

Swirl diffuser for tile


Twisted 850



Advantages 

Description 

Selection tables 

Selection diagrams 



Swirl diffuser for tile

Twisted 850 Series - steel



Twisted 850 diffuser for supply



Twisted 850 opening core diffuser with filter for exhaust



APPLICATION

- Ceiling air diffuser designed to replace a suspended ceiling tile of 600 x 600 mm or 675 x 675 mm.
- Air supply or exhaust, fixed high induction diffusion by helicoid air pattern swirl diffusers.
- Large airflow range on a single dimension for the diffuser.
- Heating and air conditioning installations with a high rate of air circulation.
- Ideal for the supply of cold air and hot air (air conditioning) with large temperature differences and low ceiling heights.
- Ideal for variable airflow installations (of the ducted fan coil units type).

DESCRIPTION

Design

- High induction air diffusion by the rotation of the air jet inside the plenum.

The diffusion cone, by maintaining a sufficient speed of ejection, ensures a perfect Coanda effect (ceiling effect) and a helicoid pattern air jet. It is this swirl effect (or helicoid pattern air jet) that will induce movement of the ambient air, and thereby mix the air blown in to guarantee a high level of homogeneity of temperatures in the occupied area.

- Aldes patent.

Description

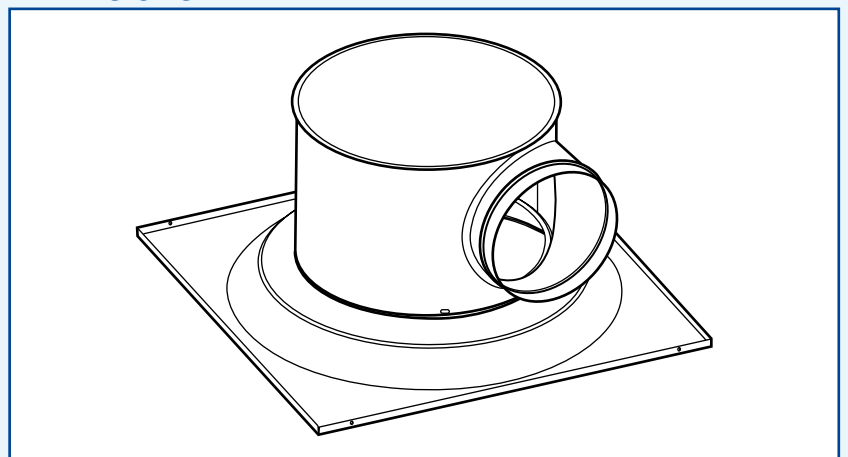
- Diffusion cone and central disk in painted steel.
- Compensation plate in steel adapted to ceiling tiles of 600 x 600 mm or 675 x 675 mm with "Tbar" or "Fine-Line" framework types.
- Air supply model with a fixed central disk serving as a deflector.
- Air exhaust model with a removable central disk and an elliptical filter. Access to the filter by simple and quick opening of the central disk.
- Cylindrical plenum in galvanized steel for direct connection to a circular duct with a 200 mm diameter.
- RAL9010 mat 30 % epoxy paint finish.
- Fixing is made to the concrete tile using lugs located on the plenum.

NB: the weight of the diffuser must not be supported by the suspended ceiling's framework. Use the suspension cables (see the Aldes general catalogue).

