# FIXED GEOMETRY
# HIGH INDUCTION DIFFUSERS
# WITH INTERNAL COLLAR

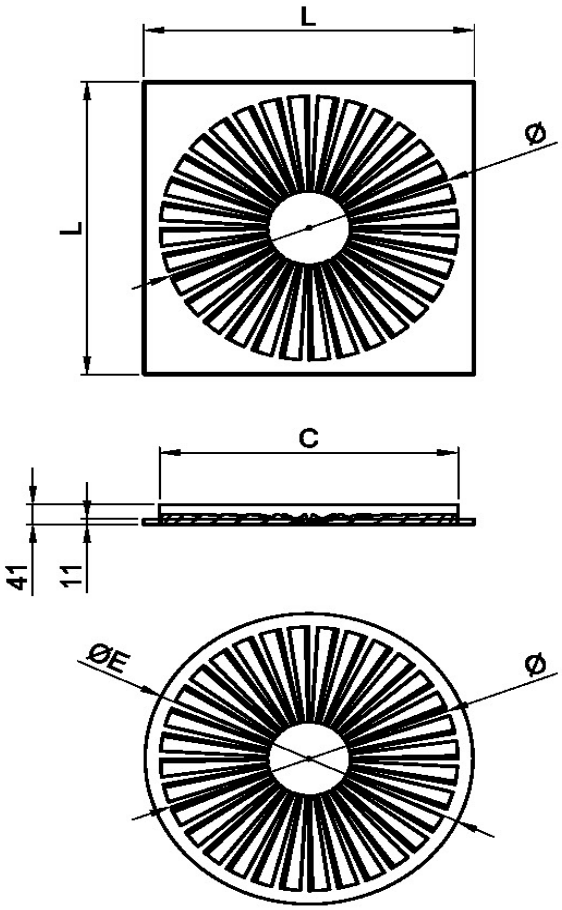
**OVERVIEW**

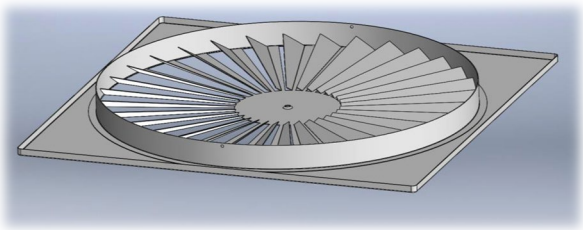
KPC
SERIES

KPC: Series of diffuser consisting of a support panel on which a rose patter of fixed deflectors is stamped.
This geometry achieves a circular air flow with a large induction effect aided by the internal collar that directs the air flow towards the deflecttors.
This particular diffuser series is normally used in spaces with ceilings heights between 2,6 and 4 metres.

CHARACTERISTICS:
Diffuser made of carbon steel sheet with white RAL 9010 or RAL 9003 epoxy paint.
The KPC series diffusers are normally fixed to the plenum by means of a central screw. They can also be fixed by means of side screws.

UNSUITABLE ENVIRONMENTS
Painted carbon steel products are not suitable for installation in high humidity environments and in environments with potentially explosive atmospheres or containing dust or vapours of corrosive substances.



| SQUARED VERSIONS | | | | |
|---|---|---|---|---|
| **Code** | L mm | Ø mm | C mm | Ak m² |
| **KPC300** | 298 | 236 | 238 | 0,010 |
| **KPC400** | 398 | 336 | 338 | 0,016 |
| **KPC500** | 498 | 436 | 438 | 0,033 |
| **KPC600** | 595 | 536 | 538 | 0,049 |
| **KPC625** | 622 | 536 | 538 | 0,049 |
| **KPCT300** | 595 | 236 | 238 | 0,010 |
| **KPCT400** | 595 | 336 | 338 | 0,016 |
| **KPCT500** | 595 | 436 | 438 | 0,033 |
| **KPCD300** | 622 | 236 | 238 | 0,010 |
| **KPCD400** | 622 | 336 | 338 | 0,016 |
| **KPCD500** | 622 | 436 | 438 | 0,033 |

| CIRCULAR VERSIONS | | | | |
|---|---|---|---|---|
| **Code** | ØE mm | Ø mm | C mm | Ak m² |
| **KPCR300** | 298 | 236 | 238 | 0,010 |
| **KPCR400** | 398 | 336 | 338 | 0,016 |
| **KPCR500** | 498 | 436 | 438 | 0,033 |
| **KPCR600** | 595 | 536 | 538 | 0,049 |
| **KPCR625** | 622 | 536 | 538 | 0,049 |

# FIXED GEOMETRY
# HIGH INDUCTION DIFFUSERS
# WITH INTERNAL COLLAR

**QUICK SELECTION**

KPC
SERIES

| Model | | Air flow rate | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $A_k$ [m²] | | m³/h | 75 | 100 | 125 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 700 | 750 | 800 | 850 |
| | | l/s | (21) | (28) | (35) | (42) | (56) | (69) | (83) | (97) | (111) | (125) | (139) | (153) | (167) | (181) | (194) | (208) | (222) | (236) |
| KPZ 300 (0,01) | $L_{WA}$ | [dB(A)] | <20 | 24 | 28 | 31 | 37 | 41 | 44 | | | | | | | | | | | |
| | $V_k$ | [m/s] | 2,1 | 2,8 | 3,5 | 4,2 | 5,6 | 6,9 | 8,3 | | | | | | | | | | | |
| | $\Delta p_t$ | [Pa] | 4 | 8 | 12 | 18 | 31 | 48 | 69 | | | | | | | | | | | |
| | $L_{0,2}$ | [m] | 1 | 1,4 | 1,9 | 2,3 | 3,1 | 4 | 4,9 | | | | | | | | | | | |
| KPZ 400 (0,016) | $L_{WA}$ | [dB(A)] | 21 | 25 | 28 | 31 | 35 | 38 | 40 | 43 | 45 | 46 | | | | | | | | |
| | $V_k$ | [m/s] | 1,3 | 1,8 | 2,2 | 2,6 | 3,5 | 4,3 | 5,2 | 6,1 | 6,9 | 7,8 | | | | | | | | |
| | $\Delta p_t$ | [Pa] | 2 | 3 | 5 | 7 | 12 | 18 | 26 | 35 | 46 | 58 | | | | | | | | |
| | $L_{0,2}$ | [m] | 0,9 | 1,2 | 1,5 | 1,8 | 2,4 | 3 | 3,7 | 4,4 | 5 | 5,7 | | | | | | | | |
| KPZ 500 (0,033) | $L_{WA}$ | [dB(A)] | <20 | <20 | 20 | 23 | 27 | 29 | 32 | 34 | 36 | 37 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | |
| | $V_k$ | [m/s] | 0,6 | 0,8 | 1,1 | 1,3 | 1,7 | 2,1 | 2,5 | 2,9 | 3,4 | 3,8 | 4,2 | 4,6 | 5,1 | 5,5 | 5,9 | 6,3 | 6,7 | |
| | $\Delta p_t$ | [Pa] | 1 | 1 | 2 | 2 | 4 | 7 | 10 | 13 | 17 | 22 | 27 | 33 | 39 | 46 | 52 | 60 | 68 | |
| | $L_{0,2}$ | [m] | 0,6 | 0,9 | 1,1 | 1,3 | 1,8 | 2,2 | 2,7 | 3,2 | 3,7 | 4,2 | 4,7 | 5,2 | 5,6 | 6,1 | 6,6 | 7,1 | 7,6 | |
| KPZ 600 (0,049) | $L_{WA}$ | [dB(A)] | | <20 | <20 | <20 | 23 | 26 | 29 | 32 | 34 | 36 | 37 | 39 | 40 | 41 | 42 | 43 | 45 | 45 |
| | $V_k$ | [m/s] | | 0,6 | 0,7 | 0,9 | 1,1 | 1,4 | 1,7 | 2 | 2,3 | 2,6 | 2,8 | 3,1 | 3,4 | 3,7 | 4 | 4,2 | 4,5 | 4,8 |
| | $\Delta p_t$ | [Pa] | | 0 | 1 | 1 | 2 | 3 | 4 | 5 | 7 | 9 | 11 | 14 | 16 | 19 | 22 | 25 | 28 | 32 |
| | $L_{0,2}$ | [m] | | 0,5 | 0,6 | 0,8 | 1,1 | 1,4 | 1,7 | 2 | 2,4 | 2,7 | 3,1 | 3,4 | 3,8 | 4,2 | 4,5 | 4,9 | 5,3 | 5,6 |
| KPZ 625 (0,049) | $L_{WA}$ | [dB(A)] | | <20 | <20 | <20 | 23 | 26 | 29 | 32 | 34 | 36 | 37 | 39 | 40 | 41 | 42 | 43 | 45 | 45 |
| | $V_k$ | [m/s] | | 0,6 | 0,7 | 0,9 | 1,1 | 1,4 | 1,7 | 2 | 2,3 | 2,6 | 2,8 | 3,1 | 3,4 | 3,7 | 4 | 4,2 | 4,5 | 4,8 |
| | $\Delta p_t$ | [Pa] | | 0 | 1 | 1 | 2 | 3 | 4 | 5 | 7 | 9 | 11 | 14 | 16 | 19 | 22 | 25 | 28 | 32 |
| | $L_{0,2}$ | [m] | | 0,5 | 0,6 | 0,8 | 1,1 | 1,4 | 1,7 | 2 | 2,4 | 2,7 | 3,1 | 3,4 | 3,8 | 4,2 | 4,5 | 4,9 | 5,3 | 5,6 |

