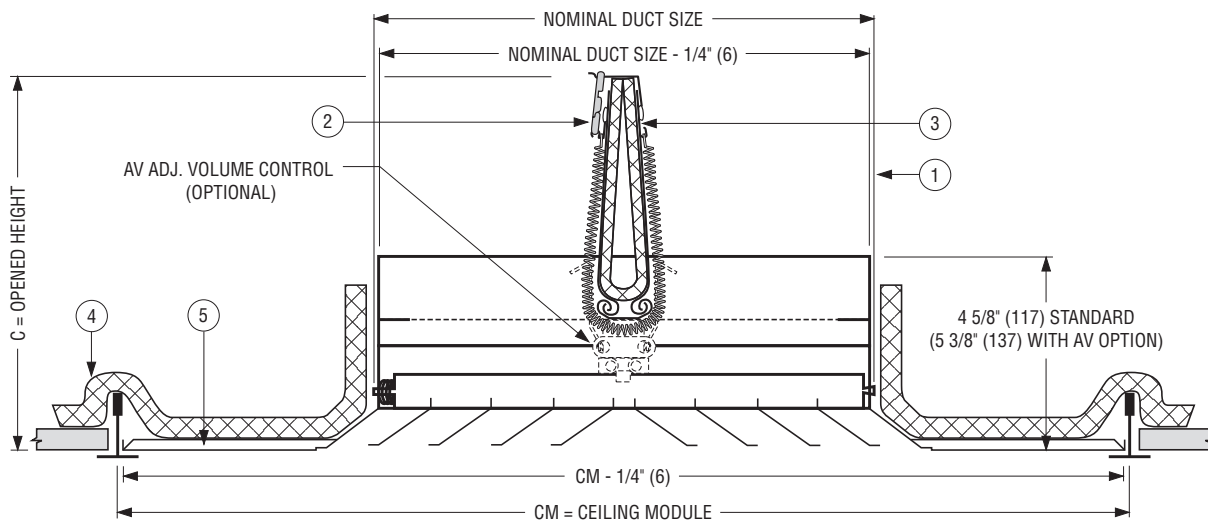




FIRE RATED PATTERN CEILING DIFFUSER
STEEL • SQUARE NECK
MODEL: 6500FRD



CATEGORY
CABS & CABS7



Dimensional Data and Sizing Availability:

Ceiling Module CM	Nominal Duct Size (square)	Opened Height C	
		Standard	With AV Option
12 x 12	6 x 6	5 3/4	6 1/2
	9 x 9	7 1/4	8
24 x 24	6 x 6	5 3/4	6 1/2
	9 x 9	7 1/4	8
	12 x 12	9	9 3/4
	15 x 15	10 1/4	11
	18 x 18	11 3/4	N/A
	21 x 21	13 1/4	N/A

Note: If square ceiling module is more than 3" (76) larger than the duct size, a module sized extended panel is utilized.

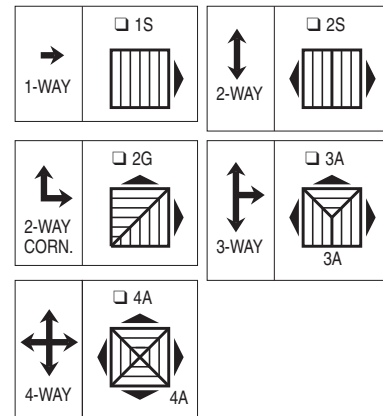
ITEMS:

1. Steel duct drop (by others).
2. U.L. Listed fusible link. 212°F (100°C) standard.
3. Ceiling radiation damper (Model 0716).
4. Ceramic fibre thermal blanket accessory (Model 0726).
5. Corrosion resistant steel diffuser.

DESCRIPTION:

1. All models are classified for use in UL/ULC restrained or unrestrained floor/ceiling and or roof/ceiling assemblies which incorporate an exposed grid suspended ceiling (lay-in T-bar) with up to a 3 hour rating. For details of fire rated assemblies, see the current UL or ULC Fire Resistance Directory.
2. A high capacity ceiling diffuser available in 1, 2, 3 or 4-way blow patterns to provide a tight horizontal air flow pattern from maximum to minimum air flow. Ideal for VAV applications.
3. Spring-loaded removable core.

Core Selection



4. The fixed radiation damper is standard. The adjustable ceiling radiation damper (Model 0716A) with volume control for balancing is optional.
5. Standard finish is AW Appliance White.

OPTIONS:

1. AV Fusible link adjustable volume control (Model 0716A damper). Max. square duct size is 15 x 15 (381 x 381).
2. Non-standard temperature U.L. Listed fusible link. 165°F (74°C)
3. Finish: WH Off-white SP Special

For installation instructions, see IOM-CRSDINST or IOM-CRDTBINST.

SCHEDULE TYPE:

PROJECT:

ENGINEER:

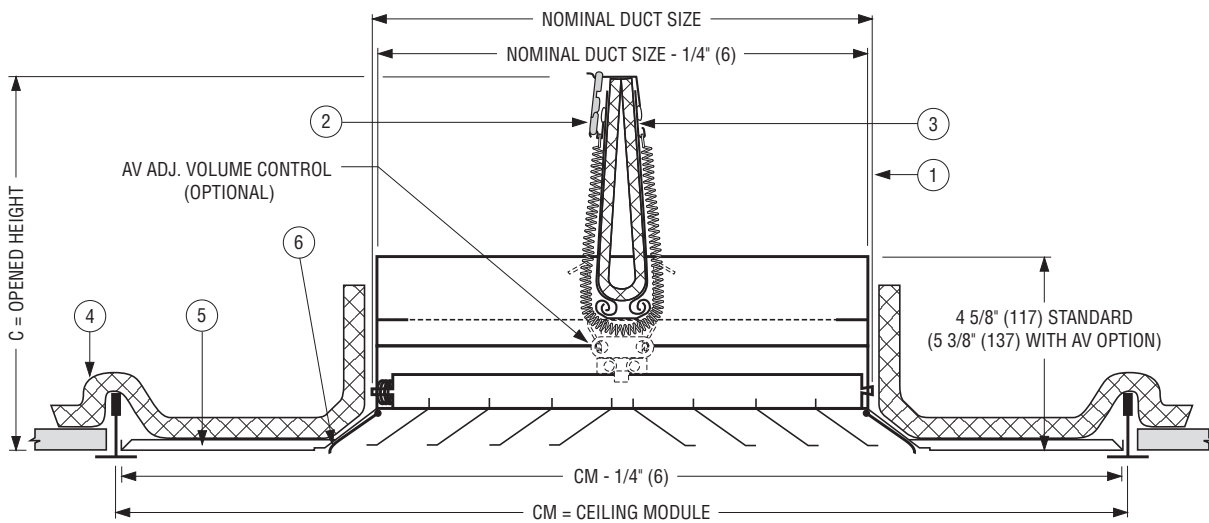
CONTRACTOR:

Dimensions are in inches (mm).

DATE	B SERIES	SUPERSEDES	DRAWING NO.
11 - 24 - 16	6500FRD	5 - 11 - 15	6500FRD-1



FIRE RATED PATTERN CEILING DIFFUSER
ADJUSTABLE VANES • STEEL • SQUARE NECK
MODEL: 6550FRD



CATEGORY
CABS & CABS7



Dimensional Data and Sizing Availability:

Ceiling Module CM	Nominal Duct Size (square)	Opening Height C	
		Standard	With AV Option
12 x 12	6 x 6	5 3/4	6 1/2
	9 x 9	7 1/4	8
24 x 24	6 x 6	5 3/4	6 1/2
	9 x 9	7 1/4	8
	12 x 12	9	9 3/4
	15 x 15	10 1/4	11
	18 x 18	11 3/4	N/A
	21 x 21	13 1/4	N/A

Note: If square ceiling module is more than 3" (76) larger than the duct size, a module sized extended panel is utilized.

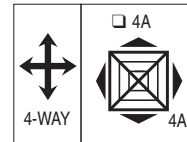
ITEMS:

1. Steel duct drop (by others).
2. U.L. Listed fusible link. 212°F (100°C) standard.
3. Ceiling radiation damper (Model 0716).
4. Ceramic fibre thermal blanket accessory (Model 0726).
5. Corrosion resistant steel diffuser.
6. Adjustable vane.

DESCRIPTION:

1. All models are classified for use in UL/ULC restrained or unrestrained floor/ceiling and or roof/ceiling assemblies which incorporate an exposed grid suspended ceiling (lay-in T-bar) with up to a 3 hour rating. For details of fire rated assemblies, see the current UL or ULC Fire Resistance Directory.
2. A high capacity ceiling diffuser available in a 4-way blow pattern as standard. It provides a tight horizontal air flow pattern from maximum to minimum air flow. Ideal for VAV applications. The unit is provided with independent movable vanes on all four sides to provide a horizontal to vertical throw adjustable discharge.

Core Selection



Model 6550FRD is available in core style 4A only.

3. Spring-loaded removable core.
4. The fixed radiation damper is standard. The adjustable ceiling radiation damper (Model 0716A) with volume control for balancing is optional.
5. Standard finish is AW Appliance White.

OPTIONS:

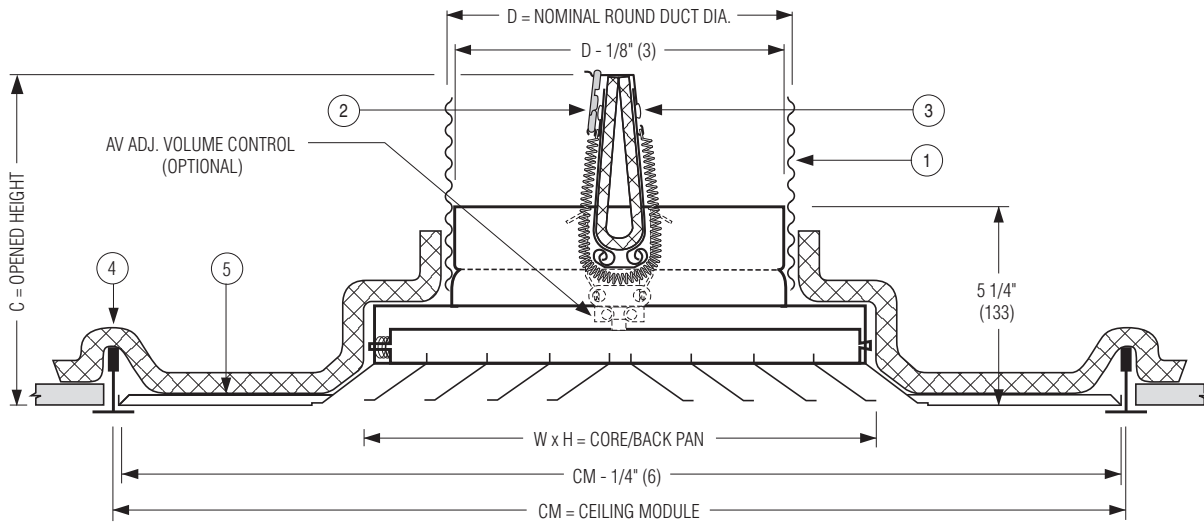
1. AV Fusible link adjustable volume control (Model 0716A damper). Maximum square duct size is 15 x 15 (381 x 381).
2. Non-standard temperature U.L. Listed fusible link. 165°F (74°C)
3. Finish: WH Off-white SP Special

For installation instructions, see IOM-CRDSINST or IOM-CRDTBINST.

