OVERVIEW:
KQ high induction diffusers with variable geometry are a new type of air diffusion equipment. Their unique deflector adjustment system enables them to be used both for cooling and heating.

The versatility of this range of components makes them ideal for use in all civil applications that are prone to considerable variations in thermal load and where the throws should be consistent.

The variety of dimensions enables the diffusers to be used with a wide range of air flows, throws, and temperature difference between primary air and ambient air.

Within this parameters the KQ diffusers ensure the correct air speed in the occupied area, thus maintaining a steady temperature and preventing any irregular or unwanted air currents.

Any problems installing the diffusers in a false ceiling are solved by the models fitted with a 595x595 panel.

CHARACTERISTICS AND OPERATION:
KQ series ceiling diffusers are equipped with a set of pivoting fins, which enable high induction. In this way, both the delivery speed and temperature gradient are quickly reduced to the optimum values for the occupied area.

The deflector fins include a variable horizontal part to subdivide the main air flow into radial jets, forced to swirl around the main axis. This system creates a range of individual jets with a swirl motion, which fosters strong turbulence; in turn, this turbulence moves high quantities of ambient air. This procedure obtains high induction and mixes primary air and ambient air thoroughly.

The deflectors can be set in different positions in order to vary the direction of the air thus obtaining combined or single air flows, both in a vertical direction (deflectors horizontal) and a horizontal direction (positioned at 45°). However, if all the deflectors are set at 45° in the same direction, the air flow is given a centrifugal swirl motion. Hence, this aeraulic equipment is suitable for all applications which require high induction for heating and cooling.

The deflector angle of each model can be changed in one mode in accordance with the model chosen: fin by fin during the installation phase.

APPLICATIONS:
The diffuser is designed for civil applications with any type of mixing ventilation plants and should be installed at heights between 3.0 and 4.5 meters. The high induction diffuser with variable geometry, which can be changed during operation, can set flows between 50 and 1700 m³/h with variable temperature gradients ranging from +15 °C and –10 °C.

SPECIAL VERSIONS
The aesthetic requirements in buildings is in constant evolution and require constantly new solutions. As a result of this, the special AP-KQ1 diffuser is offered.

The AP-KQ diffuser offers the architectural planning a solution of a clean and essential view obtained by the smooth metal deflectors inside the diffusers.

The planning of the new type of deflectors has been carefully made to obtain performances identical to the traditional KQ1 model.

The AP-KQ1 model is made with a series of slots in relation to the sizes 400-500-600 each obtained on a carbon steel panel 595x595mm painted white RAL9010. This solution allows the for the simplest installation in modular counter ceilings even with diffuser with small air flows.

Just like all other KQ models on 595x595 panel, the AP-KQ1 special model can be paired with the PPS plenum in expanded polyester as alternative to traditional steel sheet plenums.

MATERIAL:
Carbon steel panel painted white RAL9010
Black polypropylene deflectors (KQ series) or black painted steel deflectors. (AP-KQ1).
Possibility of producing AISI 304 or AISI 316 stainless steel versions with gloss or satin finish.
FIELD OF USE AND ADJUSTMENT:

The high induction diffusers with variable geometry model KQ and AP-KQ, are ideal for installation with counter ceilings in spaces with a ceiling height between 2.7 and 4.5 metres - for example in offices, shops, meeting rooms, corridors, doctor surgeries and similar spaces. They are ideal both for supply and extraction. The two possible deflector positions allows to optimize the diffuser for the intended use.

By turning all the deflectors in the same direction the flow of air exits along the ceiling with a spiral motion. This regulation is indicated from heating and cooling. By placing all deflectors horizontally, the air flow is pushed towards the floor. This regulation is indicated only for heating or extraction, it is best to avoid intermediate positions.

