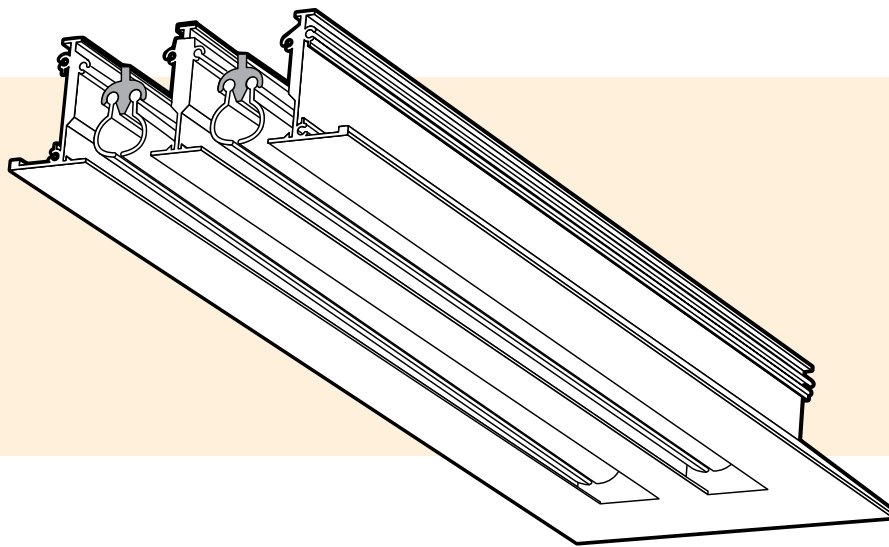


HOLYOAKE
AIR MANAGEMENT SOLUTIONS | by price

CEILING SLOT DIFFUSERS

INDEX

Single or Multi-slot Ceiling Diffuser	3
CSD-T Thermally Operated Diffuser.....	4
CSD Mounting Frame	5
CSD Dimensional Data	6
CSD Performance Data	8



Single or Multi-slot Ceiling Diffuser

CSD-13 (13mm SLOTS)

CSD-19 (19mm SLOTS)

CSD-25 (25mm SLOTS)

Extruded aluminium continuous or discrete length linear slot diffusers to suit modern interiors, while providing unobtrusive draughtless air distribution over widely ranging airflows.

Particularly suited to variable volume applications and ideal for perimeter supply in major commercial buildings. Supply and return air configurations are identical in construction except for omission of pattern controls.

Features

- Available in one to eight slots with three slot widths.
- Standard universal pattern control is aluminium, black anodised for best visual effect and can be adjusted to give full 180° control of air pattern, with volume control to shut off.
- CSD-MF mounting frame available for ease of installation and high standard finish.
- For use with diffuser adapter (CSDA/I), plenum supply, or linear duct.
- Alignment strips and four end types to suit discrete or continuous lengths.
- Up to 2.8 metres single piece length.

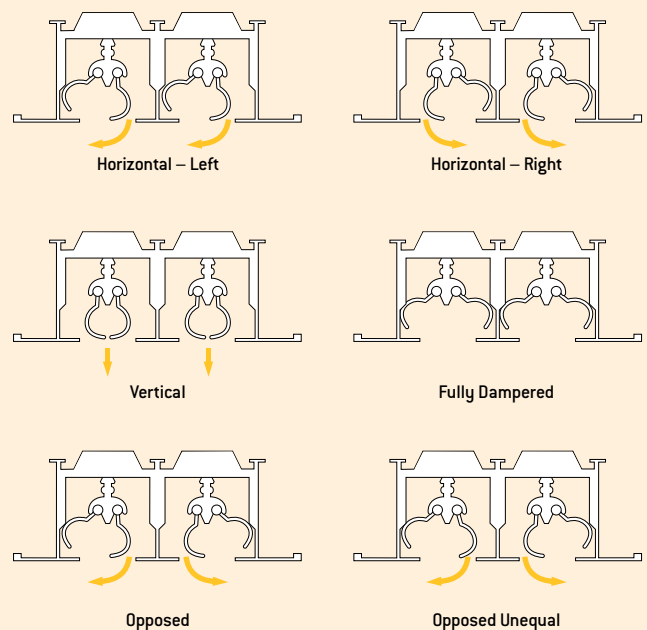
For standard universal pattern control/damper, specify CSD.

For return air application, specify CSDR.

Performance for CSD fitted with either type of pattern control may be read from the supply performance data on pages 8 to 14.

Due to a policy of continuous development and improvement the right is reserved to supply products which may differ slightly from those illustrated and described in this publication.

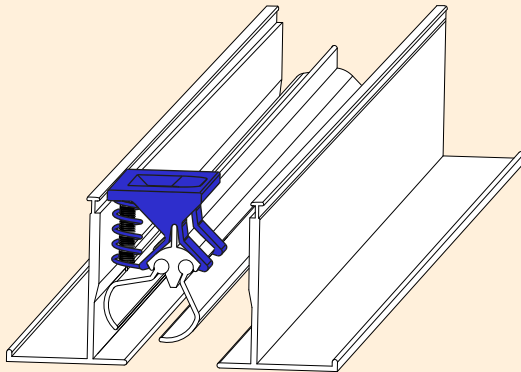
Typical CSD Throw Options



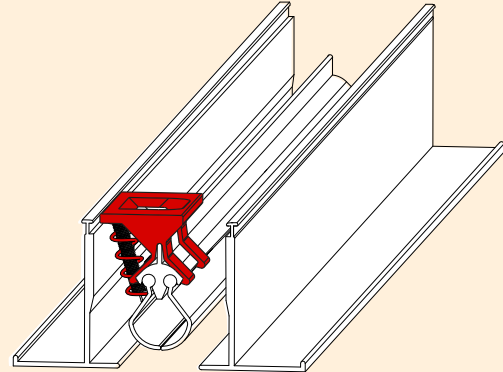
Thermally Operated – CSD-T

Model: CSD-T – Thermally Operated Ceiling Slot Diffuser

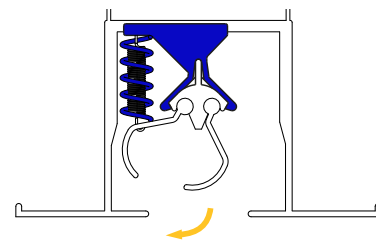
CSD-T – Cooling



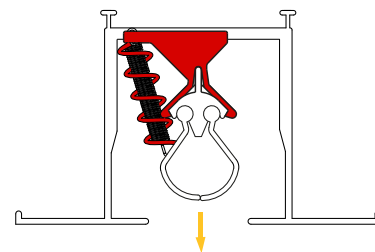
CSD-T – Heating



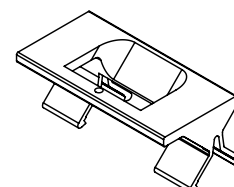
CSD-T – Pattern Control Positions



UPON COOLING: PATTERN CONTROL MOVES UPWARDS DIRECTING COOL AIR ALONG THE CEILING.



UPON HEATING: PATTERN CONTROL MOVES DOWN DIRECTING WARM AIR VERTICALLY.



DIE CAST CLIP AS DETAILED ABOVE

CSD-T – Thermally Operated Ceiling Slot Diffuser

The Holyoake CSD-T Thermally Operated Ceiling Slot Diffuser is designed to utilise standard CSD slot diffuser components, which provide unobtrusive, draughtless air distribution over widely ranging airflows. Particularly suited to variable air volume applications and ideal for perimeter supply in major commercial buildings.

The unique die cast clip attaches to the pattern blades to provide the CSD with a thermal control, enabling energy savings to be made and improvements in room comfort levels. Above 35°C the thermal control starts to move the pattern position, providing vertical airflow.

On multi-slot diffusers CSD-T is required on the first slot only. Discuss with your local Holyoake branch other options available.

Construction

Extruded aluminium continuous or discrete length linear slot diffusers. Utilising standard CSD components and mounting frame, with a specifically designed die cast clip containing a temperature sensitive alloy for thermal adjustment of the pattern blades.

Features

- CSD-T thermal option, to give CSD a self powered thermal control.
- **Die cast clip may be retrofitted to existing installations.**
- Operation is controlled by a temperature sensitive alloy.
- Changes the air distribution pattern from horizontal (ceiling when cooling) to vertical (down to floor in heating).
- Energy savings and improvement in comfort level.
- Enables cost savings to be made.