SCHEDULE TYPE:	Dimensions are in inches (mm).			
PROJECT:				
ENGINEER:	DATE	B SERIES	SUPERSEDES	DRAWING NO.
CONTRACTOR:	11 - 24 - 16	6500FRD	5 - 11 - 15	6500FRD-2



FIRE RATED PATTERN CEILING DIFFUSER
STEEL • ROUND NECK
MODEL: 6505FRD



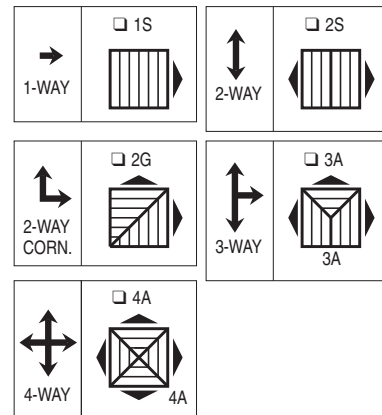
CLASSIFIED
 C UL US
 CATEGORY
 CABS & CABS7



Dimensional Data and Sizing Availability:

Ceiling Module	Core / Back Pan	Round Neck	Opened Height
CM	W x H	D	C
12 x 12	9 x 9	6	6 1/2
		8	7 1/2
24 x 24	9 x 9	6	6 1/2
		8	7 1/2
	12 x 12	8	7 1/2
		10	8 1/2
	15 x 15	10	8 1/2
		12	9 1/2
18 x 18	14	10 1/2	
	12	9 1/2	
		14	10 1/2

Core Selection



Note: If square ceiling module is more than 3" (76) larger than the duct size, a module sized extended panel is utilized.

ITEMS:

1. Flexible air duct (UL Class 0 or 1) connector or steel duct.
2. U.L. Listed fusible link. 212°F (100°C) standard.
3. Ceiling radiation damper (Model 0722).
4. Ceramic fibre thermal blanket accessory (Model 0725).
5. Corrosion resistant steel diffuser.

DESCRIPTION:

1. All models are classified for use in UL/ULC restrained or unrestrained floor/ceiling and or roof/ceiling assemblies which incorporate an exposed grid suspended ceiling (lay-in T-bar) with up to a 3 hour rating. For details of fire rated assemblies, see the current UL or ULC Fire Resistance Directory.
2. A high capacity ceiling diffuser available in 1, 2, 3 or 4-way blow patterns to provide a tight horizontal air flow pattern from maximum to minimum air flow. Ideal for VAV applications.
3. Spring-loaded removable core.

4. The fixed radiation damper is standard. The adjustable ceiling radiation damper (Model 0722A) with volume control for balancing is optional.
5. Standard finish is AW Appliance White.

OPTIONS:

1. AV Fusible link adjustable volume control (Model 0722A damper)
2. Non-standard temperature U.L. Listed fusible link.
 165°F (74°C)
3. Finish:
 WH Off-white SP Special

For installation instructions, see IOM-CRSDINST or IOM-CRDTBINST.

SCHEDULE TYPE:

PROJECT:

ENGINEER:

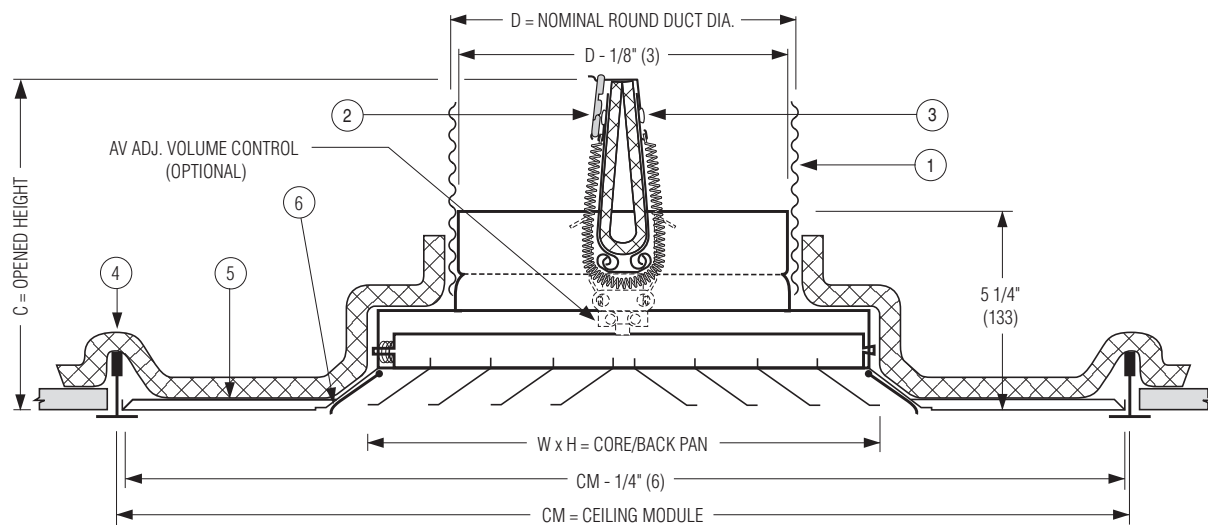
CONTRACTOR:

Dimensions are in inches (mm).

DATE	B SERIES	SUPERSEDES	DRAWING NO.
11 - 24 - 16	6500FRD	5 - 11 - 15	6500FRD-3



FIRE RATED PATTERN CEILING DIFFUSER
ADJUSTABLE VANES • STEEL • ROUND NECK
MODEL: 6555FRD



CATEGORY
CABS & CABS7



Dimensional Data and Sizing Availability:

Ceiling Module	Core / Back Pan	Round Neck	Opened Height
CM	W x H	D	C
12 x 12	9 x 9	6	6 1/2
		8	7 1/2
24 x 24	9 x 9	6	6 1/2
		8	7 1/2
	12 x 12	8	7 1/2
		10	8 1/2
	15 x 15	10	8 1/2
12		9 1/2	
18 x 18	14	10 1/2	
	12	9 1/2	
		14	10 1/2

Note: If square ceiling module is more than 3" (76) larger than the duct size, a module sized extended panel is utilized.

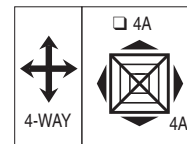
ITEMS:

1. Flexible air duct (UL Class 0 or 1) connector or steel duct.
2. U.L. Listed fusible link. 212°F (100°C) standard.
3. Ceiling radiation damper (Model 0722).
4. Ceramic fibre thermal blanket accessory (Model 0725).
5. Corrosion resistant steel diffuser.
6. Adjustable vane.

DESCRIPTION:

1. All models are classified for use in UL/ULC restrained or unrestrained floor/ceiling and or roof/ceiling assemblies which incorporate an exposed grid suspended ceiling (lay-in T-bar) with up to a 3 hour rating. For details of fire rated assemblies, see the current UL or ULC Fire Resistance Directory.
2. A high capacity ceiling diffuser available in a 4-way blow pattern as standard. It provides a tight horizontal air flow pattern from maximum to

Core Selection



Model 6555FRD is available in core style 4A only.

minimum air flow. Ideal for VAV applications. The unit is provided with independent movable vanes on all four sides to provide a horizontal to vertical throw adjustable discharge.

3. Spring-loaded removable core.
4. The fixed radiation damper is standard. The adjustable ceiling radiation damper (Model 0722A) with volume control for balancing is optional.
5. Standard finish is AW Appliance White.

OPTIONS:

1. AV Fusible link adjustable volume control (Model 0722A damper)
2. Non-std. temperature U.L. Listed fusible link. 165°F (74°C)
3. Finish: WH Off-white SP Special

For installation instructions, see IOM-CRSDINST or IOM-CRDTBINST.

SCHEDULE TYPE:

PROJECT:

ENGINEER:

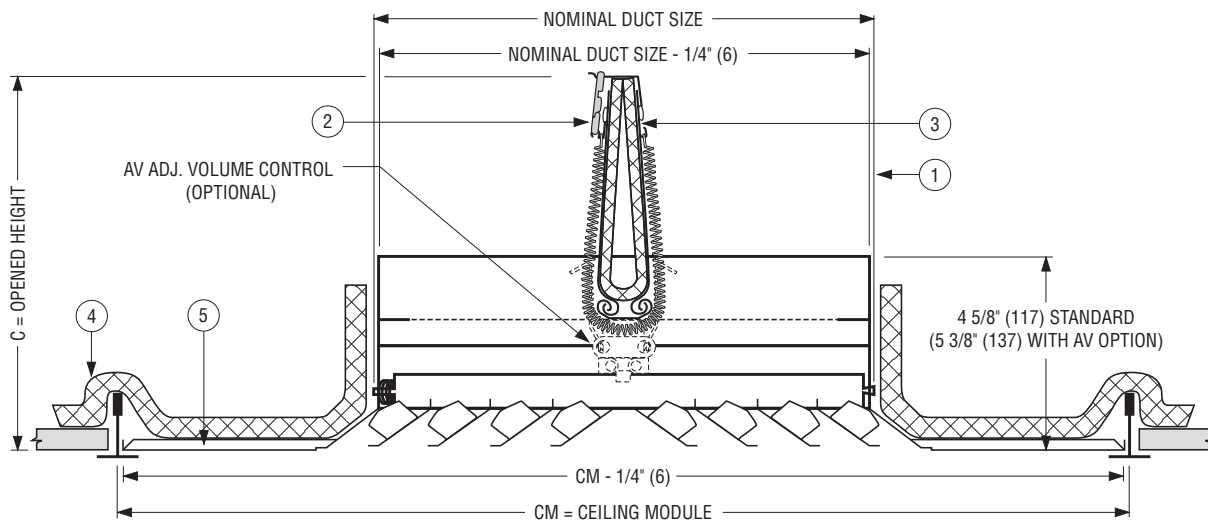
CONTRACTOR:

Dimensions are in inches (mm).

DATE	B SERIES	SUPERSEDES	DRAWING NO.
11 - 24 - 16	6500FRD	5 - 11 - 15	6500FRD-4



FIRE RATED PATTERN CEILING DIFFUSER
STEEL • SQUARE NECK • INDUCTION VANES
MODEL: 6500IVFRD



CLASSIFIED
 C UL US
 CATEGORY
 CABS & CABST



Dimensional Data and Sizing Availability:

Ceiling Module CM	Nominal Duct Size (square)	Opened Height C	
		Standard	With AV Option
12 x 12	6 x 6	5 3/4	6 1/2
	9 x 9	7 1/4	8
24 x 24	6 x 6	5 3/4	6 1/2
	9 x 9	7 1/4	8
	12 x 12	9	9 3/4
	15 x 15	10 1/4	11
	18 x 18	11 3/4	N/A
	21 x 21	13 1/4	N/A

Note: If square ceiling module is more than 3" (76) larger than the duct size, a module sized extended panel is utilized.

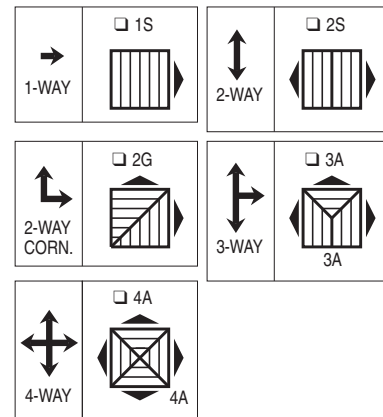
ITEMS:

1. Steel duct drop (by others).
2. U.L. Listed fusible link. 212°F (100°C) standard.
3. Ceiling radiation damper (Model 0716).
4. Ceramic fibre thermal blanket accessory (Model 0726).
5. Corrosion resistant steel diffuser.