USE

The KQ series diffusers are normally fixed to the plenum using screws in the middle of the diffuser. They can also be fixed laterally with screws. for this reason, the diffusers have a central screw hole and are supplied with a screw cover to be used in case the installation required central screw fixing and a plastic hole cover to use as cover when the fixing is done laterally.
VALUES FOR THE EFFECTIVE AIR PASSAGE SURFACE $A_k$ FOR THE VARIOUS MODELS
AVAILABLE FOR KW SERIES DIFFUSERS, MEASURES IN $m^2$

<table>
<thead>
<tr>
<th>NOMINAL DIMENSIONS</th>
<th>Setting</th>
<th>$KQ_1$</th>
<th>$KQ_2$</th>
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HIGH INDUCTION DIFFUSERS WITH VARIABLE GEOMETRY

Ak in m²

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KQ  High induction diffuser

- 1 star-shape geometry
- 2 spiral-shape geometry
- 3 doubled spiral-shape geometry
- 40 with nozzles - circular distribution
- 42 with nozzles - linear distribution
- -- standard
- T with 595x595 panel
- R circular

U05 Diffusion-vers.14.00.xls
CONSTRUCTION DIMENSIONS:

Figure no. 3
Standard square and circular construction with vertical or horizontal throw

KQ2 300x300  400x400  500x500
KQ2 R  Ø 300  Ø 400  Ø 500

Figure no. 4
Standard square and circular construction with vertical or horizontal throw

KQ2 600x600  625x625
KQ2 R  Ø 600  Ø 625

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<th>Nominal diameter</th>
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HIGH INDUCTION DIFFUSERS WITH VARIABLE GEOMETRY KQ - 2 SERIES PERFORMANCE KQ2-300

A fluid dynamic analysis carried out at ENERGO ENERGY EFFICIENCY ENGINEERING www.energo-group.com

Data obtained from CFD mathematical model in virtual test chamber operating in isothermal conditions in accordance with the international standard:

- A(m) distance between the diffusers
- Vo (m/s) speed at the limit of the occupied zone
- L (m) horizontal distance in metres from the centre of the diffuser
- VL (m/s) maximum speed in the air stream

For Hr different from 3m:

\[ Vo(h) = Vo \times K_f \]
Data measured in reverberation room in accordance with international standards:
ISO 3741 1999: Acoustic - determination of sound power levels of noise sources using sound pressure - Precision methods for reverberation rooms
ISO 5135 1997: Acoustic - determination of sound power levels of noise from air-terminal devices; air terminal units; dampers and valves by measurement in a reverberation room.

The data presented does not consider the attenuation given by the area of installation. This attenuation is normally between 6 and 10 dBA and is determined by the room size, the shape of the environment and the interior features.

Data obtained by CFD mathematical model in virtual test chamber operating in accordance with the international standard:

Data obtained from CFD mathematical model in virtual test chamber operating in heating conditions with ΔT = 10 °C in accordance with the international standard:

H1 (m) vertical distance in metres from the centre of the diffuser at which there is the inversion of the direction of air.
HIGH INDUCTION DIFFUSERS WITH VARIABLE GEOMETRY

PERFORMANCE KQ2-400

Data obtained from CFD mathematical model in virtual test chamber operating in isothermal conditions in accordance with the international standard: ISO 5219 1984: Air distribution and air diffusion - Laboratory. Aerodynamic testing and rating of air terminal devices.

A(m) distance between the diffusers
Vo (m/s) speed at the limit of the occupied zone
L (m) horizontal distance in metres from the centre of the diffuser
VL (m/s) maximum speed in the air stream

For Hr different from 3m:
Vo (h) = Vo x Kf

fluid dynamic analysis carried out at
HIGH INDUCTION DIFFUSERS WITH VARIABLE GEOMETRY  
PERFORMANCE KQ2-400

Data measured in reverberation room in accordance with international standards:
ISO 3741 1999: Acoustic - determination of sound power levels of noise sources using sound pressure - Precision methods for reverberation rooms
ISO 5135 1997: Acoustic - determination of sound power levels of noise from air-terminal devices; air terminal units; dampers and valves by measurement in a reverberation room.

The data presented does not consider the attenuation given by the area of installation. This attenuation is normally between 6 and 10 dBA and is determined by the room size, the shape of the environment and the interior features.

