

AmeriFlow[®]

Retail

Grilles, Registers & Diffusers



Table of Contents

RESIDENTIAL		
	Product Information	Engineering Data
FLOOR REGISTERS & GRILLES		
456	Value Floor Register	5 30
427	Toe Space Grille.....	5 30
413	Floor Register	5 30
410	Deluxe Floor Register	6 30
400	Heavy Duty Floor Register.....	6 31
405	Heavy Duty Floor Grille.....	6 31
534	Royalaire® Floor Diffuser	7 31
BASEBOARD REGISTERS & GRILLES		
3015	Perimeter Baseboard Diffuser 15"	7 32
3018	Perimeter Baseboard Diffuser 18"	7 32
4015	Perimeter Baseboard Return 15"	7 32
4018	Perimeter Baseboard Return 18"	7 32
3024	Baseboard Diffuser 24"	8 32
3048	Baseboard Diffuser 48"	8 32
366	Baseboard Register with Plate Damper	8 32
367	Baseboard Register 1/3" fins	9 32
375	Baseboard Return 1/3" fins	9 32
358	Baseboard Return with Base Projection	9 32
SIDEWALL REGISTERS & GRILLES		
356	2-Way Sidewall Register 1/3" fins	10 33
357	3-Way Sidewall Register 1/3" fins	10 33
377	Return Air Grille 1/3" fins	10 34
382	2-Way Sidewall Register 1/2" fins	11 35
383	3-Way Sidewall Register 1/2" fins	11 35
384	4-Way Sidewall Register 1/2" fins	11 35
372	Return Air Grille 1/2" fins	11 36
361	1-Way Sidewall Register Curved Blade	12 37
363	3-Way Sidewall Register Curved Blade	12 38
364	4-Way Sidewall Register Curved Blade	12 38
341	1-Way Adj Curved Blade Alum Register	12 39
342	2-Way Adj Curved Blade Alum Register	12 39
343	3-Way Adj Curved Blade Alum Register	13 39
344	4-Way Adj Curved Blade Alum Register	13 39
348	Vertical Adj Alum Register	13 40
RETURN AIR FILTER GRILLES		
359	Filter Grille 1/3" fins	14 34
326	Filter Grille 1/2" fins	14 36
CEILING DIFFUSERS		
1500	Round Ceiling Diffuser.....	15 41
1800	Round Ceiling Damper	15
1900	Round Ceiling Duct Ring	15
2603	3-Way Ceiling Diffuser MS Damper	16 41
2604	4-Way Ceiling Diffuser MS Damper	16 41
2605	2-Way Corner Ceiling Diffuser MS Damper	16 41

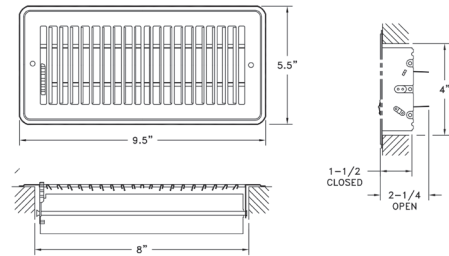
COMMERCIAL		
	Product Information	Engineering Data
REGISTERS AND GRILLES-STEEL		
291L	Single Deflection Steel Register	17 41-43
470	Steel Fixed Bar Return Air Grille	17 43
472OB	Double Deflection Steel Register OBD damper.....	17 41-43
490	Steel Fixed Bar Filter Grille	17 43
REGISTERS AND GRILLES-ALUMINUM		
RA204	Aluminum Fixed Bar Return Air Grille	18 44
RAF204	Aluminum Fixed Bar Filter Grille	18 44
T-BAR AIR FILTER GRILLES-STEEL		
359TW	T-Bar Filter Grille 1/3" Lanced	19 44
359TIW	T-Bar Filter Grille 1/3" Lanced, R4 Insulation	19 44
359TIR6W	T-Bar Filter Grille 1/3" Lanced, R6 Insulation	19 44
326TW	T-Bar Filter Grille 1/2" Lanced	19 44
326TPIR6W	T-Bar Filter Grille 1/2" Lanced, Deep Plenum, R6	20 44
490TW	T-Bar Filter Grille Fixed Bar Steel	20 45
490TIW	T-Bar Filter Grille Fixed Bar Steel, R4 Insulation.....	20 45
T-BAR FILTER RETURNS-ALUMINUM		
RAF204TW	T-Bar Filter Grille Fixed Bar Aluminum.....	21 45
T-BAR RETURN GRILLES-STEEL		
470TW	T-Bar Fixed Bar Return Air Grille Steel.....	21 45
T-BAR RETURN GRILLES-ALUMINUM		
8000W	T-Bar Eggcrate Return	22 45
8000R6W	T-Bar Eggcrate Return, R6 Insulation	22 45
8100W	Egg Crate Filter Grille, Aluminum	22 45
RA204TW	T-Bar Fixed Bar Return Air Grille, Aluminum.....	22 45
PERFORATED SUPPLIES AND RETURNS		
PTW24X24	PTW24X24 ~ T-Bar Perforated Face Only	23 45
6004W	Perforated Face T-Bar Supply, R4 Insulation	23 45
6006W	Perforated Face T-Bar Supply, R6 Insulation	23 45
7000W	Perforated Face T-Bar Return, R4 Insulation	23 45
9000W	Curved Blade Perforated T-Bar Supply with Collar	24 46-47
9100W	Perforated T-Bar Return with Collar	24 46-47
FIXED PATTERN DIFFUSERS		
6400W	High Volume T-Bar Diffuser	25 47
6414W	High Volume T-Bar Diffuser, 14" Collar	25 47
6400R6W	High Volume T-Bar Diffuser with R6 Insulation.....	25 47
5000W	2 Cone T-Bar Diffuser with Collar	25 47
500U	Steel/Aluminum Fixed-Pattern Diffuser.....	26 47
5300W	3 Cone T-Bar Diffuser with Collar	26 47
5300R6W	3 Cone T-Bar Diffuser with Collar, R6 Insulation.....	26 47
200U	Steel T-Bar Plate Diffuser	26 47
T-BAR ACCESSORIES		
G5000C	Tab Collar For Insulated Backs	27
G6400C	Snap on Collar	27
6400	6400 Push Pins ~ Push Pins for G6400C Collars.....	27
G1700B	Snap on Damper for G5000C and G6400C Collars.	27

Floor Registers & Grilles



456 Value Floor Register

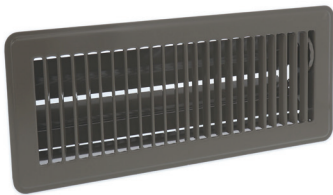
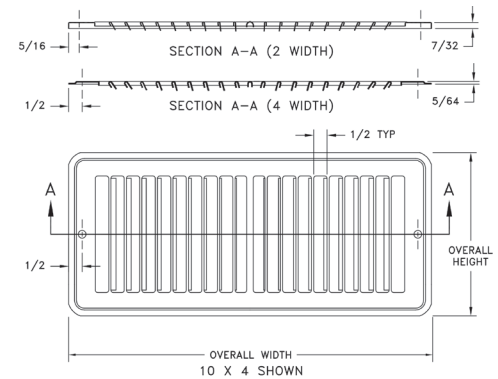
- Stamped, straight blade floor register with screwholes
- Toe-operated multi-louver damper
- Steel welded construction
- Brown or Bright White enamel finish



427 Toe-Space Grille

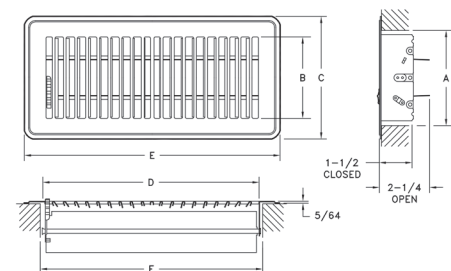
- All-steel construction
- Heavy-gauge stamped face
- Multi-angle fins
- Brown or Bright White enamel finish

SIZE	FREE AREA SQ.IN.	OVERALL SIZE	
		WIDTH	HEIGHT
10 X 2	15	11-1/8	3-3/8
12 X 2	17	13-1/8	3-3/8
14 X 2	20	15-1/8	3-3/8
10 X 4	27	11-1/2	5-1/2
12 X 4	32	13-1/2	5-1/2

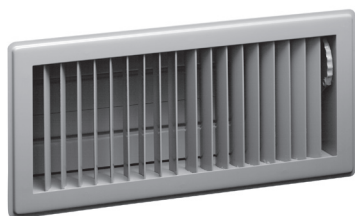


413 Floor Diffuser

- All-steel construction
- Multi-angle fin setting
- Rolled fin for strength and safety
- Welded construction
- Toe-operated dial control
- Heavy-gauge stamped face
- Brown or Bright White enamel finish

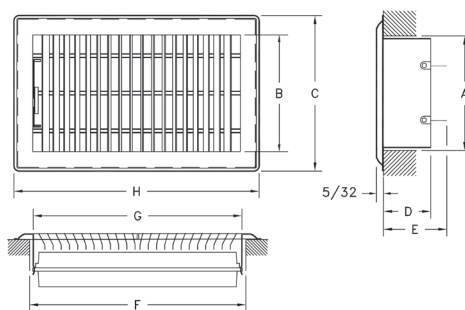


SIZE A X F	FREE AREA SQ.IN.	DIMENSIONS (SEE DETAIL SKETCHES)			
		DAYLIGHT OPENING		OVERALL	
		B	D	C	E
2 X 10	15	2	9-5/8	3-3/4	11-1/2
2 X 12	17	2	11-5/8	3-3/4	13-1/2
2 X 14	20	2	13-5/8	3-3/4	15-1/2
4 X 8	22	3-3/4	7-5/8	5-1/2	9-1/2
4 X 10	27	3-3/4	9-5/8	5-1/2	11-1/2
4 X 12	32	3-3/4	11-5/8	5-1/2	13-1/2
4 X 14	37	3-3/4	13-5/8	5-1/2	15-1/2
6 X 10	39	5-1/2	9-5/8	7-1/2	11-1/2
6 X 12	48	5-1/2	11-5/8	7-1/2	13-1/2
6 X 14	56	5-1/2	13-5/8	7-1/2	15-1/2



410 Deluxe Floor Diffuser

- All-steel construction
- Heavy-gauge individually welded diffusion vanes
- Multi-angle fin setting
- Toe-operated dial control
- Can be used in high traffic areas
- Brown enamel finish

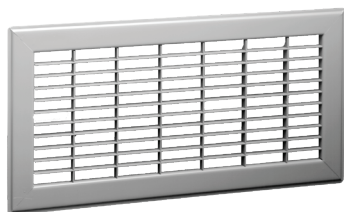
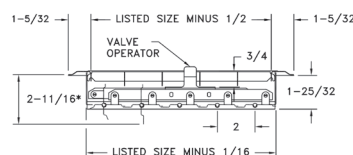
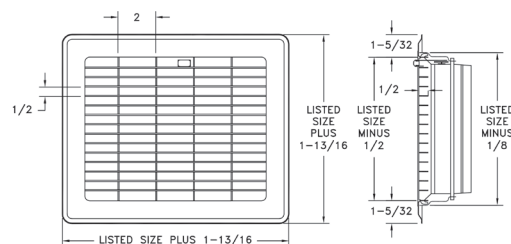


SIZE A X F	FREE AREA SQ. IN.	DIMENSIONS (SEE DETAIL SKETCHES)					
		DAYLIGHT OPENING		OVERALL		DEPTH	
		B	G	C	H	D (CLOSED)	E (OPEN)
4 X 10	29	3-3/4	9-3/4	5-1/8	11-1/8	1-7/8	2-5/8
4 X 12	35	3-3/4	11-3/4	5-1/8	13-1/8	1-7/8	2-5/8
4 X 14	40	3-3/4	13-3/4	5-1/8	15-1/8	1-7/8	2-5/8
6 X 10	44	5-1/2	9-3/4	7-1/4	11-1/2	1-7/8	2-5/8
6 X 12	53	5-1/2	11-3/4	7-1/4	13-1/2	1-7/8	2-5/8
6 X 14	60	5-1/2	13-3/4	7-1/4	15-1/2	1-7/8	2-5/8



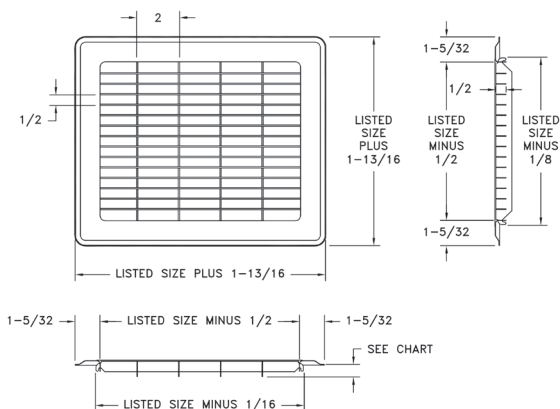
400 Heavy Duty Floor Register

- All-steel construction
- Provides firm, smooth surface
- Extremely rigid
- Free area averages over 75%
- Toe-operated valve control
- Brown enamel finish



405 Heavy Duty Floor Grille

- All-steel construction
- Provides firm, smooth surface
- Extremely rigid
- Free area averages over 75%
- Brown enamel finish

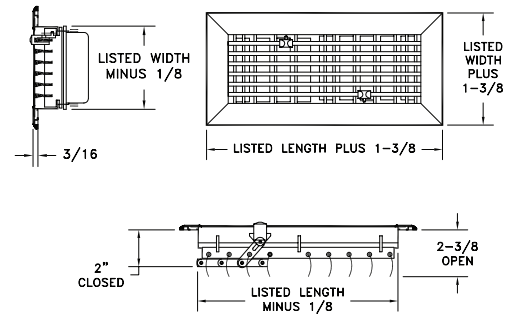


Floor Registers & Grilles



354 Royaleaire® Floor Diffuser

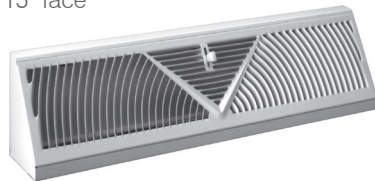
- Extruded aluminum construction
- Corrosion-resistant, high strength
- Heavy cross-bracing at strategic intervals
- Dual multi-shutter valves for adjustable air pattern
- Nylon slide valve operators
- Satin-anodized finish



Baseboard Registers & Grilles



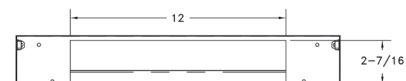
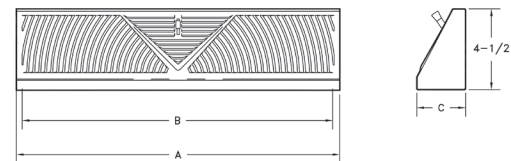
15" face



18" face

3015/3018 Perimeter Baseboard Diffuser

- All-steel construction
- Blankets wall or window area
- Brown or Bright White enamel finish



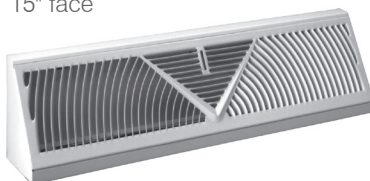
BOTTOM VIEW

18" Shown

A	B	C	FREE AREA SQ INCH
15	14 3/8"	2 3/4"	32
18	17 3/8"	2 13/16"	38



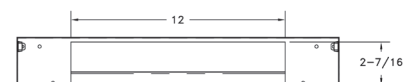
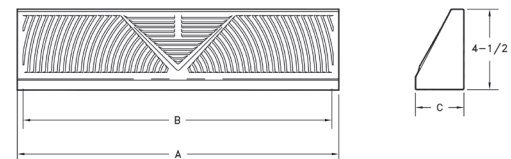
15" face



18" face

4015/4018 Perimeter Baseboard Return

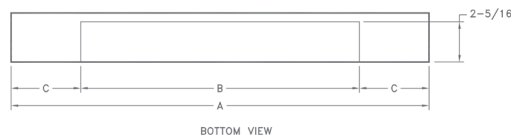
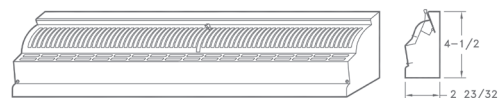
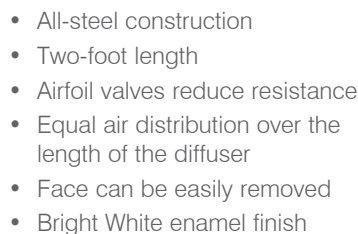
- All-steel construction
- Complementary return air grille for Model 3015/3018 supply
- Bright White enamel finish



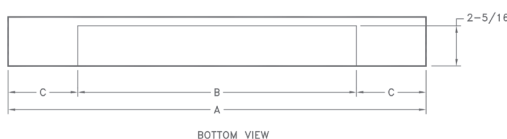
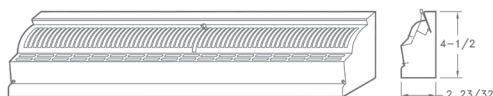
BOTTOM VIEW

18" Shown

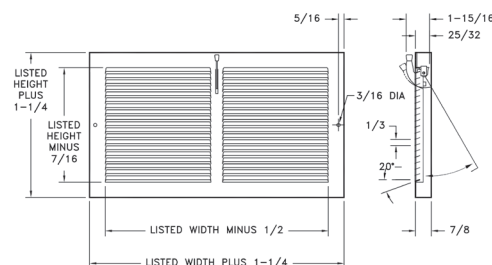
A	B	C	FREE AREA SQ INCH
15	14 3/8"	2 3/4"	32
18	17 3/8"	2 13/16"	38



MODEL	A	B	C	FREE AREA SQ INCH
3024	24	16	4	27
3048	48	24	12	54

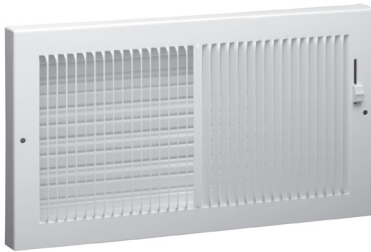


- One-piece steel construction
- 1/3" spaced fins set at 20 degrees
- 7/8" margin turnback
- Exceptional free area
- Positive volume-control damper
- Bright White enamel finish



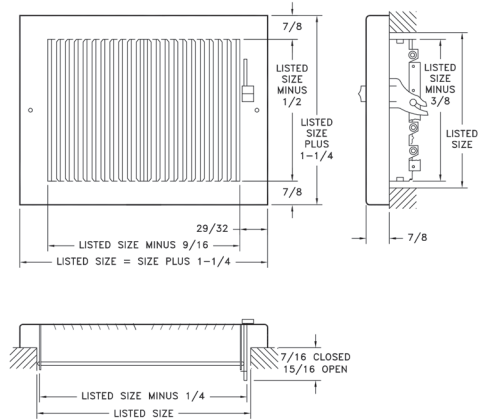
Baseboard Registers & Grilles

Baseboard Registers and Grilles



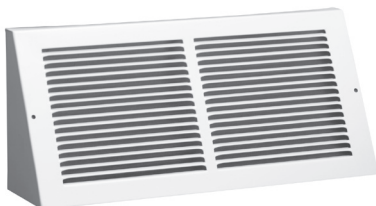
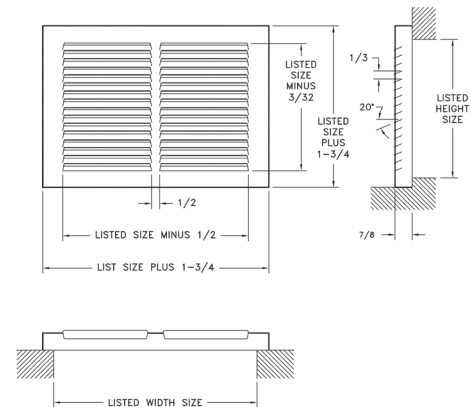
367 Baseboard Register

- All-steel construction
- 1/3"-spaced fins set at 20 degrees
- 7/8" margin turnback
- 1-5/8" depth when fully opened
- Exceptional free area
- Ideal for shallow duct installations
- Multi-shutter valve
- Bright White enamel finish



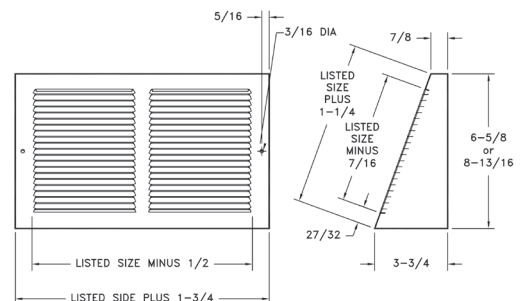
375 Baseboard Return

- One-piece steel construction
- 1/3" spaced fins set at 20 degrees
- 7/8" margin turnback
- Exceptional free area
- Install with fins upward or downward for best duct concealment
- Brown or Bright White enamel finish



358 Baseboard Return

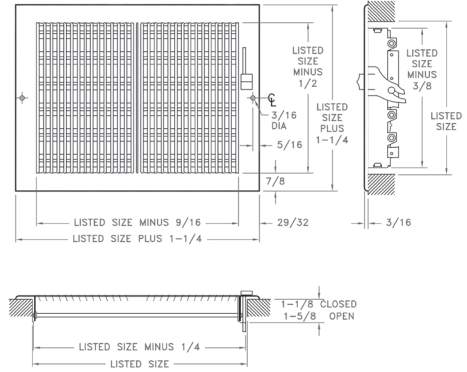
- All-steel construction
- 1/3" spaced fins set at 20 degrees
- Bright White enamel finish





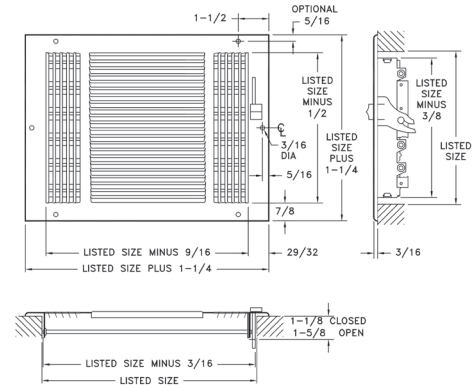
356 2-Way Sidewall Register

- All-steel construction
- Used for ceiling or sidewall installations
- For heating or cooling
- Ideal for shallow duct installations
- Two-way deflection
- 1/3" spaced fins set at 20 degrees
- Galvanized multi-shutter valve
- 1-5/8" depth when fully opened
- Interlocking valve louvers for positive shut-off
- Bright White finish



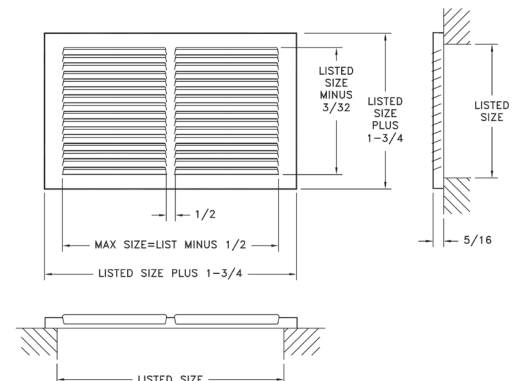
357 3-Way Sidewall Register

- All-steel construction
- Ideal for shallow duct installations
- Used for ceiling or sidewall installations
- For heating or cooling
- Three-way deflection
- 1/3" spaced fins set at 20 degrees
- Multi-shutter valve
- 1-5/8" depth when fully opened
- Interlocking valve louvers for positive shut-off
- Bright White finish



377 Return Air Grille

- All-steel construction
- 1/3" spaced fins set at 20 degrees
- Exceptional free area
- 5/16" Margin Turnback
- Bright White finish



Note: When ordering, specify horizontal dimension first.

Sidewall Registers & Grilles

Sidewall Registers and Grilles



382



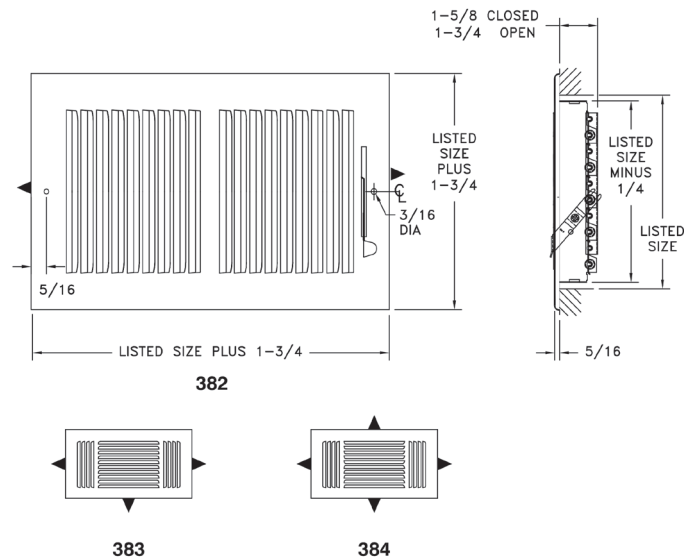
383



384

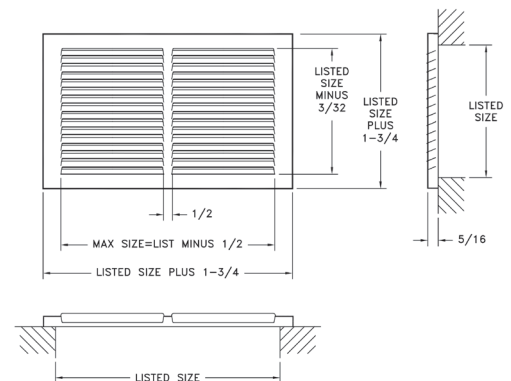
380 Series Sidewall Registers

- All-steel construction with metal handle
- Stamped, straight-blade, supply register with multi-louver damper for ceiling or sidewall installation
- Fins spaced on 1/2" centers at 40 degrees
- Available in 2-way, 3-way and 4-way airflow patterns
- Bright White finish



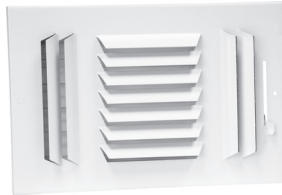
372 Return Air Grille

- All-steel construction
- 1/2" spaced fins set at 40 degrees
- Exceptional free area
- 5/16" Margin Turnback
- Bright White finish





361



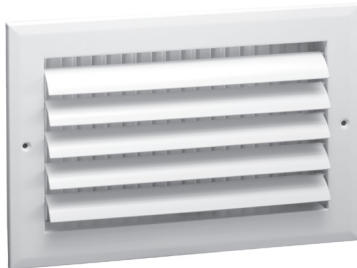
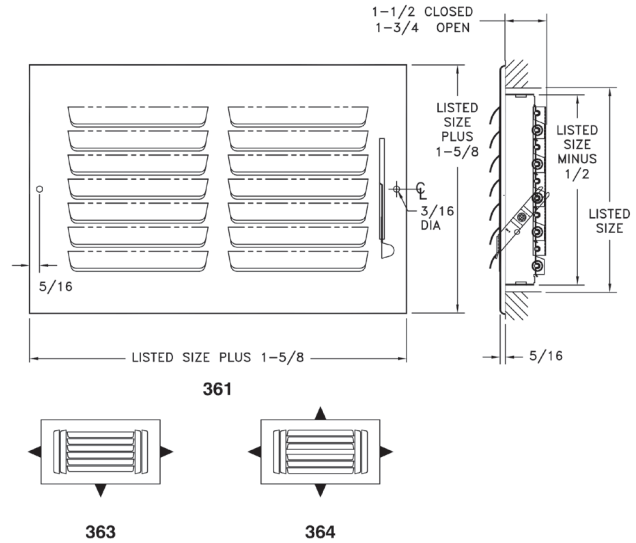
363



364

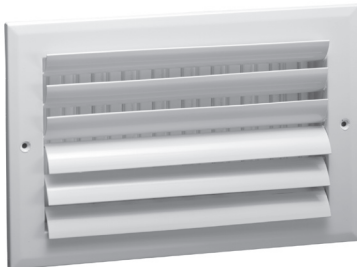
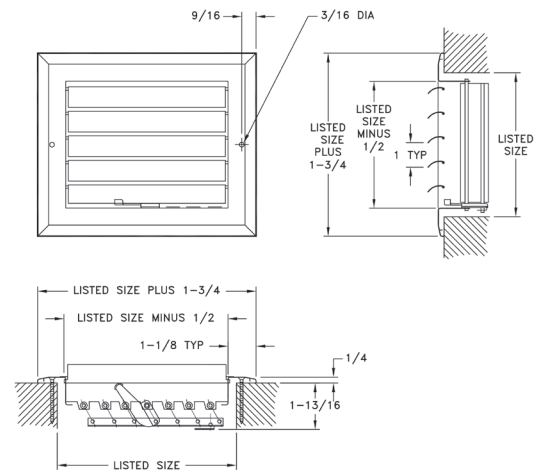
360 Series Register