**10 ≤ LwA < 30** **30 ≤ LwA < 40** **40 ≤ LwA < 50**

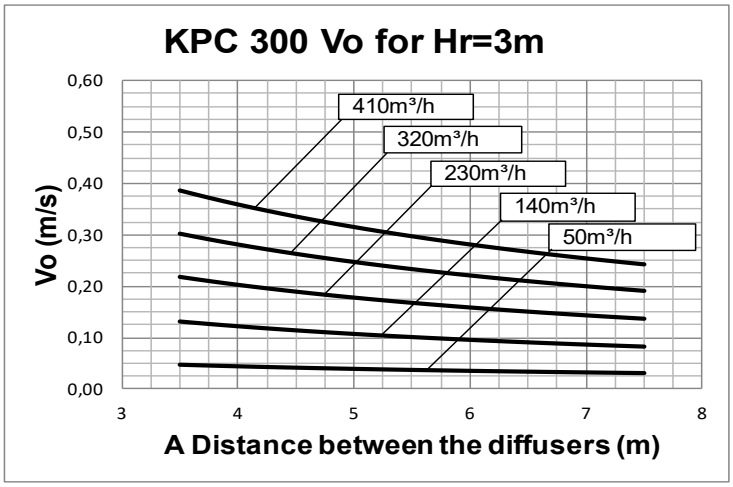
Data valid for:
- Supply air
- Isotherm conditions
- Throw with ceiling effect

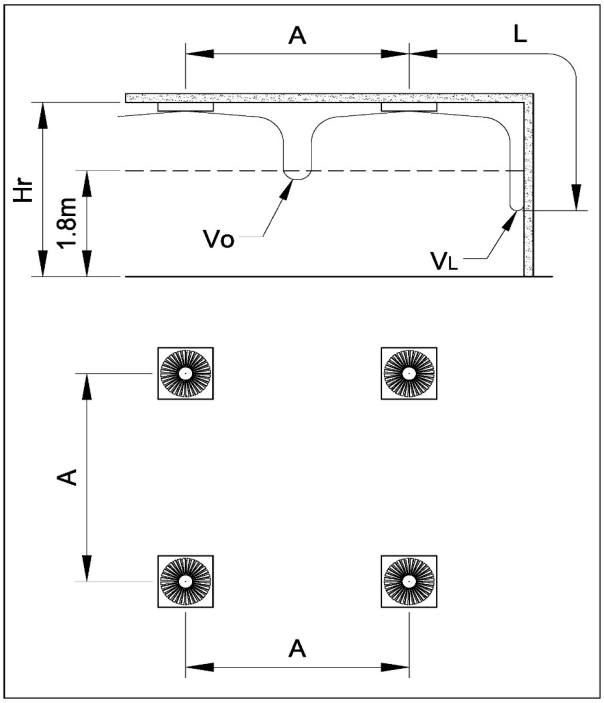
Terminology:
- $A_k$ = effective free area
- $V_k$ = effective face velocity
- Δpt = total pressure loss
- $L_{WA}$ = sound power level
- $L_{0,2}$ = throw to terminal velocity at 0,2 m/s

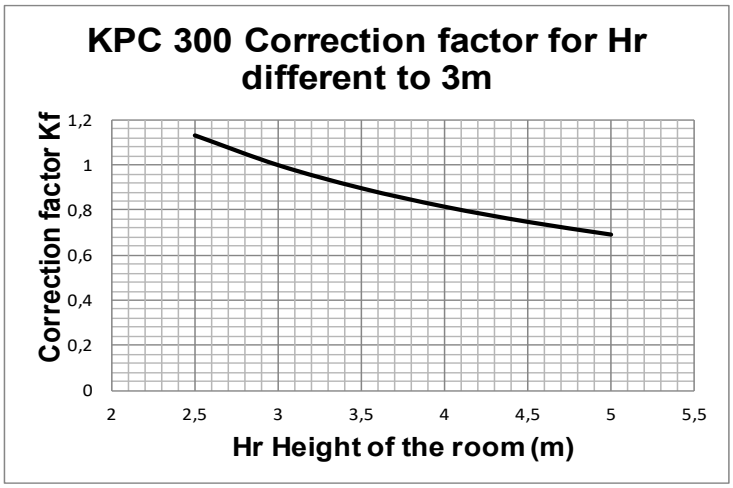
# FIXED GEOMETRY
# HIGH INDUCTION DIFFUSERS
# WITH INTERNAL COLLAR

**PERFORMANCE KPC 300**

KPC
SERIES



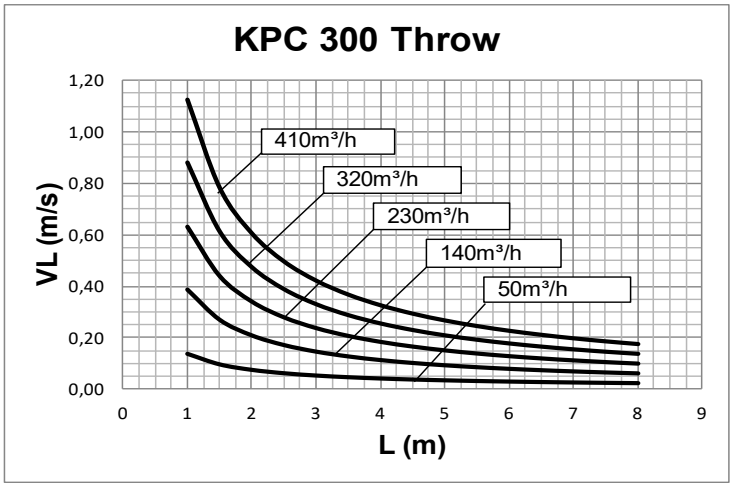




**Data measured operating in isothermal conditions in accordance with the international standard: ISO 5219 1984:** *Air distribution and air diffusion - Laboratory. Aerodynamic testing and rating of air terminal devices.*