Data obtained by CFD mathematical model in virtual test chamber operating in accordance with the international standard:

Data obtained from CFD mathematical model in virtual test chamber operating in heating conditions with $\Delta T = 10 \, ^\circ C$ in accordance with the international standard:

H1 (m) vertical distance in metres from the centre of the diffuser at which there is the inversion of the direction of air.
HIGH INDUCTION DIFFUSERS WITH VARIABLE GEOMETRY
PERFORMANCE KQ2-500

Data obtained from CFD mathematical model in virtual test chamber operating in isothermal conditions in accordance with the international standard:

A(m) distance between the diffusers
Vo (m/s) speed at the limit of the occupied zone
L (m) horizontal distance in metres from the centre of the diffuser
VL (m/s) maximum speed in the air stream

For Hr different from 3m:
Vo (h) = Vo x Kf

fluid dynamic analysis carried out at

ENERGO
ENERGY EFFICIENCY ENGINEERING
www.energogroup.com
Data measured in reverberation room in accordance with international standards:
ISO 3741 1999: Acoustic - determination of sound power levels of noise sources using sound pressure - Precision methods for reverberation rooms
ISO 5135 1997: Acoustic - determination of sound power levels of noise from air-terminal devices; air terminal units; dampers and valves by measurement in a reverberation room.

The data presented does not consider the attenuation given by the area of installation. This attenuation is normally between 6 and 10 dBA and is determined by the room size, the shape of the environment and the interior features.

Data obtained by CFD mathematical model in virtual test chamber operating in accordance with the international standard:

Data obtained from CFD mathematical model in virtual test chamber operating in heating conditions with \( \Delta T = 10 \, ^\circ \text{C} \) in accordance with the international standard:

\( H_1 \) (m) vertical distance in metres from the centre of the diffuser at which there is the inversion of the direction of air
HIGH INDUCTION DIFFUSERS WITH VARIABLE GEOMETRY

PERFORMANCE KQ2-600/625

KQ - 2

SERIES

Data obtained from CFD mathematical model in virtual test chamber operating in isothermal conditions in accordance with the international standard:


A(m) distance between the diffusers
Vo (m/s) speed at the limit of the occupied zone
L (m) horizontal distance in metres from the centre of the diffuser
VL (m/s) maximum speed in the air stream

For Hr different from 3m:
Vo (h) = Vo x Kf
Data measured in reverberation room in accordance with international standards:
ISO 3741 1999: Acoustic - determination of sound power levels of noise sources using sound pressure - Precision methods for reverberation rooms
ISO 5135 1997: Acoustic - determination of sound power levels of noise from air-terminal devices; air terminal units; dampers and valves by measurement in a reverberation room.

The data presented does not consider the attenuation given by the area of installation. This attenuation is normally between 6 and 10 dBA and is determined by the room size, the shape of the environment and the interior features.

Data obtained by CFD mathematical model in virtual test chamber operating in accordance with the international standard:

Data obtained from CFD mathematical model in virtual test chamber operating in heating conditions with $\Delta T = 10 \, ^\circ C$ in accordance with the international standard:

$H_1$ (m) vertical distance in metres from the centre of the diffuser at which there is the inversion of the direction of air.
HIGH INDUCTION DIFFUSERS WITH VARIABLE GEOMETRY

PLENUM IN SEEL SHEET

PLENUM PP80
Made of galvanized sheet steel.
Lateral connection.
Mounting bridge for mounting diffuser with central screw.
Complete with hooks for ceiling suspension.

optionals:
- polyethylene insulation;
- equalizer steel mesh;
- control damper into the fitting.

PLENUM PP81
Made of galvanized sheet steel.
Rear connection.
Mounting bridge for mounting diffuser with central screw.
Complete with hooks for ceiling suspension.

optionals:
- polyethylene insulation;
- equalizer steel mesh;
- control damper into the fitting.

Nominal dimensions of the diffuser A x B | Real dimensions of the panel | L x L | S x S | H | N' connections | S | Connection and damper material
---|---|---|---|---|---|---|---
300 x 300 | 296 | 260 | 290 | 240 | 1 | 123 | ABS (*)
400 x 400 | 396 | 360 | 360 | 290 | 1 | 199 | ABS (*)
500 x 500 | 496 | 460 | 490 | 290 | 1 | 199 | ABS (*)
600 x 600 | 596 | 560 | 590 | 290 | 1 | 250 | ABS (*)
625 x 625 | 621 | 585 | 615 | 290 | 1 | 250 | ABS (*)
800 x 800 | 796 | 760 | 790 | 400 | 1 | 301 | steel
825 x 825 | 821 | 785 | 815 | 340 | 1 | 301 | steel

(*) Steel on request
PLENUM FOR HIGH INDUCTION DIFFUSERS
KQ SERIES

HOW TO ORDER

PP8 Plenum for KQ diffuser
0 lateral connection,
1 top connection
-- base
E equalizer
S damper
I insulation
P mounting bridge

KQ for squared diffusers
KQR for circular diffusers

size

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<tr>
<th>Standard sizes</th>
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OVERVIEW:

The PPS series of polystyrene assemblable plenum boxes have a density of 45 kg/m³, with a Fire class 1 quality, eternally crystallised.

