

# HIGH INDUCTION SWIRL DIFFUSER



## Serie EDE2S

High-induction swirl diffuser on squared panel EDE2S dedicated to ceiling installation. Suitable both for cooling and heating in variable flow systems installations where a high number of air exchange per hour is required.

EDE2S diffusers allow a high induction ratio (mixing capacity) between supplied and ambient air. Panels have laser cut slits where adjustable aerodynamic profile deflectors are mounted.

Installation, regulation and maintenance are easily operated.

## FEATURES:

- Material: galvanized steel panel with deflectors in polymeric material.
- Standard finishing: panel painted RAL 9016 and deflectors RAL 9005.
- Special finishing: panel painted according different RAL colour.
- Mounting: with lateral screws or central screw on plenum box mounting bridge..

The panel is made of steel sheet painted with epoxy resin-based powder, electrostatically laid and oven-dried. This type of painting is resistant to any impacts or abrasions and keeps its aesthetic characteristics unchanged over time. The ABS deflectors are suitable for both heating & air conditioning temperatures; deflectors are adjustable and have possibility of launching horizontally, vertically or with a helical effect.

Installation with plenum box by lateral non-visible screws or by central screw fixed to the plenum box internal mounting bridge.

## USE:

High-induction swirl diffuser suitable for installation in environment with high between 2,5 and 4 m both in cooling and heating conditions.

Deflectors can be adjusted also after diffuser installation to grant possibility of adjusting and optimize air flow direction in the room.

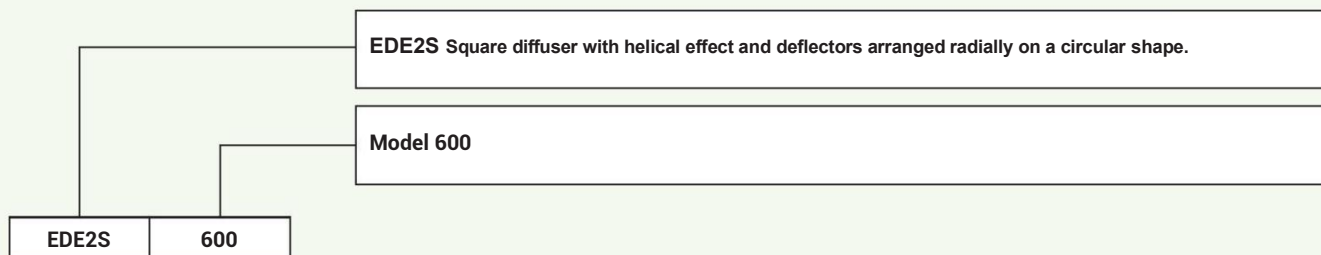
EDE2S diffusers can be supplied without deflectors in case of using only for return air.

The helical flow of the supplied air can be oriented clockwise, anti-clockwise or alternately simply by varying the position of the deflectors. The air flow direction is adjusted manually by acting on the deflectors which have a snap movement designed to ensure that deflectors position is maintained during airflow passage.

## ACCESSORIES

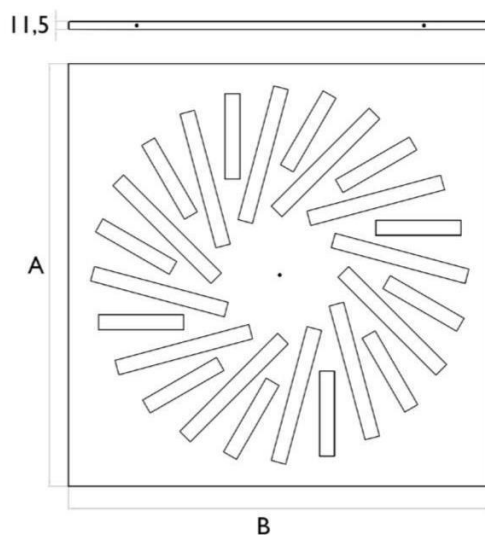
Insulated or non-insulated plenum box, equipped with regulation damper in spigot, equalizer and mounting bridge for installation by central screw and connection for lateral or upper flexible duct.

