

KOMFORT FLOW

KOMFORT FLOW S.E. CO., LTD.

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PRAKANONG, BANGKOK 10250

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321-4124, 321-4145

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บริษัท คอมฟอร์ตโฟลว์ เอส.อี. จำกัด

98/12 หมู่ 4 ซ.อ่อนนุช ตำบลประเวศ

อำเภอพระโขนง กรุงเทพมหานคร 10250

โทร. 321-2511, 321-2592

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รูปที่ 1. ห้างสรรพสินค้าโรบินสัน
รูปที่ 2. อาคารไทยสมุทร
รูปที่ 3. สรรธานี
รูปที่ 4. โรงแรมแชงกรีลา

ALL TYPES OF KOMFORT FLOW CEILING DIFFUSERS ARE SUITABLE FOR ALL KINDS OF CEILINGS AND/OR FOR ANY SPECIALLY DESIGNED CEILINGS THE OVER LAPPING INSTALLATION CONCEALS CEILING OPENING WORK AND MAKE ITS APPEARANCE PERFECTLY NEAT, BESIDES YOU WILL ENJOY THE SIMPLICITY IN AN INSTALLATION TECHNIQUE.

— KOMFORT FLOW CEILING DIFFUSERS ARE RECOMMENDED FOR AIR CONDITIONING AND VENTILATION SYSTEMS.

— REMOVABLE SNAP-IN DIRECTIONAL CORES PROVIDE 4, 3, 2 OR 1-WAY HORIZONTAL AND DIFFUSION PATTERNS TOUCHING THE CEILING THUS PROVIDING BEST RESULT OF DISTRIBUTION IN THE CONDITIONED SPACE. AVAILABLE IN SQUARE OR RECTANGULAR SHAPE.

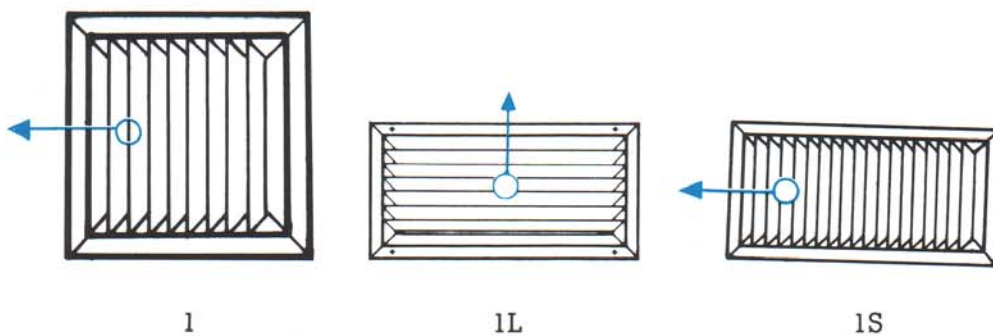
— THE BEVELLED-TYPE DROP FRAME DESIGNS PROVIDE BETTER AND MORE EFFICIENT AIR DIFFUSION, FURTHER MORE, THEY PROVIDE BEST RESULT OF CEILING PROTECTION. THE DROP FRAME TYPE CAN BE WELL FURNISHED ANY KIND OF CEILING WITH SIMPLE INSTALLATION METHOD.

— THE OPPOSED CONTROL DAMPERS FOR FINE ADJUSTING AIRFLOW WHICH COMPLETELY FIXES IN NECK SIZE OF DIFFUSER ARE AVAILABLE ON ORDER.

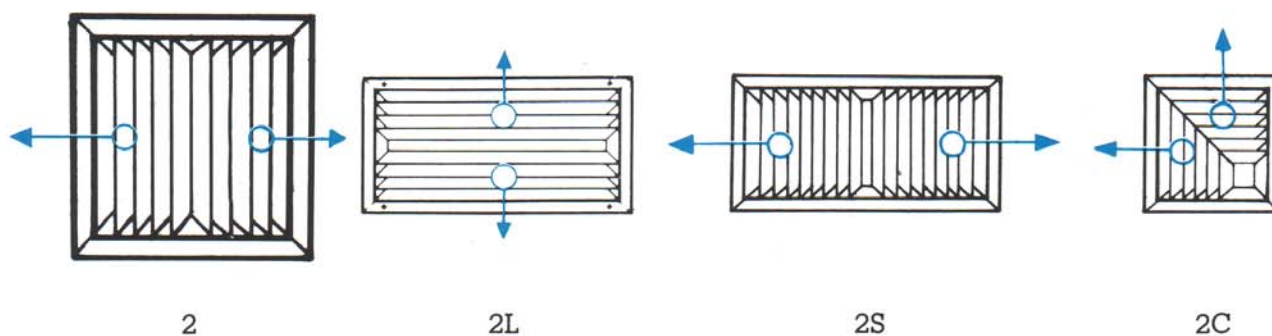
— MATERIAL : EXTRUDED ALUMINIUM ANODIZED, AVAILABLE IN NATURAL COLOUR AND ANOLOK COLOUR NO. 512

— ALTERNATIVE COLOUR BAKED PAINT FINISH AVAILABLE UPON REQUEST.

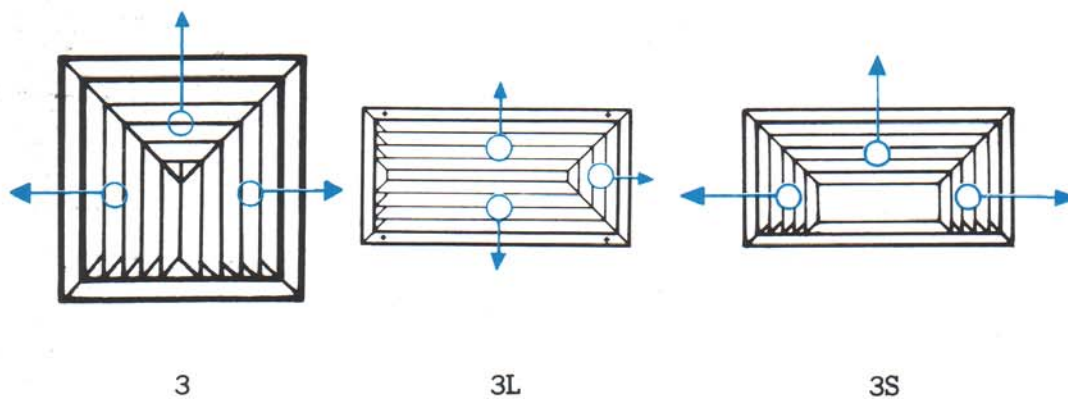
1-WAY DISCHARGE DIFFUSERS TYPE



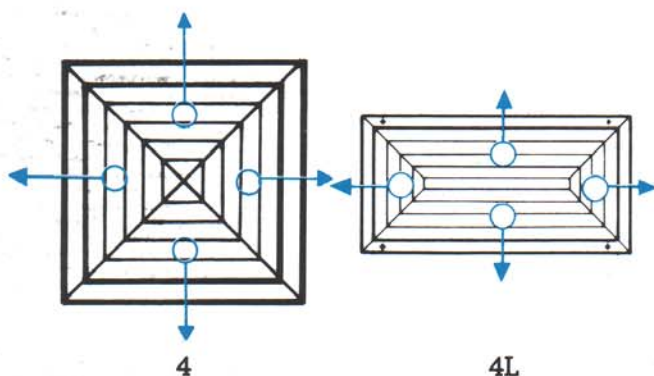
2-WAY DISCHARGE DIFFUSERS TYPE



3-WAY DISCHARGE DIFFUSERS TYPE



4-WAY DISCHARGE DIFFUSERS TYPE



KOMFORT FLOW CEILING DIFFUSERS MODEL ASD



MODEL 4-ASD



MODEL 3-ASD



MODEL 2-ASD



MODEL 1-ASD



MODEL 4L-ARD



MODEL 3S-ARD



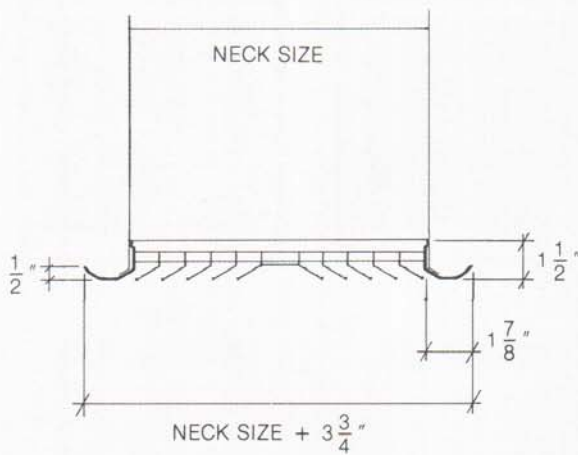
MODEL 2L-ARD



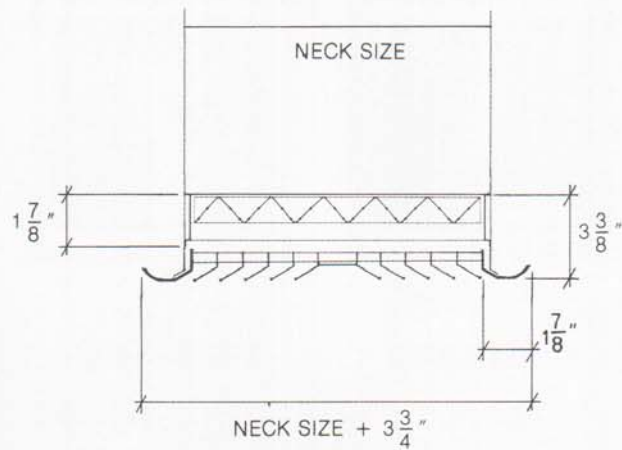
MODEL 1L-ARD

— THE NUMBER IN FRONT OF EACH MODEL CODE INDICATES THE DIRECTION OF AIR FLOW E.G. MODEL 4-ASD : MEANS FOUR-WAY DEFLECTIONS AIR FLOW SQUARE DIFFUSERS 3S-ARD : THREE-WAY DEFLECTIONS AIR FLOW RECTANGULAR DIFFUSERS ETC.

SECTION DETAILS

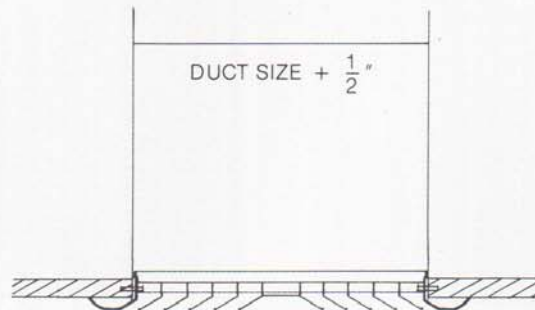


MODEL 4-ASD



MODEL 4-ASD (W.D.)

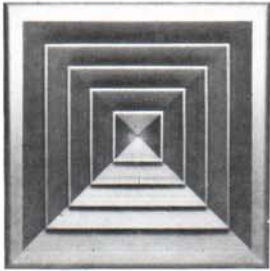
INSTALLATION DETAIL



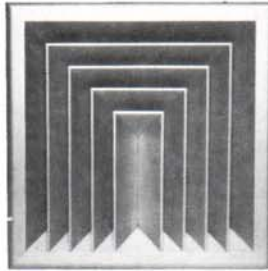
INSTALLATION METHOD :

THE TWO MODELS CSD-D AND ASD HAVE THE SAME INSTALLING METHOD I.E. PREPARE THE DUCT EDGE IN ACCORDANCE WITH CEILING OPENING AND FIX DIFFUSER FRAME TO AIR DUCT WITH SCREWS THEN SNAP IN DIFFUSER CORE TO THE FRAME.