- All-steel construction with metal handle
- Stamped curved-blade supply register with multi-louver damper for ceiling or sidewall installation
- Available in 1-way, 3-way and 4-way airflow patterns
- Bright White finish



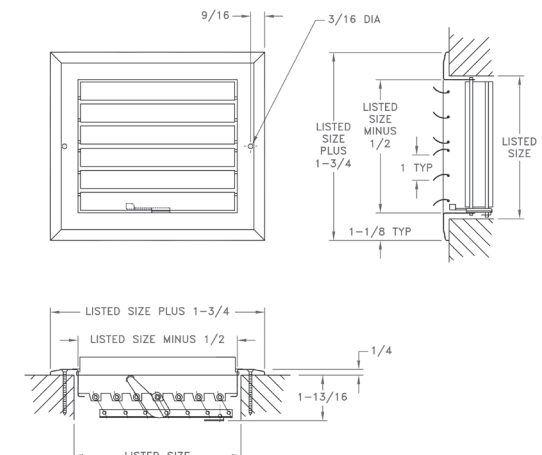
341 Curved-Blade Register

- Aluminum face/fin construction
- For sidewall or ceiling application
- One-way deflection
- Adjustable curved blades
- Galvanized multi-shutter valve
- Bright White finish



342 Curved-Blade Register

- Aluminum face/fin construction
- For sidewall or ceiling application
- Two-way deflection
- Adjustable curved blades
- Galvanized multi-shutter valve
- Bright White finish



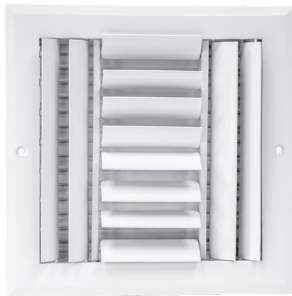
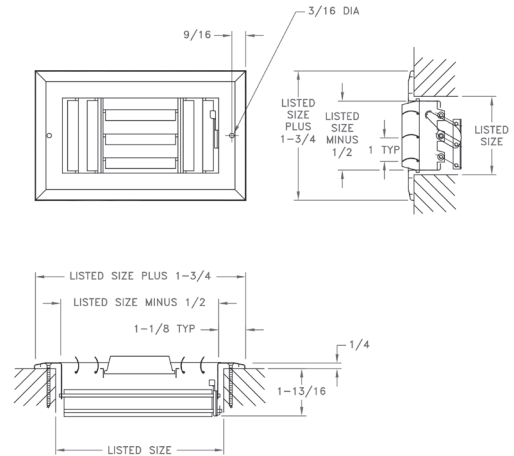
Sidewall Registers & Grilles

Sidewall Registers and Grilles



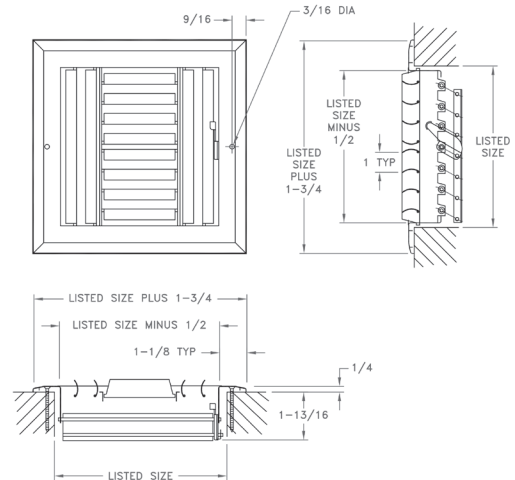
343 Curved-Blade Register

- Aluminum face/fin construction
- For sidewall or ceiling application
- Three-way deflection
- Adjustable curved blades
- Galvanized multi-shutter valve
- Bright White finish



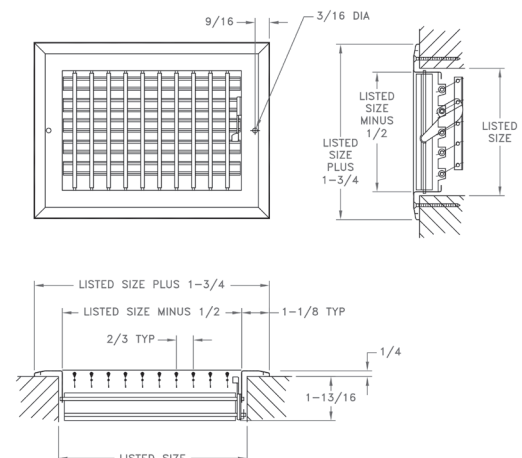
344 Curved-Blade Register

- Aluminum face/fin construction
- For sidewall or ceiling application
- Four-way deflection
- Adjustable curved blades
- Galvanized multi-shutter valve
- Bright White finish



348 Register

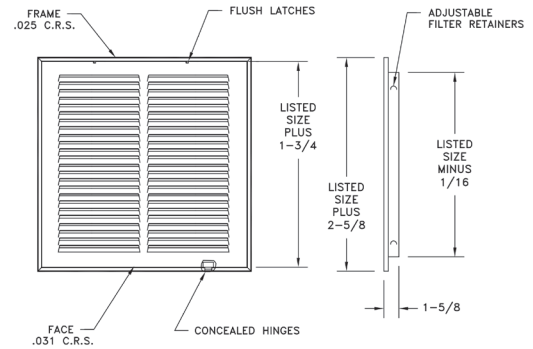
- Aluminum face/fin construction
- Adjustable straight fins provides individual deflection control
- Stamped face margins eliminate mitered corners and rough edges
- Galvanized multi-shutter valve
- Bright White finish





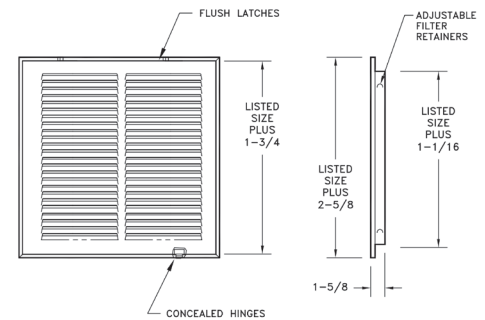
359 Filter Grille

- All-steel construction
- 1/3" spaced fins set at 20 degrees
- Effectively conceals filter
- Use standard 1" thick disposable filters (not included)
- Removable face for easy installation and cleaning
- Equipped with adjustable filter retainers
- Bright White finish



326 Filter Grille

- All-steel construction
- 1/2" spaced fins set at 40 degrees
- Effectively conceals filter
- Use standard 1" thick disposable filters (not included)
- Removable face for easy installation and cleaning
- Equipped with adjustable filter retainers
- Bright White finish

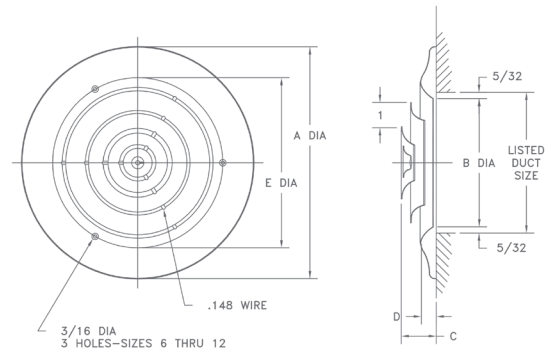


Note: When ordering, specify horizontal dimension first.



1500 Round Ceiling Diffuser

- All-steel construction
- Step-down diffuser rings deflect air stream 360 degrees
- Bright White finish



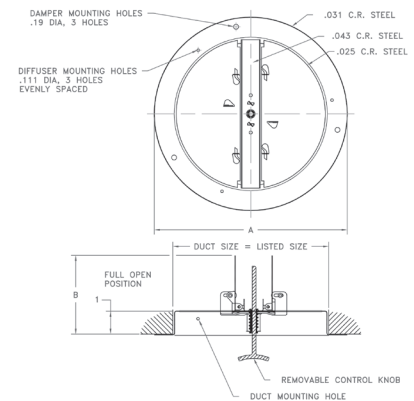
SIZE	A DIA	B DIA	C	D	E DIA
6	9-15/16	5-11/16	1-3/64	11/16	6-1/2
8	11-15/16	7-11/16	1-7/32	11/16	8-1/2
10	13-15/16	9-11/16	1-25/64	11/16	10-1/2
12	15-15/16	11-11/16	1-9/16	11/16	12-1/2
14	17-15/16	13-11/16	1-3/4	11/16	14-1/2
18	23	17-11/16	2-19/32	15/16	21-3/4



1800 Round Ceiling Damper

- All-steel construction
- Controls air volume evenly over entire #1500 diffuser
- Removable knob operator for adjustment from closed to fully open
- Brown enamel finish

Note: Knob permits diffuser to be held in position while attaching face screws.



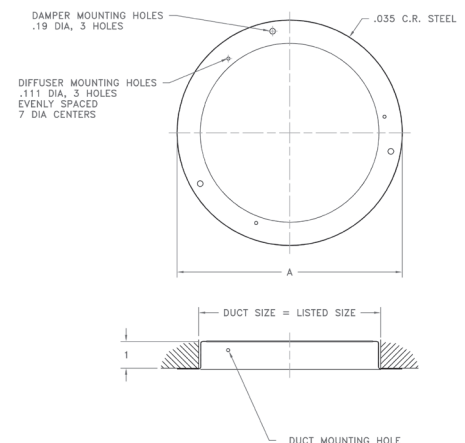
SIZE	A	B
6	7-1/2	3-11/16
8	9-1/2	4-11/16
10	10-7/8	5-11/16
12	12-7/8	6-11/16
14	14-7/8	7-11/16
18	18-13/16	9-11/16



1900 Round Ceiling Duct Ring

- All-steel construction
- For installation of #1500 diffuser when not using a damper
- Brown enamel finish

SIZE	A
6	7-1/2
8	9-1/2
10	10-7/8
12	12-7/8
14	14-7/8
18	18-13/16





2603 3-Way Ceiling Diffuser

- Extruded aluminum construction
- Cores flush with margin
- Three-way air diffusion
- Face mount for easy installation
- Multi-shutter dampers - aluminum
- Inconspicuous fingertip lever for air volume control
- Bright White finish



2604 4-Way Ceiling Diffuser

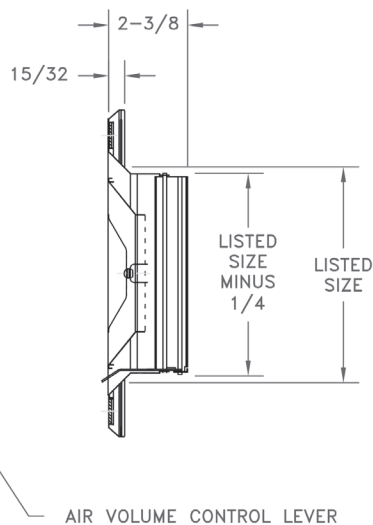
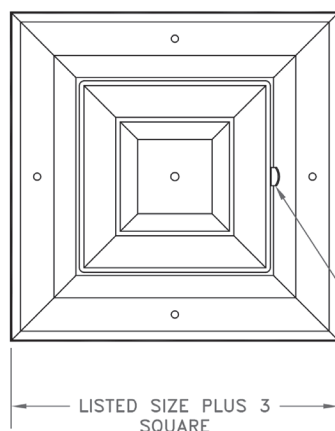
- Extruded aluminum construction
- Cores flush with margin
- Four-way air diffusion
- Face mount for easy installation
- Multi-shutter dampers - aluminum
- Inconspicuous fingertip lever for air volume control
- Bright White finish



2605 2-Way Corner Ceiling Diffuser

- Extruded aluminum construction
- Cores flush with margin
- Two-way corner air diffusion
- Face mount for easy installation
- Multi-shutter dampers - aluminum
- Inconspicuous fingertip lever for air volume control
- Bright White finish

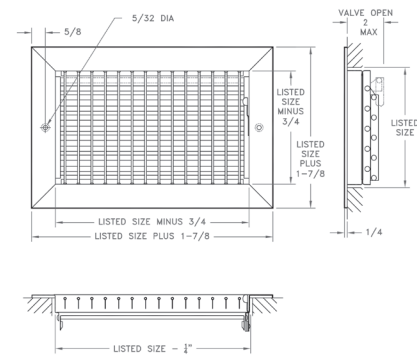
4 WAY CORE SHOWN





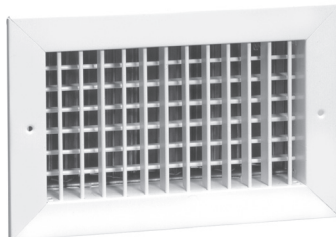
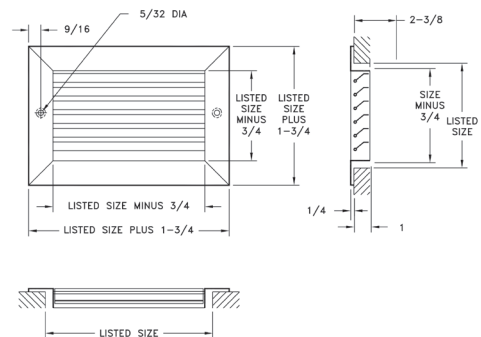
291L Single Deflection Register

- All-steel construction
- Vertical adjustable face bars
- Horizontal multi-shutter valve
- Bright White finish



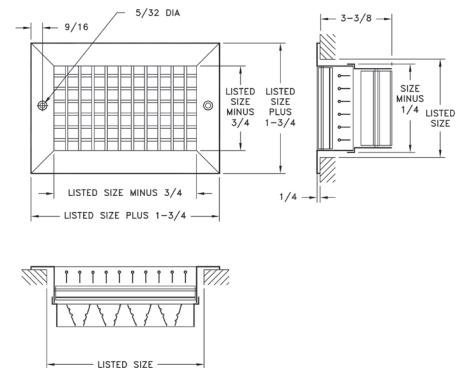
470 Fixed Bar Return Air Grille (No Damper)

- All-steel construction
- 3/4" spaced fins set at 35°, horizontal face bars set at 35°
- Bright White finish



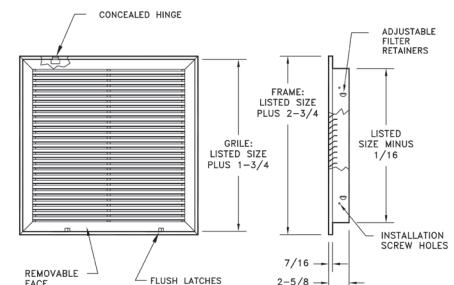
472OB Double Deflection Register w/OBD

- All-steel construction
- Vertical front bars
- Horizontal second bars
- Adjustable face bars may be set to any desired deflection
- Opposed-blade damper
- Bright White finish



490 Fixed Bar Filter Grille

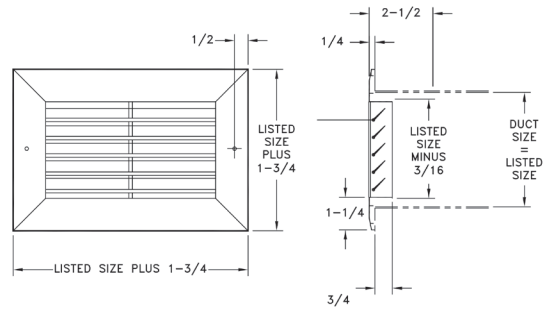
- Steel construction
- Simplifies contractor installation
- Flush, removable face with concealed hinges
- Uses nominal 1" thick disposable filters (not included)
- Equipped with adjustable filter retainers
- 3/4" spaced fins set at 35°
- Bright White finish





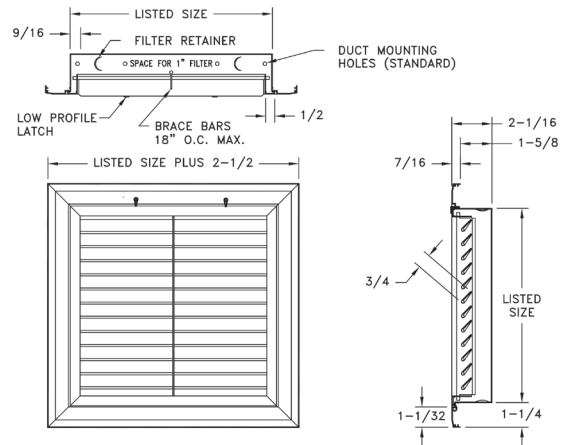
RA204 Fixed Bar Return Air Grille

- Extruded aluminum construction
- Horizontal bars at 45 degrees
- Face bars permanently fixed into heavy aluminum frames at a 45-degree angle
- Bright White finish



RAF204 Fixed Bar Filter Grille

- Extruded aluminum construction
- Horizontal bars at 45 degrees
- Hinged on the bottom edge, face is removable
- Accommodates standard 1" thick disposable filter (not included)
- Filter grilles equipped with plastic slide latch
- Bright White finish

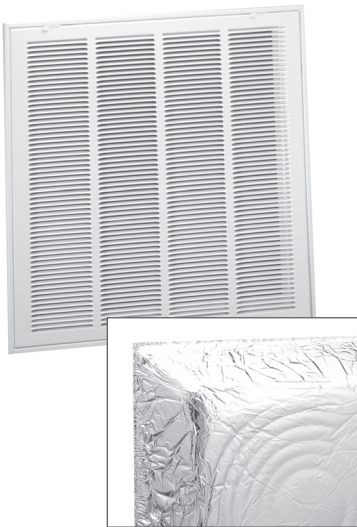
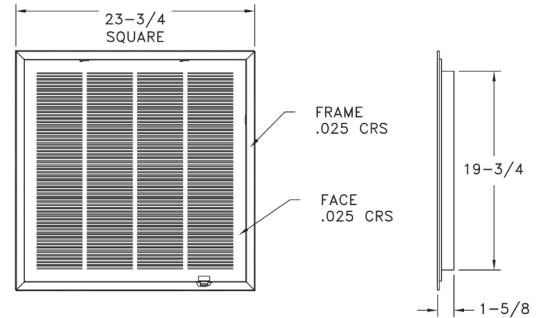


T-Bar Return-Air Filter Grilles



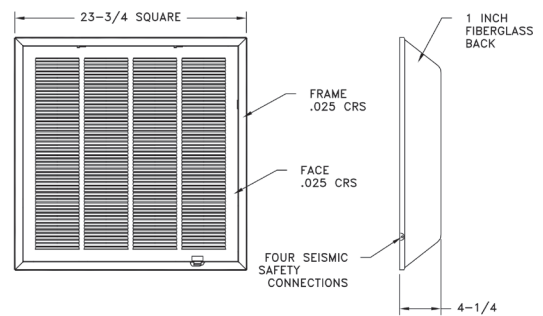
359TW T-Bar Filter Grille

- Steel construction
- Lanced-face design with 1/3" blade spacing
- Flush, removable face with concealed latches and hinges can be installed in any direction
- Uses standard 1" disposable filters (not furnished)
- Bright White finish



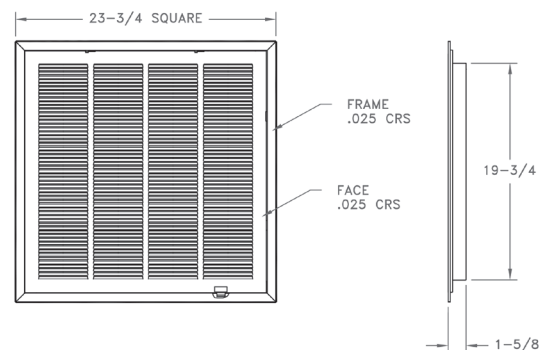
359TIW/359TIR6W T-Bar Filter Grille With Insulated Back

- Steel construction
- Lanced-face design with 1/3" blade spacing
- Flush, removable face with concealed latches and hinges can be installed in any direction
- Molded fiberglass backs in both R4.2, and R6 options
- Accepts 6" to 14" unique tab collar (G5000C series) or 6" to 14" unique snap-in collar (G6400C series and 6400PP); also accepts standard spin-in collar
- Frame includes four seismic safety connections
- Uses standard 1" disposable filters (not furnished)
- Bright White finish



326TW T-Bar Filter Grille

- Steel construction
- Lanced-face design with 1/2" blade spacing
- Flush, removable face with concealed latches and hinges can be installed in any direction
- Uses standard 1" disposable filters (not furnished)
- Bright White finish

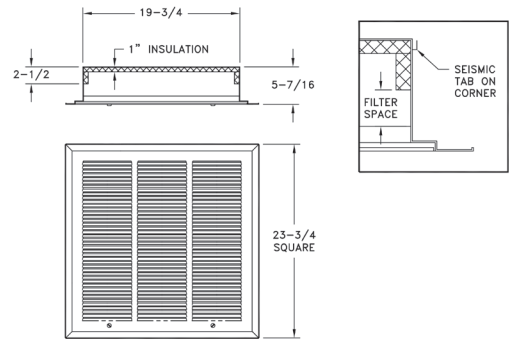


T-Bar Return-Air Filter Grilles



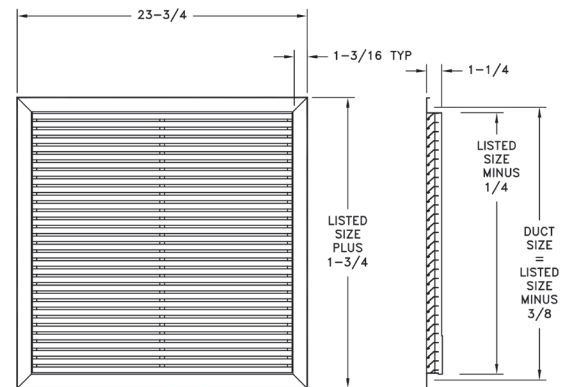
326TPIR6W T-Bar Filter Grille With Deep Plenum

- Steel construction
- Lanced-face design with 1/2" blade spacing
- Flush, face with screwdriver latches and piano hinges can be installed in any direction
- Plenum box with R6 insulated ductboard
- Uses standard 1" disposable filters (not furnished)
- Bright White finish



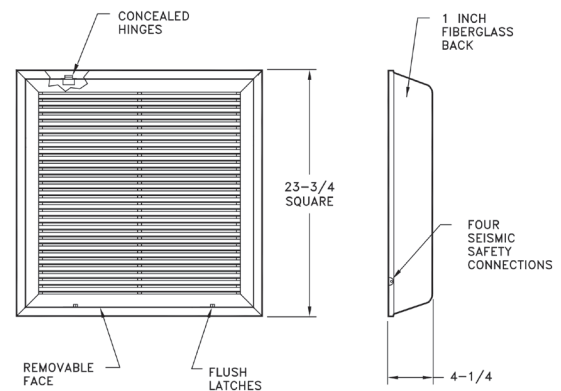
490TW T-Bar Filter Grille Fixed Bar

- All-steel construction
- Bar-style face design
- Flush, removable face with concealed latches and hinges, can be installed in any direction
- Uses standard 1" disposable filters (not furnished)
- Bright White finish



490TIW T-Bar Filter Grille Fixed Bar With Molded Insulation

- Steel construction
- Bar-style face design
- Flush, removable face with concealed latches and hinges, can be installed in any direction
- R4.2 molded fiberglass back
- Accepts 6" to 14" unique tab collar (G5000C series) or 6" to 14" unique snap-in collar (G6400C series with 6400PP); also accepts standard spin-in collar
- Frame includes four seismic safety connections
- Uses standard 1" disposable filters (not furnished)
- Bright White finish

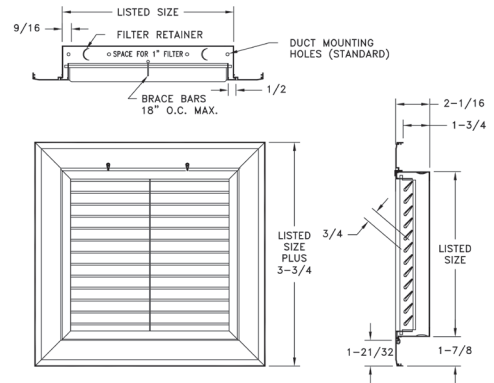


T-Bar Return and Filter Return Grilles



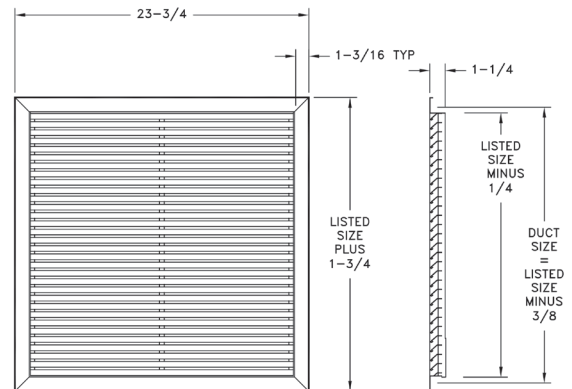
RAF204TW T-Bar Filter Grille Fixed Bar

- Extruded aluminum construction
- Bar-style face
- Hinged to filter frame, removable face
- Mounts flush with T-Bar ceilings
- Filter grilles equipped with plastic slide latch
- Uses standard 1" disposable filter (not furnished)
- Bright White finish

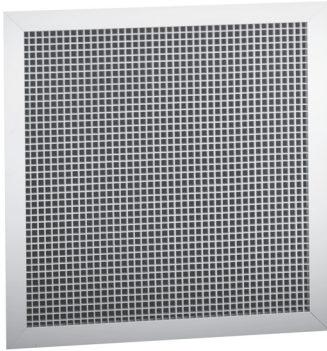


470TW T-Bar Fixed Return Air Grille

- Steel construction
- Mount flush with T-Bar ceilings
- Bright White finish

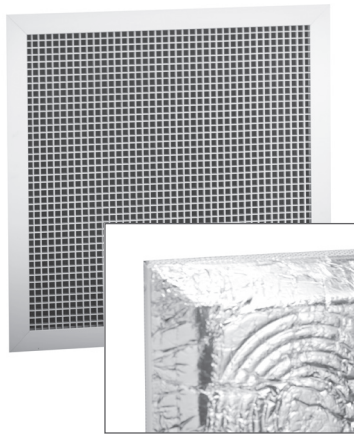
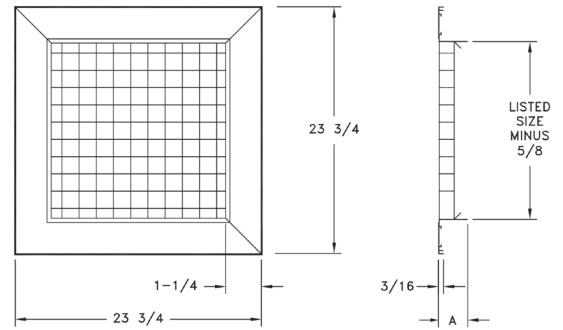


T-Bar Return and Filter Return Grilles



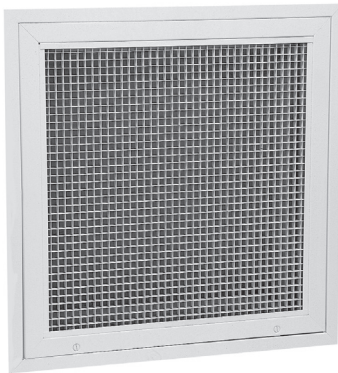
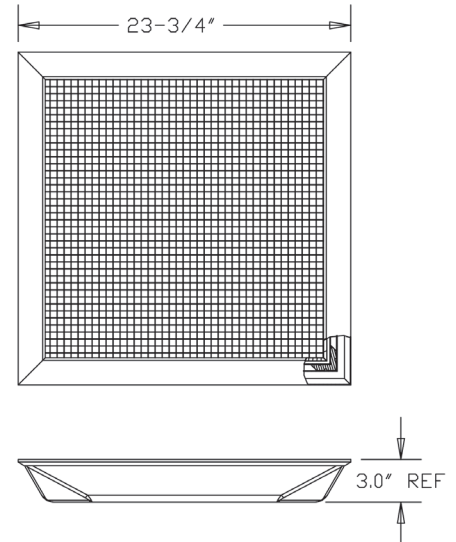
**8000W T-Bar
Egg Crate Return**