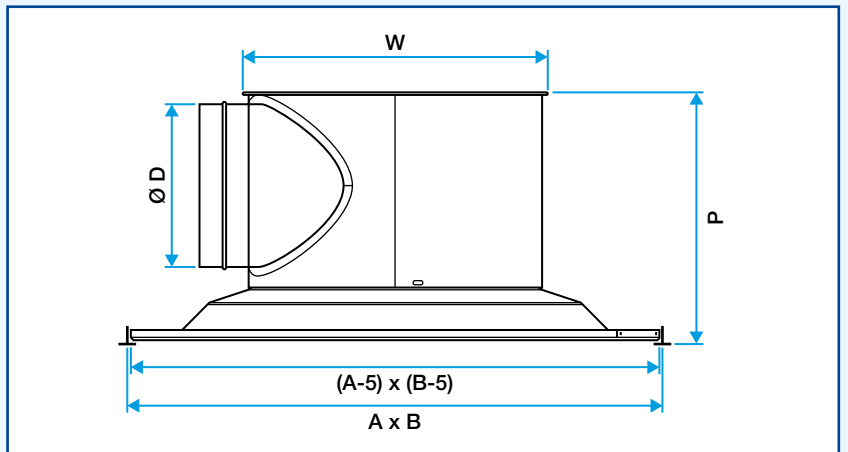
ACCESSORIES

- Elliptical plan filter with G2 efficiency supplied with the exhaust diffuser.
- M1 Non-flammable fire resistance classification.

DIMENSIONS



Twisted 850 diffuser top view



Twisted 850 diffuser

Comfort airflow for $L_w < NR 35$ and sizes

A x B* (mm)	Ø W (mm)	Ø D (mm)	P (mm)	Airflow (m ³ /h)
600 x 600	250	200	298	150 à 600
675 x 675	250	200	298	150 à 600

*Nominal tile sizes

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STANDARD RANGE

Dimensions	Supply diffuser Twisted 850 600 x 600 Code	Exhaust diffuser with filter Twisted 850 W 600 x 600 Code	Replacing filter W850 Code
Ø 200	11051161	11051162	11053949

RANGE WITH OPTIONS

Dimensions	Supply diffuser Twisted 850 600 x 600 Code	Exhaust diffuser with filter Twisted 850 W 600x600 Code	Supply diffuser Twisted 850 675x675 Code	Exhaust diffuser with filter Twisted 850 W 675 x 675 Code
Ø 200	11003361	11003362	11003363	11003364

OPTIONS

Option	Plénium
Tbar or Fine Line ceiling	Acoustic insulation
Paint finish in RAL colours	Thermal + acoustic insulation

Twisted 850 Series

Selection table – supply with ceiling effect

Ak (m ²)	Dimensions	qv (m ³ /h)																							
		150		200		250		300		350		400		450		500		550		600		650			
0,022	Ø 200	19	0,30	20	0,39	21	0,52	23	0,59	24	0,65	26	0,71	30	0,85	32	0,91	34	0,96	35	1,02	38	1,10		
		2,0	2	2,6	3	3,3	4	3,9	6	4,6	8	5,2	11	5,9	13	6,5	17	7,2	20	7,8	24	8,5	28		
		Lw	Lt																			Lw	Lt		
		Vk	Pa																			Vk	Pa		

Lw (NR) values are based without room absorption. Test carried out with a standard plenum.

Vt = 0,37 m/s

Selection table – exhaust without filter

Ak (m ²)	Dimensions	qv (m ³ /h)																							
		150		200		250		300		350		400		450		500		550		600		650			
0,029	Ø 200	19	-	19	-	20	-	21	-	22	-	25	-	28	-	31	-	33	-	35	-	37	-		
		1,4	2	1,9	3	2,4	5	2,9	7	4,6	10	3,8	13	4,3	16	4,8	20	5,3	24	5,7	29	6,2	34		
	- Pa2	-	4	-	7	-	11	-	16	-	21	-	28	-	35	-	44	-	53	-	63	-	74		
		Lw	-																			Lw	-		
		Vk	Pa																			Vk	Pa		