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**



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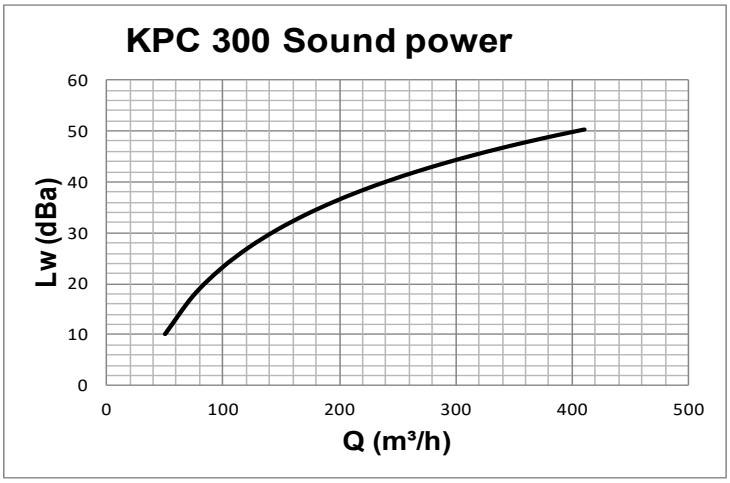
**PERFORMANCE KPC 300**

KPC
SERIES




**Data measured in reverberation room in accordance with international standards:**
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**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.*

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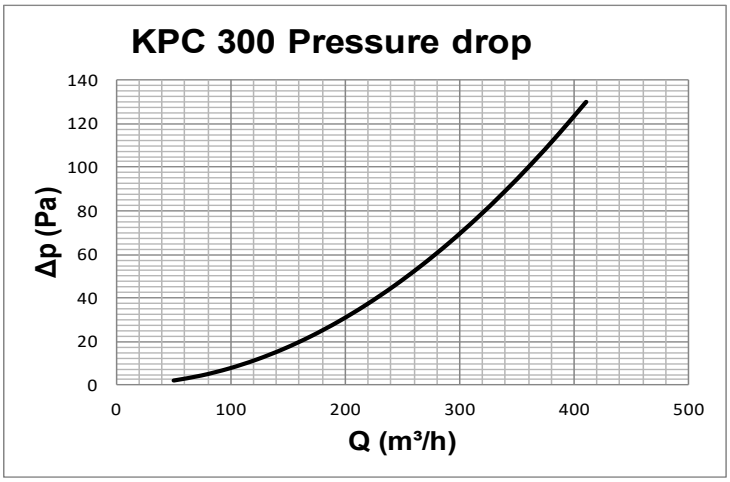


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# FIXED GEOMETRY
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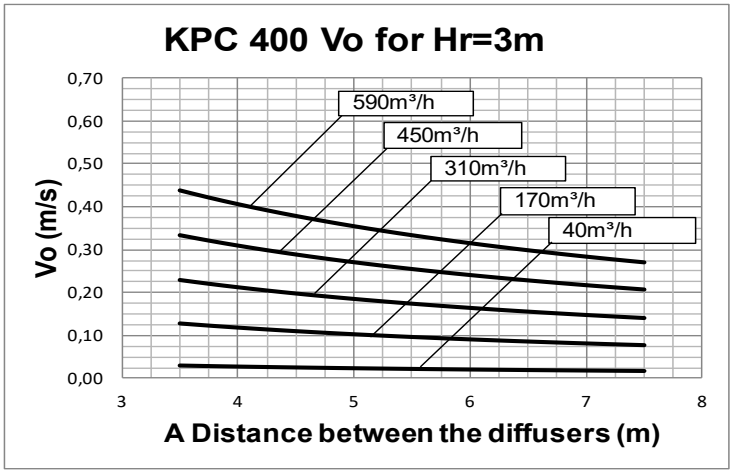
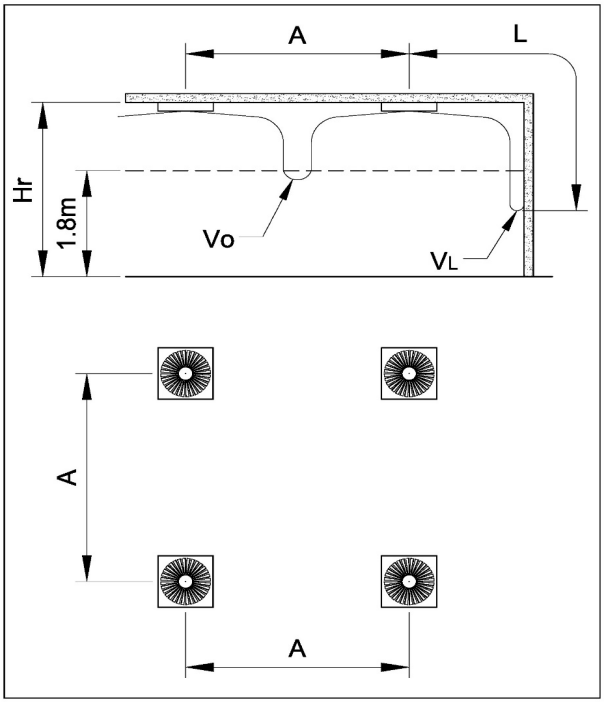
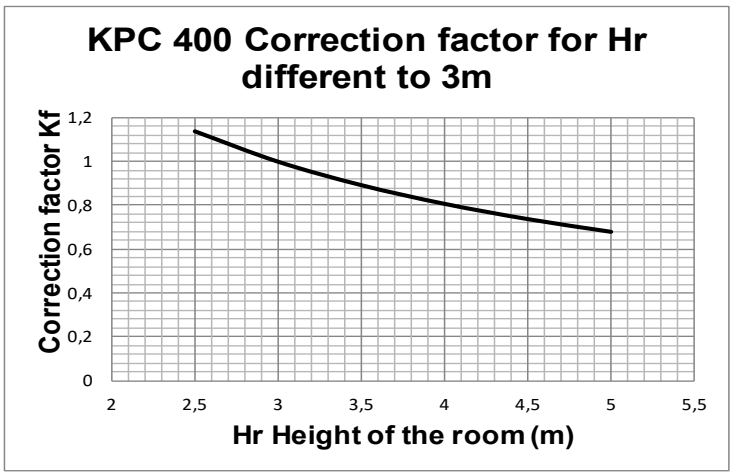
**PERFORMANCE KPC 400**

