

# CEILING DIFFUSERS



SCD	Supply Ceiling Diffuser
RCD	Return Ceiling Diffuser
SPCD	Supply Perforated Ceiling Diffuser
RPCD	Return Perforated Ceiling Diffuser
SDCD	Supply Decorative Ceiling Diffuser
RDCD	Return Decorative Ceiling Diffuser



intertek

**APPLICATIONS**

A wide range of Ceiling Diffusers is available to suit the various requirements of ceiling air distribution.

Supply air ceiling diffusers (SCD) and return air ceiling diffusers (RCD) can be Square or Rectangle in shape with One, Two, Three or Four Way Patterns. The different diffuser patterns are used to control the supply air direction. Typical examples of such application are supply diffusers near glass areas, in corridors and in corners.

SCD is supplied with Opposed Blades Damper (OBD) to facilitate the precise air volume control. (Note: OBD is used for fine tuning the air volume flow rate and should not be used to replace the branch Volume Control Damper). RCD is supplied without OBD and usually used for return air applications. In certain applications, SCD must be used as return air diffuser; that is, where return air volume requires precise control, such as room pressurization applications. This is frequently required for Clean Room Engineering applications such as Hospitals, Pharmaceutical Plants, Biotech Laboratories, Computer Rooms and Silicon Industry.

SCD and RCD are commonly used for Heating, Cooling and Isothermal Ventilation applications. However, such applications are limited to 4 meters ceiling height. For Ceiling Heights above 4.0 Meters, refer to specially terminal devices such as Jet Nozzle Diffusers and Drop Ceiling Diffusers.

SCD and RCD are tested by Intertek to ASHRAE 70 - 1991 standard method of testing for rating performance of air outlets and inlets.

Perforated ceiling diffuser (PCD) is of the same construction as SCD but with a removable perforated face of GI sheet powder coated, or aluminium sheet as optional.



Supply Air 4 Way Ceiling Diffuser (SCD-4S)



Supply Air 3 Way Ceiling Diffuser (SCD-3S)



Return Air Rectangular 4 Way Ceiling Diffuser (RCD-4R)



4 Way Supply Ceiling Diffuser with Perforated Face (PCD)

**FEATURES**

**MATERIAL:**

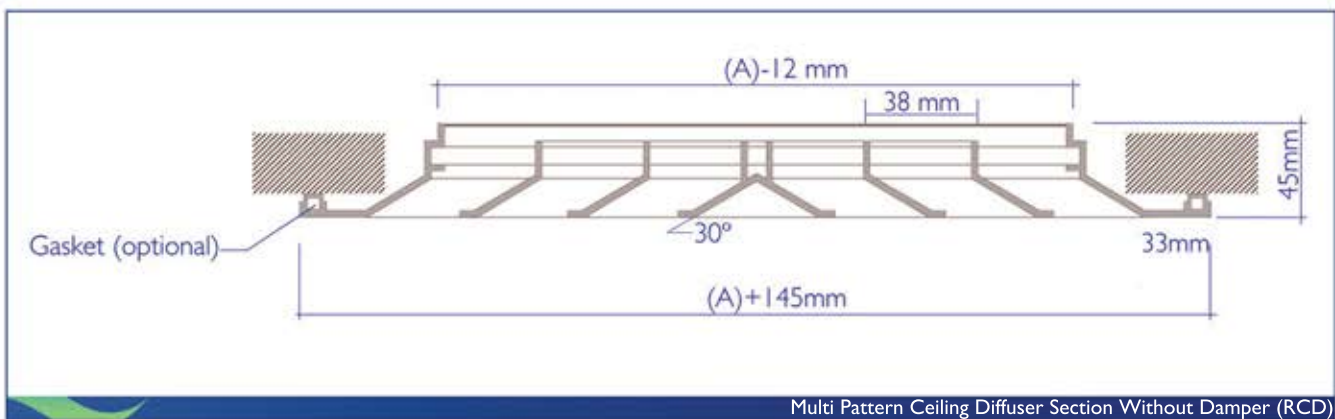
- Frame and Core are made of extruded aluminium alloy 6063 to T6 Heat Treatment
- The Opposed Blades Damper is extruded aluminium alloy 6063/T6
- Mitred Corner
- Spring loaded core

**Opposed Blades Damper (OBD):**

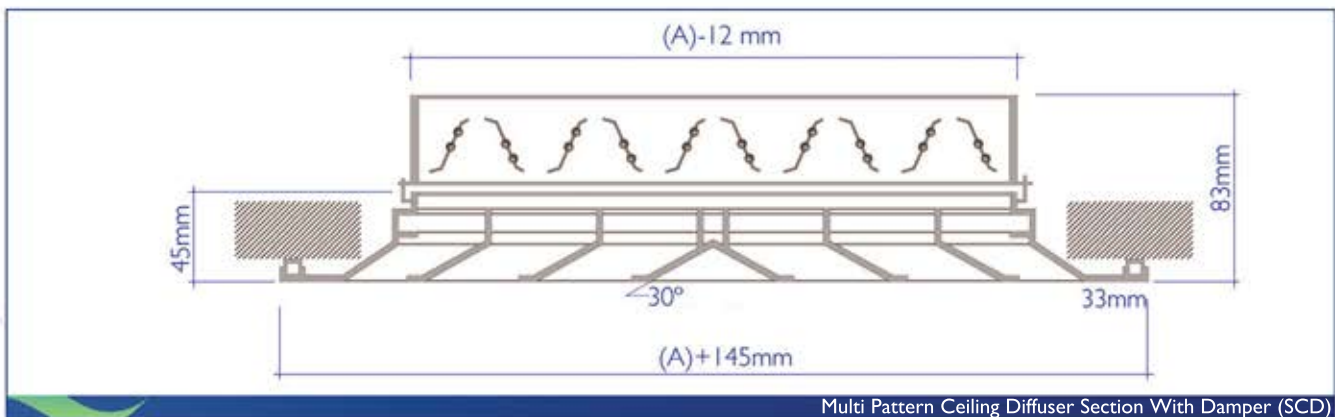
OBD is fixed to the rear frame of SCD model by means of "S" clamp for ease of removal and rigid construction.

To adjust the OBD opening, remove the core and turn the adjustment screw available at the front face of the damper (Clockwise to open / Counter Clockwise to close).

**DIMENSIONS**



Multi Pattern Ceiling Diffuser Section Without Damper (RCD)



Multi Pattern Ceiling Diffuser Section With Damper (SCD)

**STANDARD SIZES**

**Square Ceiling Diffusers**

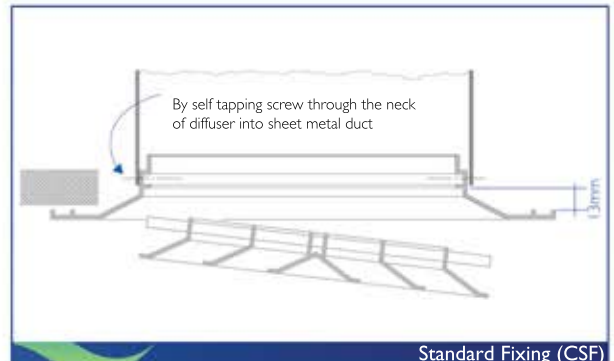
Neck Size	Face Size
150 x 150	295 x 295
225 x 225	370 x 370
300 x 300	445 x 445
375 x 375	520 x 520
450 x 450	595 x 595
525 x 525	670 x 670
600 x 600	745 x 745

**Rectangular Ceiling Diffusers**

A & B Size (mm)	
225 x 150	370 x 295
300 x 150	445 x 295
375 x 150	520 x 295
450 x 150	595 x 295
525 x 150	670 x 295
300 x 225	445 x 370
375 x 225	520 x 370
450 x 225	595 x 370
525 x 225	670 x 370

**FINISH OPTIONS / FIXING**

- Available in Powder Coated RAL 9010 or 9016 as standard.
- Other powder coated color finishes are available on request.
- Fixing options are Concealed Screw Fixing.

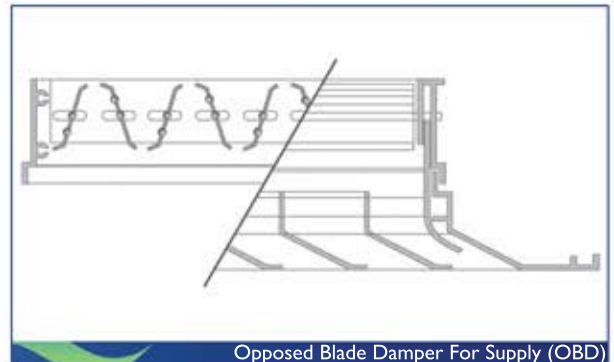


Standard Fixing (CSF)

**ACCESSORIES**

**Opposed blade damper for supply (optional)**

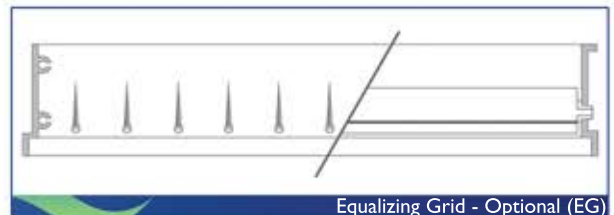
The specially designed blades have an overlapping lip which assures a tight closure. Control is done by adjustment screw through the face of diffuser. Material: Extruded aluminium construction.



Opposed Blade Damper For Supply (OBD)

**Equalizing grid (optional)**

Individually adjustable blades, to provide precise directional control of air through the diffuser. Nylon tension bushes. Extruded aluminium construction.