DESCRIPTION:

1. All models are classified for use in UL/ULC restrained or unrestrained floor/ceiling and or roof/ceiling assemblies which incorporate an exposed grid suspended ceiling (lay-in T-bar) with up to a 3 hour rating. For details of fire rated assemblies, see the current UL or ULC Fire Resistance Directory.
2. A high capacity ceiling diffuser available in 1, 2, 3 or 4-way blow patterns to provide a tight horizontal air flow pattern from maximum to minimum air flow. Induction vanes cause air to emerge from each louver at alternating angles, producing high induction rates and rapid temperature equalization. Ideal for VAV applications.

Core Selection



3. Spring-loaded removable core.
4. The fixed radiation damper is standard. The adjustable ceiling radiation damper (Model 0716A) w/volume control for balancing is optional.
5. Standard finish is AW Appliance White.

OPTIONS:

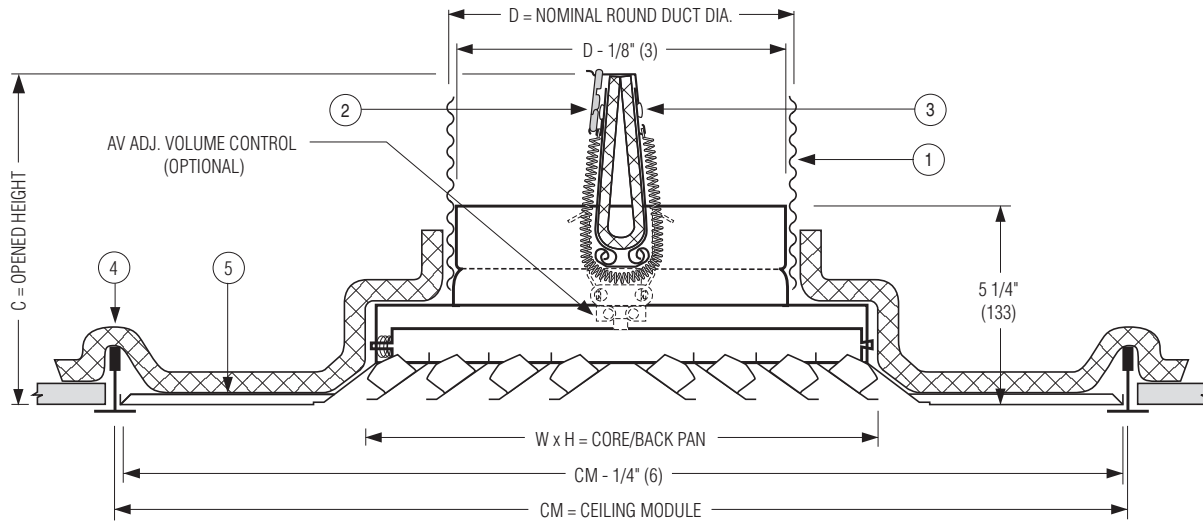
1. AV Fusible link adjustable volume control (Model 0716A damper). Max. square duct size is 15 x 15 (381 x 381).
2. Non-standard temperature U.L. Listed fusible link. 165°F (74°C)
3. Finish: WH Off-white SP Special

For installation instructions, see IOM-CRDSINST or IOM-CRDTBINST.

SCHEDULE TYPE:	Dimensions are in inches (mm).			
PROJECT:				
ENGINEER:	DATE	B SERIES	SUPERSEDES	DRAWING NO.
CONTRACTOR:	11 - 24 - 16	6500FRD	5 - 11 - 15	6500FRD-5



FIRE RATED PATTERN CEILING DIFFUSER
STEEL • ROUND NECK • INDUCTION VANES
MODEL: 6505IVFRD



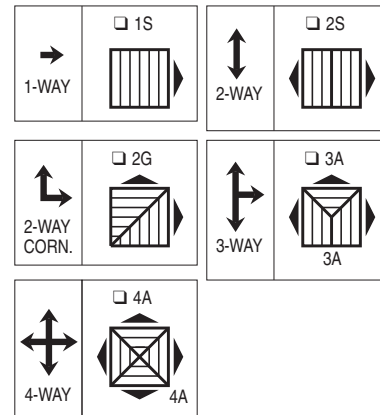
CLASSIFIED
 C UL US
 CATEGORY
 CABS & CABS7



Dimensional Data and Sizing Availability:

Ceiling Module	Core / Back Pan	Round Neck	Opened Height
CM	W x H	D	C
12 x 12	9 x 9	6	6 1/2
		8	7 1/2
24 x 24	9 x 9	6	6 1/2
		8	7 1/2
	12 x 12	8	7 1/2
		10	8 1/2
15 x 15	10	8 1/2	
	12	9 1/2	
18 x 18	12	9 1/2	
	14	10 1/2	

Core Selection



Note: If square ceiling module is more than 3" (76) larger than the duct size, a module sized extended panel is utilized.

ITEMS:

1. Flexible air duct (UL Class 0 or 1) connector or steel duct.
2. U.L. Listed fusible link. 212°F (100°C) standard.
3. Ceiling radiation damper (Model 0722).
4. Ceramic fibre thermal blanket accessory (Model 0725).
5. Corrosion resistant steel diffuser.

DESCRIPTION:

1. All models are classified for use in UL/ULC restrained or unrestrained floor/ceiling and or roof/ceiling assemblies which incorporate an exposed grid suspended ceiling (lay-in T-bar) with up to a 3 hour rating. For details of fire rated assemblies, see the current UL or ULC Fire Resistance Directory.
2. A high capacity ceiling diffuser available in 1, 2, 3 or 4-way blow patterns to provide a tight horizontal air flow pattern from maximum to minimum air flow. Induction vanes cause air to emerge from each louver at alternating angles, producing high induction rates and rapid temperature equalization. Ideal for VAV applications.

3. Spring-loaded removable core.
4. The fixed radiation damper is standard. The adjustable ceiling radiation damper (Model 0722A) with volume control for balancing is optional.
5. Standard finish is AW Appliance White.

OPTIONS:

1. AV Fusible link adjustable volume control (Model 0722A damper)
2. Non-standard temperature U.L. Listed fusible link.
 165°F (74°C)
3. Finish:
 SP Special. Specify _____.

For installation instructions, see IOM-CRSDINST or IOM-CRDTBINST.

SCHEDULE TYPE:	Dimensions are in inches (mm).			
PROJECT:				
ENGINEER:	DATE	B SERIES	SUPERSEDES	DRAWING NO.
CONTRACTOR:	11 - 24 - 16	6500FRD	5 - 11 - 15	6500FRD-6

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

NAILOR POWDER COAT PROPERTIES

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

ELECTROCOATING PROPERTIES

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


POWDER COAT

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

ELECTROCOATING

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

CLEAR ANODIZING (Aluminum products only)

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

COLOR ANODIZING (Aluminum products only)

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

BRUSHED AND CLEAR COAT

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

#4 BRUSHED SATIN POLISHED (Stainless Steel products only)

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

PRIME COAT

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

PAINT PREPARED ALUMINUM (Aluminum products only)

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

MILL FINISH

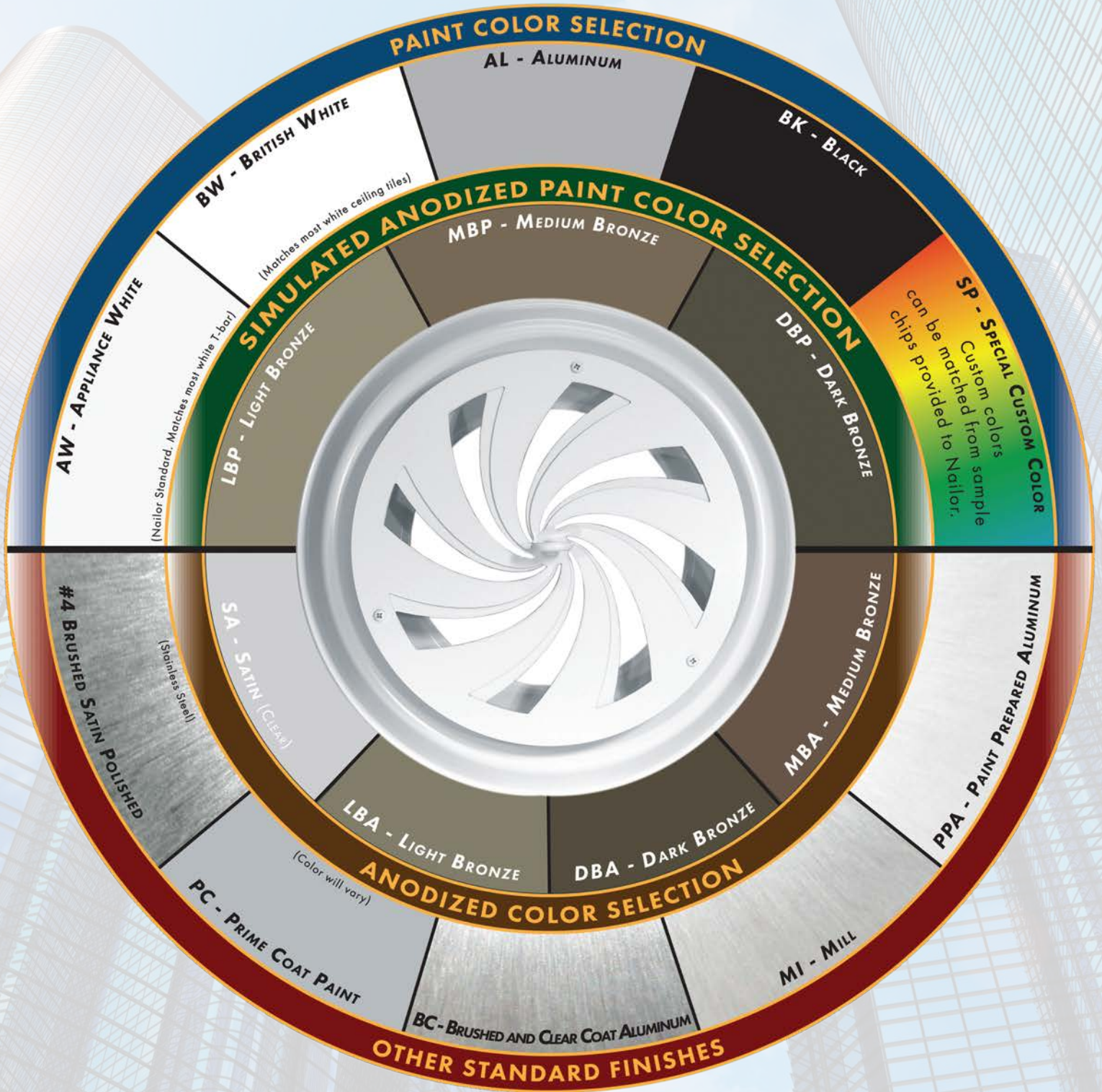
Surface is left untreated and requires cleaning, degreasing, etc. in the field before final finish can be applied if required.



Nailor[®]
Industries Inc.

STANDARD AND OPTIONAL FINISHES FOR GRILLES AND DIFFUSERS

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



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

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

"Complete Air Control and Distribution Solutions."