KPC
SERIES

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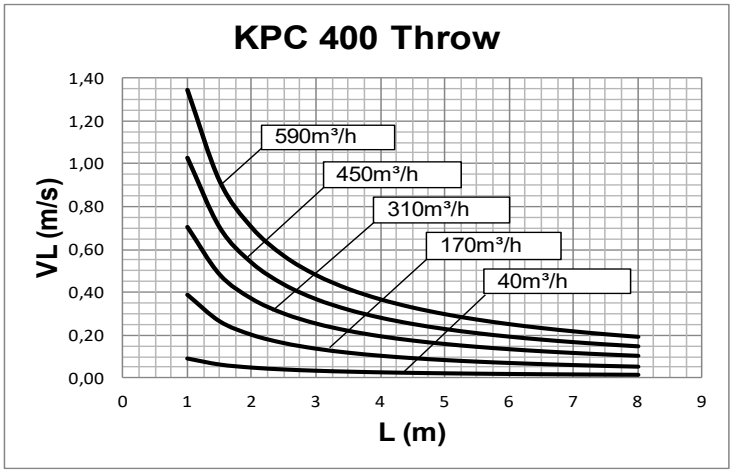
Vo (m/s) speed at the limit of the occupied zone
L (m) horizontal distance in metres from the centre of the diffuser
VL (m/s) maximum speed in the air stream




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

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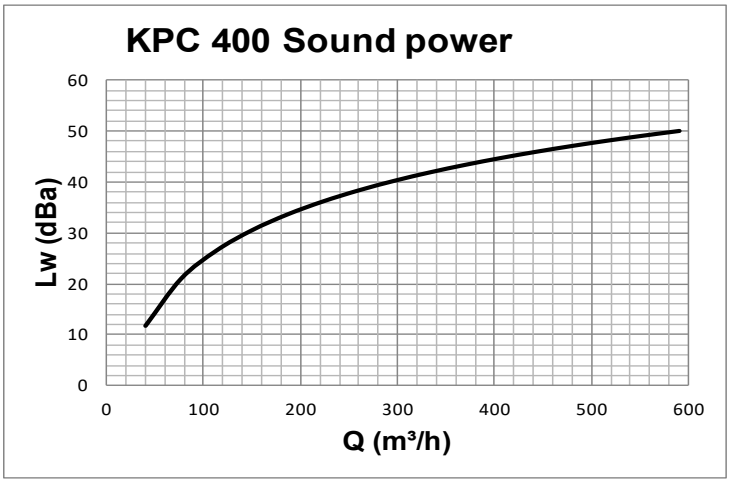
# HIGH INDUCTION DIFFUSERS
# WITH INTERNAL COLLAR

**PERFORMANCE KPC 400**

KPC
SERIES

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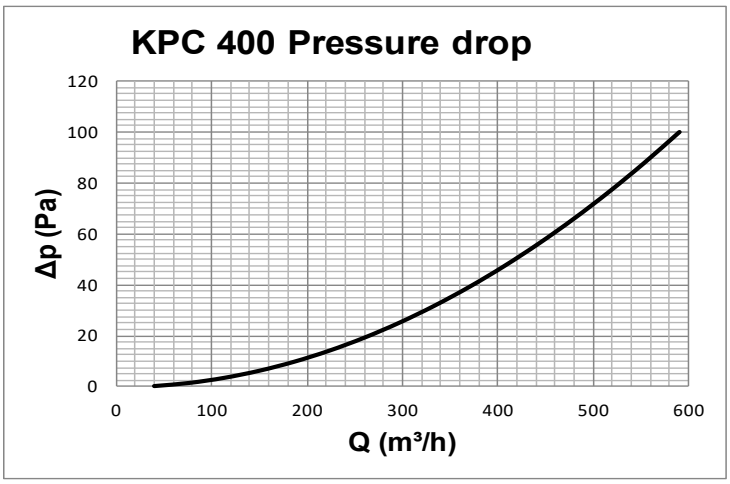


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# FIXED GEOMETRY
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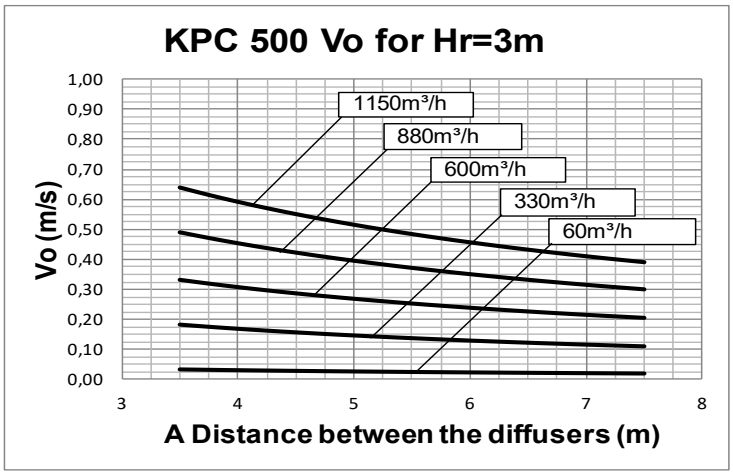
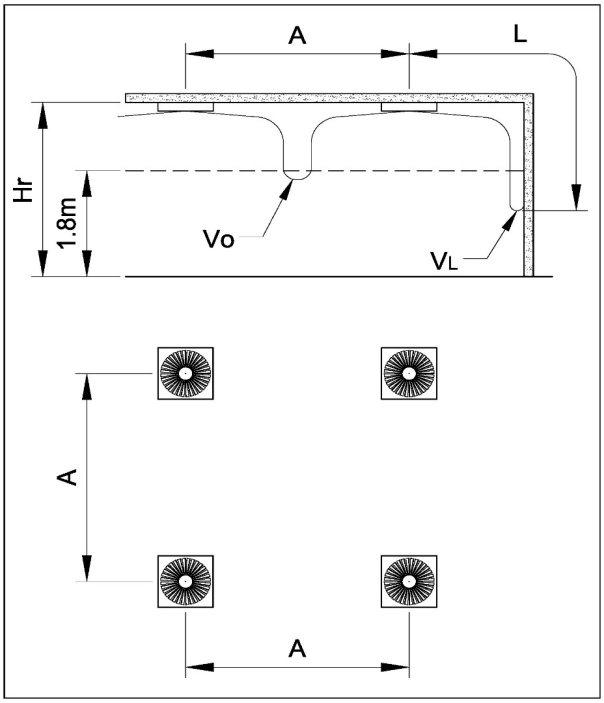
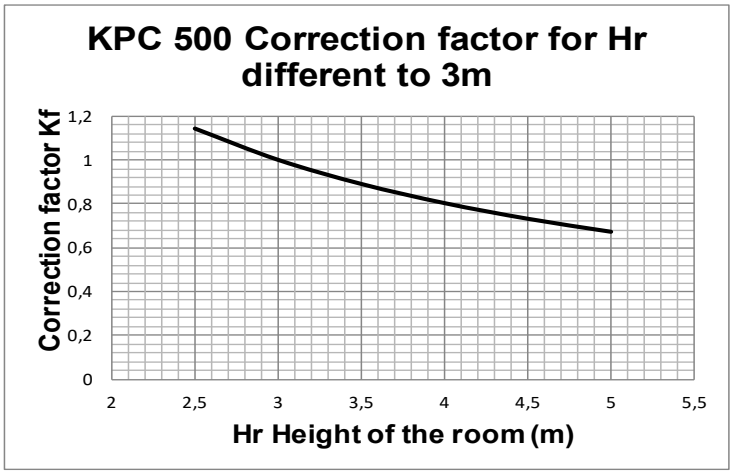
# WITH INTERNAL COLLAR

