



## HIGH INDUCTION DIFFUSER WITH FIXED GEOMETRY ANGLED NECK

KPZ  
SERIES

### OVERVIEW

KPZ: Series of circular ceiling diffusers with angled neck and fixed deflectors for a helicoidal/centrifugal motion of the air flow suitable for any mixing ventilation system for installation heights between 2.6 and 5.1 metres.

#### CHARACTERISTICS:

Diffuser made of carbon steel sheet with white RAL 9010 epoxy paint.

The KPZ series diffusers are normally fixed to the plenum by means of a central screw. They can also be fixed by means of side screws in the neck.

For this purpose they have a countersunk central hole and are supplied with a screw cover to be used in case of installation with central screw and a closing cap to be used in case of fixing with lateral screws.

#### VERSIONS

KPZ with squared panel;

KPZ6 with squared panel 596x596;

KPZD with squared panel 623x623

KPZR circular

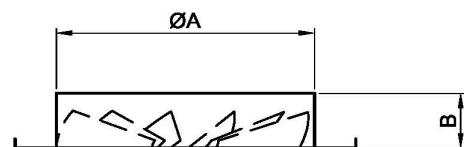
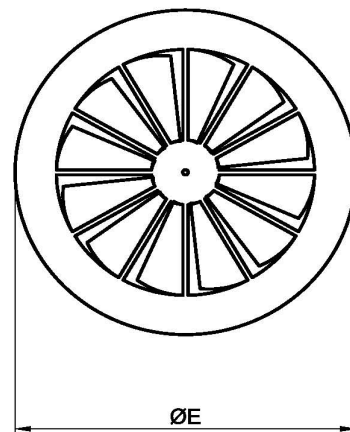
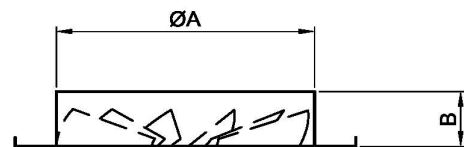
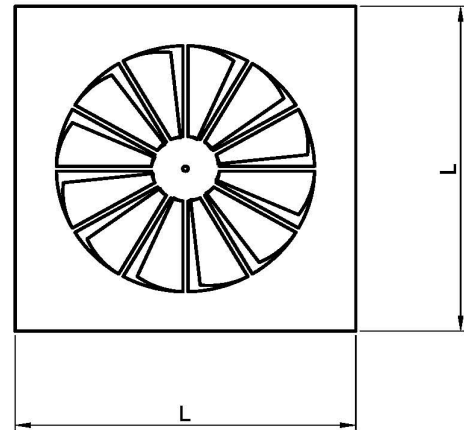
#### FIELD OF USE

KPZ diffusers are suitable installation with or without contereiling and with a height of installation between 2.6 and 5.1 meters such as halls, supermarkets, shopping centres, stations or airports.

They are suitable for both supply and extract air.

#### 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.



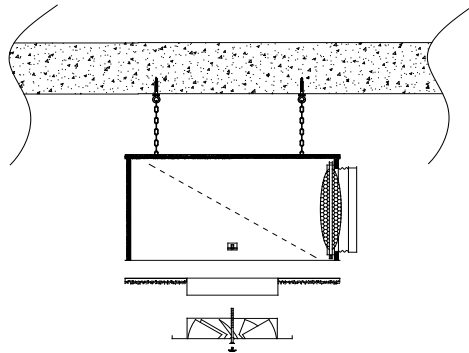
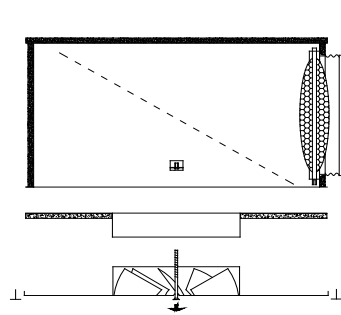
| size | A   | B  | KPZ<br>L | KPZ6<br>L | KPZD<br>L | KPRZ<br>E | Ak<br>m <sup>2</sup> |
|------|-----|----|----------|-----------|-----------|-----------|----------------------|
| 125  | 122 | 55 | 171      | 596       | 623       | 171       | 0,00910              |
| 160  | 157 | 55 | 214      | 596       | 623       | 214       | 0,01462              |
| 200  | 197 | 55 | 264      | 596       | 623       | 264       | 0,02245              |
| 250  | 247 | 55 | 326      | 596       | 623       | 326       | 0,03445              |
| 315  | 312 | 55 | 404      | 596       | 623       | 404       | 0,05370              |
| 355  | 353 | 65 | 448      | 596       | 623       | 448       | 0,06755              |
| 400  | 398 | 55 | 500      | 596       | 623       | 500       | 0,08495              |