## CODES:

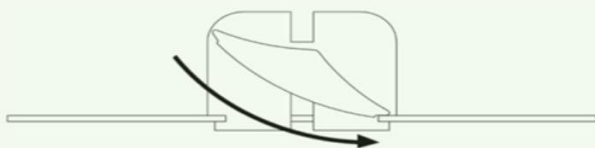


## SQUARE PANEL DIMENSIONS:

Model EDE2S	Dimensions	
	A	B
600	595	595

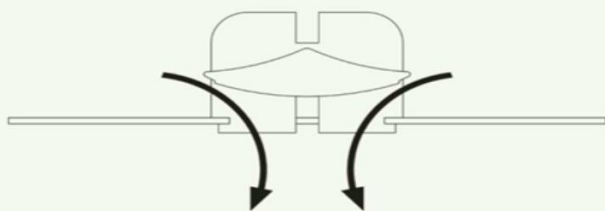


## DEFLECTORS REGULATION:



### - Deflector position by maximal horizontal throw

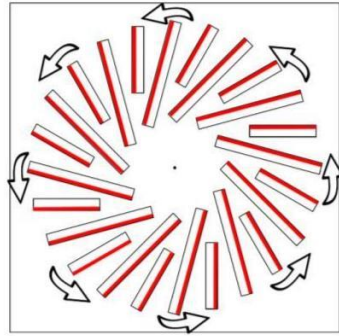
Helical effect is obtained by tilting the deflectors. A clockwise or anti-clockwise vortex will be obtained depending on the tilting direction.



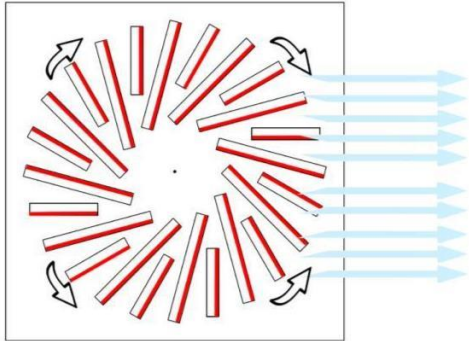
### - Deflector position by maximal vertical throw

Vertical throw is obtained by keeping the deflectors straight; this solution is recommended in heating function to reach maximum airflow penetration into the room.

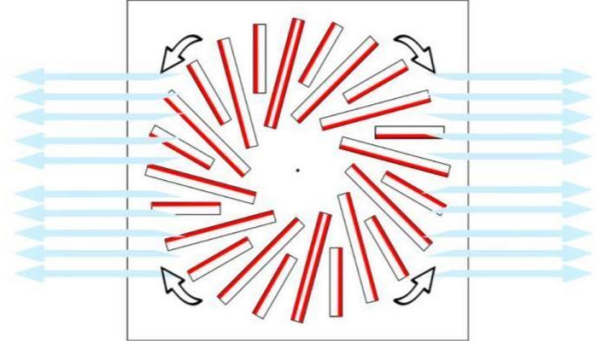
## AIR THROW WITH DEFLECTORS TILTED ON THE RED SIZE:



- Helicoidal Throw



- Single Direction Throw



- Two Direction Throw

## OPERATING DATA:

Model EDE2S	Effective Ak m <sup>2</sup>							Nr. deflectors
600	0,0431	Q	310	465	620	775	930	24
		Dp	3	7	14	24	38	
		L	1,8	2,6	3,5	4,4	5,3	
		dB(A)	20	25	30	35	40	

## LEGEND:

- Ak [m<sup>2</sup>] Effective Section
- Vk [m/s] Effective Air Speed
- Q [m<sup>3</sup>/h]: Air Volume
- Dp [Pa] Total Air Drop
- L [m] Throw: Max. airflow distance with terminal air speed 0.25 m/s
- dB(A) Weighted sound power level.

## CORRECTIVE FACTORS

Corrective multiplication factor for non-isothermal horizontal launch.