The transformation process and the special properties of the material, make the PPS a very compact and lightweight plenum.

These special features combined to the trapezoidal shape that distinguish it, allows the fixing of the unit in completed counterscaling structure. This facilitates both the realisation and maintenance of the system. Given the light weight, the plenum is positioned on the structure of the counter ceiling, eliminating therefore the necessity of using hanging clips for fixing to the ceiling.

This has the advantage of reducing considerably the fitting time and a saving of the space used of over 50%, compared to a traditional plenum box.

The PPS has an excellent thermal acoustic insulation characteristic. It does not therefore require additional insulating material.

The PPS plenums can be supplied already assembled with a square 600x60mm diffuser panel, model KQ1, complete with regulation damper in ABS and equalizer, ready for installation.

As an alternative, there is also a version assembled but without the diffuser fitted.

Lastly a kit is also available, comprising the plenum, the connection ‘C’, bar ‘A’ and assembly diagram.

Installation: once the diffuser has been fitted to the plenum using the screw ‘V’ (PPS-V680T) to bar ‘A’, the plenum is positioned on the counter ceiling structure.

TECHNICAL CHARACTERISTICS:

fire reaction:
Class 1 - Test report CSI DC01/378F05
Euroclass E - Test report CSI DC01/656F07

Mechanic resistance:
10% deformation with 226kPa pressure - Test report CSI 0936/FPM/MATS/07.

Water absorption:
Increase average volume 3.26% in full immersion, tested according to UNI EN 12087 method 2A - Test report CSI 0936/FPM/MATS/07_2.

Thermal conductivity:
λ (average) 0.0320 W/mK - Test report CSI 0037/DC/TTS/07.

Thermal resistance:
R (average) 0.637 m²K/W - Test report CSI 0037/DC/TTS/07.

Test certificate type:

The documentation indicated above can viewed in electronic form in Italian with prior agreement from the Technical Department.
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<thead>
<tr>
<th>Image</th>
<th>Description</th>
<th>Connector diameter</th>
<th>Code</th>
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<td>Plenum in PS already assembled with connector in ABS with damper and without equalizer.</td>
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**ACCESSORIES**

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<tr>
<td><img src="image8.png" alt="Fixing screw (usually already included in the DIFFUSER)" /></td>
<td>Fixing screw (usually already included in the DIFFUSER)</td>
<td>PPS-V680T</td>
</tr>
</tbody>
</table>
**TECHNICAL CHARACTERISTICS:**
The KPQ series diffuser is a support panel on which a rose pattern of fixed deflectors is stamped. This geometry achieves a circular airflow with a large induction effect. For this reason, the diffuser is ideal both for heating and cooling even with large temperature differences between the injected air and the air in the room. This particular diffuser series is normally used in spaces with ceiling heights between 2.6 and 4 metres.

**POSSIBLE TYPES:**
The KPQ diffuser series is available in different sizes, both for the simple panel version and the Fineline version for modular ceilings panels 670x670mm.

**DIFFUSER MATERIAL:**
The diffuser is made of carbon steel sheet. Paint Finish: white colour RAL 9010. Possibility of producing AISI 304 or AISI 316 stainless steel versions with gloss or satin finish.

**DIFFUSER FITTING:**
The diffuser is fixed with a central M5 type screw using a fixing bridge to the plenum or the duct. The screw is supplied, together with a white screw cover.

