	**74** –	**148** –	**222** –	**296** 15	**370** 20	**444** 25	**518** 30	**592** 35	**666** 39	**740** 42
12 x 12	14 x 10 18 x 8	24 x 6 38 x 4	0.90	0.89	**CFM** NC	**90** –	**180** –	**270** –	**360** 16	**450** 21	**540** 26	**630** 31	**720** 36	**810** 39	**900** 42
14 x 14	16 x 12 20 x 10	24 x 8 34 x 6	1.24	1.22	**CFM** NC	**124** –	**248** –	**372** –	**496** 16	**620** 21	**744** 26	**868** 31	**992** 36	**1116** 40	**1240** 43
18 x 12	16 x 14 22 x 10	28 x 8 38 x 6	1.37	1.34	**CFM** NC	**137** –	**274** –	**411** –	**548** 17	**685** 22	**822** 27	**959** 32	**1096** 37	**1233** 40	**1370** 43
24 x 10	20 x 12 30 x 8		1.52	1.49	**CFM** NC	**152** –	**304** –	**456** –	**608** 17	**760** 22	**912** 27	**1064** 32	**1216** 38	**1368** 41	**1520** 44
16 x 16	18 x 14 22 x 12	30 x 8	1.64	1.58	**CFM** NC	**164** –	**328** –	**492** –	**656** 18	**820** 23	**984** 28	**1148** 33	**1312** 38	**1476** 41	**1640** 44
24 x 12	18 x 16 20 x 14	30 x 10 36 x 8	1.85	1.78	**CFM** NC	**185** –	**370** –	**555** –	**740** 18	**925** 23	**1110** 28	**1295** 33	**1480** 38	**1665** 41	**1850** 45
18 x 18	20 x 16 24 x 14	28 x 12 32 x 10	2.10	2.01	**CFM** NC	**210** –	**420** –	**630** –	**840** 18	**1050** 23	**1260** 29	**1470** 34	**1680** 39	**1890** 42	**2100** 45
30 x 12	20 x 18 22 x 16	26 x 14 36 x 10	2.32	2.23	**CFM** NC	**232** –	**464** –	**696** –	**928** 19	**1160** 24	**1392** 29	**1624** 34	**1856** 39	**2088** 42	**2320** 46
20 x 20	24 x 18 26 x 16	30 x 14 36 x 12	2.61	2.48	**CFM** NC	**261** –	**522** –	**783** –	**1044** 19	**1305** 24	**1566** 30	**1827** 35	**2088** 40	**2349** 43	**2610** 46
22 x 22	24 x 20 26 x 18	30 x 16 36 x 14	3.17	3.00	**CFM** NC	**317** –	**634** –	**951** –	**1268** 20	**1585** 25	**1902** 31	**2219** 35	**2536** 40	**2853** 43	**3170** 47
30 x 18	24 x 22 34 x 16	40 x 14	3.54	3.34	**CFM** NC	**354** –	**708** –	**1062** –	**1416** 20	**1770** 25	**2124** 31	**2478** 36	**2832** 41	**3186** 44	**3540** 48
24 x 24	26 x 22 28 x 20	32 x 18 36 x 16	3.79	3.56	**CFM** NC	**379** –	**758** –	**1137** –	**1516** 20	**1895** 25	**2274** 31	**2653** 36	**3032** 41	**3411** 44	**3790** 48
36 x 18	32 x 20 40 x 16	46 x 14	4.27	4.01	**CFM** NC	**427** –	**854** –	**1281** –	**1708** 21	**2135** 26	**2562** 32	**2989** 37	**3416** 42	**3843** 45	**4270** 49
26 x 26	28 x 24 48 x 14		4.47	4.19	**CFM** NC	**447** –	**894** –	**1341** –	**1788** 21	**2235** 26	**2682** 32	**3129** 37	**3576** 42	**4023** 45	**4470** 49
30 x 24	28 x 26 32 x 22	36 x 20 40 x 18	4.77	4.46	**CFM** NC	**477** –	**954** –	**1431** 15	**1908** 22	**2385** 27	**2862** 33	**3339** 38	**3816** 42	**4293** 46	**4770** 50
28 x 28	30 x 26 36 x 22	40 x 20	5.20	4.85	**CFM** NC	**520** –	**1040** –	**1560** 15	**2080** 22	**2600** 27	**3120** 33	**3640** 38	**4160** 43	**4680** 46	**5200** 50
36 x 24	30 x 28 40 x 22	44 x 20	5.74	5.35	**CFM** NC	**574** –	**1148** –	**1722** 15	**2296** 22	**2870** 28	**3444** 34	**4018** 38	**4592** 43	**5166** 47	**5740** 51
30 x 30	34 x 26 38 x 24	48 x 20	5.99	5.57	**CFM** NC	**599** –	**1198** –	**1797** 15	**2396** 22	**2995** 28	**3594** 34	**4193** 39	**4792** 43	**5391** 47	**5990** 51

