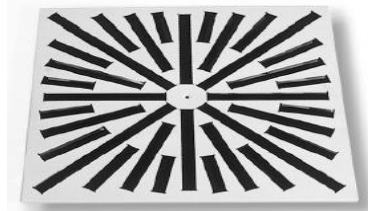
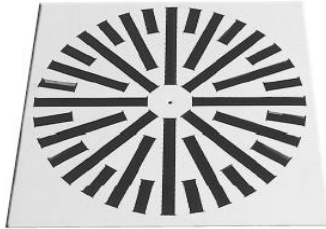


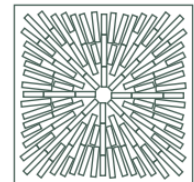
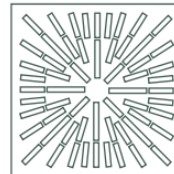
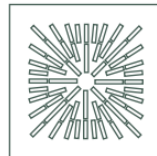
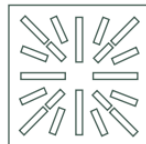
# SWIRL DIFFUSERS

Rev.02  
26-05-2015



## GMC SWD-024 PRODUCT SPECIFICATIONS:

- Used for supply and return air ducts.
- This diffusers are ideal for the application of suspending ceiling with rock wool.
- Can be used between 2,6 to 4 meters height.
- Adjustable blades can be black or White.
- Depending an architeturational demands the face can be circular or square.
- Accessories; Plenum box, Lapel for volume control.
- Material; Aluminum is standart and stainless steel are optional.
- Finishing; Electrostatic powder coating with the colour from RAL catalogue.



## TECHNICAL DETAILS

SWD 124 STANDARD SELECTION TABLE /

Standard size	A1	A2	B	D	H1	H <sub>2</sub>	P	K
300 / 8	298	300	280	158	200	250	278	290
400 / 16	398	400	364	198	200	295	362	372
500 / 24	498	500	462	198	200	295	460	476
600 / 24	598	600	559	248	200	345	557	567
600 / 48	598	600	580	248	300	345	578	590
825 / 72	825		796	313	300	410		806