WGDSOF2015

www.nailor.com

PERFORMANCE DATA:

MODELS 6500IV AND 6200IV • SQUARE NECK • INDUCTION VANES

NOMINAL NECK SIZE	BLOW PATTERNS	NECK VELOCITY TP	300 .035	400 .062	500 .097	600 .140	700 .191	800 .249	900 .316
6 x 6 .25 SQ. FT.	RETURN FACTORS —SP=1.1 TP NC + 1	CFM NC	75 —	100 14	125 21	150 26	175 30	200 35	225 39
	4A	CFM/SIDE THROW, FT.	19 3-4-6	25 3-5-8	31 5-6-8	37 5-6-9	44 6-7-10	50 6-7-10	56 7-8-10
	3A	CFM/SIDE THROW, FT.	19 28 3-4-6 4-6-9	25 38 3-5-8 5-7-10	31 47 5-6-8 6-8-11	37 56 5-6-9 6-9-12	44 66 6-7-10 7-10-13	50 75 6-7-10 7-10-14	56 85 7-8-10 8-10-14
	2S 2G	CFM/SIDE THROW, FT.	37 6-7-10	50 7-8-11	62 8-9-13	75 9-10-14	88 10-10-14	100 10-10-15	113 10-11-16
	1S	CFM/SIDE THROW, FT.	75 7-9-12	100 8-10-14	125 9-11-15	150 10-12-18	175 10-13-18	200 11-14-19	225 12-14-20
9 x 9 .56 SQ. FT.	RETURN FACTORS —SP=1.2 TP NC + 2	CFM NC	170 —	225 18	280 24	340 30	395 35	450 39	505 42
	4A	CFM/SIDE THROW, FT.	42 5-6-10	56 6-8-11	70 8-9-12	84 8-10-13	98 9-10-14	112 9-11-15	126 10-12-16
	3A	CFM/SIDE THROW, FT.	42 63 5-6-10 7-9-11	56 85 6-8-11 8-10-14	70 106 8-9-12 9-10-15	84 127 8-10-13 10-11-16	98 148 9-10-14 10-12-17	112 169 9-11-15 10-13-18	126 190 10-12-16 11-14-19
	2S 2G	CFM/SIDE THROW, FT.	84 7-8-12	112 9-10-14	141 10-12-16	169 10-13-18	197 11-14-18	225 12-14-20	253 13-15-22
	1S	CFM/SIDE THROW, FT.	169 10-12-16	225 11-14-18	282 13-15-21	338 14-18-23	394 14-18-25	450 15-19-26	507 18-20-28
12 x 12 1.0 SQ. FT.	RETURN FACTORS —SP=1.3 TP NC + 4	CFM NC	300 14	400 21	500 27	600 32	700 37	800 40	900 43
	4A	CFM/SIDE THROW, FT.	75 6-10-12	100 9-11-14	125 10-12-17	150 11-14-18	175 11-14-19	200 12-16-20	225 14-17-22
	3A	CFM/SIDE THROW, FT.	75 112 6-10-12 9-11-15	100 150 9-11-14 11-13-17	125 187 10-12-17 11-14-19	150 225 11-14-18 12-15-21	175 262 11-14-19 13-16-22	200 300 12-16-20 14-17-24	225 338 14-17-22 15-18-25
	2S 2G	CFM/SIDE THROW, FT.	150 10-12-16	200 12-14-20	250 14-15-22	300 14-16-23	350 15-17-25	400 16-20-27	450 17-20-29
	1S	CFM/SIDE THROW, FT.	300 13-16-22	400 14-18-26	500 17-20-30	600 18-21-31	700 18-22-33	800 20-23-33	900 22-26-38
15 x 15 1.56 SQ. FT.	RETURN FACTORS —SP=1.8 TP NC + 4	CFM NC	465 14	625 23	780 29	935 34	1090 37	1250 43	1400 45
	4A	CFM/SIDE THROW, FT.	117 10-13-17	156 11-14-19	195 13-15-22	234 14-17-23	273 15-18-24	312 16-19-26	350 17-21-28
	3A	CFM/SIDE THROW, FT.	117 175 10-13-17 11-14-18	156 234 11-14-19 14-18-23	195 292 13-15-22 15-18-25	234 351 14-17-23 17-18-27	273 409 15-18-24 18-20-29	312 468 16-19-26 18-23-31	350 527 17-21-28 20-23-34
	2S 2G	CFM/SIDE THROW, FT.	234 13-16-22	312 15-18-25	390 17-20-29	468 18-22-32	546 19-23-34	625 22-25-36	700 22-28-38
	1S	CFM/SIDE THROW, FT.	467 17-20-29	625 18-23-34	780 21-26-38	935 23-29-41	1090 24-31-44	1250 26-34-46	1400 29-35-49
18 x 18 2.25 SQ. FT.	RETURN FACTORS —SP=2.1 TP NC + 6	CFM NC	675 16	900 25	1125 31	1350 35	1575 40	1800 43	2025 46
	4A	CFM/SIDE THROW, FT.	168 12-15-20	225 14-16-23	281 15-19-26	337 16-20-29	394 18-22-30	450 19-23-33	506 20-25-34
	3A	CFM/SIDE THROW, FT.	168 253 12-15-20 14-18-23	225 338 14-16-23 16-20-26	281 422 15-19-26 18-22-30	337 506 16-20-29 20-26-34	394 590 18-22-30 21-26-36	450 675 19-23-33 22-28-38	506 760 20-25-34 26-29-41
	2S 2G	CFM/SIDE THROW, FT.	337 15-18-26	450 18-21-30	562 19-24-34	675 21-25-37	787 24-27-39	900 24-28-42	1012 26-31-44
	1S	CFM/SIDE THROW, FT.	675 20-26-36	900 24-29-41	1125 27-34-46	1350 29-36-49	1575 31-38-53	1800 34-42-56	2025 37-44-60

For performance notes, see D44.

PERFORMANCE DATA:

MODELS 6500IV AND 6200IV • SQUARE NECK • INDUCTION VANES

NOMINAL NECK SIZE	BLOW PATTERNS	NECK VELOCITY TP	300 .035	400 .062	500 .097	600 .140	700 .191	800 .249	900 .316
21 x 21 3.06 SQ. FT.	RETURN FACTORS —SP=2.6 TP NC + 8	CFM NC	915 18	1225 26	1530 32	1835 36	2140 41	2450 44	2750 47
			A B	A B	A B	A B	A B	A B	A B
	4A	CFM/SIDE THROW, FT.	230 14-17-24	306 15-20-27	382 17-22-31	460 18-24-33	535 20-27-35	612 21-27-37	688 22-31-41
	3A	CFM/SIDE THROW, FT.	230 345 12-15-21 16-20-27	306 460 14-18-23 18-22-31	382 573 15-20-27 21-25-36	460 688 16-21-29 22-27-40	535 802 18-22-31 23-29-42	612 918 18-23-32 27-31-45	688 1030 20-27-36 27-34-47
24 x 24 4.0 SQ. FT.	RETURN FACTORS —SP=2.7 TP NC + 8	CFM NC	1200 19	1600 27	2000 33	2400 37	2800 41	3200 45	3600 48
			A B	A B	A B	A B	A B	A B	A B
	4A	CFM/SIDE THROW, FT.	300 16-19-26	400 19-22-32	500 22-25-35	600 23-26-38	700 25-28-41	800 26-32-44	900 28-32-46
	3A	CFM/SIDE THROW, FT.	300 450 16-19-26 18-22-31	400 600 19-22-32 19-25-37	500 750 22-25-35 23-29-42	600 900 23-26-38 25-30-45	700 1050 25-28-41 29-33-47	800 1200 26-32-44 29-34-51	900 1350 28-32-46 31-38-54
30 x 30 6.25 SQ. FT.	RETURN FACTORS —SP=3.1 TP NC + 8	CFM NC	1875 20	2500 28	3125 34	3750 39	4375 43	5000 46	5625 50
			A B	A B	A B	A B	A B	A B	A B
	4A	CFM/SIDE THROW, FT.	469 20-25-34	625 23-29-38	782 27-32-44	937 29-35-49	1093 30-37-52	1250 32-40-55	1406 37-42-58
	3A	CFM/SIDE THROW, FT.	469 703 20-25-34 22-27-39	625 938 23-29-38 26-31-46	782 1172 27-32-44 28-35-51	937 1405 29-35-49 31-39-55	1093 1640 30-37-52 33-39-59	1250 1875 32-40-55 35-46-62	1406 2110 37-42-58 39-48-66
36 x 36 9.0 SQ. FT.	RETURN FACTORS —SP=3.6 TP NC + 9	CFM NC	2700 22	3600 29	4500 35	5400 40	6300 44	7200 48	8100 52
			A B	A B	A B	A B	A B	A B	A B
	4A	CFM/SIDE THROW, FT.	675 24-30-41	900 27-33-46	1125 31-37-54	1350 33-41-59	1575 35-42-62	1800 41-46-66	2025 41-51-70
	3A	CFM/SIDE THROW, FT.	675 1010 24-30-41 27-35-46	900 1350 27-33-46 32-38-54	1125 1687 31-37-54 37-45-62	1350 2025 33-41-59 38-48-66	1575 2362 35-42-62 42-51-70	1800 2700 41-46-66 46-56-75	2025 3038 41-51-70 50-59-80

D
CEILING DIFFUSERS

CFM - cubic feet per minute
 Neck Velocity - feet per minute
 TP - total pressure - inches w.g.
 NC - Noise Criteria (values) based on 10 dB room absorption, re 10⁻¹² watts.

Performance Notes:

1. Throw values are given for terminal velocities of 150, 100 and 50 fpm under isothermal conditions. Data applies to ceiling mounted units when the maximum coanda effect applies. When no ceiling is present (exposed duct), throws are reduced by approximately 25%.
2. Sound levels in performance tables are for steel construction – **Model 6500IV**. Apply the following corrections for aluminum construction – **Model 6200IV**.
 TP = Listed value x 1.25.
 NC = Listed value + 4.

3. Performance data as tabulated is for supply air conditions. Correction factors for return air application - see next page.
4. Correction factors for round inlets - see next page.
5. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

PERFORMANCE DATA CORRECTIONS :

MODEL SERIES 6500IV AND 6200IV

CORRECTION FACTORS FOR RETURN INLET

If the unit is used as a return inlet, the performance data is obtained by applying the return corrections, as follows:

- Add the NC correction at the left side of the table to the NC value listed in the performance table.
- Multiply the listed SP factor at the left side of the table by the total pressure (TP) listed at the top of the table.

Example:

12" x 12" unit handling 600 cfm of return air. (Page D43).

- Return NC = 32 + 4 = 36.
- Return negative SP = 1.3 x (- .14) = - .182.

CORRECTION FACTORS WITH SQUARE TO ROUND INLET ADAPTOR

- Add the NC correction factor from Table 2 and the NC value listed in the performance tables.
- Multiply the correction factor from Table 2 by the listed total pressure in the performance tables.
- Multiply the correction factor from Table 2 by the listed throws in the performance tables.

Example:

12" x 12" unit with 10" round adaptor handling 500 cfm supply air. (Page D43).

- NC = 27 + 7 = 34
- Total Pressure = .097 x 1.65 = 0.160
- Throw = 17 x 1.15 = 19.55 feet @ 50 fpm terminal velocity.