Performance Data

Model 67FB45 Fixed Blade Return Grilles and Registers

Imperial Units

Listed Duct Size (inches)	Alternate Size (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity VP Neg. SP	100 .001 .003	200 .002 .014	300 .006 .031	400 .010 .055	500 .016 .086	600 .022 .124	700 .031 .168	800 .040 .220	900 .050 .278	1000 .062 .344
32 x 32	36 x 30 46 x 22 38 x 28	6.84	6.34	**CFM** NC	**684** –	**1368** –	**2052** 16	**2736** 23	**3420** 29	**4104** 35	**4788** 39	**5472** 44	**6156** 48	**6840** 52
48 x 24	34 x 34 38 x 30 36 x 32 48 x 28	7.69	7.13	**CFM** NC	**769** –	**1538** –	**2307** 17	**3076** 23	**3845** 29	**4614** 35	**5383** 40	**6152** 44	**6921** 48	**7690** 52
36 x 36	38 x 34 46 x 28 42 x 30 48 x 26	8.69	8.02	**CFM** NC	**869** –	**1738** –	**2607** 17	**3476** 24	**4345** 29	**5214** 36	**6083** 41	**6952** 45	**7821** 49	**8690** 53
38 x 38	42 x 34 48 x 30 44 x 34	9.70	8.94	**CFM** NC	**970** –	**1940** –	**2910** 18	**3880** 24	**4850** 30	**5820** 36	**6790** 41	**7760** 45	**8730** 49	**9700** 53
40 x 40	42 x 36 48 x 32 46 x 34	10.77	9.90	**CFM** NC	**1077** –	**2154** –	**3231** 18	**4308** 24	**5385** 30	**6462** 36	**7539** 42	**8616** 45	**9693** 50	**10770** 54
42 x 42	44 x 40 48 x 36 46 x 38	11.89	10.92	**CFM** NC	**1189** –	**2378** –	**3567** 19	**4756** 25	**5945** 31	**7134** 37	**8323** 42	**9512** 46	**10701** 50	**11890** 54
44 x 44	46 x 42	13.07	11.98	**CFM** NC	**1307** –	**2614** –	**3921** 19	**5228** 25	**6535** 31	**7842** 37	**9149** 42	**10456** 46	**11763** 50	**13070** 54
46 x 46		14.30	13.10	**CFM** NC	**1430** –	**2860** –	**4290** 20	**5720** 26	**7150** 32	**8580** 38	**10010** 43	**11440** 47	**12870** 51	**14300** 55
48 x 48		15.59	14.26	**CFM** NC	**1559** –	**3118** –	**4677** 20	**6236** 26	**7795** 32	**9354** 38	**10913** 43	**12472** 47	**14031** 51	**15590** 55

CFM - cubic feet per minute

VP - velocity pressure - inches w.g.

Neg. SP - negative static pressure - inches w.g.

NC - Noise Criteria values are based on 10 dB room absorption, re 10^{-12} watts.

Core Velocity is in feet per minute.

Performance Notes:

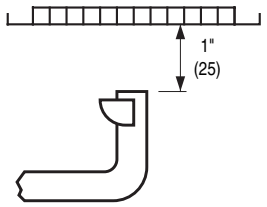
1. Performance data is for grille with opposed blade damper. Apply the following correction factors for grille without damper:

Neg. SP Listed Value x 0.91.

NC Listed value – 4.

2. 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.

