

SLOTTED SWIRL DIFFUSER



DESCRIPTION

The SMARTEMP® Slotted Swirl Diffuser, type SSC-AD (figure 1), offers manually adjustable discharge direction from horizontal to vertical as well as manually adjustable discharge pattern from 4-way to 3-way and 2-way blow. Adjustable vanes with pilot slots (patents pending) allow high airflow rates to be discharged.

The SSC-AD diffuser can be flush mounted in a ceiling or freely suspended (i.e. no Coanda attachment to the ceiling required). The rectangular vanes are located in the flat square face and are arranged in a circular or square radial array (figures 4 & 5). Each vane is individually adjustable for vertical or horizontal discharge direction for cooling or heating applications, respectively, or can be shut (figures 2 & 3). The latter allows the diffuser to be closed off, or to have 2-way or 3-way discharge patterns.

The diffuser vanes are made of black polycarbonate, whilst the flat face of the SSC-AD diffuser is made of powder coated steel.

Highly inductive swirl discharge provides rapid temperature equalisation of the supply air stream with room air, preventing cold air dumping, thereby ensuring uniform temperature distribution (no cold and draughty or hot and stagnant spots). High induction also improves heating performance. High induction produces a strong increase in the mass flow rate of the swirling supply air stream, as well as rapid discharge velocity decay.



Figure 1

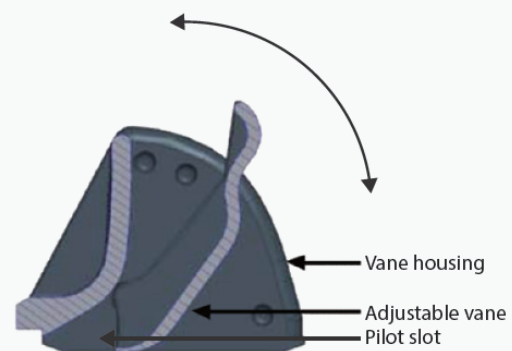


Figure 2

Slotted Swirl Diffuser

SSC-AD : 082017

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At any given airflow rate, the SSC-AD diffuser is suitable both for long throws (due to the swirling supply air stream's high momentum) as well as short throws (due to the swirling supply air stream's low velocity). The stable discharge characteristics of the SSC-AD swirl diffuser over a wide range of supply air temperatures and volume flow rates make this ceiling swirl diffuser suitable for CV and VAV systems turning down to as low as 25% at $\Delta T_{\text{supply-room}} \leq -16 \text{ K}$, whilst maintaining uniform temperature distribution and high levels of draught-free comfort.

Array Size		DN300	DN400	DN500	DN600
Volume flow rate	[L/s]				
	$V_{\max}$	76	104	217	330
	$V_{\min}^{1)}$	19	26	54	78
	$V_{\min}^{2)}$	28	38	63	116
-Square slot array	$V_{\max}$	57	94	170	265
	$V_{\min}^{1)}$	14	24	42	66
	$V_{\min}^{2)}$	21	35	63	98
Volume flow rate	[m³/h]				
	$V_{\max}$	272	374	782	1189
	$V_{\min}^{1)}$	68	93	195	297
	$V_{\min}^{2)}$	101	138	289	439
-Square slot array	$V_{\max}$	204	340	611	950
	$V_{\min}^{1)}$	51	85	153	238
	$V_{\min}^{2)}$	75	126	226	351
Discharge height [m]		2.5-4.5		2.7-4.5	
Max. supply-to-room temperature differential		-16 K when cooling +10 K when heating (3 m) +5 K when heating (4.5 m)			

Notes: 1) V_{min} flush with ceiling
2) V_{min} free-hanging

Vane positions:

- v - vertical (heating)
- h - horizontal (cooling)
- s - shut (closed/2-way/3-way)
- 1 - vane housing
- 1a - adjustable vane
- 2 - pilot slot

