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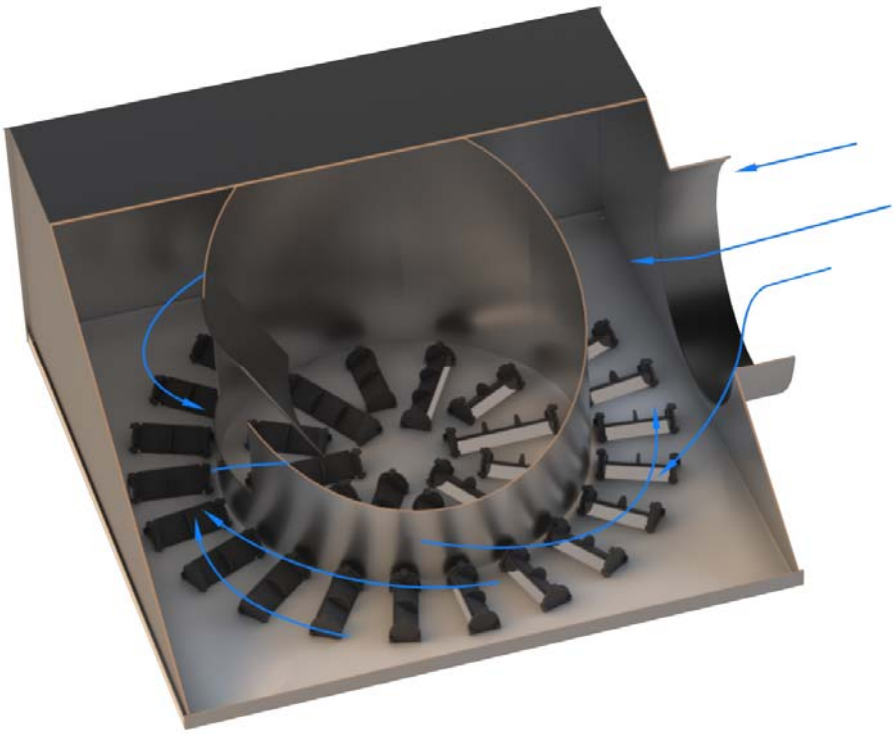

AXO-TWIN
AXO swirl diffuser with VAV plenum box

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AXO-TWIN is a plenum diffuser assembly specially designed to obtain greater comfort and an improvement in energy efficiency in VAV installations.

Thanks to the innovative design of the double chamber plenum, the AXO-TWIN diffuser adjusts the free air supply area according to the variations caused by the Variable Air Volume (VAV) dampers.

At low airflow rates, only the outdoor area works and at high airflow rates, the entire surface of the diffuser works, maintaining a high air speed with a high induction index, obtaining good air diffusion in the areas to be air-conditioned.

AXO-TWIN manages to work with a variation of 75% between the maximum and minimum airflow, maintaining the stability of the air vein throughout the range, ensuring the Coanda effect at low airflow rates in cooling and avoiding stratification in heating.

AXO-TWIN can be used at heights of 2.6 to 4 meters and with a temperature differential of up to 15º C.

•Models:

•AXO-TWIN

•AXO-TWIN-KLIN

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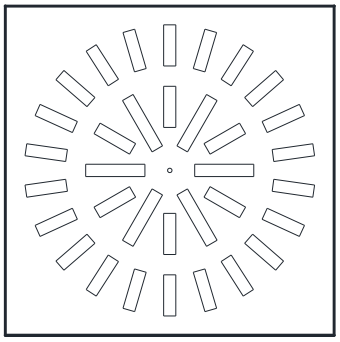
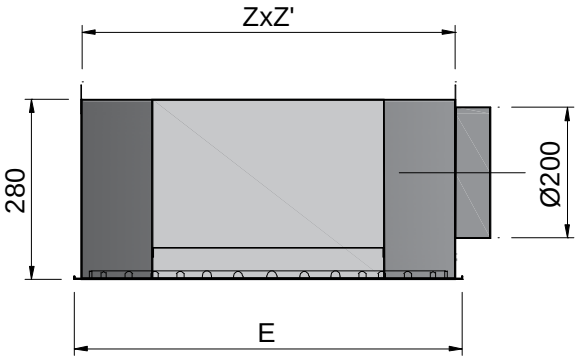
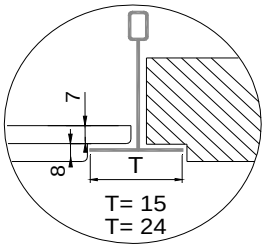
AXO-TWIN