**PERFORMANCE KPC 500**

KPC
SERIES

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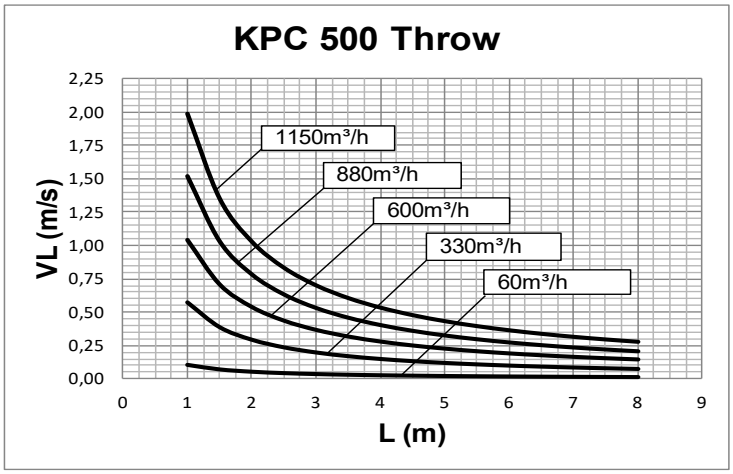
L (m) horizontal distance in metres from the centre of the diffuser
VL (m/s) maximum speed in the air stream

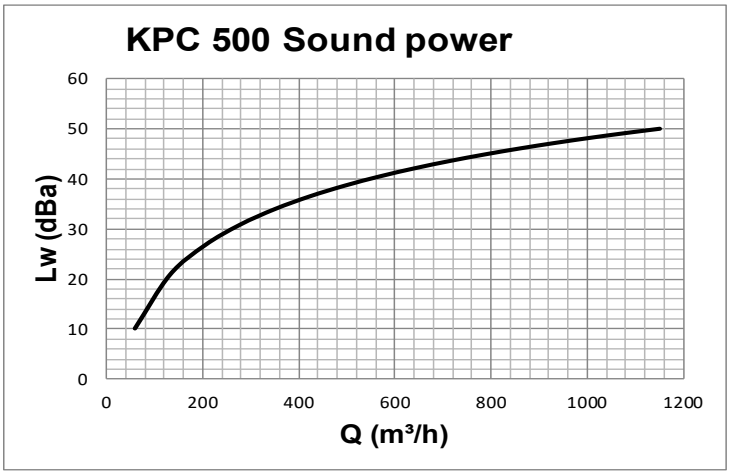
For Hr different from 3m:
**Vo (h) = Vo x Kf**



# FIXED GEOMETRY
# HIGH INDUCTION DIFFUSERS
# WITH INTERNAL COLLAR

**PERFORMANCE KPC 500**

KPC
SERIES

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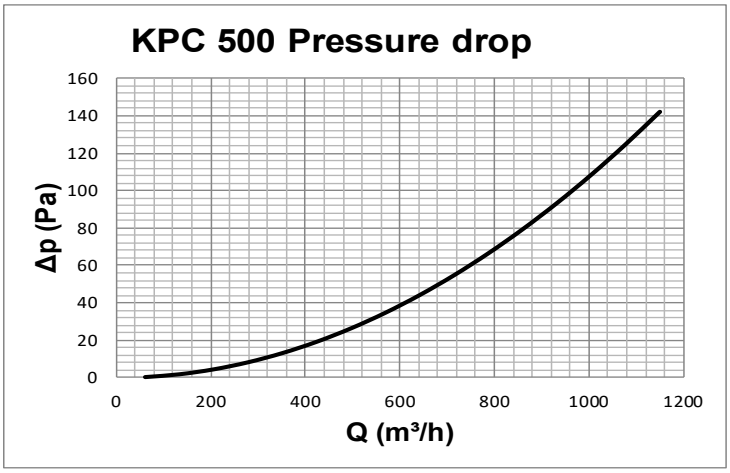


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# FIXED GEOMETRY
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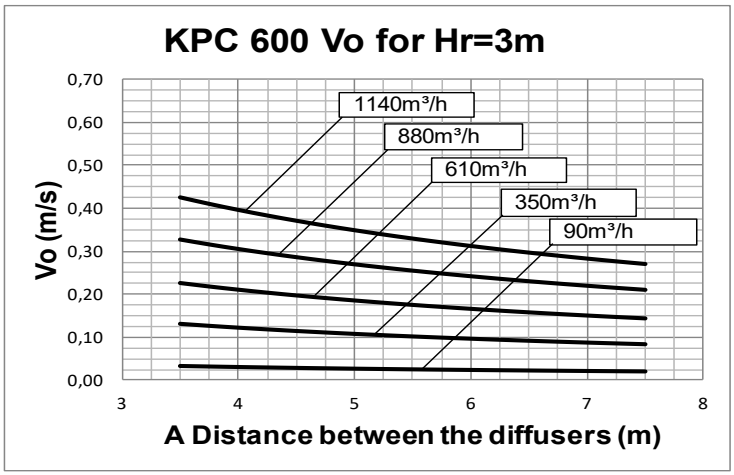
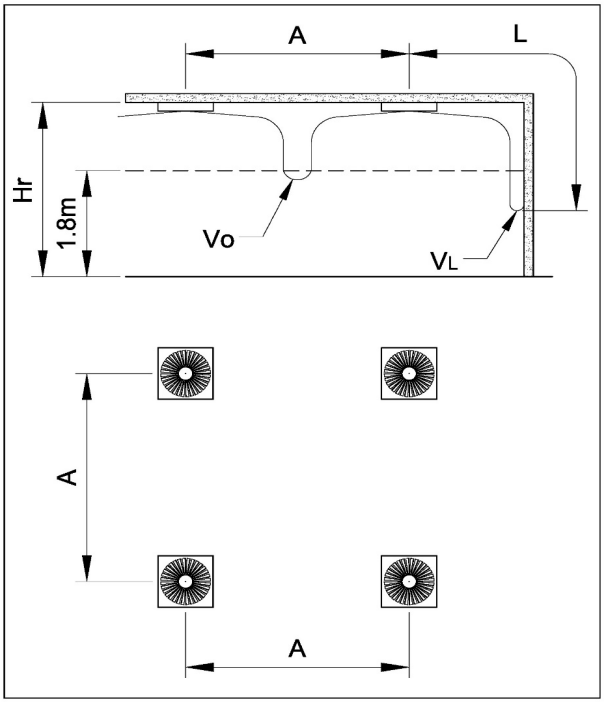
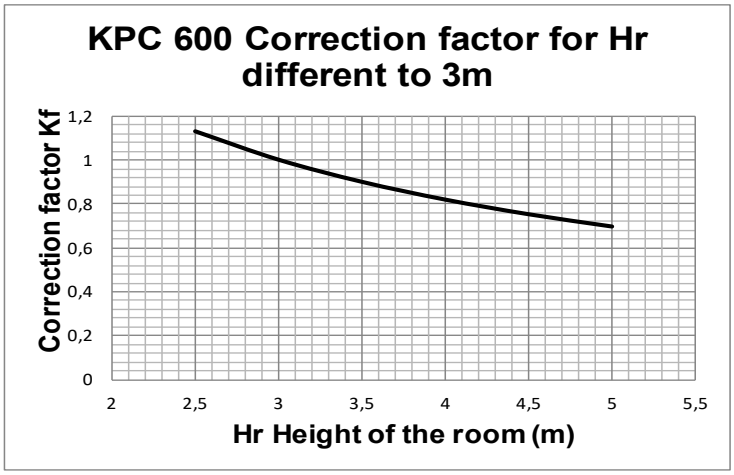
**PERFORMANCE KPC 600**