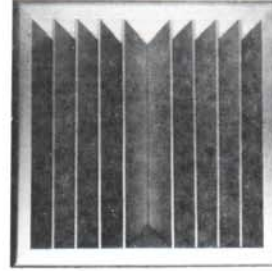
KOMFORT FLOW CEILING SQUARE DIFFUSERS MODEL CSD



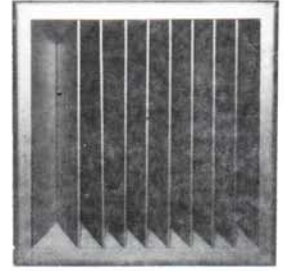
MODEL 4-CSD



MODEL 3-CSD



MODEL 2-CSD



MODEL 1-CSD

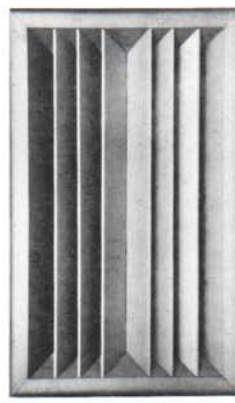
KOMFORT FLOW CEILING RECTANGULAR DIFFUSERS



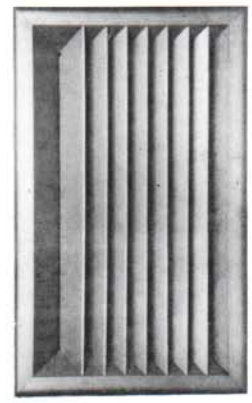
MODEL 4L-CRD



MODEL 3S-CRD



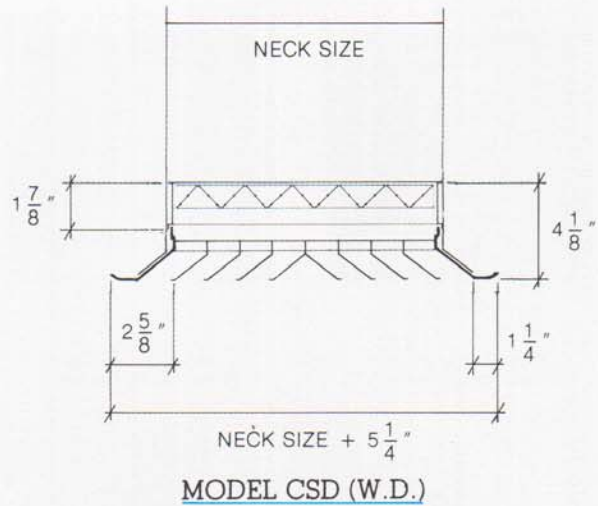
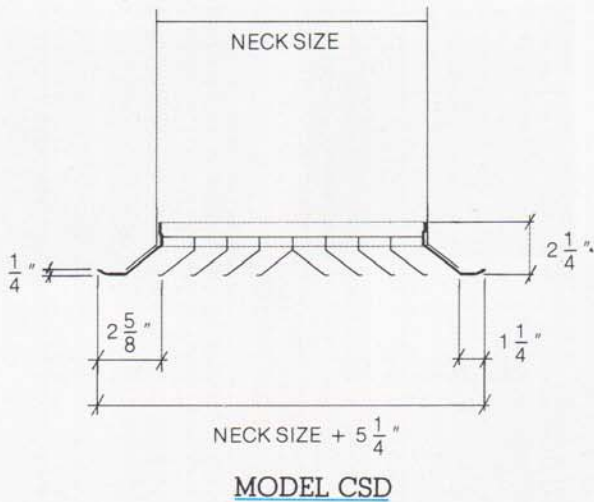
MODEL 2L-CRD



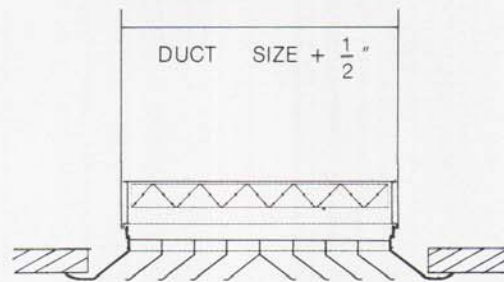
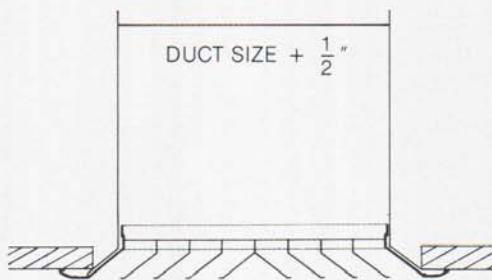
MODEL 1L-CRD

THE NUMBER IN FRONT OF EACH MODEL CODE INDICATES THE DIRECTION OF AIR FLOW.
I.E. MODEL 4-CSD : MEANS FOUR-WAY DEFLECTIONS AIR FLOW SQUARE DIFFUSERS;
3-CRD : THREE-WAY DEFLECTIONS AIR FLOW RECTANGULAR DIFFUSERS ETC.

SECTION DETAILS



INSTALLATION DETAILS



INSTALLATION METHOD :

- EXPAND THE AIR DUCT EDGE IN ACCORDANCE WITH DIFFUSER SECTION AND FIX DIFFUSER FRAME TO AIR DUCT WITH SCREWS THEN SNAP IN DIFFUSER CORE TO THE FRAME (FIG 1)
- PREPARE THE AIR DUCT EDGE SIZE ACCORDING TO THE NECK SIZE OF DIFFUSER AND FIX DIFFUSER FRAME TO AIR DUCT WITH SCREWS THEN SNAP IN DIFFUSER CORE TO THE FRAME (FIG 2)

KOMFORT FLOW CEILING DIFFUSERS MODEL. CSD-D



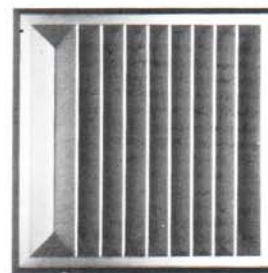
MODEL 4-CSD-D



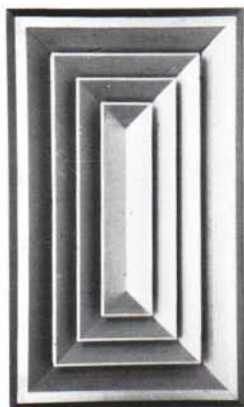
MODEL 3-CSD-D



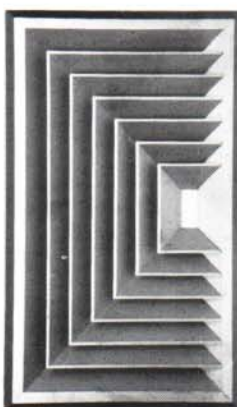
MODEL 2-CSD-D



MODEL 1-CSD-D



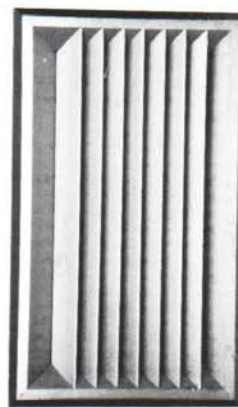
MODEL 4L-CRD-D



MODEL 3S-CRD-D



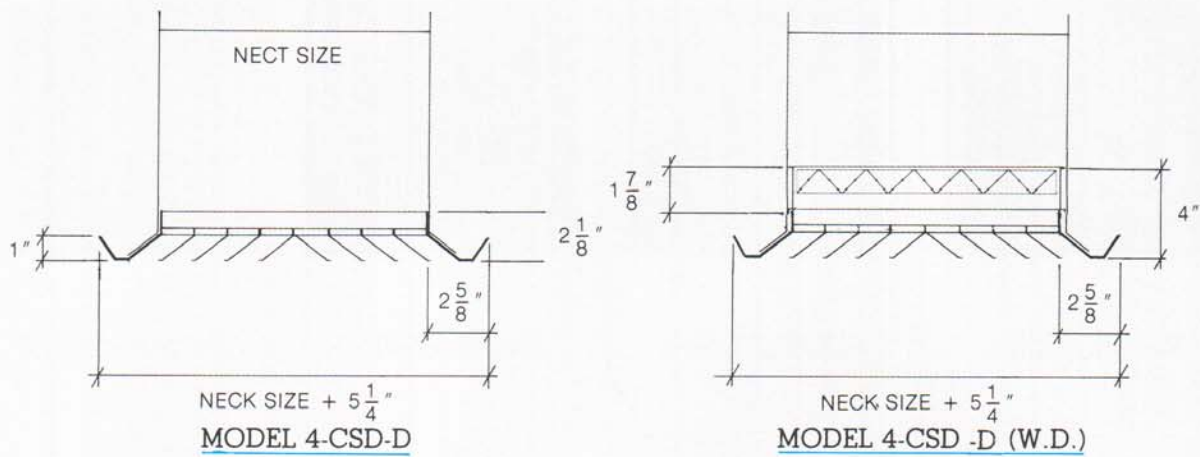
MODEL 2L-CRD-D



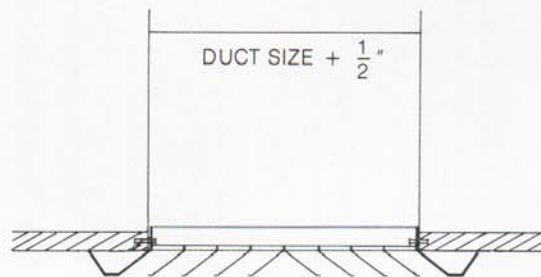
MODEL 1L-CRD-D

—THE NUMBER IN FRONT OF EACH MODEL CODE INDICATES THE DIRECTION OF AIR FLOW I.E. MODEL 4-CSD-D : MEANS FOUR-WAY DEFLECTIONS AIR FLOW SQUARE DIFFUSERS 3S-CRD- : THREE-WAY DEFLECTIONS AIR FLOW RECTANGULAR DIFFUSERS- ETC.

SECTION DETAILS



INSTALLATION DETAIL



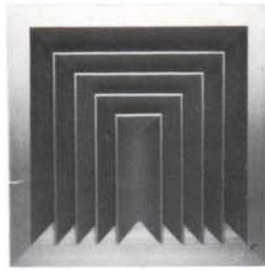
INSTALLATION METHOD :

THE TWO MODELS CSD-D AND ASD HAVE THE SAME INSTALLING METHOD I.E. PREPARE THE DUCT EDGE IN ACCORDANCE WITH CEILING OPENING AND FIX DIFFUSER FRAME TO AIR DUCT WITH SCREWS THEN SNAP IN DIFFUSER CORE TO THE FRAME.

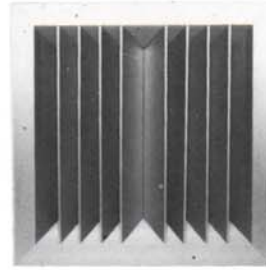
KOMFORT FLOW CEILING SQUARE DIFFUSERS MODEL CSD-F



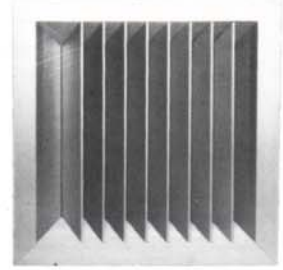
MODEL 4 CSD-F



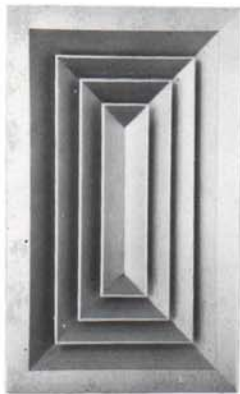
MODEL 3-CSD-F



MODEL 2-CSD-F



MODEL 1-CSD-F



MODEL 4L-CRD-F



MODEL 3S-CRD-F



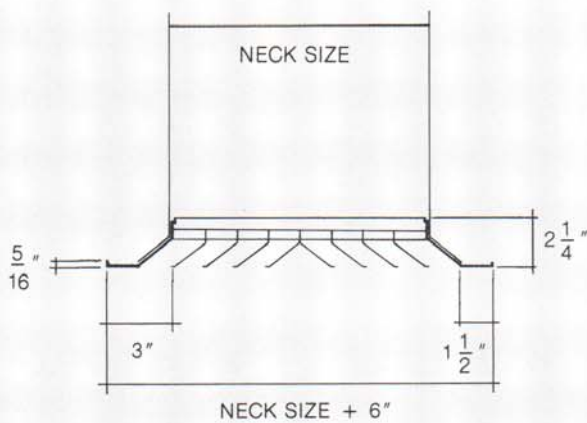
MODEL 2L-CRD-F



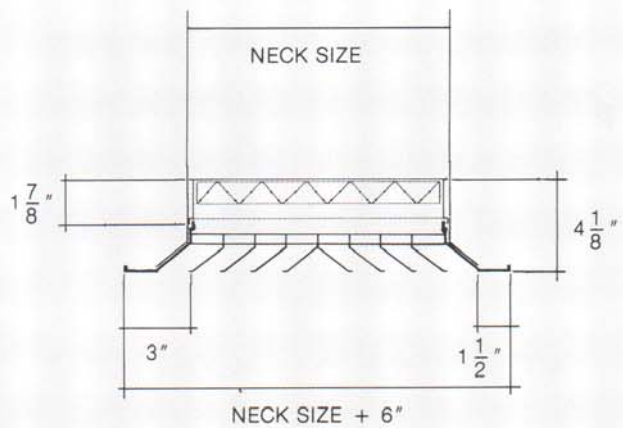
MODEL 1L-CRD-F

THE NUMBER IN FRONT OF EACH MODEL CODE INDICATES THE DIRECTION OF AIR FLOW
I.E. MODEL 4-CSD-F : MEANS FOUR-WAY DEFLECTIONS AIR FLOW SQUARE DIFFUSERS;
CSD —F : THREE WAY DEFLECTIONS AIR FLOW RECTANGULAR DIFFUSERS ETC.
CRD

SECTION DETAILS



MODEL CSD-F



MODEL CSD-F (W.D.)