	E	Z x Z'
AXO-TWIN 600	595	566 x 558
AXO-TWIN 610	605	576 x 568
AXO-TWIN 625	620	591 x 583
AXO-TWIN 675	670	641 x 633



AXO-TWIN CLASSIFICATION

AXO-TWIN Adjustable vanes swirl diffuser and double chamber plenum box assembly. Plenum with lateral circular connection.

…/T15/ Panel with angled borders to replace an angled ceiling tile profile 15 mm.
…/T24/ Panel with angled borders to replace an angled ceiling tile profile 24 mm.
…/AIS/ Thermally insulated plenum box with foam:
Density 30 kg / m3 ISO 845.
Thermal conductivity 20º C_0,040 W / mºK ISO 3386/1.
Classified reaction to fire B-s2, d0 EN 13501-1.

MATERIAL

Diffusers made of galvanized steel and vanes in black ABS plastic. The diffuser is provided with a gasket on the back, to get a seal airtight around the perimeter of contact with the plenum. Plenum made of galvanized steel and with polymeric membrane.

FIXING

1) Diffuser attached to the plenum by means of a central screw. Plenum box with brackets for ceiling suspension.

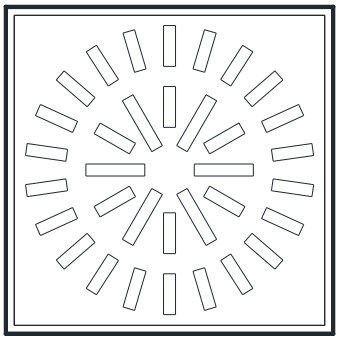
FINISHES

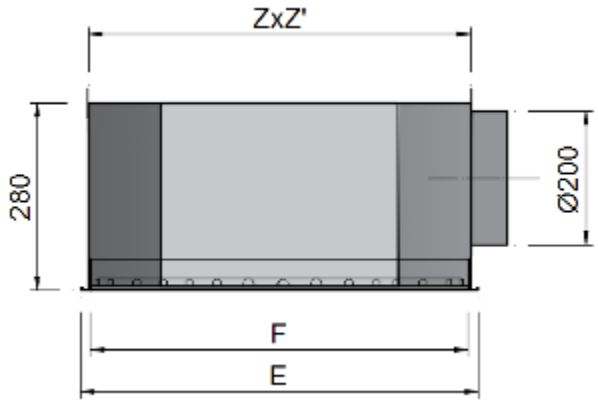
M9016 Painted in white similar to RAL 9016.
R9010 Painted in white RAL 9010.
RAL... Painted in other RAL colors.
…/AB/ ABS plastic vanes in white.

SPECIFICATION TEXT

Supply and mounting of square swirl diffuser with individually adjustable radial vanes series, with VAV plenum box series **AXO-TWIN M9016 dim. 600** made from galvanized steel , polymeric membrane and black ABS plastic vanes, paint in white **M9016.**
Manufacturer **MADEL**.

AXO-TWIN-KLIN





	E	F	Z x Z'
AXO-TWIN/KLIN 600	595	565	592 x 572
AXO-TWIN/KLIN 610	605	575	602 x 582
AXO-TWIN/KLIN 625	620	590	617 x 597
AXO-TWIN/KLIN 675	670	640	667 x 647

AXO-TWIN-KLIN CLASSIFICATION

AXO-TWIN-KLIN Hinged removable core diffuser for the easy access to the installations above the ceiling with no need of tools, by means of PUSH fasteners and double chamber plenum box assembly.
By slightly pressing on the invisible latch, the core opens, remaining hinged on one side. If necessary the core can be easily removed for maintenance of HVAC installations.