TABLE 2 Correction Factors for SR Adaptors

SQUARE INLET	ROUND INLET	NC (add)	TP (multiply)	THROW (multiply)		
				150	100	50
6 x 6	5	7	1.65	1.10	1.10	1.15
9 x 9	6	17	3.50	1.15	1.15	1.20
9 x 9	8	4	1.40	1.10	1.10	1.10
12 x 12	8	17	3.50	1.15	1.15	1.20
12 x 12	10	7	1.65	1.10	1.10	1.15
15 x 15	10	17	3.50	1.15	1.15	1.20
15 x 15	12	9	1.90	1.10	1.10	1.15
15 x 15	14	3	1.25	1.05	1.05	1.10
18 x 18	12	17	3.50	1.15	1.15	1.20
18 x 18	14	10	2.00	1.10	1.10	1.15
18 x 18	16	5	1.45	1.10	1.10	1.10
21 x 21	14	17	3.70	1.15	1.15	1.20
21 x 21	16	11	2.25	1.10	1.10	1.15
21 x 21	18	6	1.60	1.10	1.10	1.10
21 x 21	20	3	1.20	1.05	1.05	1.10
24 x 24	16	17	3.50	1.15	1.15	1.20
24 x 24	18	12	2.35	1.10	1.10	1.15
24 x 24	20	7	1.65	1.10	1.10	1.15
24 x 24	22	4	1.33	1.05	1.05	1.10

PERFORMANCE DATA:

MODELS 6500 AND 6200 • SQUARE NECK

NOMINAL NECK SIZE	BLOW PATTERNS	NECK VELOCITY TP	300 .033		400 .058		500 .090		600 .130		700 .177		800 .231		900 .293	
			CFM NC	75 —	100 10	125 17	150 22	175 26	200 31	225 35	A	B	A	B	A	B
6 x 6 .25 SQ. FT.	RETURN FACTORS —SP=1.1 TP NC + 1	CFM NC	75	—	100	10	125	17	150	22	175	26	200	31	225	35
	4A	CFM/SIDE THROW, FT.	19	4-5-8	25	4-6-10	31	6-8-10	37	6-8-11	44	8-9-12	50	8-9-12	56	9-10-13
	3A	CFM/SIDE THROW, FT.	19	28 4-5-8	25	38 5-8-11	31	47 6-8-10 8-10-14	37	56 6-8-11 8-11-15	44	66 8-9-12 9-12-16	50	75 8-9-12 9-12-17	56	85 9-10-13 10-13-18
	2S 2G	CFM/SIDE THROW, FT.	37	8-9-12	50	9-10-14	62	10-11-16	75	11-12-17	88	12-13-18	100	12-13-19	113	12-14-20
	1S	CFM/SIDE THROW, FT.	75	9-11-15	100	10-12-17	125	11-14-19	150	12-15-22	175	13-16-22	200	14-17-24	225	15-18-25
9 x 9 .56 SQ. FT.	RETURN FACTORS —SP=1.2 TP NC + 2	CFM NC	170	—	225	14	280	20	340	26	395	31	450	35	505	38
	4A	CFM/SIDE THROW, FT.	42	6-8-12	56	7-10-14	70	10-11-15	84	10-12-16	98	11-12-17	112	11-14-19	126	12-15-20
	3A	CFM/SIDE THROW, FT.	42	63 6-8-12 9-11-14	56	85 7-10-14 10-12-17	70	106 10-11-15 11-13-19	84	127 10-12-16 12-14-20	98	148 11-12-17 13-15-21	112	169 11-14-19 13-16-22	126	190 12-15-20 14-18-24
	2S 2G	CFM/SIDE THROW, FT.	84	9-10-15	112	11-13-18	141	12-15-20	169	13-16-22	197	14-17-23	225	15-18-25	253	16-19-28
	1S	CFM/SIDE THROW, FT.	169	12-15-20	225	14-17-23	282	16-19-26	338	17-22-29	394	18-22-31	450	19-24-33	507	22-25-35
12 x 12 1.0 SQ. FT.	RETURN FACTORS —SP=1.3 TP NC + 4	CFM NC	300	10	400	17	500	23	600	28	700	33	800	36	900	39
	4A	CFM/SIDE THROW, FT.	75	8-13-15	100	11-14-18	125	13-15-21	150	14-17-22	175	14-18-24	200	15-20-25	225	17-21-27
	3A	CFM/SIDE THROW, FT.	75	112 8-13-15 11-14-19	100	150 11-14-18 12-15-21	125	187 13-15-21 14-17-24	150	225 14-17-22 15-19-26	175	262 14-18-24 16-20-27	200	300 15-20-25 17-21-30	225	338 17-21-27 19-22-31
	2S 2G	CFM/SIDE THROW, FT.	150	12-15-20	200	15-17-25	250	17-19-27	300	18-20-29	350	19-21-31	400	20-25-34	450	21-25-36
	1S	CFM/SIDE THROW, FT.	300	16-20-28	400	18-22-32	500	21-25-37	600	22-26-39	700	23-28-41	800	25-29-41	900	28-33-47
15 x 15 1.56 SQ. FT.	RETURN FACTORS —SP=1.8 TP NC + 4	CFM NC	465	10	625	19	780	25	935	30	1090	33	1250	39	1400	41
	4A	CFM/SIDE THROW, FT.	117	13-16-21	156	14-18-24	195	16-19-27	234	18-21-29	273	19-22-30	312	20-24-33	350	21-26-35
	3A	CFM/SIDE THROW, FT.	117	175 13-16-21 14-17-23	156	234 14-18-24 17-19-29	195	292 16-19-27 19-22-31	234	351 18-21-29 21-23-34	273	409 19-22-30 22-25-36	312	468 19-24-35 22-29-39	350	527 21-26-35 25-29-42
	2S 2G	CFM/SIDE THROW, FT.	234	16-20-27	312	19-22-31	390	21-25-36	468	22-27-40	546	24-29-42	625	27-31-45	700	27-35-47
	1S	CFM/SIDE THROW, FT.	467	21-25-36	625	23-29-42	780	26-32-47	935	29-36-51	1090	30-39-55	1250	32-42-57	1400	36-44-61
18 x 18 2.25 SQ. FT.	RETURN FACTORS —SP=2.1 TP NC + 6	CFM NC	675	12	900	21	1125	27	1350	31	1575	36	1800	39	2025	42
	4A	CFM/SIDE THROW, FT.	168	15-19-25	225	17-20-29	281	19-24-32	337	20-25-36	394	22-27-37	450	24-29-41	506	25-31-43
	3A	CFM/SIDE THROW, FT.	168	253 15-19-25 17-22-29	225	338 17-20-29 20-25-33	281	422 19-24-32 23-27-38	337	506 20-25-36 25-32-42	394	590 22-27-37 26-32-45	450	675 24-29-41 27-35-48	506	760 25-31-43 32-36-51
	2S 2G	CFM/SIDE THROW, FT.	337	19-23-32	450	22-26-38	562	24-30-43	675	26-31-46	787	30-34-49	900	30-35-53	1012	32-39-55
	1S	CFM/SIDE THROW, FT.	675	25-33-45	900	30-36-51	1125	34-42-58	1350	36-45-61	1575	39-48-66	1800	43-52-70	2025	46-55-75

D

CEILING DIFFUSERS

For performance notes, see page D37.

PERFORMANCE DATA:

MODELS 6500 AND 6200 • SQUARE NECK

NOMINAL NECK SIZE	BLOW PATTERNS	NECK VELOCITY TP	300 .033	400 .058	500 .090	600 .130	700 .177	800 .231	900 .293
21 x 21 3.06 SQ. FT.	RETURN FACTORS —SP=2.6 TP NC + 8	CFM NC	915 14	1225 22	1530 28	1835 32	2140 37	2450 40	2750 43
	4A	CFM/SIDE THROW, FT.	230 18-21-30	306 19-25-34	382 21-28-39	460 23-30-41	535 25-32-44	612 26-34-46	688 28-39-51
	3A	CFM/SIDE THROW, FT.	230 345 15-19-26 20-25-34	306 460 17-22-29 23-28-39	382 573 19-25-34 26-31-45	460 688 20-26-36 28-34-50	535 802 22-28-39 29-36-53	612 918 23-29-40 34-39-56	688 1030 25-34-45 34-43-59
	2S 2G	CFM/SIDE THROW, FT.	458 22-27-39	612 25-31-45	765 28-35-50	917 31-39-55	1070 32-42-59	1225 35-45-62	1375 39-48-66
	1S	CFM/SIDE THROW, FT.	917 29-37-51	1225 34-43-59	1530 39-50-67	1835 43-53-71	2140 46-56-77	2450 50-60-82	2750 53-64-88
24 x 24 4.0 SQ. FT.	RETURN FACTORS —SP=2.7 TP NC + 8	CFM NC	1200 15	1600 23	2000 29	2400 33	2800 37	3200 41	3600 44
	4A	CFM/SIDE THROW, FT.	300 20-24-33	400 24-27-40	500 27-31-44	600 29-33-47	700 31-35-51	800 33-40-55	900 35-40-58
	3A	CFM/SIDE THROW, FT.	300 450 20-24-33 23-28-39	400 600 24-27-40 26-31-46	500 750 27-31-44 29-36-52	600 900 29-33-47 31-38-56	700 1050 31-33-51 36-41-59	800 1200 33-40-55 36-43-64	900 1350 35-40-58 39-47-67
	2S 2G	CFM/SIDE THROW, FT.	600 25-33-45	800 30-36-51	1000 34-42-58	1200 36-45-61	1400 39-48-66	1600 43-52-70	1800 46-55-75
	1S	CFM/SIDE THROW, FT.	1200 35-40-59	1600 38-48-67	2000 45-54-77	2400 48-58-82	2800 51-62-90	3200 54-67-93	3600 59-70-101
30 x 30 6.25 SQ. FT.	RETURN FACTORS —SP=3.1 TP NC + 8	CFM NC	1875 16	2500 24	3125 30	3750 35	4375 39	5000 42	5625 46
	4A	CFM/SIDE THROW, FT.	469 25-31-42	625 29-36-48	782 34-40-55	937 36-44-61	1093 38-46-65	1250 40-50-69	1406 46-52-73
	3A	CFM/SIDE THROW, FT.	469 703 25-31-42 28-34-49	625 938 29-36-48 32-39-57	782 1172 34-40-55 35-44-64	937 1405 36-44-61 39-49-69	1093 1640 38-46-65 41-49-74	1250 1875 40-50-69 44-57-78	1406 2110 46-52-73 49-60-83
	2S 2G	CFM/SIDE THROW, FT.	937 32-40-55	1250 37-47-63	1562 42-53-72	1875 47-57-77	2187 50-60-83	2500 53-65-88	2812 57-68-95
	1S	CFM/SIDE THROW, FT.	1875 42-53-72	2500 49-60-83	3125 56-69-93	3750 60-72-102	4375 63-77-109	5000 69-83-116	5625 72-88-123
36 x 36 9.0 SQ. FT.	RETURN FACTORS —SP=3.6 TP NC + 9	CFM NC	2700 18	3600 25	4500 31	5400 36	6300 40	7200 44	8100 48
	4A	CFM/SIDE THROW, FT.	675 30-37-51	900 34-41-57	1125 39-46-67	1350 41-51-74	1575 44-53-78	1800 51-57-83	2025 51-64-87
	3A	CFM/SIDE THROW, FT.	675 1010 30-37-51 34-44-60	900 1350 34-41-57 40-48-68	1125 1687 39-46-67 46-56-78	1350 2025 41-51-74 48-60-82	1575 2362 44-53-78 52-64-88	1800 2700 51-57-83 58-70-94	2025 3038 51-64-87 62-74-100
	2S 2G	CFM/SIDE THROW, FT.	1350 40-45-67	1800 43-54-76	2250 50-61-86	2700 54-65-92	3150 58-70-101	3600 61-76-104	4050 67-79-113
	1S	CFM/SIDE THROW, FT.	2700 49-61-85	3600 59-70-99	4500 66-80-114	5400 72-85-122	6300 76-91-131	7200 82-97-142	8100 87-106-150

For performance notes, see page D37.