- All aluminum construction
- Egg crate style face
- Mount flush with T-Bar ceilings
- Bright White finish



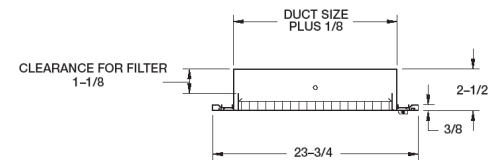
**8000R6W T-Bar Egg Crate
Return Grille With
Insulated Back**

- All aluminum construction
- Egg crate style face
- R6 molded fiberglass back
- Accepts 6" to 14" unique tab collar (G5000C series) or 6" to 14" unique snap-in collar (G6400C series and 6400PP); also accepts standard spin-in collar
- Bright White finish
- No steel, great for MRI rooms



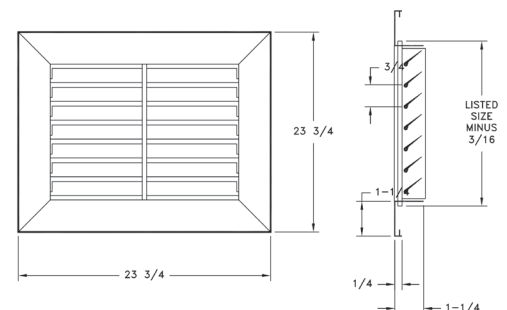
**8100W Egg Crate
Filter Grille, Aluminum**

- Aluminum and steel construction
- Egg crate style face
- Non-removable face, hinged to filter frame
- Mount flush with T-Bar ceilings
- Thumb screw fasteners
- Uses standard 1" disposable filter (not furnished)
- Bright White finish



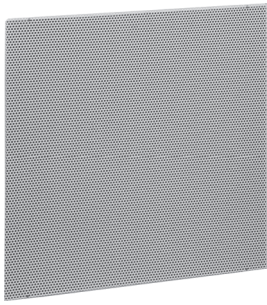
**RA204TW T-Bar Fixed Return
Air Grille, Aluminum**

- Extruded aluminum construction
- Horizontal bars at 45 degrees
- Mount flush with T-Bar ceilings
- Bright White finish



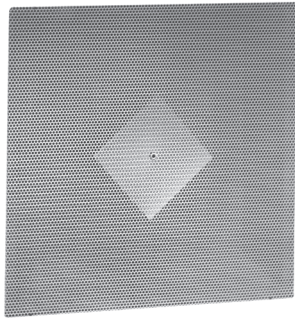
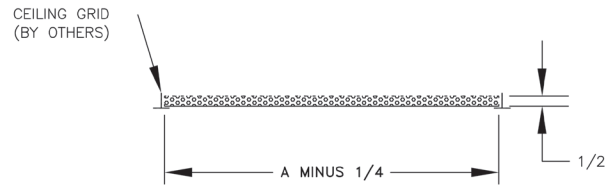
T-Bar Perforated Supply/Return

T-Bar Perforated Supply/Return



PTW24x24 T-Bar Perforated Face Only

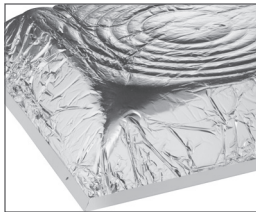
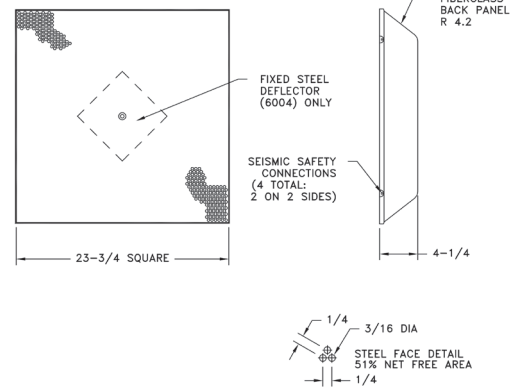
- Face only return for plenum ceilings
- White finish



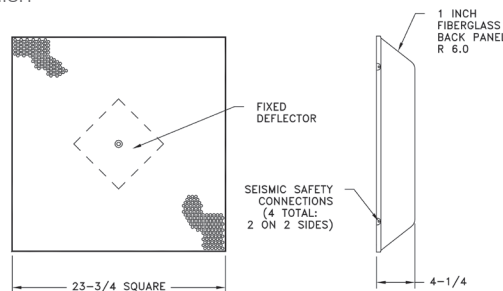
6004W/6006W Perforated Face T-Bar Supply With Insulated Back

- Perforated steel face with deflector
- Molded fiberglass back panel, available in R4.2 or R6
- Accepts 6" to 14" unique tab collar (G5000C series) or 6" to 14" unique snap-in collar (G6400C series and 6400PP); also accepts standard spin-in collar
- Bright White finish

6004W

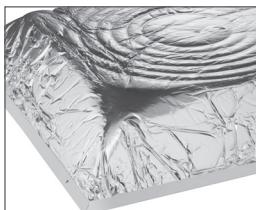
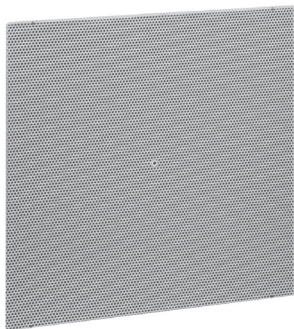
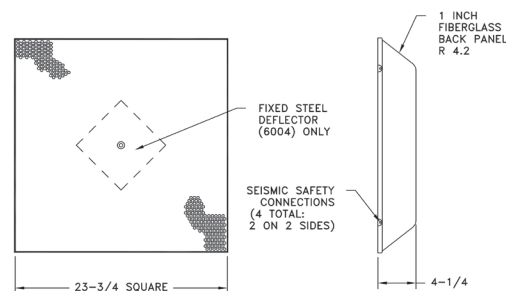


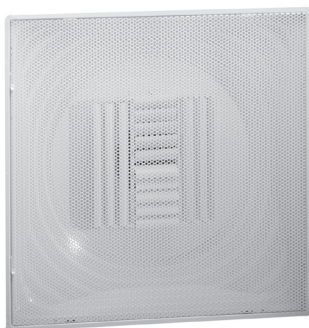
6006W



7000W Perforated Face T-Bar Return With Insulated Back

- Perforated steel face
- R4.2 molded fiberglass back panel
- Accepts 6" to 14" unique tab collar (G5000C series) or 6"-14" unique snap-in collar (G6400C series and 6400PP); also accepts standard spin-in collar
- Bright White finish





**9000W Curved-Blade
Perforated Supply**

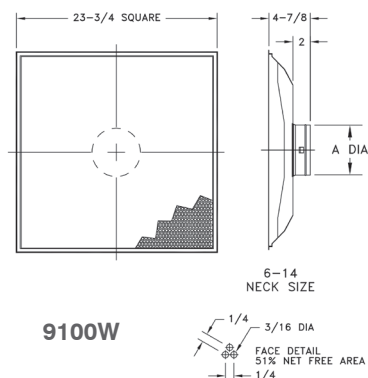
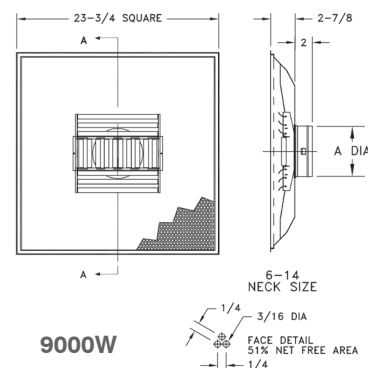


**9100W Curved-Blade
Perforated Return**

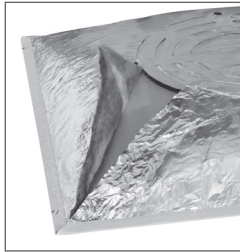
9000W/9100W Curved-Blade Perforated T-Bar Supply/ Return

- Steel construction
- Removable, hinged face allows for easy access to air pattern control core
- Individually adjustable pattern deflectors factory-set at 4-way deflection; can be field-adjusted for 1, 2, 3-way air patterns
- Available in 6", 8", 10", 12", and 14" diameter necks
- Unique 2" high collar permits easy flex connections
- Accepts G1700B series butterfly damper (order separately)
- Bright White finish

SIZE	A DIA
6	5-7/8
8	7-7/8
10	9-7/8
12	11-7/8
14	13-7/8

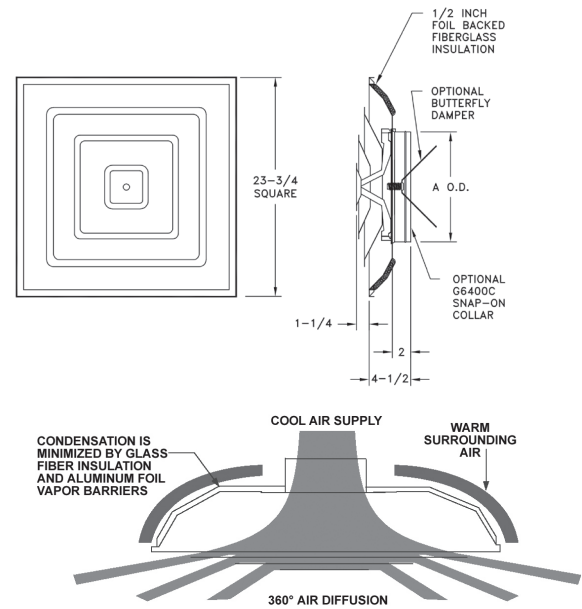


T-Bar Fixed-Pattern Diffusers

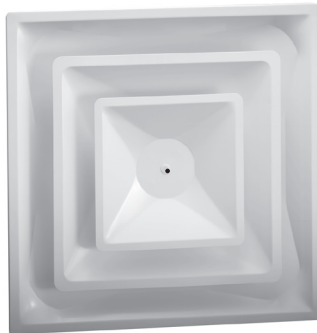


6400W Series T-Bar High-Volume Diffuser

- Steel construction
- Provides high air volume delivery
- 360-degree air diffusion
- Formed back panel
- Fixed core
- Fiberglass insulation blanket with foil vapor barrier to minimize condensation
- Insulation prescored to accommodate collar size desired
- 6400R6W comes with R6 molded insulated back
- Accepts unique 2" high snap-in collar (G6400C series) (6" to 12")
- Utilizes butterfly damper (G1700B series) inserted in collar
- Bright White finish
- 14" collar factory installed - for 6414W, 6414R6W

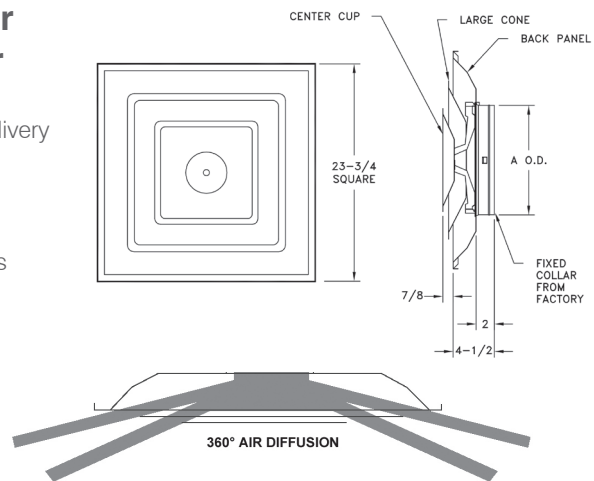


T-Bar Fixed-Pattern Diffusers



5000W 2 Cone T-Bar Diffuser With Collar

- Steel construction
- Provides high air volume delivery
- 360-degree air diffusion
- Two-cone fixed core
- Fixed collar 6" to 14"
- Unique 2" high collar permits easy flex connections
- Utilizes butterfly damper (G1700B Series) inserted in collar; order separately
- Damper adjustable through face
- Formed back panel
- Bright White finish



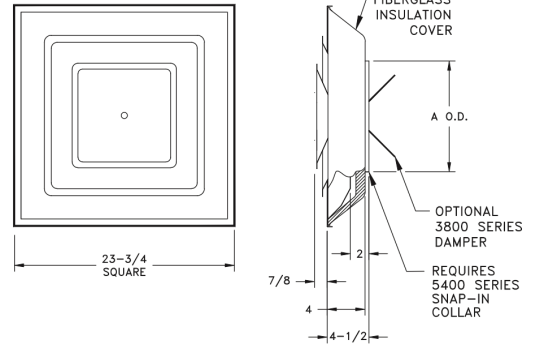
SIZE	A O.D.
6	5-7/8
8	7-7/8
10	9-7/8
12	11-7/8
14	13-7/8



500U Steel Universal Fixed-Pattern Diffuser

- All steel construction
- Molded R6 fiberglass insulation covers backpanel
- Fits standard 2' x 2' T-Bar ceiling systems
- Requires a G6400C series collar, sizes 6"-12", ordered separately
- Optional G1700B steel butterfly damper
- White Enamel finish

500U



Overall Size

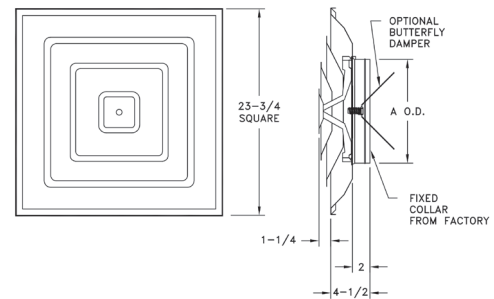
23³/₄" x 23³/₄"



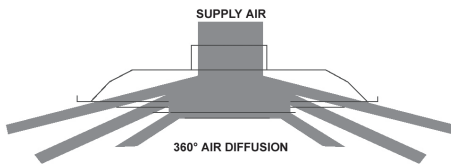
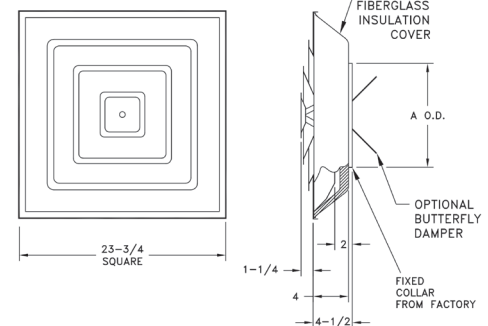
5300W/5300R6W 3 Cone T-Bar Diffuser With Collar and Insulated Back Option

- Steel construction
- Provides high air volume delivery
- 360-degree air diffusion
- Three cone fixed core
- Fixed collar 6" to 14"
- Unique 2" high collar permits easy flex connections
- Utilizes butterfly damper (G1700B Series) inserted in collar
- Damper adjustable through face
- Formed steel back panel
- Bright White finish

5300W



5300R6W



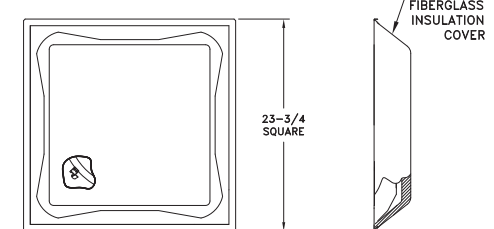
SIZE	A O.D.
6	5-7/8
8	7-7/8
10	9-7/8
12	11-7/8
14	13-7/8



200U Universal Steel T-Bar Plate Diffuser

- All steel construction
- Molded R6 fiberglass insulation covers backpanel
- Fits standard 2' x 2' T-Bar ceiling systems
- Accepts G6400C series collar, sizes 6-12, ordered separately
- Removable faceplate
- Use no. G1700B Steel Butterfly Damper (plate must be removed)
- 360° pattern delivery
- White Enamel finish

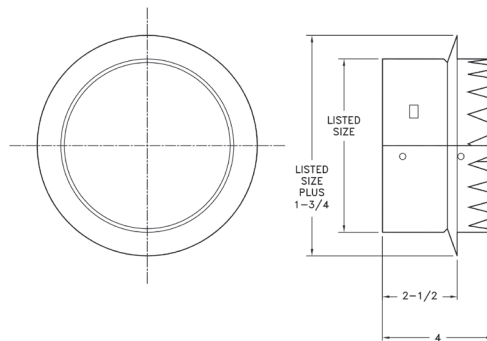
200U





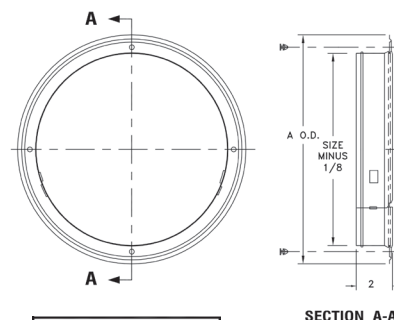
G5000C Tab Collar

- Galvanized steel construction
- For use with fiberglass-backed ceiling diffusers
- Tabbed for easy installation
- Accepts G1700B Series damper
- Available sizes 6", 8", 10", 12", and 14"



G6400C Snap On Collar

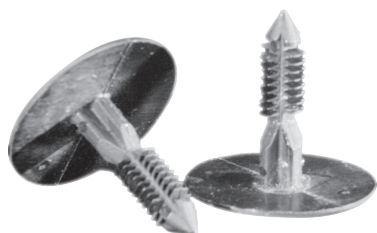
- Unique snap-in design for easy installation
- 2" high collar permits easy flex connections
- Bead on collar improves the strength and provides retention for flexible duct connections
- Available sizes 6", 8", 10", 12", and 14"



SIZE	A O.D.
6	14
8	14
10	14
12	14
14	16

*14" collar is mounted to diffuser at factory for steel back panels only.

Note: Uses 6400PP (black push pins) with insulated back panels (non-steel).



6400PP Push Pins

- Attaches G6400C collar to molded fiberglass back for the following products:

1-1/4" long

1-1/4" diameter head

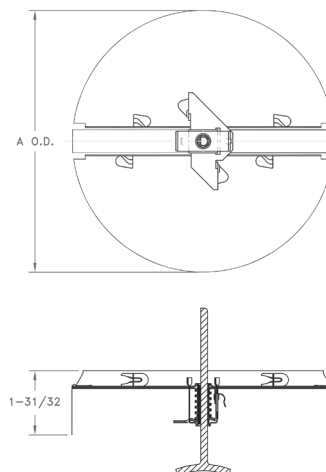
- 359TIW
- 490TIW
- 8000R6W
- 6400W
- 6414W
- 6400R6W
- 6004W
- 6006W
- 7000W



G1700B Snap On Damper

- Adjustable butterfly damper with removable handle (included)
- For use with G6400C and 5000C series collars
- Brown finish
- Available sizes 6", 8", 10", 12", and 14"

SIZE	A O.D.
6	5-11/16
8	7-11/16
10	9-11/16
12	11-11/16
14	13-11/16



Using the Engineering Data

For most of the models and sizes we've done the calculations for you.

413

Face Velocity		300	400	500	600	700	800
Pressure Loss		.006	.010	.016	.022	.031	.040
4x10	CFM	50	70	85	100	120	135
Ak	Spread	4.5	5.0	6.5	7.5	9.0	10.0
.170	Throw	4.0	6.0	8.0	10.0	11.0	12.5

Terminal velocity of 50 fpm

291L deflection A

Face Velocity		400	500	600	700	800
Pressure Loss		.010	.016	.022	.031	.040
24 x 8	CFM	420	525	625	730	835
Ak	Throw	17.0	21.0	25.0	29.0	33.0
1.045						

Terminal velocity is 75 fpm

CFM = volume of air flow in cubic feet per minute

Face Velocity = speed of air at the face of diffuser in feet per minute (FPM)

Ak = net area in square feet. This is the lab measured area across the face when air is mechanically forced through the opening.

Free Area (if given) = daylight area (in²) of blade openings. Free area is typically only required on natural / gravity movement of air, non-mechanically forced, as in free area needed for combustion air requirements on heating equipment. Use the Ak value (*144 to get to in²) if the free area has not been calculated, but is needed for a given size/model grille requiring free area for combustion.

Equation of Airflow: CFM = Ak (ft²) x Face Velocity (fpm)

Example from 413 table above: 100 = .17 x 600 _ numbers are often rounded

Sizing a Supply

Determine the amount of CFM (air volume) needed for each supply outlet. This should be done by room heating and cooling load requirements from various design manuals (ACCA Man J, ASHRAE Fundamentals Hndbk) and then followed by the duct design and layout.

Face Velocity - H&C recommends sizing a supply outlet in the range of 500 to 800 fpm face velocity (700 being a common target). The upper end of this range will create better mixing of room air and longer throws, which is what the typical forced air system is intended to do. However, the Pressure resistance and Noise must be taken into consideration depending upon the applica-

tion. In some instances, greater face velocity is allowed because the pressure and noise can be accommodated.

Pressure Loss (inches of w.c.) – the selection of the face velocity must consider the associated pressure loss that deals with each relative model. An increase in face velocity creates more pressure resistance against the blower's delivery of air volume. The velocity ranges given previously, in most cases, will have minor effect on the blower's overall performance given the entire duct system losses that it will encounter.

Noise – an increase in face velocity will create more noise. The tables below show NC design guidelines and also face velocity ranges if NC values have not been tabulated.

Application	Recommended Face Velocities
Broadcasting Studios	<500 FPM
Residences	500 to 750 FPM
Apartments	500 to 750 FPM
Churches	500 to 750 FPM
Hotel Guestrooms	500 to 750 FPM
Legitimate Theaters	500 to 1000 FPM
Private Offices, acoustically treated	500 to 1000 FPM
Private Offices, not treated	1000 to 1250 FPM
Motion Picture Theaters	1000 to 1250 FPM
General Offices	1250 to 1500 FPM
Stores, upper floors	1500 FPM
Stores, main floors	1500 FPM
Industrial Buildings	1500 to 2000 FPM

	Communication Environment	Typical Occupancy
< NC 25	Extremely quiet environment; suppressed speech is quite audible; suitable for acute pickup of all sounds.	Broadcasting studios, concert halls, music rooms.
NC 30	Very quiet office; suitable for large conferences; telephone use satisfactory.	Residences, theaters, libraries, executive offices, directors rooms.
NC 35	Quiet office; satisfactory for conference at a 15-foot table; normal voice 10 to 30 feet; telephone use satisfactory.	Private offices, schools, hotel guestrooms, courtrooms, churches, hospital rooms.
NC 40	Satisfactory for conferences at a 6-to 8-foot table; normal voice 6 to 12 feet; telephone use satisfactory.	General office, labs, dining rooms.
NC 45	Satisfactory for conferences at a 4- to 5-foot table; normal voice 3 to 6 feet; raised voice 6 to 12 feet; telephone use occasionally difficult.	Retail stores, cafeterias, lobby areas, large drafting and engineering offices, reception areas.
> NC 50	Unsatisfactory for conference of more than two or three persons; normal voice 1 to 2 feet; raised voice 3 to 6 feet; telephone use slightly difficult.	Computer rooms, stenographic pools, print machine rooms, process areas.

Sizing a Return

Air volume going back to the air handler (fan) must equal what is supplied from the air handler. Therefore the total CFM capacity of the return grilles must equal

Engineering Data

or exceed the total CFM capacity of all the supply diffusers.

Keeping face velocity low

- Returns should be at 400-600 fpm maximum
- Filter Returns should be at 450 fpm maximum
- *ACCA recommends 300 max for filter grilles and 500 max for non-filter grilles.
- The rule of thumb is 2 cfm per square inch of filter size. See table below.
- Low velocity reduces noise, especially on stamped face grilles (372/326); fixed-bar grilles can handle more velocity without noise (470/490/RA204/RAF204).
- You really can't oversize a single point return like you can with a supply. The system will not be affected adversely, only improved. *This does not apply to multiple return locations where balancing is more critical to pull in relevant amounts from each room.
- Static pressure is also reduced. Pressure works

Filter Size		Area (in²)	Ton (cfm)	Filter Size		Area (in²)	Ton (cfm)
12	12	144	n/a	20	20	400	2 (800)
12	20	240	1 (400)	20	25	500	2.5 (1000)
12	24	288	1.5 (600)	20	30	600	3 (1200)
12	30	360	1.5 (600)	20	36	720	3 (1200)
14	14	196	1 (400)	24	24	576	3 (1200)
14	20	280	1.5 (600)	24	30	720	3 (1200)
14	24	336	1.5 (600)	24	36	864	4 (1600)
14	30	420	2 (800)	25	25	625	3 (1200)
16	20	320	1.5 (600)	30	30	900	4 (1600)
16	24	384	2 (800)	30	36	1080	5 (2000)

against and reduces blower delivery volume (cfm)

- No one expects noise from a return.

Location

- Returns should be put in stagnant air locations that need to be reconditioned.
 - High for cooling mode (hot air rises)
 - Low for heating mode (cold air falls)
 - Both modes, choose a primary season
- Returns should not be near a supply register's throw range. If at all possible place the return at an opposite corner of the room.

Room Air Movement

- Returns do NOT have much effect on a room's air movement, regardless of face velocity. They only grab air about a duct diameter away from the face. Most of the room air movement is done by the supplies.

Unlisted Sizes—Engineering Data

When a size is not listed there are a couple ways to do an engineered estimate. Airflow principles permit you to utilize existing sizes to determine sizes not shown.

Method 1: Use nearest nominal size table entry. If a 14x14 is not given, but a 20x10 is, since these two sizes have an approximate equal core area (196 and

200) the table entry for a 20x10 can be used to approximate what the 14x14 grille would perform to.

Method 2: A more exact method would be to do interpolation process between two listed sizes. If 14x14 is not given, but 18x10 and 20x10 are, then this equation will get more exact 14x14 data. $Y = Y1 + [(X - X1) * (Y2 - Y1)] / (X2 - X1)$ where:

Y = unknown CFM or throw that is being computed for 14x14

Y1 = CFM or throw of listed 18x10 (for ex 600 cfm)

Y2 = CFM or throw of listed 20x10 (for ex 640 cfm)

X = 196 in² (nominal area of 14x14)

X1 = 180 in² (nominal area of 18x10)

X2 = 200 in² (nominal area of 20x10)

Using equation above computes $Y = 600 + [(196 - 180) * (640 - 600)] / (200 - 180) = 600 + [16 * 40] / 20 = 600 + 32 = 632$ cfm for Y

Method 3: Sizes beyond the table (smaller or larger) can have their CFM or Throw determined by using listed sizes by the following:

24		12
12 x 6	12 x 6	
12 x 6	12 x 6	

CFM for larger sizes:

If looking for 24x6 or 24x12 cfm that is not listed, using the listed 12x6 cfm and doubling it or quadrupling it will give the answer for the 24x6 and 24x12, respectively.

CFM for smaller sizes:

If looking for a 6x6 cfm that is not listed, using the listed 12x6 cfm and halving it will give the answer for a 6x6.

Throw:

Double the size and CFM, multiply the throw by 1.5

Quadruple the size and CFM, multiply the throw by 2

Half the size and CFM, multiply the throw by .67

One quarter the size and CFM, multiply the throw by .5

*Pressure loss, face velocity and noise criteria will all remain the same relative to the listed size used to determine the larger or smaller sizes not shown.