.../AIS/ Thermally insulated plenum box with foam:
Density 30 kg / m3 ISO 845.
Thermal conductivity 20º C_0,040 W / mºK ISO 3386/1.
Classified reaction to fire B-s2, d0 EN 13501-1.

MATERIAL

Diffusers made of galvanized steel and vanes in black ABS plastic. Plenum made of galvanized steel and with polymeric membrane.

FIXING

1) KLIN diffuser frame attached to plenum by rivets. Plenum box with suspension brackets the ceiling.

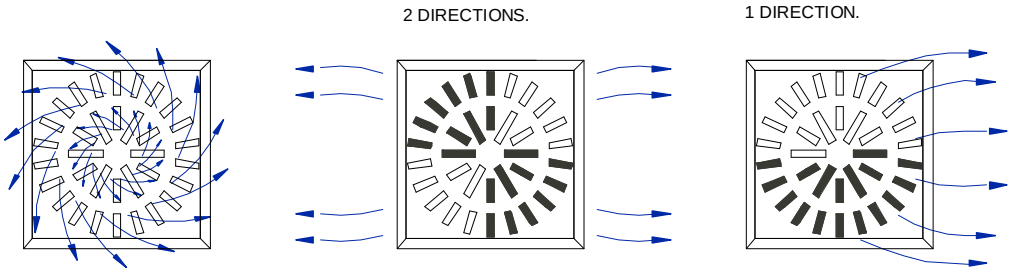
FINISHES

M9016 Painted in white similar to RAL 9016.
R9010 Painted in white RAL 9010.
RAL... Painted in other RAL colors.
.../AB/ ABS plastic vanes in white.

SPECIFICATION TEXT

Supply and mounting of square swirl diffuser with individually adjustable radial vanes series, with hinged removable core and VAV plenum box series **AXO-TWIN M9016 dim. 600** made from galvanized steel , polymeric membrane and black ABS plastic vanes, paint in white **M9016.** Manufacturer **MADEL**.

AXO-TWIN

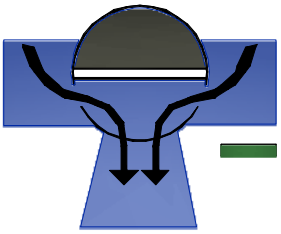


HORIZONTAL SUPPLY.

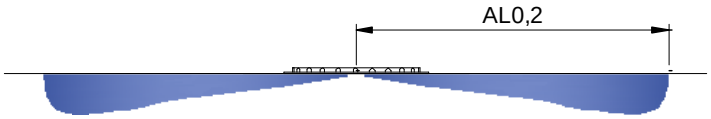
POSITION 1.

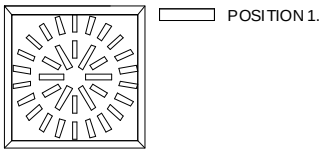
VERTICAL SUPPLY.

POSITION 2.

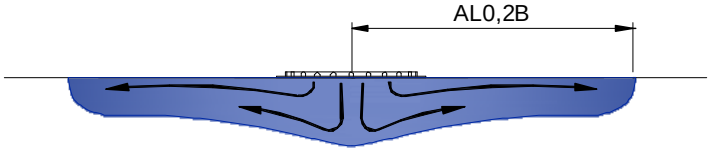


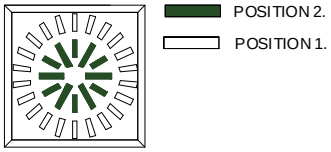
TYPE A. 100% POSITION 1.





TYPE B. 50% POSITION 1 AND 50% POSITION 2.