INSTALLATION DETAILS

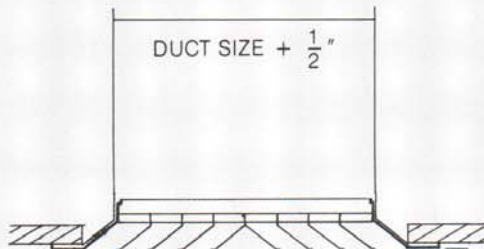


FIG. 1

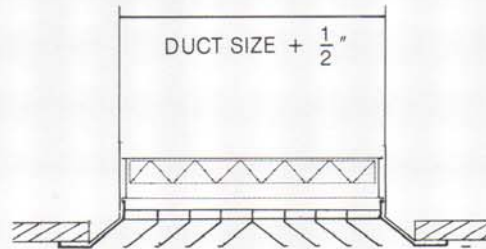


FIG. 2

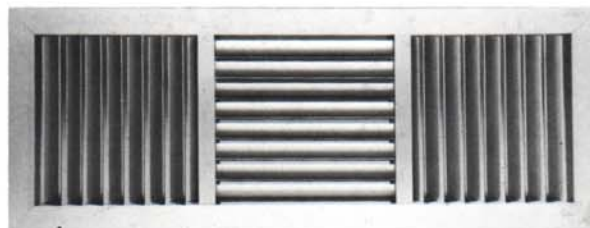
INSTALLATION METHOD :

- EXPAND THE AIR DUCT EDGE IN ACCORDANCE WITH DIFFUSER SECTION AND FIX DIFFUSER FRAME TO AIR DUCT WITH SCREWS THEN SNAP IN DIFFUSER CORE TO THE FRAME (FIG 1)
- PREPARE THE AIR DUCT EDGE SIZE ACCORDING TO THE NECK SIZE OF DIFFUSER AND FIX DIFFUSER FRAME TO AIR DUCT WITH SCREWS THEN SNAP IN DIFFUSER CORE TO THE FRAME (FIG 2)

ADJUSTABLE CEILING DIFFUSERS MODEL ADCD.



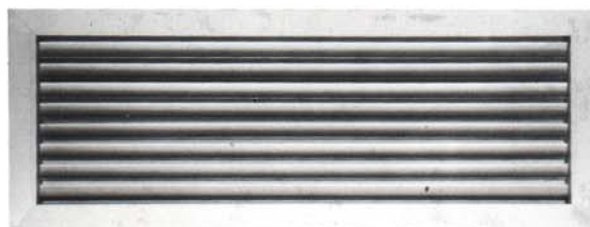
4-ADCD



3-ADCD



2-ADCD



1-ADCD

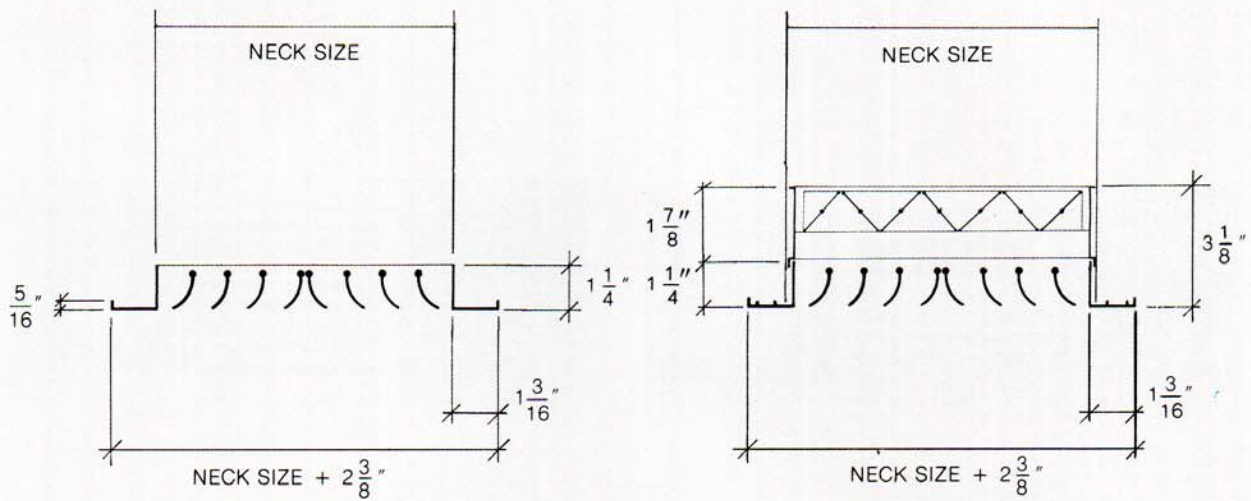
KOMFORT FLOW ADJUSTABLE CEILING DIFFUSERS ARE SPECIALLY DESIGNED FOR A WIDE RANGE CEILING APPLICATIONS AND SIMPLE INSTALLATION. THE ADJUSTABLE CURVED BLADES CAN BE SET TO PROVIDE ANY DESIRED AIRFLOW DIRECTION. FOR WIDER SELECTIONS; 4-3-2 AND 1 WAY TYPES ARE AVAILABLE.

- OPPOSED BLADE VOLUME CONTROL DAMPER CAN BE FIXED WITH ADJUSTABLE CEILING DIFFUSERS.

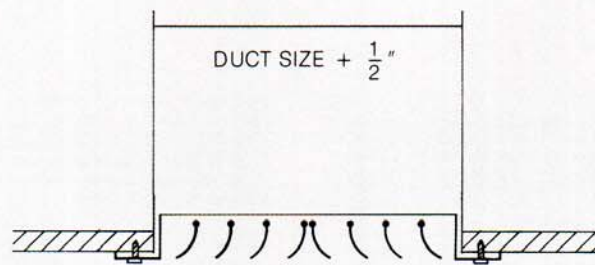
MATERIAL : EXTRUDED ALUMINIUM ANODIZED AVAILABLE IN NATURAL COLOUR AND ANOLOK NO. 512.

— ALTERNATIVE COLOUR : BAKED PAINT FINISH AVAILABLE UPON REQUEST

SECTION DETAILS



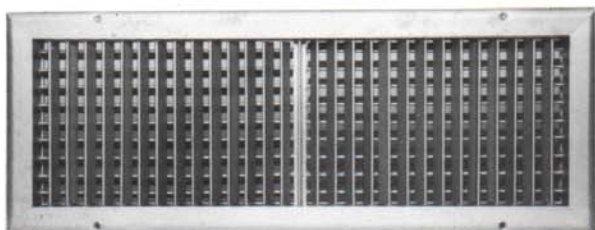
INSTALLATION DETAIL



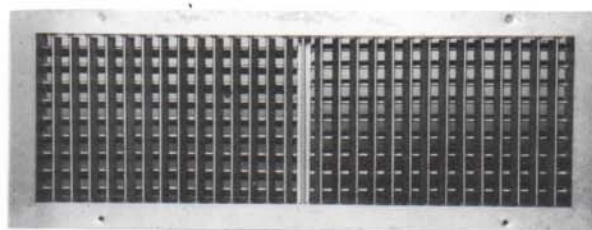
KOMFORT FLOW AIR GRILLES AND REGISTERS ARE CONSTRUCTED FROM EXTRUDED ALUMINIUM COMPRISING WITH TWO SETS OF LOUVERS ADJUSTABLE FOR FOUR WAY AIR DISTRIBUTION PATTERN AND ONE SET OF LOUVERS FOR TWO WAY AIR DISTRIBUTION PATTERN. THE KOMFORT FLOW AEROFOIL BLADES PROVIDE MAXIMUM AND ACTUAL DIRECTIONAL AIR FLOW WITH MINIMUM NOISE LEVEL.

NYLON BOOTS FIXED BETWEEN BLADES AND BORDERS CAN PREVENT THE CLICK SOUND AND ALSO KEEP THE BLADES REMAINED AT THE SET POSITION.

OPPOSED BLADE VOLUME CONTROL DAMPER CAN BE FIXED WITH ANY TYPE OF SUPPLY REGISTERS AND GRILLES.

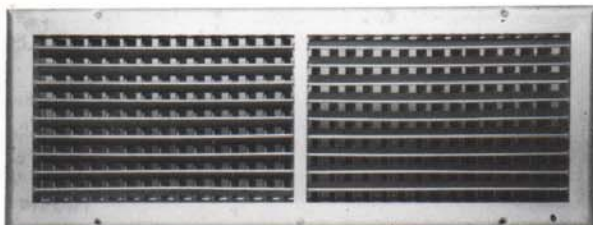


MODEL 4 - WSG - V

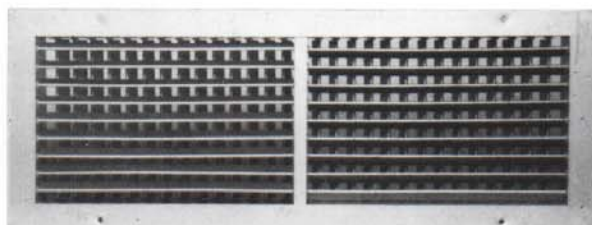


MODEL 4 - WSG - VF

TWO SETS OF LOUVERS ADJUSTABLE FOR FOUR - WAY AIR DISTRIBUTION (FRONT VERTICAL)



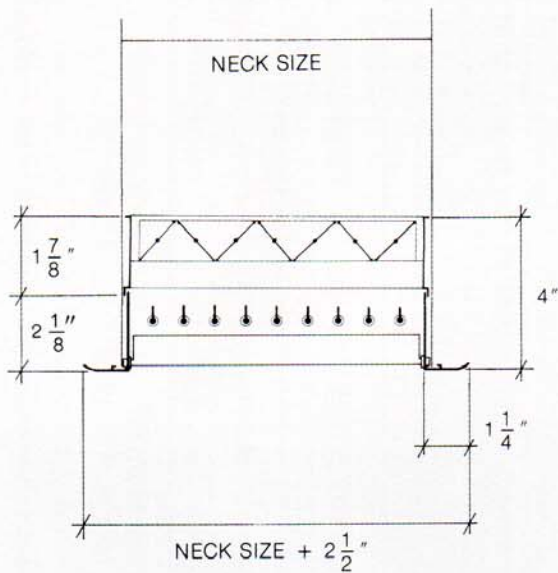
MODEL 4 - WSG - H



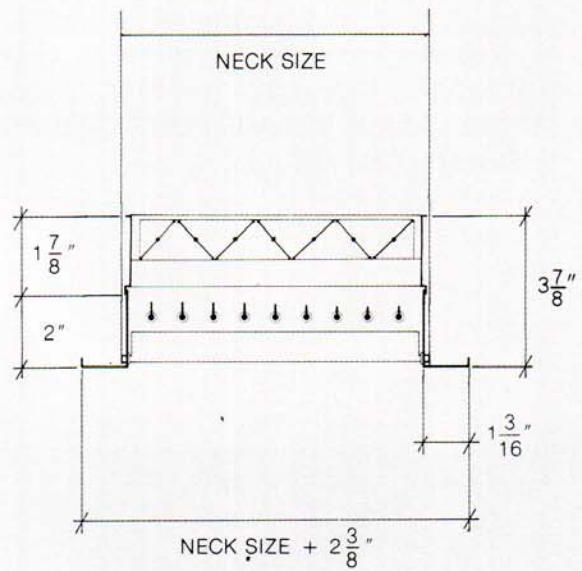
MODEL 4 - WSG - HF

TWO SETS OF LOUVERS ADJUSTABLE FOR FOUR - WAY AIR DISTRIBUTION (FRONT HORIZONTAL)

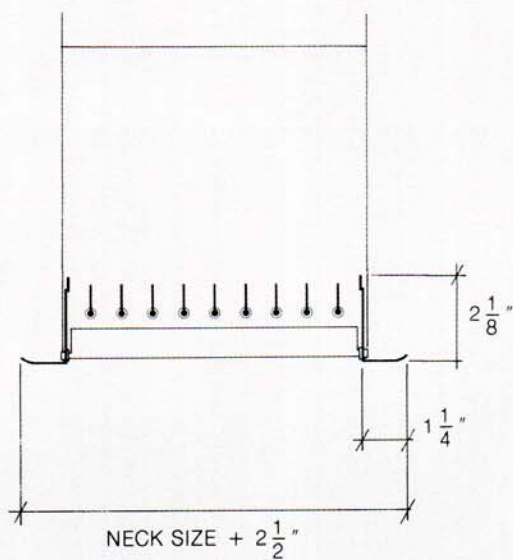
SECTION DETAILS



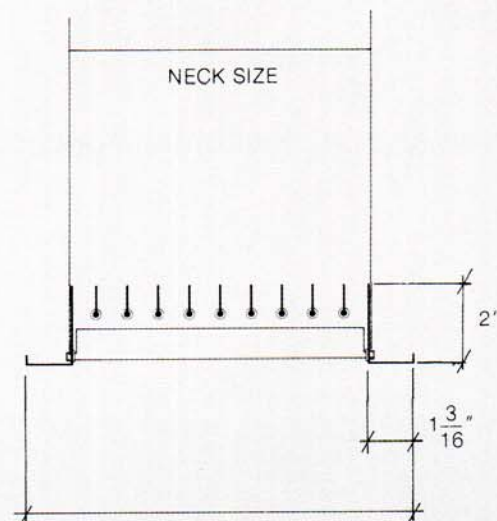
MODEL 4 - WSG - V (W.D.)



MODEL 4 - WSG - VF (W.D.)



MODEL 4 - WSG - V



MODEL 4 - WSG - VF

MODEL 2 - WSG - H



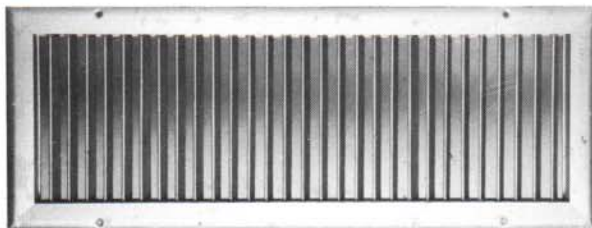
MODEL 2-WSG-H



MODEL 2-WSG-HF

ONE SET OF HORIZONTAL LOUVERS ADJUSTABLE FOR 2 - WAY AIR DISTRIBUTION
CAN BE USED WITH BOTH SUPPLY AND RETURN AIR.