Equalizing Grid - Optional (EG)

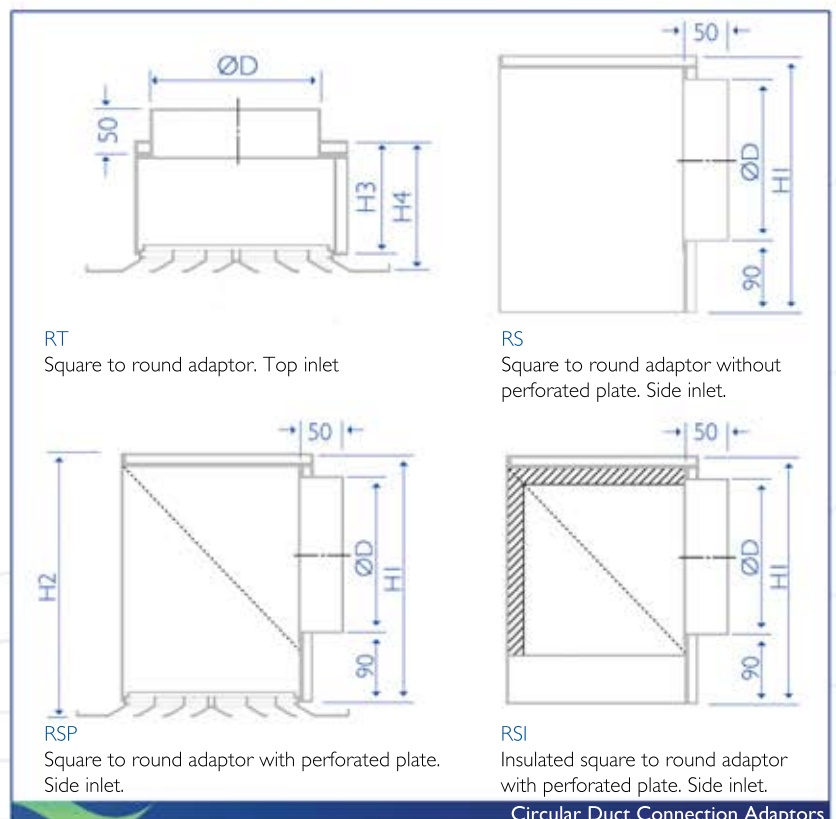
**Circular duct connection adaptors (optional)**

Suitable for supply and exhaust ceiling diffusers. Round inlet. Galvanized steel construction. Special construction available on request.

NOMINAL SIZES	ØD	TYPE RS		TYPE RT	
		H1	H2	H3	H4
150X150	100	240	285	150	195
225X225	150	290	335	175	220
300X300	200	340	385	200	245
375X375	250	390	435	225	270
450X450	300	440	485	250	295
525X525	350	490	535	275	320
600X600	400	540	585	300	345

**Fixing**

4 holes 8mm diameter for straps or drop rods.

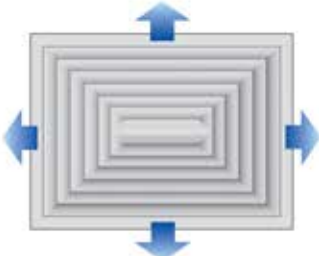


MULTI PATTERN CEILING DIFFUSERS

4 WAY DISCHARGE



Square (SCD-4S)

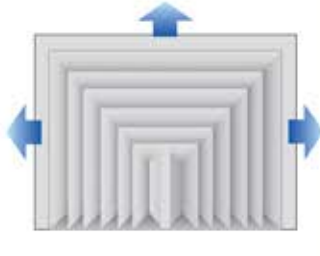


Rectangular (SCD-4R)

3 WAY DISCHARGE



Square (SCD-3S)



Rectangular (SCD-3R)

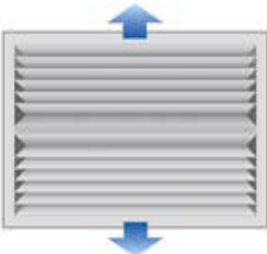
2 WAY DISCHARGE



Square (SCD-2S)



Corner (SCD-2SC)

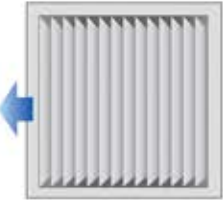


Rectangular Vertical (SCD-2RV)



Rectangular Horizontal (SCD-2RH)

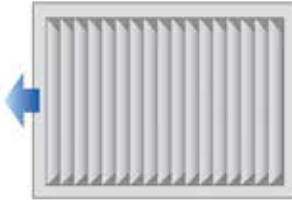
1 WAY DISCHARGE



Square (SCD-1S)



Rectangular Vertical (SCD-1RV)



Rectangular Horizontal (SCD-1RH)

## PERFORATED CEILING DIFFUSERS (SPCD / RPCD)



Perforated Ceiling Diffuser (PCD)

**Product Features:**

- This product is designed to provide laminar flow with low velocities by evenly distributing the downward moving conditioned air.
- The perforated ceiling diffuser is effective especially in areas with heavy localized internal loads, as in computer rooms.
- The column of air delivered by the perforated ceiling diffuser cools the load source directly without generating high velocities in the occupied space.

**Accessories:****Opposed blade damper for supply (optional)**

The specially designed blades have an overlapping lip which assures a tight closure. Control is done by adjustment screw through the face of diffuser.

Material: Extruded aluminium construction.

**Equalizing grid (optional) - EG**

Individually adjustable blades, to provide precise directional control of air through the diffuser. Nylon tension bushes.

Material: Extruded aluminium construction.

**GI Adaptors (optional)**

Plenum boxes with ring can be provided to suit the site requirement.

DECORATIVE DIFFUSER ( SDCSD / RDCD )

With high demand for aesthetics these days, more and more customers are enquiring about the decorative diffusers.

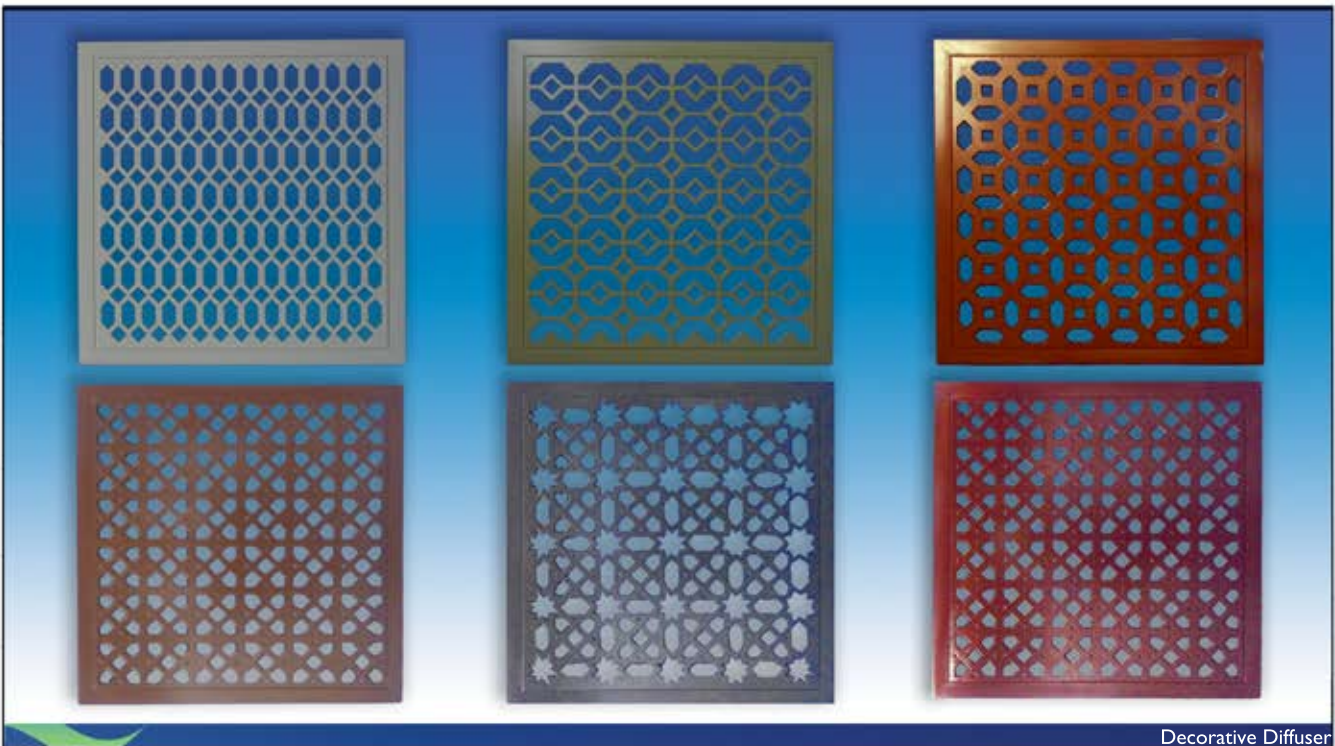
Decorative diffusers comes in a variety of designs and are commonly used in Majlis, atrium, etc.

Decorative diffusers can have the core and damper as required.

Available in Powdered Coated RAL 9016 as standard. Other powder coated finishes are available as options.