Guide Product Weights

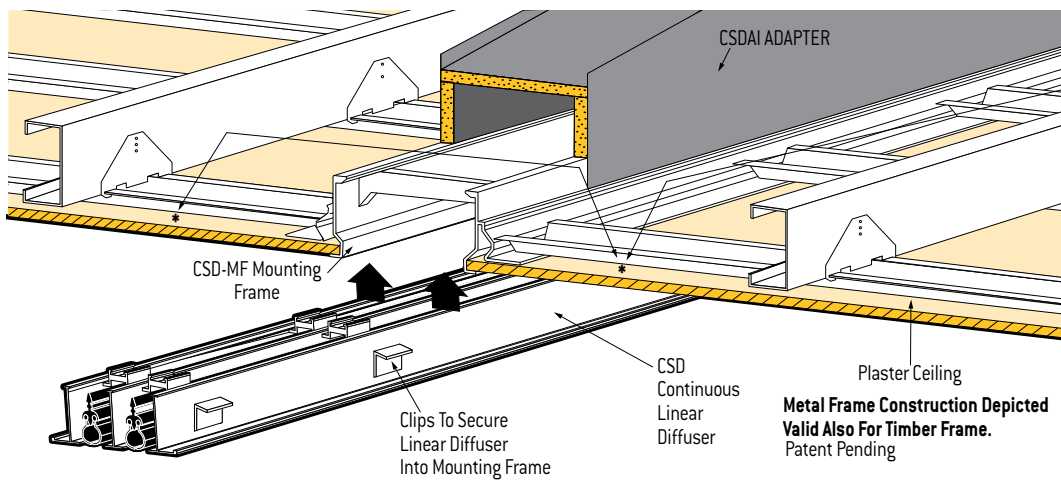
Model	Approximate Weight in Kg
CSD-T Die Cast Thermal Clip	0.05
Add to CSD 25 Weights*	0.05

*Refer to your local Holyoake branch for quantities per specific diffusers.

Notes

1. Only suitable for CSD25 models.
2. Use CSD horizontal and vertical performance data.
3. On multi-slot diffusers, CSD-T is required on the first slot only.
4. Refer to your local Holyoake branch for CSD-T quantity required, per slot length and any special site requirements.
5. Seismic restraints required but not supplied.

CSD Mounting Frame – CSD-MF



***Note: Do NOT fix plaster board to ceiling battens closer than 300mm of mounting frame.**

For more detailed instructions please contact your local Holyoake branch.

The CSD Mounting Frame (CSD-MF) is a base frame which is designed to be built into a solid ceiling. Once the frame has been installed the CSD is then inserted into this mounting frame to complete the installation.

The CSD-MF offers a vastly improved alternative to the standard method of CSD installation. This system will not only save time for all of the contractors involved (HVAC, ceiling erectors, plasterers, etc.) but will also give a much higher standard of finish than was typically able to be achieved.

Normally ceiling slot diffusers are one of the most difficult supply diffusers to install into a solid ceiling. During the process of installation it is not uncommon for both the plasterer and the painter to have to carry out remedial work to ensure a reasonable standard of finish is achieved. All of this work is obviously detrimental as it takes time and often damages the linear diffuser and contributes to the poor overall appearance of the ceiling diffuser.

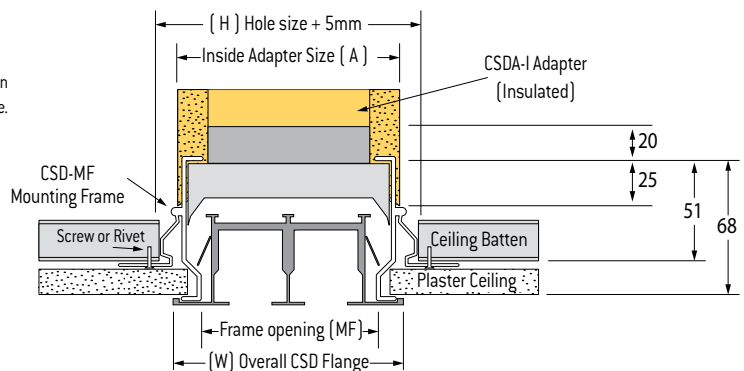
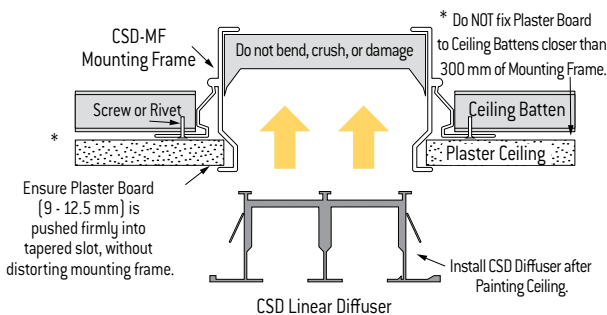
The CSD-MF is installed as part of the solid ceiling grid system. This allows the supply air boots to be installed when there is clear access to the ceiling space and there is no danger of damaging the high quality finish of the CSD. When it is time to line the ceiling, the ceiling erector has a slot to slide the gib or plaster sheet into. Once the plasterer has “stopped” the ceiling sheets

the painter is free to paint the entire ceiling without having to be concerned with masking the CSD which is not yet in place. When everything has been finished to the required standard the CSD itself is just simply pushed up into place to completely conceal the mounting frame.

The CSD-MF has many features designed into it to enable a faultless CSD installation. The mounting frame is equipped with a flexible edge which is fastened to the adjacent steel or wooden ceiling battens, whichever is used. This flexible edge allows for any discrepancies in the ceiling itself.

If the flexible edge does not take up any discrepancies in the ceiling the solid main section of the frame remains rigid to provide an accurate slot for CSD. The frame is also designed to accept the gib or plaster sheet accurately, however if there were discrepancies the plasterer can plaster out those discrepancies.

With all these features the use of the CSD-MF will not only save time in installing the CSD but will also result in a much higher standard of finish for the installation.



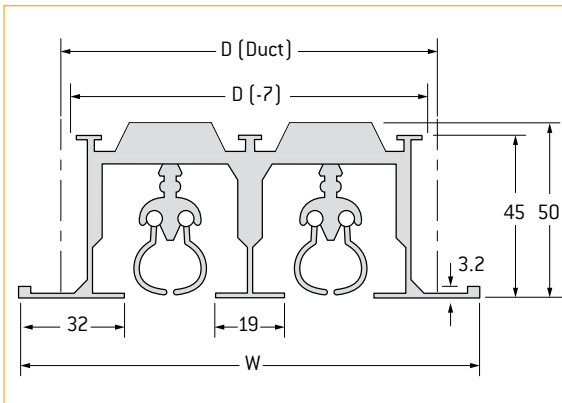
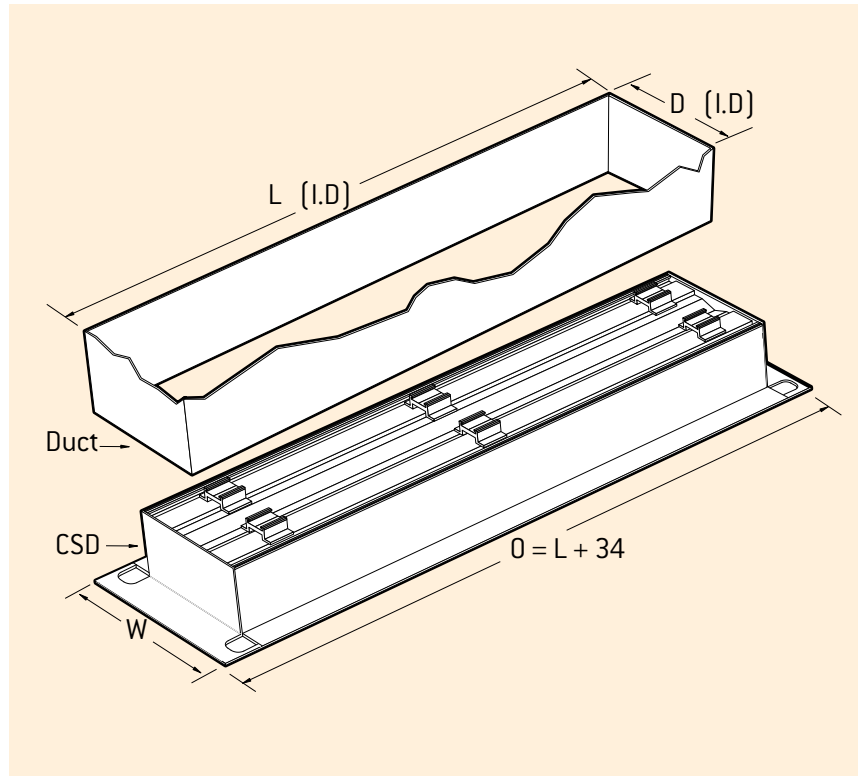
CSD AND MF DIMENSIONS

No. of Slots	CSD-13				CSD-19				CSD-25			
	Diffuser Flange	Adapter Size	Ceiling Opening	Frame Opening	Diffuser Flange	Adapter Size	Ceiling Opening	Frame Opening	Diffuser Flange	Adapter Size	Ceiling Opening	Frame Opening
	W	A	H	MF	W	A	H	MF	W	A	H	MF
1	76	70	100	47	82	77	107	54	88	83	113	60
2	109	102	132	79	120	115	145	92	132	127	157	104
3	141	133	163	110	158	153	183	130	177	172	202	149
4	174	165	195	143	196	191	221	168	222	216	246	191
5	206	197	227	174	234	229	259	206	264	260	290	237
6	238	229	259	206	271	267	297	244	308	305	335	282
7	271	260	290	237	310	305	335	282	352	349	379	326
8	304	292	322	269	348	343	373	320	396	394	424	371

Note: Seismic restraints required but not supplied.

Notes

1. The illustration below is a two slot CSD supply diffuser. Return air assembly Model CSDR is similar, but with pattern controls removed.
2. Duct dimensions include 20mm clearance on length and 7mm clearance on width (or specify exact length required).
3. For more critical applications check overall widths and advise your local Holyoake branch when ordering.