MODEL 2 - WSG - H



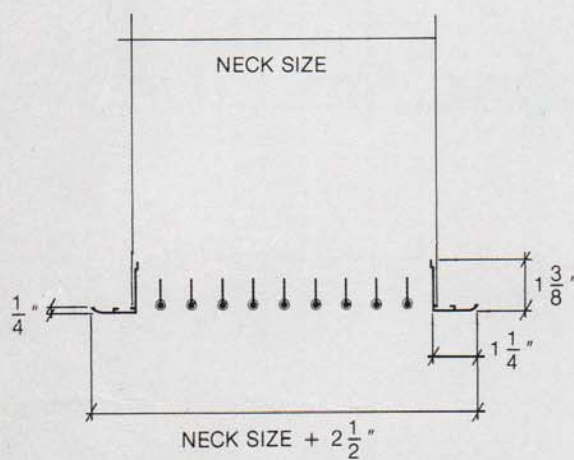
MODEL 2-WSG-V



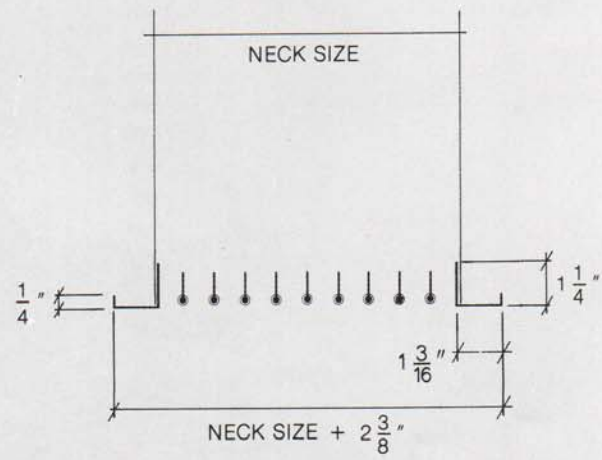
MODEL 2-WSG-VF

ONE SET OF VERTICAL LOUVERS ADJUSTABLE FOR 2 - WAY AIR DISTRIBUTION
- CAN BE USED WITH BOTH SUPPLY AND RETURN AIR.

SECTION DETAILS

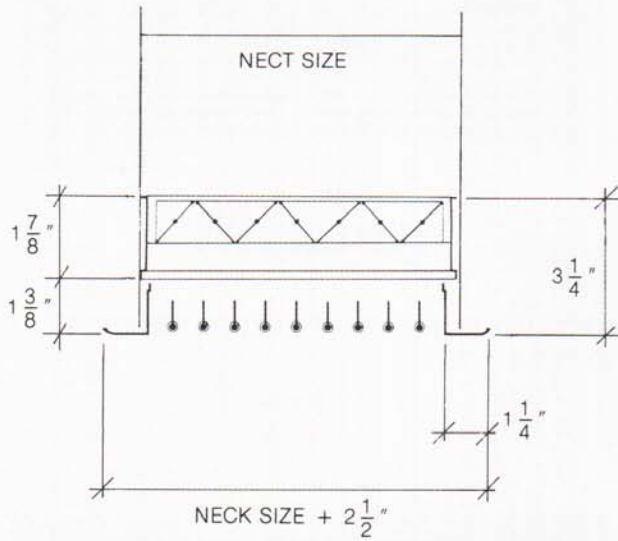


MODEL 2 - WSG - H

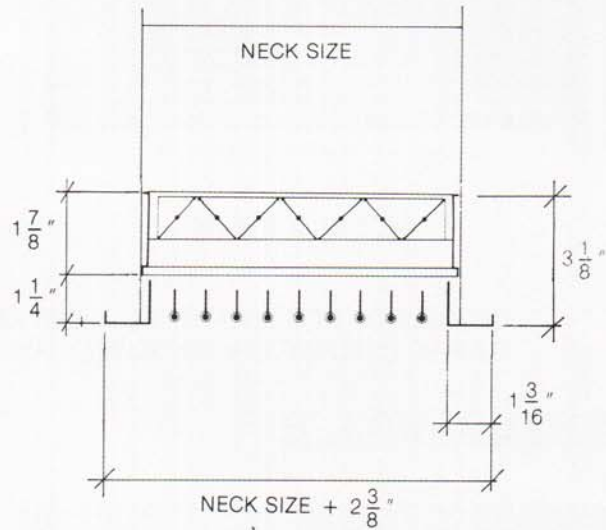


MODEL 2 - WSG - HF

SECTION DETAILS

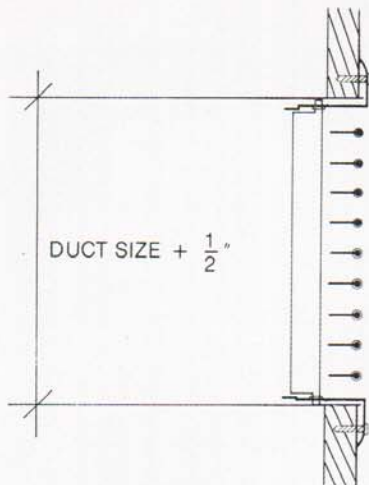


MODEL 2 - WSG - H

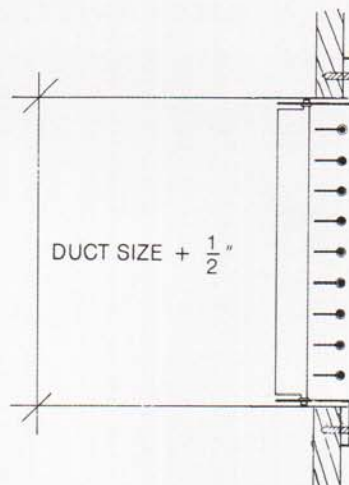


MODEL 2 - WSG - HF

INSTALLATION DETAILS



MODEL 4 - WSG - H



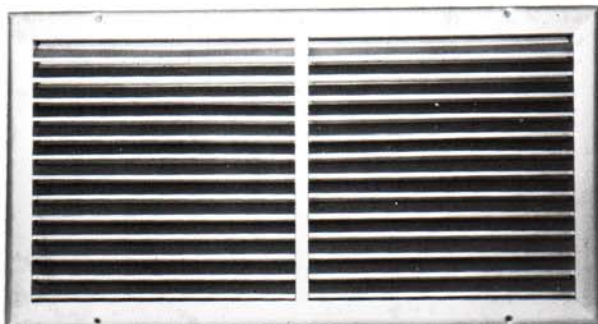
MODEL 4 - WSG HF

KOMFORT FLOW RETURN AIR GRILLES AND TRANSFER GRILLES ARE ONE SET OF Z SHAPE BLADES LOUVRES PARALLELLING TO THE LONG DIMENSION.

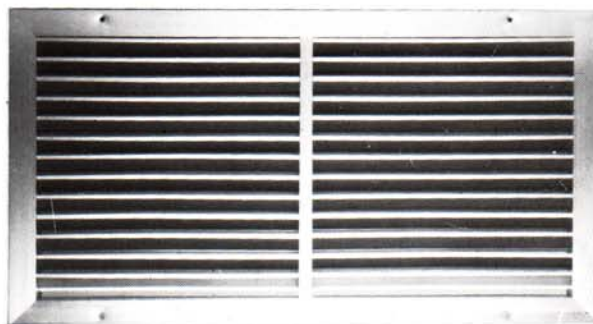
THE MENTIONED Z SHAPE BLADES CAN PROVIDE MAXIMUM FREE AREA, GOOD LOOKING AND EASY INSTALLATION. REMOVABLE CORE IS ALSO AVAILABLE IN KOMFORT FLOW RETURN AND TRANSFER GRILLES.

THE REMOVABLE TYPE IS LOCKED BY SPECIALLY DESIGNED BOLT THAT PROVIDES EASY REMOVING OF THE CORE AND IS CONVENIENT FOR FILTER SERVICES.

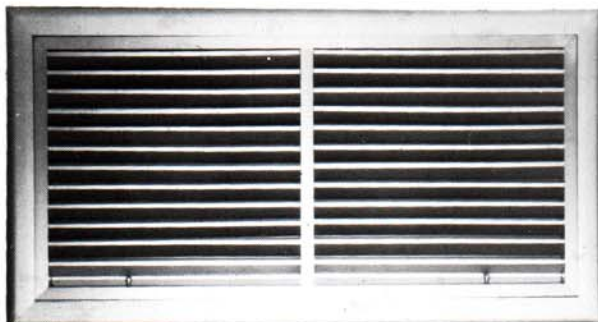
- V SHAPE BLADES ARE ALSO AVAILABLE FOR DOOR GRILLES.
- OPPOSED BLADE CONTROL DAMPER CAN BE FIXED WITH RETURN AND TRANSFER GRILLS.



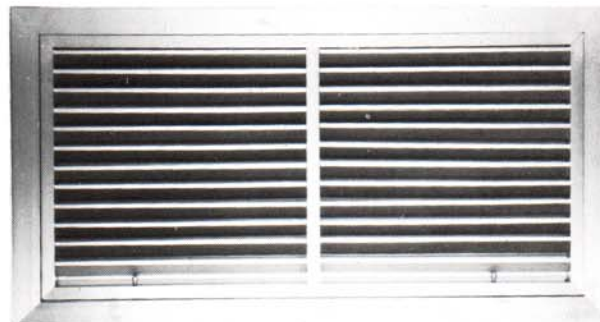
MODEL 1 - HRG



MODEL 1 - HRG - F



MODEL 1 - HRG - R

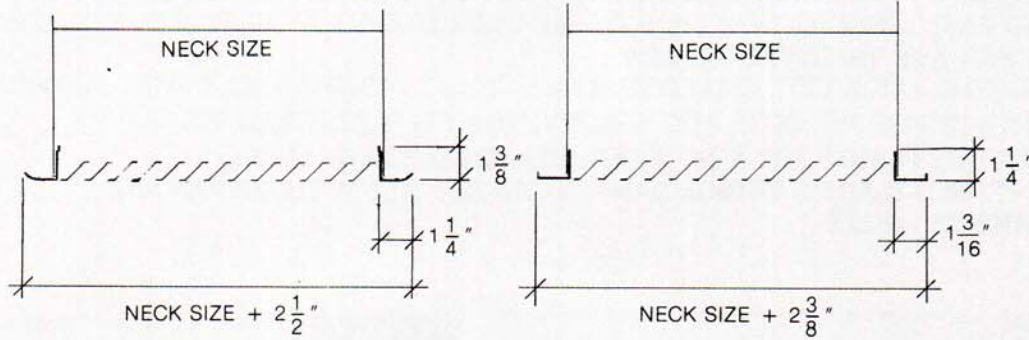


MODEL 1 - HRG - RF



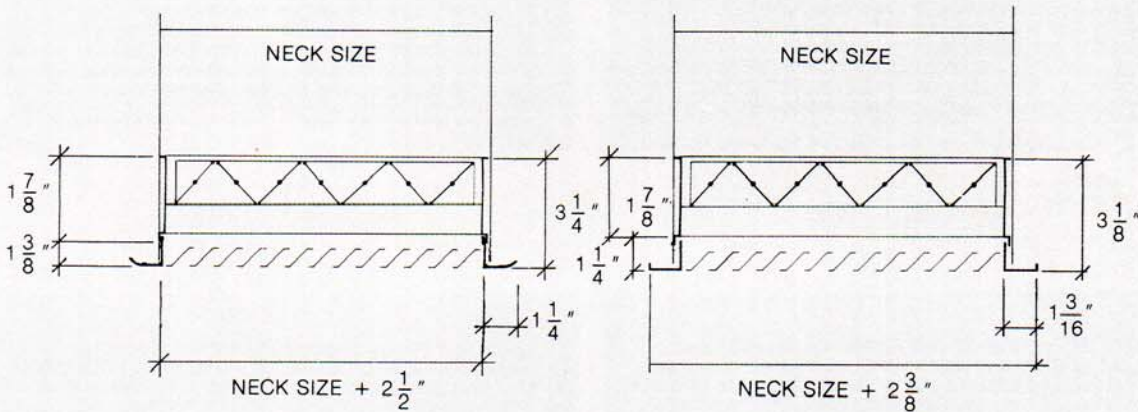
MODEL 1 - HRG - V

SECTION DETAILS



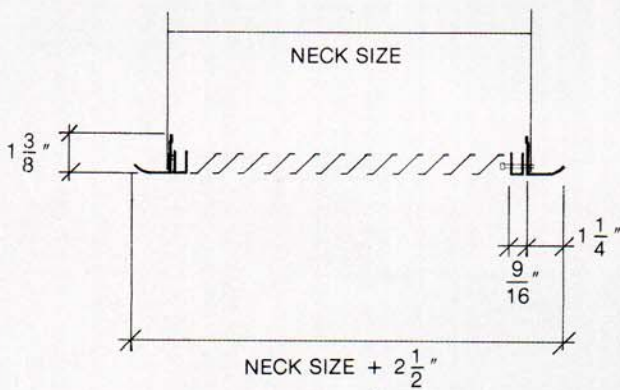
MODEL 1 - HRG

MODEL 1 - HRG - F

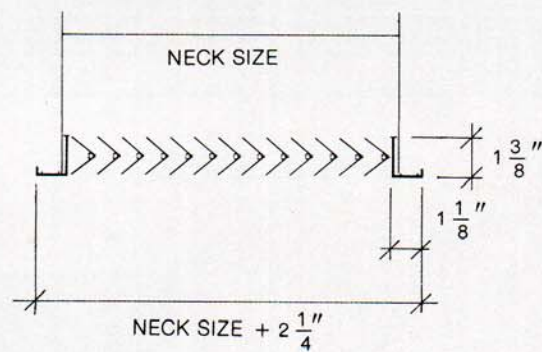


MODEL 1 - HRG (W.D.)