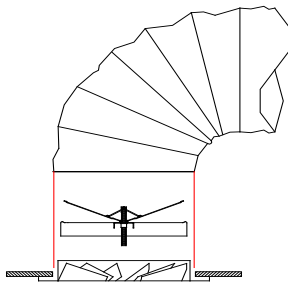
# HIGH INDUCTION DIFFUSER WITH FIXED GEOMETRY ANGLED NECK

KPZ  
SERIES

## INSTALLATION

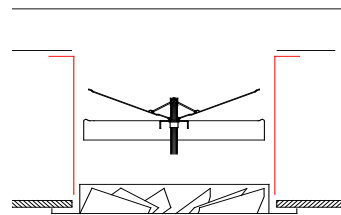


Installation with plenum



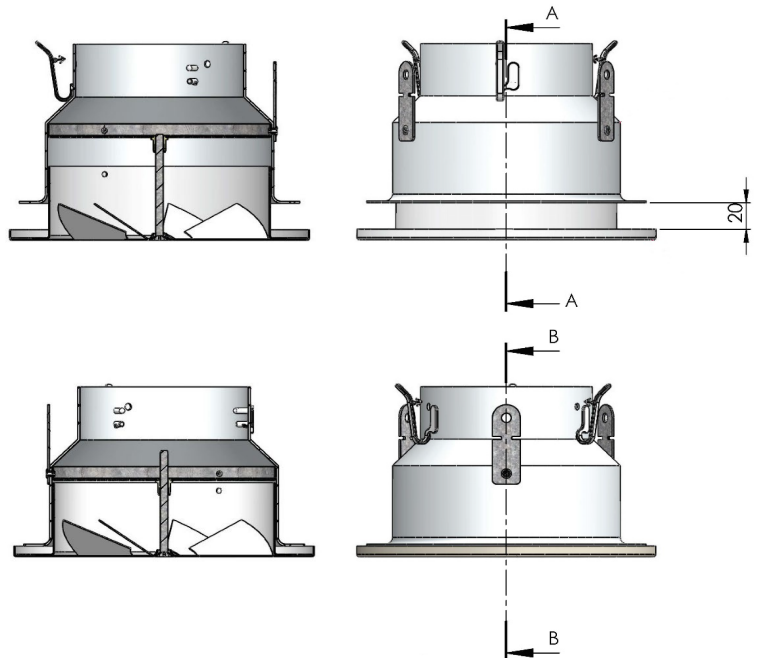
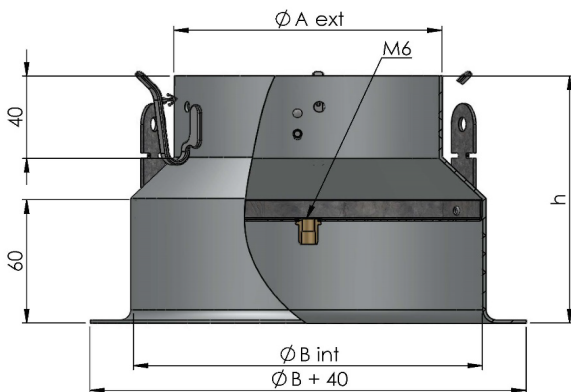
Installation with coupling  
and flexible duct

Installation with coupling  
butterfly damper  
and flexible duct



Installation with branch  
and steel duct

### Connector PPKPY



| PPKPY           | 125 | 160 | 200   | 200/180 | 250   | 315 | 355 | 400 |
|-----------------|-----|-----|-------|---------|-------|-----|-----|-----|
| $\varnothing A$ | 98  | 123 | 158   | 178     | 198   | 248 | 278 | 315 |
| $\varnothing B$ | 125 | 160 | 200   | 200     | 250   | 315 | 355 | 400 |
| h               | 115 | 120 | 112,5 | 122,5   | 127,5 | 135 | 140 | 155 |



# HIGH INDUCTION DIFFUSER WITH FIXED GEOMETRY ANGLED NECK

## KPZ SERIES

### QUICK SELECTION

| Model              | A <sub>k</sub> [m <sup>2</sup> ] | Air flow rate     |      |      |      |      |      |      |      |      |      |      |       |       |       |       |       |       |       |       |
|--------------------|----------------------------------|-------------------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|
|                    |                                  | m <sup>3</sup> /h | 50   | 75   | 100  | 125  | 150  | 175  | 200  | 250  | 300  | 350  | 400   | 450   | 500   | 550   | 600   | 700   | 800   | 900   |
|                    |                                  | l/s               | (14) | (21) | (28) | (35) | (42) | (49) | (56) | (69) | (83) | (97) | (111) | (125) | (139) | (153) | (167) | (194) | (222) | (250) |
| KPZ 125<br>(0,009) | L <sub>WA</sub> [dB(A)]          | 27                | 39   | 48   |      |      |      |      |      |      |      |      |       |       |       |       |       |       |       |       |
|                    | V <sub>k</sub> [m/s]             | 1,5               | 2,3  | 3,1  |      |      |      |      |      |      |      |      |       |       |       |       |       |       |       |       |
|                    | Δp <sub>t</sub> [Pa]             | 11                | 25   | 45   |      |      |      |      |      |      |      |      |       |       |       |       |       |       |       |       |
|                    | L 0,2 [m]                        | 2                 | 2,5  | 2,8  |      |      |      |      |      |      |      |      |       |       |       |       |       |       |       |       |
| KPZ 160<br>(0,015) | L <sub>WA</sub> [dB(A)]          | <20               | 30   | 40   | 47   |      |      |      |      |      |      |      |       |       |       |       |       |       |       |       |
|                    | V <sub>k</sub> [m/s]             | 1                 | 1,4  | 1,9  | 2,4  |      |      |      |      |      |      |      |       |       |       |       |       |       |       |       |
|                    | Δp <sub>t</sub> [Pa]             | 4                 | 10   | 18   | 28   |      |      |      |      |      |      |      |       |       |       |       |       |       |       |       |
|                    | L 0,2 [m]                        | 1,8               | 2,1  | 2,5  | 2,7  |      |      |      |      |      |      |      |       |       |       |       |       |       |       |       |
| KPZ 200<br>(0,022) | L <sub>WA</sub> [dB(A)]          |                   | <20  | 24   | 30   | 36   | 40   | 44   | 50   |      |      |      |       |       |       |       |       |       |       |       |
|                    | V <sub>k</sub> [m/s]             |                   | 0,9  | 1,2  | 1,6  | 1,9  | 2,2  | 2,5  | 3,1  |      |      |      |       |       |       |       |       |       |       |       |
|                    | Δp <sub>t</sub> [Pa]             |                   | 4    | 7    | 11   | 16   | 22   | 29   | 44   |      |      |      |       |       |       |       |       |       |       |       |
|                    | L 0,2 [m]                        |                   | 1,8  | 2,1  | 2,3  | 2,5  | 2,7  | 2,9  | 3,2  |      |      |      |       |       |       |       |       |       |       |       |
| KPZ 250<br>(0,034) | L <sub>WA</sub> [dB(A)]          |                   |      | <20  | <20  | 24   | 28   | 32   | 38   | 44   | 48   |      |       |       |       |       |       |       |       |       |
|                    | V <sub>k</sub> [m/s]             |                   |      | 0,8  | 1    | 1,2  | 1,4  | 1,6  | 2    | 2,4  | 2,8  |      |       |       |       |       |       |       |       |       |
|                    | Δp <sub>t</sub> [Pa]             |                   |      | 2    | 3    | 5    | 7    | 9    | 13   | 19   | 27   |      |       |       |       |       |       |       |       |       |
|                    | L 0,2 [m]                        |                   |      | 2    | 2,2  | 2,4  | 2,6  | 2,8  | 3,1  | 3,3  | 3,6  |      |       |       |       |       |       |       |       |       |
| KPZ 315<br>(0,054) | L <sub>WA</sub> [dB(A)]          |                   |      |      |      |      |      | <20  | <20  | 25   | 31   | 36   | 40    | 44    | 47    | 50    |       |       |       |       |
|                    | V <sub>k</sub> [m/s]             |                   |      |      |      |      |      | 1    | 1,3  | 1,5  | 1,8  | 2,1  | 2,3   | 2,6   | 2,8   | 3,1   |       |       |       |       |
|                    | Δp <sub>t</sub> [Pa]             |                   |      |      |      |      |      | 4    | 6    | 9    | 12   | 15   | 19    | 24    | 29    | 35    |       |       |       |       |
|                    | L 0,2 [m]                        |                   |      |      |      |      |      | 2,3  | 2,6  | 2,8  | 3    | 3,2  | 3,4   | 3,6   | 3,7   | 3,9   |       |       |       |       |
| KPZ 355<br>(0,068) | L <sub>WA</sub> [dB(A)]          |                   |      |      |      |      |      | <20  | 23   | 29   | 34   | 39   | 43    | 46    | 50    |       |       |       |       |       |
|                    | V <sub>k</sub> [m/s]             |                   |      |      |      |      |      | 1    | 1,2  | 1,4  | 1,6  | 1,9  | 2,1   | 2,3   | 2,5   |       |       |       |       |       |
|                    | Δp <sub>t</sub> [Pa]             |                   |      |      |      |      |      | 6    | 9    | 12   | 15   | 19   | 24    | 29    | 35    |       |       |       |       |       |
|                    | L 0,2 [m]                        |                   |      |      |      |      |      | 2,5  | 2,7  | 2,9  | 3,1  | 3,2  | 3,4   | 3,5   | 3,7   |       |       |       |       |       |
| KPZ 400<br>(0,085) | L <sub>WA</sub> [dB(A)]          |                   |      |      |      |      |      |      |      |      | <20  | <20  | 21    | 25    | 28    | 31    | 36    | 41    | 45    |       |
|                    | V <sub>k</sub> [m/s]             |                   |      |      |      |      |      |      |      |      | 1,1  | 1,3  | 1,5   | 1,6   | 1,8   | 2     | 2,3   | 2,6   | 2,9   |       |
|                    | Δp <sub>t</sub> [Pa]             |                   |      |      |      |      |      |      |      |      | 4    | 6    | 7     | 9     | 11    | 13    | 18    | 23    | 29    |       |
|                    | L 0,2 [m]                        |                   |      |      |      |      |      |      |      |      | 2,7  | 2,9  | 3     | 3,2   | 3,3   | 3,5   | 3,7   | 4     | 4,2   |       |