456, 427, and 413 Floor Register and Grille
(Page 5)

Face Velocity		300	400	500	600	700	800	900	1000
Pressure Loss		.006	.010	.016	.022	.031	.040	.050	.062
2 x 10 Ak .085	CFM		35	45	50	60	70	75	85
	Spread		3.0	5.0	5.0	6.0	7.0	8.0	9.0
	Throw		4.0	4.5	6.0	7.0	8.0	9.0	10.0
2 x 12 Ak .100	CFM	30	40	50	60	70	80	90	100
	Spread	3.0	4.0	4.5	5.5	6.5	7.0	8.0	9.0
	Throw	3.5	4.5	5.5	7.0	8.0	9.0	10.0	11.0
2 x 14 Ak .115	CFM	35	45	60	70	80	90	105	115
	Spread	3.5	4.0	5.0	7.0	7.0	8.0	9.0	10.0
	Throw	3.5	4.5	6.0	8.0	8.0	9.5	10.5	12.0
4 x 8 Ak .130	CFM	40	50	65	80	90	105	115	130
	Spread	3.0	4.0	5.0	6.5	7.5	8.5	9.5	11.0
	Throw	4.0	4.5	6.0	7.5	8.5	10.0	11.0	13.0
4 x 10 Ak .170	CFM	50	70	85	100	120	135	155	170
	Spread	4.5	5.0	6.5	7.5	9.0	10.0	11.5	13.0
	Throw	4.0	6.0	8.0	10.0	11.0	12.5	14.0	15.5
4 x 12 Ak .195	CFM	60	80	100	120	140	160	175	195
	Spread	5.0	6.5	8.0	9.5	11.5	13.0	14.5	16.0
	Throw	4.0	5.5	7.0	8.0	9.5	11.0	12.0	13.0
4 x 14 Ak .230	CFM	70	90	115	140	160	185	205	230
	Spread	5.5	7.0	8.5	10.0	12.0	13.5	15.5	17.0
	Throw	4.5	5.5	7.0	8.5	10.0	11.5	12.5	14.0
6 x 10 Ak .240	CFM	70	95	120	145	170	190	215	240
	Spread	5.5	7.0	8.0	10.0	12.0	14.0	15.0	17.0
	Throw	4.0	5.5	7.0	8.5	10.0	11.0	12.5	14.0
6 x 12 Ak .285	CFM	85	115	140	170	200	230	255	285
	Spread	6.0	7.5	9.0	11.0	13.0	15.0	17.0	19.0
	Throw	4.5	6.0	7.5	9.0	10.0	12.0	14.0	16.0
6 x 14 Ak .330	CFM	100	130	165	200	230	265	300	330
	Spread	6.5	8.0	9.0	12.0	14.0	16.5	18.0	20.0
	Throw	4.5	6.5	8.0	9.5	11.0	13.0	15.0	17.0

Terminal Velocity of 50 FPM

410 Deluxe Floor Diffuser (Page 6)

Face Velocity		300	400	500	600	700	800	900	1000
Pressure Loss		.006	.010	.016	.022	.031	.040	.050	.062
2 x 10 Ak .09	CFM	25	35	45	55	60	70	80	90
	Spread	3.0	4.0	5.0	6.5	7.5	9.0	10.0	11.0
	Throw	2.0	2.5	3.0	4.0	4.5	5.0	6.0	6.5
2 x 12 Ak .11	CFM	35	45	55	65	75	90	100	110
	Spread	3.0	4.5	6.0	7.0	8.5	9.5	11.0	12.0
	Throw	2.0	3.0	3.5	4.0	5.0	6.0	6.5	7.0
2 x 14 Ak .13	CFM	40	50	65	80	90	105	115	130
	Spread	3.5	5.0	7.0	8.0	9.5	10.5	12.0	13.0
	Throw	2.5	3.0	4.0	4.5	5.5	6.5	7.0	8.0
4 x 10 Ak .17	CFM	50	70	85	100	120	135	155	170
	Spread	4.0	6.0	7.5	9.0	11.0	12.0	13.5	15.5
	Throw	3.0	3.5	4.5	5.5	6.5	7.0	8.0	9.0
4 x 12 Ak .21	CFM	65	85	105	125	145	170	190	210
	Spread	5.0	7.0	8.5	10.0	12.0	13.5	15.5	17.0
	Throw	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0
4 x 14 Ak .25	CFM	75	100	125	150	175	200	225	250
	Spread	5.5	7.5	9.5	11.0	13.0	15.0	17.0	18.5
	Throw	3.5	4.5	5.5	6.5	7.5	9.0	10.0	11.0
6 x 10 Ak .27	CFM	80	110	135	160	190	215	245	270
	Spread	6.0	8.0	10.0	11.5	13.5	15.5	17.5	19.5
	Throw	3.5	4.5	6.0	7.0	8.0	9.0	10.5	11.5
6 x 12 Ak .33	CFM	100	130	165	200	230	265	295	330
	Spread	6.5	8.5	11.0	13.0	15.0	17.0	19.5	21.5
	Throw	4.0	5.0	6.5	7.5	9.0	10.0	11.5	12.5
6 x 14 Ak .39	CFM	115	155	195	235	275	310	350	390
	Spread	7.5	9.5	12.0	14.0	17.0	19.0	21.5	23.5
	Throw	4.5	5.5	7.0	8.5	10.0	11.0	12.5	14.0

Terminal Velocity of 50 FPM

400 Heavy Duty Floor Register (Page 6)

Face Velocity		300	400	500	600	700	800	900	1000
Pressure Loss		.006	.010	.016	.022	.031	.040	.050	.062
4 x 10	CFM	60	80	100	120	140	160	180	200
Ak .20	Throw	8	11	13	16	19	22	24	26
4 x 12 and 6 x 8	CFM	75	100	125	150	175	200	225	250
Ak .25	Throw	9	12	15	18	21	25	28	31
4 x 14	CFM	85	110	140	170	195	225	250	280
Ak .28	Throw	6	10	15	19	22	25	28	32
6 x 10 and 8 x 8	CFM	95	130	160	190	225	255	290	320
Ak .32	Throw	10	14	17	21	24	27	31	34
6 x 12	CFM	115	150	190	230	265	305	340	380
Ak .38	Throw	12	15	19	23	26	30	34	38
8 x 10	CFM	125	170	210	250	295	335	380	420
Ak .42	Throw	12	15	18	24	28	32	37	41
6 x 14	CFM	130	175	220	265	310	350	395	440
Ak .44	Throw	13	16	20	24	28	32	36	41
6 x 16	CFM	145	195	245	295	345	390	440	490
Ak .49	Throw	11	16	21	25	30	35	39	44
8 x 12 and 10 x 10	CFM	160	210	265	320	370	425	475	530
Ak .53	Throw	12	17	21	26	32	37	43	48
9 x 12 and 8 x 14	CFM	180	240	300	360	420	480	540	600
Ak .60	Throw	14	20	24	29	34	39	44	50
10 x 12	CFM	195	260	325	390	455	520	585	650
Ak .65	Throw	14	18	24	30	35	41	46	51
8 x 16 and 9 x 14	CFM	205	275	345	415	485	550	620	690
Ak .69	Throw	15	21	27	32	37	42	48	53
10 x 14 and 12 x 12	CFM	235	310	390	470	545	625	700	780
Ak .78	Throw	14	21	28	34	40	46	51	56
10 x 16	CFM	265	350	440	530	615	705	790	880
Ak .88	Throw	17	23	30	36	41	48	53	60
12 x 14	CFM	280	370	465	560	650	745	835	930
Ak .93	Throw	18	24	30	37	43	50	56	62
12 x 16 and 14 x 14	CFM	320	430	535	640	750	855	965	1070
Ak 1.07	Throw	20	26	32	39	46	53	59	64
12 x 18 and 14 x 16	CFM	365	490	610	730	855	975	1100	1220
Ak 1.22	Throw	21	28	34	42	49	56	62	68
14 x 18	CFM	425	570	710	850	995	1135	1280	1420
Ak 1.42	Throw	22	30	37	45	52	58	63	68
12 x 24 and 14 x 20	CFM	475	635	795	955	1115	1270	1430	1590
Ak 1.59	Throw	23	31	39	46	52	59	65	71

Terminal Velocity of 50 FPM

405 Heavy Duty Floor Grille (Page 6)

Average Face Velocity*		400	500	600	700	800	900	1000
4 x 12	CFM	120	150	175	205	235	265	295
Ak .295	Pt	.011	.017	.024	.033	.043	.054	.065
4 x 14	CFM	135	170	200	235	270	300	335
Ak .335	Pt	.011	.016	.023	.032	.042	.052	.064
6 x 10	CFM	150	185	220	260	295	335	370
Ak .37	Pt	.010	.016	.022	.031	.041	.051	.063
6 x 12	CFM	180	225	265	310	355	400	445
Ak .445	Pt	.010	.015	.021	.030	.039	.049	.060
8 x 10	CFM	195	245	295	345	390	440	490
Ak .49	Pt	.010	.015	.021	.029	.038	.047	.059
6 x 14	CFM	205	255	305	355	410	460	510
Ak .51	Pt	.010	.015	.020	.029	.038	.047	.058
8 x 12	CFM	235	295	350	410	470	525	585
Ak .565	Pt	.009	.014	.020	.028	.036	.046	.057
8 x 14	CFM	270	340	410	475	545	610	680
Ak .68	Pt	.009	.014	.019	.027	.035	.044	.055
10 x 12	CFM	290	360	430	505	575	650	720
Ak .72	Pt	.009	.014	.019	.027	.035	.043	.054
12 x 12 and 6 x 24	CFM	340	425	510	595	680	765	850
Ak .85	Pt	.009	.013	.019	.026	.033	.042	.053
6 x 30	CFM	410	515	620	720	825	925	1030
Ak 1.03	Pt	.008	.012	.018	.024	.032	.040	.049
8 x 24	CFM	445	555	665	775	890	1000	1110
Ak 1.11	Pt	.008	.012	.018	.024	.031	.039	.048
14 x 14	CFM	460	575	690	805	920	1035	1150
Ak 1.15	Pt	.008	.012	.018	.024	.031	.039	.048
8 x 30	CFM	540	675	810	945	1080	1215	1350
Ak 1.35	Pt	.008	.012	.017	.023	.030	.037	.046
14 x 20	CFM	630	790	950	1105	1265	1420	1580
Ak 1.58	Pt	.007	.011	.016	.022	.029	.036	.045
12 x 24	CFM	655	820	985	1150	1310	1475	1690
Ak 1.64	Pt	.007	.011	.016	.022	.029	.036	.044
10 x 30	CFM	670	840	1010	1175	1345	1510	1680
Ak 1.68	Pt	.007	.011	.016	.022	.029	.036	.044
18 x 18	CFM	720	900	1080	1260	1440	1620	1800
Ak 1.80	Pt	.007	.011	.015	.021	.028	.035	.043
14 x 24	CFM	750	935	1120	1310	1495	1685	1870
Ak 1.87	Pt	.007	.011	.015	.021	.028	.035	.043
12 x 30	CFM	800	1000	1200	1400	1600	1800	2000
Ak 2.00	Pt	.007	.011	.015	.021	.027	.034	.042
14 x 30	CFM	940	1175	1410	1645	1880	2115	2350
Ak 2.35	Pt	.007	.010	.015	.020	.026	.033	.040
24 x 24	CFM	1240	1550	1860	2170	2480	2790	3100
Ak 3.10	Pt	.006	.010	.014	.019	.024	.031	.038

*Velocity measured 1" from face

534 Royale® Floor Diffuser (Page 7)

Face Velocity		300		400		500		600		700		800		900		1000	
Pressure Loss		.006		.010		.016		.022		.031		.040		.050		.062	
		H	C	H	C	H	C	H	C	H	C	H	C	H	C	H	C
2 x 10	CFM							35	35	40	40	45	50	50	55	55	60
Ak .055 Heating	Spread							3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.0	7.5
Ak .060 Cooling	Throw							4.0	6.0	5.5	7.5	6.0	8.5	6.5	9.0	7.0	10.0
2 x 12	CFM					35	35	40	45	45	50	55	60	60	65	65	75
Ak .067 Heating	Spread					3.5	4.0	4.0	4.5	4.5	5.0	5.0	5.5	5.5	6.0*	6.0*	6.0*
Ak .074 Cooling	Throw					4.0	6.0	5.0	6.5	5.5	7.5	6.0	9.0	7.0	10.0	8.0	11.0
2 x 14	CFM			30	35	40	45	45	50	55	60	65	70	70	80	80	85
Ak .079 Heating	Spread			3.0	4.0	4.0	4.5	4.5	5.0	5.0	5.5	5.5	6.0*	6.0*	6.0*	6.0*	6.0*
Ak .087 Cooling	Throw			3.5	4.5	5.0	6.0	5.5	7.0	6.5	8.5	7.5	10.0	8.0	11.5	8.5	12.5
4 x 10	CFM	35	40	45	50	55	65	70	75	80	90	90	100	105	115	115	125
Ak .115 Heating	Spread	3.0	4.0	4.5	5.0	5.5	6.5	6.5	7.5	7.5	8.5	8.5	10.0	9.5	11.5	11.5	12.5
Ak .125 Cooling	Throw	3.0	4.5	4.0	6.0	5.5	7.5	6.5	9.5	7.5	10.5	8.5	11.5	9.5	13.5	11.5	15.0
4 x 12	CFM	40	50	55	65	70	80	85	95	100	110	115	130	125	145	140	160
Ak .140 Heating	Spread	3.0	4.0	4.5	5.0	5.5	6.5	6.5	7.5	7.5	8.5	8.5	10.0	9.5	11.5	11.5	12.5
Ak .160 Cooling	Throw	3.5	5.0	4.5	6.5	6.0	8.5	7.5	10.0	11.0	11.5	10.0	13.0	11.0	15.0	12.0	17.0
4 x 14	CFM	50	55	65	70	80	90	100	110	115	125	130	145	150	160	165	180
Ak .165 Heating	Spread	3.5	4.5	4.5	5.0	5.5	6.5	6.0*	7.0	6.0*	7.0	6.0*	7.0	6.0*	6.0*	6.0*	6.0*
Ak .180 Cooling	Throw	4.0	5.5	5.5	7.0	6.5	9.5	8.0	11.0	10.0	12.5	11.0	14.0	12.0	15.5	13.5	17.5
6 x 10	CFM	60	60	75	80	95	105	115	125	135	145	150	165	170	185	190	205
Ak .190 Heating	Spread	3.5	4.5	4.5	5.5	6.0*	7.0	6.0*	7.0	6.0*	7.0	6.0*	7.0	6.0*	6.0*	6.0*	6.0*
Ak .205 Cooling	Throw	4.5	6.0	5.5	7.5	7.0	9.5	8.5	11.0	10.0	13.0	11.0	15.0	12.5	16.5	14.0	18.5
6 x 12	CFM	70	75	90	100	115	125	135	150	160	175	180	200	205	225	225	250
Ak .225 Heating	Spread	4.0	5.0	5.0	6.0*	6.0*	7.0	6.0*	7.0	6.0*	7.0	6.0*	7.0	6.0*	6.0*	6.0*	6.0*
Ak .250 Cooling	Throw	5.0	6.5	6.0	8.5	8.0	10.5	9.0	12.0	11.0	15.0	12.5	16.5	14.0	18.5	16.0	21.0
6 x 14	CFM	80	90	105	120	135	150	160	180	185	210	210	240	240	270	265	300
Ak .265 Heating	Spread	4.5	5.0	5.0	6.0*	6.0*	7.0	6.0*	7.0	6.0*	7.0	6.0*	7.0	6.0*	6.0*	6.0*	6.0*
Ak .300 Cooling	Throw	5.0	7.0	7.0	9.5	8.5	11.5	10.0	13.5	12.0	16.0	13.5	18.0	16.0	20.5	17.5	23.5

The spread shown for the heating mode is for a valve setting of 22" left deflection. *The maximum value given for heating is that which occurs at the ceiling height (8 feet). The cooling spread is a straight vertical column of air and is not shown. Throw and spread values are based on a terminal velocity of 50 FPM.

3018/4018 Perimeter Baseboard Diffuser and Return (Page 7)

Face Velocity		300	400	500	600	700	800
Pressure Loss		.013	.022	.035	.048	.067	.088
Ak .260	CFM	80	105	130	155	180	210
	Spread	4.5	6.5	7.5	8.5	9.5	11.0
	Throw	5.0	7.0	8.0	9.0	10.0	11.0

Terminal Velocity of 50 FPM

3015/4015

Face Velocity		300	400	500	600	700	800	900	1000
Ak .159	CFM	48	63	79	95	111	127	143	159
	Ps	.005	.009	.014	.020	.027	.035	.044	.053
Throw	50	5.5	7.5	9.0	11.0	13.0	14.5	16.5	18.5
Spread	FPM	5.5	7.5	7.5	11.5	13.5	15.0	17.0	19.0
Throw	100	3.0	3.5	4.5	5.5	6.5	7.5	8.5	9.0
Spread	FPM	3.0	3.5	4.5	5.5	6.5	7.5	9.0	9.5
Throw	150	2.0	2.5	3.0	3.5	4.5	5.0	5.5	6.0
Spread	FPM	2.0	2.5	3.0	3.5	4.5	5.0	5.5	6.0

3024 and 3048 Baseboard Diffuser (Page 8)

Airflow (CFM)		300	400	500	600	700	800
2 feet 27 sq. in. Ak .187	CFM	55	75	95	110	130	150
	Spread	6.5	7.5	8.0	8.5	9.0	11.0
	Throw	7.0	8.0	9.5	10.5	12.0	13.0
	Pressure Loss	.009	.017	.029	.038	.054	.072
4 feet 54 sq. in. Ak .375	CFM	110	150	185	225	260	300
	Spread	12.0	15.0	17.5	19.0	20.0	21.0
	Throw	7.5	9.0	10.0	11.5	12.5	13.5
	Pressure Loss	.031	.058	.090	.124	.178	.224

Terminal Velocity of 50 FPM

366 Baseboard Register with Plate Damper (Page 8)

Face Velocity		300	400	500	600	700	800	900	1000
Pressure Loss		.006	.010	.016	.022	.031	.040	.050	.062
8 x 6	CFM	55	72	90	108	125	145	162	180
Ak .180	Throw	7.5	10.0	12.5	15.0	17.5	20.5	23.0	25.0
10 x 6	CFM	70	92	115	140	160	185	205	230
Ak .230	Throw	9.0	11.5	14.5	17.5	20.0	23.0	25.5	29.0
12 x 6	CFM	85	115	145	175	205	230	260	290
Ak .290	Throw	10.0	13.0	17.0	20.0	23.5	26.5	30.0	33.0
14 x 6	CFM	102	135	170	205	240	270	305	340
Ak .340	Throw	11.0	14.5	18.0	22.0	25.5	29.0	32.5	36.0

Terminal Velocity of 75 FPM

367 Baseboard Register (Page 9)

Face Velocity		300	400	500	600	700	800	900	1000
Pressure Loss		.006	.010	.016	.022	.031	.040	.050	.062
8 x 6	CFM	55	70	90	110	125	145	160	180
Ak .180	Throw	5.5	7.0	9.0	10.5	12.5	14.0	16.0	18.0
10 x 6 and	CFM	75	100	125	145	170	195	220	245
Ak .245	Throw	6.0	8.0	10.0	12.0	14.0	16.0	18.0	20.0
14 x 6	CFM	110	145	180	215	252	290	325	360
Ak .360	Throw	7.0	9.5	12.0	14.0	16.5	19.0	21.5	24.0
12 x 8	CFM	130	170	215	255	300	340	385	425
Ak .425	Throw	7.5	10.0	12.5	15.0	18.0	20.5	23.0	25.5

Terminal Velocity of 75 FPM

375 and 358 Baseboard Return (Page 9)

Average Face Velocity*		300	400	500	600	700
10 x 6	CFM	115	150	190	225	265
Ak .38	Pt	.013	.023	.037	.052	.072
12 x 6	CFM	135	180	230	280	320
Ak .46	Pt	.013	.022	.035	.051	.070
10 x 8	CFM	150	205	255	305	355
Ak .51	Pt	.012	.022	.035	.050	.068
14 x 6	CFM	160	210	265	320	370
Ak .53	Pt	.012	.022	.035	.050	.068
12 x 8	CFM	180	245	305	365	430
Ak .61	Pt	.012	.022	.034	.049	.066
14 x 8	CFM	215	288	360	430	505
Ak .72	Pt	.012	.021	.033	.047	.065
20 x 6	CFM	225	300	375	450	525
Ak .75	Pt	.012	.021	.033	.047	.064
16 x 8	CFM	250	330	415	500	580
Ak .83	Pt	.012	.021	.033	.046	.063
14 x 10 and	CFM	275	365	460	550	640
Ak .92	Pt	.011	.020	.032	.045	.062
14 x 12	CFM	320	430	540	650	755
Ak 1.08	Pt	.011	.020	.031	.045	.060
30 x 6	CFM	335	445	560	670	780
Ak 1.12	Pt	.011	.020	.031	.044	.060
24 x 8	CFM	365	485	605	730	850
Ak 1.21	Pt	.011	.020	.031	.044	.059
20 x 10	CFM	375	500	630	750	880
Ak 1.25	Pt	.011	.019	.030	.043	.059
24 x 10 and	CFM	450	600	750	890	1040
Ak 1.50	Pt	.011	.019	.030	.042	.057
24 x 12	CFM	550	730	910	1100	1270
Ak 1.82	Pt	.010	.018	.029	.041	.056
30 x 10	CFM	575	760	960	1150	1330
Ak 1.91	Pt	.010	.018	.029	.041	.055
30 x 12	CFM	680	900	1130	1350	1570
Ak 2.25	Pt	.010	.018	.028	.040	.054

*Velocity measured 1" from face

356 2-Way Sideway Register (Page 10)

Face Velocity		300	400	500	600	700	800	900	1000
Pressure Loss		.006	.010	.016	.022	.031	.040	.050	.062
6 x 4	CFM	25	30	40	50	55	65	70	80
Ak .080	Throw	4.0	4.5	6.0	7.0	8.5	10.0	11.0	12.5
8 x 4	CFM	35	45	55	65	75	90	100	110
Ak .110	Throw	4.5	5.5	7.0	8.5	10.0	11.5	13.0	14.5
10 x 4 and 8 x 5	CFM	45	60	75	85	100	115	130	145
Ak .145	Throw	5.0	6.5	8.0	9.5	11.5	13.0	14.5	16.0
12 x 4 and 8 x 6	CFM	55	70	90	110	125	145	160	180
Ak .180	Throw	5.5	7.0	9.0	10.5	12.5	14.0	16.0	18.0
14 x 4	CFM	65	85	110	130	150	170	195	215
Ak .215	Throw	6.0	7.5	9.5	11.5	13.5	15.5	17.0	19.0
10 x 6 and 12 x 5	CFM	75	100	125	145	170	195	220	245
Ak .245	Throw	6.0	8.0	10.0	12.0	14.0	16.0	18.0	20.0
12 x 6 and 14 x 5	CFM	90	120	150	175	205	235	265	295
Ak .295	Throw	6.5	8.5	11.0	13.0	15.5	17.5	19.5	22.0
10 x 8	CFM	105	140	175	205	240	275	310	345
Ak .345	Throw	7.0	9.0	11.5	13.5	16.5	18.5	21.0	23.5
14 x 6	CFM	110	145	180	215	250	290	325	360
Ak .360	Throw	7.0	9.5	12.0	14.0	16.5	19.0	21.5	24.0
16 x 6 and 12 x 8	CFM	130	170	215	255	300	340	385	425
Ak .425	Throw	7.5	10.0	12.5	15.0	18.0	20.5	23.0	25.5
14 x 8	CFM	155	205	260	310	360	410	465	515
Ak .515	Throw	8.0	10.5	14.0	16.0	19.5	22.0	25.0	28.0
20 x 6	CFM	165	220	275	330	385	440	495	550
Ak .550	Throw	8.5	11.0	14.5	17.0	20.0	23.0	25.5	29.0
16 x 8	CFM	180	240	300	360	420	480	540	600
Ak .600	Throw	8.5	11.0	14.5	17.0	20.0	23.0	25.5	29.0
24 x 6 and 18 x 8	CFM	205	270	340	410	475	545	610	680
Ak .680	Throw	9.5	12.0	15.5	18.5	22.0	25.0	28.0	31.5
20 x 8	CFM	230	305	380	455	530	610	685	760
Ak .760	Throw	10.0	13.0	16.5	19.0	23.0	26.0	28.5	33.0
30 x 6	CFM	265	350	440	530	615	705	790	880
Ak .880	Throw	10.5	14.0	17.5	20.5	24.5	28.0	31.5	35.0
24 x 8	CFM	295	390	490	590	685	785	880	980
Ak .980	Throw	11.0	14.0	18.0	21.5	25.5	29.0	33.0	37.0
30 x 8	CFM	375	500	625	750	875	1000	1125	1250
Ak 1.250	Throw	12.0	16.0	20.0	24.0	28.5	32.0	37.0	41.0

Terminal Velocity of 75 FPM

357 3-Way Sideway Register (Page 10)

Face Velocity		300	400	500	600	700	800	900	1000
Pressure Loss		.006	.010	.016	.022	.031	.040	.050	.062
10 x 6	CFM	85	110	140	170	195	225	250	280
Ak .18	Throw L/S	4.0/8.0	5.5/10.0	7.0/13.0	8.5/16.0	9.5/19.0	11.0/21.0	13.0/24.0	15.0/26.0
12 x 6	CFM	100	135	170	205	240	275	305	340
Ak .34	Throw L/S	4.0/8.0	5.0/10.0	6.0/13.0	7.5/16.0	9.0/20.0	10.0/22.0	11.5/24.0	13.0/28.0
10 x 8	CFM	115	150	190	230	265	305	340	380
Ak .38	Throw L/S	3.5/9.5	5.0/13.0	6.0/16.0	7.0/18.0	8.0/21.0	9.0/24.0	10.5/29.0	11.5/32.0
14 x 6	CFM	120	160	200	240	280	320	360	400
Ak .40	Throw L/S	4.0/10.0	5.0/12.0	6.5/16.0	8.0/19.0	9.0/22.0	10.0/24.0	11.0/27.0	12.5/30.0
12 x 8	CFM	140	190	235	280	330	375	425	470
Ak .47	Throw L/S	4.5/10.0	6.0/13.0	7.5/15.0	9.0/18.0	10.0/21.0	11.5/25.0	13.0/28.0	14.5/31.0
14 x 8	CFM	165	220	275	330	385	440	495	550
Ak .55	Throw L/S	4.0/10.0	5.5/13.5	7.5/18.0	8.5/22.0	10.0/25.0	11.5/29.0	13.0/33.0	15.0/36.0

Terminal Velocity of 75 FPM

377 Return Air Grille (Page 10)

359 Filter Grille (Page 14)

Engineering Data

Face Velocity*		300	400	500	600
6 x 4	CFM	33	44	55	66
Ak .111	Ps	.010	.018	.029	.041
6 x 6	CFM	50	67	83	100
Ak .167	Ps	.010	.018	.029	.041
8 x 4	CFM	44	59	74	89
Ak .148	Ps	.010	.018	.029	.041
8 x 6	CFM	67	89	112	134
Ak .223	Ps	.010	.018	.029	.041
8 x 8	CFM	90	120	150	179
Ak .299	Ps	.010	.018	.029	.041
10 x 4	CFM	56	74	93	111
Ak .186	Ps	.010	.018	.029	.041
10 x 6	CFM	84	112	140	168
Ak .280	Ps	.010	.018	.029	.041
10 x 8	CFM	112	150	187	225
Ak .375	Ps	.010	.018	.029	.041
10 x 10	CFM	141	188	235	282
Ak .470	Ps	.010	.018	.029	.041
12 x 6	CFM	101	135	168	202
Ak .337	Ps	.010	.018	.029	.041
12 x 8	CFM	135	180	226	271
Ak .451	Ps	.010	.018	.029	.041
12 x 10	CFM	170	226	283	339
Ak .566	Ps	.010	.018	.029	.041
12 x 12	CFM	204	272	340	408
Ak .681	Ps	.010	.018	.029	.041
12 x 18	CFM	308	411	513	616
Ak 1.027	Ps	.010	.018	.029	.041
14 x 6	CFM	118	158	197	236
Ak .394	Ps	.010	.018	.029	.041
14 x 8	CFM	158	211	264	316
Ak .527	Ps	.010	.018	.029	.041
14 x 10	CFM	198	265	331	397
Ak .661	Ps	.010	.018	.029	.041
14 x 12	CFM	239	318	398	477
Ak .796	Ps	.010	.018	.029	.041
14 x 14	CFM	279	372	465	558
Ak .930	Ps	.010	.018	.029	.041
14 x 18	CFM	360	480	600	720
Ak 1.200	Ps	.010	.018	.029	.041

Face Velocity*		300	400	500	600
16 x 6	CFM	135	180	226	271
Ak .451	Ps	.010	.018	.029	.041
16 x 8	CFM	181	242	302	362
Ak .604	Ps	.010	.018	.029	.041
16 x 10	CFM	227	303	379	454
Ak .757	Ps	.010	.018	.029	.041
16 x 12	CFM	273	364	455	547
Ak .911	Ps	.010	.018	.029	.041
16 x 14	CFM	320	426	533	639
Ak 1.065	Ps	.010	.018	.029	.041
16 x 16	CFM	366	488	610	732
Ak 1.219	Ps	.010	.018	.029	.041
16 x 24	CFM	552	736	920	1104
Ak 1.840	Ps	.010	.018	.029	.041
18 x 6	CFM	153	203	254	305
Ak .508	Ps	.010	.018	.029	.041
18 x 18	CFM	465	619	774	929
Ak 1.548	Ps	.010	.018	.029	.041
20 x 6	CFM	170	226	283	339
Ak .566	Ps	.010	.018	.029	.041
20 x 10	CFM	285	380	475	570
Ak .949	Ps	.010	.018	.029	.041
20 x 12	CFM	343	457	571	685
Ak 1.142	Ps	.010	.018	.029	.041
20 x 14	CFM	401	534	668	801
Ak 1.335	Ps	.010	.018	.029	.041
20 x 20	CFM	575	767	959	1150
Ak 1.917	Ps	.010	.018	.029	.041
20 x 24	CFM	692	923	1153	1384
Ak 2.307	Ps	.010	.019	.029	.042
20 x 25	CFM	721	962	1202	1442
Ak 2.404	Ps	.010	.019	.029	.042

Face Velocity*		300	400	500	600
24 x 4	CFM	135	180	226	271
Ak .451	Ps	.010	.018	.029	.041
24 x 6	CFM	204	272	340	408
Ak .681	Ps	.010	.018	.029	.041
24 x 8	CFM	273	364	455	547
Ak .911	Ps	.010	.018	.029	.041
24 x 10	CFM	343	457	571	685
Ak 1.142	Ps	.010	.018	.029	.041
24 x 12	CFM	412	550	687	825
Ak 1.374	Ps	.010	.018	.029	.041
24 x 14	CFM	482	643	803	964
Ak 1.607	Ps	.010	.018	.029	.041
24 x 24	CFM	832	1110	1387	1665
Ak 2.775	Ps	.010	.019	.029	.042
30 x 4	CFM	170	226	283	339
Ak .566	Ps	.010	.018	.029	.041
30 x 6	CFM	256	341	427	512
Ak .853	Ps	.010	.018	.029	.041
30 x 8	CFM	343	457	571	685
Ak 1.142	Ps	.010	.018	.029	.041
30 x 10	CFM	430	573	716	859
Ak 1.432	Ps	.010	.018	.029	.041
30 x 12	CFM	517	689	862	1034
Ak 1.723	Ps	.010	.018	.029	.041
30 x 14	CFM	604	806	1007	1209
Ak 2.015	Ps	.010	.018	.029	.042
30 x 18	CFM	780	1040	1300	1560
Ak 2.599	Ps	.010	.019	.029	.042
30 x 20	CFM	868	1157	1446	1735
Ak 2.892	Ps	.010	.019	.029	.042
30 x 24	CFM	1044	1392	1740	2088
Ak 3.479	Ps	.010	.019	.029	.042
30 x 30	CFM	1309	1745	2181	2618
Ak 4.363	Ps	.010	.019	.029	.042
36 x 6	CFM	308	411	513	616
Ak 1.027	Ps	.010	.018	.029	.041
36 x 8	CFM	412	550	687	825
Ak 1.374	Ps	.010	.018	.029	.041

*Filter grilles: Tested without filters. Typical capacity is 2 CFM per square inch of nominal filter area. Recommended face velocity is 300-450 FPM. Velocities higher will decrease filter performance, increase flow resistance, and possibly be of noise concern. Velocity measured 1" from face.