MODEL 1 - HRG - F (W.D.)

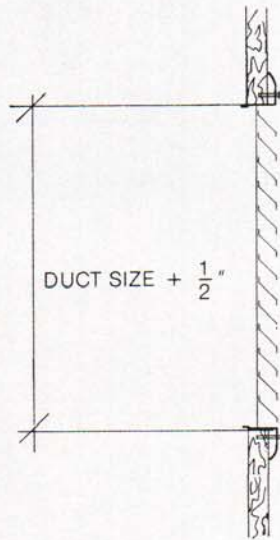


MODEL 1 - HRG - R



MODEL 1 - HRG - V

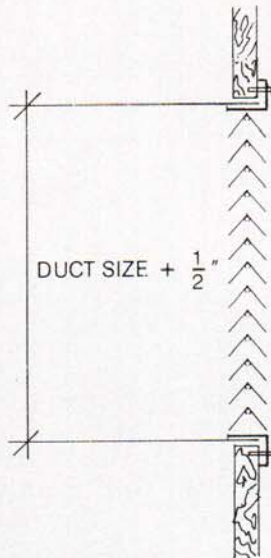
INSTALLATION DETAILS



MODEL 1 - HRG. 1 - HRG



MODEL 1 - HRG - R 1 - HRG - R

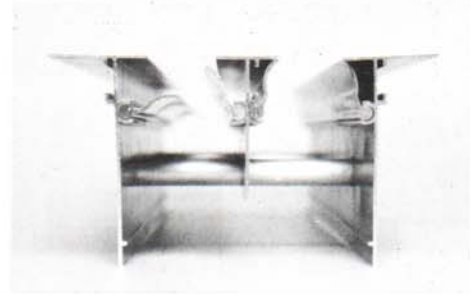
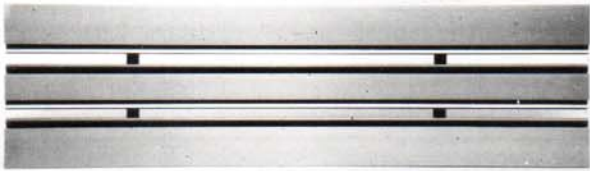


MODEL 1 - HRG - V

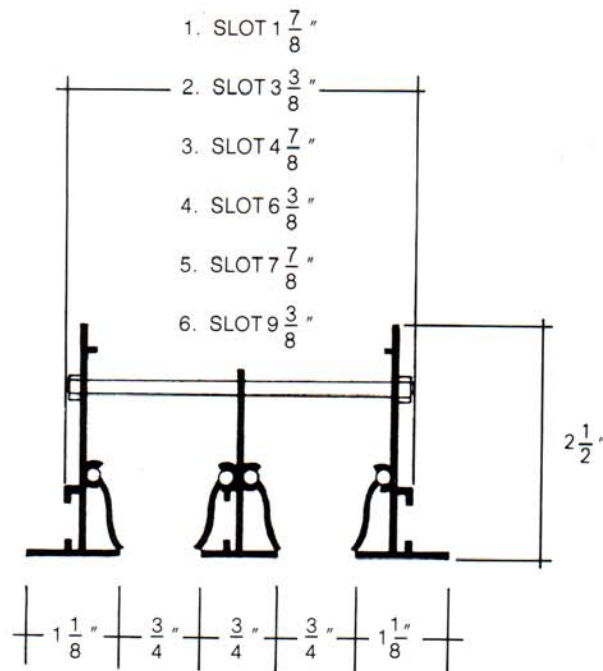


1 - HRG - V (DOOR GRILLES)

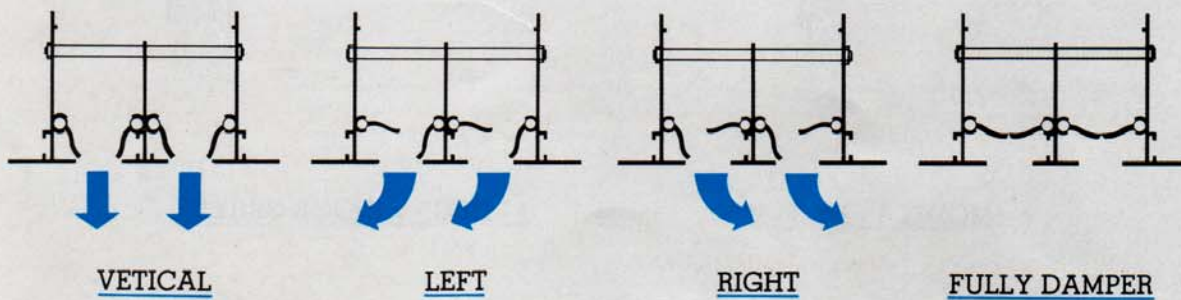
KOMFORT FLOW LINEAR SLOT DIFFUSERS ARE IS AVAILABLE IN SINGLE AND MULTIPLE SLOTS FOR CEILING AND SIDE WALL INSTALLATION.



SECTION DETAILS



DIRECTIONAL FLOW

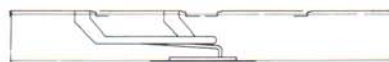
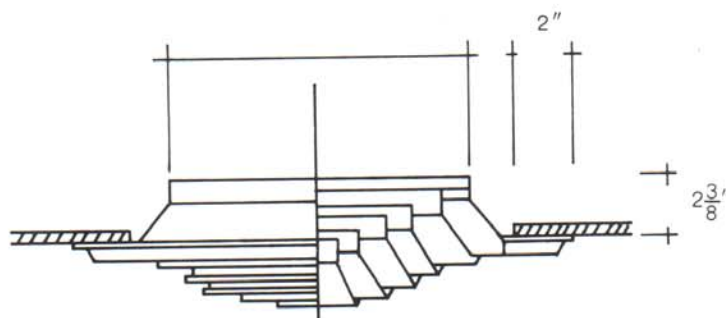


KOMFORT FLOW CEILING ROUND DIFFUSERS MODEL R.D.



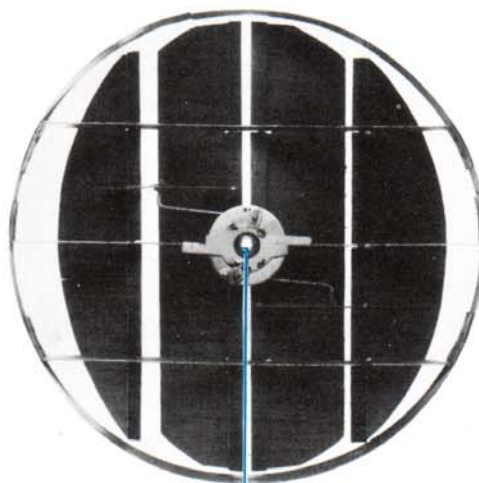
MODEL RD

KOMFORT FLOW ROUND DIFFUSERS ARE MADE OF SPUN ALUMINIUM AND FINISHED WITH BAKED ENAMEL IN ANY DESIRED COLOUR AS SPECIFIED AVAILABLE WITH OR WITHOUT OPPOSED BLADE VOLUME DAMPERS.



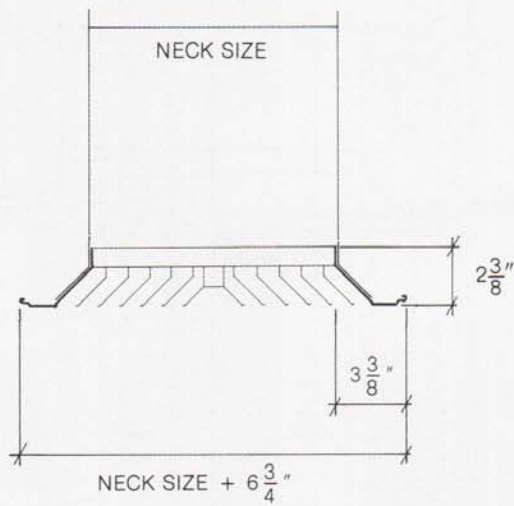
ROUND DIFFUSERS
VOLUME DAMPER

A BUTTERFLY DAMPER THAT PROVIDES SIMPLE AND EASY CONTROL OF AIR VOLUME. FRICTION PIVOTS ON SHEET METAL BLADES KEEP BLADES AT DESIRED SETTING. CAN BE MOUNTED DIRECTLY ON DIFFUSER. FULLY ADJUSTABLE FROM FACE OF DIFFUSER.

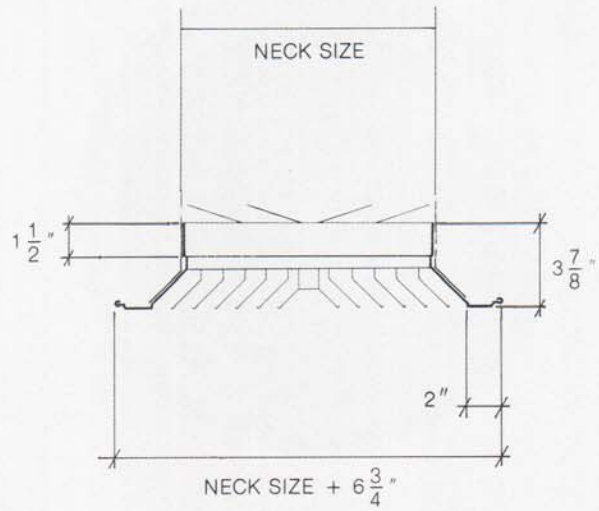


— ADJUST BY SCREW

SECTION DETAILS

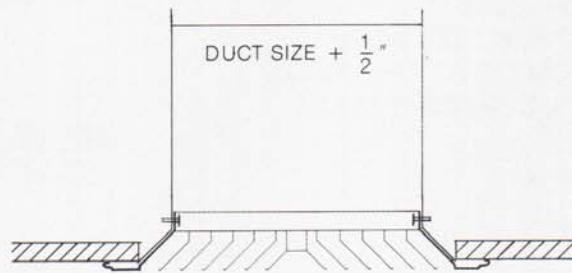


MODEL RD.



MODEL RD. (W.D.)

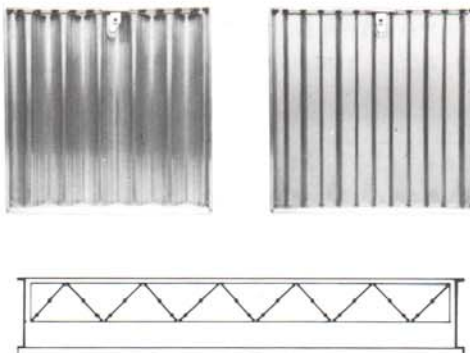
INSTALLATION DETAIL



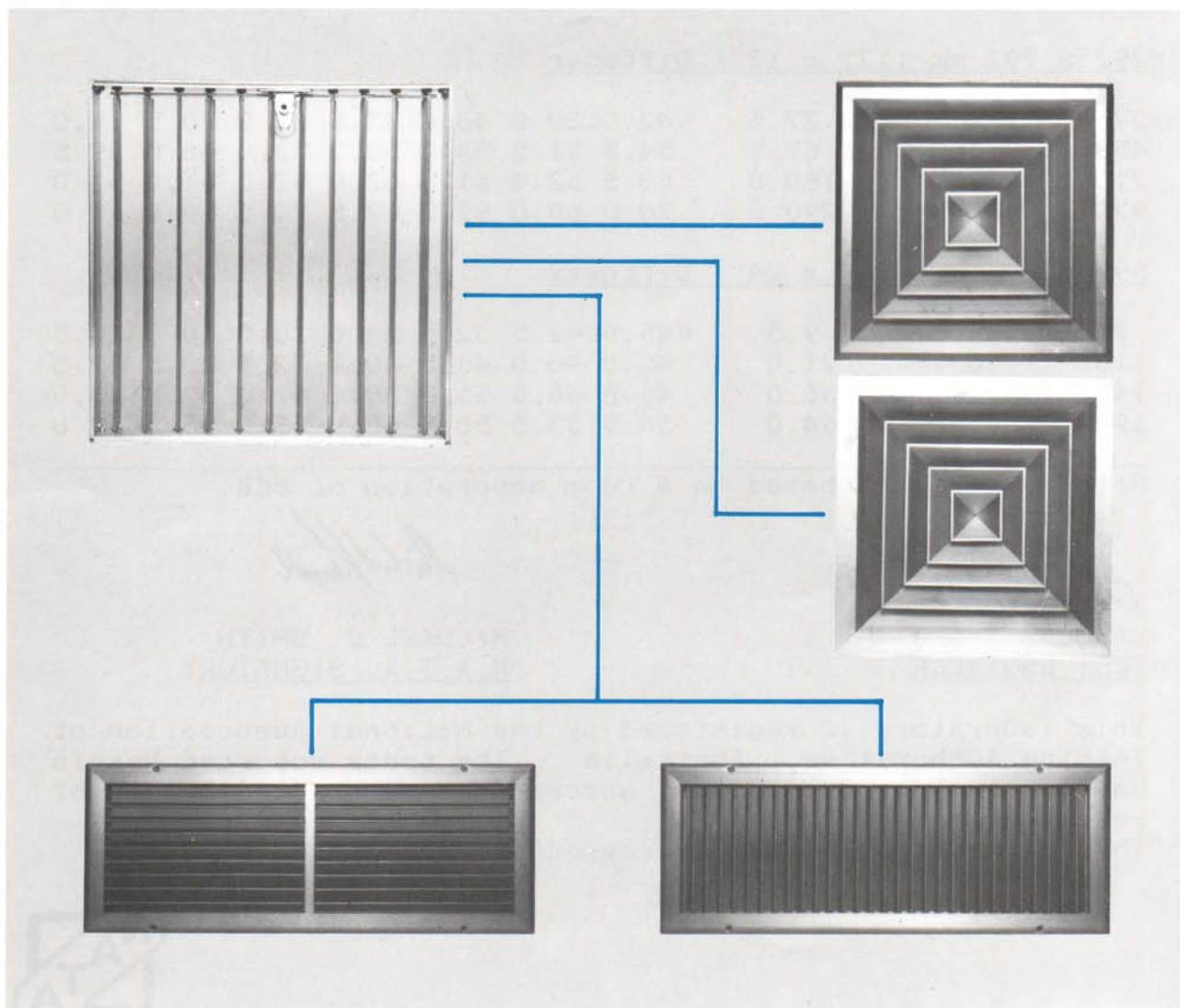
INSTALLATION METHOD :