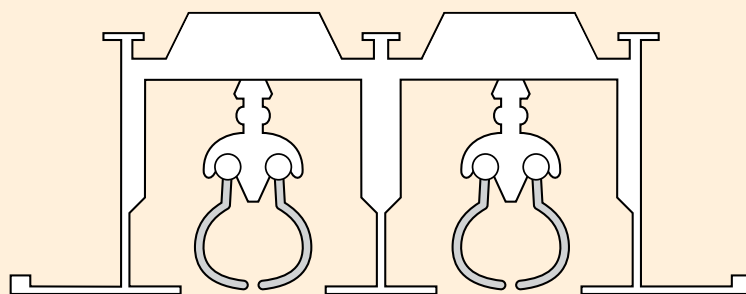
No. Slots	CSD-13		CSD-19		CSD-25	
	D	W	D	W	D	W
1	47	76	54	82	60	88
2	79	109	92	120	104	132
3	110	141	130	158	149	177
4	142	174	168	196	193	220
5	174	206	206	234	237	264
6	206	238	244	272	282	308
7	237	271	282	310	326	352
8	269	304	320	348	371	396

Note: Seismic restraints required but not supplied.

Ceiling Slot Diffusers

Guide Product Weights	
Model	Approximate Weight in Kg per metre
CSD 13 Two Slots (inc Mounting Frame)	3.85
CSD 19 Two Slots (inc Mounting Frame)	3.79
CSD 25 Two Slots (inc Mounting Frame)	4.51
CSDR 19 Two Slots (inc Mounting Frame)	1.17

Frame

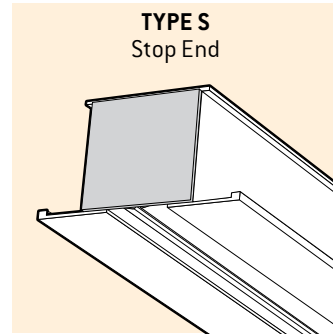
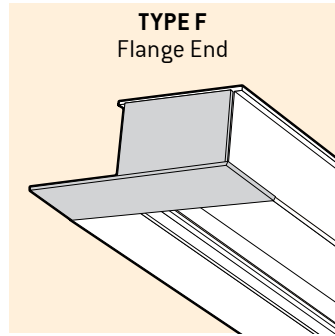


CSD Surface Mount

End Styles

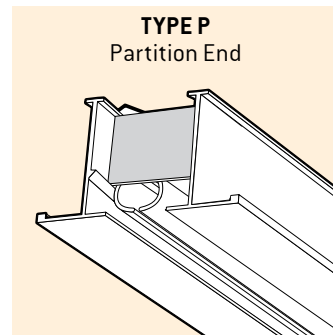
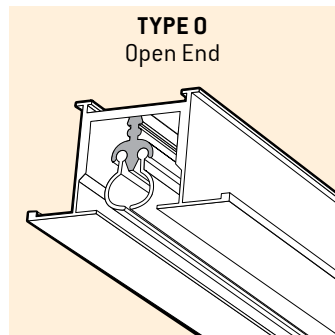
Flanged End - Type F is for use where the end of the diffuser terminates away from the wall or partition and is visible.

(These are recessed to accommodate CSD-MF Mounting Frame.)



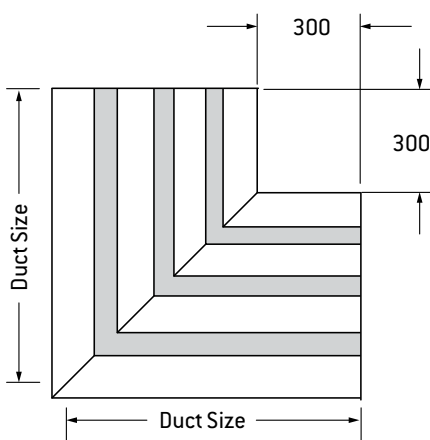
Stop End - Type S is used where the diffuser terminates at a wall or partition.

Open End - Type O is for use when the diffuser terminates at a wall or partition, or when the diffuser is to be butted with another diffuser. Also used when field cutting is required.

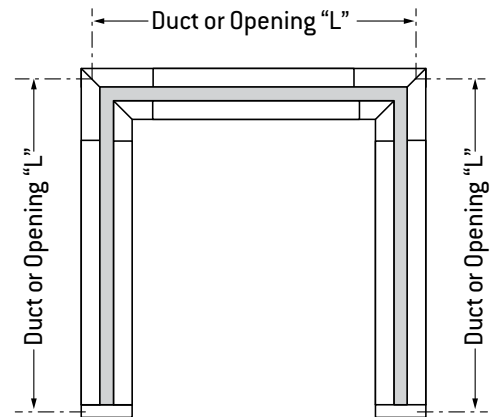
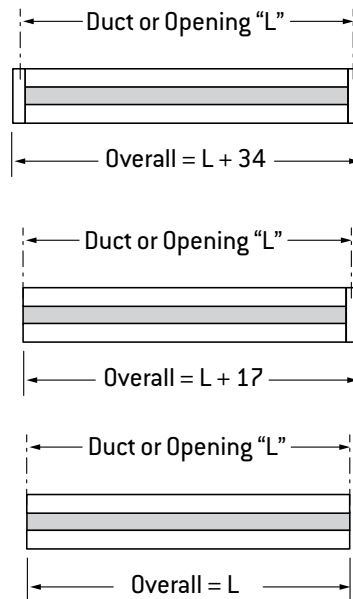


Partition End - Type P is used to separate between active and inactive sections of diffuser when part of a continuous length.

Mitred Corner



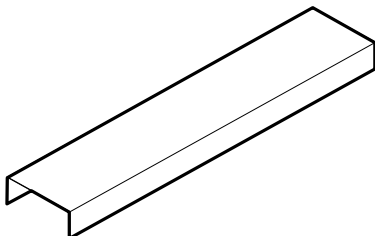
Diffuser Length Dimensions



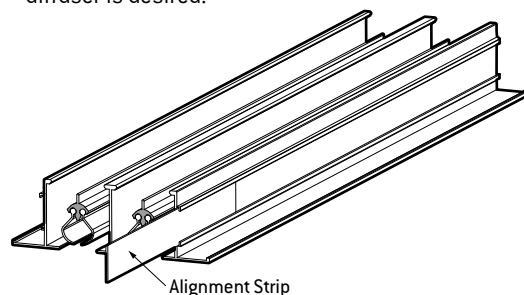
Note: The overall dimension is at the face of the diffuser.

Accessories

Blank Off used to cover inactive sections of diffuser shipped in 1200mm or 2400mm sections for field cutting and installation. Material: 0.45 galvanised steel.



Alignment Strips used on installations where alignment of continuous diffuser is desired.



CSD-13 – Performance Data

Model: **CSD-13**

Plenum Supply

SLOTS	Total Press.	H	1	5	11	19	30	43	56	74
		V	1	3	8	13	20	29	39	50
1	m ³ /s/m		0.008	0.016	0.023	0.031	0.039	0.047	0.054	0.062
	Projection, m	H	0.3-0.6	0.3-2.7	0.6-3.4	1.2-4.0	2.1-4.3	2.7-4.6	2.7-4.9	3.1-5.6
		V	0.6	1.8	2.7	3.4	3.7	4.3	4.6	4.9
	NC		-	-	-	17	23	29	33	38
2	m ³ /s/m		0.016	0.031	0.047	0.062	0.078	0.093	0.109	0.124
	Projection, m	H	0.3-1.2	0.6-3.7	1.5-4.6	2.4-5.2	3.1-5.8	3.7-6.4	4.0-7.0	4.3-7.3
		V	1.2	2.4	4.0	4.9	5.2	5.8	6.1	6.7
	NC		-	-	-	22	28	34	38	43
3	m ³ /s/m		0.023	0.047	0.070	0.093	0.116	0.140	0.163	0.186
	Projection, m	H	0.3-2.1	0.9-4.6	2.1-5.6	3.1-6.4	4.0-7.0	4.6-7.7	4.9-8.2	5.2-8.8
		V	1.5	3.1	4.6	5.8	6.4	7.0	7.7	8.2
	NC		-	-	16	25	31	37	41	46
4	m ³ /s/m		0.031	0.062	0.093	0.124	0.155	0.186	0.217	0.248
	Projection, m	H	0.3-2.7	1.2-5.2	2.7-6.4	3.7-7.3	4.6-8.2	5.2-8.8	5.8-9.8	6.1-10.4
		V	2.1	3.7	5.6	6.7	7.7	8.2	8.8	9.4
	NC		-	-	18	27	33	39	43	48
5	m ³ /s/m		0.039	0.076	0.116	0.155	0.194	0.233	0.271	0.310
	Projection, m	H	0.3-3.1	1.8-5.8	3.1-7.0	4.0-8.2	5.2-9.2	6.1-10.1	6.4-10.7	6.9-11.6
		V	2.1	4.3	6.1	7.7	8.5	9.2	9.8	10.7
	NC		-	-	19	28	34	40	44	49
6	m ³ /s/m		0.047	0.093	0.140	0.186	0.233	0.279	0.326	0.372
	Projection, m	H	0.6-3.4	2.1-6.4	3.4-7.9	4.6-8.8	5.6-10.1	6.4-11.0	7.0-11.9	7.3-12.8
		V	2.1	4.9	6.7	8.2	9.2	10.1	10.7	11.6
	NC		-	-	20	29	35	41	45	50
7	m ³ /s/m		0.054	0.109	0.163	0.217	0.271	0.326	0.380	0.434
	Projection, m	H	0.9-4.9	2.4-7.0	3.7-8.5	4.9-9.8	6.1-11.0	7.0-11.9	7.6-12.8	7.9-13.7
		V	2.4	4.9	7.3	8.8	9.8	10.7	11.6	12.5
	NC		-	-	21	30	36	42	46	51
8	m ³ /s/m		0.062	0.124	0.186	0.248	0.310	0.372	0.434	0.496
	Projection, m	H	0.9-4.0	2.4-7.3	4.0-8.8	5.2-10.4	6.7-11.6	7.3-12.8	7.9-13.7	8.5-14.6
		V	2.4	5.2	7.9	9.4	10.4	11.6	12.5	13.1
	NC		-	10	22	31	37	43	47	52