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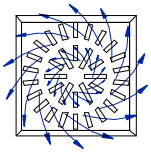
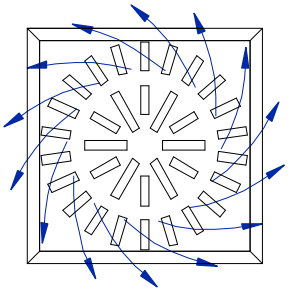
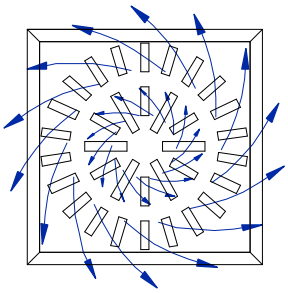
AXO-TWIN



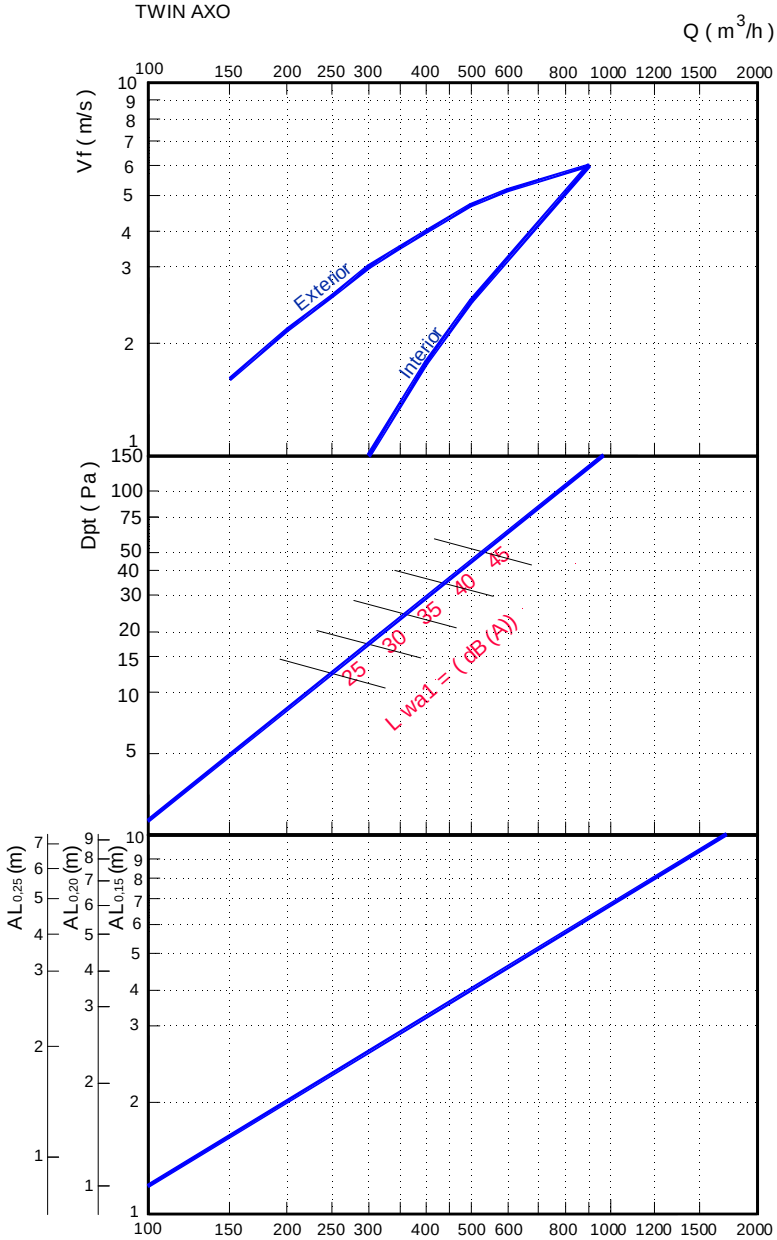
Qmin (Ext)