REMOVE THE DIFFUSER CORE FROM BORDER, FIX THE DIFFUSER BORDER TO THE CEILING BY SCREWS, THEN PUT IN DIFFUSER CORE TO THE BORDER.

SECTION DETAILS.



MODEL W.D.



TEST CERTIFICATE

DESCRIPTION

The Komfort Flow square ceiling diffusers tested are manufactured by S.E. Air Supply Ltd., Part of Bangkok, Thailand and are known as model 4-CSD. The diffusers are manufactured from aluminium extrusions. The pattern controlling cores are designed to produce four-directional horizontal flow and are removable but non-adjustable.

RESULTS

Airflow (l/s)	Throw 0.5m/s (m)	Static Pressure (Pa)	Sound Power Level(dB re 10^{-12} W) Octave Band Centre Frequency							
			125	250	500	1000	2000	4000	8000	

140 x 140 mm (6" x 6") Diffuser

46	1.3	14.0	31.0	32.0	25.5	16.0	<10.0	<10.0	<10.0	<10.0
90	2.6	49.0	44.5	47.5	43.5	39.5	37.0	26.0	10.0	
116	4.0	85.0	51.0	52.0	49.5	47.0	46.5	39.5	22.5	
130	4.5	108.0	54.5	54.0	52.0	50.5	51.0	46.0	29.5	

292 x 292 mm (12" x 12") Diffuser

275	4.7	27.5	<42.0	<38.0	43.0	35.5	32.0	20.5	11.0	
450	6.3	67.5	54.5	51.5	53.0	50.5	52.0	48.0	29.5	
710	7.7	160.0	63.5	62.0	61.5	62.0	62.0	61.0	51.0	
970	8.8	290.0	70.0	69.0	69.0	69.5	70.5	68.0	61.0	

597 x 597 mm (24" x 24") Diffuser

740	5.7	9.5	<45.0	<42.5	32.5	23.5	10.0	<10.0	10.5	
1100	6.7	21.0	45.0	40.0	46.5	40.0	32.5	23.5	12.5	
1420	7.8	36.0	45.0	46.5	55.0	50.0	47.0	37.5	22.0	
1920	8.8	64.0	54.5	53.5	58.5	60.0	58.0	55.0	37.0	

Note NR Level is based on a room absorption of 8dB

Malcolm Munro 29/3/88

MALCOLM MUNRO
TEST ENGINEER

Michael J. Smith

MICHAEL J. SMITH
N.A.T.A. SIGNATORY

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TEST CERTIFICATE

DESCRIPTION

The Komfort Flow Double Deflection Supply Air Grilles tested are manufactured by S.E. Air Supply Ltd., of Bangkok, Thailand and are known as model 4-WSG. The grilles are manufactured from aluminium extrusions. The pattern controlling blades are designed to allow dispersion in both the horizontal and vertical plane by manual adjustment of individual blades. The grilles were tested with all blades at 90 degrees to the grille face.

RESULTS

Airflow (l/s)	Throw 0.5m/s (m)	Static Pressure (Pa)	Sound Power Level(dB re 10^{-12} W) Octave Band Centre Frequency (Hz)
------------------	------------------------	----------------------------	---

125	250	500	1000	2000	4000	8000
-----	-----	-----	------	------	------	------

444 x 140 mm (18 x 6") Side Wall Grille

420	12.0	80	50.0	50.0	51.5	51.0	48.0	44.5	30.0
520	13.0	124	55.0	56.5	56.5	57.0	55.0	51.5	39.0
620	14.5	176	58.0	58.5	60.0	61.5	59.5	58.0	45.5
710	15.5	229	62.0	61.5	62.5	67.0	64.0	61.5	51.0

444 x 190 mm (18 x 8") Side Wall Grille

405	11.0	25	<50.5	39.5	38.5	36.0	30.0	20.0	-
480	12.5	36	<49.5	44.0	43.0	40.0	37.5	29.5	13.5
580	14.0	52	44.5	47.0	48.0	46.0	44.5	37.0	20.5
680	15.0	65	52.0	52.0	51.5	50.0	48.5	43.0	28.5
770	16.0	90	<56.5	55.0	55.5	55.5	53.5	48.5	35.5

899 x 292 mm (36 x 12") Side Wall Grille

780	14.0	17	49.5	45.0	43.5	38.5	34.5	23.5	-
920	16.0	24	52.0	47.0	47.5	46.5	41.0	32.0	11.5
1080	17.0	32	54.0	50.5	51.0	48.5	46.0	38.5	21.5
1190	>17.0	40	57.0	54.5	55.5	53.0	50.5	44.5	29.0
1310	>17.0	52	60.5	56.0	57.5	57.0	54.0	47.5	33.5

Note NR Level is based on a room absorption of 8dB

MALCOLM C. MUNRO
MALCOLM C. MUNRO
TEST ENGINEER

MICHAEL J. SMITH
.....
MICHAEL J. SMITH
N.A.T.A. SIGNATORY

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TEST CERTIFICATE

DESCRIPTION

The Komfort Flow Return Air Grilles tested are manufactured by S.E. Air Supply Ltd. of Bangkok, Thailand and are known as model 1-HRG. The grilles are manufactured from aluminium extrusions.

RESULTS

Airflow (l/s)	Pressure Drop (Pa)	Sound Power Level(dB re 10^{-12} W)							
		Octave Band Centre Frequency (Hz)							
		125	250	500	1000	2000	4000	8000	
<u>286 X 137 mm (12 x 6") Return Air Grille</u>									
76	23	25.0	38.0	36.5	26.0	16.0	-	-	
100	40	33.0	43.0	42.0	35.5	28.0	20.5	10.1	
164	108	45.5	51.5	52.5	49.0	44.0	38.0	24.5	
235	224	51.5	55.0	58.0	60.5	54.5	49.5	40.0	
298	345	56.0	59.0	61.5	65.5	62.5	56.0	49.0	
<u>592 X 287 mm (24 x 12") Return Air Grille</u>									
501	39	49.0	47.5	45.0	39.0	31.5	22.5	-	
640	68	53.0	53.5	51.5	47.5	41.5	35.5	21.5	
900	132	59.5	61.0	59.5	57.5	52.5	49.0	38.0	
1210	250	67.0	68.5	66.5	66.5	61.5	59.0	50.0	
<u>1202 X 594 mm (48 x 24") Return Air Grille</u>									
900	5	40.5	39.0	35.5	29.5	20.0	10.0	-	
1285	10	53.5	50.0	48.0	45.0	39.5	29.0	15.0	
1570	12	56.0	54.0	52.0	47.0	44.0	37.0	21.5	
1920	17	60.0	57.5	57.0	53.0	51.0	45.5	32.5	
2460	28	66.0	64.0	63.5	59.0	58.5	55.0	44.0	

Note NR Level is based on a room absorption of 8dB

M. Munro 29/3/88
MALCOLM MUNRO
TEST ENGINEER

Michael J. Smith
.....
MICHAEL J. SMITH
N.A.T.A. SIGNATORY

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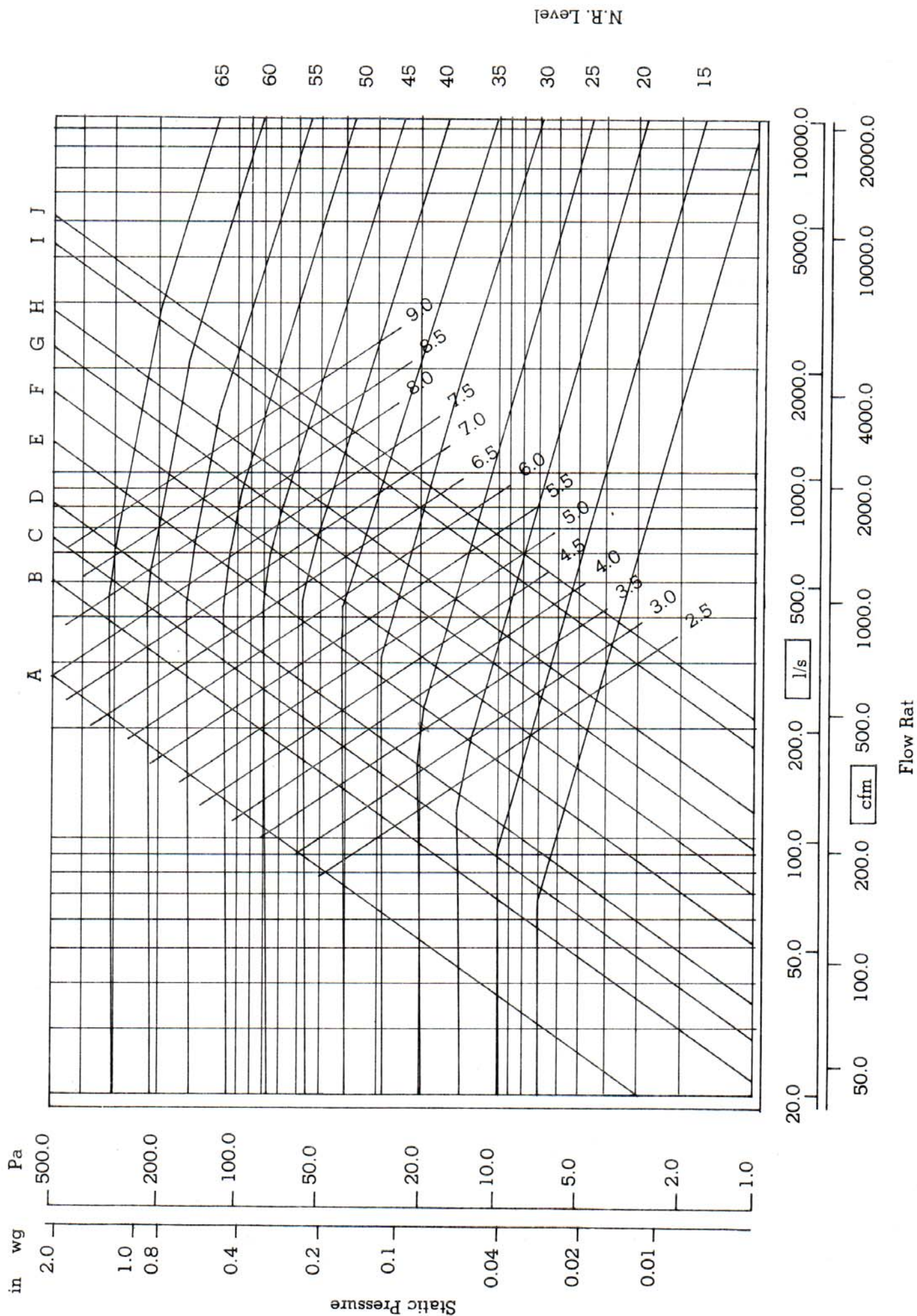
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Table Recommended Noise Ratings Inside Buildings