Model: **CSDR-13**

Plenum Return

SLOTS	Neg. S.P.	3	7	12	18	26	45	69	104
1	m ³ /s/m	0.016	0.023	0.031	0.039	0.047	0.062	0.078	0.093
	NC	-	-	-	20	25	33	39	44
2	m ³ /s/m	0.031	0.047	0.062	0.078	0.093	0.124	0.155	0.186
	NC	-	-	17	23	28	36	42	47
3	m ³ /s/m	0.047	0.070	0.093	0.116	0.140	0.186	0.233	0.279
	NC	-	-	19	25	30	38	44	49
4	m ³ /s/m	0.062	0.093	0.124	0.155	0.186	0.248	0.310	0.372
	NC	-	-	20	26	31	39	45	50
5	m ³ /s/m	0.078	0.116	0.155	0.194	0.233	0.310	0.388	0.465
	NC	-	-	21	27	32	40	46	51
6	m ³ /s/m	0.093	0.140	0.186	0.233	0.279	0.372	0.465	0.558
	NC	-	-	22	28	33	41	47	52
7	m ³ /s/m	0.109	0.163	0.217	0.271	0.326	0.434	0.543	0.651
	NC	-	-	23	29	34	42	48	53
8	m ³ /s/m	0.124	0.186	0.248	0.310	0.372	0.496	0.620	0.744
	NC	-	-	23	29	34	42	48	53

Ceiling Slot Diffusers

Model: **CSD-13 with CSDA or CSDA-I Supply Adapters**

1 Slot 13mm			Capacity m ³ /s	0.028	0.038	0.047	0.057	0.066	0.076	0.085	0.094	0.104
Projection, m	H	H	0.9-2.7	1.2-3.4	1.5-3.7	1.8-4.0	2.4-4.3	2.7-4.6	2.7-4.9	3.1-5.2	3.1-5.6	
		V	0.6-2.1	0.9-2.4	1.2-2.7	1.5-3.1	1.5-3.4	1.8-3.4	2.1-3.7	2.1-4.0	2.4-4.3	
Nom. Length	Spread m	H	1.2-4.0	1.8-4.9	2.1-5.6	2.7-5.8	3.7-6.4	4.0-6.7	4.0-7.3	4.6-7.6	4.6-8.2	
		V	0.9-2.7	1.2-3.1	1.5-3.7	1.8-4.0	1.8-4.3	2.4-4.3	2.7-4.9	2.7-5.2	3.1-5.6	
0.9m	TP		32	57	88	129	172					
	NC		25	34	40	46	51					
1.2m	TP		18	31	47	70	93	122	153			
	NC		-	24	30	36	41	45	48			
1.5m	TP		11	18	28	42	56	71	92	112	137	
	NC		-	16	22	28	33	37	40	43	46	

2 Slot 13mm			Capacity m ³ /s	0.047	0.061	0.076	0.090	0.104	0.118	0.132	0.146	0.161
Projection, m	H	H	1.2-3.4	1.5-3.7	1.8-4.3	2.1-4.6	2.4-4.9	2.7-5.2	3.1-5.6	3.4-5.8	3.4-6.1	
		V	0.6-1.5	0.6-1.8	0.9-2.1	0.9-2.1	1.2-2.4	1.2-2.4	1.5-2.7	1.5-2.7	1.8-3.1	
Nom. Length	Spread m	H	1.8-4.9	2.1-5.6	2.7-6.4	3.1-6.7	3.7-7.3	4.0-7.6	4.6-8.2	4.9-8.5	4.9-9.2	
		V	0.9-1.8	0.9-2.4	1.2-2.7	1.2-2.7	1.5-3.1	1.5-3.1	1.8-3.7	1.8-3.7	2.4-4.0	
0.9m	TP		21	36	53	75	102	133				
	NC		20	28	34	40	44	48				
1.2m	TP		11	20	29	40	53	70	92	108	128	
	NC		-	19	25	31	35	39	43	46	47	
1.5m	TP		8	13	19	27	35	46	58	69	83	
	NC		-	-	18	24	28	32	36	39	41	

3 Slot 13mm			Capacity m ³ /s	0.061	0.076	0.090	0.104	0.118	0.132	0.146	0.161	0.175
Projection, m	H	H	1.2-3.7	1.5-3.7	1.5-4.3	1.8-4.6	2.1-4.9	2.4-5.2	2.7-5.6	3.1-5.6	3.1-5.8	
		V	0.6-1.5	0.6-1.5	0.6-1.8	0.9-2.1	0.9-2.1	0.9-2.4	1.2-2.4	1.2-2.4	1.2-2.7	
Nom. Length	Spread m	H	1.8-4.9	2.1-5.6	2.1-6.4	2.7-6.7	3.1-7.3	3.7-7.6	4.0-8.2	4.6-8.2	4.6-8.5	
		V	0.9-1.8	0.9-1.8	0.9-2.4	1.2-2.7	1.2-2.7	1.2-3.1	1.5-3.1	1.5-3.1	1.5-3.7	
0.9m	TP		17	26	35	48	63	79	97	115	134	
	NC		19	25	31	35	39	43	46	48	50	
1.2m	TP		9	13	18	25	32	40	50	59	68	
	NC		-	-	20	24	28	32	35	37	39	
1.5m	TP		6	9	12	16	21	26	32	38	44	
	NC		-	-	-	18	22	26	29	31	33	

4 Slot 13mm			Capacity m ³ /s	0.076	0.094	0.113	0.132	0.151	0.170	0.189	0.208	0.227
Projection, m	H	H	1.2-3.7	1.5-4.0	1.8-4.6	2.1-4.9	2.4-5.2	2.7-5.6	3.0-5.8	3.4-6.1	3.7-6.4	
		V	0.3-1.2	0.6-1.5	0.6-1.8	0.6-2.1	0.9-2.1	0.9-2.4	0.9-2.4	1.2-2.7	1.2-2.7	
Nom. Length	Spread m	H	1.8-5.6	2.1-5.8	2.7-6.7	3.1-7.3	3.7-7.6	4.0-8.2	4.6-8.5	4.9-9.2	5.6-9.4	
		V	0.3-1.5	0.9-1.8	0.9-2.4	0.9-2.7	1.2-2.7	1.2-3.1	1.2-3.1	1.5-3.7	1.5-3.7	
0.9m	TP		14	21	31	42	55	67	83	101	120	
	NC		16	22	28	33	37	40	43	46	49	
1.2m	TP		8	12	18	24	31	38	47	57	67	
	NC		-	-	20	25	29	32	35	38	41	
1.5m	TP		5	7	11	15	19	24	28	34	41	
	NC		-	-	-	17	21	24	27	30	33	