### SQUARED VERSIONS

<table>
<thead>
<tr>
<th>Code</th>
<th>L mm</th>
<th>Ø mm</th>
<th>Ak m²</th>
</tr>
</thead>
<tbody>
<tr>
<td>KPQ300</td>
<td>296</td>
<td>236</td>
<td>0.010</td>
</tr>
<tr>
<td>KPQ400</td>
<td>396</td>
<td>336</td>
<td>0.016</td>
</tr>
<tr>
<td>KPQ500</td>
<td>496</td>
<td>436</td>
<td>0.033</td>
</tr>
<tr>
<td>KPQ600</td>
<td>596</td>
<td>536</td>
<td>0.049</td>
</tr>
<tr>
<td>KPQ625</td>
<td>621</td>
<td>536</td>
<td>0.049</td>
</tr>
<tr>
<td>KPQT300</td>
<td>596</td>
<td>236</td>
<td>0.010</td>
</tr>
<tr>
<td>KPQT400</td>
<td>596</td>
<td>336</td>
<td>0.016</td>
</tr>
<tr>
<td>KPQT500</td>
<td>596</td>
<td>436</td>
<td>0.033</td>
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</table>

### FINELINE VERSIONS

<table>
<thead>
<tr>
<th>Code</th>
<th>Ø E mm</th>
<th>Ø mm</th>
<th>Ak m²</th>
</tr>
</thead>
<tbody>
<tr>
<td>KPQFC300</td>
<td>236</td>
<td>0.010</td>
<td></td>
</tr>
<tr>
<td>KPQFC400</td>
<td>336</td>
<td>0.016</td>
<td></td>
</tr>
<tr>
<td>KPQFC500</td>
<td>436</td>
<td>0.033</td>
<td></td>
</tr>
<tr>
<td>KPQFC600</td>
<td>536</td>
<td>0.049</td>
<td></td>
</tr>
</tbody>
</table>

### CIRCULAR VERSIONS

<table>
<thead>
<tr>
<th>Code</th>
<th>Ø E mm</th>
<th>Ø mm</th>
<th>Ak m²</th>
</tr>
</thead>
<tbody>
<tr>
<td>KPQR300</td>
<td>296</td>
<td>236</td>
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</tr>
<tr>
<td>KPQR400</td>
<td>396</td>
<td>336</td>
<td>0.016</td>
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<tr>
<td>KPQR500</td>
<td>496</td>
<td>436</td>
<td>0.033</td>
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<tr>
<td>KPQR600</td>
<td>596</td>
<td>536</td>
<td>0.049</td>
</tr>
<tr>
<td>KPQR625</td>
<td>621</td>
<td>536</td>
<td>0.049</td>
</tr>
</tbody>
</table>

---

U06 Diffusion-vers. 14.00.xls
FIXED GEOMETRY HIGH INDUCTION DIFFUSERS

TECHNICAL CHARACTERISTICS

THROW DIAGRAM IN ISOTHERMIC CONDITIONS

NOISE AND AIRFLOW LOSS DIAGRAM

How to order

- squared
- T 593x595 panel
- D 621x621 panel
- F fineline
- R circular

KPQ Fixed geometry diffuser

KPQ R 600
PLENUM FOR HIGH INDUCTION DIFFUSERS
KQ SERIES

TECHNICAL CHARACTERISTICS

PLENUM PP80
Made of galvanized sheet steel.
Lateral connection.
Mounting bridge for mounting diffuser with central screw.
Complete with hooks for ceiling suspension.

optionals:
- polyethylene insulation;
- equalizer steel mesh;
- control damper into the fitting.

Made of galvanized sheet steel.
Rear connection.
Mounting bridge for mounting diffuser with central screw.
Complete with hooks for ceiling suspension.

optionals:
- polyethylene insulation;
- equalizer steel mesh;
- control damper into the fitting.

<table>
<thead>
<tr>
<th>Nominal dimensions of the diffuser $A \times B$</th>
<th>Real dimensions of the panel $L \times L$</th>
<th>$S \times S$</th>
<th>$H$</th>
<th>N° connections</th>
<th>$S$</th>
<th>Connection and damper material</th>
</tr>
</thead>
<tbody>
<tr>
<td>300 x 300</td>
<td>296</td>
<td>260</td>
<td>290</td>
<td>240</td>
<td>1</td>
<td>123</td>
</tr>
<tr>
<td>400 x 400</td>
<td>396</td>
<td>360</td>
<td>390</td>
<td>290</td>
<td>1</td>
<td>199</td>
</tr>
<tr>
<td>500 x 500</td>
<td>496</td>
<td>460</td>
<td>490</td>
<td>290</td>
<td>1</td>
<td>199</td>
</tr>
<tr>
<td>600 x 600</td>
<td>596</td>
<td>560</td>
<td>590</td>
<td>290</td>
<td>1</td>
<td>250</td>
</tr>
<tr>
<td>625 x 625</td>
<td>621</td>
<td>585</td>
<td>615</td>
<td>290</td>
<td>1</td>
<td>250</td>
</tr>
<tr>
<td>800 x 800</td>
<td>796</td>
<td>760</td>
<td>790</td>
<td>400</td>
<td>1</td>
<td>301</td>
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<tr>
<td>825 x 825</td>
<td>821</td>
<td>785</td>
<td>815</td>
<td>340</td>
<td>1</td>
<td>301</td>
</tr>
</tbody>
</table>