Description Area	Criteria for continuous noise intrusion		Criteria for traffic and other intermittent noise dB (A)	
	NR Curve	Approx. ⁵ dB (A)	L ₉₀	L ₁₀
<i>Office buildings</i>				
General open offices, reception areas	40	45	45	50
Design offices	35	40	40	45
Drawing offices	40	45	45	50
Conference rooms'	30	35	35	40
Executive offices'	35	40	40	45
Foyers, public areas	45	50	50	60
Typing and machinist rooms, computer rooms	45	50	50	60
<i>Hospitals</i>				
Hospital wards (public)	35	40	40	50
Hospital wards (private)	30	35	35	40
Intensive care wards, operating theatres	30	35	—	—
Laboratories, casualty areas	40	45	45	55
Kitchens, sterilising and service areas	45	50	50	60
Surgery, dental clinics and consulting areas	40	45	45	55
Waiting rooms and reception areas	45	50	50	60
<i>Schools</i>				
Class-rooms'	35	40	40	50
Lectures theatres', conference rooms'	30	35	35	40
Libraries, seminar rooms, tutorial rooms	30	35	35	40
Recreation halls, gymnasium, open learning areas	40	45	45	55
Workshops, laboratories	45	50	50	60
Music practice rooms, office areas	40	45	45	55
Assembly halls'	30	35	35	40
<i>Radio and T.V. studios</i>				
Recording studios, news rooms, interview rooms etc.'				
(close microphone pick-up)	25	30	—	—
(distant microphone pick-up)	20	25	—	—
Audience studios'	30	35	—	—
General office areas, make-up rooms	35	40	40	50
Workshops and scenery areas	45	50	50	60
<i>Laboratory buildings</i>				
Laboratory areas (other than those with special acoustic requirements)	40	45	45	55
Workshops	45	50	50	60
Other areas		As for office building areas		

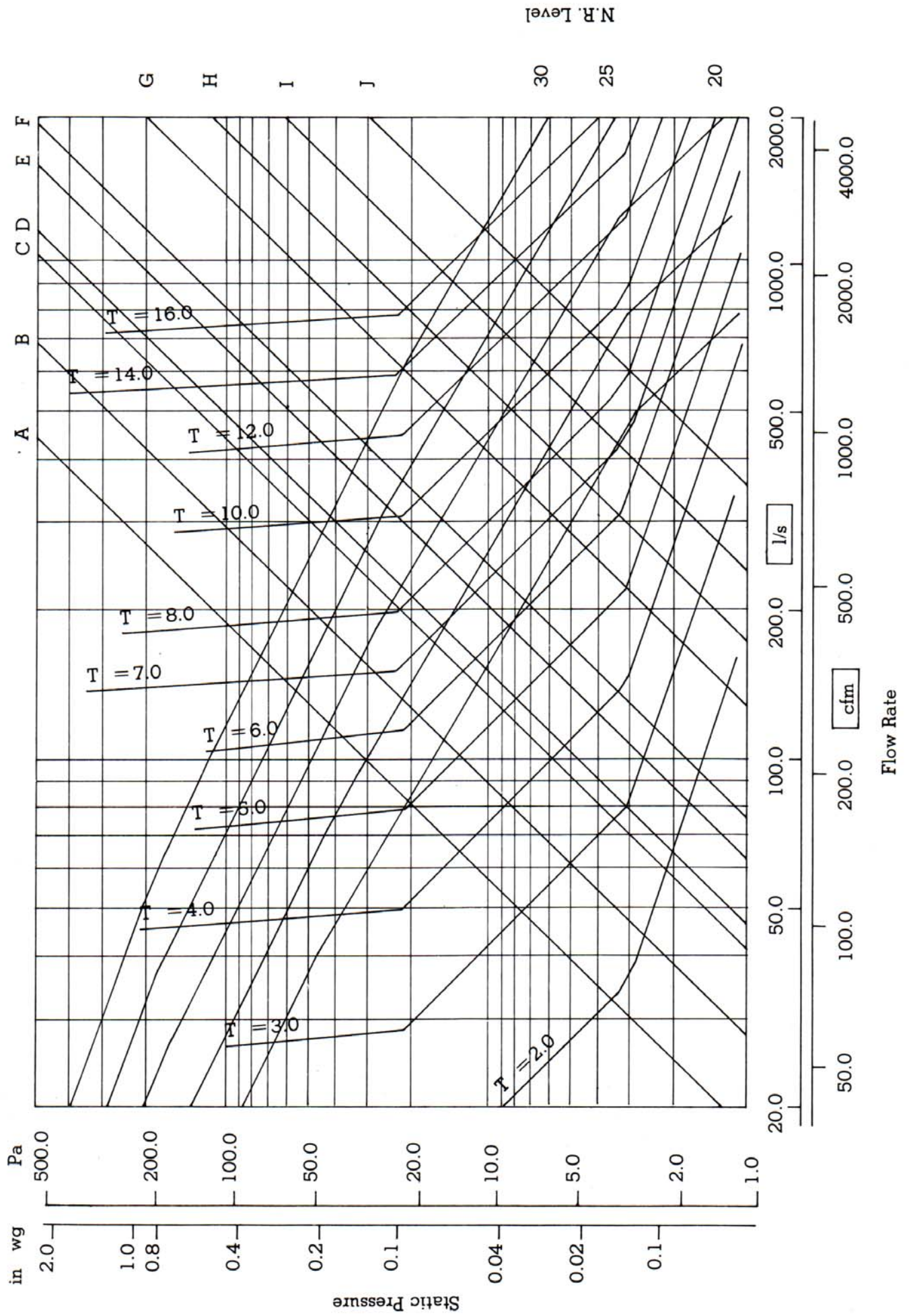
KOMFORT FLOW — SQUARE DIFFUSERS



KEY FOR CATALOG FOR SQUARE DIFFUSERS

Diffuser	Size	Neck Area mm × mm
A	6" × 6"	140 × 140
B	8" × 8"	190 × 190
C	9" × 9"	216 × 216
D	10" × 10"	241 × 241
E	12" × 12"	292 × 292
F	14" × 14"	343 × 343
G	16" × 16"	394 × 394
H	18" × 18"	444 × 444
I	22" × 22"	546 × 546
J	24" × 24"	597 × 597

KOMFORT FLOW — DOUBLE DEFLECTION GRILLES

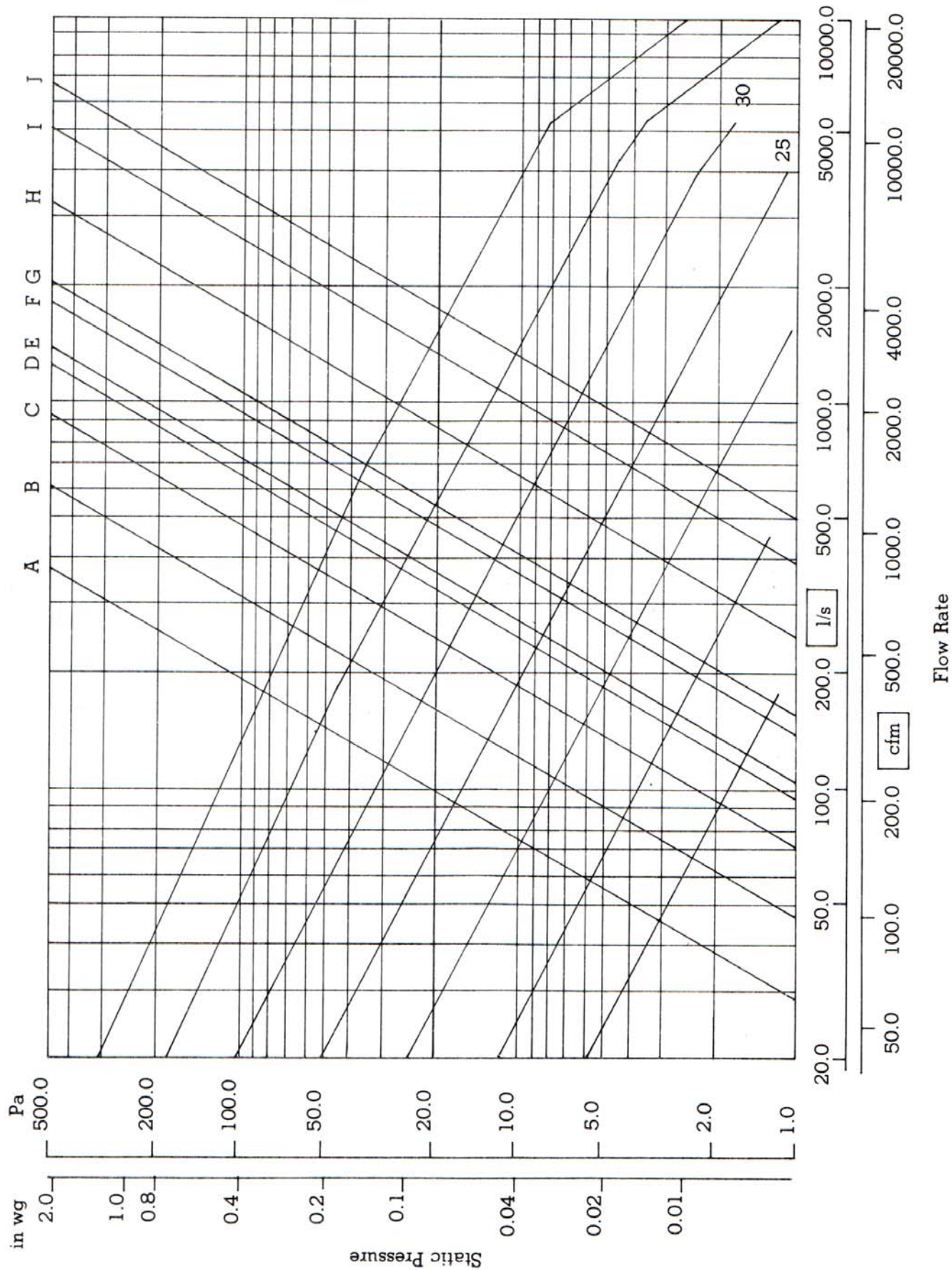


N.R. Level

KEY TO CATALOG FOR DOUBLE DEFLECTION GRILLES

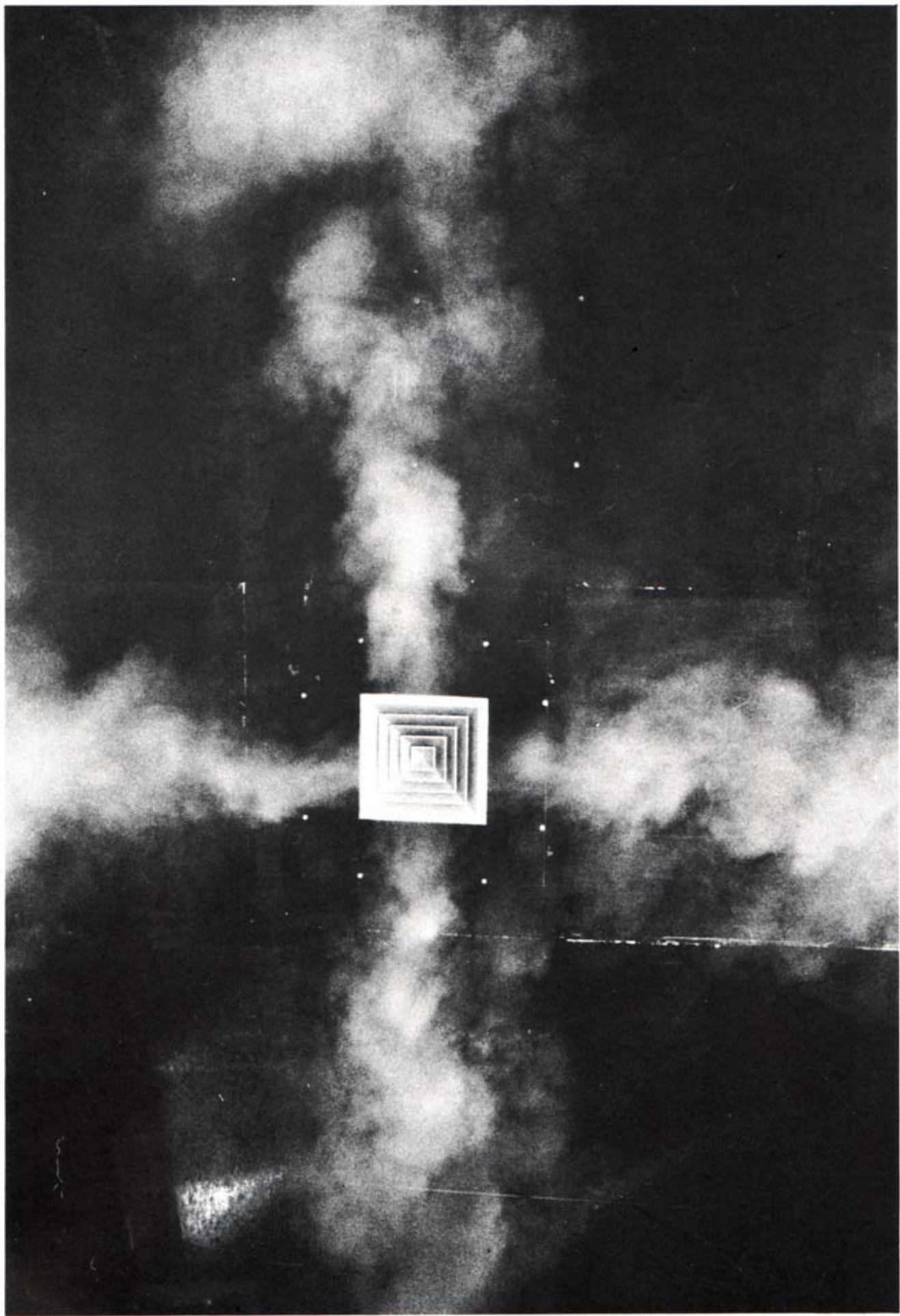
Grille	Size	Neck Area mm × mm
A	8" × 6"	190 × 140
B	12" × 6"	292 × 140
C	18" × 6"	444 × 140
D	20" × 6"	495 × 140
E	20" × 8"	495 × 190
F	24" × 8"	597 × 190
G	32" × 10"	800 × 241
H	36" × 12"	899 × 288
I	42" × 14"	1054 × 343
J	48" × 18"	1206 × 444