CSD-19 – Performance Data

Model: **CSD-19**

Plenum Supply

SLOTS	Total Press.	H	1	4	8	15	23	32	44	58
		V	1	3	6	11	17	24	32	43
1	m³/s/m		0.009	0.019	0.028	0.037	0.047	0.056	0.065	0.074
	Throw,m	H	0.3-0.9	0.3-2.7	0.9-3.4	1.5-4.0	2.4-4.6	2.7-4.9	3.1-5.2	3.4-8.0
		V	0.6	1.8	3.1	3.7	4.3	4.6	4.9	5.2
	NC		-	-	-	18	24	30	35	39
2	m³/s/m		0.019	0.037	0.056	0.074	0.093	0.112	0.130	0.149
	Throw,m	H	0.3-1.5	0.6-4.0	1.5-4.9	2.7-5.8	3.4-6.4	4.0-7.0	4.3-7.6	4.6-8.2
		V	1.2	2.7	4.3	5.2	5.8	6.4	7.0	7.3
	NC		-	-	-	23	29	35	40	44
3	m³/s/m		0.028	0.056	0.084	0.112	0.140	0.167	0.194	0.223
	Throw,m	H	0.3-2.4	1.2-4.9	2.1-6.1	3.4-7.0	4.3-7.9	4.9-8.5	5.6-9.2	5.8-9.8
		V	1.8	3.4	5.2	6.4	7.0	7.9	8.5	9.2
	NC		-	-	16	26	32	38	43	47
4	m³/s/m		0.037	0.074	0.112	0.149	0.186	0.223	0.260	0.298
	Throw,m	H	0.3-3.1	1.5-5.8	3.1-7.0	4.0-8.2	4.9-9.2	5.8-9.8	6.4-10.7	6.7-11.3
		V	1.8	4.0	5.8	7.3	8.2	9.2	9.8	10.4
	NC		-	-	18	28	34	40	45	49
5	m³/s/m		0.047	0.093	0.140	0.186	0.233	0.279	0.326	0.372
	Throw,m	H	0.6-3.4	1.8-6.4	3.4-7.9	4.6-9.2	5.6-10.1	6.4-11.0	7.0-11.9	7.6-12.8
		V	2.1	4.3	6.4	8.2	9.2	10.1	11.0	11.6
	NC		-	-	19	29	35	41	46	50
6	m³/s/m		0.056	0.112	0.167	0.223	0.279	0.335	0.391	0.446
	Throw,m	H	0.6-3.7	2.4-7.0	3.7-8.5	4.9-9.8	6.1-11.0	7.0-12.2	7.6-13.1	7.9-13.7
		V	2.4	4.6	7.3	9.2	10.1	11.0	11.9	12.8
	NC		-	-	20	30	36	42	47	51
7	m³/s/m		0.065	0.130	0.195	0.260	0.326	0.391	0.456	0.521
	Throw,m	H	0.9-3.7	2.7-7.6	4.0-9.2	5.6-10.7	6.7-11.9	7.6-13.1	8.2-14.0	8.8-14.9
		V	2.4	4.9	7.3	9.8	11.0	11.9	12.8	13.7
	NC		-	10	21	31	37	43	48	52
8	m³/s/m		0.074	0.149	0.223	0.298	0.372	0.446	0.521	0.595
	Throw,m	H	1.2-4.3	2.7-8.2	4.3-9.8	5.8-11.3	7.3-12.8	7.9-13.7	8.8-14.9	9.2-15.9
		V	2.4	4.9	7.3	10.1	11.6	12.8	13.7	14.6
	NC		-	11	22	32	38	44	49	53

Model: **CSDR-19**

Plenum Return

SLOTS	Neg. S.P.	2	7	16	27	43	63	86	113
1	m³/s/m	0.015	0.031	0.047	0.062	0.078	0.093	0.109	0.124
	NC	-	-	18	26	32	37	41	45
2	m³/s/m	0.031	0.062	0.093	0.124	0.155	0.186	0.217	0.248
	NC	-	-	21	29	35	40	44	48
3	m³/s/m	0.047	0.093	0.140	0.186	0.233	0.279	0.326	0.372
	NC	-	-	23	31	37	42	46	50
4	m³/s/m	0.062	0.124	0.186	0.248	0.310	0.372	0.434	0.496
	NC	-	-	24	32	38	43	47	51
5	m³/s/m	0.078	0.155	0.233	0.310	0.388	0.465	0.543	0.620
	NC	-	-	25	33	39	44	48	52
6	m³/s/m	0.093	0.186	0.279	0.372	0.465	0.558	0.651	0.744
	NC	-	-	26	34	40	45	49	53
7	m³/s/m	0.109	0.217	0.326	0.434	0.543	0.651	0.760	0.868
	NC	-	-	27	35	41	46	50	54
8	m³/s/m	0.124	0.248	0.372	0.496	0.620	0.744	0.868	0.992
	NC	-	-	27	35	41	46	50	54

Ceiling Slot Diffusers

Model: **CSD-19 with CSDA or CSDA-I Supply Adapters**

1 Slot 19mm			0.038	0.047	0.057	0.066	0.076	0.085	0.094	0.104	0.113
Capacity m ³ /s			0.038	0.047	0.057	0.066	0.076	0.085	0.094	0.104	0.113
Projection, m		H	1.2-3.4	1.5-3.7	1.8-4.0	2.1-4.0	2.4-4.6	2.7-4.9	3.1-5.2	3.1-5.2	3.1-5.6
		V	0.9-1.8	0.9-2.1	1.2-2.4	1.5-2.4	1.5-2.7	1.5-3.1	1.8-3.1	1.8-3.1	1.8-3.4
Nom. Length	Spread m	H	1.8-4.6	2.1-4.9	2.7-5.8	3.1-6.4	3.7-6.7	4.0-6.7	4.0-7.3	4.6-7.6	4.6-8.2
		V	1.2-2.4	1.2-2.7	1.5-3.1	1.8-3.1	1.8-3.7	1.8-4.0	2.4-4.0	2.4-4.0	2.4-4.3
0.9m	TP		40	59	89	121	157				
	NC		27	33	39	44	48				
1.2m	TP		22	34	50	68	88	111	135	165	
	NC		18	24	30	35	39	42	45	48	
1.5m	TP		12	18	27	36	47	60	72	88	107
	NC		-	16	22	27	31	34	37	40	43

2 Slot 19mm			0.061	0.076	0.090	0.104	0.118	0.132	0.146	0.161	0.175
Capacity m ³ /s			0.061	0.076	0.090	0.104	0.118	0.132	0.146	0.161	0.175
Projection, m		H	1.5-3.7	1.8-4.0	2.1-4.3	2.4-4.6	2.7-4.9	3.1-5.2	3.1-5.6	3.4-5.8	3.4-6.1
		V	0.6-1.8	0.9-1.8	1.2-2.1	1.2-2.1	1.5-2.4	1.5-2.4	1.5-2.7	1.5-2.7	1.5-2.7
Nom. Length	Spread m	H	2.1-5.6	2.7-5.8	3.1-6.4	3.7-6.7	4.0-7.3	4.6-7.6	4.6-8.5	4.9-8.5	4.9-9.1
		V	0.9-2.4	1.2-2.4	1.5-2.7	1.5-2.7	1.8-3.1	1.8-3.1	1.8-3.7	1.8-3.7	2.4-4.0
0.9m	TP		24	36	51	67	90	113	136		
	NC		23	29	35	39	43	47	50		
1.2m	TP		13	19	27	36	48	60	71	84	101
	NC		-	19	25	29	33	37	40	42	45
1.5m	TP		9	13	17	23	30	38	47	55	64
	NC		-	-	19	23	27	31	34	36	39

3 Slot 19mm			0.076	0.090	0.104	0.118	0.132	0.146	0.160	0.175	0.189
Capacity m ³ /s			0.076	0.090	0.104	0.118	0.132	0.146	0.160	0.175	0.189
Projection, m		H	1.5-3.7	1.8-4.0	1.8-4.3	2.1-4.6	2.4-4.9	2.7-5.2	3.1-5.6	3.1-5.8	3.4-5.8
		V	0.6-1.5	0.9-1.8	0.9-1.8	0.9-2.1	1.2-2.1	1.2-2.4	1.5-2.4	1.5-2.4	1.5-2.4
Nom. Length	Spread m	H	2.1-5.6	2.7-5.8	2.7-6.4	3.1-6.7	3.7-7.3	4.0-7.6	4.6-8.2	4.6-8.5	4.9-8.5
		V	0.9-1.8	1.2-2.4	1.2-2.4	1.2-2.7	1.5-2.7	1.5-3.1	1.8-3.1	1.8-3.1	1.8-3.1
0.9m	TP		17	23	31	40	52	63	73	86	101
	NC		17	23	27	31	35	38	40	42	45
1.2m	TP		9	13	17	23	28	34	40	47	54
	NC		-	-	18	22	26	29	31	33	36
1.5m	TP		6	8	11	13	18	22	26	29	34
	NC		-	-	-	16	20	23	25	27	30

4 Slot 19mm			0.094	0.113	0.132	0.151	0.170	0.189	0.208	0.227	0.246
Capacity m ³ /s			0.094	0.113	0.132	0.151	0.170	0.189	0.208	0.227	0.246
Projection, m		H	1.5-4.0	1.5-4.3	2.1-4.6	2.4-4.9	2.7-5.2	3.1-5.6	3.4-5.8	3.4-6.1	3.7-6.4
		V	0.6-1.8	0.9-1.8	0.9-2.1	1.2-2.1	1.2-2.1	1.2-2.4	1.5-2.4	1.5-2.4	1.5-2.7
Nom. Length	Spread m	H	2.1-5.8	2.7-6.4	3.1-6.7	3.7-7.3	4.0-7.6	4.6-8.2	4.9-8.5	4.9-9.2	5.6-9.4
		V	0.9-2.4	1.2-2.4	1.2-2.7	1.5-2.7	1.5-2.7	1.5-3.1	1.8-3.1	1.8-3.1	1.8-3.7
0.9m	TP		15	22	30	38	48	58	69	84	100
	NC		17	23	28	32	35	38	41	44	46
1.2m	TP		8	12	16	20	25	30	36	44	52
	NC		-	-	18	22	25	28	31	34	36
1.5m	TP		5	8	11	13	16	20	24	28	34
	NC		-	-	-	16	19	22	25	28	30