382 Sideway Register (Page 11)

Face Velocity		300	400	500	600	700	800	900	1000
Pressure Loss		.006	.010	.016	.022	.031	.040	.050	.062
8 x 4	CFM	25	35	45	55	65	70	80	90
Ak .090	Throw	2.0	3.5	4.5	5.5	6.5	7.0	8.0	9.0
6 x 6	CFM	30	40	50	65	75	85	95	105
Ak .105	Throw	3.0	3.5	4.5	6.0	7.0	8.0	9.0	10.0
10 x 4	CFM	35	45	60	70	80	90	105	115
Ak .115	Throw	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0
12 x 4	CFM	40	55	70	85	100	110	125	140
Ak .140	Throw	3.5	4.5	5.5	6.5	8.0	9.0	10.0	11.5
10 x 6	CFM	55	75	95	110	130	150	165	185
Ak .185	Throw	4.0	5.0	6.5	8.0	9.0	10.5	12.0	13.0
8 x 8	CFM	60	80	100	120	140	160	180	200
Ak .200	Throw	4.0	5.5	7.0	8.0	9.5	11.0	12.5	13.5
12 x 6	CFM	70	90	115	135	160	180	205	225
Ak .225	Throw	4.5	6.0	7.5	8.5	10.5	12.0	13.0	14.5
14 x 6	CFM	85	115	145	175	205	230	260	290
Ak .290	Throw	5.0	6.5	8.5	10.0	11.5	13.5	15.0	17.0
10 x 10	CFM	95	125	155	185	215	250	280	310
Ak .310	Throw	5.0	7.0	8.5	10.0	12.0	14.0	15.5	17.0
12 x 8	CFM	95	130	160	190	225	255	290	320
Ak .320	Throw	5.5	7.0	9.0	10.5	12.5	14.0	16.0	18.0
14 x 8	CFM	115	155	195	235	275	310	350	390
Ak .390	Throw	6.0	8.0	10.0	12.0	14.0	16.0	18.0	20.0
12 x 12	CFM	140	190	235	280	330	375	425	470
Ak .470	Throw	6.5	8.5	10.5	12.5	15.0	17.0	19.0	21.0

Terminal Velocity of 75 FPM

383 Sideway Register (Page 11)

Face Velocity		300	400	500	600	700	800	900	1000
Pressure Loss		.006	.010	.016	.022	.031	.040	.050	.062
8 x 4	Total CFM	25	35	45	55	65	70	80	90
Ak .090	CFM L/S	13/6	17/9	24/11	29/13	34/16	37/17	42/19	48/22
	Throw L/S	3.0/2.5	4.0/3.0	5.0/3.5	6.0/4.0	7.0/5.0	7.5/5.5	8.5/6.0	10.0/6.5
6 x 6	Total CFM	30	40	50	65	75	85	95	105
Ak .105	CFM L/S	10/10	13/14	16/17	21/22	24/26	27/29	30/32	34/36
	Throw L/S	3.0/3.0	3.5/3.5	4.0/4.0	5.5/5.5	6.0/6.0	7.0/7.0	8.0/8.0	9.0/9.0
10 x 4	Total CFM	35	45	60	70	80	90	105	115
Ak .115	CFM L/S	21/7	29/8	38/11	45/13	51/14	58/16	67/19	74/21
	Throw L/S	4.0/2.0	5.0/2.5	6.0/3.5	7.5/4.0	8.5/4.5	9.5/5.0	11.0/6.0	12.0/6.5
12 x 4	Total CFM	40	55	70	85	100	110	125	140
Ak .140	CFM L/S	21/10	29/13	36/17	44/20	52/24	57/26	65/30	73/34
	Throw L/S	3.5/2.5	5.0/3.0	6.0/4.0	7.5/5.0	8.5/5.5	9.5/6.0	10.5/7.0	12.0/8.0
10 x 6	Total CFM	55	75	95	110	130	150	165	185
Ak .185	CFM L/S	35/10	48/14	61/17	70/20	83/23	96/27	106/30	118/33
	Throw L/S	4.5/2.5	6.5/3.5	8.0/4.0	9.0/5.0	11.0/5.5	12.5/6.5	14.0/7.5	15.5/8.0
8 x 8	Total CFM	60	80	100	120	140	160	180	200
Ak .200	CFM L/S	31/14	42/19	52/24	62/29	73/34	83/38	94/43	104/48
	Throw L/S	4.5/3.0	6.0/4.0	7.5/5.0	8.5/6.0	10.5/7.0	11.5/8.0	13.0/9.0	14.5/10.0
12 x 6	Total CFM	70	90	115	135	160	180	205	225
A .225	CFM L/S	36/17	47/22	60/28	70/32	83/38	94/43	107/49	117/54
	Throw L/S	4.5/3.5	6.0/4.0	8.0/5.5	9.0/6.0	11.0/7.5	12.5/8.0	14.0/9.5	15.5/10.5
14 x 6	Total CFM	85	115	145	175	205	230	260	290
Ak .290	CFM L/S	51/17	69/23	87/29	105/35	123/41	138/46	156/52	174/58
	Throw L/S	5.5/3.5	7.5/4.5	10.0/5.5	12.0/6.5	14.0/8.0	15.5/9.0	18.0/10.0	20.0/11.0
10 x 10	Total CFM	95	125	155	185	215	250	280	310
Ak .310	CFM L/S	61/17	80/23	99/28	118/33	138/39	160/45	179/50	198/56
	Throw L/S	6.0/3.5	8.0/4.5	10.0/5.5	12.0/6.5	14.0/7.5	16.5/9.0	18.0/9.5	20.0/10.5
12 x 8	Total CFM	95	130	160	190	225	255	290	320
Ak .320	CFM L/S	49/23	68/31	83/38	99/46	117/54	133/61	151/70	166/77
	Throw L/S	5.5/4.0	7.5/5.0	9.5/6.0	11.0/7.5	13.0/9.0	15.0/10.0	17.0/11.5	19.0/12.5
14 x 8	Total CFM	115	155	195	235	275	310	350	390
Ak .390	CFM L/S	69/23	93/31	117/39	141/47	165/55	186/62	210/70	234/78
	Throw L/S	6.5/4.0	9.0/5.0	11.0/6.0	13.5/7.5	16.0/9.0	18.0/10.0	20.0/11.5	22.0/12.5
12 x 12	Total CFM	140	190	235	280	330	375	425	470
Ak .470	CFM L/S	73/34	99/46	122/56	146/67	172/79	195/90	221/102	244/113
	Throw L/S	7.0/4.5	9.0/6.0	11.5/7.5	13.5/9.0	16.0/10.5	18.0/12.0	20.0/14.0	22.0/15.5
14 x 14	Total CFM	195	260	325	390	455	520	585	650
Ak .650	CFM L/S	117/39	156/52	195/65	234/78	273/91	312/104	351/117	390/130
	Throw L/S	8.5/5.0	11.5/6.5	14.0/8.0	17.0/9.5	20.0/11.5	23.0/13.0	26.0/14.5	29.0/16.0
16 x 16	Total CFM	280	370	465	560	650	745	835	930
Ak .930	CFM L/S	164/67	192/89	242/112	291/134	338/156	387/179	434/200	484/223
	Throw L/S	10.0/6.5	13.0/9.0	16.5/11.0	20.0/13.0	23.0/15.5	26.0/17.0	29.0/20.0	33.0/22.0

Terminal Velocity of 75 FPM

384 Sideway Register (Page 11)

Face Velocity		300	400	500	600	700	800	900	1000
Pressure Loss		.006	.010	.016	.022	.031	.040	.050	.062
6 x 6	Total CFM	30	40	50	65	75	85	95	105
Ak .105	CFM L/S	4/11	6/14	8/17	10/22	12/26	14/29	15/32	17/36
	Throw L/S	2.0/3.0	2.0/3.5	3.0/4.0	3.5/5.5	4.5/6.5	5.0/7.0	5.5/8.0	6.0/9.0
8 x 8	Total CFM	60	80	100	120	140	160	180	200
Ak .200	CFM L/S	16/14	21/19	26/24	31/29	37/34	42/38	47/43	52/48
	Throw L/S	3.0/3.0	4.0/4.0	5.0/5.0	6.0/6.0	7.5/7.0	8.5/8.0	9.5/9.0	10.5/10.0
10 x 10	Total CFM	95	125	155	185	215	250	280	310
Ak .310	CFM L/S	31/17	40/23	50/28	59/33	69/39	80/45	90/50	99/56
	Throw L/S	4.5/3.5	6.0/4.5	7.0/5.5	8.5/6.5	10.0/7.5	11.0/9.0	13.0/9.5	14.5/10.5
12 x 12	Total CFM	140	190	235	280	330	375	425	470
Ak .470	CFM L/S	37/34	50/46	61/56	73/67	86/79	98/90	111/102	122/113
	Throw L/S	5.0/4.5	6.5/6.0	8.0/7.5	9.5/9.0	11.5/10.5	13.0/12.0	14.5/14.0	16.0/15.5
14 x 14	Total CFM	195	260	325	390	455	520	585	650
Ak .650	CFM L/S	59/39	78/52	98/65	117/78	137/91	156/104	176/117	195/130
	Throw L/S	6.0/5.0	8.0/6.5	10.0/8.0	12.0/9.5	14.0/11.5	16.0/13.0	18.0/14.5	20.0/16.0
16 x 16	Total CFM	280	370	465	560	650	745	835	930
Ak .930	CFM L/S	73/67	96/89	121/112	146/134	169/156	194/179	217/200	242/223
	Throw L/S	7.0/6.5	9.0/9.0	11.5/11.0	14.0/13.0	16.0/15.5	19.0/17.0	21.0/20.0	23.0/22.0

Terminal Velocity of 75 FPM

372 Return Air Grille (Page 11)
326 Filter Grille (Page 14)

Engineering Data

Face Velocity*		300	400	500	600
6 x 4	CFM	34	45	56	68
Ak .110	Ps	.020	.035	.054	.079
6 x 6	CFM	50	67	84	101
Ak .170	Ps	.019	.035	.054	.079
8 x 4	CFM	45	60	75	90
Ak .150	Ps	.019	.035	.054	.079
8 x 6	CFM	67	89	111	134
Ak .220	Ps	.019	.035	.054	.079
8 x 8	CFM	89	118	148	178
Ak .300	Ps	.019	.035	.054	.078
10 x 4	CFM	56	74	93	112
Ak .190	Ps	.019	.035	.054	.079
10 x 6	CFM	83	111	139	167
Ak .280	Ps	.019	.035	.054	.078
10 x 8	CFM	111	147	184	221
Ak .370	Ps	.019	.034	.054	.078
10 x 10	CFM	138	184	230	276
Ak .460	Ps	.019	.034	.054	.078
12 x 6	CFM	100	133	166	199
Ak .330	Ps	.019	.034	.054	.078
12 x 8	CFM	132	177	221	265
Ak .440	Ps	.019	.034	.054	.078
12 x 10	CFM	165	220	275	330
Ak .550	Ps	.019	.034	.053	.077
12 x 12	CFM	197	263	329	395
Ak .660	Ps	.019	.034	.053	.077
12 x 18	CFM	294	392	491	589
Ak .980	Ps	.019	.034	.053	.075
14 x 6	CFM	116	155	193	232
Ak .390	Ps	.019	.034	.054	.078
14 x 8	CFM	154	205	257	308
Ak .510	Ps	.019	.034	.053	.077
14 x 10	CFM	192	256	320	384
Ak .640	Ps	.019	.034	.053	.077
14 x 12	CFM	230	306	383	460
Ak .770	Ps	.019	.034	.053	.076
14 x 14	CFM	267	357	446	535
Ak .890	Ps	.019	.034	.053	.075
14 x 18	CFM	343	457	571	685
Ak 1.140	Ps	.019	.033	.052	.074

Face Velocity*		300	400	500	600
16 x 6	CFM	132	177	221	265
Ak .440	Ps	.019	.034	.054	.078
16 x 8	CFM	176	234	293	352
Ak .590	Ps	.019	.034	.053	.077
16 x 10	CFM	219	292	365	438
Ak .730	Ps	.019	.034	.053	.076
16 x 12	CFM	262	349	437	524
Ak .870	Ps	.019	.034	.053	.076
16 x 14	CFM	305	407	509	610
Ak 1.020	Ps	.019	.034	.052	.075
16 x 16	CFM	348	464	580	696
Ak 1.160	Ps	.019	.033	.052	.074
16 x 24	CFM	519	692	865	1038
Ak 1.730	Ps	.018	.033	.051	.071
16 x 25	CFM	540	720	900	1081
Ak 1.800	Ps	.018	.033	.051	.071
18 x 6	CFM	149	198	248	297
Ak .500	Ps	.019	.034	.054	.077
18 x 18	CFM	439	585	732	878
Ak 1.460	Ps	.019	.033	.052	.073
18 x 24	CFM	583	777	971	1166
Ak 1.940	Ps	.018	.032	.051	.070
20 x 6	CFM	165	220	275	330
Ak .550	Ps	.019	.034	.053	.077
20 x 10	CFM	273	364	455	546
Ak .910	Ps	.019	.034	.053	.075
20 x 12	CFM	327	435	544	653
Ak 1.090	Ps	.019	.033	.052	.074
20 x 14	CFM	380	507	634	760
Ak 1.270	Ps	.019	.033	.052	.074
20 x 20	CFM	540	720	900	1081
Ak 1.800	Ps	.018	.033	.051	.071
20 x 24	CFM	647	862	1078	1293
Ak 2.160	Ps	.018	.032	.050	.069
20 x 25	CFM	673	898	1122	1346
Ak 2.240	Ps	.018	.032	.050	.069

Face Velocity*		300	400	500	600
24 x 4	CFM	132	177	221	265
Ak .440	Ps	.019	.034	.054	.078
24 x 6	CFM	197	263	329	395
Ak .660	Ps	.019	.034	.053	.077
24 x 8	CFM	262	349	437	524
Ak .870	Ps	.019	.034	.053	.076
24 x 10	CFM	327	435	544	653
Ak 1.090	Ps	.019	.033	.052	.074
24 x 12	CFM	391	521	651	782
Ak 1.300	Ps	.019	.033	.052	.073
24 x 14	CFM	455	607	758	910
Ak 1.520	Ps	.019	.033	.051	.072
24 x 24	CFM	774	1032	1290	1548
Ak 2.580	Ps	.018	.032	.049	.067
30 x 4	CFM	165	220	275	330
Ak .550	Ps	.019	.034	.053	.077
30 x 6	CFM	246	328	410	492
Ak .820	Ps	.019	.034	.053	.076
30 x 8	CFM	327	435	544	653
Ak 1.090	Ps	.019	.033	.052	.074
30 x 10	CFM	407	543	678	814
Ak 1.360	Ps	.019	.033	.052	.073
30 x 12	CFM	487	649	812	974
Ak 1.620	Ps	.018	.033	.051	.072
30 x 14	CFM	567	756	945	1134
Ak 1.890	Ps	.018	.032	.051	.071
30 x 18	CFM	726	968	1210	1452
Ak 2.420	Ps	.018	.032	.050	.068
30 x 20	CFM	806	1074	1343	1611
Ak 2.690	Ps	.018	.031	.049	.067
30 x 24	CFM	964	1286	1607	1928
Ak 3.210	Ps	.017	.031	.048	.064
30 x 30	CFM	1201	1602	2002	2403
Ak 4.000	Ps	.017	.030	.046	.060
36 x 8	CFM	391	521	651	782
Ak 1.300	Ps	.019	.033	.052	.073

*Filter grilles: Tested without filters. Typical capacity is 2 CFM per square inch of nominal filter area. Recommended face velocity is 300-450 FPM. Velocities higher will decrease filter performance, increase flow resistance, and possibly be of noise concern. Velocity measured 1" from face.

361 Return Air Grille (Page 12)

Face Velocity		300	400	500	600	700	800	900	1000
6 x 6 Ak .09	CFM	30	40	45	55	65	75	85	95
	Ps	.007	.013	.020	.029	.040	.052	.066	.081
	Throw	6.0	8.0	10.0	11.0	13.0	15.0	17.0	19.0
8 x 4 Ak .11	CFM	30	45	55	65	75	85	95	105
	Ps	.007	.013	.021	.030	.041	.053	.067	.083
	Throw	6.0	8.0	10.0	12.0	14.0	16.0	18.0	20.0
8 x 6 Ak .12	CFM	35	50	60	75	85	100	110	125
	Ps	.007	.013	.021	.030	.040	.053	.067	.082
	Throw	7.0	9.0	11.0	13.0	15.0	17.0	19.0	22.0
8 x 8 Ak .16	CFM	50	65	80	95	110	130	145	160
	Ps	.008	.014	.022	.031	.042	.055	.070	.086
	Throw	8.0	10.0	12.0	15.0	17.0	20.0	22.0	25.0
10 x 4 Ak .12	CFM	35	50	60	70	85	95	110	120
	Ps	.008	.013	.021	.030	.041	.054	.068	.084
	Throw	6.0	9.0	11.0	13.0	15.0	17.0	19.0	21.0
10 x 6 Ak .14	CFM	40	55	70	80	95	110	120	135
	Ps	.008	.014	.021	.031	.042	.054	.069	.085
	Throw	7.0	9.0	11.0	14.0	16.0	18.0	20.0	23.0
10 x 8 Ak .19	CFM	55	75	95	115	130	150	170	190
	Ps	.008	.014	.022	.031	.043	.056	.071	.087
	Throw	8.0	11.0	13.0	16.0	19.0	21.0	24.0	27.0
10 x 10 Ak .24	CFM	70	95	120	145	170	190	215	240
	Ps	.008	.014	.021	.030	.042	.054	.069	.085
	Throw	8.0	11.0	14.0	16.0	19.0	22.0	24.0	27.0
12 x 4 Ak .13	CFM	40	55	65	80	95	105	120	135
	Ps	.008	.014	.021	.031	.042	.054	.069	.085
	Throw	9.0	12.0	15.0	18.0	21.0	24.0	27.0	30.0
12 x 6 Ak .18	CFM	55	75	95	110	130	150	165	185
	Ps	.008	.015	.023	.033	.045	.059	.074	.091
	Throw	7.0	9.0	11.0	13.0	16.0	18.0	20.0	22.0
12 x 8 Ak .22	CFM	65	85	110	130	150	170	195	215
	Ps	.008	.014	.022	.032	.043	.056	.071	.088
	Throw	8.0	11.0	13.0	16.0	19.0	21.0	24.0	26.0
12 x 12 Ak .30	CFM	90	120	150	180	210	235	265	295
	Ps	.008	.014	.022	.032	.044	.057	.073	.090
	Throw	10.0	13.0	16.0	19.0	22.0	25.0	28.0	31.0
14 x 4 Ak .15	CFM	45	60	75	90	105	120	130	145
	Ps	.008	.140	.021	.031	.042	.055	.069	.086
	Throw	10.0	14.0	17.0	20.0	24.0	27.0	30.0	34.0
14 x 6 Ak .22	CFM	65	85	110	130	150	175	195	215
	Ps	.008	.014	.022	.031	.042	.055	.070	.087
	Throw	7.0	9.0	12.0	14.0	16.0	19.0	21.0	23.0
14 x 8 Ak .24	CFM	75	95	120	145	170	195	220	240
	Ps	.008	.014	.022	.032	.043	.057	.072	.089
	Throw	9.0	12.0	14.0	17.0	20.0	23.0	26.0	29.0

Terminal Velocity of 75 FPM

363 Return Air Grille (Page 12)

Face Velocity		300	400	500	600	700	800	900	1000
6 x 6	CFM	35	50	60	75	85	100	110	125
Ak .12	Ps	.014	.025	.039	.056	.077	.100	.126	.156
	L Throw	5.0	7.0	9.0	10.0	12.0	14.0	15.0	17.0
	S Throw	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0
8 x 4	CFM	30	40	50	65	75	85	95	105
Ak .10	Ps	.015	.027	.041	.060	.081	.106	.134	.166
	L Throw	5.0	6.0	8.0	9.0	11.0	12.0	14.0	15.0
	S Throw	3.0	4.0	5.0	6.0	7.0	8.0	8.0	9.0
8 x 6	CFM	40	55	70	85	100	115	125	140
Ak .14	Ps	.015	.026	.041	.059	.080	.104	.132	.163
	L Throw	6.0	7.0	9.0	11.0	13.0	15.0	16.0	18.0
	S Throw	3.0	5.0	6.0	7.0	8.0	9.0	10.0	11.0
8 x 8	CFM	55	75	90	110	130	145	165	185
Ak .18	Ps	.013	.022	.035	.050	.069	.090	.114	.140
	L Throw	6.0	8.0	11.0	13.0	15.0	17.0	19.0	21.0
	S Throw	4.0	5.0	6.0	8.0	9.0	10.0	11.0	12.0
10 x 4	CFM	35	50	60	75	85	100	110	125
Ak .12	Ps	.014	.025	.039	.056	.076	.100	.126	.156
	L Throw	5.0	7.0	9.0	10.0	12.0	14.0	15.0	17.0
	S Throw	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0
10 x 6	CFM	50	70	85	105	120	140	155	175
Ak .17	Ps	.015	.027	.043	.062	.084	.110	.139	.171
	L Throw	6.0	8.0	10.0	12.0	14.0	16.0	18.0	20.0
	S Throw	4.0	5.0	6.0	7.0	9.0	10.0	11.0	12.0
10 x 8	CFM	65	90	110	135	155	180	200	225
Ak .22	Ps	.012	.022	.034	.049	.066	.086	.109	.135
	L Throw	7.0	9.0	12.0	14.0	16.0	18.0	21.0	23.0
	S Throw	4.0	6.0	7.0	8.0	10.0	11.0	12.0	14.0
10 x 10	CFM	95	125	155	185	220	250	280	310
Ak .31	Ps	.015	.027	.043	.062	.084	.110	.139	.172
	L Throw	8.0	11.0	14.0	16.0	19.0	22.0	24.0	27.0
	S Throw	5.0	7.0	8.0	10.0	11.0	13.0	14.0	16.0

Terminal Velocity of 75 FPM

Face Velocity		300	400	500	600	700	800	900	1000
12 x 6	CFM	60	85	105	125	145	165	185	205
Ak .18	Ps	.012	.022	.034	.049	.066	.086	.109	.135
	L Throw	7.0	9.0	11.0	13.0	15.0	18.0	20.0	22.0
	S Throw	4.0	6.0	7.0	8.0	9.0	11.0	12.0	13.0
12 x 8	CFM	80	105	130	160	185	210	240	265
Ak .22	Ps	.008	.014	.022	.032	.044	.057	.072	.089
	L Throw	8.0	10.0	13.0	15.0	17.0	20.0	22.0	25.0
	S Throw	5.0	6.0	8.0	9.0	11.0	12.0	13.0	15.0
12 x 12	CFM	115	155	190	230	270	305	345	385
Ak .38	Ps	.008	.014	.023	.033	.044	.058	.073	.090
	L Throw	9.0	12.0	15.0	18.0	21.0	24.0	27.0	30.0
	S Throw	6.0	7.0	9.0	11.0	13.0	14.0	16.0	18.0
14 x 4	CFM	50	65	80	100	115	130	150	165
Ak .16	Ps	.008	.014	.022	.031	.042	.055	.070	.086
	L Throw	6.0	8.0	10.0	12.0	14.0	16.0	17.0	19.0
	S Throw	4.0	5.0	6.0	7.0	9.0	10.0	11.0	12.0
14 x 6	CFM	60	80	100	120	145	165	185	205
Ak .20	Ps	.009	.017	.026	.037	.051	.066	.084	.104
	L Throw	7.0	9.0	11.0	13.0	15.0	17.0	20.0	22.0
	S Throw	4.0	6.0	7.0	8.0	9.0	11.0	12.0	13.0
14 x 8	CFM	90	120	150	185	215	245	275	305
Ak .30	Ps	.008	.014	.022	.032	.044	.057	.073	.090
	L Throw	8.0	11.0	13.0	16.0	19.0	21.0	24.0	27.0
	S Throw	5.0	7.0	8.0	10.0	11.0	13.0	14.0	16.0
16 x 6	CFM	80	105	130	160	185	210	240	265
Ak .26	Ps	.008	.014	.022	.032	.044	.057	.072	.089
	L Throw	8.0	10.0	12.0	15.0	17.0	20.0	22.0	25.0
	S Throw	5.0	6.0	8.0	9.0	11.0	12.0	14.0	15.0

Terminal Velocity of 75 FPM

364 Return Air Grille (Page 12)

Face Velocity		300	400	500	600	700	800	900	1000
6 x 6	CFM	50	65	80	95	110	125	145	160
Ak .16	Ps	.040	.072	.112	.161	.219	.287	.363	.448
	L Throw	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0
	S Throw	4.0	5.0	6.0	7.0	8.0	9.0	11.0	12.0
8 x 8	CFM	65	85	110	130	155	175	195	220
Ak .22	Ps	.024	.043	.067	.096	.130	.170	.216	.266
	L Throw	4.0	5.0	6.0	7.0	8.0	10.0	11.0	12.0
	S Throw	4.0	6.0	7.0	8.0	10.0	11.0	12.0	14.0
10 x 10	CFM	85	115	140	170	200	225	255	285
Ak .28	Ps	.016	.029	.045	.064	.087	.114	.144	.178
	L Throw	4.0	6.0	7.0	8.0	10.0	11.0	12.0	14.0
	S Throw	5.0	6.0	8.0	10.0	11.0	13.0	14.0	16.0
12 x 12	CFM	120	160	200	235	275	315	355	395
Ak .40	Ps	.012	.022	.032	.047	.064	.084	.107	.133
	L Throw	5.0	7.0	8.0	10.0	11.0	13.0	14.0	16.0
	S Throw	6.0	8.0	9.0	11.0	13.0	15.0	17.0	18.0
14 x 14	CFM	145	190	240	285	335	380	430	475
Ak .48	Ps	.009	.016	.025	.037	.049	.065	.081	.102
	L Throw	6.0	7.0	9.0	11.0	12.0	14.0	16.0	18.0
	S Throw	6.0	8.0	10.0	12.0	14.0	16.0	18.0	20.0