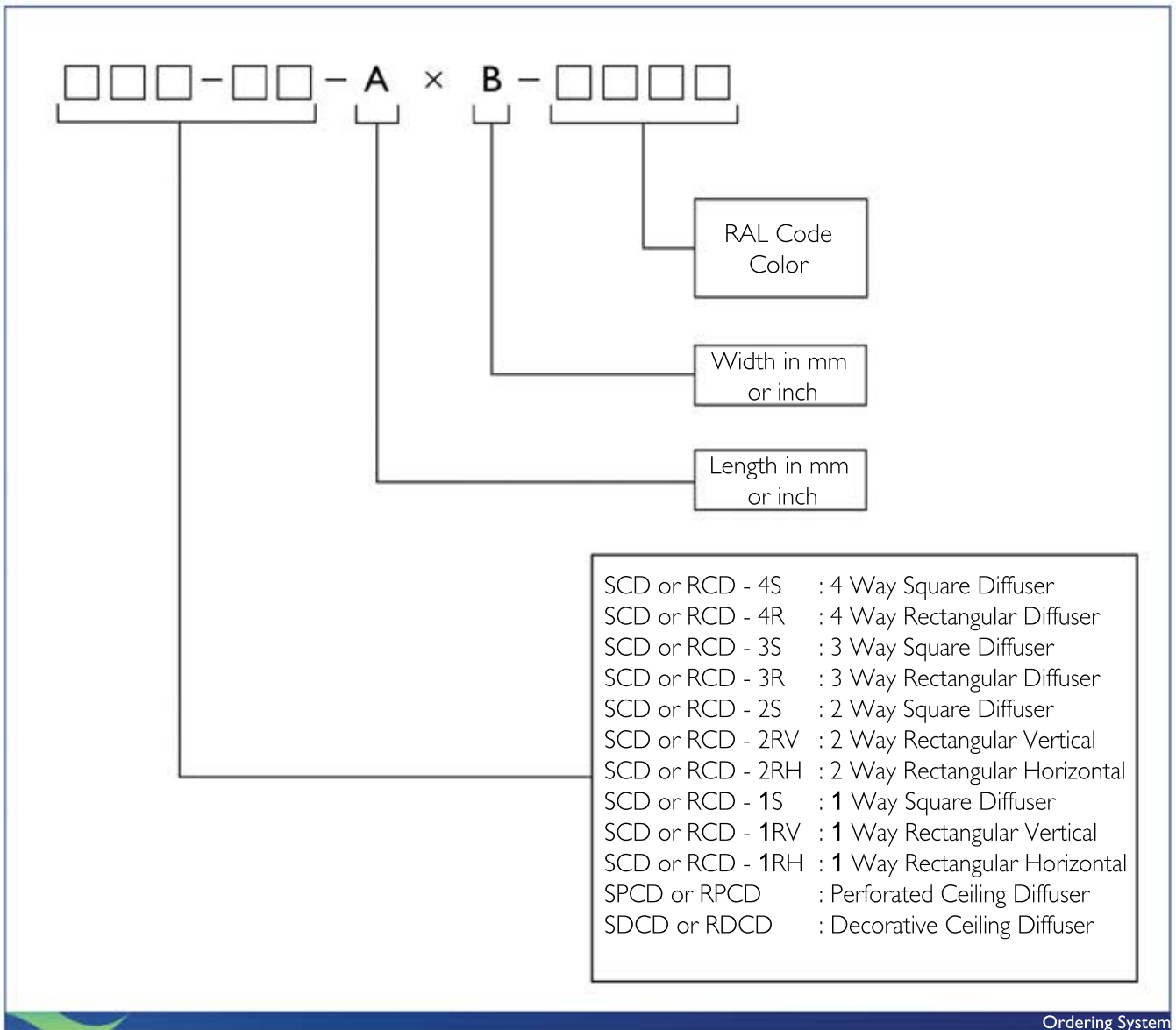


Decorative Diffuser



Decorative Diffuser

**ORDERING SYSTEM**



**ORDERING EXAMPLE**

**SCD-4S-300mm x 300mm-9010**

Stands for Supply Ceiling Diffuser, 4Way, 300x300 coating color RAL 9010.



## GENERAL NOTES

Pages onwards give performance data for all models and variants, and unless otherwise stated the following general notes apply:

1. Throws shown are to three terminal velocity of 0.25m/s, 0.5m/s, 0.75m/s, (50fpm, 100fpm, 150fpm) with coanda effect across a flat ceiling, and with supply air at conditions with max  $\Delta T=10K$  cooling.
2. For standard room height of 2.75 metres, throws should be taken as the distance to the nearest wall (minimum plan dimension, MPD), or to half the distance between diffuser centres.
3. When mounted without a surrounding closed ceiling, the throw will be reduced by approx. 40%, ie throw = table throw  $\times$  0.6  
  
However, in order to avoid the airflow 'dumping' into the space when on cooling mode, giving excessive velocities, it may be necessary for coanda plates to be fitted to the diffuser. Please check with factory for details.
4. Another fault that can give rise to 'dumping' on cooling cycles is low jet velocities at the diffuser core. In order to avoid this, it is advisable to ensure that neck velocities do not drop below 0.75m/s, (150fpm).
5. The acoustic data were tested in accordance to ASHRAE 70 - 1991 standard. The octave band sound power levels obtained were plotted to determine the point of tangency with the highest rank. Noise Criteria curve (NC) to establish the NC. Noise Criteria ratings were determined by subtracting room absorption of 10dB from the sound power level data.
7. NC and Pressure values shown, are based on a diffuser complete unit with an opposed blade damper in the fully open position for the supply diffuser and without for the return diffuser. The damper should only be used for fine balancing, as for every doubling of pressure there is a resulting increase in the noise level of +9dB for supply, or +5dB for exhaust.
8. Models With Reduced Necks.  
  
There is a 'dilution effect' on performance for these models, as the air tends to spread behind the core, reducing throws by up to 20% depending on the relationship between the neck size and the base diffuser size. For more information, please check with the factory.
9. For rectangular diffusers, throw values tested are on the longer side of the diffusers. For the shorter side throws, values are to be multiplied by 0.72.
10. Corrections for 1, 2 and 3 way diffusers
 

3 way pattern throw:	Multiply by 1.15
2 way pattern throw:	Multiply by 1.25
1 way pattern throw:	Multiply by 1.45
11. The following tables include the results of tests conducted on samples of air terminals. The test results include Noise Criteria (NC), static pressure verses air flow, throw and effective area. Extrapolation was used to obtain the performance for other sizes and other parameters within the range of products mentioned above.

**ORDERING SYSTEM****SYMBOLS**

- L/Sec : Air Volume in litres per second.
- Af : Effective free area in square meters.
- Vf : Face Velocity in meters per second.
- Ak : Neck Area in square meters.
- Vk : Neck Velocity in meters per second.
- Pt : Total pressure in Pascal.
- Th : Throw in meters.
- NC : Noise Criteria.

**NOTES**

- The large throw values are based on the minimum terminal velocity of 0.25m/Sec.
- The middle throw values are based on the medium terminal velocity of 0.50m/Sec.
- The small throw values are based on the maximum terminal velocity of 0.75m/Sec.

**CONDITIONS**

- Supply or Return as indicated.
- Noise Criteria values are based on (10dB) room attenuation.
- Damper is fully open.
- Maximum room height = 4.0m
- Cooling @  $\Delta T = 10K$

**CORRECTION FOR 1, 2 AND 3 WAY**

- Noise Criteria : No correction required.
- Pressure : No correction required.
- Throw : 3 way - increase for 15%  
: 2 way - increase for 25%  
: 1 way - increase for 45%
- Drop : No correction required.

**CEILING DIFFUSERS**



**SI-UNITS**

**SUPPLY AIR CEILING DIFFUSER, 4 WAY - (SCD - 4S)**

SIZE (mm x mm)	NECK AREA (m <sup>2</sup> )	FREE AREA (m <sup>2</sup> )	NECK VELOCITY (m/s)	1.00	1.50	2.00	2.25	2.50	2.75	3.00	3.50	4.00
150x150	0.019	0.009	Q (L/s)	19	29	38	43	48	52	57	67	76
			Vf (m/s)	2.13	3.19	4.26	4.79	5.32	6.38	7.45	8.51	
			Pt (Pa)	3	7	13	17	21	38	41	52	
			Throw (m)	0.9   1.2   2.4	1.2   1.8   3.4	1.8   2.7   4.2	2.0   3.0   4.5	2.1   3.3   4.8	2.4   3.5   4.9	3.0   3.9   5.4	3.3   4.2   5.4	
			NC	<15	<15	<15	<15	<15	17	22	24	
225x225	0.046	0.021	Q (L/s)	46	69	92	104	115	127	138	161	184
			Vf (m/s)	2.21	3.31	4.41	4.96	5.51	6.62	7.72	8.82	
			Pt (Pa)	2	3	9	11	14	20	31	42	
			Throw (m)	1.2   2.1   3.8	2.1   3.3   5.4	2.3   3.7   5.7	2.7   3.9   5.9	3.0   4.0   6.1	3.6   4.7   7.0	4.8   6.0   8.4	5.1   6.3   9.3	
			NC	<15	<15	<15	18	21	25	28	33	
300x300	0.083	0.036	Q (L/s)	83	124	166	187	207	228	249	290	332
			Vf (m/s)	2.29	3.44	4.58	5.15	5.73	6.87	8.02	9.16	
			Pt (Pa)	2	4	8	11	14	22	32	43	
			Throw (m)	1.8   2.7   5.4	2.7   3.9   7.2	3.6   5.4   8.1	4.1   5.9   8.6	4.5   6.3   9.0	5.0   6.8   9.5	6.3   7.8   11.0	6.9   8.1   11.0	
			NC	<15	<15	<15	17	19	25	32	36	
375x375	0.132	0.055	Q (L/s)	132	198	264	296	329	362	395	461	527
			Vf (m/s)	2.38	3.57	4.76	5.36	5.95	7.14	8.33	9.52	
			Pt (Pa)	2	4	8	11	14	22	32	43	
			Throw (m)	2.4   3.6   6.9	3.6   5.1   9.0	4.8   6.9   10.0	5.3   7.5   10.8	5.7   8.1   11.0	6.3   8.6   12.2	6.9   9.0   13.0	7.8   9.6   14.0	8.4   10.0   15.0
			NC	<15	<15	18	23	28	32	35	41	45
450x450	0.192	0.077	Q (L/s)	192	288	384	432	480	528	576	671	767
			Vf (m/s)	2.48	3.72	4.96	5.58	6.20	7.44	8.68	9.92	
			Pt (Pa)	2	4	8	11	14	22	32	43	
			Throw (m)	2.7   4.2   8.1	4.2   6.0   11.0	5.7   8.1   12.0	6.2   8.9   12.8	6.6   9.6   14.0	7.4   10.1   14.4	8.1   11.0   15.0	9.3   11.0   16.0	12.0   16.0   18.0
			NC	<15	<15	22	28	34	37	39	44	48
525x525	0.263	0.102	Q (L/s)	263	395	526	592	658	724	790	921	1053
			Vf (m/s)	2.59	3.88	5.17	5.82	6.47	7.76	9.05	10.34	
			Pt (Pa)	2	4	9	12	16	25	36	49	
			Throw (m)	3.3   4.6   9.3	4.8   7.2   12.0	6.6   9.6   14.0	7.2   10.4   15.0	7.8   11.0   16.0	8.7   11.7   16.8	9.6   12.0   18.0	11.0   13.0   19.0	12.0   14.0   21.0
			NC	<15	16	25	31	37	40	42	47	51
600x600	0.346	0.128	Q (L/s)	346	519	691	778	864	951	1037	1210	1383
			Vf (m/s)	2.70	4.05	5.41	6.08	6.76	8.11	9.46	10.81	
			Pt (Pa)	2	4	9	12	16	25	36	49	
			Throw (m)	3.6   5.7   11.0	5.4   8.1   14.0	7.5   11.0   16.0	8.3   12.0   17.1	9.0   13.0   18.0	10.1   13.5   19.1	11.0   14.0   20.0	12.0   15.0   22.0	14.0   16.0   24.0
			NC	<15	19	29	35	40	43	45	50	53