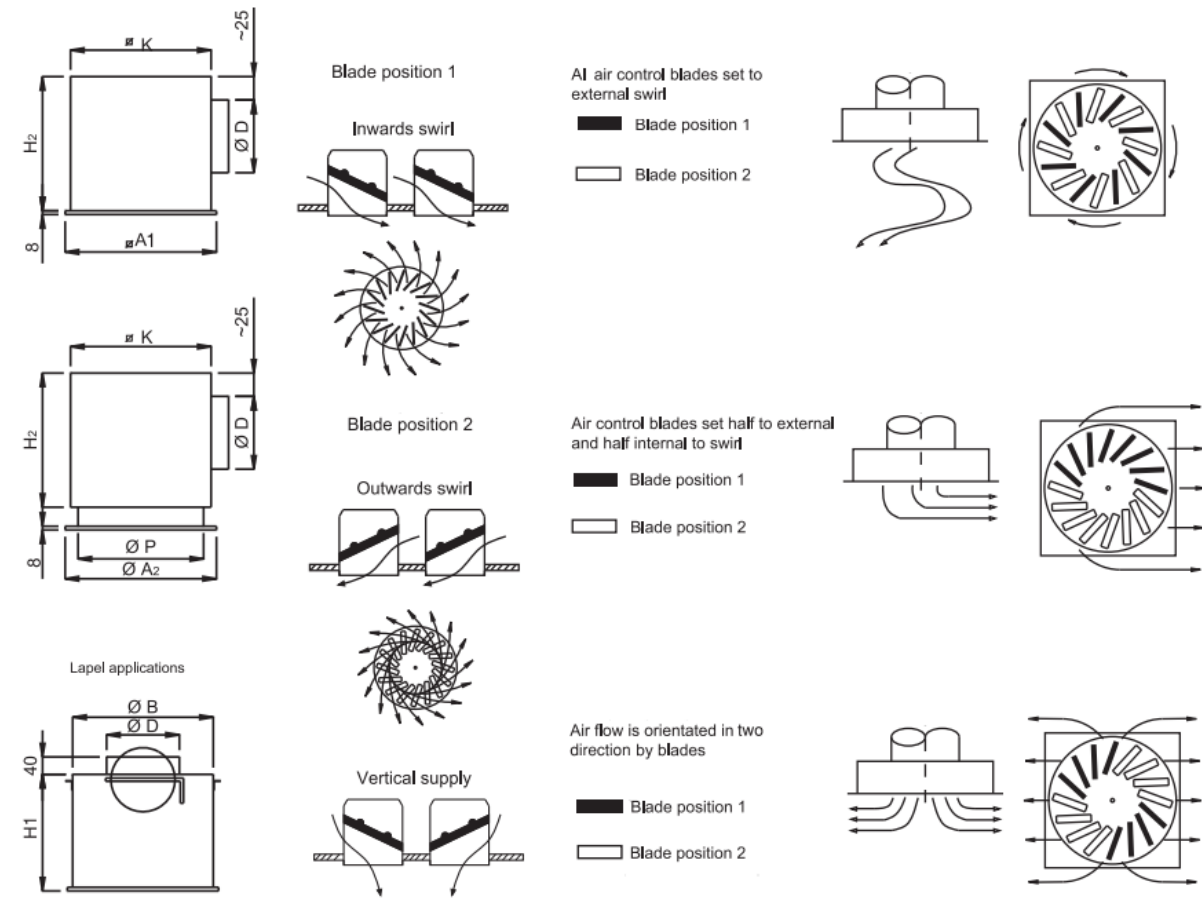


HVAC Systems and Equipments Co.  
4640 Hedcoxe Road 227 Plano, TX 75024 – US

[www.gmcair.com](http://www.gmcair.com)

# SWIRL DIFFUSERS

Rev.02  
26-05-2015



## SWD-124 QUICK SELECTION TABLE

Standart size	Aeff m <sup>2</sup>	Vmin m <sup>3</sup> /h	Vmax m <sup>3</sup> /h	Lwa min dBA	Lwa max dBA
300 / 8	0,007	54	252	< 20	40
400 / 16	0,014	108	396	< 20	40
500 / 24	0,021	144	468	< 20	40
600 / 24	0,030	216	684	< 20	40
600 / 48	0,033	360	828	< 20	40
825 / 72	0,073	558	1260	< 20	40

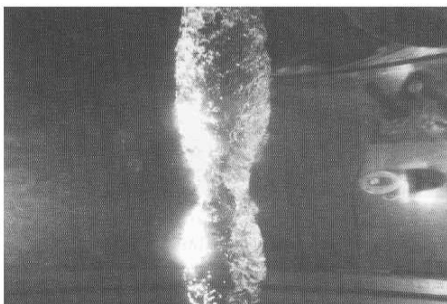


Fig.1: Air column behavior according to blade position 1.

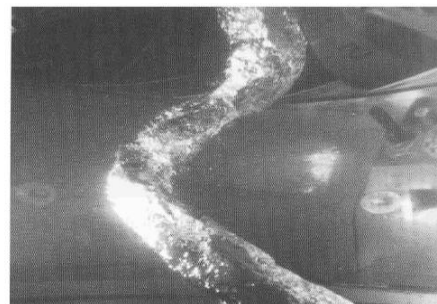


Fig.2: Air column behavior according to blade position 2.



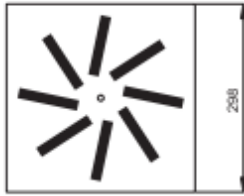
# SWIRL DIFFUSERS

Rev.02  
26-05-2015

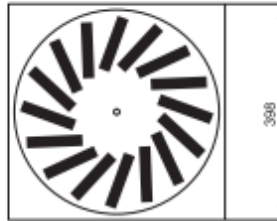


## SWD-124 SWIRL DIFFUSER TYPES

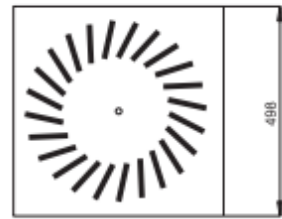
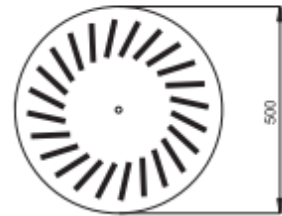
**SWD-124 300/8**



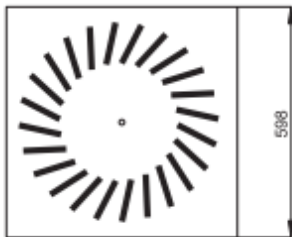
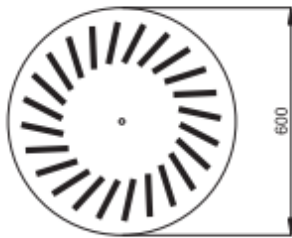
**SWD-124 400/16**



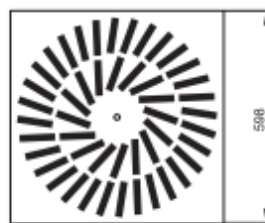
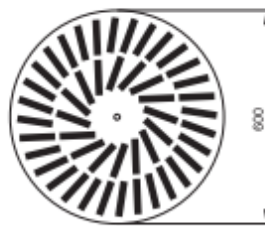
**SWD-124 500/24**