CSD-25 – Performance Data

Model: **CSD-25**

Plenum Supply

SLOTS	Total Press.	H	1	4	10	16	25	35	49	63
		V	1	3	6	10	15	21	29	38
1	m ³ /s/m		0.012	0.025	0.037	0.050	0.062	0.074	0.087	0.099
	Throw, m	H	0.3-0.9	0.6-3.4	0.9-4.0	1.8-4.6	2.7-5.2	3.4-5.8	3.7-6.1	3.7-6.7
		V	0.6	2.4	3.7	4.3	4.6	5.2	5.6	5.8
	NC		-	-	-	22	29	34	39	43
2	m ³ /s/m		0.025	0.05	0.074	0.099	0.124	0.149	0.174	0.198
	Throw, m	H	0.3-1.8	0.9-4.6	1.8-5.8	3.4-6.7	4.3-7.3	4.6-8.2	4.9-8.5	5.6-9.5
		V	1.5	3.4	4.9	5.8	6.7	7.3	7.9	8.5
	NC		-	-	18	27	34	39	44	48
3	m ³ /s/m		0.037	0.074	0.112	0.149	0.186	0.223	0.26	0.298
	Throw, m	H	0.3-3.1	1.2-5.8	3.1-7.0	4.0-8.2	4.9-9.2	5.8-9.8	6.1-10.7	6.7-11.4
		V	2.1	4	6.1	7.3	8.2	8.8	9.8	10.4
	NC		-	-	21	30	37	42	47	51
4	m ³ /s/m		0.05	0.099	0.149	0.198	0.248	0.298	0.347	0.397
	Throw, m	H	0.6-3.4	1.8-6.7	3.7-8.2	4.6-9.5	6.1-10.4	6.7-11.3	7.3-12.2	7.6-13.1
		V	2.4	4.6	7	8.5	9.5	10.4	11	11.9
	NC		-	-	23	32	39	44	49	53
5	m ³ /s/m		0.062	0.124	0.186	0.248	0.31	0.372	0.434	0.496
	Throw, m	H	0.6-4.0	2.4-7.3	4.0-9.2	5.6-10.4	6.7-11.6	7.3-12.8	7.9-13.7	8.5-14.6
		V	2.7	5.2	7.6	9.5	10.4	11.6	12.5	13.1
	NC		-	-	24	33	40	45	50	54
6	m ³ /s/m		0.074	0.149	0.223	0.298	0.372	0.446	0.521	0.595
	Throw, m	H	0.9-4.3	2.7-8.2	4.6-9.8	5.8-11.4	7.3-12.8	8.2-13.7	8.8-14.9	9.2-15.9
		V	2.7	5.8	8.5	10.4	11.6	12.5	13.7	14.6
	NC		-	-	25	34	41	46	51	55
7	m ³ /s/m		0.087	0.174	0.26	0.347	0.434	0.521	0.608	0.694
	Throw, m	H	0.9-4.6	3.1-8.5	4.6-10.7	6.4-12.2	7.9-13.7	8.8-14.9	9.5-16.2	10.1-17.1
		V	3.1	6.1	9.2	11	12.5	13.7	14.6	15.9
	NC		-	-	26	35	42	47	52	56
8	m ³ /s/m		0.099	0.198	0.298	0.397	0.496	0.595	0.694	0.794
	Throw, m	H	1.2-4.9	3.4-9.5	4.9-11.4	6.7-13.1	8.5-14.6	9.2-15.8	10.1-17.1	10.7-18.3
		V	3.4	6.7	9.8	11.9	13.1	14.6	15.9	16.8
	NC		-	-	27	36	43	48	53	57

Model: **CSDR-25**

Plenum Return

SLOTS	Neg. S.P.	5	10	18	27	40	54	70	113
		1	m ³ /s/m	0.031	0.047	0.062	0.078	0.093	0.109
	NC	-	-	19	25	30	34	38	44
2	m ³ /s/m	0.062	0.093	0.124	0.155	0.186	0.217	0.248	0.310
	NC	-	-	22	28	33	37	41	47
3	m ³ /s/m	0.093	0.140	0.186	0.233	0.279	0.326	0.372	0.465
	NC	-	-	24	30	35	39	43	49
4	m ³ /s/m	0.124	0.186	0.248	0.310	0.372	0.434	0.496	0.620
	NC	-	17	25	31	36	40	44	50
5	m ³ /s/m	0.155	0.232	0.310	0.387	0.465	0.542	0.620	0.775
	NC	-	18	26	32	37	41	45	51
6	m ³ /s/m	0.186	0.279	0.372	0.465	0.558	0.651	0.744	0.930
	NC	-	19	27	33	38	42	46	52
7	m ³ /s/m	0.217	0.325	0.434	0.542	0.651	0.759	0.868	1.085
	NC	-	20	28	34	39	43	47	53
8	m ³ /s/m	0.248	0.372	0.496	0.620	0.744	0.868	0.992	1.240
	NC	-	20	28	34	39	43	47	53

Ceiling Slot Diffusers

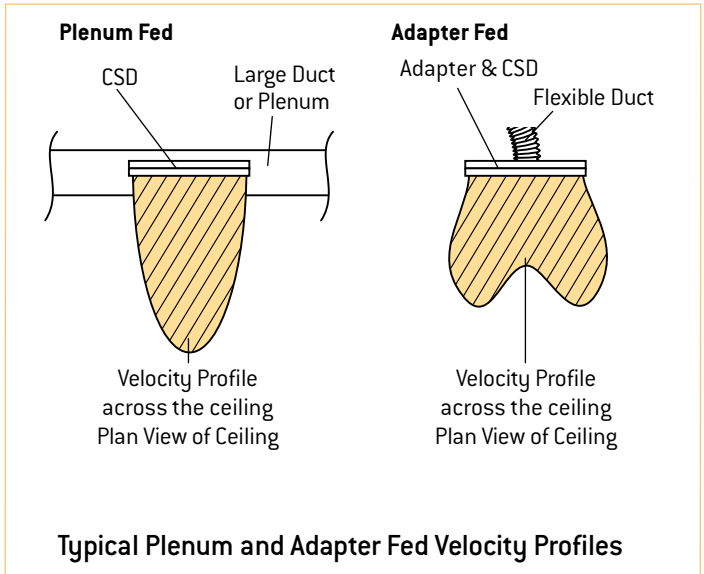
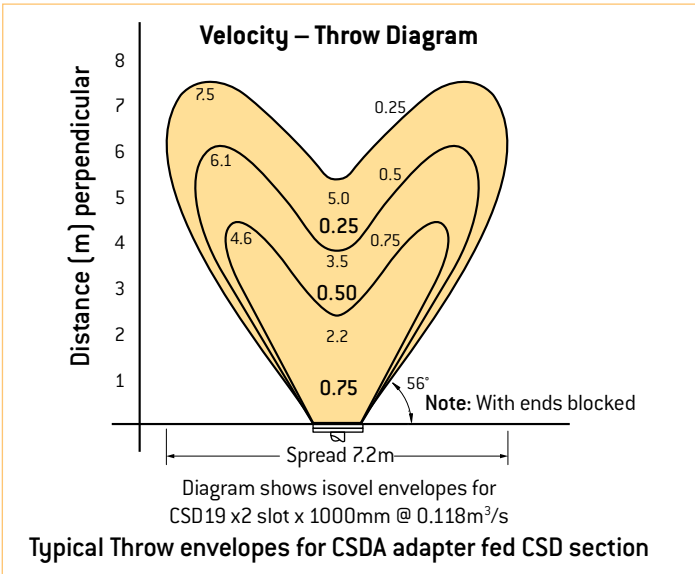
Model: **CSD-25 with CSDA or CSDA-I Supply Adapters**

1 Slot 25mm			0.047	0.057	0.066	0.076	0.085	0.094	0.104	0.113	0.123
Capacity m ³ /s			0.047	0.057	0.066	0.076	0.085	0.094	0.104	0.113	0.123
Projection, m		H	1.2-3.4	1.5-3.7	1.8-4.0	2.1-4.3	2.4-4.6	2.7-4.9	3.1-5.2	3.1-5.2	3.1-5.6
		V	0.6-1.8	0.9-2.1	0.9-2.1	0.9-2.4	1.2-2.4	1.2-2.7	1.5-2.7	1.5-2.7	1.8-3.1
Nom. Length	Spread m	H	1.8-4.9	2.1-5.6	2.7-5.8	3.1-6.4	3.7-6.7	4.0-7.3	4.6-7.6	4.6-7.6	4.6-8.2
		V	0.9-2.4	1.2-2.7	1.2-2.7	1.2-3.1	1.5-3.1	1.5-3.7	1.8-3.7	1.8-3.7	2.4-4.0
0.9m	TP		42	60	80	105	134	162			
	NC		28	34	39	42	46	49			
1.2m	TP		21	31	42	55	68	83	103	122	
	NC		19	25	30	33	37	40	43	46	
1.5m	TP		13	19	25	33	41	51	61	72	88
	NC		-	17	22	25	29	32	35	38	40