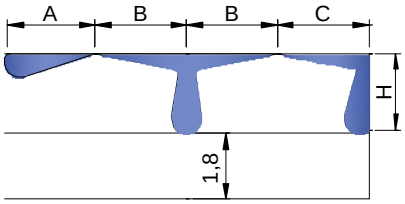


Qmax (Ext + Int)



FREE VELOCITY, PRESSURE LOSS AND SOUND POWER LEVEL,
THROW WITH CEILING EFFECT.
TWIN AXO





$AL_{0.2}$ = A
$AL_{0.2}$ = B+H
$AL_{0.2}$ = C+H

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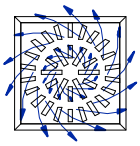
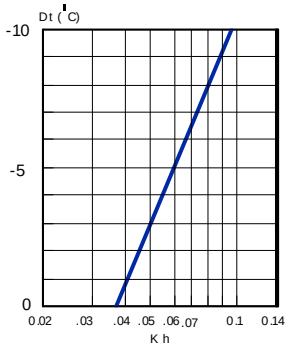
AXO-TWIN

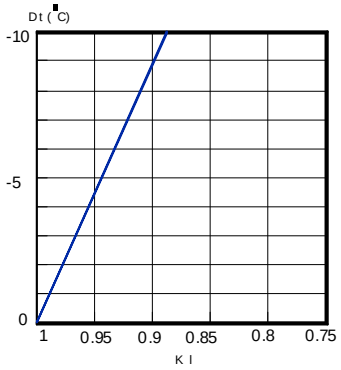


CORRECTION FACTOR FOR VERTICAL DIFFUSION (bV) FOR DT (-).

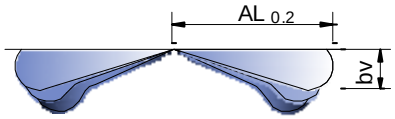


Kh = Correction factor for the vertical diffusion.

CORRECTON FACTOR FOR THROW (L0.2) DT (-).



Kl = Correction factor for the throw.

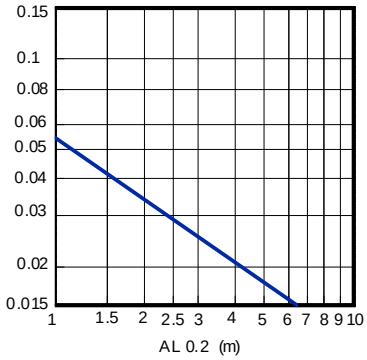


$bv = Kh \times AL_{0.2}$

$AL'_{0.2} (Dt < 0) = Kl \times AL_{0.2}$

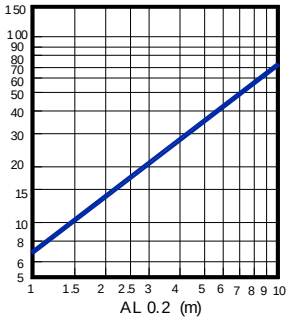
TEMPERATURE RATIO.

$$\frac{Dtl}{Dtz} = \frac{t\ room - tx}{t\ room - t\ supply}$$

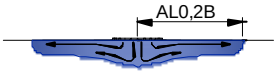


INDUCTION RATIO.

$$i = \frac{Qr}{Q_0} = \frac{Q\ total\ at\ x}{Q\ of\ supply.}$$



TYPE B. 50% POSITION 1 AND 50% POSITION 2.



$$i = \frac{Qr}{Q_0} = \frac{Q\ total\ at\ x}{Q\ of\ supply.}$$

CORRECTION FACTOR FOR THROW TYPE B.

DIFUSOR	KB
TWIN-AXO	0,75

AL0,2B = KB * AL0,2

EXAMPLE:

TWIN AXO
Q = 450 m3/h
AL0,2 = 3 m
AL0,2B = 0,74 * 3 = 2,22 m
i = 24

INDUCTION RATIO. TYPE B.