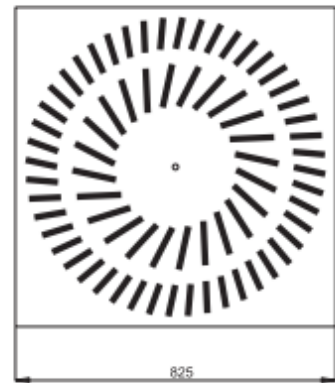
**SWD-124 600/24**



**SWD-124 600/48**



**SWD-124 825/72**

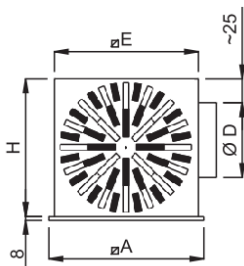


# SWIRL DIFFUSERS

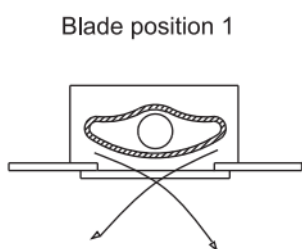
Rev.02  
26-05-2015



**SWD-224 STANDARD SELECTION TABLE**

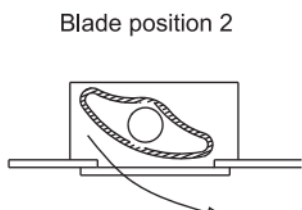
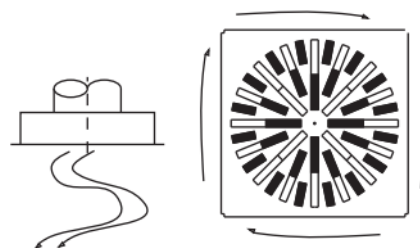


Standard size	A	E	H	D	(Vmin-Vmax) Air Volume (m³/h)	V(volume) 40db A
310	308	290	260	158	155-410	280
400	398	370	260	158	170-490	330
500	498	470	300	198	300-960	540
600	598	570	350	248	410-1430	810
625	623	570	350	248	410-1430	810
800	798	770	455	353	610-2600	1200



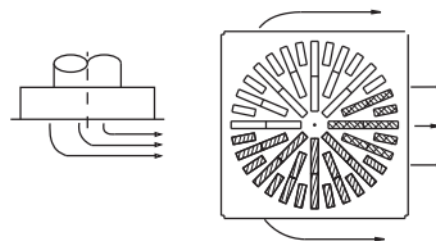
All air control blades set to external swirl

- Blade position 1
- Blade position 2



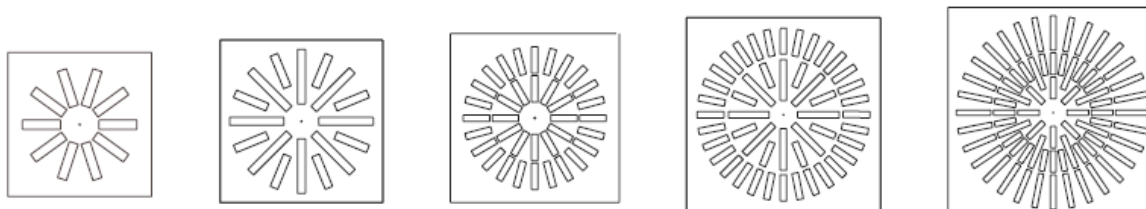
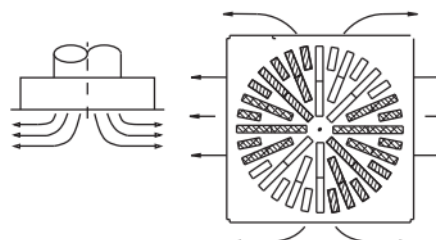
Air flow is orientated in one direction by blades

- Blade position 2, Left
- Blade position 2, Right
- Closed



Air flow is orientated in two direction by blades.

- Blade position 2, Left
- Blade position 2, Right
- Closed



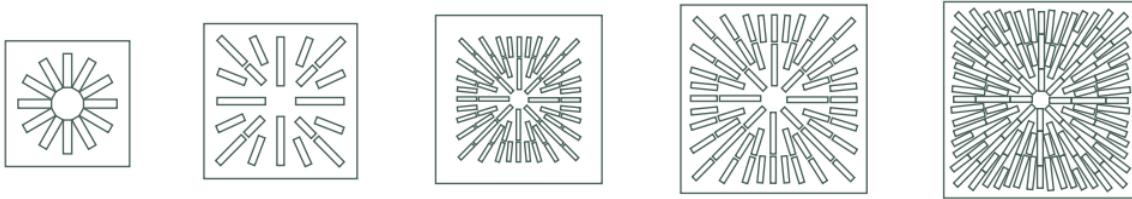
# SWIRL DIFFUSERS

Rev.02  
26-05-2015

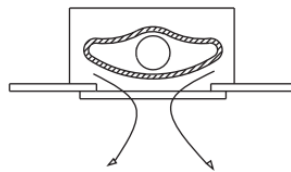
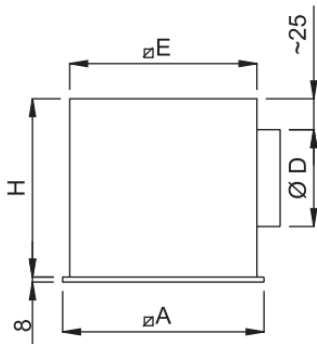