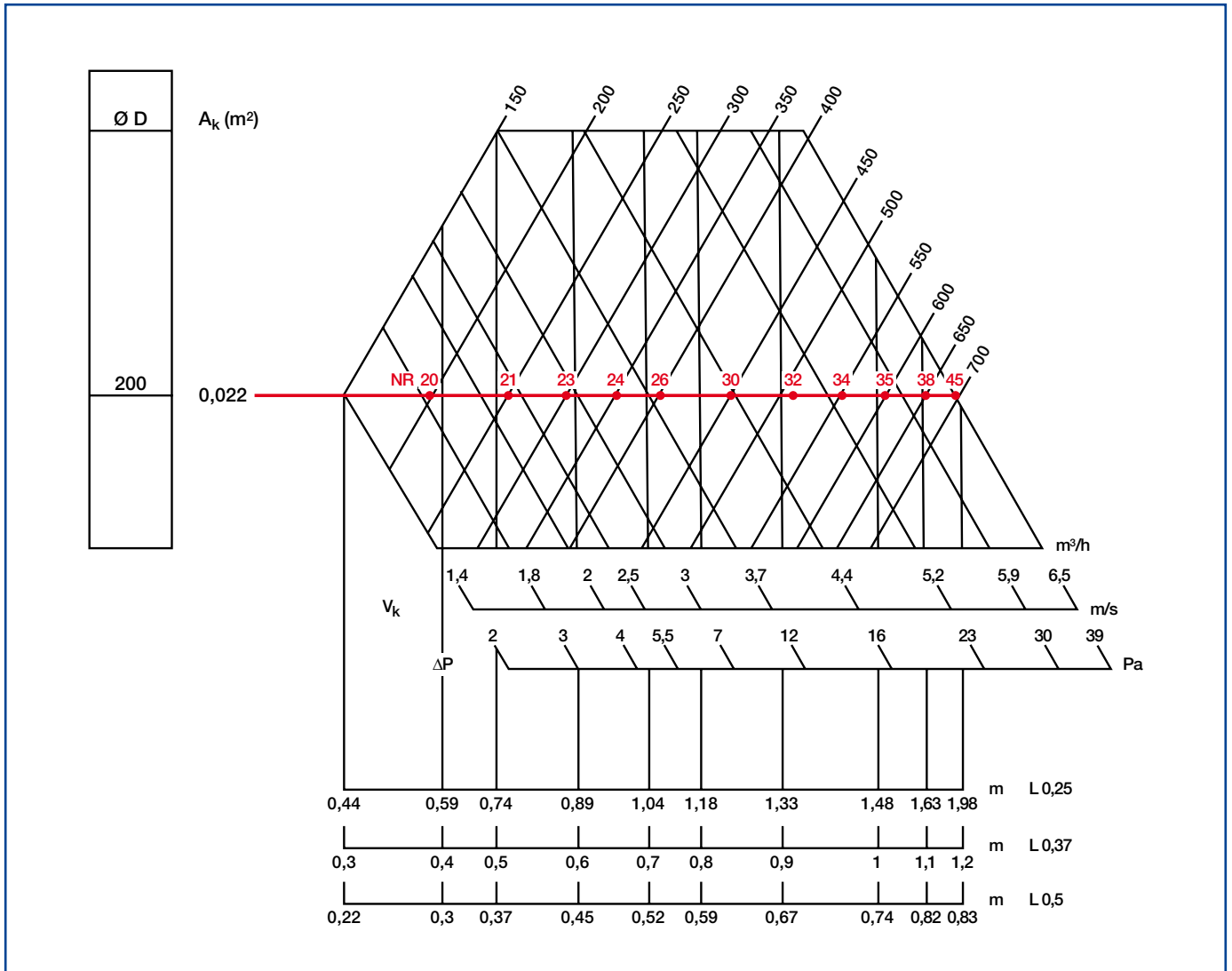
Lw (NR) values are based without room absorption. Test carried out without plenum and with a standard plenum (Pa2).

Selection table – exhaust G2 filter only

Ak (m ²)	Dimensions	qv (m ³ /h)																							
		150		200		250		300		350		400		450		500		550		600		650			
	Ø 200	-	1	-	2	-	3	-	4	-	6	-	8	-	10	-	12	-	14	-	17	-	20		
		-	Pa																				-	Pa	

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Twisted 850 Series - supply with ceiling effect



Lw (NR) values are based without room absorption. Test carried out with a standard plenum.