Performance Data

Model 67FB45 Fixed Blade Return Grilles and Registers

Metric Units

Listed Duct Size (mm)	Alternate Size (mm)	Core Area (sq. m)	Ak Factor	Core Velocity VP Neg. SP	0.51 0.2 0.7	1.01 0.5 3.5	1.52 1.5 7.7	2.03 2.5 14	2.54 4.0 21	3.05 5.5 31	3.55 7.7 42	4.06 10 55	4.57 12 69	5.08 15 86
152 x 152	203 x 102 254 x 102	.019	21	**L/S** NC	**9** –	**19** –	**28** –	**38** –	**47** –	**57** 19	**66** 24	**76** 28	**85** 32	**94** 36
203 x 152	254 x 127 305 x 102	.026	28	**L/S** NC	**13** –	**26** –	**40** –	**53** –	**66** 15	**79** 20	**92** 25	**106** 29	**119** 33	**132** 37
254 x 152	305 x 127 406 x 102	.033	34	**L/S** NC	**17** –	**33** –	**50** –	**66** –	**83** 16	**99** 21	**116** 26	**132** 30	**149** 34	**165** 38
203 x 203	356 x 127	.035	37	**L/S** NC	**18** –	**36** –	**54** –	**72** –	**90** 17	**108** 22	**126** 27	**143** 31	**161** 35	**179** 39
305 x 152	457 x 102	.039	42	**L/S** NC	**20** –	**40** –	**59** –	**79** –	**99** 18	**119** 23	**139** 27	**159** 32	**178** 36	**198** 40
305 x 203	406 x 152 610 x 102	.054	55	**L/S** NC	**27** –	**55** –	**82** –	**109** –	**137** 19	**164** 24	**192** 28	**219** 33	**246** 37	**274** 41
254 x 254	356 x 178 660 x 102	.057	58	**L/S** NC	**29** –	**58** –	**86** –	**115** –	**144** 19	**173** 24	**202** 29	**230** 34	**259** 37	**288** 41
457 x 152	356 x 203 762 x 102 711 x 102	.060	62	**L/S** NC	**31** –	**61** –	**92** –	**123** 15	**153** 20	**184** 25	**215** 30	**245** 34	**276** 38	**307** 41
305 x 254	406 x 203 508 x 152 610 x 127	.069	69	**L/S** NC	**35** –	**70** –	**105** –	**140** 15	**175** 20	**210** 25	**244** 30	**279** 35	**314** 39	**349** 42
305 x 305	356 x 254 610 x 152 457 x 203 965 x 102	.084	83	**L/S** NC	**42** –	**85** –	**127** –	**170** 16	**212** 21	**255** 26	**297** 31	**340** 36	**382** 39	**425** 42
356 x 356	406 x 305 610 x 203 508 x 254 864 x 152	.115	113	**L/S** NC	**59** –	**117** –	**176** –	**234** 16	**293** 21	**351** 26	**410** 31	**468** 36	**527** 40	**585** 43
457 x 305	406 x 356 711 x 203 559 x 254 965 x 152	.127	125	**L/S** NC	**65** –	**129** –	**194** –	**259** 17	**323** 22	**388** 27	**453** 32	**517** 37	**582** 40	**647** 43
610 x 254	508 x 305 762 x 203	.141	139	**L/S** NC	**72** –	**143** –	**215** –	**287** 17	**359** 22	**430** 27	**502** 32	**574** 38	**646** 41	**717** 44
406 x 406	457 x 356 762 x 203 559 x 305	.152	147	**L/S** NC	**77** –	**155** –	**232** –	**310** 18	**387** 23	**464** 28	**542** 33	**619** 38	**697** 41	**774** 44
610 x 305	457 x 406 762 x 254 508 x 356 914 x 203	.172	165	**L/S** NC	**87** –	**175** –	**262** –	**349** 18	**437** 23	**524** 28	**611** 33	**698** 38	**786** 41	**873** 45
457 x 457	508 x 406 711 x 305 610 x 356 813 x 254	.195	187	**L/S** NC	**99** –	**198** –	**297** –	**396** 18	**495** 23	**595** 29	**694** 34	**793** 39	**892** 42	**991** 45
762 x 305	508 x 457 660 x 356 559 x 406 914 x 254	.216	207	**L/S** NC	**109** –	**219** –	**328** –	**438** 19	**547** 24	**657** 29	**766** 34	**876** 39	**985** 42	**1095** 46
508 x 508	610 x 457 762 x 356 660 x 406 914 x 305	.242	231	**L/S** NC	**123** –	**246** –	**369** –	**493** 19	**616** 24	**739** 30	**862** 35	**985** 40	**1108** 43	**1232** 46
559 x 559	610 x 508 762 x 406 660 x 457 914 x 356	.294	279	**L/S** NC	**150** –	**299** –	**449** –	**598** 20	**748** 25	**898** 31	**1047** 35	**1197** 40	**1346** 43	**1496** 47
762 x 457	610 x 559 1016 x 356 863 x 406	.329	310	**L/S** NC	**167** –	**334** –	**501** –	**668** 20	**835** 25	**1002** 31	**1169** 36	**1336** 41	**1503** 44	**1671** 48
610 x 610	660 x 559 813 x 457 711 x 508 914 x 406	.352	331	**L/S** NC	**179** –	**358** –	**537** –	**715** 20	**894** 25	**1073** 31	**1252** 36	**1431** 41	**1610** 44	**1789** 48
914 x 457	813 x 508 1168 x 356 1016 x 406	.397	373	**L/S** NC	**202** –	**403** –	**605** –	**806** 21	**1008** 26	**1209** 32	**1411** 37	**1612** 42	**1814** 45	**2015** 49
660 x 660	711 x 610 1219 x 356	.415	390	**L/S** NC	**211** –	**422** –	**633** –	**844** 21	**1055** 26	**1266** 32	**1477** 37	**1688** 42	**1898** 45	**2109** 49
762 x 610	711 x 660 914 x 508 813 x 559 1016 x 457	.443	415	**L/S** NC	**225** –	**450** –	**675** 15	**900** 22	**1125** 27	**1351** 33	**1576** 38	**1801** 42	**2026** 46	**2251** 50
711 x 711	762 x 660 1016 x 508 914 x 559	.483	451	**L/S** NC	**245** –	**491** –	**736** 15	**982** 22	**1227** 27	**1472** 33	**1718** 38	**1963** 43	**2208** 46	**2454** 50
914 x 610	762 x 711 1118 x 508 1016 x 559	.533	497	**L/S** NC	**271** –	**542** –	**813** 15	**1083** 22	**1354** 28	**1625** 34	**1896** 38	**2167** 43	**2438** 47	**2709** 51
762 x 762	864 x 660 1219 x 508 965 x 610	.556	518	**L/S** NC	**283** –	**565** –	**848** 15	**1131** 22	**1413** 28	**1696** 34	**1979** 39	**2261** 43	**2544** 47	**2827** 51