**SWD-324 STANDARD SELECTION TABLE**

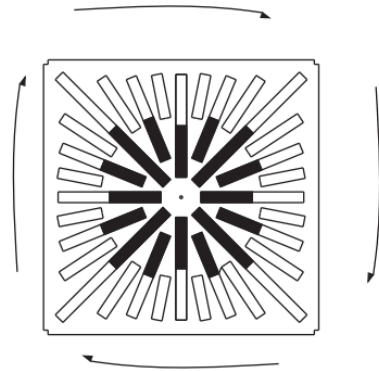
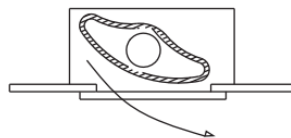
Standard size	A	E	H	D	(Vmin-Vmax) Air Volume (m³/h)	V(volumet) 40db A
310	308	290	260	158	160-420	290
400	398	370	260	158	170-510	345
500	498	470	300	198	370-1160	650
600	598	570	350	248	420-1600	890
625	623	570	350	248	420-1600	890
800	798	770	455	353	620-3060	1420



Blade position 1



Blade position 2



# SWIRL DIFFUSERS

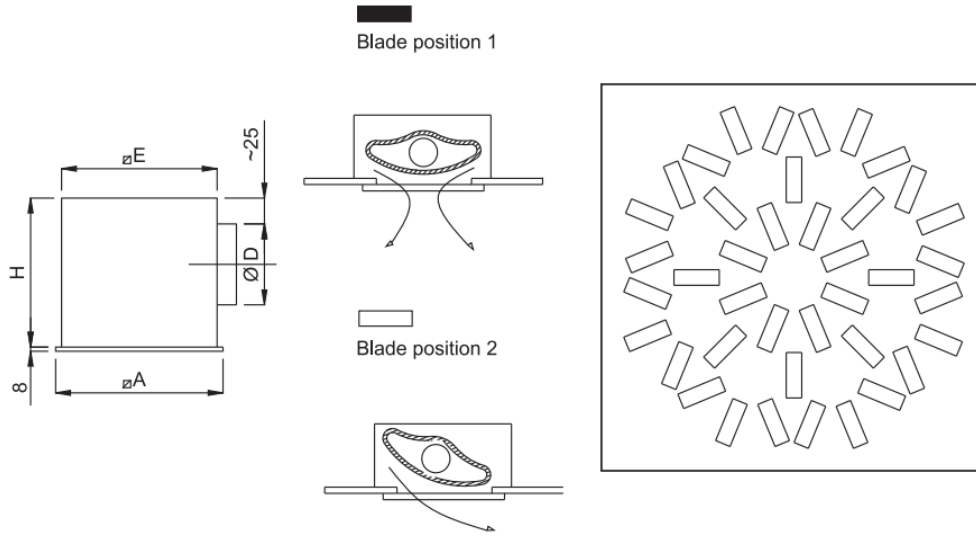
Rev.02  
26-05-2015



**SWD-424 STANDARD SELECTION TABLE**

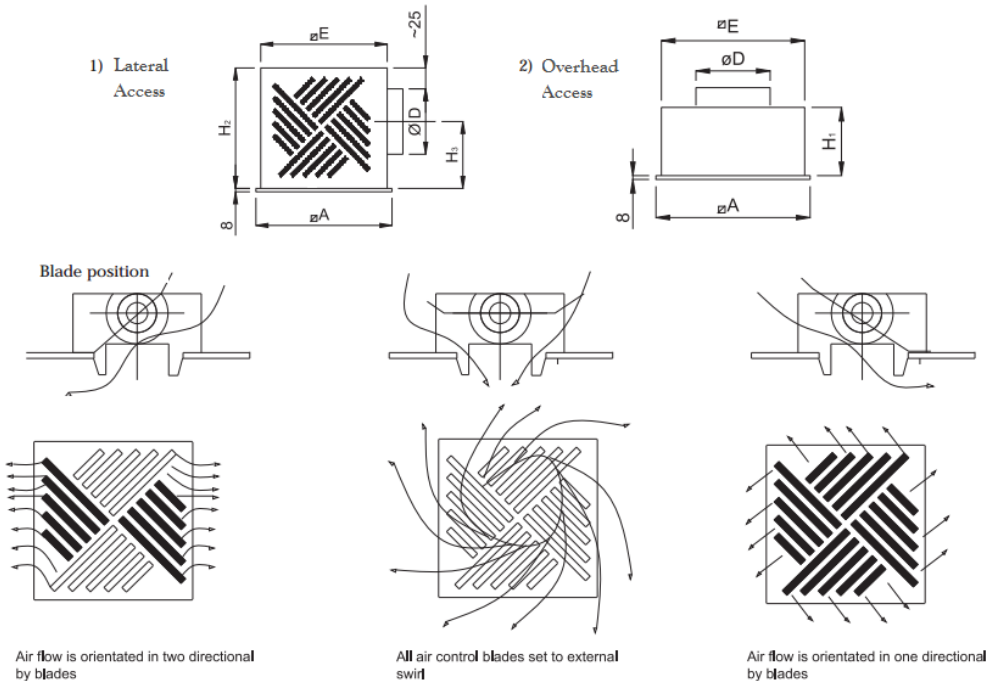
Standard size	A	E	H	D	Air Volume (m <sup>3</sup> /h)
300	308	290	260	158	100
400	398	370	260	158	145
500	498	470	300	198	225
600	598	570	350	248	324
800	798	770	455	353	576