(*) Steel on request
PLENUM FOR HIGH INDUCTION DIFFUSERS
KQ SERIES

HOW TO ORDER

<table>
<thead>
<tr>
<th>Standard sizes</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
</tr>
<tr>
<td>300</td>
</tr>
<tr>
<td>400</td>
</tr>
<tr>
<td>500</td>
</tr>
<tr>
<td>600</td>
</tr>
<tr>
<td>625</td>
</tr>
<tr>
<td>800</td>
</tr>
<tr>
<td>825</td>
</tr>
</tbody>
</table>
OVERVIEW:

The PPS series of polystyrene assemblable plenum boxes have a density of 45 kg/m³, with a Fire class 1 quality, eternally crystallised.

The transformation process and the special properties of the material, make the PPS a very compact and lightweight plenum.

These special features combined to the trapezoidal shape that distinguish it, allows the fixing of the unit in completed countersealing structure. This facilitates both the realisation and maintenance of the system. Given the light weight, the plenum is positioned on the structure of the counter ceiling, eliminating therefore the necessity of using hanging clips for fixing to the ceiling.

This has the advantage of reducing considerably the fitting time and a saving of the space used of over 50%, compared to a traditional plenum box.

The PPS has an excellent thermal acoustic insulation characteristic. It does not therefore require additional insulating material.

The PPS plenums can be supplied already assembled with a square 600x600mm diffuser panel, model KQ1, complete with regulation damper in ABS and equalizer, ready for installation.

As an alternative, there is also a version assembled but without the diffuser fitted.

Lastly a kit is also available, comprising the plenum, the connection 'C', bar 'A' and assembly diagram.

Installation: once the diffuser has been fitted to the plenum using the screw 'V' (PPS-V680T) to bar 'A', the plenum is positioned on the counter ceiling structure.

TECHNICAL CHARACTERISTICS:

fire reaction:
Class 1 - Test report CSI DC01/378F05
Euroclass E - Test report CSI DC01/656F07

Mechanic resistance:
10% deformation with 226kPa pressure - Test report CSI 0936/FPM/MATs/07.

Water absorption:
Increase average volume 3.26% in full immersion, tested according to UNI EN 12087 method 2A - Test report CSI 0936/FPM/MATs/07_2.

Thermal conductivity:
A (average) 0.0320 W/mK - Test report CSI 0037/DC/TTS/07.

Thermal resistance:
R (average) 0.637 m²K/W - Test report CSI 0037/DC/TTS/07.

Test certificate type:

The documentation indicated above can viewed in electronic form in Italian with prior agreement from the Technical Department.
<table>
<thead>
<tr>
<th>Image</th>
<th>Description</th>
<th>Connector diameter</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Image" /></td>
<td>Plenum in PS already assembled with connector in ABS with damper and without equalizer.</td>
<td>125</td>
<td>PPS-PSI25</td>
</tr>
<tr>
<td></td>
<td></td>
<td>160</td>
<td>PPS-PSI60</td>
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<tr>
<td></td>
<td></td>
<td>200</td>
<td>PPS-PS200</td>
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<tr>
<td></td>
<td></td>
<td>250</td>
<td>PPS-PS250</td>
</tr>
<tr>
<td><img src="image2.png" alt="Image" /></td>
<td>Plenum in PS already assembled, complete with connector in ABS with damper and equalizer.</td>
<td>125</td>
<td>PPS-PESI25</td>
</tr>
<tr>
<td></td>
<td></td>
<td>160</td>
<td>PPS-PESI60</td>
</tr>
<tr>
<td></td>
<td></td>
<td>200</td>
<td>PPS-PES200</td>
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<tr>
<td></td>
<td></td>
<td>250</td>
<td>PPS-PES250</td>
</tr>
<tr>
<td><img src="image3.png" alt="Image" /></td>
<td>Plenum in PS already assembled, complete with connector in ABS with damper, equalizer and diffuser KQi 600.</td>
<td>125</td>
<td>PPS-KQIPESI25</td>
</tr>
<tr>
<td></td>
<td></td>
<td>160</td>
<td>PPS-KQIPESI60</td>
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<td>PPS-KQIPES200</td>
</tr>
<tr>
<td></td>
<td></td>
<td>250</td>
<td>PPS-KQIPES250</td>
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**ACCESSORIES**