Terminal Velocity of 75 FPM

Engineering Data

341, 342, 343, and 344 Curved-Blade Register (Page 12, 13)

341

Face Velocity		300	400	500	600	700	800	900	1000	1100	1200
Pressure Loss		.006	.010	.016	.022	.031	.040	.050	.062	.075	.090
8 x 4	CFM	30	45	55	65	75	85	95	105	120	130
Ak .107	Throw	3.5	5.5	6.5	7.5	9.0	10.0	11.5	12.5	14.0	15.5
10 x 4	CFM	40	55	65	80	90	105	120	130	145	160
Ak .132	Throw	4.0	6.0	7.0	8.5	9.5	11.0	12.5	13.5	15.5	17.0
10 x 6	CFM	60	80	100	120	140	160	180	200	220	240
Ak .200	Throw	5.0	6.5	8.5	10.0	11.5	13.5	15.0	16.0	18.0	20.0
12 x 6	CFM	70	95	120	140	165	190	210	235	260	280
Ak .235	Throw	5.5	7.0	9.0	10.5	12.5	14.5	16.0	18.0	20.0	22.0
10 x 8	CFM	80	105	130	160	185	210	240	265	290	315
Ak .264	Throw	5.5	7.5	9.5	11.5	13.0	15.0	17.0	19.0	21.0	23.0
12 x 8	CFM	95	130	160	190	225	255	290	320	350	385
Ak .320	Throw	6.0	8.5	10.5	12.5	14.5	16.5	19.0	21.0	23.0	25.0
14 x 8	CFM	110	145	180	220	255	290	330	365	400	435
Ak .364	Throw	6.5	8.5	11.0	13.0	15.5	17.5	20.0	22.0	24.0	26.0

Terminal Velocity of 75 FPM

342

Face Velocity		300	400	500	600	700	800	900	1000	1100	1200
Pressure Loss		.006	.010	.016	.022	.031	.040	.050	.062	.075	.090
10 x 6	CFM	60	80	100	120	140	160	180	200	220	240
Ak .200	Throw	3.5	4.5	6.0	7.0	8.5	9.5	10.5	12.0	13.0	14.0
12 x 6	CFM	70	95	120	140	165	190	210	235	260	280
Ak .235	Throw	4.0	5.0	6.5	7.5	9.0	10.0	11.5	12.5	14.0	15.0
12 x 8	CFM	95	130	160	190	225	255	290	320	350	385
Ak .320	Throw	4.5	6.0	7.5	8.5	10.5	11.5	13.5	14.5	16.0	18.0
14 x 8	CFM	110	145	180	220	255	290	330	365	400	435
Ak .364	Throw	4.5	6.0	7.5	9.5	11.0	12.5	14.0	15.5	17.0	19.0

Terminal Velocity of 75 FPM

343

Face Velocity		300	400	500	600	700	800	900	1000	1100	1200
Pressure Loss		.006	.010	.016	.022	.031	.040	.050	.062	.075	.090
10 x 6 Ak .200	Total CFM	60	80	100	120	140	160	180	200	220	240
	CFM L/S	22/19	29/26	36/32	43/38	50/45	58/51	65/58	72/64	79/70	86/77
	Throw L/S	3.0/2.0	4.0/4.0	5.0/4.5	6.0/5.0	7.0/6.5	8.0/7.5	9.0/8.5	10.0/9.5	11.0/10.5	12.0/11.5
8 x 8 Ak .215	Total CFM	65	85	110	130	150	170	195	215	235	260
	CFM L/S	30/18	39/23	50/30	60/35	68/41	78/46	89/53	98/58	108/64	119/70
	Throw L/S	3.5/3.0	4.5/3.5	6.0/4.5	7.0/5.5	8.0/6.5	9.5/7.0	10.5/8.0	11.5/9.0	13.0/10.0	14.0/11.0
12 x 6 Ak .235	Total CFM	70	95	120	140	165	190	210	235	260	280
	CFM L/S	21/25	28/33	36/42	42/49	49/58	57/67	63/74	70/82	77/91	83/98
	Throw L/S	3.0/3.0	4.0/4.0	5.0/5.5	6.0/6.5	7.0/7.5	8.0/8.5	9.0/9.5	9.5/10.5	10.5/11.5	11.5/12.5
10 x 10 Ak .330	Total CFM	100	130	165	200	230	265	295	330	365	395
	CFM L/S	36/32	47/42	59/63	72/64	83/74	95/85	106/94	119/106	131/117	142/126
	Throw L/S	4.0/3.5	5.0/4.5	6.5/6.0	7.5/7.0	9.0/8.5	10.0/9.5	11.0/10.5	12.5/12.0	14.0/13.0	15.0/14.0

Terminal Velocity of 75 FPM

344

Face Velocity		300	400	500	600	700	800	900	1000	1100	1200
Pressure Loss		.006	.010	.016	.022	.031	.040	.050	.062	.075	.090
8 x 8 Ak .215	Total CFM	65	85	110	130	150	170	195	215	235	260
	CFM L/S	15/18	20/23	25/30	30/35	35/41	39/46	45/53	49/58	54/64	60/70
	Throw L/S	2.5/3.0	3.5/3.5	4.0/4.5	5.0/5.5	6.0/6.5	6.5/7.0	7.5/8.0	8.0/9.0	9.0/10.0	10.0/11.0
10 x 10 Ak .330	Total CFM	100	130	165	200	230	265	295	330	365	395
	CFM L/S	18/32	24/42	30/53	36/64	42/74	48/85	53/94	60/106	66/117	71/126
	Throw L/S	2.5/3.5	3.5/4.5	4.5/6.0	5.5/7.0	6.5/8.5	7.0/9.5	8.0/10.5	9.0/12.0	10.0/13.0	10.5/14.0
12 x 12 Ak .452	Total CFM	135	180	225	270	315	360	405	450	495	540
	CFM L/S	20/47	27/63	34/79	40/95	47/111	54/126	61/142	67/158	74/174	81/190
	Throw L/S	2.5/4.0	3.5/5.5	4.5/7.0	5.5/8.5	6.5/10.0	7.5/11.0	8.5/12.5	9.0/14.0	10.0/15.5	11.0/17.0

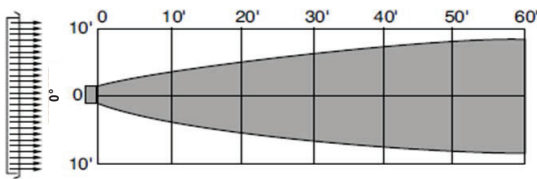
Terminal Velocity of 75 FPM

348 Curved-Blade Register (Page 13)

A Deflection

Face Velocity		300	400	500	600	700	800	900	1000	1100	1200
Pressure Loss		.006	.010	.016	.022	.031	.040	.050	.062	.075	.090
8 x 4	CFM	45	60	80	95	110	125	140	155	170	185
Ak .156	Throw	5.0	6.5	8.5	10.0	12.0	13.0	15.0	16.0	18.0	19.0
10 x 4	CFM	60	80	100	120	140	160	180	200	220	240
Ak .198	Throw	6.0	7.5	9.5	12.0	13.0	15.0	17.0	19.0	20.0	22.0
12 x 4	CFM	70	95	120	145	170	190	215	240	265	290
Ak .240	Throw	6.0	8.0	10.0	12.0	14.0	16.0	18.0	20.0	22.0	25.0
10 x 6	CFM	95	125	155	190	220	250	280	315	345	375
Ak .313	Throw	7.0	9.0	12.0	14.0	16.0	19.0	21.0	23.0	26.0	28.0
12 x 6	CFM	115	150	190	225	265	305	340	380	415	455
Ak .379	Throw	8.0	10.0	13.0	15.0	18.0	21.0	23.0	26.0	28.0	31.0
10 x 8	CFM	130	170	215	255	300	340	385	425	470	510
Ak .425	Throw	8.0	11.0	14.0	16.0	19.0	21.0	24.0	27.0	30.0	32.0
14 x 6	CFM	135	180	225	270	310	355	400	445	490	545
Ak .446	Throw	8.0	11.0	14.0	17.0	19.0	22.0	25.0	28.0	30.0	33.0
12 x 8	CFM	160	200	265	320	370	425	475	530	585	635
Ak .530	Throw	9.0	11.0	15.0	18.0	21.0	24.0	27.0	30.0	33.0	36.0
14 x 8	CFM	185	250	310	370	435	495	560	620	680	745
Ak .620	Throw	10.0	13.0	16.0	20.0	23.0	26.0	30.0	33.0	36.0	39.0

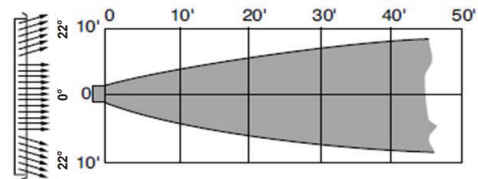
Terminal Velocity of 75 FPM



C Deflection

Face Velocity		300	400	500	600	700	800	900	1000	1100	1200
Pressure Loss		.006	.010	.016	.022	.031	.040	.050	.062	.075	.090
8 x 4	CFM	40	55	70	85	100	115	125	140	155	170
Ak .141	Throw	3.5	5.0	6.5	7.5	9.0	10.0	11.0	13.0	14.0	15.0
10 x 4	CFM	55	70	90	105	125	140	160	180	195	215
Ak .178	Throw	4.0	5.5	7.0	8.5	10.0	11.0	13.0	14.0	16.0	17.0
12 x 4	CFM	65	85	110	130	150	175	195	215	240	260
Ak .216	Throw	4.5	6.0	8.0	9.5	11.0	13.0	14.0	16.0	18.0	19.0
10 x 6	CFM	85	115	140	170	195	225	255	280	310	340
Ak .282	Throw	5.5	7.5	9.0	11.0	12.0	14.0	16.0	18.0	20.0	22.0
12 x 6	CFM	105	135	170	205	240	275	310	340	375	410
Ak .342	Throw	6.0	8.0	10.0	12.0	14.0	16.0	18.0	20.0	22.0	24.0
10 x 8	CFM	115	155	195	235	275	310	350	390	430	470
Ak .390	Throw	6.0	8.0	11.0	13.0	15.0	17.0	19.0	21.0	23.0	26.0
14 x 6	CFM	125	165	205	245	290	330	370	410	455	495
Ak .412	Throw	7.0	9.0	11.0	13.0	16.0	18.0	20.0	22.0	24.0	27.0
12 x 8	CFM	140	190	235	280	330	375	425	470	515	565
Ak .470	Throw	7.0	9.0	12.0	14.0	16.0	19.0	21.0	23.0	25.0	28.0
14 x 8	CFM	165	220	275	330	385	440	495	550	605	660
Ak .550	Throw	8.0	10.0	13.0	15.0	18.0	20.0	23.0	25.0	28.0	30.0

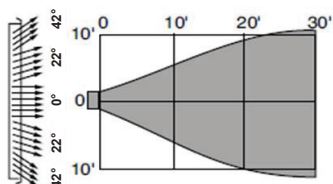
Terminal Velocity of 75 FPM



E Deflection

Face Velocity		300	400	500	600	700	800	900	1000	1100	1200
Pressure Loss		.006	.010	.016	.022	.031	.040	.050	.062	.075	.090
8 x 4	CFM	40	50	65	75	90	100	115	125	140	150
Ak .127	Throw	3.0	4.0	5.0	5.5	7.0	7.5	8.5	9.5	11.0	11.5
10 x 4	CFM	50	65	80	95	115	130	145	160	180	195
Ak .162	Throw	3.0	4.5	5.5	6.5	7.5	8.5	9.5	11.0	12.0	13.0
12 x 4	CFM	60	80	100	120	140	160	175	195	215	235
Ak .197	Throw	4.0	4.5	6.0	7.5	8.5	10.0	11.0	12.0	13.0	14.0
10 x 6	CFM	75	105	130	155	180	205	230	255	285	310
Ak .257	Throw	4.0	5.5	7.5	8.5	9.5	11.0	12.0	14.0	15.0	17.0
12 x 6	CFM	95	125	155	185	220	250	280	310	340	375
Ak .311	Throw	4.5	6.0	7.5	9.0	11.0	12.0	14.0	15.0	17.0	18.0
10 x 8	CFM	105	140	175	210	245	280	315	350	385	420
Ak .350	Throw	5.0	6.0	8.0	10.0	11.0	13.0	14.0	16.0	18.0	19.0
14 x 6	CFM	110	145	185	220	255	290	330	365	400	440
Ak .365	Throw	5.5	6.5	8.5	10.0	11.0	13.0	15.0	16.0	18.0	20.0
12 x 8	CFM	130	175	220	260	305	350	390	435	480	520
Ak .435	Throw	5.0	7.0	9.0	11.0	13.0	15.0	16.0	18.0	20.0	22.0
14 x 8	CFM	155	205	255	305	355	410	460	510	560	610
Ak .510	Throw	6.0	8.0	10.0	12.0	14.0	16.0	18.0	20.0	22.0	23.0

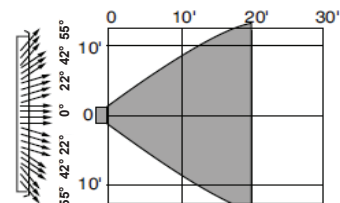
Terminal Velocity of 75 FPM



G Deflection

Face Velocity		300	400	500	600	700	800	900	1000	1100	1200
Pressure Loss		.006	.010	.016	.022	.031	.040	.050	.062	.075	.090
8 x 4	CFM	35	45	60	70	85	95	105	120	130	140
Ak .118	Throw	2.0	2.5	3.5	4.0	5.0	5.5	6.0	6.5	7.5	8.0
10 x 4	CFM	45	60	75	90	105	120	135	150	165	180
Ak .149	Throw	2.0	3.0	3.5	4.5	5.0	6.0	6.5	7.5	8.0	9.0
12 x 4	CFM	55	70	90	110	125	145	165	180	200	215
Ak .181	Throw	2.5	3.0	4.0	5.0	5.5	6.5	7.5	8.0	9.0	10.0
10 x 6	CFM	70	95	120	140	165	190	210	235	260	285
Ak .236	Throw	3.0	4.0	5.0	5.5	6.5	7.5	8.5	9.5	10.0	11.0
12 x 6	CFM	85	115	145	170	200	230	255	285	315	345
Ak .286	Throw	3.0	4.0	5.0	6.0	7.0	8.5	9.0	10.0	11.0	12.0
10 x 8	CFM	95	130	160	190	225	255	290	320	350	385
Ak .320	Throw	3.0	4.5	5.5	6.5	7.5	8.5	10.0	11.0	12.0	13.0
14 x 6	CFM	100	135	170	200	235	270	300	335	370	405
Ak .336	Throw	3.5	4.5	5.5	6.5	8.0	9.0	10.0	11.0	12.0	13.0
12 x 8	CFM	120	160	200	235	275	315	355	395	435	475
Ak .395	Throw	3.5	5.0	6.0	7.0	8.0	10.0	11.0	12.0	13.0	15.0
14 x 8	CFM	140	185	230	275	320	370	415	460	505	550
Ak .460	Throw	4.0	5.5	6.5	8.0	9.0	10.5	11.5	13.0	14.5	15.5

Terminal Velocity of 75 FPM



1500 Round Ceiling Diffuser (Page 15)

Face Velocity		300	400	500	600	700	800	900	1000
Pressure Loss		.006	.010	.016	.022	.031	.040	.050	.062
Neck Size	CFM		55	65	80	95	105	120	135
6" Ak .135	Throw		2.5	3.0	3.5	4.0	4.5	5.0	5.5
Neck Size	CFM	70	90	115	135	160	180	200	225
8" Ak .225	Throw	2.0	3.0	3.5	4.5	5.0	5.5	6.5	7.0
Neck Size	CFM	105	140	175	210	240	275	310	345
10" Ak .345	Throw	2.5	3.5	4.5	5.0	6.0	7.0	8.0	8.5
Neck Size	CFM	150	200	250	300	350	400	450	500
12" Ak .500	Throw	3.0	4.0	5.0	6.0	7.5	8.5	9.0	10.5
Neck Size	CFM	190	250	315	375	440	500	565	625
14" Ak .625	Throw	3.5	4.5	5.5	6.5	8.0	9.0	10.0	11.0
Neck Size	CFM	310	415	520	625	730	830	935	1040
18" Ak 1.040	Throw	4.5	6.0	7.0	8.5	10.0	11.5	13.0	14.5

Terminal Velocity of 50 FPM

2603/2604/2605 Ceiling Diffuser (Page 16)

Model 2603 Three-Way Diffuser

Face Velocity		400	500	600	700	900	1100	1500
Pressure Loss		.010	.016	.022	.031	.050	.075	.140
6 x 6	CFM	55	65	75	90	120	140	195
Ak .13	Throw L/S	3.5/2.5	4.0/3.0	5.0/3.5	5.5/4.0	7.0/5.0	9.0/6.0	12.0/9.0
8 x 8	CFM	75	90	105	120	150	180	240
Ak .20	Throw L/S	4.0/2.0	5.0/2.5	6.0/3.5	7.0/4.0	8.0/4.5	10.0/5.5	12.0/7.0
10 x 10	CFM	115	135	155	175	235	290	395
Ak .29	Throw L/S	5.0/3.0	7.0/4.0	8.0/4.5	10.0/5.5	12.0/7.0	14.0/8.5	18.0/10.5
12 x 12	CFM	170	210	255	300	380	470	610
Ak .42	Throw L/S	7.0/4.0	8.5/4.5	10.0/5.5	12.0/6.5	15.0/8.5	18.0/10.0	23.0/14.0
14 x 14	CFM	250	305	360	410	505	610	800
Ak .59	Throw L/S	8.0/5.5	10.0/6.0	11.5/7.0	13.0/7.5	15.5/9.0	20.0/11.0	27.0/16.0

Model 2604 Four-Way Diffuser

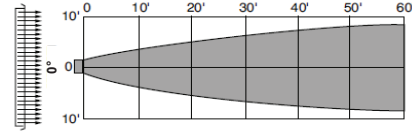
Face Velocity		400	500	600	700	900	1100	1500
Pressure Loss		.010	.016	.022	.031	.050	.075	.140
6 x 6	CFM	55	65	75	90	120	140	195
Ak .13	Throw	2.0	3.0	4.0	5.0	6.0	7.0	9.0
8 x 8	CFM	75	90	105	120	150	180	240
Ak .20	Throw	3.0	4.0	5.0	6.0	8.0	10.0	13.0
10 x 10	CFM	115	135	155	175	235	290	395
Ak .29	Throw	4.0	5.0	6.0	7.0	9.0	12.0	14.0
12 x 12	CFM	170	210	255	300	380	470	610
Ak .42	Throw	5.0	6.0	7.0	8.0	10.0	12.0	15.0
14 x 14	CFM	250	305	360	410	505	610	800
Ak .59	Throw	6.0	7.0	8.0	9.0	11.0	14.0	18.0

Model 2605 Two-Way Corner Diffuser

Face Velocity		400	500	600	700	900	1100	1500
Pressure Loss		.010	.016	.022	.031	.050	.075	.140
6 x 6	CFM	55	65	75	90	120	140	195
Ak .13	Throw	3.0	4.0	5.0	6.0	7.0	9.0	12.0
8 x 8	CFM	75	90	105	120	150	180	240
Ak .20	Throw	4.0	5.0	6.0	7.0	9.0	12.0	16.0
10 x 10	CFM	115	135	155	175	235	290	395
Ak .29	Throw	5.0	6.0	7.0	8.0	10.0	14.0	20.0
12 x 12	CFM	170	210	255	300	380	470	610
Ak .42	Throw	6.0	7.0	8.0	10.0	13.0	17.0	23.0
14 x 14	CFM	250	305	360	410	505	610	800
Ak .59	Throw	7.0	9.0	11.0	13.0	16.0	19.0	27.0

291L Single Deflection Register (Page 17)
4720OB Double Deflection Register w/OBD (Page 17)

Deflection A

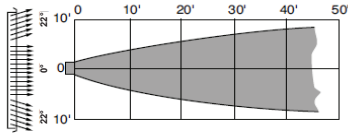


Face Velocity		400	500	600	700	800	900	1000	1100	1200	1300	1400	1600	1800	2000
Pressure Loss		.010	.016	.022	.031	.040	.050	.062	.075	.090	.105	.122	.160	.202	.249
8 x 4	CFM	65	80	100	110	130	145	160	175	190	210	225	255	290	320
Ak .160	Throw	6.5	8.0	10.0	11.0	13.0	15.0	16.0	18.0	19.0	21.0	23.0	26.0	29.0	32.0
10 x 4	CFM	80	100	120	140	160	180	200	220	240	265	285	325	365	405
Ak .202	Throw	7.0	9.0	11.0	13.0	14.0	16.0	18.0	20.0	22.0	24.0	26.0	29.0	33.0	36.0
12 x 4	CFM	100	120	145	170	195	220	245	270	295	315	340	390	440	490
Ak .244	Throw	8.0	10.0	12.0	14.0	16.0	18.0	20.0	22.0	24.0	26.0	28.0	32.0	36.0	40.0
14 x 4	CFM	115	145	170	200	230	255	285	315	345	370	400	460	515	570
Ak .286	Throw	8.5	11.0	13.0	15.0	17.0	19.0	22.0	24.0	26.0	28.0	30.0	35.0	39.0	43.0
12 x 5	CFM	125	155	190	220	250	280	310	345	375	405	435	500	560	625
Ak .312	Throw	9.0	11.0	14.0	16.0	18.0	20.0	22.0	25.0	27.0	29.0	31.0	36.0	41.0	45.0
10 x 6	CFM	125	155	190	220	250	285	315	345	375	410	440	500	565	630
Ak .314	Throw	9.0	11.0	14.0	16.0	18.0	21.0	23.0	25.0	27.0	30.0	32.0	36.0	41.0	45.0
14 x 5	CFM	145	185	220	255	295	330	365	405	440	475	510	585	660	730
Ak .366	Throw	10.0	12.0	15.0	17.0	20.0	22.0	24.0	27.0	29.0	32.0	34.0	39.0	44.0	49.0
12 x 6	CFM	150	190	225	265	305	340	380	415	455	495	530	605	680	760
Ak .379	Throw	10.0	12.0	15.0	17.0	20.0	22.0	25.0	27.0	30.0	33.0	35.0	40.0	45.0	50.0
16 x 5	CFM	170	210	250	295	335	380	420	460	505	545	585	670	755	840
Ak .419	Throw	11.0	13.0	16.0	18.0	21.0	24.0	26.0	29.0	32.0	34.0	37.0	42.0	47.0	53.0
14 x 6	CFM	180	220	265	310	355	400	445	490	535	575	620	710	800	890
Ak .444	Throw	11.0	13.0	16.0	19.0	22.0	24.0	27.0	30.0	32.0	35.0	38.0	43.0	49.0	54.0
16 x 6	CFM	205	255	305	355	410	460	510	560	610	665	715	815	920	1020
Ak .510	Throw	12.0	15.0	17.0	20.0	23.0	26.0	29.0	32.0	35.0	38.0	41.0	47.0	53.0	58.0
20 x 5	CFM	210	265	315	370	420	475	525	580	630	685	735	840	945	1050
Ak .526	Throw	12.0	15.0	18.0	21.0	23.0	27.0	29.0	32.0	35.0	38.0	41.0	47.0	53.0	59.0
24 x 5	CFM	255	315	380	445	505	570	635	695	760	825	890	1015	1140	1270
Ak .634	Throw	13.0	16.0	19.0	23.0	26.0	29.0	32.0	35.0	39.0	42.0	45.0	52.0	58.0	65.0
20 x 6	CFM	255	320	385	445	510	575	640	705	770	830	895	1015	1140	1270
Ak .640	Throw	13.0	16.0	19.0	23.0	26.0	29.0	32.0	36.0	39.0	42.0	45.0	52.0	58.0	65.0
24 x 6	CFM	310	385	465	540	615	695	770	850	925	1000	1080	1235	1390	1540
Ak .771	Throw	14.0	18.0	21.0	25.0	28.0	32.0	35.0	39.0	43.0	46.0	50.0	57.0	64.0	71.0
20 x 8	CFM	345	435	520	610	695	780	870	955	1040	1130	1215	1390	1560	1735
Ak .868	Throw	15.0	19.0	23.0	26.0	30.0	34.0	38.0	41.0	45.0	49.0	53.0	60.0	68.0	75.0
30 x 6	CFM	385	485	580	675	775	870	965	1065	1160	1255	1355	1545	1740	1935
Ak .967	Throw	16.0	20.0	24.0	28.0	32.0	36.0	40.0	44.0	48.0	51.0	56.0	63.0	71.0	79.0
24 x 8	CFM	420	525	625	730	835	940	1045	1150	1255	1360	1465	1670	1880	2090
Ak 1.045	Throw	17.0	21.0	25.0	29.0	33.0	37.0	41.0	46.0	50.0	54.0	58.0	66.0	74.0	83.0
30 x 8	CFM	525	655	785	915	1050	1180	1310	1440	1570	1705	1835	2095	2360	2620
Ak 1.310	Throw	19.0	23.0	28.0	32.0	37.0	42.0	46.0	51.0	56.0	60.0	65.0	74.0	84.0	93.0
24 x 10	CFM	530	660	790	925	1055	1185	1320	1450	1585	1715	1845	2110	2375	2640
Ak 1.319	Throw	19.0	23.0	28.0	33.0	37.0	42.0	46.0	51.0	56.0	60.0	65.0	74.0	84.0	93.0
36 x 8	CFM	630	790	945	1105	1260	1420	1575	1735	1890	2050	2205	2520	2835	3150
Ak 1.576	Throw	20.0	25.0	30.0	36.0	41.0	46.0	51.0	56.0	61.0	66.0	71.0	81.0	91.0	101.0
24 x 12	CFM	635	795	955	1115	1275	1435	1595	1755	1910	2070	2230	2550	2865	3185
Ak 1.593	Throw	20.0	25.0	31.0	36.0	41.0	47.0	51.0	56.0	61.0	66.0	71.0	82.0	92.0	102.0
30 x 10	CFM	660	825	990	1160	1325	1490	1655	1820	1985	2150	2315	2645	2975	3310
Ak 1.654	Throw	21.0	26.0	31.0	37.0	42.0	47.0	52.0	57.0	63.0	68.0	73.0	83.0	94.0	104.0
36 x 10	CFM	795	995	1195	1390	1590	1790	1990	2190	2385	2585	2785	3180	3580	3980
Ak 1.989	Throw	23.0	29.0	34.0	40.0	46.0	51.0	57.0	63.0	68.0	74.0	80.0	91.0	103.0	114.0
30 x 12	CFM	800	1000	1200	1400	1600	1800	2000	2200	2395	2595	2795	3195	3595	3995
Ak 1.997	Throw	23.0	29.0	34.0	40.0	45.0	51.0	57.0	63.0	68.0	74.0	80.0	91.0	103.0	114.0
36 x 12	CFM	960	1200	1440	1680	1920	2160	2400	2640	2880	3120	3365	3845	4325	4805
Ak 2.402	Throw	25.0	31.0	38.0	44.0	50.0	56.0	63.0	69.0	75.0	81.0	88.0	100.0	113.0	125.0

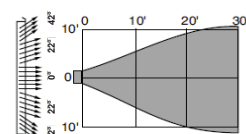
291L Single Deflection Register (Page 17)

4720OB Double Deflection Register w/OBD (Page 17)