See notes on page E-8

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# CEILING DIFFUSERS



## SUPPLY AIR CEILING DIFFUSER, 4 WAY - (SCD - 4R)

SI-UNITS

SIZE (mm x mm)	NECK AREA (m <sup>2</sup> )	FREE AREA (m <sup>2</sup> )	NECK VELOCITY (m/s)	1.00	1.50	2.00	2.25	2.50	2.75	3.00	3.50	4.00															
225x150	0.029	0.014	Q (L/s)	29	44	59	66	73	81	88	103	118															
			Vf (m/s)	2.17	3.25	4.33	4.87	5.41	5.96	6.50	7.04	7.58	8.12														
			Pt (Pa)	2	3	7	12	17	23	29	38	47	56	65													
			Throw (m)	1.2	1.8	3.3	1.8	2.4	4.2	2.4	3.3	5.1	2.7	3.6	5.6	3.0	3.9	6.0	3.3	4.2	6.3	3.6	4.5	6.6	4.2	5.1	7.2
			NC	<15	<15	<15	<15	<15	17	20	26	30															
300x150	0.040	0.018	Q (L/s)	40	60	79	89	99	109	119	139	159															
			Vf (m/s)	2.20	3.31	4.41	4.96	5.51	6.06	6.61	7.16	7.71	8.26														
			Pt (Pa)	2	3	8	11	14	22	30	38	47	56	65													
			Throw (m)	1.5	2.1	4.2	2.1	3.0	4.8	2.7	3.6	5.7	3.0	3.9	6.2	3.3	4.2	6.6	3.6	4.5	6.9	3.9	4.8	7.2	4.5	5.4	7.8
			NC	<15	<15	<15	15	16	19	21	27	31															
375x150	0.050	0.022	Q (L/s)	50	75	100	113	125	138	150	163	175	187														
			Vf (m/s)	2.24	3.37	4.49	5.05	5.61	6.17	6.73	7.29	7.85	8.41														
			Pt (Pa)	3	4	9	13	17	21	26	31	36	41	46													
			Throw (m)	1.5	2.4	4.2	2.1	3.3	5.7	3.3	4.5	6.9	3.6	4.8	7.2	3.9	5.1	7.5	4.2	5.4	7.8	4.5	5.7	8.1	5.1	6.3	8.7
			NC	<15	<15	<15	15	16	19	22	28	32															
450x150	0.060	0.026	Q (L/s)	60	91	121	136	151	166	181	196	212	227														
			Vf (m/s)	2.28	3.43	4.57	5.14	5.71	6.28	6.85	7.42	7.99	8.56														
			Pt (Pa)	3	4	9	13	17	21	26	31	36	41	46													
			Throw (m)	1.8	2.7	4.5	2.4	3.6	6.0	3.6	4.8	7.5	3.9	5.1	7.8	4.2	5.4	8.1	4.5	5.7	8.6	4.8	6.0	9.0	5.4	6.9	9.9
			NC	<15	<15	<15	15	16	20	23	29	33															
525x150	0.071	0.030	Q (L/s)	71	106	142	159	177	195	212	228	245	262														
			Vf (m/s)	2.32	3.49	4.65	5.23	5.81	6.39	6.97	7.55	8.13	8.71														
			Pt (Pa)	3	4	9	13	17	21	26	31	36	41	46													
			Throw (m)	1.8	2.7	4.8	3.0	3.9	6.9	3.6	4.8	8.1	3.9	5.1	8.4	4.2	5.4	8.7	4.7	5.7	9.0	5.1	6.0	9.3	5.7	6.9	10.0
			NC	<15	<15	<15	15	16	20	23	29	33															
600x150	0.081	0.034	Q (L/s)	81	122	162	183	203	223	243	263	284	305														
			Vf (m/s)	2.36	3.55	4.73	5.32	5.91	6.50	7.09	7.68	8.27	8.86														
			Pt (Pa)	3	4	9	13	17	21	26	31	36	41	46													
			Throw (m)	1.7	2.8	5.5	3.0	4.2	7.5	3.9	5.7	8.4	4.4	6.2	8.9	4.8	6.6	9.3	5.3	7.1	9.8	5.7	7.5	10.0	6.6	8.1	11.0
			NC	<15	<15	<15	16	17	21	24	30	34															
300x225	0.061	0.027	Q (L/s)	61	92	123	138	153	169	184	199	215	230														
			Vf (m/s)	2.25	3.37	4.49	5.06	5.62	6.18	6.74	7.29	7.85	8.41														
			Pt (Pa)	3	4	9	13	17	21	26	31	36	41	46													
			Throw (m)	1.8	2.7	4.5	2.4	3.6	6.0	3.6	4.8	7.5	3.9	5.1	7.8	4.2	5.4	8.1	4.5	5.7	8.6	4.8	6.0	9.0	5.4	6.9	9.9
			NC	<15	<15	<15	15	16	20	23	29	33															

See notes on page E-8

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SUPPLY AIR CEILING DIFFUSER, 4 WAY - (SCD - 4R)

SI-UNITS



SIZE (mm x mm)	NECK AREA (m <sup>2</sup> )	FREE AREA (m <sup>2</sup> )	NECK VELOCITY (m/s)	1.00	1.50	2.00	2.25	2.50	2.75	3.00	3.50	4.00		
375x225	0.077	0.034	Q (l/s)	77	116	155	174	193	213	232	271	309		
			Vf (m/s)	2.29	3.43	4.58	5.15	5.72	6.29	6.87	7.44	8.01	8.58	
			Pt (Pa)	3	4	9	13	17	21	26	33	42	50	
			Throw (m)	1.8	2.7	3.6	4.5	5.4	6.2	7.2	8.1	9.1	10.1	11.0
			NC	<15	<15	17	21	24	27	30	34	38	42	46
450x225	0.093	0.040	Q (l/s)	93	140	187	210	233	257	280	327	373		
			Vf (m/s)	2.33	3.50	4.66	5.24	5.83	6.41	6.99	7.57	8.16	8.74	
			Pt (Pa)	3	4	9	13	17	21	26	31	36	41	
			Throw (m)	2.4	3.3	4.2	5.1	6.0	6.9	7.8	8.7	9.6	10.5	11.4
			NC	<15	<15	<15	16	18	22	25	28	31	35	
525x225	0.109	0.046	Q (l/s)	109	164	219	246	273	300	328	382	437		
			Vf (m/s)	2.37	3.56	4.75	5.34	5.93	6.53	7.12	7.71	8.31	8.91	
			Pt (Pa)	3	4	9	13	17	21	26	31	36	41	
			Throw (m)	2.4	3.0	4.0	4.7	5.4	6.1	6.8	7.5	8.2	8.9	9.6
			NC	<15	<15	<15	16	18	22	25	28	31	35	
600x225	0.125	0.052	Q (l/s)	125	188	250	282	313	344	376	438	501		
			Vf (m/s)	2.42	3.63	4.83	5.44	6.04	6.65	7.25	7.85	8.46	9.07	
			Pt (Pa)	3	4	9	13	17	21	26	31	36	41	
			Throw (m)	2.4	3.0	4.0	4.7	5.4	6.1	6.8	7.5	8.2	8.9	9.6
			NC	<15	<15	<15	17	19	23	26	29	32	36	
375x300	0.105	0.045	Q (l/s)	105	157	209	235	261	287	314	366	418		
			Vf (m/s)	2.33	3.50	4.67	5.25	5.84	6.42	7.00	7.58	8.17	8.76	
			Pt (Pa)	3	4	9	13	17	21	26	31	36	41	
			Throw (m)	2.4	3.3	4.2	5.0	5.8	6.6	7.4	8.2	9.0	9.8	10.6
			NC	<15	<15	<15	17	19	23	26	29	32	36	
450x300	0.126	0.053	Q (l/s)	126	189	252	284	315	347	378	442	505		
			Vf (m/s)	2.38	3.57	4.76	5.35	5.95	6.54	7.14	7.73	8.33	8.92	
			Pt (Pa)	3	4	9	13	17	21	26	31	36	41	
			Throw (m)	2.4	3.0	4.0	4.7	5.4	6.1	6.8	7.5	8.2	8.9	9.6
			NC	<15	<15	<15	17	20	24	27	30	33	37	
525x300	0.148	0.061	Q (l/s)	148	222	295	332	369	406	443	517	591		
			Vf (m/s)	2.42	3.64	4.85	5.46	6.06	6.67	7.27	7.87	8.49	9.10	
			Pt (Pa)	3	4	9	13	17	21	26	31	36	41	
			Throw (m)	2.4	3.6	4.5	5.4	6.3	7.2	8.1	9.0	9.9	10.8	11.7
			NC	<15	<15	<15	17	20	24	27	30	33	37	