KPC
SERIES

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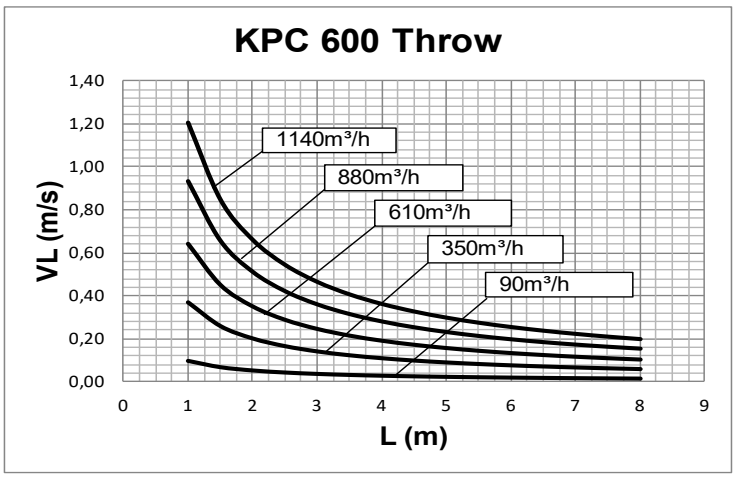


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**Vo (h) = Vo x Kf**

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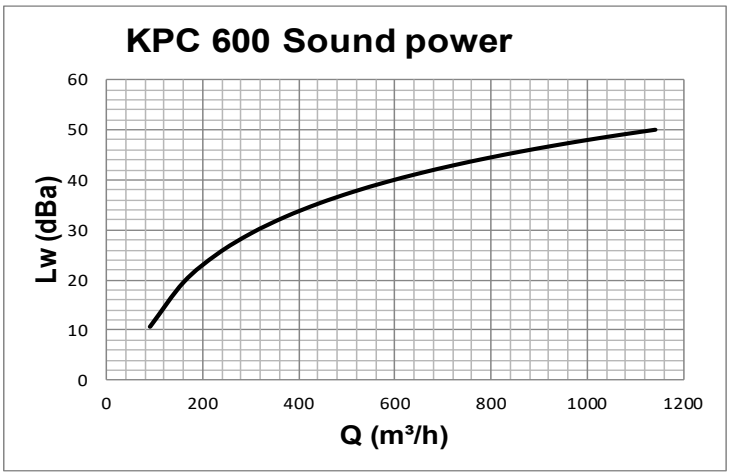
**PERFORMANCE KPC 600**

KPC
SERIES

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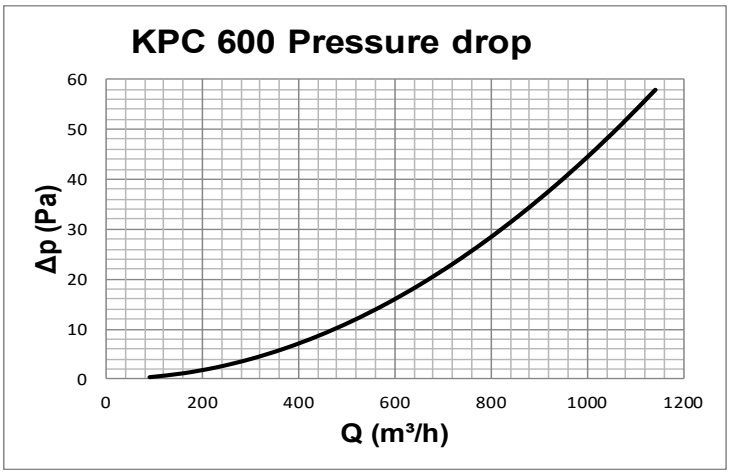


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# FIXED GEOMETRY
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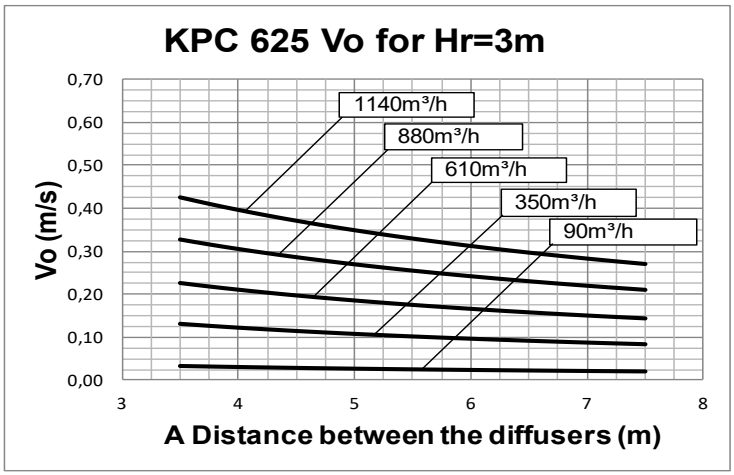
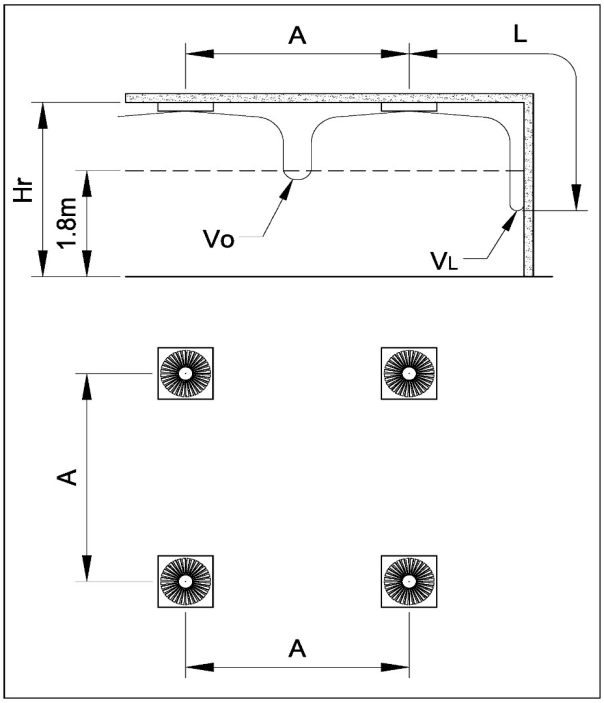
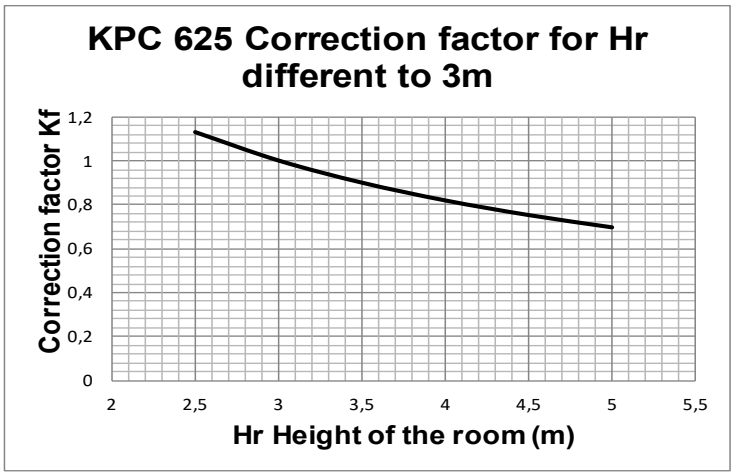
**PERFORMANCE KPC 625**