<table>
<thead>
<tr>
<th>Image</th>
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<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image4.png" alt="Image" /></td>
<td>Only PS bell shape body with fixing bar (without connector)</td>
<td>PPS-KIT</td>
</tr>
<tr>
<td><img src="image5.png" alt="Image" /></td>
<td>Equalizer for plenum</td>
<td>PPS-E</td>
</tr>
<tr>
<td><img src="image6.png" alt="Image" /></td>
<td>Connector in ABS</td>
<td>RR10-125</td>
</tr>
<tr>
<td></td>
<td></td>
<td>160</td>
</tr>
<tr>
<td></td>
<td></td>
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<td></td>
<td></td>
<td>250</td>
</tr>
<tr>
<td><img src="image7.png" alt="Image" /></td>
<td>Damper for connectors in ABS</td>
<td>RRS10-125</td>
</tr>
<tr>
<td></td>
<td></td>
<td>160</td>
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<tr>
<td></td>
<td></td>
<td>200</td>
</tr>
<tr>
<td></td>
<td></td>
<td>250</td>
</tr>
<tr>
<td><img src="image8.png" alt="Image" /></td>
<td>Fixing screw (usually already included in the DIFFUSER)</td>
<td>PPS-V680T</td>
</tr>
</tbody>
</table>
OVERVIEW:
The KH series linear diffusers allow to manage high air flows with minimum pressure losses and generated noise power. They allow to fully make use of the induction principle, guaranteeing optimum comfort conditions, no noticeable air currents and temperature uniformity, even in large spaces by positioning the diffusers along the perimeter of the ceiling.

CHARACTERISTICS AND FUNCTION:
The KH series diffusers are constructed from an aluminium body housing the different exhaust slots each with a pair of deflector blades. The change of direction of the air throw can be easily made without removing the diffuser. The regulation of the air flow can be made by using a butterfly type damper in the plenum connection.

APPLICATIONS:
The KH diffusers are ideal in air ventilations applications with ceiling heights from 2.4 to 4 metres.

DIFFUSER INSTALLATION:
The KH diffusers are installed inside special plenums fixed on the sides with screws or by suspension by using mounting bridges. This second solution allows for a quick installation even after all the work has been completed in the building site. The wider shape of the plenum allows to contain the generated noise and the pressure losses connected to the expanding effect of the air.

FINISH:
The KH diffusers are constructed from an aluminium or RAL 9010 painted body and deflector blades. Different finishes can be agreed on request.
LINEAR SLOT DIFFUSERS

DIMENTIONS

KH SERIES

Efficient section AK for diffuser L-1 m (m²)

<table>
<thead>
<tr>
<th></th>
<th>1 slot</th>
<th>2 slots</th>
<th>3 slots</th>
<th>4 slots</th>
<th>5 slots</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.012</td>
<td>0.023</td>
<td>0.037</td>
<td>0.032</td>
<td>0.069</td>
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</tbody>
</table>
LINEAR SLOT DIFFUSERS

KH SERIES

PLENUM

<table>
<thead>
<tr>
<th>N° slots</th>
<th>B</th>
<th>H</th>
<th>ØN</th>
<th>Lb</th>
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<tbody>
<tr>
<td>1</td>
<td>40</td>
<td>200</td>
<td>123</td>
<td>ABS (*)</td>
</tr>
<tr>
<td>2</td>
<td>71</td>
<td>200</td>
<td>123</td>
<td>ABS (*)</td>
</tr>
<tr>
<td>3</td>
<td>101.5</td>
<td>235</td>
<td>155</td>
<td>ABS (*)</td>
</tr>
<tr>
<td>4</td>
<td>132</td>
<td>235</td>
<td>155</td>
<td>ABS (*)</td>
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<tr>
<td>5</td>
<td>163</td>
<td>275</td>
<td>195</td>
<td>ABS (*)</td>
</tr>
</tbody>
</table>

for L up to 1500 one connection ØN
for L greater than 1500: two connections ØN

(*) Steel on request

Holes for fixing by suspension

Mounting bridge

Corner connection
LINEAR SLOT DIFFUSERS

KH SERIES

PERFORMANCE
ONE SLOT

**Aeraculic data measured in isothermic conditions for a one meter long diffuser in accordance with the international standard:**