D
CEILING DIFFUSERS

PERFORMANCE DATA:

MODELS 6500 AND 6200 • RECTANGULAR NECK

NOMINAL NECK SIZE	BLOW PATTERNS	NECK VELOCITY TP	300 .033		400 .058		500 .090		600 .130		700 .177		800 .231		900 .293	
			CFM NC	1800 18	2400 25	3000 31	3600 36	4200 40	4800 43	5400 46						
36 x 24 6.0 SQ. FT.	RETURN FACTORS —SP=3.3 TP NC + 8	CFM NC	1800 18	2400 25	3000 31	3600 36	4200 40	4800 43	5400 46							
	4B 4C	CFM/SIDE THROW, FT.	600 300 29-37-51 19-22-31	800 400 34-41-58 22-25-37	1000 500 39-48-66 25-29-41	1200 600 41-51-70 27-31-44	1400 700 44-54-75 29-32-48	1600 800 49-59-80 31-37-51	1800 900 53-63-85 32-37-54							
	4E	CFM/SIDE THROW, FT.	450 450 25-31-42 24-31-42	600 600 29-37-51 29-37-51	750 750 32-41-58 32-41-58	900 900 35-44-61 35-44-61	1050 1050 37-48-66 37-48-66	1200 1200 41-51-71 41-51-71	1350 1350 42-54-75 42-54-75							
	3A1	CFM/SIDE THROW, FT.	750 300 31-37-54 19-22-31	1000 400 37-42-61 22-25-37	1250 500 41-49-70 25-29-41	1500 600 44-54-75 27-31-44	1750 700 48-58-80 29-32-48	2000 800 51-61-85 31-37-51	2250 900 54-65-90 32-37-54							
	3A2	CFM/SIDE THROW, FT.	676 562 27-32-48 24-29-41	900 750 34-37-54 27-32-48	1125 937 34-42-61 31-37-54	1350 1125 37-48-66 32-39-58	1575 1312 39-51-71 35-42-61	1800 1500 42-54-75 37-44-66	2025 1687 48-58-80 41-49-70							
	2A	CFM/SIDE THROW, FT.	900 32-41-56	1200 37-48-65	1500 42-54-73	1800 48-58-78	2100 51-61-85	2400 54-66-90	2700 58-70-97							
	2B	CFM/SIDE THROW, FT.	900 32-41-56	1200 37-48-65	1500 42-54-73	1800 48-58-78	2100 51-61-85	2400 54-66-90	2700 58-70-97							
	2C 2D	CFM/SIDE THROW, FT.	1200 600 37-42-63 25-31-42	1600 800 41-51-71 29-37-51	2000 1000 48-58-82 32-41-58	2400 1200 51-61-87 35-44-61	2800 1400 54-66-95 37-48-66	3200 1600 58-71-99 41-51-71	3600 1800 63-75-107 42-54-75							
	2E	CFM/SIDE THROW, FT.	1200 600 37-42-63 25-31-42	1600 800 41-51-71 29-37-51	2000 1000 48-58-82 32-41-58	2400 1200 51-61-87 35-44-61	2800 1400 54-66-95 37-48-66	3200 1600 58-71-99 41-51-71	3600 1800 63-75-107 42-54-75							
	1A 1B	CFM/SIDE THROW, FT.	1800 41-51-70	2400 48-58-80	3000 54-66-90	3600 58-70-99	4200 61-75-105	4800 66-80-114	5400 70-85-122							
36 x 30 7.5 SQ. FT.	RETURN FACTORS —SP=3.4 TP NC + 8	CFM NC	2250 19	3000 26	3750 32	4500 37	5250 41	6000 44	6750 47							
	4B 4C	CFM/SIDE THROW, FT.	657 468 29-37-51 20-25-34	875 625 34-41-58 24-29-39	1093 782 39-48-66 27-32-44	1313 937 41-51-70 29-37-49	1532 1093 44-54-75 31-37-53	1750 1250 49-59-80 32-41-56	1969 1406 53-63-85 37-42-59							
	3A1	CFM/SIDE THROW, FT.	890 468 32-41-56 20-25-34	1187 625 37-48-65 24-29-39	1484 782 42-54-73 27-32-44	1781 937 48-58-78 29-37-49	2078 1093 51-61-85 31-37-53	2375 1250 54-66-90 32-41-56	2672 1406 58-70-97 37-42-59							
	3A2	CFM/SIDE THROW, FT.	787 675 31-37-54 22-27-37	1050 900 37-42-61 25-31-42	1312 1125 41-49-70 29-34-49	1575 1350 44-54-75 31-37-54	1837 1575 48-58-80 32-39-58	2100 1800 51-61-85 37-42-61	2362 2025 54-65-90 37-48-65							
	2A	CFM/SIDE THROW, FT.	1125 34-42-59	1500 39-49-68	1875 44-56-76	2250 49-59-83	2625 53-65-88	3000 56-68-97	3375 59-73-102							
	2B	CFM/SIDE THROW, FT.	1125 34-42-59	1500 39-49-68	1875 44-56-76	2250 49-59-83	2625 53-65-88	3000 56-68-97	3375 59-73-102							
	2C 2D	CFM/SIDE THROW, FT.	1312 938 37-42-63 29-37-51	1750 1250 41-51-71 34-41-58	2188 1562 48-58-82 39-48-66	2625 1875 51-61-87 41-51-70	3063 2187 54-66-95 44-54-75	3500 2500 58-71-99 49-59-80	3938 2812 63-75-107 53-63-85							
	2E	CFM/SIDE THROW, FT.	1312 938 37-42-63 29-37-51	1750 1250 41-51-71 34-41-58	2188 1562 48-58-82 39-48-66	2625 1875 51-61-87 41-51-70	3063 2187 54-66-95 44-54-75	3500 2500 58-71-99 49-59-80	3938 2812 63-75-107 53-63-85							
	1A 1B	CFM/SIDE THROW, FT.	2250 48-60-82	3000 56-68-94	3750 64-78-106	4500 68-82-116	5250 72-88-124	6000 78-94-134	6750 82-100-144							

Notes:

- Core style 4E is sized to give equal flow as near as possible in directions A and B.
- For core styles 1A, 1B, 2A and 2B, the "A" direction is shown. Throw correction factor for "B" direction is: $A \times .82 = B$.

CFM - cubic feet per minute
TP - total pressure - inches w.g.
T - throw in feet
NC - Noise Criteria (values) based on 10 dB room absorption, re 10^{-12} watts.
Neck Velocity – feet per minute

Performance Notes:

- Throw values are given for terminal velocities of 150, 100 and 50 fpm under isothermal conditions. Data applies to ceiling mounted units when the maximum coanda effect applies. When no ceiling is present (exposed duct), throws are reduced by approximately 25%.
- Sound levels in performance tables are for steel construction – **Model 6500**. Apply the following corrections for aluminum construction – **Model 6200**.
 TP = Listed value x 1.25.
 NC = Listed value + 4.
- Performance data as tabulated is for supply air conditions. Correction factors for return air application - see next page.
- Correction factors for adjustable models - see next page.
- Correction factors for round inlets - see next page.
- Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

PERFORMANCE DATA CORRECTIONS:

MODELS 6500 AND 6200

CORRECTION FACTORS FOR RETURN INLET

If the unit is used as a return inlet, the performance data is obtained by applying the return corrections, as follows:

- Add the NC correction at the left side of the table to the NC value listed in the performance table.
- Multiply the listed SP factor at the left side of the table by the total pressure (TP) listed at the top of the table.

CORRECTION FACTORS FOR MODELS 6550 AND 6250 (ADJUSTABLE PATTERN CONTROLLERS) – TABLE 2

Refer to the performance data for the **Models 6500 and 6200**. Apply the corrections from Table 2 to the data for square, 4-way core styles, as follows:

- NC = listed + correction
- Total Pressure = listed x factor
- Horizontal Throw = listed
- Vertical Throw = listed x factor

Apply the throw factor to the 50 fpm terminal velocity throw only.

Example:

18" x 18", **Model 6500**, 1350 cfm, 20°F temperature difference heating, vertical projection, (Page D23).

- NC = 31 + 6 = 37
- TP = .13 x 2.1 = .273
- Throw = 36 x .9 = 32.4 feet @ 50 fpm terminal velocity.

CORRECTION FACTORS WITH SQUARE TO ROUND INLET ADAPTOR – TABLE 3

- Add the NC correction factor from Table 3 and the NC value listed in the performance tables.
- Multiply the correction factor from Table 3 by the listed total pressure in the performance tables.
- Multiply the correction factor from Table 3 by the listed throws in the performance tables.

Example:

12" x 12" unit with 10" round adaptor handling 500 cfm supply air. (Page D23).

- NC = 23 + 7 = 30
- Total Pressure = .09 x 1.65 = 0.149
- Throw = 21 x 1.15 = 24.15 feet @ 50 fpm terminal velocity.

Example:

12" x 12" unit handling 600 cfm of return air. (Page D23).

- Return NC = 28 + 4 = 32.
- Return negative SP = 1.3 x (-.13) = -.169.

TABLE 2 Correction Factors 6550/6250 Adjustable

NECK SIZE	NC (add)		TOTAL PRESSURE (multiply)		VERTICAL THROW (multiply)			
					COOLING, ΔT		HEATING, ΔT	
	H	V	H	V	20°F	0°F	20°F	40°F
6 x 6	2	6	1.2	1.5	1.3	1.1	0.8	0.6
9 x 9	2	6	1.4	2.1	1.5	1.2	0.9	0.6
12 x 12	2	6	1.4	2.1	1.6	1.3	1.0	0.6
15 x 15	2	6	1.4	2.1	1.7	1.3	1.0	0.6
18 x 18	2	6	1.4	2.1	1.7	1.3	0.9	0.6
21 x 21	2	6	1.4	2.1	1.7	1.3	0.8	0.5
24 x 24	2	6	1.6	2.2	1.5	1.1	0.7	0.3

TABLE 3 Correction Factors for SR Adaptors

SQUARE INLET	ROUND INLET	NC (add)	TP (multiply)	THROW (multiply)		
				150	100	50
6 x 6	5	7	1.65	1.10	1.10	1.15
9 x 9	6	17	3.50	1.15	1.15	1.20
9 x 9	8	4	1.40	1.10	1.10	1.10
12 x 12	8	17	3.50	1.15	1.15	1.20
12 x 12	10	7	1.65	1.10	1.10	1.15
15 x 15	10	17	3.50	1.15	1.15	1.20
15 x 15	12	9	1.90	1.10	1.10	1.15
15 x 15	14	3	1.25	1.05	1.05	1.10
18 x 18	12	17	3.50	1.15	1.15	1.20
18 x 18	14	10	2.00	1.10	1.10	1.15
18 x 18	16	5	1.45	1.10	1.10	1.10
21 x 21	14	17	3.70	1.15	1.15	1.20
21 x 21	16	11	2.25	1.10	1.10	1.15
21 x 21	18	6	1.60	1.10	1.10	1.10
21 x 21	20	3	1.20	1.05	1.05	1.10
24 x 24	16	17	3.50	1.15	1.15	1.20
24 x 24	18	12	2.35	1.10	1.10	1.15
24 x 24	20	7	1.65	1.10	1.10	1.15
24 x 24	22	4	1.33	1.05	1.05	1.10

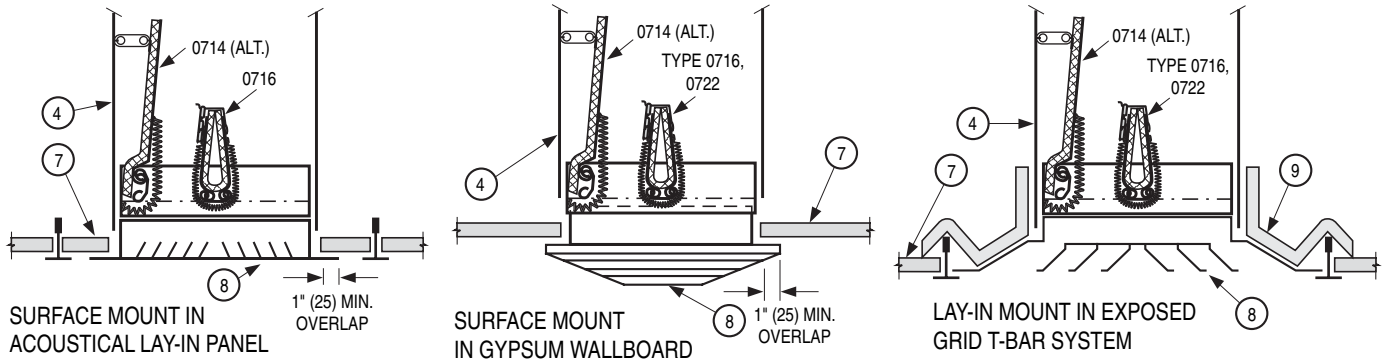
QUALIFICATIONS:

- **UL 555C Classified Ceiling Damper (File #9660).**
- **CAN4-S112.2 Ceiling Firestop Flap Assemblies.**
- **California State Fire Marshal: Fire Damper Listing No. 3225-0935:102.**
- **City of New York Board of Standards and Appeals. Cal. No. 460-88-SA.**
- **Meets the requirements for NFPA 90A, IBC and NBC (Canada) and associated local building codes.**

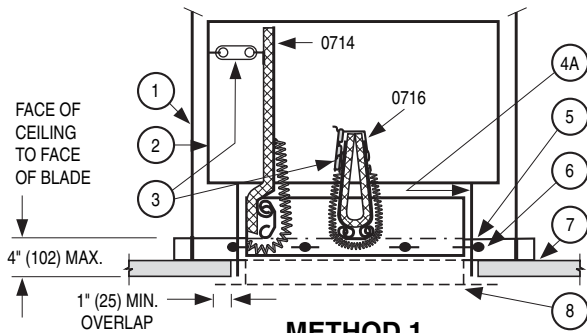
**NOTES:**

1. Model Series 0700 Ceiling Dampers (known as Fire Stop Flaps in Canada) are for use in place of the hinged blade, sheet metal damper in steel ducts with steel diffuser or grille as specified in the "Design Information Section – General" and in the individual floor or roof ceiling design(s) being used, as illustrated and described in the current UL Fire Resistance Directory. One ceiling damper of the same size as the allowable duct outlet size may be substituted for each hinged sheet metal damper specified in the design.
The clearance between each side of the ceiling damper and the duct drop shall be 1/8" (3) maximum.
2. Opening in ceiling membrane may be up to 1" (25) larger than the nominal size of the ceiling radiation damper. For exposed grid T-Bar ceiling systems, where the opening in the ceiling membrane is larger (more than 1" (25)) than the ceiling damper, a thermal blanket (Model 0725 or 0726) must be installed over the exposed surface of the diffuser (see lay-in diffuser applications).
Duct outlets in lay-in ceilings should be located within the field of an acoustical ceiling panel or tile.
Where it is necessary to cut a main runner or cross tee, each cut end shall be supported by a vertical No. 12 SWG hanger wire. A 1/2" (13) clearance shall be maintained between the duct outlet and each cut end at main runner and cross tee. The duct outlet shall be located so that no more than one main runner or cross tee is cut when penetrating the ceiling membrane.
3. A. Before installing Model 0716 or 0722, open blades and install fusible link between spring loaded wire clips. Do not bend or deform clips after assembly. If dampers are provided with link tabs instead of wire clips, install link and bend tabs to secure link in position.
B. After installing damper model 0714 in duct drop, open blade and attach link to duct or duct drop.
4. **INSTALLATION:**
Method 1. Type 0714, 0716 and 0720
Attach the two 16 ga. (1.6) steel support channels. (1 1/2" (38) deep with 1/2" (13) flanges), through the duct drop and ceiling damper using 3/16" (5) diameter by 1/2" (13) long steel bolts spaced 6" (152) o.c. maximum, with two bolts per channel minimum. The bolts shall not interfere with the closing of the ceiling damper.
Method 2. Type 0714, 0716, 0720 and 0722
Support the duct with two 16 ga. (1.6) steel support channels (1 1/2" (38) deep with 1/2" (13) flanges). Place the support channels at the bottom of the duct adjacent to both sides of the duct drop. Install the ceiling damper in the duct drop using 3/16" (5) diameter by 1/2" (13) long steel bolts, #8 by 1/2" (13) sheet metal screws or 3/16" (5) diameter steel rivets at 6" (152) o.c. with 2 per side minimum for rectangular or square dampers. For round dampers, use three equally spaced #8 x 1/2" (13) sheet metal screws for dampers up to 10" (254) dia. and four for larger sizes.
5. Use No. 12 SWG galvanized steel wire hangers to independently support channels to the structural members of the floor or roof above.
6. Maximum damper size. Models 0714, 0716, 0716-4 and 0716-4A: 24" x 24" (610 x 610).
Model 0716A: 16" x 16" (406 x 406). Model 0720: 18" x 18" (457 x 457).
Model 0722: 24" (610) dia. Model 0722A: 16" (406) dia..
7. **Steel grille or diffuser installation:** Attach to the duct drop or ceiling damper using #8 by 1/2" (13) long sheet metal screws at 8" (203) o.c. maximum and at least one screw per side for rectangular or square dampers. Round neck grilles or diffusers shall be attached to the duct drop or ceiling damper using a minimum of four equally spaced #8 x 1/2" (13) sheet metal screws. The grille or diffuser flange face shall overlap the ceiling opening by 1" (25) minimum and provide structural support for the ceiling membrane.
Non-steel grille or diffuser installation: Duct drop requires a support flange as detailed on page 2. Grille or diffuser may be attached in any suitable manner.

TYPICAL GRILLE/DIFFUSER APPLICATIONS

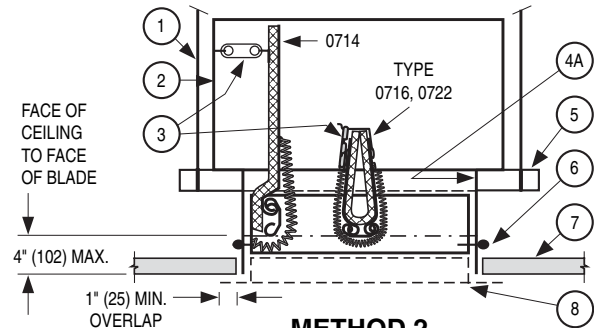


STEEL GRILLE OR DIFFUSER DETAIL



METHOD 1

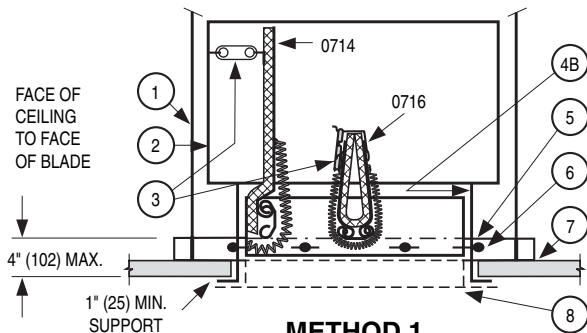
MODELS 0714, 0716, 0716A,
0716-4, 0716-4A AND 0720



METHOD 2

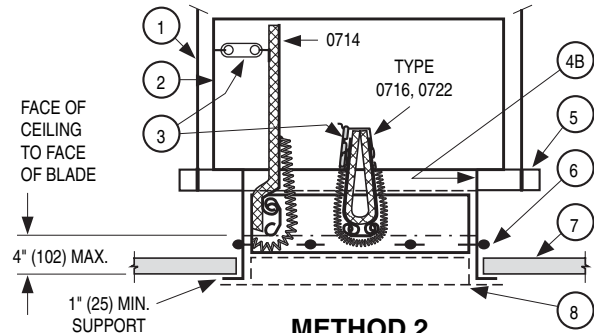
MODELS 0714, 0716, 0716A,
0716-4, 0716-4A, 0720, 0722 AND 0722A

NON-STEEL GRILLE OR DIFFUSER DETAIL



METHOD 1

MODELS 0714, 0716, 0716A,
0716-4, 0716-4A AND 0720



METHOD 2

MODELS 0714, 0716, 0716A,
0716-4, 0716-4A, 0720, 0722 AND 0722A

ITEMS:

1. Wire hangers (4 required).
2. Main duct.
3. Listed fusible link or alt. listed adj. fusible link assembly. (Blade control through screw adjustment).
- 4a. Steel duct drop.
- 4b. Steel duct drop with 1" (25) lower support flange. The support flange may be integral to the duct drop or 1" x 1" (25 x 25) angles may be fastened to the duct drop at 4" (102) max. on center, min. two per side.
5. Support channels (2 required).
6. Mounting bolts, screws or rivets.
7. Ceiling: Acoustical panel (lay-in), acoustical tile or gypsum wallboard.
8. Grille or diffuser (see note 7).
9. Supplementary thermal blanket for use where ceiling opening is larger than nominal damper size. (See lay-in diffuser applications).

Dimensions are in inches (mm).

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**CEILING DAMPER, DIFFUSER AND THERMAL BLANKET ASSEMBLY
FOR LAY-IN INSTALLATION WITH FLEXIBLE OR STEEL DUCT****QUALIFICATIONS:**

- UL 555C Classified Ceiling Damper. (File # 9660).
- CAN4-S112.2 Ceiling Firestop Flap Assemblies.
- California State Fire Marshal: Fire Damper Listing No. 3225-0935:102.
- City of New York Board of Standards and Appeals. Cal. No. 460-88-SA.
- Meets the requirements for NFPA 90A, IBC, BOCA, SBCCI, UBC, NBC (Canada) and associated local building codes.

**NOTES:**

1. Follow carefully the installation procedure shown on page 2 for flexible duct and page 3 for hard duct.
2. Before installing, open damper blades and install link between spring loaded wire clips. Do not bend or deform clips after assembly. If dampers are provided with link tabs instead of wire clips, install link and bend tabs to secure link in position.
3. The end tabs of the 2'-0" (610) cross T-Bar shall be bent back against the web of the 4'-0" (1219) cross T-Bars. The 4'-0" (1219) cross T-Bars must have slots in the web for connection of the 2'-0" (610) cross T-Bar.
4. Use No. 12 SWG galvanized steel hanger wires to independently support the ceiling T-Bars to the structural members of the floor or roof above. Ensure hanger wires are plumb and straight.
5. Maximum distance from face of ceiling to face of damper blade is 4" (102).
6. Maximum size of the Ceiling Damper/Ceiling Air Diffuser neck is 12" x 12" (305 x 305) for square hard duct and 14" (356) dia. for flexible duct installations.
Larger neck sizes require the duct to be independently supported. See IOM pages 5.050-5.051.
The Flexible Duct shall be Class 0 or 1 bearing the UL Classification marking. The maximum length of the duct shall not exceed 14'-0" (4267) in length. No portion of the duct shall rest on the back surface of the ceiling panels or tiles and a minimum of 4" (102) clearance must be maintained. Where the duct must be supported, use straps or No. 12 SWG steel hanger wires 4'-0" (1219) to 6'-0" (1829) o.c.
7. Caution should be observed so that the duct does not interfere with the operation of the Classified Ceiling Damper of the Ceiling Air Diffuser assembly.
8. No Diffuser shall be located in an adjacent 24" x 48" (610 x 1219) ceiling grid module.
9. Ceiling Damper/Ceiling Air Diffuser assemblies are for use in lieu of the hinged blade, sheet metal damper in steel ducts as specified in the "Design Information Section - General", and in the individual floor and roof ceiling design(s) being used, as illustrated and described in the current UL "Fire Resistance Directory".