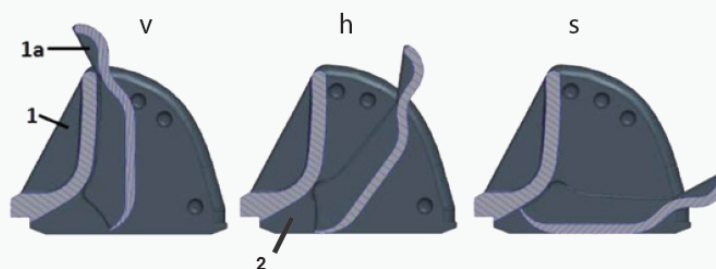


Figure 3

VARIATIONS

SQUARE SLOT ARRAY SIZES & PATTERNS



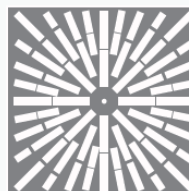
S-DN300



S-DN400



S-DN500



S-DN600

Figure 4

CIRCULAR SLOT ARRAY SIZES & PATTERNS



C-DN300



C-DN400



C-DN500

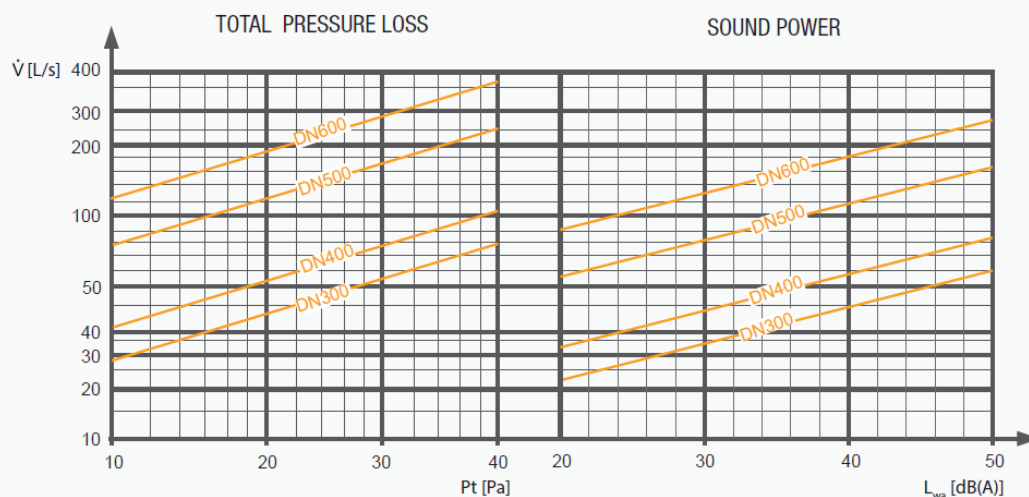


C-DN600

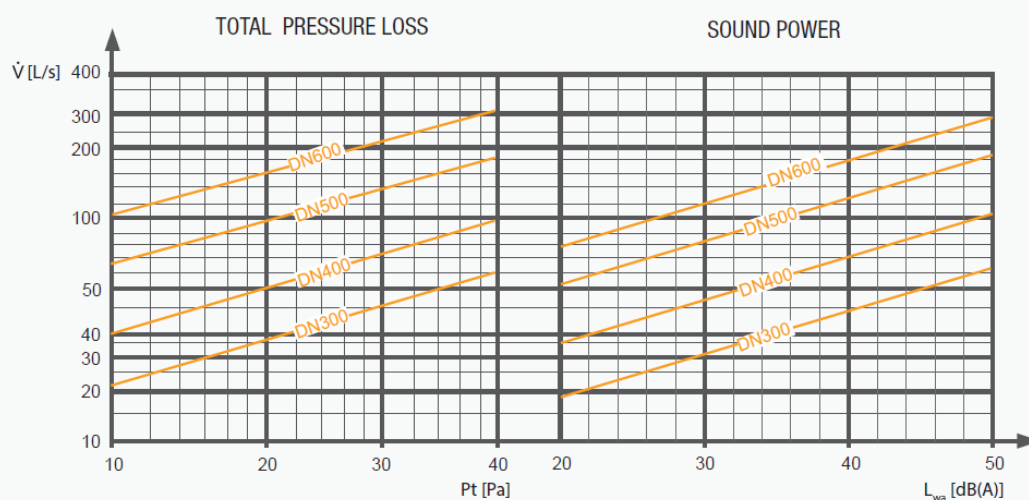
Figure 5

TECHNICAL DATA

SQUARE SLOT ARRAY



CIRCULAR SLOT ARRAY



ORDER DETAILS

SSC-AD- - - - -

CONNECTION TYPE:

- O = No connection piece (only discharge element)
- K = Connection box

SURFACE FINISH:

- 9003* = Face painted to RAL 9003 (Signal White)
- ____ = Face painted to RAL ____

SQUARE FACE¹:

- 300 = 295 mm x 295 mm
- 400 = 395 mm x 395 mm
- 500 = 495 mm x 495 mm
- 600 = 595 mm x 595 mm
- 24" = 603 mm x 603 mm

ARRAY SIZE:

- DN300 (minimum Square Face 300)
- DN400 (minimum Square Face 400)
- DN500 (minimum Square Face 500)
- DN600 (minimum Square Face 600)

SLOT ARRAY:

- S = Square array
- C* = Circular array

MODEL:

- Slotted Swirl Ceiling - Adjustable Direction

Notes:

* Standard, if no type code entered.

¹ Square face size is set equal to array size, if no type code entered.

Products supplied may differ slightly from those described in this technical brochure due to on-going product development.

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