Performance Data

Model 67FB45 Fixed Blade Return Grilles and Registers

Metric Units

Listed Duct Size (mm)	Alternate Size (mm)	Core Area (sq. m)	Ak Factor	Core Velocity VP Neg. SP	0.51 0.2 0.7	1.01 0.5 3.5	1.52 1.5 7.7	2.03 2.5 14	2.54 4.0 21	3.05 5.5 31	3.55 7.7 42	4.06 10 55	4.57 12 69	5.08 15 86
813 x 813	914 x 762 1168 x 559 965 x 711	.635	589	**L/S** NC	**323** –	**646** –	**968** 16	**1291** 23	**1614** 29	**1937** 35	**2259** 39	**2582** 44	**2905** 48	**3228** 52
1219 x 610	864 x 864 965 x 762 914 x 813 1219 x 711	.714	663	**L/S** NC	**363** –	**726** –	**1089** 17	**1452** 23	**1814** 29	**2177** 35	**2540** 40	**2903** 44	**3266** 48	**3629** 52
914 x 914	965 x 864 1168 x 711 1067 x 762 1219 x 660	.807	746	**L/S** NC	**410** –	**820** –	**1230** 17	**1640** 24	**2050** 29	**2460** 36	**2871** 41	**3281** 45	**3691** 49	**4101** 53
965 x 965	1067 x 864 1219 x 762 1118 x 864	.901	831	**L/S** NC	**458** –	**915** –	**1373** 18	**1831** 24	**2289** 30	**2746** 36	**3204** 41	**3662** 45	**4120** 49	**4577** 53
1016 x 1016	1067 x 914 1219 x 813 1168 x 864	1.00	920	**L/S** NC	**508** –	**1016** –	**1525** 18	**2033** 24	**2541** 30	**3049** 36	**3558** 42	**4066** 45	**4574** 50	**5082** 54
1067 x 1067	1118 x 1016 1219 x 914 1168 x 965	1.10	1015	**L/S** NC	**561** –	**1122** –	**1683** 19	**2244** 25	**2805** 31	**3367** 37	**3928** 42	**4489** 46	**5050** 50	**5611** 54
1118 x 1118	1168 x 1067	1.21	1114	**L/S** NC	**617** –	**1234** –	**1850** 19	**2467** 25	**3084** 31	**3701** 37	**4317** 42	**4934** 46	**5551** 50	**6168** 54
1168 x 1168		1.33	1218	**L/S** NC	**675** –	**1350** –	**2024** 20	**2699** 26	**3374** 32	**4049** 38	**4724** 43	**5399** 47	**6073** 51	**6748** 55
1219 x 1219		1.45	1326	**L/S** NC	**736** –	**1471** –	**2207** 20	**2943** 26	**3678** 32	**4414** 38	**5150** 43	**5886** 47	**6621** 51	**7357** 55

L/S - litres per second

VP - velocity pressure - Pa

Neg. SP - negative static pressure - Pa

NC - Noise Criteria values are based on 10 dB room absorption, re 10^{-12} watts.

Core Velocity is in meters per second.

Performance Notes:

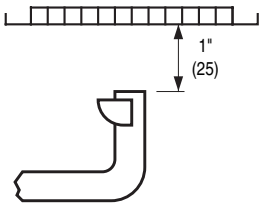
1. Performance data is for grille with opposed blade damper. Apply the following correction factors for grille without damper:

Neg. SP Listed Value x 0.91.

NC Listed value – 4.

2. 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 m/s).

4. Calculate the airflow (L/S) by multiplying the average velocity by the appropriate Ak factor.
Airflow (L/S) = Average velocity (Vk) x Ak.