2 Slot 25mm			0.076	0.090	0.104	0.118	0.132	0.146	0.161	0.175	0.189
Capacity m ³ /s			0.076	0.090	0.104	0.118	0.132	0.146	0.161	0.175	0.189
Projection, m		H	1.5-3.7	1.8-4.3	2.1-4.6	2.4-4.9	2.7-5.2	3.1-5.6	3.4-5.6	3.4-5.8	3.4-6.1
		V	0.6-1.8	0.9-2.1	0.9-2.1	0.9-2.1	1.2-2.4	1.2-2.4	1.5-2.4	1.5-2.7	1.5-2.7
Nom. Length	Spread m	H	2.1-5.6	2.7-6.7	3.1-6.7	3.7-7.3	4.0-7.6	4.6-8.2	4.9-8.2	4.9-8.5	4.9-9.2
		V	0.9-2.4	1.2-2.7	1.2-2.7	1.2-2.7	1.5-3.1	1.5-3.1	1.8-3.1	1.8-3.7	1.8-3.7
0.9m	TP		25	36	48	63	80	97	114		
	NC		24	29	34	37	41	44	46		
1.2m	TP		14	19	26	34	42	51	60	70	83
	NC		-	19	24	27	31	34	36	39	42
1.5m	TP		9	12	16	21	26	31	37	44	51
	NC		-	-	17	20	24	27	29	32	35

3 Slot 25mm			0.090	0.104	0.118	0.132	0.146	0.161	0.175	0.189	0.203
Capacity m ³ /s			0.090	0.104	0.118	0.132	0.146	0.161	0.175	0.189	0.203
Projection, m		H	1.5-3.7	1.8-4.3	1.8-4.6	2.1-4.6	2.4-4.9	2.4-5.2	2.7-5.6	3.1-5.6	3.4-5.8
		V	0.6-1.8	0.6-1.8	0.9-1.8	0.9-2.1	0.9-2.1	0.9-2.1	1.2-2.4	1.2-2.4	1.2-2.4
Nom. Length	Spread m	H	2.1-5.6	2.7-6.4	2.7-6.7	3.1-6.7	3.7-7.3	3.7-7.6	4.0-8.2	4.6-8.2	4.9-8.5
		V	0.9-2.4	0.9-2.4	1.2-2.4	1.2-2.7	1.2-2.7	1.2-2.7	1.5-3.1	1.5-3.1	1.5-3.1
0.9m	TP		16	22	28	35	43	51	60	69	80
	NC		18	23	26	30	33	36	38	41	43
1.2m	TP		9	12	16	19	23	28	32	37	44
	NC		-	-	-	19	22	25	27	30	32
1.5m	TP		6	7	10	12	15	17	20	24	27
	NC		-	-	-	-	-	18	20	23	25

4 Slot 25mm			0.113	0.132	0.151	0.170	0.189	0.208	0.227	0.246	0.264
Capacity m ³ /s			0.113	0.132	0.151	0.170	0.189	0.208	0.227	0.246	0.264
Projection, m		H	1.5-4.3	1.8-4.6	2.1-4.9	2.4-5.2	2.7-5.6	3.1-5.6	3.1-5.8	3.4-6.1	3.7-6.4
		V	0.6-1.8	0.6-1.8	0.9-1.8	0.9-2.1	1.2-2.1	1.2-2.4	1.2-2.4	1.5-2.4	1.5-2.7
Nom. Length	Spread m	H	2.1-6.4	2.7-6.7	3.1-7.3	3.7-7.6	4.0-8.2	4.6-8.2	4.6-8.5	4.9-9.2	5.6-9.4
		V	0.9-2.4	0.9-2.4	1.2-2.4	1.2-2.7	1.5-2.7	1.5-3.1	1.5-3.1	1.8-3.1	1.8-3.7
0.9m	TP		15	21	26	33	40	48	57	68	80
	NC		18	23	26	30	33	36	39	41	44
1.2m	TP		8	11	14	17	21	25	30	36	42
	NC		-	-	-	19	22	25	28	30	33
1.5m	TP		6	8	10	12	15	17	21	24	29
	NC		-	-	-	-	17	20	23	25	28



Performance Notes

General Notes on performance charts for single or multi slot linear diffusers in this section.

- All pressures are Pa [N/m²].
- Projection (throw) values in metres are based upon the performance of a one metre long active section.** When only 300mm is active, the values are 0.6 times those shown. For a 3 metre long continuous length, the values are 1.8 times those shown. See table below:

Length mm	300	400	500	600	700	800	900	1000	1200	1500	1800	2000	2400	3000
Correction Factor	0.6	0.66	0.72	0.8	0.84	0.9	0.96	1	1.08	1.2	1.32	1.4	1.56	1.8

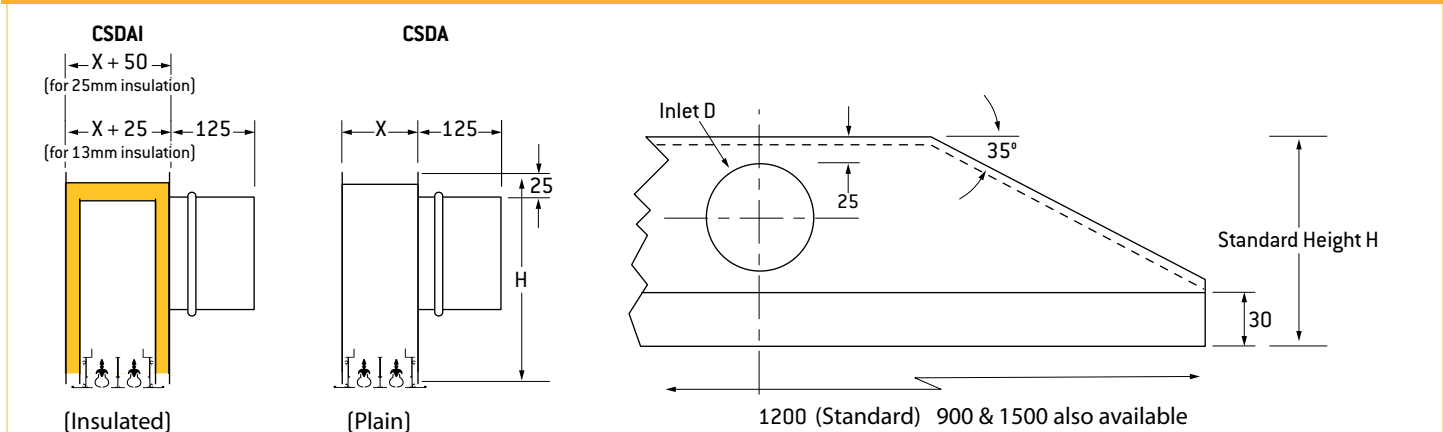
H : Horizontal projection : Minimum is to a terminal velocity of 0.75m/s and maximum to 0.25m/s.
 V : Vertical projection is to a terminal velocity of 0.25m/s.

- Spread is the maximum width of the jet defined by the above velocities.
- N.C. values are based upon horizontal projection from a three metre active section and a room absorption of 10dB re 10⁻¹² watts.** Vertical projection values are 11dB less than listed.
- N.C. correction for length:

Length mm	300	600	1000	1200	1800	2400	3000	4500	6000	7500	9000
Supply	-16	-11	-7	-6	-3	-2	0	+3	+5	+6	+8
Return	-10	-7	-5	-4	-2	-1	0	+2	+3	+4	+5

- Figures for plenum fed diffusers are for essentially zero inlet velocity. The velocity profile is relatively uniform for the length of the active section.
- Figures for adapter fed diffusers take account of the effect of the adapter and inlet neck on diffuser velocities which tend to be less uniform and produce a velocity profile of the shape shown in the Velocity-Throw diagram above. The 0.25m/s isovel generally shows a projection reduction at the centre of approximately 25%.

CSDA/I Adapters



CSDA/I Dimensions

No. of Slots	CSD-13			CSD-19			CSD-25		
	D	H	X	D	H	X	D	H	X
1	100	195	46	100	195	53	125	220	60
2	125	220	79	125	245	92	150	245	104
3	150	245	110	150	270	130	200	295	149
4	175	270	143	175	295	168	250	345	191

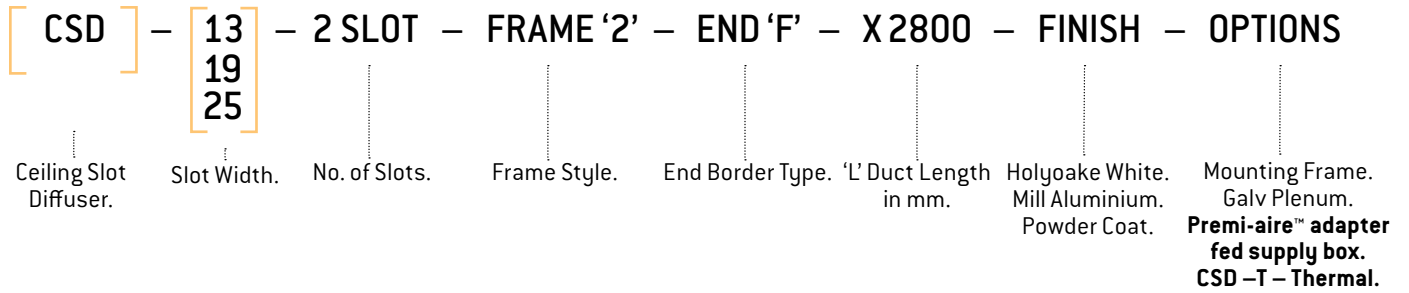
Guide Weights	
CSDA	CSDAI
1200	1200
4.78	5.08

- Notes: 1. For sizes other than shown Standard Height H = Inlet Diameter +100.
 2. Construction details may vary*.
 3. Premi-aire™ versions available*.