Corrections for other Vt

Vt (m/s)	0,25	0,37	0,5
Lt	x 1,5	x 1	x 0,75

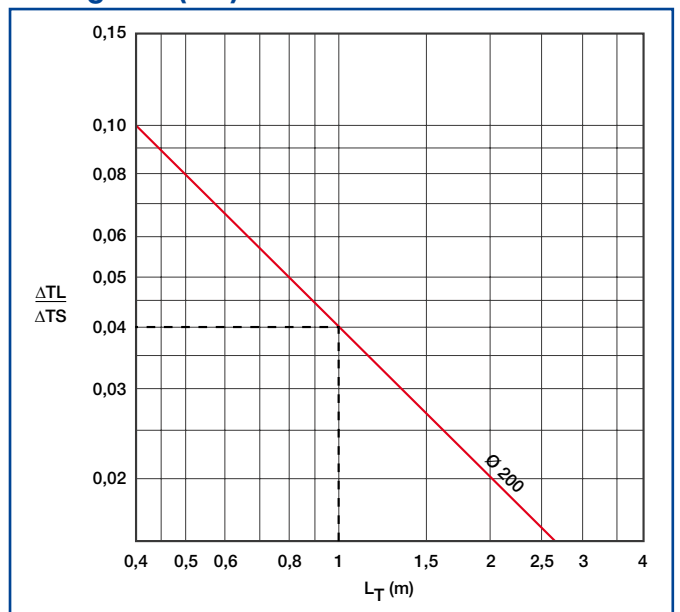
Mixing rate (TM)

Lt (m)	Throw in m
ΔTL (°C)	Difference between the temperature at the end of throw and room temperature (in °C).
ΔTS (°C)	Difference between the air supply temperature and room temperature (in °C).
TM = DTL / ΔTS	Temperature quotient. This value is significant capacity to mixing "fast" air supply to the room temperature.

Example

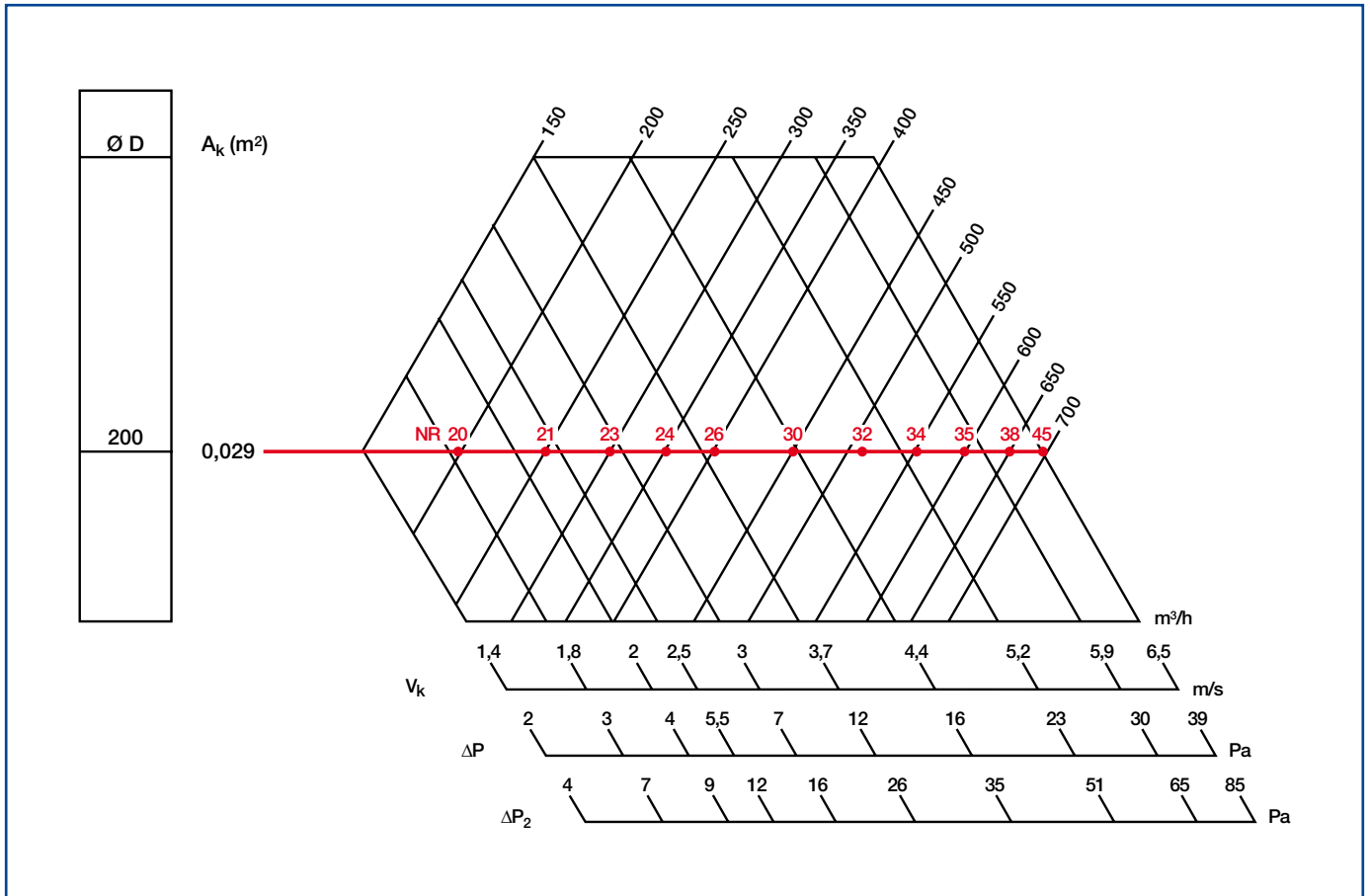
Example with 15°C supply and 25°C in the room	Air jet temperature at 1 m (Lt = 1 m) of the diffuser : ΔTs = 25°C - 15°C = 10°C ΔLt = 10 x 0,04 = 0,4°C Ts à 1m = 25 - 0,4 = 24,6°C
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Mixing rate (TM)