Performance Data

Model 67FB55 Fixed Blade Return Grilles and Registers

Imperial Units

Listed Duct Size (inches)	Alternate Size (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity VP Neg. SP	100 .001 .005	200 .002 .018	300 .006 .041	400 .010 .073	500 .016 .114	600 .022 .164	700 .031 .223	800 .040 .292	900 .050 .369	1000 .062 .456
6 x 6	8 x 4 10 x 4	0.20	0.23	**CFM** NC	**20** –	**40** –	**60** –	**80** –	**100** 16	**120** 21	**140** 26	**160** 30	**180** 34	**200** 38
8 x 6	10 x 5 12 x 4	0.28	0.30	**CFM** NC	**28** –	**56** –	**84** –	**112** –	**140** 17	**168** 22	**196** 27	**224** 31	**252** 35	**280** 39
10 x 6	12 x 5 16 x 4	0.35	0.37	**CFM** NC	**35** –	**70** –	**105** –	**140** –	**175** 18	**210** 23	**245** 28	**280** 32	**315** 36	**350** 40
8 x 8	14 x 5	0.38	0.40	**CFM** NC	**38** –	**76** –	**114** –	**152** –	**190** 19	**228** 24	**266** 29	**304** 33	**342** 37	**380** 41
12 x 6	18 x 4	0.42	0.45	**CFM** NC	**42** –	**84** –	**126** –	**168** 15	**210** 20	**252** 25	**294** 29	**336** 34	**378** 38	**420** 42
12 x 8	16 x 6 24 x 4	0.58	0.59	**CFM** NC	**58** –	**116** –	**174** –	**232** 16	**290** 21	**348** 26	**406** 30	**464** 35	**522** 39	**580** 43
10 x 10	14 x 7 26 x 4	0.61	0.62	**CFM** NC	**61** –	**122** –	**183** –	**244** 16	**305** 21	**366** 26	**427** 31	**488** 36	**549** 39	**610** 43
18 x 6	14 x 8 30 x 4 28 x 4	0.65	0.67	**CFM** NC	**65** –	**130** –	**195** –	**260** 17	**325** 22	**390** 27	**455** 32	**520** 36	**585** 40	**650** 43
12 x 10	16 x 8 20 x 6 24 x 5	0.74	0.74	**CFM** NC	**74** –	**148** –	**222** –	**296** 17	**370** 22	**444** 27	**518** 32	**592** 37	**666** 41	**740** 44
12 x 12	14 x 10 24 x 6 18 x 8 38 x 4	0.90	0.89	**CFM** NC	**90** –	**180** –	**270** –	**360** 18	**450** 23	**540** 28	**630** 33	**720** 38	**810** 41	**900** 44
14 x 14	16 x 12 24 x 8 20 x 10 34 x 6	1.24	1.22	**CFM** NC	**124** –	**248** –	**372** –	**496** 18	**620** 23	**744** 28	**868** 33	**992** 38	**1116** 42	**1240** 45
18 x 12	16 x 14 28 x 8 22 x 10 38 x 6	1.37	1.34	**CFM** NC	**137** –	**274** –	**411** 15	**548** 20	**685** 25	**822** 30	**959** 35	**1096** 40	**1233** 43	**1370** 46
24 x 10	20 x 12 30 x 8	1.52	1.49	**CFM** NC	**152** –	**304** –	**456** 15	**608** 20	**760** 25	**912** 30	**1064** 35	**1216** 41	**1368** 44	**1520** 47
16 x 16	18 x 14 30 x 8 22 x 12	1.64	1.58	**CFM** NC	**164** –	**328** –	**492** 16	**656** 21	**820** 26	**984** 31	**1148** 36	**1312** 41	**1476** 44	**1640** 47
24 x 12	18 x 16 30 x 10 20 x 14 36 x 8	1.85	1.78	**CFM** NC	**185** –	**370** –	**555** 16	**740** 21	**925** 26	**1110** 31	**1295** 36	**1480** 41	**1665** 44	**1850** 48
18 x 18	20 x 16 28 x 12 24 x 14 32 x 10	2.10	2.01	**CFM** NC	**210** –	**420** –	**630** 16	**840** 21	**1050** 26	**1260** 32	**1470** 37	**1680** 42	**1890** 45	**2100** 48
30 x 12	20 x 18 26 x 14 22 x 16 36 x 10	2.32	2.23	**CFM** NC	**232** –	**464** –	**696** 16	**928** 22	**1160** 27	**1392** 32	**1624** 37	**1856** 42	**2088** 45	**2320** 49
20 x 20	24 x 18 30 x 14 26 x 16 36 x 12	2.61	2.48	**CFM** NC	**261** –	**522** –	**783** 16	**1044** 22	**1305** 27	**1566** 33	**1827** 38	**2088** 43	**2349** 46	**2610** 49
22 x 22	24 x 20 30 x 16 26 x 18 36 x 14	3.17	3.00	**CFM** NC	**317** –	**634** –	**951** 17	**1268** 23	**1585** 28	**1902** 34	**2219** 38	**2536** 43	**2853** 46	**3170** 50
30 x 18	24 x 22 40 x 14 34 x 16	3.54	3.34	**CFM** NC	**354** –	**708** –	**1062** 17	**1416** 23	**1770** 28	**2124** 34	**2478** 39	**2832** 44	**3186** 47	**3540** 51
24 x 24	26 x 22 32 x 18 28 x 20 36 x 16	3.79	3.56	**CFM** NC	**379** –	**758** –	**1137** 17	**1516** 23	**1895** 28	**2274** 34	**2653** 39	**3032** 44	**3411** 47	**3790** 51
36 x 18	32 x 20 46 x 14 40 x 16	4.27	4.01	**CFM** NC	**427** –	**854** –	**1281** 18	**1708** 25	**2135** 29	**2562** 36	**2989** 41	**3416** 46	**3843** 49	**4270** 53
26 x 26	28 x 24 48 x 14	4.47	4.19	**CFM** NC	**447** –	**894** –	**1341** 18	**1788** 25	**2235** 30	**2682** 36	**3129** 41	**3576** 46	**4023** 49	**4470** 53
30 x 24	28 x 26 36 x 20 32 x 22 40 x 18	4.77	4.46	**CFM** NC	**477** –	**954** –	**1431** 19	**1908** 26	**2385** 31	**2862** 37	**3339** 42	**3816** 46	**4293** 50	**4770** 54
28 x 28	30 x 26 40 x 20 36 x 22	5.20	4.85	**CFM** NC	**520** –	**1040** –	**1560** 19	**2080** 26	**2600** 31	**3120** 37	**3640** 42	**4160** 47	**4680** 50	**5200** 54
36 x 24	30 x 28 44 x 20 40 x 22	5.74	5.35	**CFM** NC	**574** –	**1148** –	**1722** 19	**2296** 26	**2870** 32	**3444** 38	**4018** 42	**4592** 47	**5166** 51	**5740** 55
30 x 30	34 x 26 48 x 20 38 x 24	5.99	5.57	**CFM** NC	**599** –	**1198** –	**1797** 19	**2396** 26	**2995** 32	**3594** 38	**4193** 43	**4792** 47	**5391** 51	**5990** 55