Assumed air velocity is 2,5 m/s.



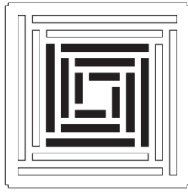
**SWD-524 STANDARD SELECTION TABLE**

Standard size	A	E	D	H <sub>1</sub>	H <sub>2</sub>	H <sub>3</sub>	(Vmin-Vmax) Air Volume (m <sup>3</sup> /h)	V(volume) 40db A
600	598	570	248	200	350	200	200-900	600
625	623	570	248	200	350	200	200-900	600



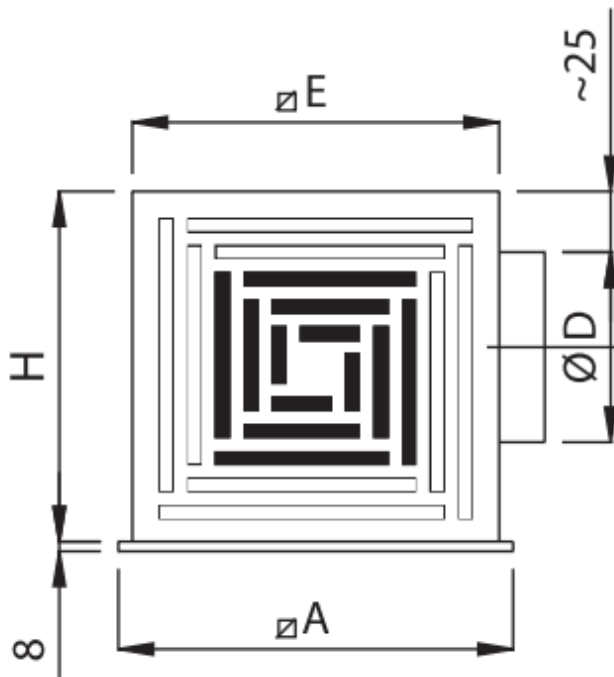
# SWIRL DIFFUSERS

Rev.02  
26-05-2015

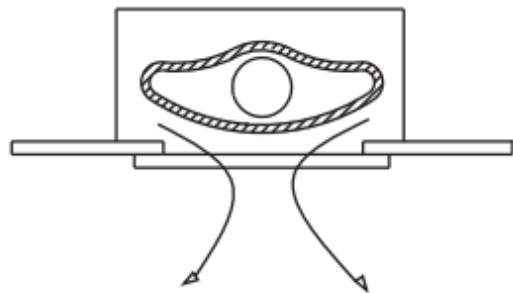


SWD-624 STANDARD SELECTION TABLE

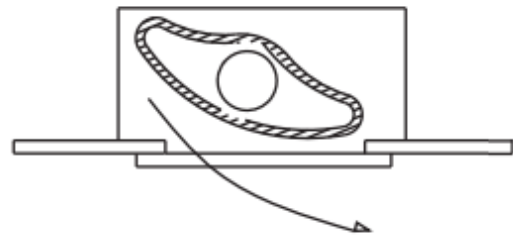
Standard size	A	E	H	D	(Vmin-Vmax) Air Volume (m <sup>3</sup> /h)	V(volume) 40db A
310	308	290	260	158	30-1000	250
400	398	370	260	158	50-1700	400
500	498	470	300	198	80-3000	650
600	598	570	350	248	100-3000	750
800	798	770	455	353	170-5000	1300