KOMFORT FLOW — RETURN AIR GRILLES

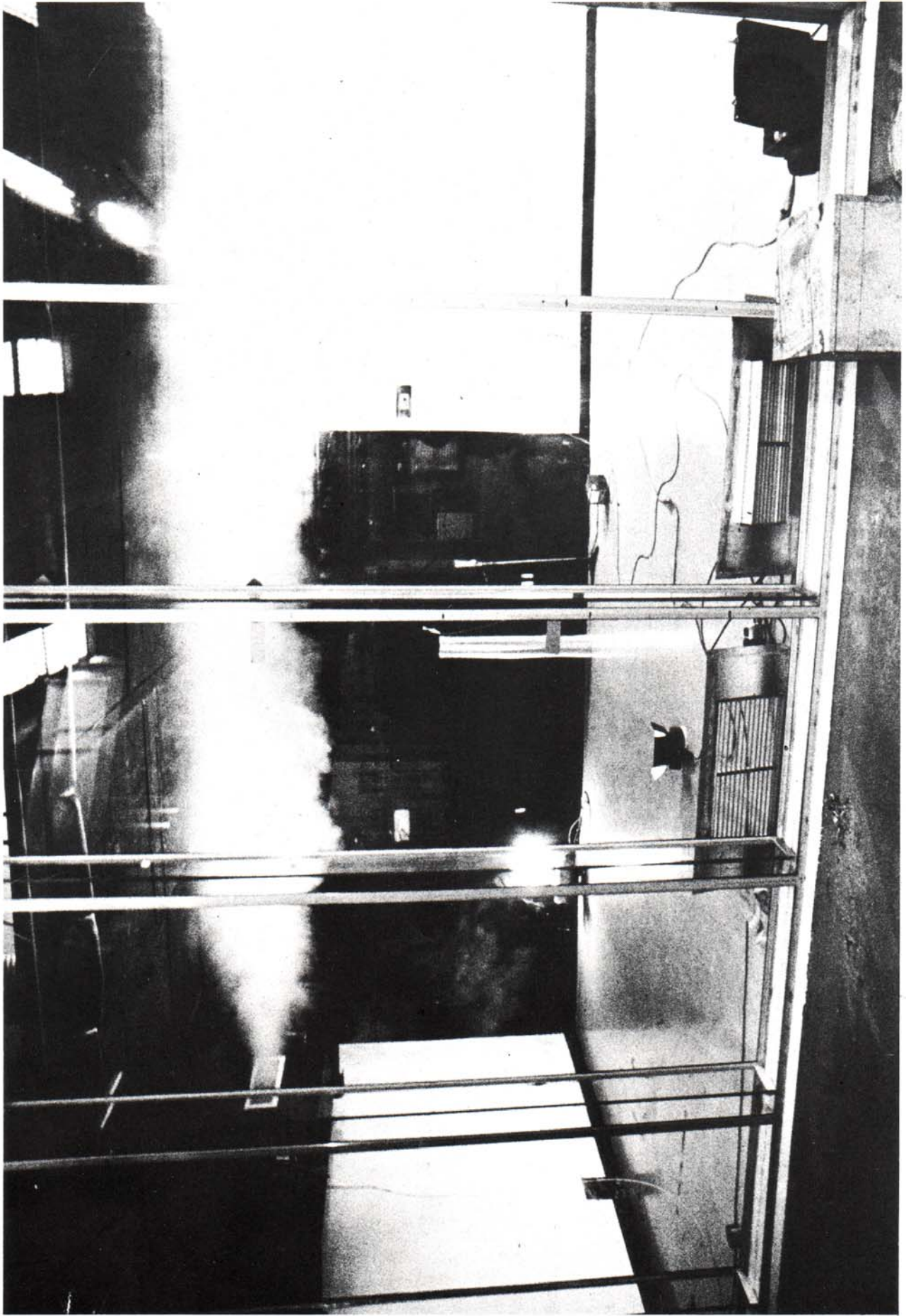


KEY TO CATALOG FOR RETURN AIR GRILLES

Grille	Size	Neck Area mm X mm
A	8" X 8"	205 X 205
B	18" X 6"	455 X 150
C	20" X 8"	510 X 205
D	22" X 10"	560 X 250
E	24" X 10"	610 X 250
F	30" X 10"	815 X 250
G	36" X 10"	915 X 250
H	36" X 16"	915 X 405
I	44" X 20"	1120 X 510
J	48" X 24"	1220 X 610



KOMFORT FLOW 4 WAY SQUARE CEILING DIFFUSER TESTED IN LABORATORY.



KOMFORT FLOW DOUBLE DEFLECTION SUPPLY AIR GRILLES TESTED IN LABORATORY.

SQUARE DIFFUSERS PERFORMANCE DATA MODEL ASD.

NECK SIZE	RATING	NECK VELOCITY IN FEET PER MINUTE								
		400	500	600	700	800	900	1000	1200	1400
6" × 6" 0.196	CFM SP RAD	78 0.04 3-5	98 0.06 3-6	118 0.08 4-6	137 0.11 4-6	157 0.13 4-6	176 0.16 5-7	196 0.20 5-7	235 0.28 6-8	274 0.38 6-8
8" × 8" 0.349	CFM SP RAD	140 0.03 4-6	175 0.05 5-8	209 0.07 5-8	244 0.10 5-8	279 0.12 5-9	314 0.17 6-10	349 0.18 6-10	419 0.27 7-11	487 0.37 8-13
10" × 10" 0.545	CFM SP RAD	218 0.06 5-9	273 0.09 5-9	327 0.12 6-11	381 0.22 6-11	436 0.24 7-13	490 0.30 7-13	545 0.36 8-14	654 0.52 9-16	763 0.72 12-18
12" × 12" 0.785	CFM SP RAD	314 0.04 6-10	392 0.08 6-10	471 0.10 6-12	550 0.18 6-12	628 0.20 7-14	706 0.29 7-15	785 0.31 10-18	942 0.49 13-21	1099 0.67 15-25
14" × 14" 1.07	CFM SP RAD	428 0.05 8-13	535 0.09 8-13	642 0.12 11-15	749 0.17 11-16	856 0.20 13-19	963 0.28 13-19	1070 0.31 18-23	1280 0.44 21-26	1500 0.59 24-28
16" × 16" 1.40	CFM SP RAD	560 0.07 10-14	700 0.08 10-14	840 0.14 13-17	980 0.19 14-18	1120 0.26 17-22	1260 0.30 18-22	1460 0.41 19-25	1680 0.59 22-29	1960 0.82 24-30
18" × 18" 1.77	CFM SP RAD	708 0.05 9-14	885 0.07 9-15	1062 0.11 12-18	1239 0.18 12-18	1416 0.22 17-24	1593 0.28 18-26	1770 0.35 20-28	2124 0.53 23-30	2478 0.72 26-32
20" × 20" 2.18	CFM SP RAD	872 0.05 11-17	1090 0.08 12-18	1308 0.12 14-20	1526 0.16 14-20	1744 0.24 19-25	1962 0.28 20-26	2180 0.36 22-29	2616 0.54 23-30	3052 0.76 27-35
22" × 22" 2.63	CFM SP RAD	1052 0.05 11-18	1315 0.07 12-18	1578 0.11 14-22	1841 0.14 15-22	2104 0.23 20-24	2367 0.26 20-24	2630 0.32 22-30	3156 0.50 22-32	3682 0.70 24-36
24" × 24" 3.14	CFM SP RAD	1256 0.05 12-18	1570 0.09 12-18	1884 0.12 16-22	2198 0.16 18-24	2512 0.20 21-29	2826 0.25 22-30	3140 0.28 24-32	3768 0.40 27-38	4396 0.54 30-40
28" × 28" 4.274	CFM SP RAD	1709 0.06 13-20	2137 0.09 13-22	2564 0.11 12-23	2992 0.14 14-24	3411 0.19 22-31	3847 0.23 27-36	4274 0.28 27-36	5129 0.39 30-40	5184 0.52 34-44
32" × 32" 5.59	CFM SP RAD	2236 0.02 14-22	2795 0.03 14-22	3354 0.04 18-25	3913 0.06 20-26	4472 0.07 23-32	5031 0.09 34-34	5590 0.11 28-39	6710 0.16 32-42	7826 0.21 35-48
36" × 36" 7.07	CFM SP RAD	2828 0.03 14-22	3535 0.04 15-24	4242 0.05 19-26	4949 0.06 20-26	5656 0.10 23-34	6363 0.12 30-40	7070 0.16 33-46	8480 0.23 33-46	9890 0.30 37-48

CFM. = CAPACITY IN CUBIC FEET PERMINUTE
 SP. = STATIC PRESSURE IN INCHES OF WATER
 RAD. = RADIUS OF DIFFUSION IN FEET

MULTIPLIER FOR MODEL CSD
 CFM × 1.09
 SP × 0.95
 RAD × 0.90

ROUND DIFFUSER PERFORMANCE DATA

SIZE	NECK AREA	NECK VEL	400	500	600	700	800	900	1000	1100	1200
6"	0.196	CFM	78	98	117	137	157	176	196	215	235
		SP	0.03	0.04	0.05	0.08	0.09	0.12	0.14	0.17	0.21
		RAD	3-5	3-5	3-6	3-6	3-7	3-8	4-8	4-8	5-9
8"	0.349	CFM	140	175	210	245	280	315	350	385	420
		SP	0.05	0.05	0.07	0.10	0.12	0.16	0.18	0.22	0.26
		RAD	3-5	3-6	3-7	4-7	4-8	4-9	5-10	5-10	6-12
10"	0.545	CFM	218	276	327	382	436	490	545	600	654
		SP	0.05	0.06	0.08	0.10	0.14	0.17	0.20	0.24	0.27
		RAD	3-6	4-8	4-8	4-9	4-9	4-10	5-10	5-12	6-12
12"	0.785	CFM	314	395	470	550	630	705	785	865	940
		SP	0.06	0.06	0.09	0.12	0.16	0.19	0.25	0.30	0.38
		RAD	5-11	6-14	7-14	8-15	8-16	8-17	9-18	9-19	10-20
14"	1.07	CFM	428	535	642	749	856	963	1070	1177	1284
		SP	0.06	0.07	0.10	0.13	0.16	0.20	0.26	0.31	0.38
		RAD	7-15	7-15	8-17	9-19	10-22	10-22	12-24	12-26	12-26
16"	1.396	CFM	558	698	838	977	1117	1256	1396	1537	1675
		SP	0.07	0.08	0.12	0.14	0.17	0.21	0.27	0.32	0.39
		RAD	8-15	8-15	8-18	10-19	10-22	10-24	12-25	12-28	12-28
18"	1.766	CFM	706	883	1060	1235	1413	1589	1766	1943	2119
		SP	0.09	0.10	0.14	0.15	0.18	0.22	0.28	0.33	0.40
		RAD	8-15	8-16	8-18	10-20	10-22	12-24	12-24	14-30	14-30

NECK SIZE INCHES
 NECK AREA SQUARE INCHES
 NECK VELOCITY FEET PER MINUTE
 CFM CUBIC FEET PER MINUTE
 SP STATIC PRESSURE-INCHES OF WATER
 RAD RADIUS OF DIFFUSION-FEET

LINEAR SLOT DIFFUSER PERFORMANCE

DATA CEILING, SIDE WALL APPLICATION

NO. OF SLOT	CFM PER FT	20	30	40	60	80	100	125	150	200	250	300
1	VEL SP THROW	320 0.016 5	480 0.038 10	640 0.060 15	960 0.100 20	1280 0.142 22	1600 0.394 35					
2	VEL SP THROW		240 0.009 4	320 0.017 7	480 0.040 11	640 0.065 20	800 0.113 24	1000 0.176 30	1200 0.270 35	1600 0.040 41		
3	VEL SP THROW			213 0.009 6	320 0.018 9	427 0.036 15	533 0.060 20	667 0.085 24	800 0.150 30	1066 0.221 34	1333 0.350 42	
4	VEL SP THROW				240 0.014 10	320 0.023 14	400 0.040 18	500 0.060 20	600 0.095 26	800 0.140 30	1000 0.242 38	1200 0.320 46
5	VEL SP THROW					256 0.014 12	320 0.018 16	400 0.040 20	480 0.058 24	640 0.098 28	800 0.156 36	960 0.240 42

VEL = VELOCITY IN FEET PER MINUTE
 THROW = THROW IN FEET
 SP = STATIC PRESSURE IN INCHES OF WATER



รูปที่ 1. ธนาคารกรุงเทพ จำกัด
รูปที่ 2. โรงพยาบาลकु้มเกล้าฯ
รูปที่ 3. ธนาคารกสิกรไทย จำกัด
รูปที่ 4. โรงแรมแอมบาสซาเดอร์



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