Performance Data

Model 67FB55 Fixed Blade Return Grilles and Registers

Imperial Units

Listed Duct Size (inches)	Alternate Size (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity VP Neg. SP	100 .001 .005	200 .002 .018	300 .006 .041	400 .010 .073	500 .016 .114	600 .022 .164	700 .031 .223	800 .040 .292	900 .050 .369	1000 .062 .456
32 x 32	36 x 30 46 x 22 38 x 28	6.84	6.34	**CFM** NC	**684** –	**1368** 15	**2052** 20	**2736** 27	**3420** 33	**4104** 39	**4788** 43	**5472** 48	**6156** 52	**6840** 56
48 x 24	34 x 34 38 x 30 36 x 32 48 x 28	7.69	7.13	**CFM** NC	**769** –	**1538** 16	**2307** 21	**3076** 27	**3845** 33	**4614** 39	**5383** 44	**6152** 48	**6921** 52	**7690** 56
36 x 36	38 x 34 46 x 28 42 x 30 48 x 26	8.69	8.02	**CFM** NC	**869** –	**1738** 17	**2607** 21	**3476** 28	**4345** 33	**5214** 40	**6083** 45	**6952** 49	**7821** 53	**8690** 57
38 x 38	42 x 34 48 x 30 44 x 34	9.70	8.94	**CFM** NC	**970** –	**1940** 18	**2910** 22	**3880** 28	**4850** 34	**5820** 40	**6790** 45	**7760** 49	**8730** 53	**9700** 57
40 x 40	42 x 36 48 x 32 46 x 34	10.77	9.90	**CFM** NC	**1077** –	**2154** 18	**3231** 23	**4308** 29	**5385** 35	**6462** 41	**7539** 47	**8616** 50	**9693** 55	**10770** 59
42 x 42	44 x 40 48 x 36 46 x 38	11.89	10.92	**CFM** NC	**1189** –	**2378** 19	**3567** 24	**4756** 30	**5945** 36	**7134** 42	**8323** 47	**9512** 51	**10701** 55	**11890** 59
44 x 44	46 x 42	13.07	11.98	**CFM** NC	**1307** –	**2614** 19	**3921** 24	**5228** 30	**6535** 36	**7842** 42	**9149** 47	**10456** 51	**11763** 55	**13070** 59
46 x 46		14.30	13.10	**CFM** NC	**1430** 15	**2860** 20	**4290** 25	**5720** 31	**7150** 37	**8580** 43	**10010** 48	**11440** 52	**12870** 56	**14300** 60
48 x 48		15.59	14.26	**CFM** NC	**1559** 15	**3118** 20	**4677** 25	**6236** 31	**7795** 37	**9354** 43	**10913** 48	**12472** 52	**14031** 56	**15590** 60

CFM - cubic feet per minute

VP - velocity pressure - inches w.g.

Neg. SP - negative static pressure - inches w.g.

NC - Noise Criteria values are based on 10 dB room absorption, re 10^{-12} watts.

Core Velocity is in feet per minute.

Performance Notes:

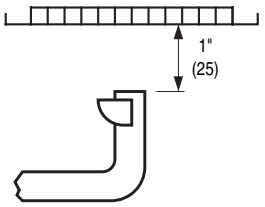
1. Performance data is for grille with opposed blade damper. Apply the following correction factors for grille without damper:

Neg. SP Listed Value x 0.91.

NC Listed value – 4.

2. 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.