KPC
SERIES

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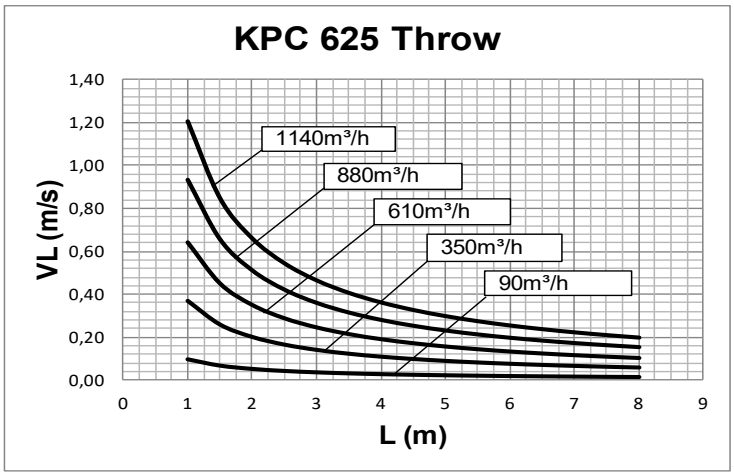


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**PERFORMANCE KPC 625**

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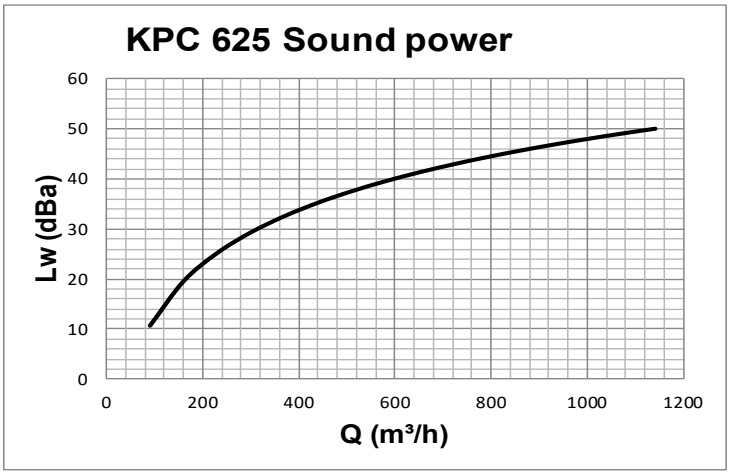


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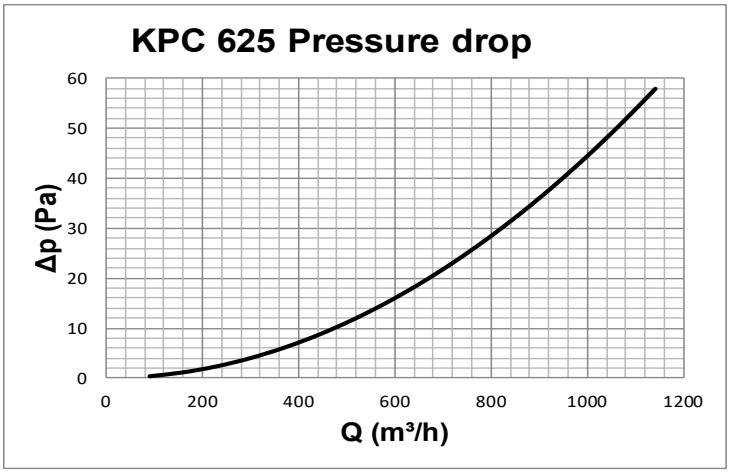
**ISO 5135 1997:** *Acoustic - determination of sound power levels of noise from air-terminal devices ; air terminal units; dampers and valves by measurement in a reverberation room.*

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.

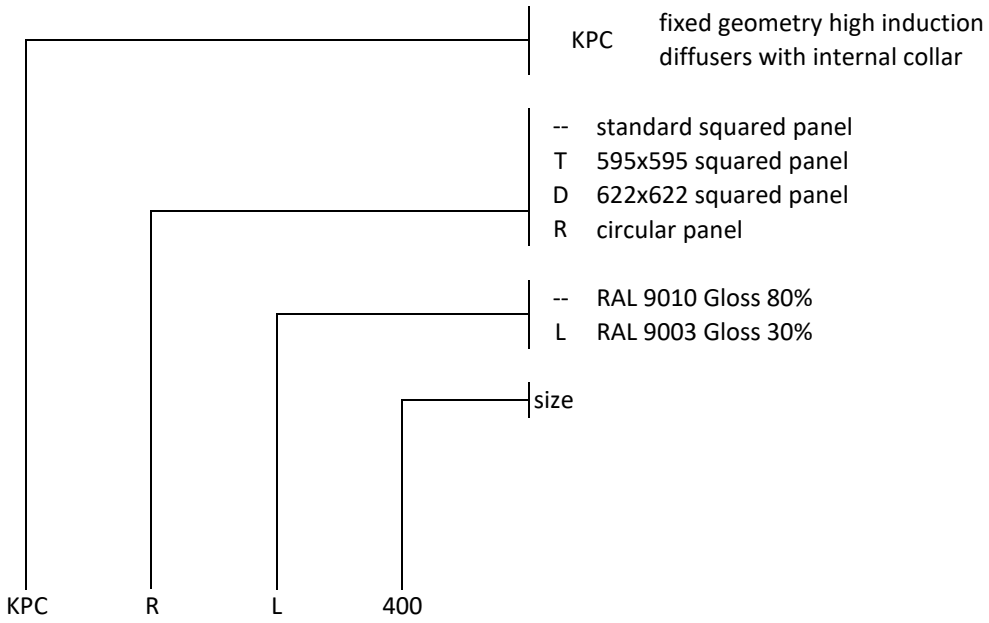



**Data measured operating in accordance with the international standard:**
**ISO 5219 1984:** *Air distribution and air diffusion - Laboratory. Aerodynamic testing and rating of air terminal devices.*

