



## UNDER-CHAIR DIFFUSERS

KS  
SERIES

### OVERVIEW AND OPERATION

#### OVERVIEW

The KS under-chair diffuser was developed to meet the need for diffusing air in places such as cinemas, theatres, and auditoriums. These locations are subject to very strict specifications that make air-conditioning and ventilation of these spaces problematic, from both a strictly technical and an architectural point of view.

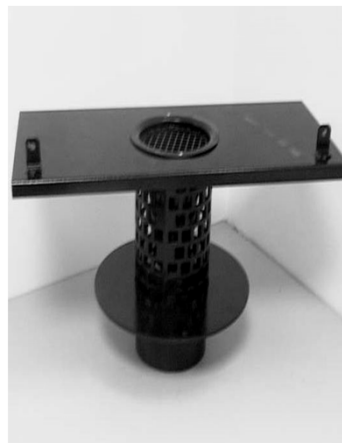
Using KS diffusers fully solves this type of problem simply and efficiently. In practice, the KS series diffusers use air coming from an air-conditioning system, diffusing it at the base of the chair, generating a microclimate in the immediate vicinity.

#### Advantages offered by KS diffusers

- Low plant cost
- Maximum comfort around the people
- Maximum energy savings, as the entire room does not have to be air-conditioned due to the micro-climate created
- Minimum noise emissions
- Low residual velocity
- Limited temperature gradient

#### Models available:

- KS-A : Model complete with chair support and a Venturi cone, fan and upper equaliser grid.
- S-B : Model complete with Venturi cone, fan and equaliser grid at the top.

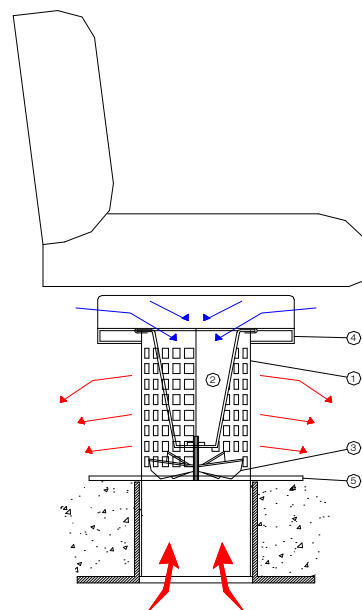


#### OPERATION

The primary air is introduced at the base of the cylinder (1), via a diffuser with adjustable fins (3). These cause the air to change direction and force it towards the holes in the sides of the cylinder.

This airflow creates a low pressure area in the centre of the diffuser, where there is an inverted cone (2) that draws in ambient air and mixes it with the primary air.

This creates a mixed flow that is introduced into the room via the holes in the sides of the cylinder (1), thereby creating a low temperature gradient.



#### UNSUITABLE ENVIRONMENTS

The products in painted carbon steel are not suitable for installation in environments with high humidity and in environments with a potentially explosive atmosphere or containing powders or vapors of corrosive substances.



## UNDER-CHAIR DIFFUSERS

KS  
SERIES

### TECHNICAL CHARACTERISTICS

#### CONSTRUCTION

Perforated conical cylinder, with support for a chair, diffuser with fins adjustable in height and collar for fixing to the floor, all in RAL 9005 epoxy powder coated steel.

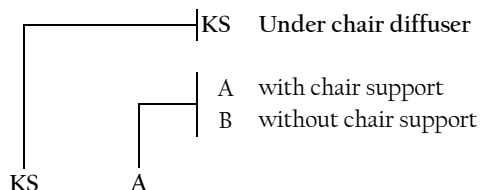
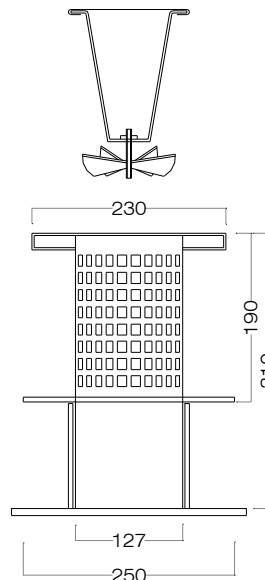
#### INSTALLATION

The KS series of diffusers can be installed with any type of chair. It can be used to support the chair, or more simply positioned on the floor under the chair, thereby not limiting the designer's choice of chair.

#### EXPERIMENTAL FINDINGS

The induced airflow conveys the air coming into the opening immediately below the chair (at the intake into the Venturi cone). The quantity of induced air drawn in through the perforated cylinder cannot be measured.

The temperature of the primary air is 16,5 °C while that of the ambient air is 22,8 °C.



Primary air flow rate [m <sup>3</sup> /h]	Induced air flow rate [m <sup>3</sup> /h]	Pressure drop [Pa]
35	9	8
45	12	10
55	14	18

Primary air flow rate [m <sup>3</sup> /h]	Air velocity at 25 cm [m/s]	Air temperature at 25 cm [°C]	Air velocity at 1 m [m/s]	Air temperature at 1 m [°C]
35	0,25	20,4	0,09	22,4
45	0,28	20,5	0,08	22,5
55	0,3	20,5	0,08	22,4

Frequency [Hz]	63	125	250	500	1000	2000	4000	8000
Background noise L <sub>w</sub>	36	29	26	11	6	7	10	12
L <sub>w</sub> [dB] a 35 [m <sup>3</sup> /h]	*	*	*	*	*	*	*	*
L <sub>w</sub> [dB] a 45 [m <sup>3</sup> /h]	*	*	32	21	*	*	*	*
L <sub>w</sub> [dB] a 55 [m <sup>3</sup> /h]	*	32	33	33	24	13	*	*

\* The acoustic level does not exceed the background noise level.



## UNDER-CHAIR DIFFUSERS

KS  
SERIES

### CODES

Description	Code
Under-chair diffuser - model complete with chair support, Venturi cone, diffuser with height adjustment, upper equaliser grid and floor fixing plate. Painted RAL 9005 black.	KS - A
Under-chair diffuser - model complete with Venturi cone, diffuser with height adjustment, upper equaliser grid, and floor fixing plate. Painted RAL 9005 black.	KS - B