Performance Data

Model 67FB55 Fixed Blade Return Grilles and Registers

Metric Units

Listed Duct Size (mm)	Alternate Size (mm)	Core Area (sq. m)	Ak Factor	Core Velocity VP Neg. SP	0.51 0.2 0.7	1.01 0.5 3.5	1.52 1.5 7.7	2.03 2.5 14	2.54 4.0 21	3.05 5.5 31	3.55 7.7 42	4.06 10 55	4.57 12 69	5.08 15 86
152 x 152	203 x 102 254 x 102	.019	21	**L/S** NC	**9** –	**19** –	**28** –	**38** –	**47** 16	**57** 21	**66** 26	**76** 30	**85** 34	**94** 38
203 x 152	254 x 127 305 x 102	.026	28	**L/S** NC	**13** –	**26** –	**40** –	**53** –	**66** 17	**79** 22	**92** 27	**106** 31	**119** 35	**132** 39
254 x 152	305 x 127 406 x 102	.033	34	**L/S** NC	**17** –	**33** –	**50** –	**66** –	**83** 18	**99** 23	**116** 28	**132** 32	**149** 36	**165** 40
203 x 203	356 x 127	.035	37	**L/S** NC	**18** –	**36** –	**54** –	**72** –	**90** 19	**108** 24	**126** 29	**143** 33	**161** 37	**179** 41
305 x 152	457 x 102	.039	42	**L/S** NC	**20** –	**40** –	**59** –	**79** 15	**99** 20	**119** 25	**139** 29	**159** 34	**178** 38	**198** 42
305 x 203	406 x 152 610 x 102	.054	55	**L/S** NC	**27** –	**55** –	**82** –	**109** 16	**137** 21	**164** 26	**192** 30	**219** 35	**246** 39	**274** 43
254 x 254	356 x 178 660 x 102	.057	58	**L/S** NC	**29** –	**58** –	**86** –	**115** 16	**144** 21	**173** 26	**202** 31	**230** 36	**259** 39	**288** 43
457 x 152	356 x 203 762 x 102 711 x 102	.060	62	**L/S** NC	**31** –	**61** –	**92** –	**123** 17	**153** 22	**184** 27	**215** 32	**245** 36	**276** 40	**307** 43
305 x 254	406 x 203 508 x 152 610 x 127	.069	69	**L/S** NC	**35** –	**70** –	**105** –	**140** 17	**175** 22	**210** 27	**244** 32	**279** 37	**314** 41	**349** 44
305 x 305	356 x 254 610 x 152 457 x 203 965 x 102	.084	83	**L/S** NC	**42** –	**85** –	**127** –	**170** 18	**212** 23	**255** 28	**297** 33	**340** 38	**382** 41	**425** 44
356 x 356	406 x 305 610 x 203 508 x 254 864 x 152	.115	113	**L/S** NC	**59** –	**117** –	**176** –	**234** 18	**293** 23	**351** 28	**410** 33	**468** 38	**527** 42	**585** 45
457 x 305	406 x 356 711 x 203 559 x 254 965 x 152	.127	125	**L/S** NC	**65** –	**129** –	**194** 15	**259** 20	**323** 25	**388** 30	**453** 35	**517** 40	**582** 43	**647** 46
610 x 254	508 x 305 762 x 203	.141	139	**L/S** NC	**72** –	**143** –	**215** 15	**287** 20	**359** 25	**430** 30	**502** 35	**574** 41	**646** 44	**717** 47
406 x 406	457 x 356 762 x 203 559 x 305	.152	147	**L/S** NC	**77** –	**155** –	**232** 16	**310** 21	**387** 26	**464** 31	**542** 36	**619** 41	**697** 44	**774** 47
610 x 305	457 x 406 762 x 254 508 x 356 914 x 203	.172	165	**L/S** NC	**87** –	**175** –	**262** 16	**349** 21	**437** 26	**524** 31	**611** 36	**698** 41	**786** 44	**873** 48
457 x 457	508 x 406 711 x 305 610 x 356 813 x 254	.195	187	**L/S** NC	**99** –	**198** –	**297** 16	**396** 21	**495** 26	**595** 32	**694** 37	**793** 42	**892** 45	**991** 48
762 x 305	508 x 457 660 x 356 559 x 406 914 x 254	.216	207	**L/S** NC	**109** –	**219** –	**328** 16	**438** 22	**547** 27	**657** 32	**766** 37	**876** 42	**985** 45	**1095** 49
508 x 508	610 x 457 762 x 356 660 x 406 914 x 305	.242	231	**L/S** NC	**123** –	**246** –	**369** 16	**493** 22	**616** 27	**739** 33	**862** 38	**985** 43	**1108** 46	**1232** 49
559 x 559	610 x 508 762 x 406 660 x 457 914 x 356	.294	279	**L/S** NC	**150** –	**299** –	**449** 17	**598** 23	**748** 28	**898** 34	**1047** 38	**1197** 43	**1346** 46	**1496** 50
762 x 457	610 x 559 1016 x 356 863 x 406	.329	310	**L/S** NC	**167** –	**334** –	**501** 17	**668** 23	**835** 28	**1002** 34	**1169** 39	**1336** 44	**1503** 47	**1671** 51
610 x 610	660 x 559 813 x 457 711 x 508 914 x 406	.352	331	**L/S** NC	**179** –	**358** –	**537** 17	**715** 23	**894** 28	**1073** 34	**1252** 39	**1431** 44	**1610** 47	**1789** 51
914 x 457	813 x 508 1168 x 356 1016 x 406	.397	373	**L/S** NC	**202** –	**403** –	**605** 18	**806** 25	**1008** 29	**1209** 36	**1411** 41	**1612** 46	**1814** 49	**2015** 53
660 x 660	711 x 610 1219 x 356	.415	390	**L/S** NC	**211** –	**422** –	**633** 18	**844** 25	**1055** 30	**1266** 36	**1477** 41	**1688** 46	**1898** 49	**2109** 53
762 x 610	711 x 660 914 x 508 813 x 559 1016 x 457	.443	415	**L/S** NC	**225** –	**450** –	**675** 19	**900** 26	**1125** 31	**1351** 37	**1576** 42	**1801** 46	**2026** 50	**2251** 54
711 x 711	762 x 660 1016 x 508 914 x 559	.483	451	**L/S** NC	**245** –	**491** –	**736** 19	**982** 26	**1227** 31	**1472** 37	**1718** 42	**1963** 47	**2208** 50	**2454** 54
914 x 610	762 x 711 1118 x 508 1016 x 559	.533	497	**L/S** NC	**271** –	**542** –	**813** 19	**1083** 26	**1354** 32	**1625** 38	**1896** 42	**2167** 47	**2438** 51	**2709** 55
762 x 762	864 x 660 1219 x 508 965 x 610	.556	518	**L/S** NC	**283** –	**565** –	**848** 19	**1131** 26	**1413** 32	**1696** 38	**1979** 43	**2261** 47	**2544** 51	**2827** 55