**10 ≤ L<sub>WA</sub> < 30**

**30 ≤ L<sub>WA</sub> < 40**

**40 ≤ L<sub>WA</sub> < 50**

Data valid for:

- Supply air
- Isotherm conditions
- Throw with ceiling effect

Terminology:

- A<sub>k</sub> = effective free area
- V<sub>k</sub> = effective face velocity
- Δp<sub>t</sub> = total pressure loss
- L<sub>WA</sub> = sound power level
- L<sub>0,2</sub> = throw to terminal velocity at 0,2 m/s

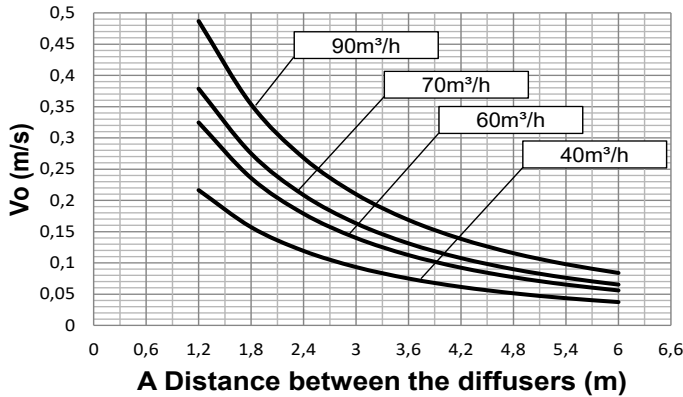


# HIGH INDUCTION DIFFUSER WITH FIXED GEOMETRY ANGLED NECK

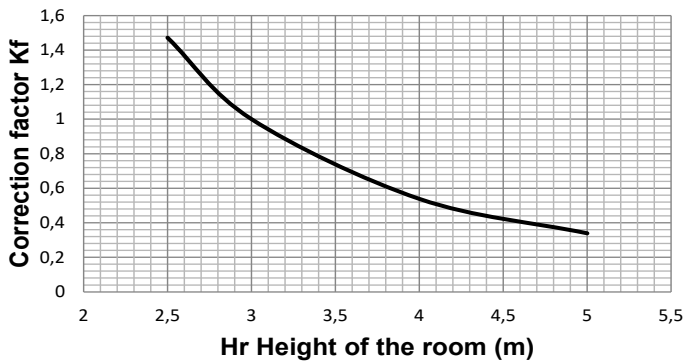
KPZ  
SERIES

PERFORMANCE KPZ 125

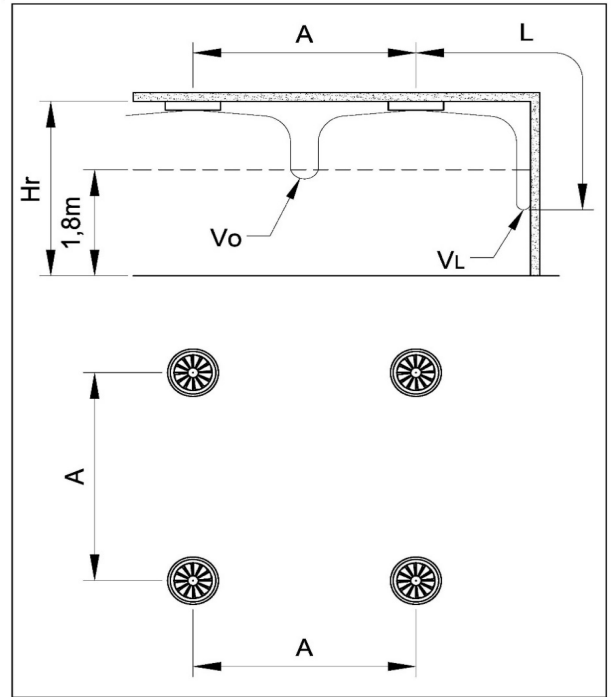
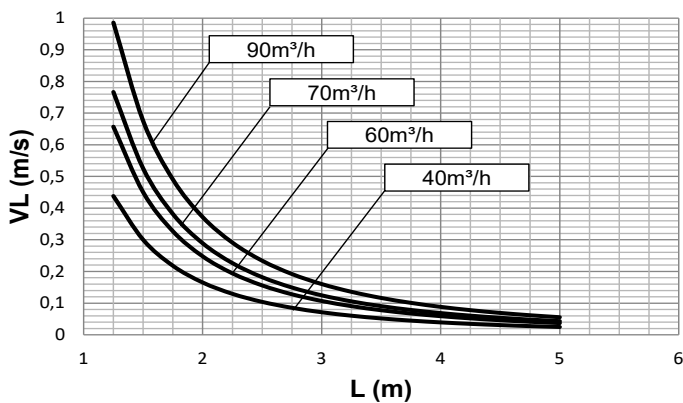
**KPZ125 Vo for Hr=3m**