ISO 5219 1984: *Air distribution and air diffusion - Laboratory. Aerodynamic testing and rating of air terminal devices.*

L (m) horizontal distance in meters from the centre of the diffuser
VL (m/s) maximum air speed in the air vain at a distance L
H (m) distance from ceiling
Vh (m/s) speed at height H

Acoustic data measured in reverberating room for a one meter long diffuser in accordance with the international standard:

ISO 3741 1999: *Acoustic - determination of sound power levels of noise sources using sound pressure - Precision methods for reverberation rooms*

ISO 5135 1997: *Acoustic - determination of sound power levels of noise from air terminal devices; air terminal units; dampers and valves by measurement in a reverberation room.*

The data shown does not consider the attenuation given by the place of installation. This attenuation is normally included between 6 and 10dBa and is determined by the dimensions of the room, its shape and the arrangements of the furnishings within it.
LINEAR SLOT DIFFUSERS
KH SERIES
PERFORMANCE
TWO SLOTS

Aerualic data measured in isothermic conditions for a one meter long diffuser in accordance with the international standard:

- L (m) horizontal distance in meters from the centre of the diffuser
- VL (m/s) maximum air speed in the air vain at a distance L
- H (m) distance from ceiling
- Vh (m/s) speed at height H

Acoustic data measured in reverberating room for a one meter long diffuser in accordance with the international standard:
ISO 3741 1999: Acoustic - determination of sound power levels of noise sources using sound pressure - Precision methods for reverberation rooms
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VL (m/s) maximum air speed in the air vain at a distance L
H (m) distance from ceiling
Vh (m/s) speed at height H

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The data shown does not consider the attenuation given by the place of installation. This attenuation is normally included between 6 and 10dBA and is determined by the dimensions of the room, its shape and the arrangements of the furnishings within it.
LINEAR SLOT DIFFUSERS

PERFORMANCE

FIVE SLOTOS

Aeraulic data measured in isothermic conditions for a one meter long diffuser in accordance with the international standard:

L (m) horizontal distance in meters from the centre of the diffuser
VL (m/s) maximum air speed in the air vain at a distance L
H (m) distance from ceiling
Vh (m/s) speed at height H

Acoustic data measured in reverberating room for a one meter long diffuser in accordance with the international standard:
ISO 3741 1999: Acoustic - determination of sound power levels of noise sources using sound pressure - Precision methods for reverberation rooms

ISO 5135 1997: Acoustic - determination of sound power levels of noise from air terminal devices; air terminal units; dampers and valves by measurement in a reverberation room.

The data shown does not consider the attenuation given by the place of installation. This attenuation is normally included between 6 and 10dBa and is determined by the dimensions of the room, its shape and the arrangements of the furnishings within it.
LINEAR SLOT DIFFUSERS

MOUNTING INSTRUCTIONS

Diffuser

insert the mounting bridges into the rear opening of the diffuser

Diffuser

insert the diffuser into the plenum and tighten the screws

Plenum

Mountin bridges
LINEAR SLOT DIFFUSERS

ORDER CODES

**KH SERIES**

**KH Linear diffuser**

- C With deflectors (supply)
- E Without deflectors (extraction)

-..... anodized deflectors
- R deflectors RAL 9010
- N deflectors RAL 9005

- Number of slots (from 1 up to 5)*
- Length

-..... Anodized profile
- R RAL9010 profile

* No special version are foreseen with a greater number of slots

**P8 Plenum for KH diffuser**

- 6 Internal insulated
- 7 External insulated
- 8 Not insulated

- Number of slots (from 1 up to 5)*
- Length

- N Without damper
- D With damper

**Standard lengths:**
- 600 mm
- 800mm
- 1000mm
- 1200mm
- 1500mm
- 2000mm