Performance Data

Model 67FB55 Fixed Blade Return Grilles and Registers

Metric Units

Listed Duct Size (mm)	Alternate Size (mm)	Core Area (sq. m)	Ak Factor	Core Velocity VP Neg. SP	0.51 0.2 0.7	1.01 0.5 3.5	1.52 1.5 7.7	2.03 2.5 14	2.54 4.0 21	3.05 5.5 31	3.55 7.7 42	4.06 10 55	4.57 12 69	5.08 15 86
813 x 813	914 x 762 1168 x 559 965 x 711	.635	589	**L/S** NC	**323** –	**646** 15	**968** 20	**1291** 27	**1614** 33	**1937** 39	**2259** 43	**2582** 48	**2905** 52	**3228** 56
1219 x 610	864 x 864 965 x 762 914 x 813 1219 x 711	.714	663	**L/S** NC	**363** –	**726** 16	**1089** 21	**1452** 27	**1814** 33	**2177** 39	**2540** 44	**2903** 48	**3266** 52	**3629** 56
914 x 914	965 x 864 1168 x 711 1067 x 762 1219 x 660	.807	746	**L/S** NC	**410** –	**820** 17	**1230** 21	**1640** 28	**2050** 33	**2460** 40	**2871** 45	**3281** 49	**3691** 53	**4101** 57
965 x 965	1067 x 864 1219 x 762 1118 x 864	.901	831	**L/S** NC	**458** –	**915** 18	**1373** 22	**1831** 28	**2289** 34	**2746** 40	**3204** 45	**3662** 49	**4120** 53	**4577** 57
1016 x 1016	1067 x 914 1219 x 813 1168 x 864	1.00	920	**L/S** NC	**508** –	**1016** 18	**1525** 23	**2033** 29	**2541** 35	**3049** 41	**3558** 47	**4066** 50	**4574** 55	**5082** 59
1067 x 1067	1118 x 1016 1219 x 914 1168 x 965	1.10	1015	**L/S** NC	**561** –	**1122** 19	**1683** 24	**2244** 30	**2805** 36	**3367** 42	**3928** 47	**4489** 51	**5050** 55	**5611** 59
1118 x 1118	1168 x 1067	1.21	1114	**L/S** NC	**617** –	**1234** 19	**1850** 24	**2467** 30	**3084** 36	**3701** 42	**4317** 47	**4934** 51	**5551** 55	**6168** 59
1168 x 1168		1.33	1218	**L/S** NC	**675** 15	**1350** 20	**2024** 25	**2699** 31	**3374** 37	**4049** 43	**4724** 48	**5399** 52	**6073** 56	**6748** 60
1219 x 1219		1.45	1326	**L/S** NC	**736** 15	**1471** 20	**2207** 25	**2943** 31	**3678** 37	**4414** 43	**5150** 48	**5886** 52	**6621** 56	**7357** 60

L/S - litres per second

VP - velocity pressure - Pa

Neg. SP - negative static pressure - Pa

NC - Noise Criteria values are based on 10 dB room absorption, re 10^{-12} watts.

Core Velocity is in meters per second.

Performance Notes:

1. Performance data is for grille with opposed blade damper. Apply the following correction factors for grille without damper:

Neg. SP Listed Value x 0.91.

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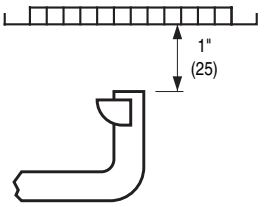
Air Measurement



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 m/s).

4. Calculate the airflow (L/S) by multiplying the average velocity by the appropriate Ak factor.
Airflow (L/S) = Average velocity (Vk) x Ak.