Blade position 1



Blade position 2



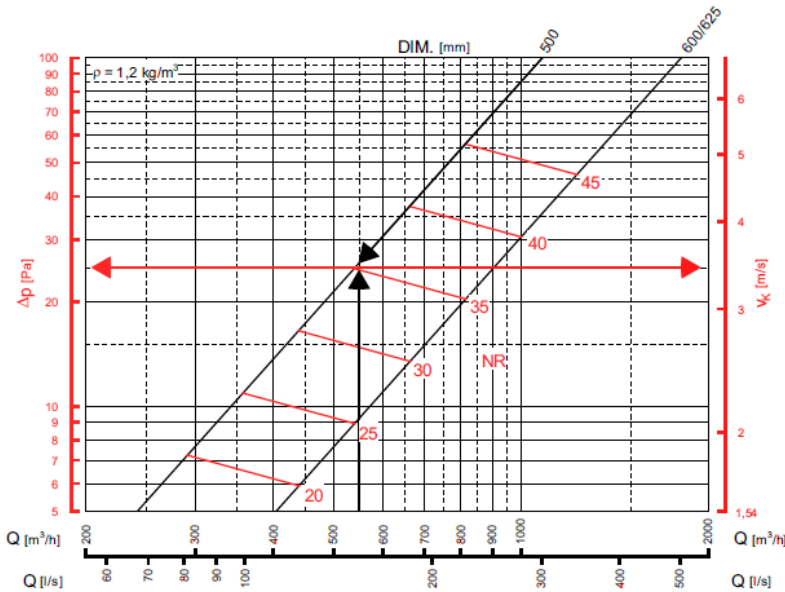
# SWIRL DIFFUSERS

Rev.02  
26-05-2015



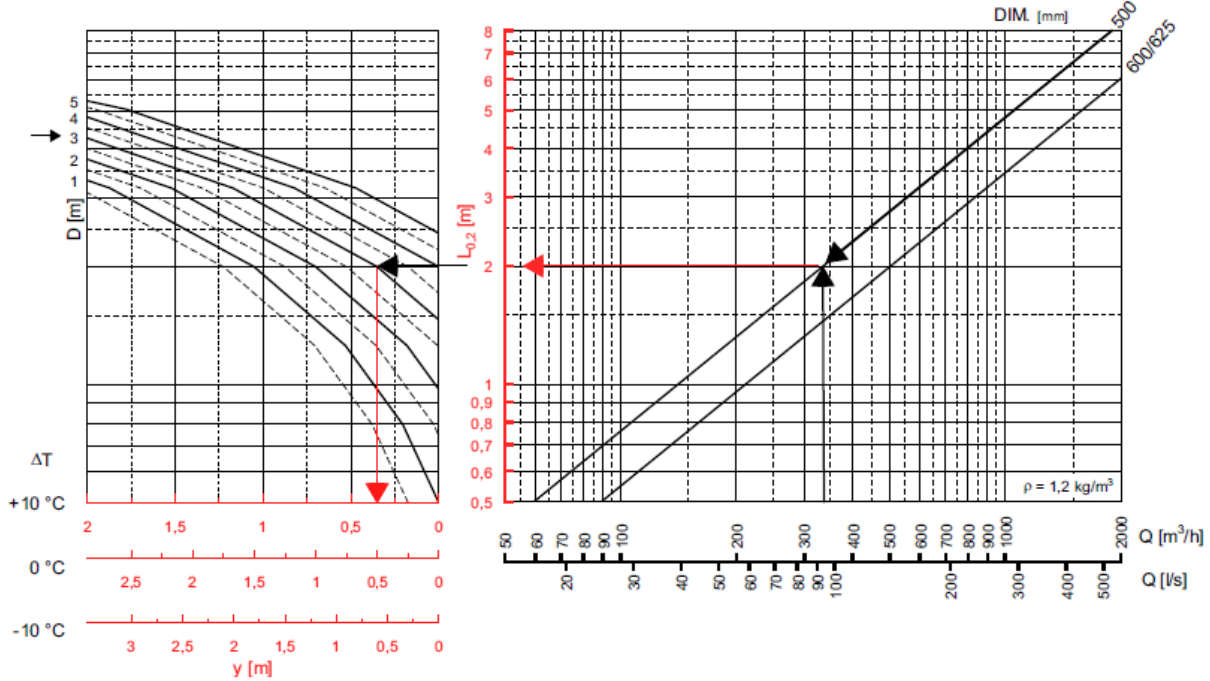
## DATA DIAGRAMS

### SWD-024, PRESSURE LOSS AND NOISE LEVELS



- Q [m<sup>3</sup>/h] supply air flow rate
- DIM. [mm] diffuser dimensions
- v<sub>k</sub> [m/s] velocity relating to the effective outlet area S
- Δp [Pa] total pressure loss
- NR noise rating (ISO standard, in relation to 10<sup>-12</sup> W) taking no account of the attenuation of the room