See notes on page E-8

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# CEILING DIFFUSERS

## SUPPLY AIR CEILING DIFFUSER, 4 WAY - (SCD - 4R)

### SI-UNITS



SIZE (mm x mm)	NECK AREA (m <sup>2</sup> )	FREE AREA (m <sup>2</sup> )	NECK VELOCITY (m/s)	1.00	1.50	2.00	2.25	2.50	2.75	3.00	3.50	4.00																		
600x300	0.169	0.069	Q (L/s)	169	254	339	381	423	466	508	593	677																		
			Vf (m/s)	2.47	3.71	4.94	5.56	6.18	7.41	8.65	9.88																			
			Pt (Pa)	3	4	9	13	17	21	26	36	50																		
			Throw (m)	2.4	3.3	7.2	3.9	6.0	9.3	5.7	7.8	11.0	6.3	8.3	12.2	6.9	8.7	13.0	7.4	9.2	13.5	7.8	9.6	14.0	8.4	11.0	15.0	9.0	11.0	17.0
			NC	<15	<15	<15	18	21	25	28	34																			
450x375	0.159	0.066	Q (L/s)	159	238	317	358	398	437	559	636																			
			Vf (m/s)	2.43	3.65	4.85	5.46	6.06	7.28	8.67	9.71																			
			Pt (Pa)	3	4	9	13	17	21	26	36	50																		
			Throw (m)	2.4	3.3	7.2	3.9	6.0	9.3	5.7	7.8	11.0	6.3	8.3	12.2	6.9	8.7	13.0	7.4	9.2	13.5	7.8	9.6	14.0	8.4	11.0	15.0	9.0	11.0	17.0
			NC	<15	<15	<15	18	21	25	28	34																			
525x375	0.186	0.075	Q (L/s)	186	279	372	419	466	512	559	652	745																		
			Vf (m/s)	2.48	3.72	4.95	5.57	6.19	7.43	8.67	9.91																			
			Pt (Pa)	3	4	9	13	17	21	26	36	50																		
			Throw (m)	2.7	3.9	7.8	3.9	6.3	9.3	6.0	8.1	12.0	6.6	8.6	12.6	7.2	9.0	13.0	7.5	9.5	13.8	7.8	9.9	14.0	8.4	11.0	16.0	9.3	12.0	18.0
			NC	<15	<15	<15	18	21	25	28	34																			
600x375	0.213	0.084	Q (L/s)	213	320	427	480	534	587	640	747	854																		
			Vf (m/s)	2.53	3.79	5.05	5.68	6.32	7.58	8.84	10.11																			
			Pt (Pa)	3	4	9	13	17	21	26	36	50																		
			Throw (m)	2.7	4.5	8.7	4.2	6.3	11.0	6.0	8.7	13.0	6.6	9.3	13.4	7.2	9.9	14.0	8.1	10.5	15.0	9.0	11.0	16.0	12.0	16.0	17.0	13.0	17.0	18.0
			NC	<15	<15	<15	18	22	29	35																				
525x450	0.225	0.089	Q (L/s)	225	337	449	506	562	618	674	786	899																		
			Vf (m/s)	2.53	3.80	5.06	5.69	6.33	7.59	8.86	10.12																			
			Pt (Pa)	3	4	9	13	17	21	26	36	50																		
			Throw (m)	2.4	4.2	7.8	4.2	6.0	11.0	5.7	8.4	13.0	6.3	8.9	13.1	6.9	9.3	14.0	7.8	9.8	14.3	8.7	10.0	15.0	12.0	15.0	17.0	14.0	17.0	19.0
			NC	<15	<15	<15	18	22	29	36																				
600x450	0.258	0.100	Q (L/s)	258	386	515	579	644	708	773	901	1030																		
			Vf (m/s)	2.58	3.88	5.17	5.81	6.46	7.75	9.04	10.34																			
			Pt (Pa)	3	4	9	13	17	21	26	36	50																		
			Throw (m)	3.3	4.8	9.3	4.8	7.2	12.0	6.6	9.6	14.0	7.5	10.4	14.9	8.4	11.0	16.0	9.2	11.9	16.7	9.9	13.0	18.0	11.0	14.0	18.0	12.0	15.0	20.0
			NC	<15	<15	<15	19	23	30	36																				
600x525	0.302	0.114	Q (L/s)	302	452	603	679	754	830	905	1056	1207																		
			Vf (m/s)	2.64	3.96	5.29	5.95	6.61	7.93	9.25	10.57																			
			Pt (Pa)	2	4	9	12	16	20	25	36	49																		
			Throw (m)	3.3	5.1	9.9	5.4	7.8	13.0	6.9	10.0	15.0	7.8	11.0	15.8	8.7	12.0	17.0	9.6	12.2	17.4	11.0	13.0	18.0	11.0	14.0	20.0	12.0	15.0	22.0
			NC	<15	<15	<15	20	24	31	37																				

**APPLICATIONS**



**RETURN AIR CEILING DIFFUSER, 4 WAY - (RCD - 4S)**

SI-UNITS

SIZE (mm x mm)	NECK AREA (m <sup>2</sup> )	NECK VELOCITY (m/s)	1.00	1.50	2.00	2.25	2.50	2.75	3.00	3.50	4.00
150x150	0.019	Q (L/s)	19	29	38	43	48	52	57	67	76
		Pt (Pa)	8	12	18	20	21	22	24	35	45
		NC	<15	<15	<15	<15	<15	15	15	21	25
225x225	0.045	Q (L/s)	45	68	91	102	113	125	136	159	181
		Pt (Pa)	10	14	20	22	23	30	37	55	75
		NC	<15	<15	<15	18	22	26	30	36	41
300x300	0.083	Q (L/s)	83	124	166	187	207	228	249	290	332
		Pt (Pa)	10	14	20	22	23	30	37	55	75
		NC	<15	<15	16	21	26	30	33	39	45
375x375	0.132	Q (L/s)	132	198	264	296	329	362	395	461	527
		Pt (Pa)	10	14	20	22	23	30	37	55	75
		NC	<15	15	19	24	28	32	36	42	47
450x450	0.192	Q (L/s)	192	288	384	432	480	528	576	671	767
		Pt (Pa)	10	14	20	22	23	30	37	55	75
		NC	16	18	21	26	31	35	38	44	50
525x525	0.263	Q (L/s)	263	395	526	592	658	724	790	921	1053
		Pt (Pa)	10	14	20	22	23	30	37	55	75
		NC	18	21	23	28	33	37	40	46	52
600x600	0.346	Q (L/s)	346	519	691	778	864	951	1037	1210	1383
		Pt (Pa)	10	14	20	22	23	30	37	55	75
		NC	19	22	24	29	34	38	42	48	53

See notes on page E-8

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RETURN AIR CEILING DIFFUSER, 4 WAY - (RCD - 4R)

SI-UNITS

SIZE (mm x mm)	NECK AREA (m <sup>2</sup> )	NECK VELOCITY (m/s)	1.00	1.50	2.00	2.25	2.50	2.75	3.00	3.50	4.00
225x150	0.029	Q (L/s)	29	44	59	66	73	81	88	103	118
		Pt (Pa)	10	14	20	22	23	30	37	55	75
		NC	<15	<15	<15	17	19	24	28	33	38
300x150	0.040	Q (L/s)	40	60	79	89	99	109	119	139	159
		Pt (Pa)	10	14	20	22	23	30	37	55	75
		NC	<15	<15	<15	18	21	25	29	34	40
375x150	0.050	Q (L/s)	50	75	100	113	125	138	150	175	200
		Pt (Pa)	10	14	20	22	23	30	37	55	75
		NC	<15	<15	<15	19	23	27	31	36	42
450x150	0.060	Q (L/s)	60	91	121	136	151	166	181	212	242
		Pt (Pa)	10	14	20	22	23	30	37	55	75
		NC	<15	<15	16	20	24	28	32	37	43
525x150	0.071	Q (L/s)	71	106	142	159	177	195	212	248	283
		Pt (Pa)	10	14	20	22	23	30	37	55	75
		NC	<15	<15	16	21	25	29	33	38	44
600x150	0.081	Q (L/s)	81	122	162	183	203	223	243	284	325
		Pt (Pa)	10	14	20	22	23	30	37	55	75
		NC	<15	<15	17	21	25	29	32	39	45
300x225	0.061	Q (L/s)	61	92	123	138	153	169	184	215	245
		Pt (Pa)	10	14	20	22	23	30	37	55	75
		NC	<15	<15	16	20	24	28	32	37	43
375x225	0.077	Q (L/s)	77	116	155	174	193	213	232	271	309
		Pt (Pa)	10	14	20	22	23	30	37	55	75
		NC	<15	<15	17	22	26	30	33	38	45
450x225	0.093	Q (L/s)	93	140	187	210	233	257	280	327	373
		Pt (Pa)	10	14	20	22	23	30	37	55	75
		NC	<15	<15	17	22	27	31	34	40	46
375x225	0.077	Q (L/s)	77	116	155	174	193	213	232	271	309
		Pt (Pa)	10	14	20	22	23	30	37	55	75
		NC	<15	<15	17	22	26	30	33	38	45
525x225	0.109	Q (L/s)	109	164	219	246	273	300	328	382	437
		Pt (Pa)	10	14	20	22	23	30	37	55	75
		NC	<15	15	18	23	27	31	35	41	46
600x225	0.125	Q (L/s)	125	188	250	282	313	344	376	438	501
		Pt (Pa)	10	14	20	22	23	30	37	55	75
		NC	<15	16	19	24	28	32	36	42	47
375x300	0.105	Q (L/s)	105	157	209	235	261	287	314	366	418
		Pt (Pa)	10	14	20	22	23	30	37	55	75
		NC	<15	15	18	23	27	31	34	40	46
450x300	0.126	Q (L/s)	126	189	252	284	315	347	378	442	505
		Pt (Pa)	10	14	20	22	23	30	37	55	75
		NC	<15	15	19	24	28	32	36	42	47