**KPZ125 Correction factor for Hr different to 3m**



**KPZ125 Throw**



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

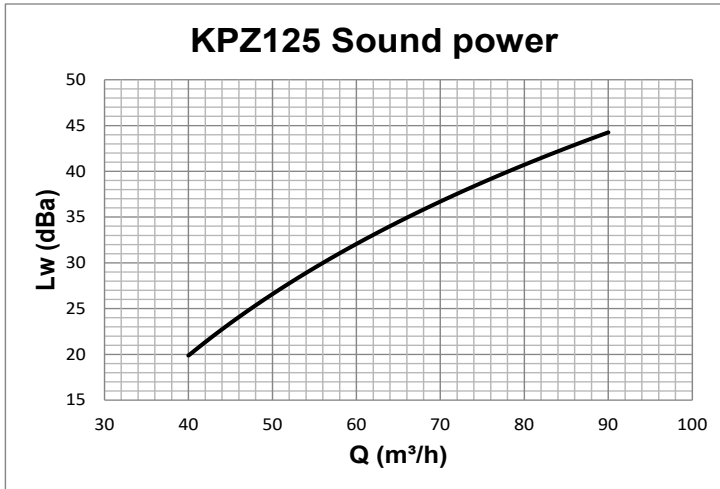
For Hr different from 3m:  
 $Vo(h) = Vo \times Kf$



## HIGH INDUCTION DIFFUSER WITH FIXED GEOMETRY ANGLED NECK

KPZ  
SERIES

PERFORMANCE KPZ 125

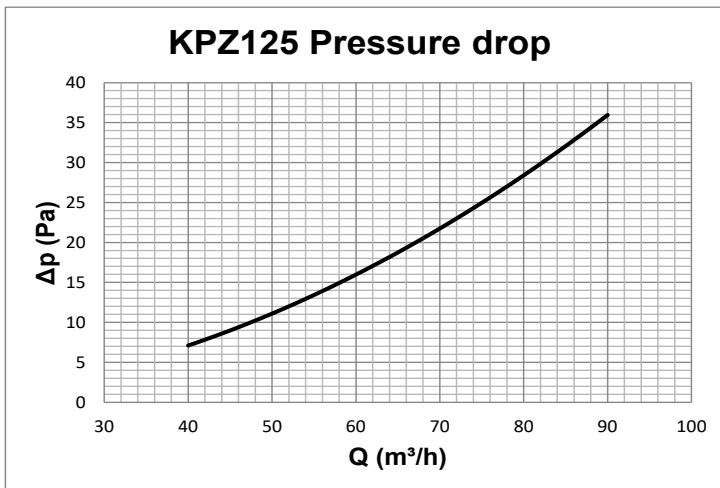


Data measured in reverberation room in accordance with international standards:

**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 measured operating in accordance with the international standard:

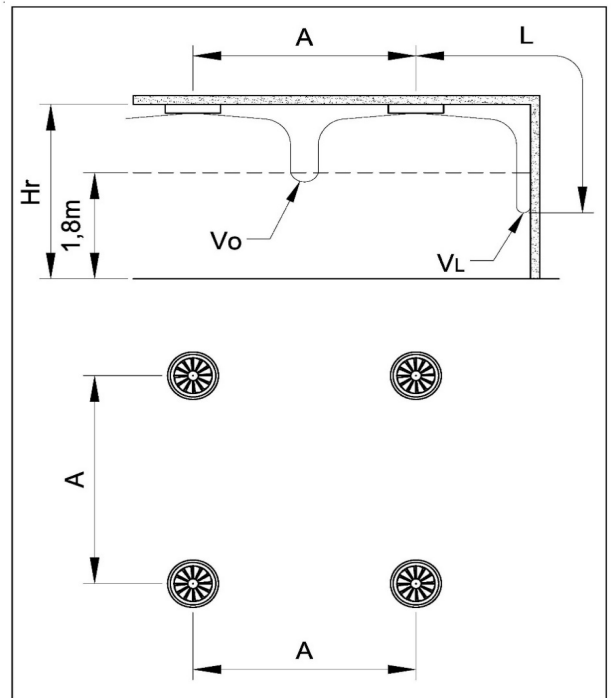
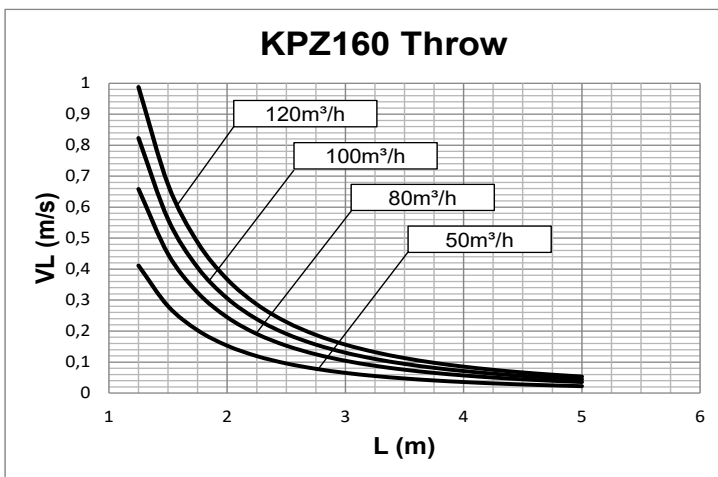
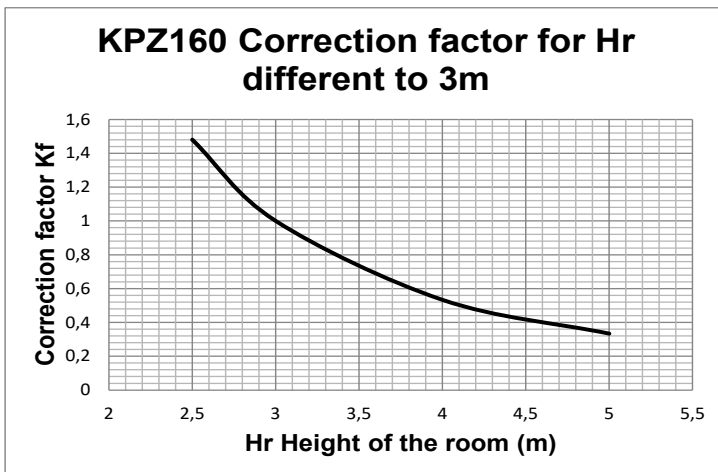
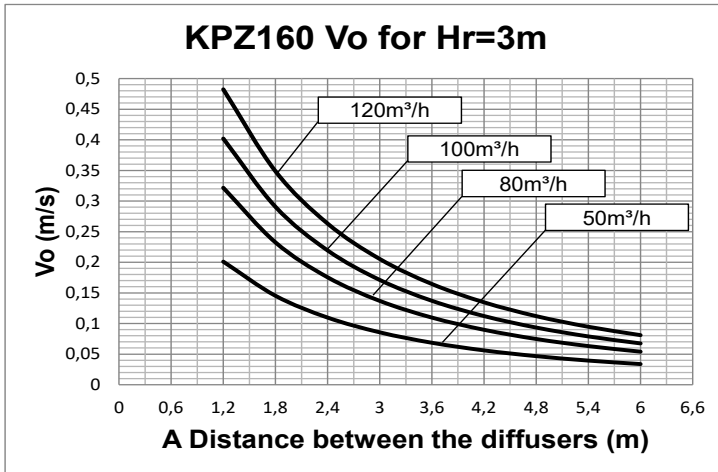
**ISO 5219 1984:** *Air distribution and air diffusion - Laboratory. Aerodynamic testing and rating of air terminal devices.*