Deflection C



Deflection E



Face Velocity	400	500	600	700	800	900	1000	1100	1200	1300	1400	1600	1800	2000
Pressure Loss	.010	.016	.022	.031	.040	.050	.062	.075	.090	.105	.122	.160	.202	.249
8 x 4	CFM	55	70	85	100	110	125	140	155	170	180	195	225	250
Ak. 140	Throw	5.0	6.0	7.5	8.5	9.5	11.0	12.0	14.0	15.0	16.0	17.0	20.0	22.0
10 x 4	CFM	70	90	105	125	140	160	180	195	215	230	250	285	320
Ak. 178	Throw	5.0	7.0	8.0	9.5	11.0	12.0	14.0	15.0	17.0	18.0	19.0	22.0	25.0
12 x 4	CFM	85	110	130	150	170	195	215	235	260	280	300	345	385
Ak. 215	Throw	6.0	8.0	9.0	11.0	12.0	14.0	15.0	17.0	18.0	20.0	21.0	24.0	27.0
14 x 4	CFM	100	125	150	175	200	225	250	275	300	330	355	405	455
Ak. 252	Throw	6.5	8.0	10.0	11.0	13.0	15.0	16.0	18.0	20.0	22.0	23.0	26.0	30.0
12 x 5	CFM	110	135	165	190	220	245	275	300	330	355	385	440	495
Ak. 274	Throw	7.0	8.5	10.0	12.0	14.0	15.0	17.0	19.0	21.0	22.0	24.0	28.0	31.0
10 x 6	CFM	110	140	165	195	220	245	275	305	330	360	385	440	495
Ak. 276	Throw	7.0	8.5	10.0	12.0	14.0	15.0	17.0	19.0	21.0	22.0	24.0	27.0	31.0
14 x 5	CFM	130	160	195	225	255	290	320	355	385	415	450	515	580
Ak. 321	Throw	7.5	9.0	11.0	13.0	15.0	17.0	18.0	21.0	22.0	24.0	26.0	30.0	37.0
12 x 6	CFM	135	165	200	235	265	300	335	365	400	435	465	535	600
Ak. 333	Throw	7.5	9.5	11.0	13.0	15.0	17.0	19.0	21.0	23.0	25.0	26.0	30.0	34.0
16 x 5	CFM	150	185	220	260	295	330	370	405	445	480	515	590	665
Ak. 369	Throw	8.0	10.0	12.0	14.0	16.0	18.0	20.0	22.0	24.0	26.0	28.0	32.0	40.0
14 x 6	CFM	155	195	235	275	315	350	390	430	470	510	545	625	705
Ak. 391	Throw	8.0	10.0	12.0	14.0	17.0	18.0	20.0	23.0	25.0	27.0	29.0	33.0	37.0
16 x 6	CFM	180	225	270	315	360	405	450	495	540	580	625	715	805
Ak. 448	Throw	9.0	11.0	13.0	15.0	18.0	20.0	22.0	24.0	26.0	28.0	31.0	35.0	39.0
20 x 5	CFM	185	230	280	325	370	415	465	510	555	600	650	740	835
Ak. 463	Throw	9.0	11.0	13.0	16.0	18.0	20.0	22.0	25.0	27.0	29.0	31.0	36.0	40.0
24 x 5	CFM	225	280	335	390	445	500	555	615	670	725	780	890	1005
Ak. 557	Throw	10.0	12.0	15.0	17.0	19.0	22.0	24.0	27.0	29.0	32.0	34.0	40.0	44.0
20 x 6	CFM	225	280	340	395	450	505	565	620	675	730	790	900	1015
Ak. 563	Throw	10.0	12.0	15.0	17.0	20.0	22.0	25.0	27.0	29.0	32.0	34.0	39.0	44.0
24 x 6	CFM	270	340	405	475	540	610	680	745	815	880	950	1085	1220
Ak. 678	Throw	11.0	14.0	16.0	19.0	21.0	24.0	27.0	30.0	32.0	35.0	38.0	43.0	49.0
20 x 8	CFM	305	380	460	535	610	685	765	840	915	990	1070	1220	1375
Ak. 763	Throw	11.0	14.0	17.0	20.0	23.0	26.0	29.0	32.0	34.0	37.0	40.0	46.0	52.0
30 x 6	CFM	340	425	510	595	680	765	850	935	1020	1105	1190	1360	1530
Ak. 850	Throw	12.0	15.0	18.0	21.0	24.0	27.0	30.0	33.0	36.0	39.0	42.0	48.0	54.0
24 x 8	CFM	370	460	550	645	735	825	920	1010	1105	1195	1285	1470	1655
Ak. 919	Throw	13.0	16.0	19.0	22.0	25.0	28.0	31.0	35.0	38.0	41.0	44.0	50.0	57.0
30 x 8	CFM	460	575	690	805	920	1035	1150	1265	1380	1500	1615	1845	2075
Ak. 1.152	Throw	14.0	15.0	21.0	25.0	28.0	32.0	35.0	39.0	42.0	46.0	49.0	56.0	63.0
24 x 10	CFM	465	580	695	810	930	1045	1160	1275	1390	1510	1625	1855	2090
Ak. 1.160	Throw	14.0	18.0	21.0	25.0	28.0	32.0	35.0	39.0	42.0	46.0	49.0	56.0	64.0
36 x 8	CFM	555	695	830	970	1110	1245	1385	1525	1665	1800	1940	2220	2495
Ak. 1.386	Throw	15.0	19.0	21.0	27.0	31.0	35.0	39.0	42.0	46.0	50.0	54.0	62.0	69.0
24 x 12	CFM	560	700	840	980	1120	1260	1400	1540	1680	1820	1960	2240	2520
Ak. 1.401	Throw	16.0	19.0	23.0	27.0	31.0	35.0	39.0	43.0	47.0	50.0	54.0	62.0	70.0
30 x 10	CFM	580	725	870	1020	1165	1310	1455	1600	1745	1890	2035	2325	2615
Ak. 1.454	Throw	16.0	20.0	24.0	28.0	32.0	36.0	39.0	43.0	47.0	51.0	55.0	63.0	71.0
36 x 10	CFM	700	875	1050	1225	1400	1575	1750	1925	2100	2275	2450	2800	3150
Ak. 1.749	Throw	17.0	22.0	26.0	30.0	35.0	39.0	43.0	48.0	52.0	56.0	61.0	69.0	78.0
30 x 12	CFM	700	880	1055	1230	1405	1580	1755	1930	2110	2285	2460	2810	3160
Ak. 1.756	Throw	17.0	22.0	26.0	30.0	35.0	39.0	43.0	48.0	52.0	56.0	61.0	69.0	78.0
36 x 12	CFM	845	1055	1265	1480	1690	1900	2110	2325	2535	2745	2955	3380	3800
Ak. 2.112	Throw	19.0	24.0	28.0	33.0	38.0	43.0	47.0	52.0	57.0	62.0	66.0	76.0	86.0

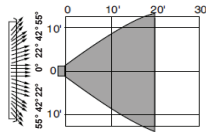
Terminal Velocity of 75 FPM

Face Velocity	400	500	600	700	800	900	1000	1100	1200	1300	1400	1600	1800	2000
Pressure Loss	.010	.016	.022	.031	.040	.050	.062	.075	.090	.105	.122	.160	.202	.249
8 x 4	CFM	50	60	75	85	100	110	125	135	150	160	175	200	225
Ak. 124	Throw	3.5	4.5	5.5	6.0	7.5	8.0	9.0	10.0	11.0	12.0	13.0	15.0	18.0
10 x 4	CFM	65	80	95	110	125	140	155	175	190	205	220	250	285
Ak. 157	Throw	4.0	5.0	6.0	7.0	8.0	9.0	10.0	11.0	12.0	13.0	14.0	16.0	19.0
12 x 4	CFM	75	95	115	135	150	170	190	210	230	245	265	305	340
Ak. 190	Throw	4.5	5.5	7.0	8.0	9.0	10.0	11.0	12.0	14.0	15.0	16.0	18.0	20.0
14 x 4	CFM	90	110	135	155	180	200	220	245	265	290	310	355	400
Ak. 222	Throw	5.0	6.0	7.5	8.5	10.0	11.0	12.0	13.0	14.0	16.0	17.0	19.0	22.0
12 x 5	CFM	95	120	145	170	195	220	240	265	290	315	340	385	435
Ak. 242	Throw	5.0	6.5	7.5	9.0	10.0	12.0	13.0	14.0	15.0	17.0	18.0	20.0	23.0
10 x 6	CFM	100	120	145	170	195	220	245	270	295	315	340	390	440
Ak. 244	Throw	5.0	6.5	7.5	9.0	10.0	11.0	13.0	14.0	15.0	16.0	18.0	20.0	23.0
14 x 5	CFM	115	140	170	200	225	255	285	310	340	370	400	455	510
Ak. 284	Throw	5.5	7.0	8.0	9.5	11.0	12.0	14.0	15.0	16.0	18.0	19.0	22.0	25.0
12 x 6	CFM	120	145	175	205	235	265	295	325	355	380	410	470	530
Ak. 294	Throw	5.5	7.0	8.5	9.5	11.0	13.0	14.0	15.0	17.0	18.0	19.0	22.0	25.0
16 x 5	CFM	130	165	195	230	260	295	325	360	390	425	455	520	585
Ak. 325	Throw	6.0	7.5	9.0	10.0	12.0	13.0	15.0	16.0	18.0	19.0	21.0	24.0	26.0
14 x 6	CFM	140	175	205	240	275	310	345	380	415	450	485	550	620
Ak. 345	Throw	6.0	7.5	9.0	11.0	12.0	14.0	15.0	17.0	18.0	20.0	21.0	24.0	27.0
16 x 6	CFM	160	200	240	275	315	355	395	435	475	515	555	635	715
Ak. 396	Throw	6.5	8.0	10.0	11.0	13.0	15.0	16.0	18.0	19.0	21.0	23.0	26.0	32.0
20 x 5	CFM	165	205	245	285	325	365	410	450	490	530	570	655	735
Ak. 408	Throw	6.5	8.5	10.0	11.0	13.0	15.0	17.0	18.0	20.0	21.0	23.0	26.0	30.0
24 x 5	CFM	195	245	295	345	395	445	490	540	590	640	690	785	885
Ak. 492	Throw	7.0	9.0	11.0	13.0	14.0	16.0	18.0	20.0	22.0	23.0	25.0	29.0	32.0
20 x 6	CFM	200	250	300	350	400	445	495	545	595	645	695	795	895
Ak. 497	Throw	7.5	9.0	11.0	13.0	15.0	16.0	18.0	20.0	22.0	24.0	25.0	29.0	33.0
24 x 6	CFM	240	300	360	420	480	540	600	660	720	775	835	955	1075
Ak. 598	Throw	8.0	10.0	12.0	14.0	16.0	18.0	20.0	22.0	24.0	26.0	28.0	32.0	36.0
20 x 8	CFM	270	335	405	470	540	605	675	740	810	875	940	1075	1210
Ak. 673	Throw	8.5	11.0	13.0	15.0	17.0	19.0	21.0	23.0	25.0	27.0	30.0	34.0	42.0
30 x 6	CFM	300	375	450	525	600	675	750	825	900	975	1050	1200	1350
Ak. 750	Throw	9.0	11.0	13.0	16.0	18.0	20.0	22.0	25.0	27.0	29.0	31.0	36.0	40.0
24 x 8	CFM	325	405	485	570	650	730	810	890	975	1055	1135	1300	1460
Ak. 811	Throw	9.5	12.0	14.0	16.0	19.0	21.0	23.0	25.0	28.0	30.0	32.0	37.0	42.0
30 x 8	CFM	400	500	610	710	815	915	1015	1120	1220	1320	1425	1625	1830
Ak. 1017	Throw	11.0	13.0	16.0	18.0	21.0	23.0	26.0	29.0	31.0	34.0	36.0	42.0	47.0
24 x 10	CFM	410	510	615	715	820	920	1025	1125	1230	1330	1430	1635	1840
Ak. 1023	Throw	10.0	13.0	16.0	18.0	21.0	23.0	26.0	29.0	31.0	34.0	36.0	42.0	47.0
36 x 8	CFM	490	610	735	855	980	1100	1220	1345	1465	1590	1710	1955	2200
Ak. 1222	Throw	11.0	14.0	17.0	20.0	23.0	26.0	28.0	31.0	34.0	37.0	40.0	46.0	51.0
24 x 12	CFM	495	620	740	865	990	1110	1235	1360	1485	1605	1730	1975	2225
Ak. 1236	Throw	11.0	14.0	17.0	20.0	23.0	26.0	29.0	32.0	34.0	37.0	40.0	46.0	52.0
30 x 10	CFM	515	640	770	900	1025	1155	1285	1410	1540	1670	1795	2055	2310
Ak. 1283	Throw	12.0	15.0	17.0	20.0	23.0	26.0	29.0	32.0	35.0	38.0	42.0	46.0	52.0
36 x 10	CFM	615	750	925	1080	1235	1390	1545	1700	1850	2005	2160	2470	2775
Ak. 1543	Throw	13.0	16.0	19.0	22.0	26.0	29.0	32.0	35.0	38.0	42.0	45.0	51.0	57.0
30 x 12	CFM	620	775	930	1085	1240	1395	1550	1705	1860	2015	2170	2480	2790
Ak. 1550	Throw	13.0	16.0	19.0	22.0	26.0	29.0	32.0	35.0	39.0	42.0	45.0	51.0	58.0
36 x 12	CFM	745	930	1120	1305	1490	1680	1865	2050	2235	2425	2610	2980	3355
Ak. 1864	Throw	14.0	18.0	21.0	25.0	28.0	32.0	35.0	39.0	42.0	46.0	49.0	56.0	63.0

Engineering Data

291L Single Deflection Register (Page 17) 4720OB Double Deflection Register w/ OBD (Page 17)

Deflection G



Face Velocity	400	500	600	700	800	900	1000	1100	1200	1300	1400	1600	1800	2000
Pressure Loss	.010	.016	.022	.031	.040	.050	.062	.075	.090	.105	.122	.160	.202	.249
8 x 4	CFM	50	60	70	85	95	105	120	130	145	155	165	190	215
Ak .119	Throw	2.5	3.0	4.0	4.5	5.0	5.5	6.5	7.0	8.0	8.5	9.0	10.0	12.0
10 x 4	CFM	55	70	85	100	115	130	145	155	170	185	200	230	255
Ak .143	Throw	2.5	3.5	4.0	5.0	5.5	6.5	7.0	7.5	8.0	9.0	9.5	11.0	12.0
12 x 4	CFM	70	85	105	120	140	155	175	190	210	225	240	275	310
Ak .173	Throw	3.0	3.5	4.5	5.5	6.0	7.0	7.5	8.5	9.0	10.0	11.0	12.0	14.0
14 x 4	CFM	80	100	120	140	160	180	200	220	240	265	285	325	365
Ak .202	Throw	3.0	4.0	5.0	5.5	6.5	7.5	8.0	9.0	9.5	11.0	12.0	13.0	15.0
12 x 5	CFM	90	110	130	155	175	200	220	240	265	285	310	350	395
Ak .220	Throw	3.5	4.5	5.0	6.0	7.0	8.0	8.5	9.5	10.0	11.0	12.0	14.0	15.0
10 x 6	CFM	90	110	135	155	180	200	220	245	265	290	310	355	400
Ak .222	Throw	3.5	4.5	5.0	6.0	7.0	7.5	8.5	9.5	10.0	11.0	12.0	14.0	15.0
14 x 5	CFM	105	130	155	180	205	230	260	285	310	335	360	415	465
Ak .258	Throw	4.0	4.5	5.5	6.5	7.5	8.5	9.5	10.0	11.0	12.0	13.0	15.0	17.0
12 x 6	CFM	105	135	160	190	215	240	270	295	320	350	375	430	480
Ak .268	Throw	4.0	5.0	5.5	6.5	7.5	8.5	9.5	10.0	11.0	12.0	13.0	15.0	17.0
16 x 5	CFM	120	150	180	205	235	265	295	325	355	385	415	475	535
Ak .296	Throw	4.0	5.0	6.0	7.0	8.0	9.0	10.0	11.0	12.0	13.0	14.0	16.0	18.0
14 x 6	CFM	125	155	190	220	250	285	315	345	375	410	440	500	565
Ak .314	Throw	4.0	5.0	6.0	7.0	8.0	9.5	10.0	11.0	12.0	13.0	14.0	16.0	18.0
16 x 6	CFM	145	180	215	250	290	325	360	395	430	470	505	575	650
Ak .360	Throw	4.5	5.5	6.5	7.5	9.0	10.0	11.0	12.0	13.0	14.0	15.0	17.0	20.0
20 x 5	CFM	150	185	225	260	300	335	370	410	445	485	520	595	670
Ak .372	Throw	4.5	5.5	6.5	7.5	9.0	10.0	11.0	12.0	13.0	14.0	15.0	18.0	20.0
24 x 5	CFM	180	225	270	315	360	405	450	495	540	580	625	715	805
Ak .448	Throw	5.0	7.5	7.5	8.5	10.0	11.0	12.0	13.0	15.0	16.0	17.0	19.0	22.0
20 x 6	CFM	180	225	270	315	360	410	455	500	545	590	635	725	815
Ak .453	Throw	5.0	6.0	7.5	8.5	10.0	11.0	12.0	14.0	15.0	16.0	17.0	20.0	22.0
24 x 6	CFM	220	275	325	380	435	490	545	600	655	710	765	870	1090
Ak .545	Throw	5.5	7.0	8.0	9.5	11.0	12.0	13.0	15.0	16.0	18.0	19.0	21.0	24.0
20 x 8	CFM	245	305	370	430	490	555	615	675	735	800	860	980	1105
Ak .614	Throw	5.5	7.0	8.5	10.0	11.0	13.0	14.0	16.0	17.0	19.0	20.0	23.0	26.0
30 x 6	CFM	275	340	410	480	545	615	685	750	820	890	955	1095	1230
Ak .683	Throw	6.0	7.5	9.0	11.0	12.0	14.0	15.0	17.0	18.0	20.0	21.0	24.0	27.0
24 x 8	CFM	295	370	445	515	590	665	740	815	885	960	1035	1180	1330
Ak .739	Throw	6.5	8.0	9.5	11.0	13.0	14.0	16.0	17.0	19.0	20.0	22.0	25.0	28.0
30 x 8	CFM	370	465	555	650	740	835	925	1020	1110	1205	1295	1480	1665
Ak .926	Throw	7.0	9.0	10.0	12.0	14.0	16.0	17.0	19.0	21.0	23.0	24.0	28.0	31.0
24 x 10	CFM	375	465	560	650	745	840	930	1025	1120	1210	1305	1490	1675
Ak .932	Throw	7.0	9.0	11.0	12.0	14.0	16.0	18.0	19.0	21.0	23.0	25.0	28.0	35.0
36 x 8	CFM	445	555	670	780	890	1005	1115	1225	1335	1450	1560	1780	2005
Ak 1.114	Throw	7.5	9.5	12.0	13.0	15.0	17.0	19.0	21.0	23.0	25.0	27.0	31.0	39.0
24 x 12	CFM	450	565	675	790	900	1015	1125	1240	1350	1465	1575	1800	2025
Ak 1.126	Throw	7.5	9.5	12.0	14.0	15.0	17.0	19.0	21.0	23.0	25.0	27.0	31.0	35.0
30 x 10	CFM	470	585	700	820	935	1050	1170	1285	1405	1520	1635	1870	2105
Ak 1.169	Throw	8.0	10.0	12.0	14.0	16.0	18.0	20.0	22.0	24.0	26.0	27.0	31.0	39.0
36 x 10	CFM	560	705	845	985	1125	1265	1405	1545	1685	1830	1970	2250	2530
Ak 1.406	Throw	8.5	11.0	13.0	15.0	17.0	19.0	22.0	24.0	26.0	28.0	30.0	35.0	43.0
30 x 12	CFM	565	705	845	990	1130	1270	1410	1555	1695	1835	1975	2260	2540
Ak 1.412	Throw	8.5	11.0	13.0	15.0	17.0	19.0	22.0	24.0	26.0	28.0	30.0	35.0	43.0
36 x 12	CFM	680	850	1020	1190	1360	1530	1700	1870	2040	2210	2375	2715	3055
Ak 1.698	Throw	9.5	12.0	14.0	17.0	19.0	21.0	24.0	26.0	29.0	31.0	33.0	38.0	48.0

Terminal Velocity of 75 FPM

470 Fixed Bar Return Air Grille (No Damper) (Page 17) 490 Fixed Bar Filter Grille (Page 17)

Face Velocity	300	400	500	600	700	800	900	1000
6 x 6	CFM	45	60	75	90	105	120	135
Ak .150	Ps	.010	.019	.029	.046	.060	.075	.100
8 x 8	CFM	84	112	140	169	197	225	253
Ak .280	Ps	.010	.019	.029	.046	.060	.075	.100
10 x 10	CFM	135	180	225	270	315	360	405
Ak .450	Ps	.011	.019	.030	.042	.057	.072	.094
12 x 6	CFM	96	127	159	191	223	255	287
Ak .320	Ps	.011	.019	.029	.045	.059	.074	.099
14 x 6	CFM	112	150	187	225	262	300	337
Ak .370	Ps	.011	.019	.029	.044	.058	.074	.097
14 x 8	CFM	152	203	254	304	355	406	456
Ak .510	Ps	.011	.019	.030	.041	.056	.072	.093
12 x 12	CFM	198	264	330	395	461	527	593
Ak .660	Ps	.011	.019	.030	.039	.054	.070	.089
24 x 8	CFM	267	355	444	533	622	711	800
Ak .890	Ps	.011	.020	.031	.040	.055	.074	.091
18 x 12	CFM	301	401	502	602	703	803	903
Ak 1.000	Ps	.011	.020	.031	.041	.056	.076	.092
30 x 8	CFM	336	448	560	672	784	895	1007
Ak 1.120	Ps	.011	.020	.031	.041	.056	.078	.093
24 x 12	CFM	406	541	676	811	946	1082	1217
Ak 1.350	Ps	.011	.020	.031	.043	.058	.081	.095
18 x 18	CFM	458	611	764	917	1069	1222	1375
Ak 1.530	Ps	.011	.020	.032	.043	.058	.083	.096
30 x 12	CFM	511	682	852	1023	1193	1364	1534
Ak 1.700	Ps	.011	.020	.032	.044	.059	.084	.097
20 x 20	CFM	571	761	951	1141	1331	1522	1712
Ak 1.900	Ps	.011	.020	.032	.044	.059	.086	.098
36 x 12	CFM	618	824	1030	1236	1442	1649	1855
Ak 2.060	Ps	.011	.020	.032	.045	.060	.087	.099
24 x 20	CFM	690	920	1150	1380	1610	1840	2070
Ak 2.300	Ps	.011	.020	.032	.045	.060	.089	.100
30 x 18	CFM	781	1041	1301	1561	1822	2082	2342
Ak 2.600	Ps	.011	.020	.032	.045	.060	.090	.100
24 x 24	CFM	835	1114	1392	1671	1949	2228	2506
Ak 2.780	Ps	.011	.020	.031	.046	.060	.090	.100
36 x 18	CFM	946	1261	1576	1892	2207	2522	2838
Ak 3.150	Ps	.011	.019	.031	.045	.059	.090	.099
30 x 24	CFM	1057	1410	1762	2115	2467	2820	3172
Ak 3.520	Ps	.011	.019	.030	.045	.058	.089	.098
36 x 24	CFM	1284	1712	2140	2568	2996	3424	3852
Ak 4.280	Ps	.011	.018	.028	.043	.055	.085	.092
30 x 30	CFM	1341	1789	2236	2683	3130	3577	4024
Ak 4.470	Ps	.011	.017	.028	.042	.054	.083	.091
36 x 30	CFM	1633	2177	2721	3265	3810	4354	4898
Ak 5.440	Ps	.010	.015	.024	.037	.047	.070	.079
48 x 24	CFM	1751	2335	2919	3503	4086	4670	5254
Ak 5.840	Ps	.009	.014	.022	.035	.043	.064	.073
36 x 36	CFM	1992	2656	3320	3984	4648	5312	5976
Ak 6.640	Ps	.008	.012	.017	.029	.034	.048	.059
48 x 36	CFM	2742	3656	4570	5484	6398	7312	8226
Ak 9.140	Ps	.008	.012	.017	.029	.034	.048	.059
48 x 48	CFM	3808	5077	6346	7615	8884	10154	11423
Ak 12.700	Ps	.008	.012	.017	.029	.034	.048	.059

RA204 Fixed Bar Return Air Grille (Page 18)
RAF204 Fixed Bar Filter Grille (Page 18)

Face Velocity		400	500	600	700	800	900	1000
6 x 6	CFM	40	60	70	80	90	100	110
Ak .110	Ps	.037	.058	.083	.113	.148	.189	.232
8 x 8	CFM	100	120	140	170	190	220	240
Ak .240	Ps	.032	.050	.072	.098	.128	.163	.200
12 x 6	CFM	110	140	170	190	220	250	280
Ak .280	Ps	.031	.048	.069	.094	.122	.155	.191
14 x 6	CFM	30	170	200	230	270	300	330
Ak .330	Ps	.029	.045	.065	.088	.114	.145	.179
14 x 8	CFM	190	230	280	330	370	420	460
Ak .460	Ps	.025	.039	.055	.075	.097	.123	.152
12 x 12	CFM	250	310	370	430	490	550	610
Ak .610	Ps	.021	.032	.046	.062	.079	.100	.125
24 x 8	CFM	340	420	500	590	670	760	840
Ak .840	Ps	.020	.032	.046	.061	.079	.100	.124
18 x 12	CFM	380	480	570	670	760	860	950
Ak .950	Ps	.020	.032	.046	.061	.080	.101	.124
30 x 8	CFM	430	530	640	750	850	960	1100
Ak	Ps	.020	.032	.046	.061	.080	.101	.124
24 x 12	CFM	520	650	780	900	1000	1200	1300
Ak	Ps	.020	.032	.046	.062	.081	.102	.124
18 x 18	CFM	580	730	880	1000	1200	1300	1500
Ak	Ps	.020	.032	.046	.062	.081	.102	.124
30 x 12	CFM	650	820	980	1100	1300	1500	1600
Ak	Ps	.021	.032	.046	.062	.082	.103	.124
20 x 20	CFM	730	910	1100	1300	1500	1600	1800
Ak	Ps	.021	.032	.046	.063	.083	.104	.124
36 x 12	CFM	790	990	1200	1400	1600	1800	2000
Ak	Ps	.021	.032	.046	.063	.084	.105	.125
24 x 20	CFM	880	1100	1300	1500	1800	2000	2200
Ak	Ps	.021	.032	.047	.064	.085	.107	.126
30 x 18	CFM	1000	1200	1500	1700	2000	2200	2500
Ak	Ps	.021	.033	.048	.065	.087	.109	.128
24 x 24	CFM	1100	1300	1600	1900	2100	2400	2700
Ak	Ps	.022	.033	.048	.066	.088	.110	.130
36 x 18	CFM	1200	1500	1800	2100	2400	2700	3000
Ak	Ps	.023	.035	.051	.069	.092	.116	.137
30 x 24	CFM	1300	1700	2000	2400	2700	3000	3400
Ak	Ps	.024	.037	.053	.074	.096	.121	.144
36 x 24	CFM	1600	2000	2400	2900	3300	3700	4100
Ak	Ps	.027	.040	.058	.080	.105	.132	.158
30 x 30	CFM	1700	2100	2600	3000	3400	3800	4300
Ak	Ps	.027	.041	.060	.081	.107	.135	.162
36 x 30	CFM	2100	2600	3100	3600	4100	4600	5200
Ak	Ps	.030	.045	.066	.090	.117	.149	.179
48 x 24	CFM	2200	2800	3300	3900	4400	5000	5500
Ak	Ps	.031	.047	.069	.093	.122	.154	.186
36 x 36	CFM	2500	3100	3700	4400	5000	5600	6200
Ak	Ps	.034	.051	.074	.100	.130	.165	.200
48 x 36	CFM	3400	4200	5100	5900	6800	7600	8500
Ak	Ps	.025	.038	.055	.075	.098	.124	.153
48 x 48	CFM	4600	5800	6900	8100	9200	10000	12000
Ak	Ps	.022	.034	.048	.066	.086	.109	.134

359TW, 359TIW T-Bar Filter Grille (Page 19)

Average Face Velocity		300	400	500	600
359T	CFM	730	975	1220	1465
Ak 2.440	-Ps	.017	.030	.047	.067
359-TI					
w/12" collar	CFM	670	890	1115	1340
Ak 2.230	-Ps	.084	.147	.230	.330
w/14" collar	CFM	680	905	1130	1355
Ak 2.260	-Ps	.060	.105	.165	.240
w/16" collar	CFM	695	930	1160	1390
Ak 2.320	-Ps	.039	.068	.106	.155

Note: Tested without filters. Typical capacity is 2 CFM per square inch of nominal filter area. Recommended face velocity is 300-450 FPM. Velocities higher will decrease filter performance, increase flow resistance, and possibly be of noise concern. Velocity measured 1" from face.