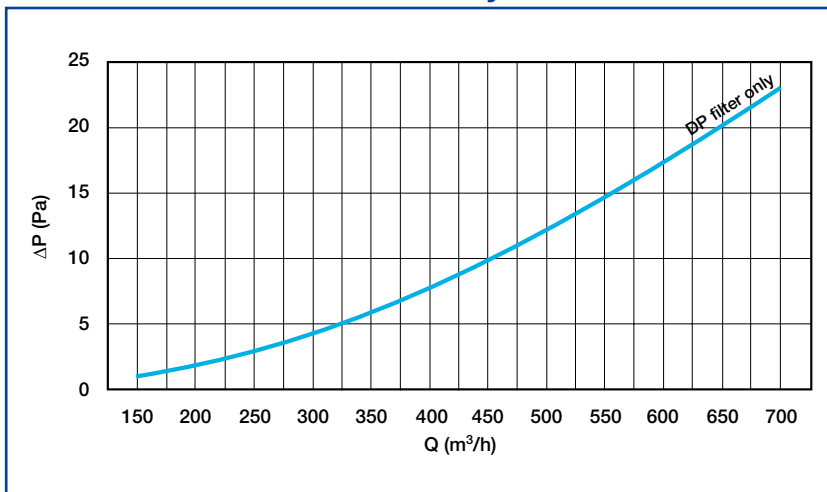
Swirl diffuser for tile

Twisted 850 Series - exhaust without filter



Lw (NR) values are based without room absorption. Test carried out without plenum and with a standard plenum (ΔP₂).

Pressure loss exhaust G2 filter only



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Twisted 850



Principle

- Swirl diffusers dedicated to air conditioning for ambience conditions in commercial premises.
- Air supply and exhaust versions.

Advantages

- A single model for a wide range of airflows.
- Can be installed to replace a suspended ceiling tile 600 x 600 mm or 675 x 675 mm.
- Blends perfectly with the majority of ambience fittings in commercial premises.
- Ideal for variable airflow systems.
- Excellent high level air circulation.
- Accepts large differences in temperature.
- Easy access to the filter on the exhaust model.

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