# FIXED GEOMETRY
# HIGH INDUCTION DIFFUSERS
# WITH INTERNAL COLLAR

**OW TO ORDER**

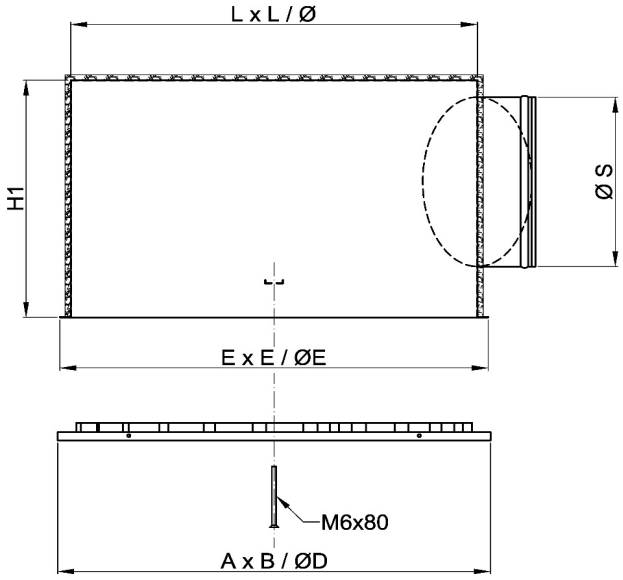
KPC
SERIES



# FIXED GEOMETRY
# HIGH INDUCTION DIFFUSERS
# WITH INTERNAL COLLAR

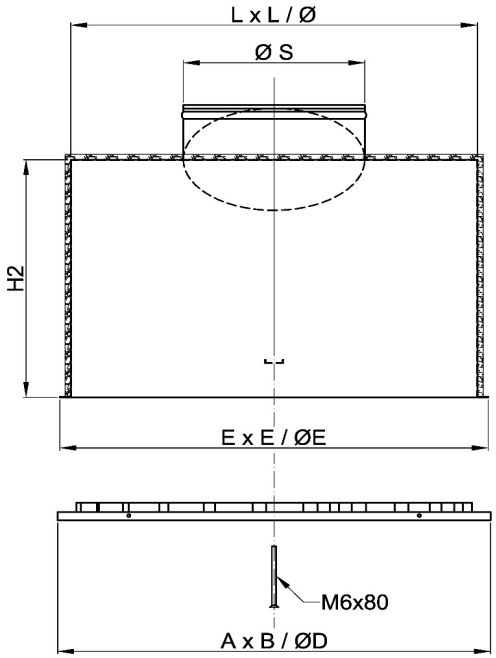
**PLENUM IN SEEL SHEET**

PP80
PP81




**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 connection.




**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 connection.

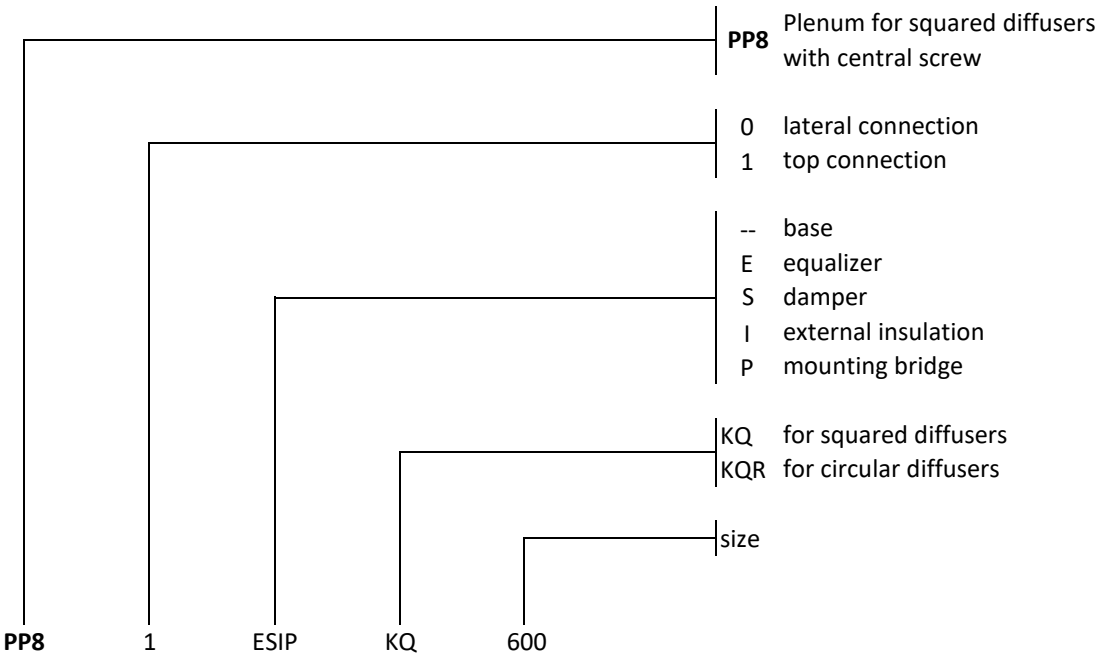
| Nominal dimensions of the diffuser A x B | Real dimansions of the panel | L x L | S x S | H | N° connections | S | Connection and damper material |
|---|---|---|---|---|---|---|---|
| **300 x 300** | 296 | 260 | 290 | 240 | 1 | 123 | ABS (*) |
| **400 x 400** | 396 | 360 | 390 | 290 | 1 | 199 | ABS (*) |
| **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

# FIXED GEOMETRY
# HIGH INDUCTION DIFFUSERS
# WITH INTERNAL COLLAR

**PLENUM IN SEEL SHEET**

PP80
PP81




| Standard sizes |
|---|
| 300 |
| 400 |
| 500 |
| 600 |
| 625 |

# PS PLENUM

## OVERVIEW

PPS
SERIES

**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 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.

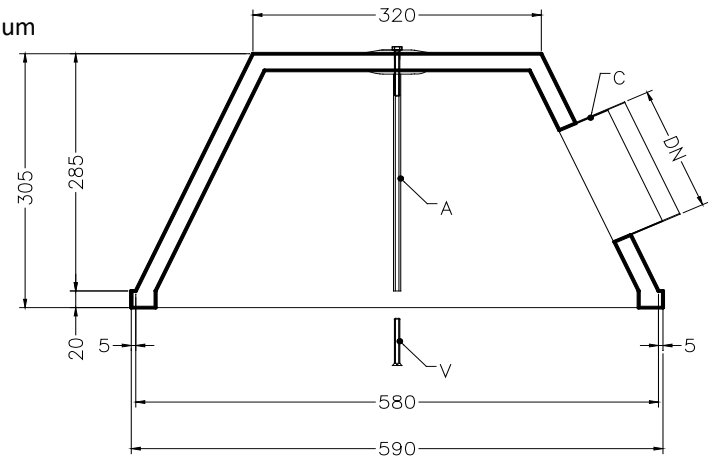
Thermal conductivity:
Δ (average) 0,0320 W/mK - Test report CSI 0037/DC/TTS/07.

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

Test certificate type:
Certificate CSI DE/1831/07 issued in conformity to directive 89/106/CEE on the bais of UNI EN 13163/2003 and UNI EN 13172/2003.

The documentation indicated above can viewed in electronic form in Italian with prior agreement from the Technical Department.

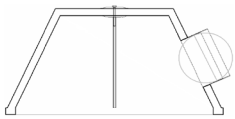
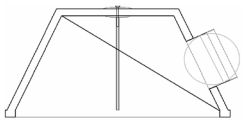
ASSEMBLED PPS



# PS PLENUM

## CODES

PPS
SERIES

| Image | Description | Connector diameter | Code |
|---|---|---|---|
|  | Plenum in PS already assembled with connector in ABS with damper and without equalizer. | 125 | PPS-PS125 |
| | | 160 | PPS-PS160 |
| | | 200 | PPS-PS200 |
| | | 250 | PPS-PS250 |
|  | Plenum in PS already assembled, complete with connector in ABS with damper and equalizer. | 125 | PPS-PES125 |
| | | 160 | PPS-PES160 |
| | | 200 | PPS-PES200 |
| | | 250 | PPS-PES250 |

ACCESSORIES

| | |
|---|---|
| PPS-G | PS bell shape body |
| PPS-CA | Fixing rod |
| PPS-E | Equalizer in steel |
| PPS-E ABS | Equalizer in ABS |
| RR10 … | Connector in ABS ø … |
| RRS10 … | Connector in ABS ø … with regulation damper |
| PPS-V680T | Screw for fixing diffuser |