See notes on page E-8

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RETURN AIR CEILING DIFFUSER, 4 WAY - (RCD - 4R)

SI-UNITS

SIZE (mm x mm)	NECK AREA (m <sup>2</sup> )	NECK VELOCITY (m/s)	1.00	1.50	2.00	2.25	2.50	2.75	3.00	3.50	4.00
525x300	0.148	Q (L/s)	148	222	295	332	369	406	443	517	591
		Pt (Pa)	10	14	20	22	23	30	37	55	75
		NC	<15	16	20	25	29	33	37	42	48
600x300	0.169	Q (L/s)	169	254	339	381	423	466	508	593	677
		Pt (Pa)	10	14	20	22	23	30	37	55	75
		NC	15	18	21	26	30	34	37	43	49
450x375	0.159	Q (L/s)	159	238	318	358	397	437	477	556	636
		Pt (Pa)	10	14	20	22	23	30	37	55	75
		NC	15	17	20	25	29	33	37	43	49
525x375	0.186	Q (L/s)	186	279	372	419	466	512	559	652	745
		Pt (Pa)	10	14	20	22	23	30	37	55	75
		NC	16	18	21	26	31	35	38	44	50
600x375	0.213	Q (L/s)	213	320	427	480	534	587	640	747	854
		Pt (Pa)	10	14	20	22	23	30	37	55	75
		NC	17	18	22	27	32	36	39	45	51
525x450	0.225	Q (L/s)	225	337	449	506	562	618	674	786	899
		Pt (Pa)	10	14	20	22	23	30	37	55	75
		NC	17	19	22	27	32	36	39	45	51
600x450	0.258	Q (L/s)	258	386	515	579	644	708	773	901	1030
		Pt (Pa)	10	14	20	22	23	30	37	55	75
		NC	18	20	23	28	33	37	40	46	52
600x525	0.302	Q (L/s)	302	452	603	679	754	830	905	1056	1207
		Pt (Pa)	10	14	20	22	23	30	37	55	75
		NC	18	21	24	29	34	38	41	47	53

See notes on page E-8



**CEILING DIFFUSERS**



**SUPPLY AIR CEILING DIFFUSER, 4 WAY - (SCD - 4S)**

**IP-UNITS**

SIZE (in x in)	NECK AREA (SQ. FT.)	FREE AREA (SQ. FT.)	NECK VELOCITY (fpm)	200	300	400	450	500	550	600	700	800
<b>6x6</b>	0.205	0.096	Q (CFM)	40	61	81	91	101	111	121	141	161
			Vf (fpm)	426	638	851	957	1064	1170	1277	1489	1702
			Pt (in-wg)	0.014	0.030	0.054	0.069	0.083	0.118	0.152	0.164	0.209
			Throw (ft)	3 4 8	4 6 11	6 9 14	6 10 15	7 11 16	8 11 16	9 12 16	10 13 18	11 14 18
<b>9x9</b>	0.495	0.221	NC	<15	<15	<15	<15	<15	17	19	22	24
			Q (CFM)	98	146	195	219	244	268	293	341	390
			Vf (fpm)	441	662	882	993	1103	1213	1324	1544	1765
			Pt (in-wg)	0.008	0.014	0.036	0.043	0.055	0.072	0.080	0.123	0.168
<b>12x12</b>	0.893	0.390	Throw (ft)	4 7 12	7 11 18	8 12 19	9 13 19	10 13 20	12 15 23	14 18 26	16 20 28	17 21 31
			NC	<15	<15	16	17	20	22	25	28	33
			Q (CFM)	176	264	352	396	440	484	528	615	703
			Vf (fpm)	458	687	916	1031	1145	1260	1374	1603	1832
<b>15x15</b>	1.418	0.595	Pt (in-wg)	0.010	0.015	0.032	0.045	0.058	0.074	0.090	0.129	0.174
			Throw (ft)	6 9 18	9 13 24	12 18 27	13 19 28	15 21 30	16 22 31	18 24 32	21 26 35	23 27 37
			NC	<15	<15	<15	17	19	22	25	32	36
			Q (CFM)	279	419	559	629	698	768	838	978	1117
<b>18x18</b>	2.065	0.832	Vf (fpm)	476	714	952	1071	1190	1310	1429	1667	1905
			Pt (in-wg)	0.010	0.015	0.032	0.045	0.058	0.074	0.090	0.129	0.174
			Throw (ft)	8 12 23	12 17 30	16 23 33	17 25 35	19 27 37	21 28 40	23 30 42	26 31 45	28 33 49
			NC	<15	<15	18	23	28	32	35	41	45
<b>21x21</b>	2.833	1.095	Q (CFM)	407	610	813	915	1017	1118	1220	1423	1627
			Vf (fpm)	496	744	992	1116	1240	1364	1488	1736	1983
			Pt (in-wg)	0.010	0.015	0.032	0.045	0.058	0.074	0.090	0.129	0.174
			Throw (ft)	9 14 27	14 20 34	19 27 39	20 29 42	22 31 44	24 33 47	27 34 50	31 37 53	40 53 58
<b>24x24</b>	3.722	1.376	NC	<15	<15	22	28	34	37	39	44	48
			Q (CFM)	558	837	1116	1255	1395	1534	1674	1953	2232
			Vf (fpm)	517	776	1034	1164	1293	1422	1552	1810	2069
			Pt (in-wg)	0.010	0.015	0.036	0.050	0.063	0.082	0.100	0.143	0.196
<b>24x24</b>	3.722	1.376	Throw (ft)	11 15 31	16 24 40	22 31 46	24 34 49	26 36 52	29 38 55	31 40 58	35 43 62	38 46 68
			NC	<15	16	31	37	40	42	47	51	
			Q (CFM)	733	1099	1466	1649	1832	2016	2199	2565	2932
			Vf (fpm)	541	811	1081	1216	1351	1486	1622	1892	2162
<b>24x24</b>	3.722	1.376	Pt (in-wg)	0.010	0.015	0.036	0.050	0.063	0.082	0.100	0.143	0.196
			Throw (ft)	12 19 35	18 27 46	25 36 53	27 39 56	30 42 59	33 44 63	36 46 66	40 50 71	44 53 78
			NC	<15	19	35	40	43	45	50	53	
			Q (CFM)	833	1249	1666	1889	2112	2335	2558	2981	3404