### SWD-024, THROW DISTANCES (m)



- Q [m<sup>3</sup>/h] or [l/s] supply air flow rate
- DIM. [mm] diffuser dimensions
- v<sub>m</sub> [m/s] average velocity of the throw at distance L
- L [m] rdiffusion radius (= x + y)
- x [m] horizontal dimension of the throw
- y [m] vertical dimension of the throw
- L<sub>0,2</sub> [m] throw with terminal velocity of 0.2 m/s
- D [m] distance between two diffusers
- ΔT [°C] difference between supply air temperature and ambient temperature



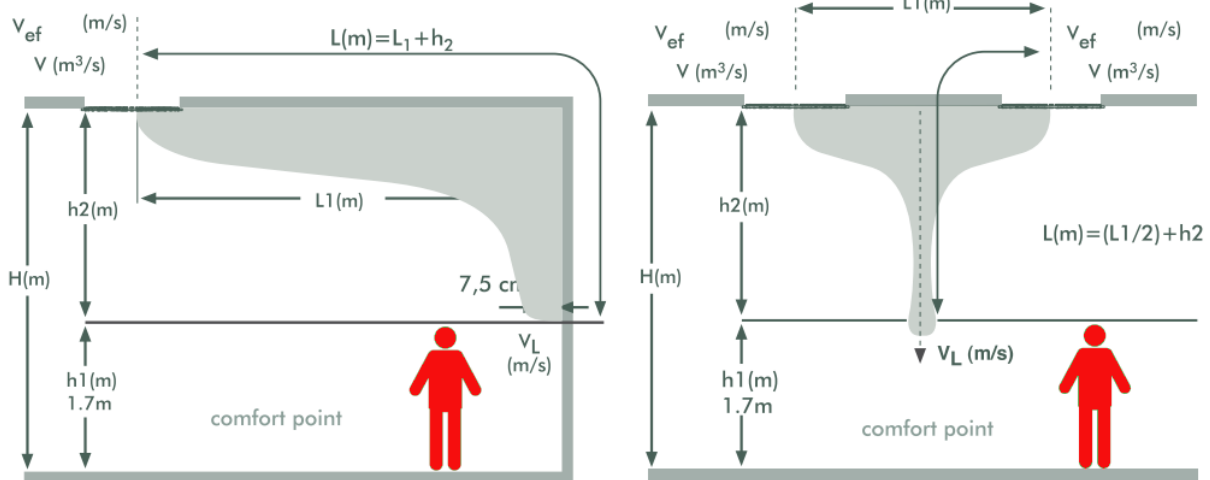


# SWIRL DIFFUSERS

Rev.02  
26-05-2015



## SELECTION TERMS



<b>L1</b>	The distance between the diffusers or between the diffuser and the wall (m)
<b>h1</b>	Comfort point height (m)
<b>h2</b>	The distance between the diffuser and the comfort point (m)
<b>V<sub>efek.</sub></b>	Effective comfort point (m/s)
<b>V<sub>L</sub></b>	At the comfort point (m)
<b>Δt<sub>0</sub></b>	The temperature difference between the air accessing to the environment and the temperature of the comfort point (°C)
<b>Δt<sub>L</sub></b>	The temperature difference between the air accessing to the comfort point and the temperature of the comfort point (°C)
<b>L</b>	Throw distance (m)
<b>V</b>	Mass air flow (m³/h)
<b>H</b>	Ambient height (m)
<b>S</b>	Sound power level dB(A)

In order to get "Coanda Effect" the effective blow out speed (V<sub>efek.</sub>) must at least be 2 m/s. To provide the comfort conditions the selection is done considering that sound level should not exceed 40 dB(A). The average upper limit of the comfort point (h<sub>1</sub>) is calculated as 1.70 m above the ground. The air throw distance are selected from the table according to the diffuser size and mass air flow considering that the air speed at this level must be (V<sub>L</sub>) 0,25 ve 0,10 m/s

**Note:** The values in the table are given for mounting diffuser surface to the same level with the ceiling and for different locations the throw distance to be multiplied by 0,7.