326TW T-Bar Filter Grille (Page 19)

20 x 20	CFM	540	720	900	1081
Ak 1.800	Ps	.018	.033	.051	.071

326TPIR6W T-Bar Filter Grille With Deep Plenum (Page 20)

6"	CFM	100	150	200	225	250	275	300
Diameter	NC	<20	<20	21	24	27	30	32
Inlet	Static Pressure	-.057	-.127	-.226	-.287	-.354	-.428	-.509
8"	CFM	150	200	250	300	400	500	550
Diameter	NC	<20	<20	<20	<20	25	31	36
Inlet	Static Pressure	-.040	-.072	-.112	-.161	-.287	-.448	-.542
10"	CFM	300	400	500	600	700	800	850
Diameter	NC	<20	<20	<20	24	28	33	35
Inlet	Static Pressure	-.066	-.117	-.183	-.264	-.359	-.469	-.530
12"	CFM	400	500	600	700	800	1000	1200
Diameter	NC	<20	<20	<20	<20	22	28	34
Inlet	Static Pressure	-.057	-.088	-.127	-.173	-.226	-.354	-.509
14"	CFM	600	700	800	1000	1200	1400	1600
Diameter	NC	<20	<20	<20	20	24	28	34
Inlet	Static Pressure	-.069	-.094	-.122	-.191	-.275	-.374	-.489
16"	CFM	800	1000	1200	1600	1800	2000	2200
Diameter	NC	<20	<20	<20	25	28	31	36
Inlet	Static Pressure	-.072	-.112	-.161	-.287	-.363	-.448	-.542

490TW, 490TIW T-Bar Filter Grille Fixed Bar (Page 20)

470TW T-Bar Fixed Return Air Grille (Page 21)

Model 490TW & 490TIW

Face Velocity		300	400	500	600	700
20 x 20 Ak 2.25	CFM	675	900	1125	1350	1575
	Static Pressure (in W.C.)	-0.024	-0.042	-0.065	-0.094	-0.128
	Total Pressure (in W.C.)	-0.018	-0.032	-0.050	-0.072	-0.098

Note: Tested without filters. Typical capacity is 2 CFM per square inch of nominal filter area. Recommended face velocity is 300-450 FPM. Velocities higher will decrease filter performance, increase flow resistance, and possibly be of noise concern. Velocity measured 1" from face.

Model 470TW

Face Velocity*		300	400	500	600
22X22 Ak 2.28	CFM	684	912	1140	1368
	Ps	.018	.033	.051	.071
22X46 6.68	CFM	2004	2672	3340	4008
	Ps	.018	.032	.051	.073

8000W, 8000R6W T-Bar Egg Crate Return Grille (Page 21)

RAF204TW T-Bar Filter Grille Fixed Bar (Page 21)

RA204TW T-Bar Fixed Return Air Grille (Page 22)

Average Face Velocity		300	400	500	600	700
8000W & 8000WR6						
22 x 22 Ak 2.420	CFM	725	970	1210	1450	1695
	-Ps	.004	.006	.010	.014	.020
RA204TW						
22 x 22 Ak 2.610	CFM	785	1045	1305	1565	1825
	-Ps	.015	.030	.043	.062	.084
RAF204TW						
20 x 20 Ak 2.170	CFM	650	870	1085	1300	1520
	-Ps	.015	.025	.040	.060	.080

PTW24x24 T-Bar Perforated Face Only (Page 23)

Neck Velocity		200	300	400	500	600	700	800
24" x 24"	CFM	735	1100	1470	1835	2200	2570	2935
	-Ps	.008	.018	.032	.050	.070	.095	.130

8100W Egg Crate Filter Grille, Aluminum (Page 22)

Average Face Velocity		300	400	500	600	700	800	900	1000
20 x 20 Ak 2.57	CF	771	1028	1285	1542	1799			
	-Ps	.003	.006	.010	.014	.019			

Note: Tested without filters. Typical capacity is 2 CFM per square inch of nominal filter area. Recommended face velocity is 300-450 FPM. Velocities higher will decrease filter performance, increase flow resistance, and possibly be of noise concern. Velocity measured 1" from face.

6004/6006W Perforated Face T-Bar Supply With Insulated Back (Page 23)

Neck Velocity		300	400	500	600	700	800	900	1000	1100
6" Diameter An .200	CFM	60	80	100	120	140	160	180	200	220
	Ps	.008	.011	.017	.024	.032	.042	.054	.066	.080
	NC	<20	<20	<20	<20	24	27	32	36	38
	Throw	1.0	2.0	3.0	3.0	4.0	4.0	5.0	5.0	6.0
8" Diameter An .350	CFM	105	140	175	210	245	280	310	350	385
	Ps	.008	.011	.017	.024	.034	.043	.054	.068	.083
	NC	<20	<20	<20	20	24	27	30	34	38
	Throw	2.0	3.0	4.0	4.0	5.0	6.0	7.0	8.0	8.5
10" Diameter An .540	CFM	165	220	270	325	385	430	490	550	600
	Ps	.008	.012	.017	.024	.032	.043	.056	.068	.082
	NC	<20	<20	20	24	29	33	36	39	42
	Throw	2.0	3.0	4.0	5.0	5.0	6.0	7.0	8.0	9.0
12" Diameter An .780	CFM	230	310	390	470	550	610	700	780	870
	Ps	.009	.016	.026	.037	.050	.065	.080	.100	.125
	NC	<20	<20	20	23	26	31	34	37	40
	Throw	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0	11.0
14" Diameter An 1.070	CFM	315	430	535	640	750	855	960	1090	1200
	Ps	.009	.016	.026	.037	.050	.065	.083	.125	.150
	NC	<20	20	25	30	35	39	43	45	48
	Throw	3.0	5.0	6.0	7.0	8.0	9.0	10.0	11.0	12.0

Note: The use of a balancing hood is recommended to balance the system.
NC is based on 10dB room attenuation (Re: 10⁻¹² watts) ASHRAE 36-72.

7000W Perforated Face T-Bar Return (Page 23)

Neck Velocity		200	300	400	500	600	700	800
6" Diameter	CFM	40	60	80	100	120	135	155
	-Ps	.003	.007	.012	.019	.027	.034	.044
8" Diameter	CFM	70	105	140	175	210	245	380
	-Ps	.004	.010	.017	.026	.037	.051	.068
10" Diameter	CFM	110	165	220	275	325	380	435
	-Ps	.005	.011	.020	.030	.043	.058	.076
12" Diameter	CFM	155	235	315	395	470	550	630
	-Ps	.005	.012	.021	.033	.046	.063	.083
14" Diameter	CFM	215	320	430	535	640	750	855
	-Ps	.006	.013	.023	.035	.050	.069	.090
16" Diameter	CFM	280	420	560	700	840	975	1115
	-Ps	.008	.018	.031	.048	.070	.094	.120
18" Diameter	CFM	355	530	705	885	1060	1235	1415
	-Ps	.008	.018	.031	.049	.070	.092	.125

9000W Curved-Blade Perforated T-Bar Supply (Page 24)

One-Way Supply								
		Neck Velocity - V _N						
Neck Size		300	400	500	600	700	800	1000
6"	CFM	60	80	100	120	140	160	200
	Ps	.060	.080	.100	.150	.200	.260	.400
	Throw	2.5-4.0-5.0	3.5-5.0-6.0	4.0-6.0-7.0	4.5-7.0-8.5	5.5-8.0-9.5	6.5-9.5-11.5	8.0-12.0-14.5
	NC	<20	<20	<20	22	26	30	>45
8"	CFM	105	140	175	210	245	280	350
	Ps	.080	.110	.160	.240	.320	.420	.650
	Throw	4.0-6.0-7.0	5.5-8.0-9.5	6.5-10.0-12.0	8.0-12.0-14.5	7.5-14.0-17.0	10.5-10.6-19.0	13.5-20.0-24.0
	NC	<20	<20	21	26	31	39	>45
10"	CFM	165	220	275	325	380	435	545
	Ps	.080	.110	.170	.250	.320	.430	.660
	Throw	4.5-7.0-8.5	6.5-9.5-11.5	8.0-12.0-14.5	9.5-14.5-17.5	11.0-16.5-20.0	12.5-19.0-23.0	16.0-24.0-29.0
	NC	<20	<20	23	26	34	40	>45
12"	CFM	235	315	395	470	550	630	790
	Ps	.080	.110	.170	.250	.340	.440	.690
	Throw	5.5-8.5-10.0	7.5-11.0-13.5	9.5-14.0-17.0	11.0-16.5-20.0	13.0-19.5-26.5	14.5-22.0-26.5	18.5-27.5-33.0
	NC	<20	20	25	33	40	45	>45
14"	CFM	325	430	535	640	750	860	1075
	Ps	.110	.140	.210	.300	.420	.550	.860
	Throw	4.5-7.0-8.5	6.5-9.5-11.5	8.0-12.0-14.5	9.5-14.5-17.5	11.5-17.0-20.5	13.0-17.5-23.5	16.5-24.5-29.5
	NC	<20	20	25	30	38	44	>45
16"	CFM	420	560	700	840	980	1120	1400
	Ps	.020	.040	.060	.080	.110	.140	.220
	Throw	5.0-8.0-10.0	7.0-10.0-12.0	10.0-13.0-16.0	12.0-15.0-18.0	13.0-18.0-21.0	14.0-19.0-24.0	18.0-26.0-30.0
	NC	<20	<20	26	34	39	43	>45

Two-Way Supply								
		Neck Velocity - V _N						
Neck Size		300	400	500	600	700	800	1000
6"	CFM	60	80	100	120	140	160	200
	Ps	.050	.070	.090	.130	.170	.220	.340
	Throw	2.0-3.0-3.5	2.5-3.5-4.5	3.5-5.0-6.0	4.0-5.5-6.5	4.5-6.5-8.0	5.0-7.5-9.0	6.5-9.5-11.5
	NC	<20	<20	<20	20	24	28	37
8"	CFM	105	140	175	210	245	280	350
	Ps	.040	.054	.084	.120	.165	.215	.330
	Throw	3.0-4.5-5.5	3.5-5.5-6.5	4.5-7.0-8.5	5.5-8.5-10.0	6.5-9.5-11.5	7.5-11.0-13.0	9.5-14.0-17.0
	NC	<20	<20	<20	23	29	36	43
10"	CFM	165	220	275	325	380	435	545
	Ps	.060	.080	.130	.180	.250	.310	.510
	Throw	4.5-6.5-7.5	5.5-8.5-10.0	7.0-10.5-12.5	8.5-12.5-15.0	9.5-14.5-17.5	11.0-16.5-20.0	14.0-21.0-25.0
	NC	<20	<20	<20	25	29	37	45
12"	CFM	235	315	395	470	550	630	790
	Ps	.050	.070	.110	.150	.210	.270	.430
	Throw	4.5-6.5-7.5	5.5-8.5-10.0	7.0-10.5-12.5	8.5-12.5-15.0	10.0-15.0-18.0	11.5-17.0-20.5	14.5-21.5-26.0
	NC	<20	<20	23	30	37	43	>45
14"	CFM	325	430	535	640	750	860	1075
	Ps	.050	.070	.100	.150	.200	.260	.410
	Throw	3.5-5.5-6.5	4.5-7.0-8.5	6.0-9.0-11.0	7.0-10.5-12.5	8.5-12.5-15.0	9.5-14.0-17.0	11.5-17.5-21.0
	NC	<20	<20	22	28	35	40	>45
16"	CFM	420	560	700	840	980	1120	1400
	Ps	.020	.040	.060	.080	.110	.140	.220
	Throw	4.0-6.0-8.0	5.0-8.0-9.0	7.0-10.0-12.0	9.0-11.0-13.0	10.0-14.0-16.0	11.0-16.0-19.0	13.0-19.0-24.0
	NC	<20	<20	26	34	39	43	>45

Three-Way Supply								
		Neck Velocity - V _N						
Neck Size		300	400	500	600	700	800	1000
6"	CFM	60	80	100	120	140	160	200
	Ps	.020	.030	.040	.060	.080	.100	.150
	Throw	2.5-3.5-4.5	3.0-4.5-5.5	3.5-5.5-6.5	4.5-6.5-8.0	5.0-7.5-9.0	5.5-8.5-10.5	7.5-11.0-13.5
	NC	<20	<20	<20	<20	23	25	34
8"	CFM	105	140	175	210	245	280	350
	Ps	.020	.030	.040	.060	.080	.100	.160
	Throw	3.0-4.0-5.0	4.0-5.5-6.5	4.5-7.0-8.5	5.5-8.0-9.5	6.5-9.5-11.5	7.5-11.0-13.5	9.0-13.5-16.0
	NC	<20	<20	<20	21	26	33	39
10"	CFM	165	220	275	325	380	435	545
	Ps	.030	.040	.060	.090	.120	.150	.240
	Throw	4.5-6.5-8.0	5.5-8.5-10.5	7.0-10.5-12.5	8.5-12.5-15.0	9.5-14.5-17.5	11.5-17.0-20.5	14.0-21.0-25.0
	NC	<20	<20	<20	21	26	34	41
12"	CFM	235	315	395	470	550	630	790
	Ps	.020	.030	.050	.070	.100	.130	.200
	Throw	4.5-6.5-8.0	5.5-8.5-10.0	7.0-10.5-12.5	8.5-12.5-15.0	10.0-14.5-17.5	11.0-16.5-20.0	13.5-20.5-24.5
	NC	<20	<20	21	27	34	39	44
14"	CFM	325	430	535	640	750	860	1075
	Ps	.020	.030	.050	.070	.100	.130	.200
	Throw	4.0-5.0-7.0	5.5-8.0-9.5	6.0-9.0-11.0	8.0-12.0-14.5	9.5-14.0-17.0	10.5-16.0-19.5	13.5-20.0-24.0
	NC	<20	<20	20	25	32	37	44
16"	CFM	420	560	700	840	980	1120	1400
	Ps	.020	.040	.060	.080	.110	.140	.220
	Throw	5.0-6.0-8.0	6.0-9.0-10.0	7.0-9.0-12.0	9.0-13.0-15.0	10.0-13.0-16.0	11.0-15.0-18.0	12.0-18.0-21.0
	NC	<20	<20	26	34	39	43	>45

Engineering Data

9000W Curved-Blade Perforated T-Bar Supply (Page 24)

Four-Way Supply		Neck Velocity - V _N							
Neck Size		300	400	500	600	700	800	1000	1200
6"	CFM	60	80	100	120	140	160	200	240
	Ps	<.010	.010	.020	.030	.040	.060	.080	.120
	NC	1.5-2.0-2.5	1.5-2.5-3.0	2.0-3.0-4.0	2.5-3.5-4.5	3.0-4.5-5.5	3.5-5.0-6.0	4.0-6.0-7.0	5.0-7.5-9.0
	Throw	<20	<20	<20	<20	21	24	32	38
8"	CFM	105	140	175	210	245	280	350	420
	Ps	<.010	.010	.020	.030	.040	.060	.090	.120
	NC	1.5-2.5-3.0	2.0-3.0-4.0	2.5-4.0-5.0	3.5-5.0-6.0	4.0-5.5-7.0	4.5-6.5-8.0	5.5-8.0-10.0	6.5-9.5-11.5
	Throw	<20	<20	<20	<20	25	31	37	42
10"	CFM	165	220	275	325	380	435	545	650
	Ps	0.01	.020	.030	.040	.060	.070	.110	.160
	NC	3.0-4.0-5.0	3.5-5.5-6.5	4.5-6.5-8.0	5.5-8.0-10.0	6.0-9.0-11.0	7.0-10.5-12.5	9.0-13.0-15.5	10.5-15.5-18.5
	Throw	<20	<20	<20	21	27	32	39	44
12"	CFM	235	315	395	470	550	630	790	940
	Ps	.010	.020	.030	.040	.060	.080	.120	.170
	NC	2.5-3.5-4.0	3.0-4.5-5.5	3.5-5.5-6.5	4.5-7.0-8.5	5.5-8.0-9.5	6.0-7.0-11.0	7.5-11.5-14.0	9.0-13.5-16.0
	Throw	<20	<20	20	26	32	37	42	>45
14"	CFM	325	430	535	640	750	860	1075	1275
	Ps	.010	.020	.030	.050	.060	.080	.130	.180
	NC	2.0-3.0-3.5	2.5-4.0-5.0	3.5-5.0-6.0	4.0-6.0-7.0	4.5-7.0-8.5	5.5-8.0-10.0	6.5-10.0-12.0	7.5-11.5-14.0
	Throw	<20	<20	<20	24	30	35	42	>45
16"	CFM	420	560	700	840	980	1120	1400	1680
	Ps	.020	.040	.060	.080	.110	.140	.220	.260
	NC	3.0-4.0-5.0	4.0-6.0-7.0	5.0-8.0-11.0	6.0-9.0-12.0	8.0-11.0-14.0	9.0-13.0-16.0	10.0-15.0-19.0	12.0-17.0-22.0
	Throw	<20	<20	26	34	39	43	>45	>45

9100W Curved-Blade Perforated T-Bar Return (Page 24)

Neck Velocity - V _N		200	300	400	500	600	700	800
-Ps		.01	.02	.03	.05	.07	.10	.12
6" Diameter	CFM	40	60	80	100	120	140	160
8" Diameter	CFM	70	105	140	175	210	245	280
10" Diameter	CFM	110	165	220	275	330	385	440
12" Diameter	CFM	160	240	320	395	475	550	630
14" Diameter	CFM	215	320	430	535	640	750	855
16" Diameter	CFM	281	420	563	698	836	975	1114
18" Diameter	CFM	356	531	712	881	1056	1231	1406

6400W Series T-Bar High-Volume Diffuser (Page 25)

5000W 2 Cone T-Bar Diffuser With Collar (Page 25)

5300W/5300R6W 3 Cone T-Bar Diffuser With Collar (Page 26)

Neck Velocity		400	500	600	700	800	900	1000	1200	1400	1600
6"	CFM	80	100	120	135	155	175	195	235	275	315
	Ps	.008	.012	.017	.021	.028	.035	.043	.063	.086	.112
	NC	<20	<20	<20	<20	<20	20	25	30	35	35
	Throw	2.0	3.0	3.0	3.5	4.0	4.5	5.0	6.0	7.0	8.0
8"	CFM	140	175	210	245	280	315	350	420	490	560
	Ps	.010	.015	.022	.029	.038	.049	.060	.086	.117	.150
	NC	<20	<20	<20	<20	20	25	30	35	35	40
	Throw	3.5	4.5	5.5	6.5	7.0	8.0	9.0	10.5	12.5	14.5
10"	CFM	220	270	325	380	435	490	545	655	765	870
	Ps	.014	.021	.030	.041	.054	.068	.084	.122	.167	.212
	NC	<20	<20	<20	20	25	30	35	40	45	45
	Throw	5.5	7.0	8.5	10.0	11.0	12.5	14.0	17.0	19.5	22.0
12"	CFM	315	390	470	550	630	705	785	940	1100	1255
	Ps	.015	.023	.033	.045	.060	.072	.094	.132	.180	.230
	NC	<20	<20	20	25	30	35	40	45	45	45
	Throw	6.0	7.5	9.0	10.5	12.0	13.5	15.0	18.0	21.0	24.0
14"	CFM	430	535	640	750	855	960	1070	1285	1500	1710
	Ps	.023	.036	.051	.071	.093	.115	.140	.205	.277	.350
	NC	<20	<20	20	25	30	35	40	45	45	45
	Throw	6.5	8.0	9.5	11.5	13.0	14.5	16.0	19.0	22.5	25.0

Terminal Velocity of 75 FPM
An = Neck Area in Sq. Ft.
NC = Noise Criteria based on 10dB room absorption (Re: 10⁻¹² watts).

200U Steel T-Bar Plate Diffuser (Page 26)

Neck Velocity		400	500	600	700	800	900	1000	1200	1400	1600
6"	CFM	80	100	120	135	155	175	195	235	275	315
	Ps	.006	.010	.014	.018	.023	.030	.037	.054	.073	.096
	NC	<20	<20	<20	<20	<20	20	25	30	35	40
	Throw	1.0	2.0	2.0	2.5	3.0	3.5	4.0	4.5	5.5	6.5
8"	CFM	140	175	210	245	280	315	350	420	490	560
	Ps	.010	.015	.022	.029	.038	.049	.060	.086	.117	.150
	NC	<20	<20	<20	20	25	30	35	40	45	45
	Throw	2.5	3.5	4.0	4.5	5.0	5.5	6.0	7.0	8.0	9.0
10"	CFM	220	275	325	380	435	490	545	655	765	875
	Ps	.014	.021	.030	.041	.054	.068	.084	.122	.167	.212
	NC	<20	<20	<20	20	25	30	35	40	45	50
	Throw	4.0	5.5	6.5	8.0	9.0	10.5	11.5	14.5	17.0	20.0
12"	CFM	315	395	470	550	630	705	785	945	1100	1260
	Ps	.015	.023	.033	.045	.060	.072	.094	.132	.180	.230
	NC	<20	<20	20	25	30	35	40	45	50	50
	Throw	5.5	7.0	8.5	10.0	11.5	13.0	14.5	17.5	20.5	24.0
14"	CFM	430	535	640	750	855	960	1070	1280	1500	1710
	Ps	.023	.036	.051	.071	.093	.115	.140	.205	.277	.350
	NC	<20	<20	20	25	30	35	40	45	50	55
	Throw	7.0	8.5	10.5	12.0	13.5	15.5	17.0	20.5	24.0	24.5

Terminal Velocity of 75 FPM
An = Neck Area in Sq. Ft.
NC = Noise Criteria based on 10dB room absorption (Re: 10⁻¹² watts).

500U Steel/Aluminum Fixed-Pattern Diffuser (Page 26)

Neck Velocity		400	500	600	700	800	900	1000	1200	1400	1600
6"	CFM	80	100	120	135	155	175	195	235	275	315
	Ps	.008	.012	.017	.021	.028	.035	.043	.063	.086	.112
	NC	<20	<20	<20	<20	<20	20	25	30	35	35
	Throw	2.0	3.0	3.0	3.5	4.0	4.5	5.0	6.0	7.0	8.0
8"	CFM	140	175	210	245	280	315	350	420	490	560
	Ps	.010	.015	.022	.029	.038	.049	.060	.086	.117	.150
	NC	<20	<20	<20	<20	20	25	30	35	40	45
	Throw	3.5	4.5	5.5	6.5	7.0	8.0	9.0	10.5	12.5	14.5
10"	CFM	220	270	325	380	435	490	545	655	765	870
	Ps	.014	.021	.030	.041	.054	.068	.084	.122	.167	.212
	NC	<20	<20	<20	20	25	30	35	40	45	45
	Throw	5.5	7.0	8.5	10.0	11.0	12.5	14.0	17.0	19.5	22.0
12"	CFM	315	390	470	550	630	705	785	940	1100	1255
	Ps	.015	.023	.033	.045	.060	.072	.094	.132	.180	.230
	NC	<20	<20	20	25	30	35	40	45	45	45
	Throw	6.0	7.5	9.0	10.5	12.0	13.5	15.0	18.0	21.0	24.0
14"	CFM	430	535	640	750	855	960	1070	1285	1500	1710
	Ps	.023	.036	.051	.071	.093	.115	.140	.205	.277	.350
	NC	<20	<20	20	25	30	35	40	45	45	45
	Throw	6.5	8.0	9.5	11.5	13.0	14.5	16.0	19.0	22.5	25.0

Terminal Velocity of 75 FPM
An = Neck Area in Sq. Ft.
NC = Noise Criteria based on 10dB room absorption (Re: 10⁻¹² watts).

Ceiling or Wall Effect

The tendency of an air stream moving along a wall or ceiling surface to remain in contact with that surface.

Core Area

The total plane area of that portion of a grille, face, or register bounded by a line tangent to the outer opening through which air can pass. The core area is less than the register size. Example, a 14-in. x 8-in. register may have a core that is 1 in. less than the listed size; so, the core area is 13in. x 7in. – 91 sq. in.

Diffuser

An outlet discharging supply air in a spreading pattern.

Diffusion

Distribution of air within a space by an outlet discharging supply air in a spreading pattern.

Drop

The vertical distance between the base of the outlet and the bottom of the air stream at the end of the horizontal throw.

Effective Area, A_k (Sq. Ft.)

The calculated area of an outlet based on the average measured velocity between the fins.

Envelope

The outer boundary of an air stream moving at a specific velocity (for example, a 50 fpm envelope).

Free Area

The total minimum area of the openings in the air outlet or inlet through which air can pass.

Grille

A louvered covering for an opening through which air passes.

Induction

The process of drawing room air into the projected air stream due to the velocity of the projected air stream (sometimes called aspiration).

Jet Velocity, Fpm (Face Velocity)

The average measured velocity of air passing between the fins.

Natural Convection Currents

Air currents created by a buoyancy effect caused by the difference in temperature between the room air and the air in contact with a warm or cold surface.

Outlet

Any opening through which air is delivered to condition a space.

Outlet Velocity, Fpm

The average velocity of the supply air, measured as it passes through the plane of the opening in the supply outlet.

Pressure Loss, WG

Indicates how much total pressure is required to move air through a register.

Primary Air

The mixture of supply air from the outlet and room air within the 150 fpm envelope.

Radius of Diffusion, Ft.

The horizontal distance (throw) from a ceiling diffuser to the point of terminal velocity.

Register

A grille which is equipped with a damper or control valve, and which directs air in a nonspreading jet.

Return

Any opening through which air is removed from a conditioned space.

Spread, Ft.

The maximum width of the total air stream at the point of terminal velocity.

Static Pressure, PS

The outward force of air within a duct measured in inches of water.

Stratification Boundary

The boundary between room air currents moving faster than 1 5 fpm and the stratification zone.

Stratified Zone

A region in which room air velocity is less than 1 5 fpm.

Temperature Differential

The temperature difference between the primary and the room air.

Temperature Variation (ΔT)

The temperature difference between points within the same space.

Terminal Velocity, Fpm

When the velocity of total air drops to 50 or 75 fpm, depending on the particular application, it reaches terminal velocity. Terminal velocity is not sharply defined for all applications.

Throw (Blow), Ft.

The horizontal distance an air stream travels after leaving a horizontal sidewall outlet before maximum velocity is reduced to terminal velocity. For a perimeter outlet, throw is the vertical distance the air stream travels before maximum velocity is reduced to terminal velocity.

Total Air

The mixture of projected air and room air set in motion by the supply air.

Total Pressure, Pt

The sum of the velocity and static pressures measured in inches of water.

Vane Ratio

The ratio showing depth of vane to minimum width between two adjacent vanes.

Velocity Pressure, Pv

The forward-moving force of air within a duct measured in inches of water.

NC Noise Criteria

A single number noise rating system that indicates what Broad Band, continuous sounds are reasonably acceptable.

This image shows a full page of blank, lined paper. It features approximately 28 horizontal grey lines spaced evenly apart, typical of standard notebook paper. The lines extend across the entire width of the page, leaving small margins at the top and bottom. There are no vertical lines, text, or other markings present.



BUILD FOR THE FUTURE

Our Portfolio of Brands

AirMate®	www.airmate.com
AmeriFlow®	www.ameriflowregisters.com
Amerivent®	www.ameri-vent.com
AMPCO®	www.ampcostacks.com
Builder's Best®	www.buildersbest.com
Duravent™	www.duravent.com
Hart & Cooley®	www.hartandcooley.com
Heatfab®	www.heatfab.com
Lima®	www.limaregister.com
Milcor®	www.milcorinc.com
Portals Plus™	www.portalsplus.com
RPST™	www.rpscurbs.com
Security Chimneys®	www.securitychimneys.com
Selkirk®	www.selkirkcorp.com

Corporate Headquarters

Duravent Group
28 W. Adams, Suite 1810
Detroit, MI 48226
Tel: 800.835.4429
Email: info@duraventgroup.com
www.duraventgroup.com

Contact Us

For more information about our products or to contact us directly, please go to any of our websites and click on the Contact section on the website.

AmeriFlow[®]

duravent[™]
GROUP

BUILD FOR THE FUTURE

www.duraventgroup.com