See notes on page E-17

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# CEILING DIFFUSERS

## SUPPLY AIR CEILING DIFFUSER, 4 WAY - (SCD - 4R)



### IP-UNITS

SIZE (in x in)	NECK AREA (SQ. FT.)	FREE AREA (SQ. FT.)	NECK VELOCITY (fpm)	200	300	400	450	500	550	600	700	800		
9x6	0.316	0.146	Q (CFM)	62	93	125	140	156	171	187	218	249		
			Vf (fpm)	433	650	866	975	1083	1191	1299	1516	1733	1950	
			Pt (in-wg)	0.008	0.014	0.029	0.049	0.069	0.094	0.118	0.145	0.173	0.200	0.227
			Throw (ft)	4 6 11 6 8 14 8 11 17 9 12 18 10 13 20 11 14 21 12 15 22 14 17 24 15 18 25										
12x6	0.428	0.194	NC	<15	<15	<15	<15	<15	17	20	26	30		
			Q (CFM)	84	126	169	190	211	232	253	274	295	316	337
			Vf (fpm)	441	661	882	992	1102	1212	1323	1433	1543	1653	1764
			Pt (in-wg)	0.008	0.014	0.031	0.043	0.055	0.067	0.080	0.093	0.106	0.119	0.132
15x6	0.539	0.240	Throw (ft)	5 7 14 7 10 16 9 12 19 10 13 20 11 14 22 12 15 23 13 16 24 15 18 26 17 20 28										
			NC	<15	<15	<15	15	16	19	21	24	27	31	
			Q (CFM)	106	159	212	239	265	292	319	346	372	425	
			Vf (fpm)	449	673	897	1010	1122	1234	1346	1458	1571	1795	
18x6	0.651	0.285	Pt (in-wg)	0.010	0.014	0.037	0.052	0.066	0.085	0.104	0.123	0.145		
			Throw (ft)	5 8 14 7 11 19 11 15 23 12 16 24 13 17 25 14 18 26 15 19 27 17 21 29 20 24 32										
			NC	<15	<15	<15	15	16	19	22	25	28	32	
			Q (CFM)	128	192	256	288	320	352	384	416	448	513	
21x6	0.762	0.328	Vf (fpm)	457	685	913	1028	1142	1256	1370	1484	1598	1827	
			Pt (in-wg)	0.010	0.014	0.037	0.052	0.066	0.085	0.104	0.123	0.145	0.167	0.199
			Throw (ft)	6 9 15 8 12 20 12 16 25 13 17 26 14 18 27 15 19 28 16 20 30 18 23 32 21 26 36										
			NC	<15	<15	<15	15	16	20	23	27	29	33	
24x6	0.874	0.369	Q (CFM)	150	225	300	338	375	413	450	525	600		
			Vf (fpm)	465	697	929	1046	1162	1278	1394	1510	1627	1859	
			Pt (in-wg)	0.010	0.014	0.037	0.052	0.066	0.085	0.104	0.123	0.145	0.167	
			Throw (ft)	6 9 16 10 13 23 12 16 27 13 17 28 14 18 29 15 19 30 17 20 31 19 23 33 21 26 36										
12x9	0.660	0.294	NC	<15	<15	<15	15	16	20	23	29	34		
			Q (CFM)	172	258	344	387	430	473	516	559	602	688	
			Vf (fpm)	473	709	946	1064	1182	1300	1419	1537	1655	1891	
			Pt (in-wg)	0.010	0.014	0.037	0.052	0.066	0.085	0.104	0.123	0.145	0.167	
12x9	0.660	0.294	Throw (ft)	6 9 18 10 14 25 13 19 28 14 20 29 16 22 31 17 23 32 19 25 33 22 27 36 24 28 38										
			NC	<15	<15	<15	16	17	21	24	29	30	34	
			Q (CFM)	130	195	260	293	325	358	390	422	455	520	
			Vf (fpm)	449	674	899	1011	1123	1236	1348	1461	1573	1797	
12x9	0.660	0.294	Pt (in-wg)	0.010	0.014	0.037	0.052	0.066	0.085	0.104	0.123	0.145		
			Throw (ft)	6 9 15 8 12 20 12 16 25 13 17 26 14 18 27 15 19 28 16 20 30 18 23 32 21 26 36										
			NC	<15	<15	<15	15	16	20	23	29	30	34	
			Q (CFM)	150	225	300	338	375	413	450	525	600		

See notes on page E-17

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# CEILING DIFFUSERS



## SUPPLY AIR CEILING DIFFUSER, 4 WAY - (SCD - 4R)

### IP-UNITS

SIZE (in x in)	NECK AREA (SQ. FT.)	FREE AREA (SQ. FT.)	NECK VELOCITY (fpm)	200	300	400	450	500	550	600	700	800		
15x9	0.832	0.363	Q (CFM)	164	246	328	369	410	451	492	574	656		
			Vf (fpm)	458	687	915	1030	1144	1259	1373	1487	1602	1831	
			Pt (in-wg)	0.010	0.014	0.037	0.052	0.066	0.085	0.104	0.123	0.142	0.161	0.180
			Throw (ft)	6 9 15	9 13 23	12 17 26	18 18 27	24 19 29	20 20 30	17 21 31	19 23 34	22 26 37	26 31 42	31 37 48
18x9	1.004	0.431	NC	<15	<15	17	21	24	27	30	34	38		
			Q (CFM)	198	297	396	445	494	544	593	642	691	740	
			Vf (fpm)	466	699	932	1049	1165	1282	1398	1514	1631	1747	1865
			Pt (in-wg)	0.010	0.014	0.037	0.052	0.066	0.085	0.104	0.123	0.142	0.161	0.180
21x9	1.176	0.495	Throw (ft)	8 11 20	10 14 25	14 20 30	15 21 31	17 23 31	18 23 31	20 25 34	22 27 36	24 29 39		
			NC	<15	<15	<15	16	18	22	25	31	37	43	
			Q (CFM)	232	347	463	521	579	637	695	753	811	869	927
			Vf (fpm)	475	712	949	1068	1187	1305	1424	1542	1661	1779	1899
24x9	1.348	0.558	Pt (in-wg)	0.010	0.014	0.037	0.052	0.066	0.085	0.104	0.123	0.142	0.161	
			Throw (ft)	8 10 20	10 16 25	14 20 29	15 21 30	17 22 31	20 25 32	23 28 36	26 32 40	31 38 46	37 45 54	
			NC	<15	<15	<15	16	18	22	25	31	37	43	
			Q (CFM)	266	398	531	597	664	730	797	864	931	998	1066
15x12	1.125	0.482	Vf (fpm)	483	725	967	1088	1208	1329	1450	1571	1692	1813	
			Pt (in-wg)	0.010	0.014	0.037	0.052	0.066	0.085	0.104	0.123	0.142	0.161	
			Throw (ft)	8 10 20	11 17 25	15 20 29	16 21 30	18 23 31	19 24 32	21 25 33	23 29 36	25 30 42	28 35 44	
			NC	<15	<15	<15	17	19	23	26	32	38	45	
18x12	1.358	0.570	Q (CFM)	222	332	443	499	554	609	665	720	776	832	
			Vf (fpm)	467	700	934	1050	1167	1284	1401	1518	1634	1751	1867
			Pt (in-wg)	0.010	0.014	0.037	0.052	0.066	0.085	0.104	0.123	0.142	0.161	0.180
			Throw (ft)	8 11 22	10 15 25	15 21 30	16 22 31	18 23 32	19 24 33	21 26 34	23 28 36	25 31 41	28 35 44	
21x12	1.590	0.656	NC	<15	<15	<15	17	19	23	26	32	36		
			Q (CFM)	267	401	535	602	669	735	802	868	934	1000	
			Vf (fpm)	476	714	952	1071	1190	1308	1427	1545	1664	1782	
			Pt (in-wg)	0.010	0.014	0.037	0.052	0.066	0.085	0.104	0.123	0.142	0.161	
24x12	1.860	0.768	Throw (ft)	8 10 20	11 16 24	14 19 28	15 20 29	17 22 30	18 23 31	20 24 32	23 28 35	24 29 40		
			NC	<15	<15	<15	17	20	24	27	33	37		
			Q (CFM)	313	470	626	705	783	861	940	1018	1096	1174	
			Vf (fpm)	485	727	970	1091	1212	1334	1455	1576	1697	1818	
24x12	1.860	0.768	Pt (in-wg)	0.010	0.014	0.037	0.052	0.066	0.085	0.104	0.123	0.142	0.161	
			Throw (ft)	8 12 25	12 18 31	17 25 34	19 26 37	21 28 40	23 29 42	25 31 43	27 32 47	30 35 51	33 39 48	
			NC	<15	<15	<15	17	20	24	27	33	37		
			Q (CFM)	313	470	626	705	783	861	940	1018	1096	1174	

See notes on page E-17

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# CEILING DIFFUSERS



## SUPPLY AIR CEILING DIFFUSER, 4 WAY - (SCD - 4R)

### IP-UNITS

SIZE (in x in)	NECK AREA (SQ. FT.)	FREE AREA (SQ. FT.)	NECK VELOCITY (fpm)	200	300	400	450	500	550	600	700	800	
24x12	1.823	0.737	Q (CFM)	359	539	718	808	898	987	1077	1257	1436	
			Vf (fpm)	494	741	988	1112	1235	1359	1483	1730	1977	
			Pt (in-wg)	0.010	0.014	0.037	0.052	0.066	0.085	0.104	0.123	0.145	0.199
			Throw (ft)	8 11 24	13 20 31	19 26 37	21 27 40	23 29 42	24 30 44	26 31 46	28 34 50	30 37 55	34
18x15	1.712	0.709	NC	<15	<15	<15	18	21	25	28	34	38	
			Q (CFM)	337	505	675	758	843	928	1010	1180	1348	
			Vf (fpm)	485	720	971	1093	1215	1334	1456	1699	1943	
			Pt (in-wg)	0.010	0.014	0.037	0.052	0.066	0.085	0.104	0.123	0.145	0.199
21x15	2.005	0.809	Throw (ft)	8 11 24	13 20 31	19 26 37	21 27 40	23 29 42	24 30 44	26 31 46	28 34 50	30 37 55	
			NC	<15	<15	<15	18	21	25	28	34	38	
			Q (CFM)	395	592	790	888	987	1086	1184	1382	1579	
			Vf (fpm)	495	743	991	1115	1239	1362	1486	1734	1982	
24x15	2.298	0.909	Pt (in-wg)	0.010	0.014	0.037	0.052	0.066	0.085	0.104	0.145	0.199	
			Throw (ft)	9 13 26	13 21 31	20 27 39	22 28 41	24 30 43	25 31 45	26 32 47	28 35 52	31 38 58	
			NC	<15	<15	<15	18	21	25	28	34	38	
			Q (CFM)	453	679	905	1018	1131	1244	1358	1584	1810	
21x18	2.419	0.955	Vf (fpm)	505	758	1011	1137	1263	1390	1516	1769	2021	
			Pt (in-wg)	0.010	0.014	0.037	0.052	0.066	0.085	0.104	0.145	0.199	
			Throw (ft)	9 15 29	14 21 35	20 29 41	22 31 44	24 32 46	27 34 49	30 36 52	39 51 56	42 54 60	
			NC	<15	<15	<15	18	22	26	29	35	39	
24x18	2.772	1.072	Q (CFM)	476	715	953	1072	1191	1310	1429	1667	1905	
			Vf (fpm)	506	759	1012	1139	1266	1392	1519	1772	2025	
			Pt (in-wg)	0.010	0.014	0.037	0.052	0.066	0.085	0.104	0.145	0.199	
			Throw (ft)	8 14 26	14 20 34	19 28 41	21 29 43	23 31 44	26 32 47	29 34 49	39 50 56	44 55 62	
24x21	3.247	1.228	NC	<15	<15	<15	18	22	26	29	36	39	
			Q (CFM)	546	819	1092	1228	1365	1501	1638	1911	2184	
			Vf (fpm)	517	775	1034	1163	1292	1421	1550	1809	2067	
			Pt (in-wg)	0.010	0.014	0.037	0.052	0.066	0.085	0.104	0.145	0.199	
24x21	3.247	1.228	Throw (ft)	11 16 31	16 24 40	22 31 46	25 34 49	28 36 51	30 39 55	32 41 58	36 45 60	40 48 67	
			NC	<15	<15	<15	19	23	27	30	36	40	
			Q (CFM)	639	959	1279	1439	1599	1759	1918	2238	2558	
			Vf (fpm)	529	793	1057	1189	1321	1453	1586	1850	2114	
24x21	3.247	1.228	Pt (in-wg)	0.010	0.015	0.036	0.050	0.063	0.082	0.100	0.143	0.196	
			Throw (ft)	11 17 32	18 26 41	23 33 48	26 36 52	29 38 55	31 40 57	34 41 59	37 44 65	40 48 71	
			NC	<15	<15	15	20	24	28	31	37	41	
			Q (CFM)	715	1072	1429	1667	1905	2143	2381	2619	2857	