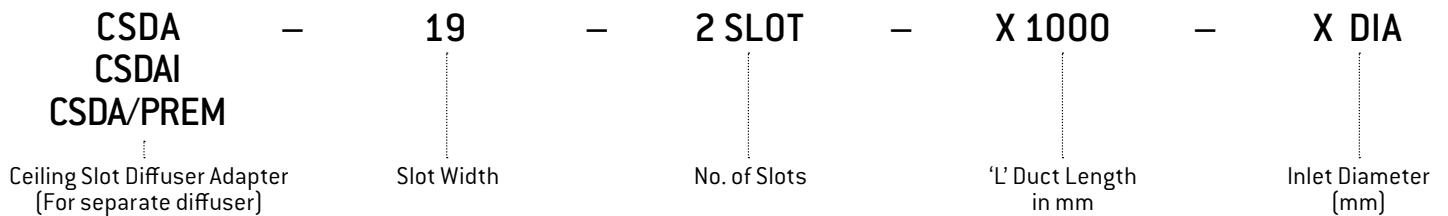
* Please check with your local Holyoake branch.

CSD, CSDA/I, CSD-T, CSD-MF

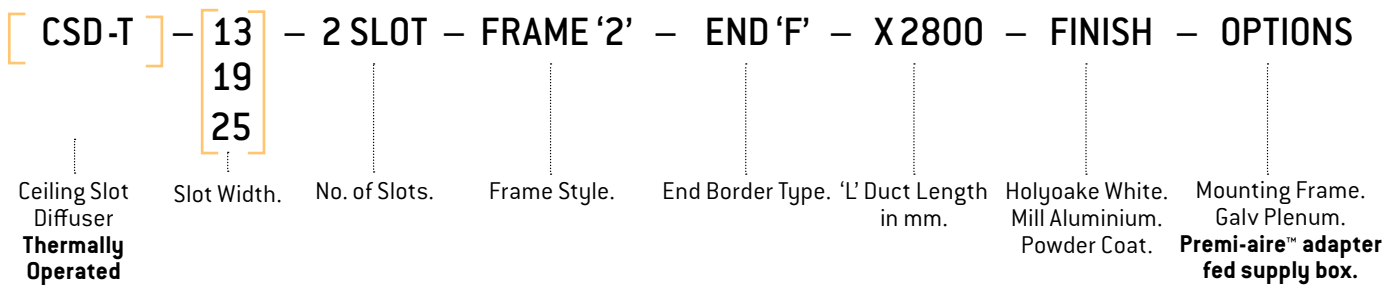
Diffuser Description Code Examples and Suggested Specifications



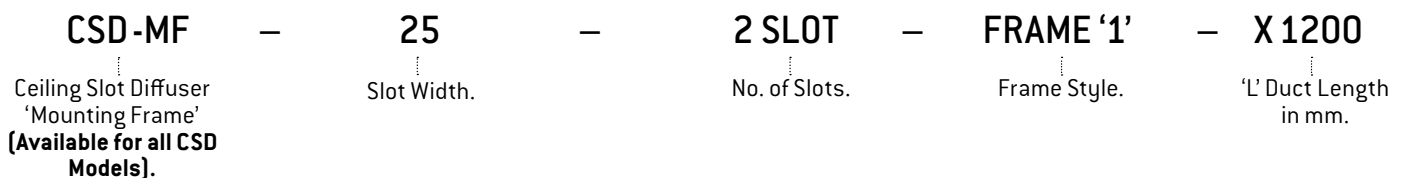
Series CSD Ceiling Slot Diffusers shall be of extruded aluminium construction, complete with integral combination air pattern control and volume control damper. The number of slots shall be as shown on the drawings and the slot components shall be mechanically locked together to form a rigid assembly. Pattern controls shall be readily adjustable through the slots and shall be finished matt black. CSD slot diffusers shall be provided with matching adapters or plenums and suitable mounting frame where shown. All shall be as manufactured by Holyoake.



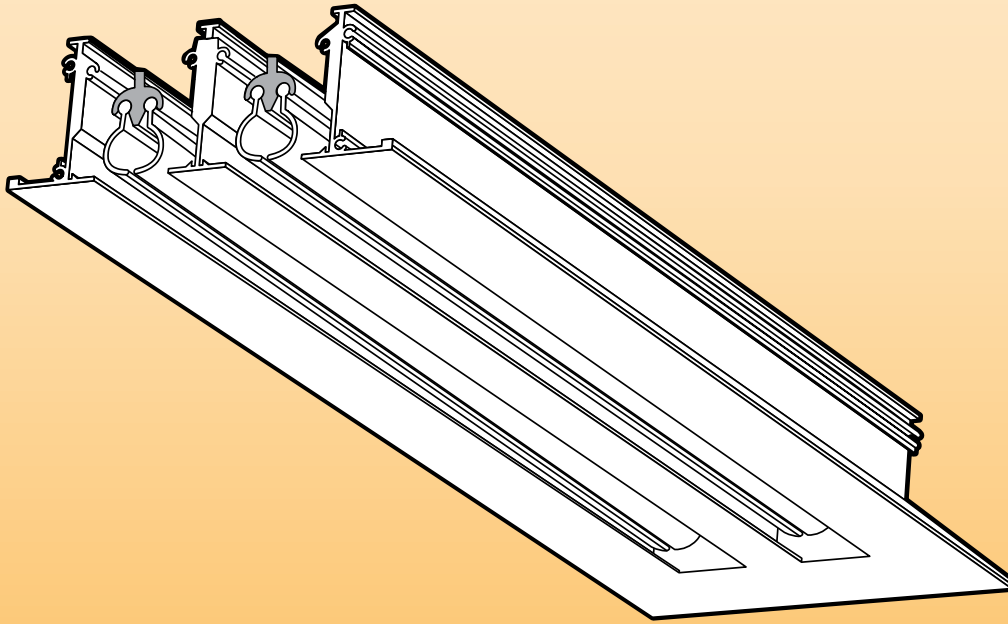
Series CSDA, CSDAI and CSDA/PREM Ceiling Slot Diffuser **'Adapter Boxes'** shall be of either sheet metal construction, with, or without non-woven polyester insulation, or manufactured from Premi-aire™ board. A suitably sized galvanised circular, or equivalent oval, inlet spigot is provided. All shall be as manufactured by Holyoake.



Series CSD - T Thermally Operated Ceiling Slot Diffusers shall be of extruded aluminium construction, complete with a unique die cast clip containing a temperature sensitive alloy; attached to the integral combination air pattern control and volume control damper, (on the first slot only, if multi-slot diffusers). The number of slots shall be as shown on the drawings and the slot components shall be mechanically locked together to form a rigid assembly. Pattern controls shall be readily adjustable through the slots, except thermal blade and shall be finished matt black. CSD - T slot diffusers shall be provided with matching adapters or plenums and suitable mounting frame where shown. All shall be as manufactured by Holyoake.



Series CSD - MF Ceiling Slot Diffuser **'Mounting Frame'** shall be of extruded aluminium construction. The mounting frame shall be able to be installed into the ceiling to form a straight and stable support structure for the ceiling to be finished to. The slot diffuser shall clip into the mounting frame, providing a neat and secure fixing. All shall be as manufactured by Holyoake.



NEW ZEALAND

Auckland Office & Factory

67-69 Greenmount Drive,
East Tamaki Auckland 2013
New Zealand
PO Box 58-548
Botany Manukau 2163
Auckland NZ

Tel: +64 9 274 4144

Email: auckland@holyoake.com

Wellington Office & Factory

89 Main Road, Tawa
Wellington 5028
New Zealand
PO Box 51-038
Tawa Wellington 5249
New Zealand

Tel: +64 4 232 2722

Email: wellington@holyoake.com

Christchurch Office & Factory

27 Waller Terrace,
Addington Christchurch 8011
New Zealand
PO Box 632
Christchurch Mail Centre
Christchurch 8140
New Zealand

Tel: +64 3 366 6545

Email: christchurch@holyoake.com

AUSTRALIA

Melbourne Office & Factory

95 Redwood Drive,
Dingley Victoria 3172
Australia
PO Box 195,
Braeside Victoria 3195
Australia

Tel: +61 3 9551 5022

Email: melbourne@holyoake.com

Sydney Office & Factory

12 Butterfield Street,
Blacktown NSW 2148
Australia

Tel: +61 2 9620 9555

Email: sydney@holyoake.com

Brisbane Office & Factory

5 Program Street,
Yatala Queensland 4207
Australia
PO Box 6061 Yatala
Queensland 4207
Australia

Tel: +61 7 3807 7111

Email: brisbane@holyoake.com

Adelaide Office & Factory

86 Hardys Road, Torrensville
Adelaide SA 5031
Australia

Tel: +61 8 8354 1580

Email: adelaide@holyoake.com

Perth Office

Level 28 AMP Tower
140 St Georges Terrace
Perth WA 6000
Australia

Tel: +61 8 8354 1580

Email: perth@holyoake.com