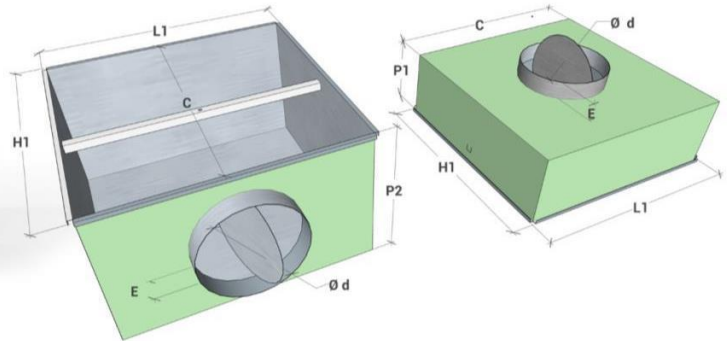
ΔT[°C]	K
-10	0,85
0	1
10	1,2

Corrective multiplication factor for non-isothermal vertical launch.

ΔT[°C]	K
-10	0,40
0	1
10	1,45

K: table shows the variation of constant K (constant to be multiplied by the non-isothermal horizontal launch) related to exit temperature variation +10 °C, 0 °C, -10 °C.

## PLENUM BOX EDE2S:



## PLENUM BOX CONSTRUCTION:

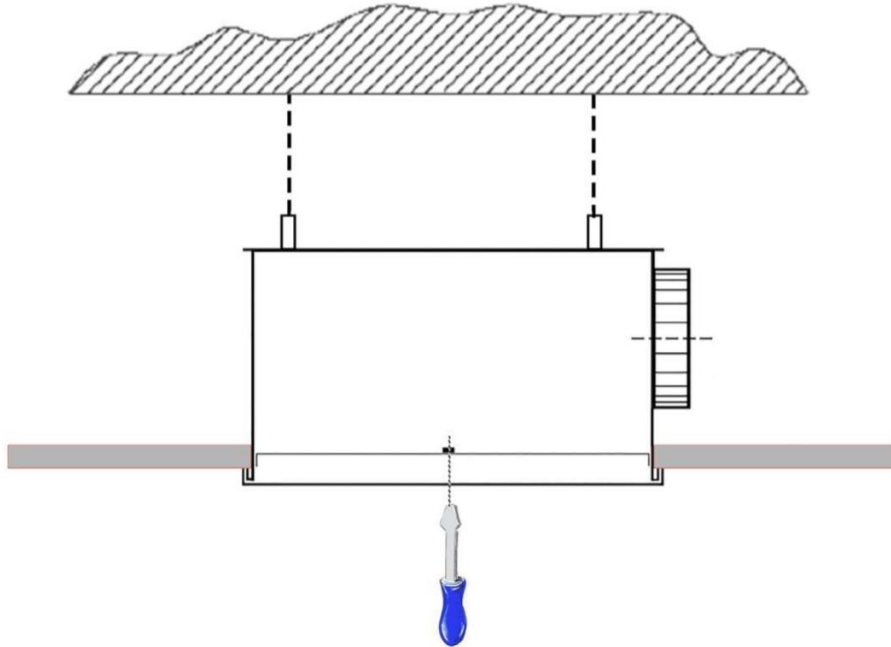
- Material: Galvanised Steel.

- Available Models:
1. Galvanised plenum box with damper in spigot and mounting bridge;
  2. Galvanised plenum box with damper in spigot and mounting bridge and equalizer;
  3. Galvanised insulated plenum box with damper in spigot and mounting bridge;
  4. Galvanised insulated plenum box with damper in spigot and mounting bridge and equalizer.

Plenum box model	External Dimensions L1 x H1	Ø d	P1	P2	C	E
600	592x592	248	200	350	560	50

## MOUNTING WITH PLENUM BOX ON A PLASTERBOARD FALSE CEILING

- Hang the plenum box from the ceiling using special brackets or chains fixed to the plenum box whose external edge can be drilled;
- Insert the flexible duct onto the connection sleeve, securing it with the appropriate hose clamp;
- Mount the diffuser either using the central screw, screwing it onto the fixing bridge of the plenum or n. 4 self-drilling side screws.



## MOUNTING ON THE SQUARE FALSE CEILING

- Hang the plenum box from the ceiling using special brackets or chains fixed to the plenum whose external edge can be drilled;
- Insert the flexible conduit onto the connection sleeve, securing it with the appropriate hose clamp;
- Mount the diffuser either using the central screw by screwing it onto the plenum fixing bridge or through the n. 4 self-drilling side screws;
- Place the diffuser already fixed on the plenum box on the appropriate square space of the false ceiling.