**CEILING DAMPER, DIFFUSER AND THERMAL BLANKET ASSEMBLY
FOR LAY-IN INSTALLATION WITH FLEXIBLE DUCT.
MODELS: 0722 & 0722A.**

Slip ceiling damper over neck of diffuser and install screws (item 5) on equally spaced centers.

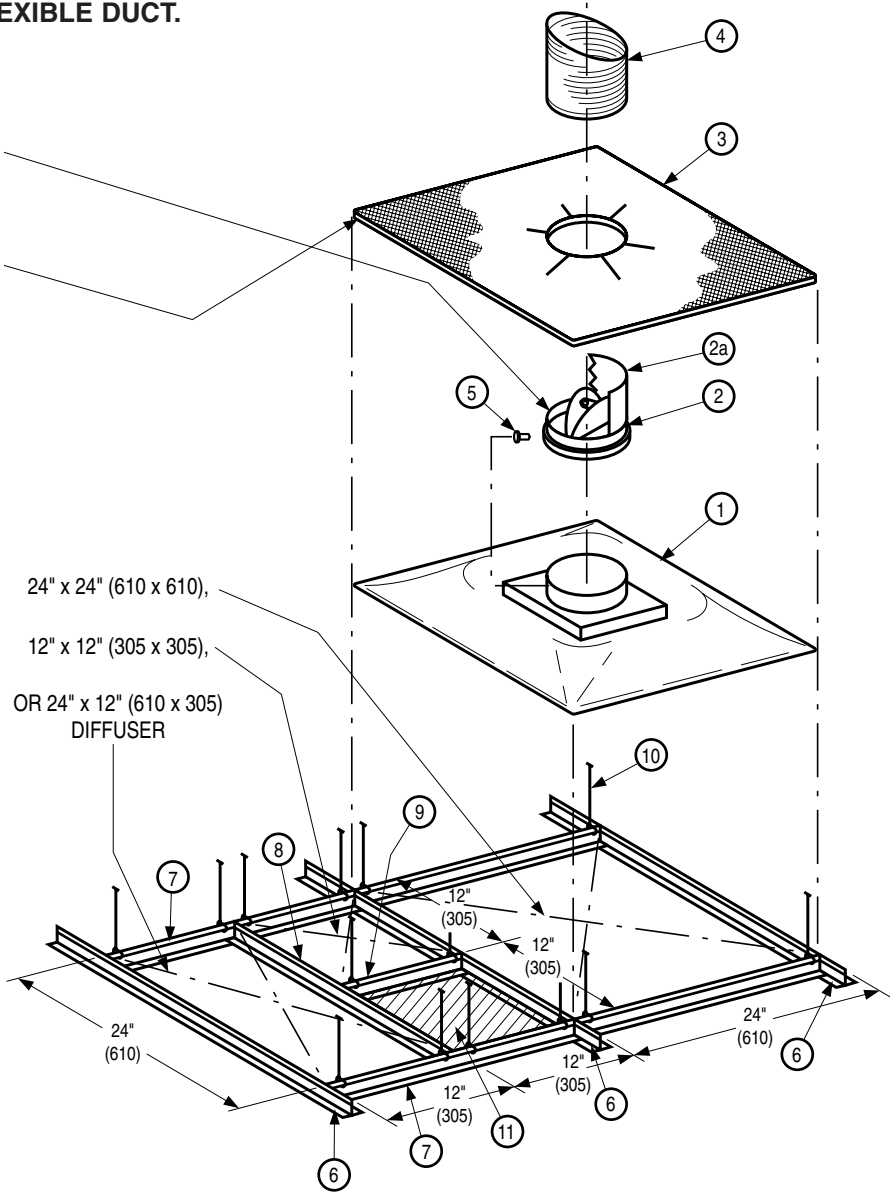
Place thermal blanket over ceiling damper and diffuser neck and set square with ceiling grid. Cut corners of blanket to clear hanger wires (item 10).

ITEMS:

1. Lay-in type steel diffuser with round neck or square-to-round adapter. (24 gauge minimum).
2. Ceiling damper.
- 2a. Ceiling damper with top extension.
3. Thermal blanket. (Model 0725).
4. UL Listed flexible duct.
5. #8 x 1/2" (13) sheet metal screws; equally spaced. Three required for 10" (254) dia. or less. Four required for 12" (305) and 14" (356) dia.
6. Main T-bar runner.
7. 4'-0" (1219) cross T-bar.
8. 2'-0" (610) T-bar.
9. 1'-0" (305) T-bar.
10. The 4 corners of the grid module in which the lay-in diffuser is installed shall have a hanger wire support.
11. Ceiling panel or tile set in ceiling grid.

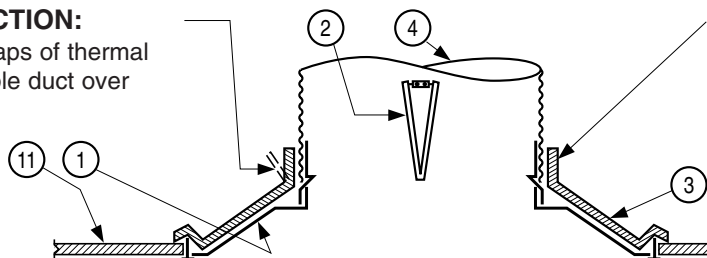
Combined diagram of typical ceiling grid layouts to suit 12" x 12" (305 x 305), 24" x 12" (610 x 305) or 24" x 24" (610 x 610) diffuser sizes as noted.

No diffusers shall be located in adjacent modules. Refer to notes on page 5.060.



DUCT CONNECTION:

Fold back neck flaps of thermal blanket, slip flexible duct over diffuser neck.



THERMAL BLANKET ATTACHMENT:

Replace neck flaps of thermal blanket over duct and fasten duct to neck over blanket using 18 SWG min. steel wire or steel clamp in accordance with duct manufacturer's installation instructions. Do not use bolts, screws or rivets.

CEILING DAMPER, DIFFUSER AND THERMAL BLANKET ASSEMBLY FOR LAY-IN INSTALLATION WITH RECTANGULAR STEEL DUCT. MODELS: 0714, 0716, 0716A, 0716-4, 0716-4A & 0720.

Slip ceiling damper over neck of diffuser and install screws (item 5) on equally spaced centers.

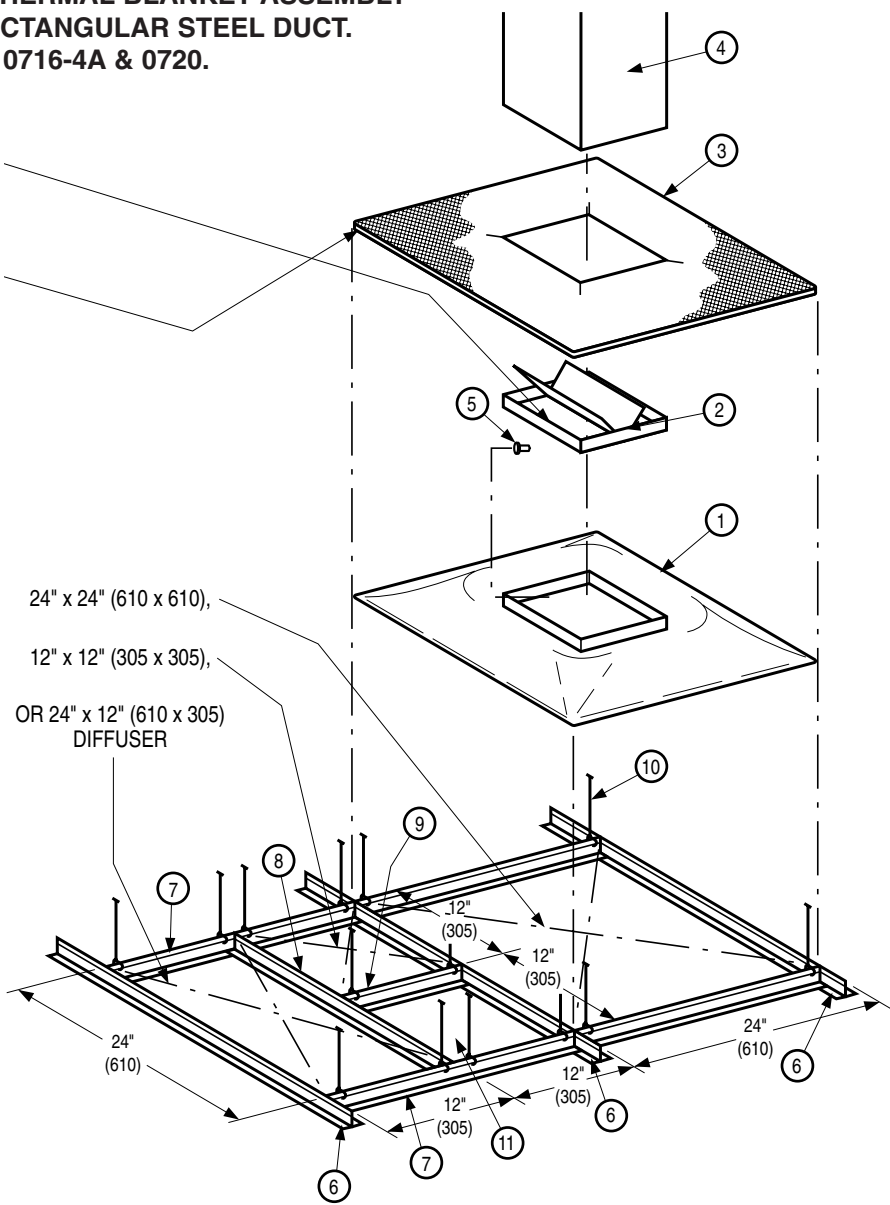
Place thermal blanket over ceiling damper and diffuser neck and set square with ceiling grid. Cut corners of blanket to clear hanger wires (item 10).

ITEMS:

1. Lay-in type steel diffuser with square or rectangular neck. (24 gauge min.).
2. Ceiling damper.
3. Thermal blanket. (Model 0726).
4. Steel duct drop.
5. #8 x 1/2" (13) sheet metal screws; equally spaced at 8" (203) o.c. maximum with at least one screw per side.
6. Main T-bar runner.
7. 4'-0" (1219) cross T-bar.
8. 2'-0" (610) T-bar.
9. 1'-0" (305) T-bar.
10. The 4 corners of the grid module in which the lay-in diffuser is installed shall have a hanger wire support.
11. Ceiling panel or tile set in ceiling grid.

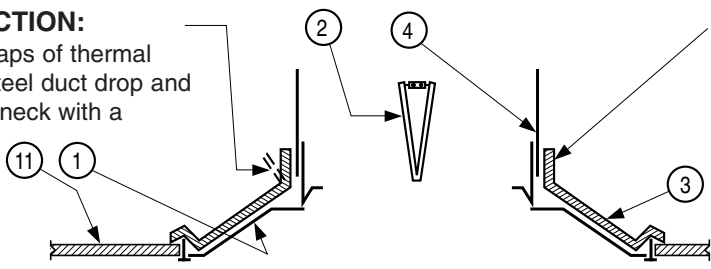
Combined diagram of typical ceiling grid layouts to suit 12" x 12" (305 x 305), 24" x 12" (610 x 305) or 24" x 24" (610 x 610) diffuser sizes as noted.

No diffusers shall be located in adjacent modules. Refer to notes on page 5.060.



DUCT CONNECTION:

Fold back neck flaps of thermal blanket, slip on steel duct drop and fasten to diffuser neck with a minimum of four #8 sheet metal screws, one per side.



THERMAL BLANKET ATTACHMENT:

Replace neck flaps of thermal blanket over duct and fasten using 18 SWG steel wire.



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