See notes on page E-17

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**RETURN AIR CEILING DIFFUSER, 4 WAY - (RCD - 4S)**

**IP-UNITS**

SIZE (in x in)	NECK AREA (SQ. FT.)	NECK VELOCITY (fpm)	200	300	400	450	500	550	600	700	800
<b>6x6</b>	<b>0.205</b>	Q (CFM)	40	61	81	91	101	111	121	141	161
		Pt (in-wg)	0.032	0.048	0.072	0.078	0.084	0.090	0.095	0.141	0.181
		NC	<15	<15	<15	<15	<15	15	15	21	25
<b>9x9</b>	<b>0.488</b>	Q (CFM)	96	144	192	216	240	265	289	337	385
		Pt (in-wg)	0.040	0.056	0.080	0.086	0.092	0.120	0.149	0.221	0.301
		NC	<15	<15	<15	18	22	26	30	36	41
<b>12x12</b>	<b>0.893</b>	Q (CFM)	176	264	352	396	440	484	528	615	703
		Pt (in-wg)	0.040	0.056	0.080	0.086	0.092	0.120	0.149	0.221	0.301
		NC	<15	<15	16	21	26	30	33	39	45
<b>15x15</b>	<b>1.418</b>	Q (CFM)	279	419	559	629	698	768	838	978	1117
		Pt (in-wg)	0.040	0.056	0.080	0.086	0.092	0.120	0.149	0.221	0.301
		NC	<15	15	19	24	28	32	36	42	47
<b>18x18</b>	<b>2.065</b>	Q (CFM)	407	610	813	915	1017	1118	1220	1423	1627
		Pt (in-wg)	0.040	0.056	0.080	0.086	0.092	0.120	0.149	0.221	0.301
		NC	16	18	21	26	31	35	38	44	50
<b>21x21</b>	<b>2.833</b>	Q (CFM)	558	837	1116	1255	1395	1534	1674	1953	2232
		Pt (in-wg)	0.040	0.056	0.080	0.086	0.092	0.120	0.149	0.221	0.301
		NC	18	21	23	28	33	37	40	46	52
<b>24x24</b>	<b>3.722</b>	Q (CFM)	733	1099	1466	1648	1832	2015	2199	2565	2932
		Pt (in-wg)	0.040	0.056	0.080	0.086	0.092	0.120	0.149	0.221	0.301
		NC	19	22	24	29	34	38	42	48	53

See notes on page E-17

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RETURN AIR CEILING DIFFUSER, 4 WAY - (RCD - 4R)

IP-UNITS

SIZE (in x in)	NECK AREA (SQ. FT.)	NECK VELOCITY (fpm)	200	300	400	450	500	550	600	700	800
9x6	0.316	Q (CFM)	62	93	125	140	156	171	187	218	249
		Pt (in-wg)	0.040	0.056	0.080	0.086	0.092	0.120	0.149	0.221	0.301
		NC	<15	<15	<15	17	19	24	28	33	38
12x6	0.428	Q (CFM)	84	126	169	190	211	232	253	295	337
		Pt (in-wg)	0.040	0.056	0.080	0.086	0.092	0.120	0.149	0.221	0.301
		NC	<15	<15	<15	18	21	25	29	34	40
15x6	0.539	Q (CFM)	106	159	212	239	265	292	319	372	425
		Pt (in-wg)	0.040	0.056	0.080	0.086	0.092	0.120	0.149	0.221	0.301
		NC	<15	<15	<15	19	23	27	31	36	42
18x6	0.651	Q (CFM)	128	192	256	288	320	352	384	448	513
		Pt (in-wg)	0.040	0.056	0.080	0.086	0.092	0.120	0.149	0.221	0.301
		NC	<15	<15	16	20	24	28	32	37	43
21x6	0.762	Q (CFM)	150	225	300	338	375	413	450	525	600
		Pt (in-wg)	0.040	0.056	0.080	0.086	0.092	0.120	0.149	0.221	0.301
		NC	<15	<15	16	21	25	29	33	38	44
24x6	0.874	Q (CFM)	172	258	344	387	430	473	516	602	688
		Pt (in-wg)	0.040	0.056	0.080	0.086	0.092	0.120	0.149	0.221	0.301
		NC	<15	<15	17	21	25	29	32	39	45
12x9	0.660	Q (CFM)	130	195	260	293	325	358	390	455	520
		Pt (in-wg)	0.040	0.056	0.080	0.086	0.092	0.120	0.149	0.221	0.301
		NC	<15	<15	16	20	24	28	32	37	43
15x9	0.832	Q (CFM)	164	246	328	369	410	451	492	574	656
		Pt (in-wg)	0.040	0.056	0.080	0.086	0.092	0.120	0.149	0.221	0.301
		NC	<15	<15	17	22	26	30	33	38	45
18x9	1.004	Q (CFM)	198	297	396	445	494	544	593	692	791
		Pt (in-wg)	0.040	0.056	0.080	0.086	0.092	0.120	0.149	0.221	0.301
		NC	<15	<15	17	22	27	31	34	40	46
21x9	1.176	Q (CFM)	232	347	463	521	579	637	695	811	927
		Pt (in-wg)	0.040	0.056	0.080	0.086	0.092	0.120	0.149	0.221	0.301
		NC	<15	15	18	23	27	31	35	41	46
24x9	1.348	Q (CFM)	266	398	531	597	664	730	797	929	1062
		Pt (in-wg)	0.040	0.056	0.080	0.086	0.092	0.120	0.149	0.221	0.301
		NC	<15	16	19	24	28	32	36	42	47
15x12	1.129	Q (CFM)	222	332	442	498	553	608	665	775	885
		Pt (in-wg)	0.040	0.056	0.080	0.086	0.092	0.120	0.149	0.221	0.301
		NC	<15	15	18	23	27	31	34	40	46
18x12	1.358	Q (CFM)	267	401	535	602	669	735	802	936	1070
		Pt (in-wg)	0.040	0.056	0.080	0.086	0.092	0.120	0.149	0.221	0.301
		NC	<15	15	19	24	28	32	36	42	47
21x12	1.590	Q (CFM)	313	470	626	705	783	861	940	1096	1253
		Pt (in-wg)	0.040	0.056	0.080	0.086	0.092	0.120	0.149	0.221	0.301
		NC	<15	16	20	25	29	33	37	42	48

See notes on page E-17

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**RETURN AIR CEILING DIFFUSER, 4 WAY - (RCD - 4R)**

IP-UNITS

SIZE (in x in)	NECK AREA (SQ. FT.)	NECK VELOCITY (fpm)	200	300	400	450	500	550	600	700	800
24x12	1.823	Q (CFM)	359	539	718	808	898	987	1077	1257	1436
		Pt (in-wg)	0.040	0.056	0.080	0.086	0.092	0.120	0.149	0.221	0.301
		NC	15	18	21	26	30	34	37	43	49
18x15	1.712	Q (CFM)	337	506	674	758	843	927	1011	1180	1348
		Pt (in-wg)	0.040	0.056	0.080	0.086	0.092	0.120	0.149	0.221	0.301
		NC	15	17	20	25	29	33	37	43	49
21x15	2.005	Q (CFM)	395	592	790	887	987	1085	1184	1382	1579
		Pt (in-wg)	0.040	0.056	0.080	0.086	0.092	0.120	0.149	0.221	0.301
		NC	16	18	21	26	31	35	38	44	50
24x15	2.298	Q (CFM)	453	679	905	1018	1131	1243	1358	1584	1810
		Pt (in-wg)	0.040	0.056	0.080	0.086	0.092	0.120	0.149	0.221	0.301
		NC	17	18	22	27	32	36	39	45	51
21x18	2.419	Q (CFM)	476	715	953	1072	1191	1309	1429	1667	1905
		Pt (in-wg)	0.040	0.056	0.080	0.086	0.092	0.120	0.149	0.221	0.301
		NC	17	19	22	27	32	36	39	45	51
24x18	2.772	Q (CFM)	546	819	1092	1227	1365	1501	1638	1911	2184
		Pt (in-wg)	0.040	0.056	0.080	0.086	0.092	0.120	0.149	0.221	0.301
		NC	18	20	23	28	33	37	40	46	52
24x21	3.247	Q (CFM)	639	959	1279	1438	1599	1759	1918	2238	2558
		Pt (in-wg)	0.040	0.056	0.080	0.086	0.092	0.120	0.149	0.221	0.301
		NC	18	21	24	29	34	38	41	47	53

See notes on page E-17