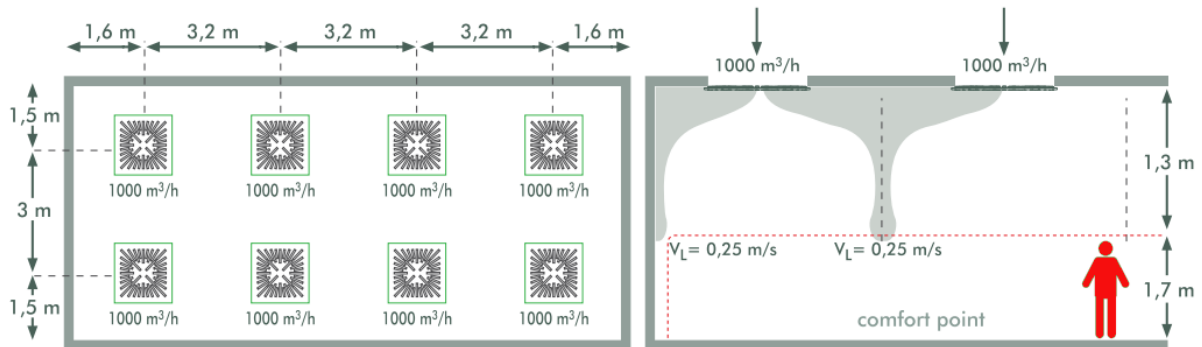


# SWIRL DIFFUSERS

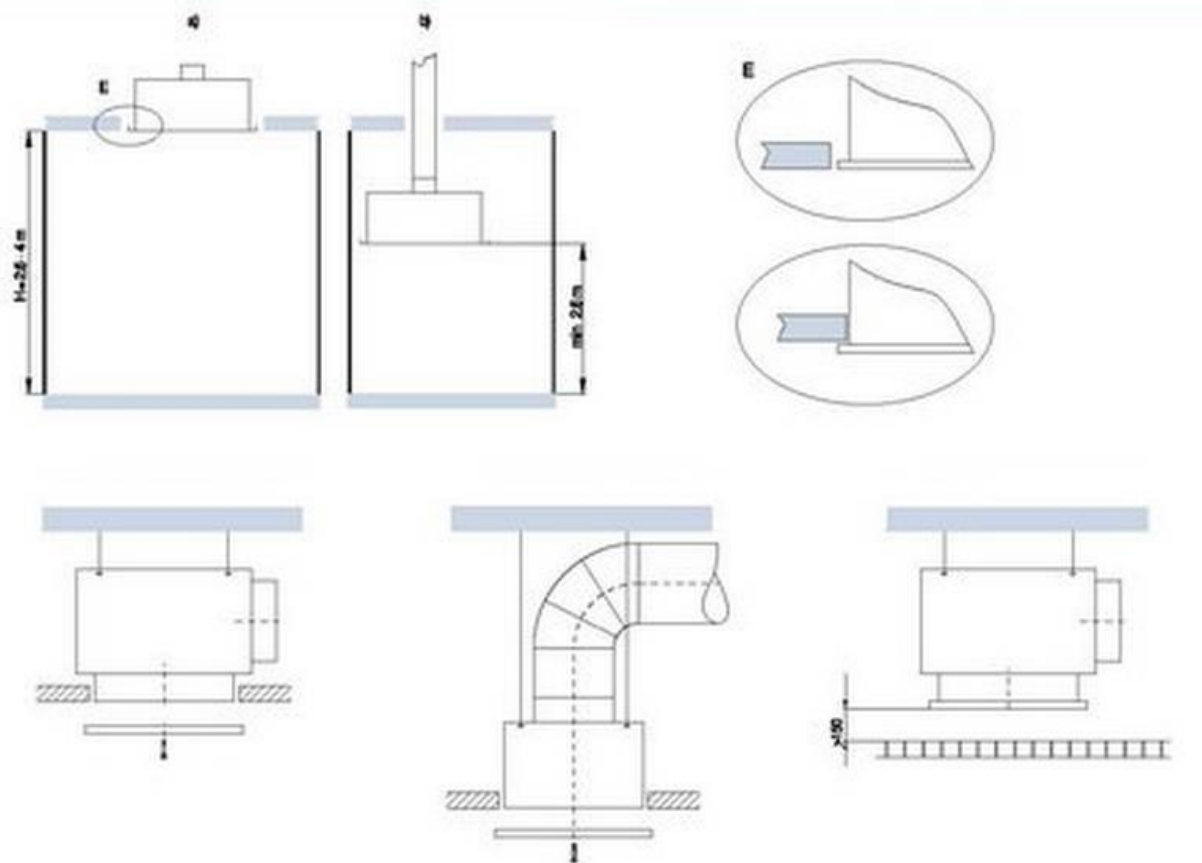
Rev.02  
26-05-2015



## DIMENSIONING & LAY-OUT



## MOUNTING DETAILS



# SWIRL DIFFUSERS

Rev.02  
26-05-2015



## ORDER PARAMETERS:

SWD-024	SQF	OD9010	SM	F 600
SWD-124 SWD-224 SWD-324 SWD-424 SWD-524 SWD-624  CRF: Circular Frame SQF: Rectangular Frame				F: Frame Size  00: No Mounting SM: Screw Mounting BM: Bridge Mounting  00: No coating EX: Eloxal Coating OD----: Oven Drying Coating