# HIGH INDUCTION DIFFUSER WITH FIXED GEOMETRY ANGLED NECK

KPZ  
SERIES

PERFORMANCE KPZ 160



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

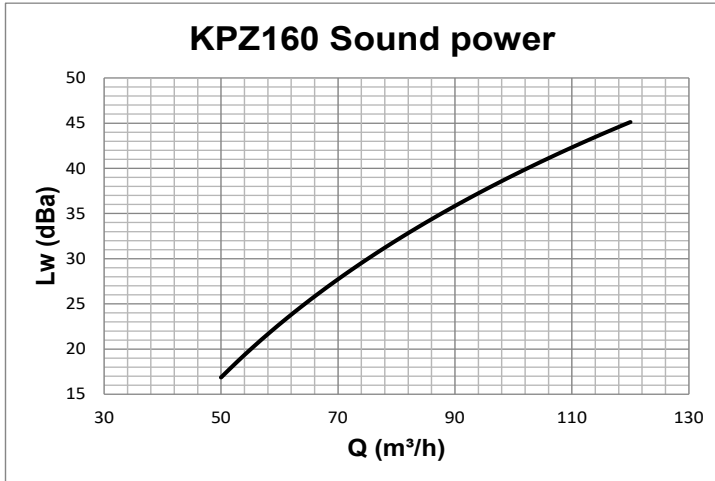
For Hr different from 3m:  
**Vo (h) = Vo x Kf**



## HIGH INDUCTION DIFFUSER WITH FIXED GEOMETRY ANGLED NECK

KPZ  
SERIES

PERFORMANCE KPZ 160

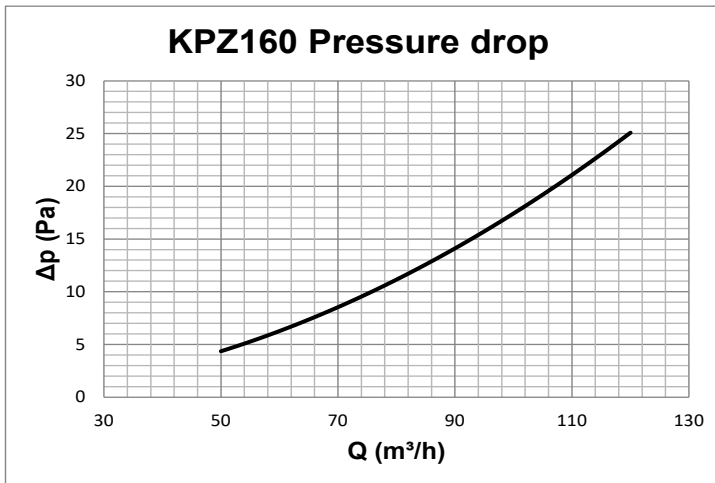


Data measured in reverberation room in accordance with international standards:

**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 measured operating in accordance with the international standard:

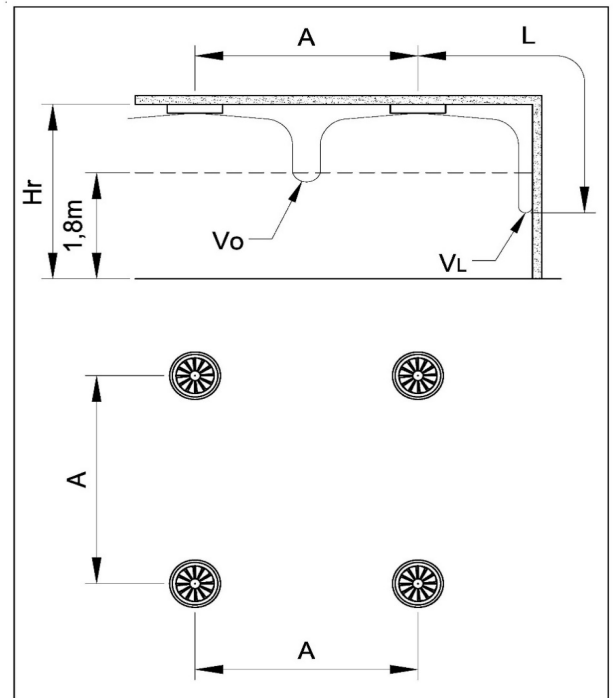
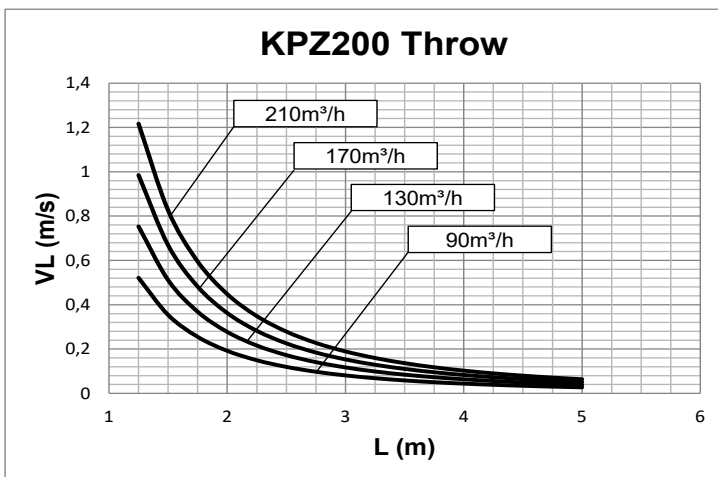
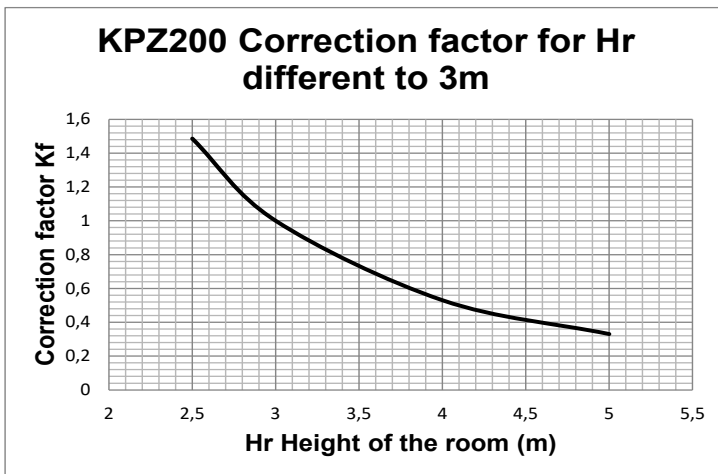
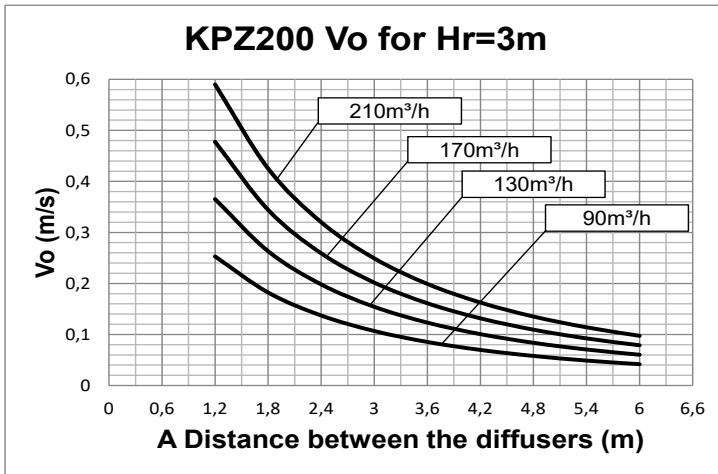
**ISO 5219 1984:** *Air distribution and air diffusion - Laboratory. Aerodynamic testing and rating of air terminal devices.*



# HIGH INDUCTION DIFFUSER WITH FIXED GEOMETRY ANGLED NECK

KPZ  
SERIES

PERFORMANCE KPZ 200



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:  
 $Vo(h) = Vo \times Kf$

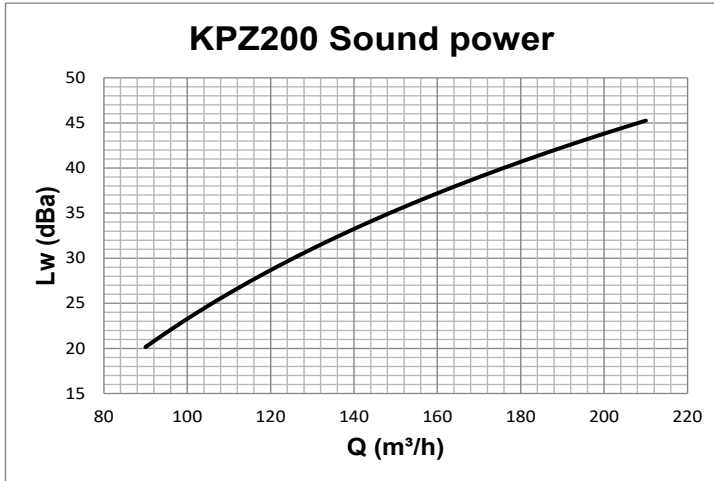




## HIGH INDUCTION DIFFUSER WITH FIXED GEOMETRY ANGLED NECK

KPZ  
SERIES

PERFORMANCE KPZ 200

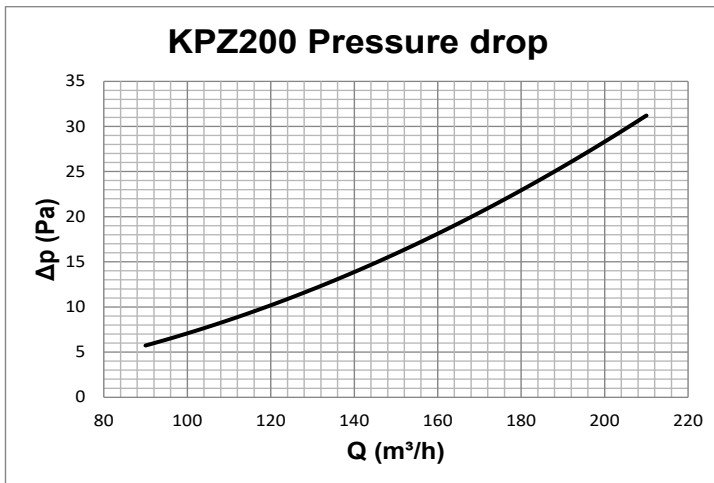


Data measured in reverberation room in accordance with international standards:

**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.*

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Data measured operating in accordance with the international standard:

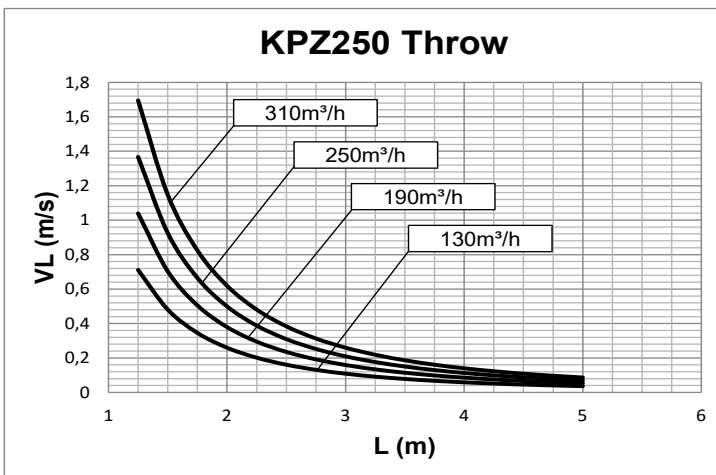
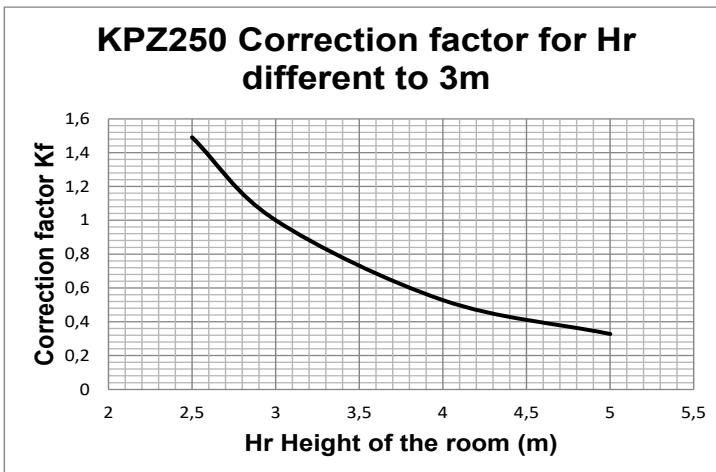
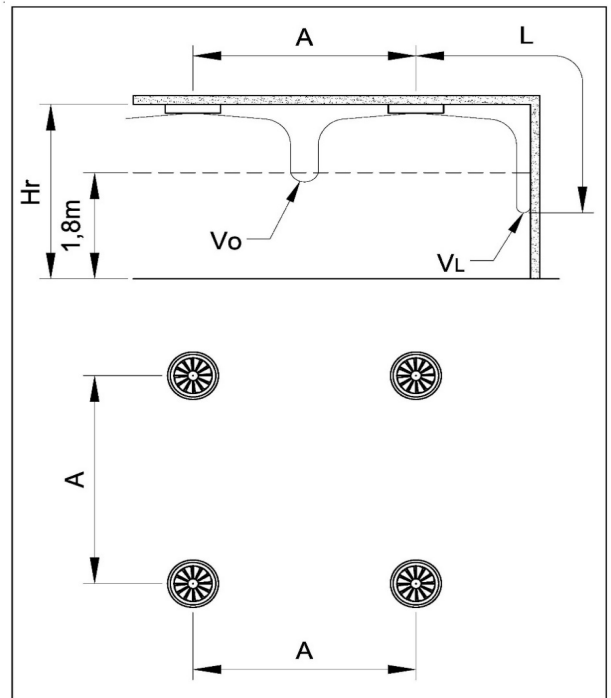
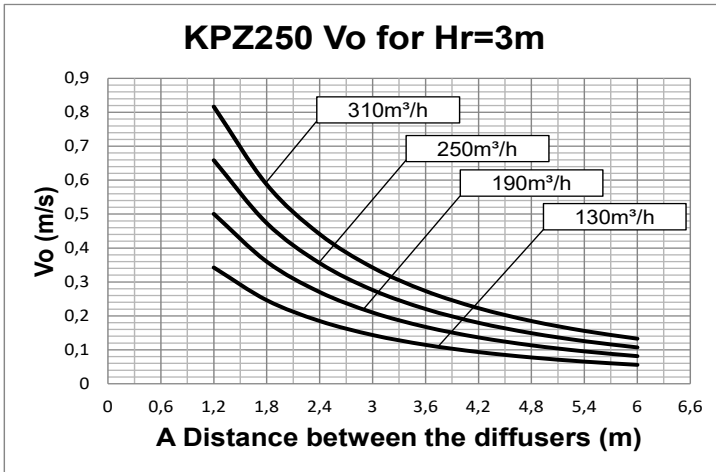
**ISO 5219 1984:** *Air distribution and air diffusion - Laboratory. Aerodynamic testing and rating of air terminal devices.*



# HIGH INDUCTION DIFFUSER WITH FIXED GEOMETRY ANGLED NECK

KPZ  
SERIES

PERFORMANCE KPZ 250



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

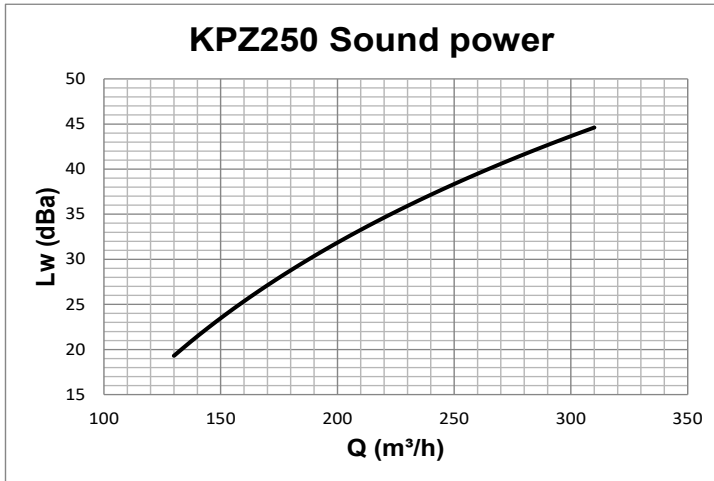
For Hr different from 3m:  
 $V_o(h) = V_o \times K_f$



## HIGH INDUCTION DIFFUSER WITH FIXED GEOMETRY ANGLED NECK

KPZ  
SERIES

PERFORMANCE KPZ 250

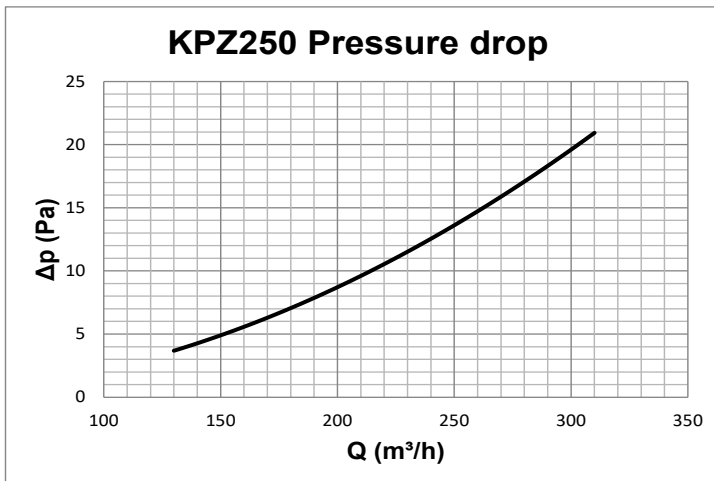


Data measured in reverberation room in accordance with international standards:

**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.*

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Data measured operating in accordance with the international standard:

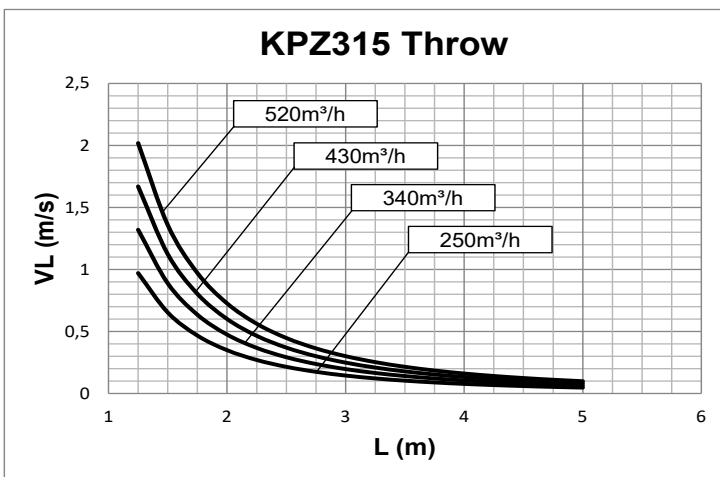
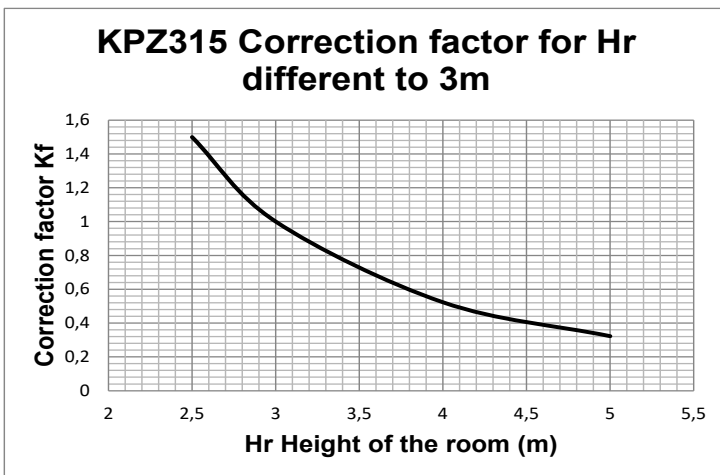
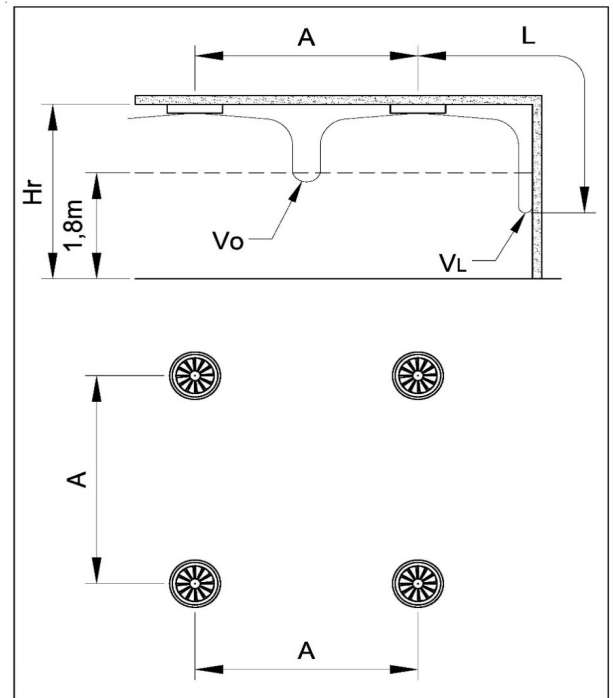
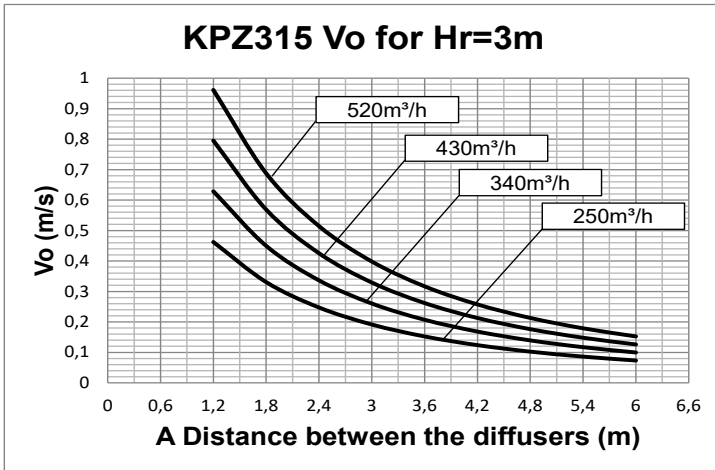
**ISO 5219 1984:** *Air distribution and air diffusion - Laboratory. Aerodynamic testing and rating of air terminal devices.*



# HIGH INDUCTION DIFFUSER WITH FIXED GEOMETRY ANGLED NECK

KPZ  
SERIES

PERFORMANCE KPZ 315



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

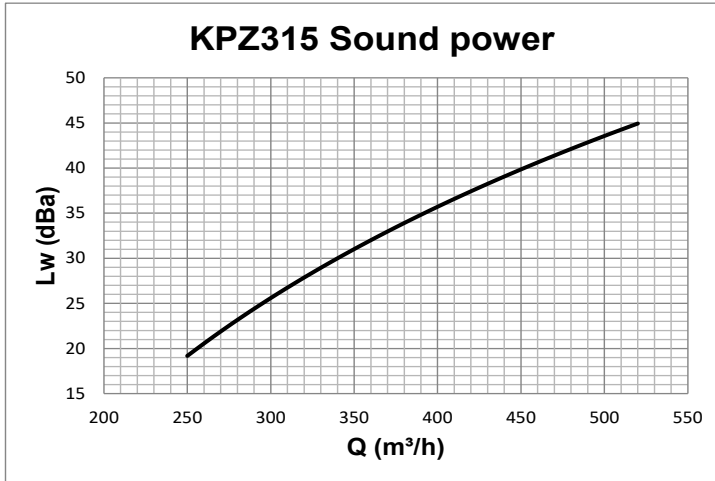
For Hr different from 3m:  
 $Vo(h) = Vo \times Kf$



## HIGH INDUCTION DIFFUSER WITH FIXED GEOMETRY ANGLED NECK

KPZ  
SERIES

PERFORMANCE KPZ 315

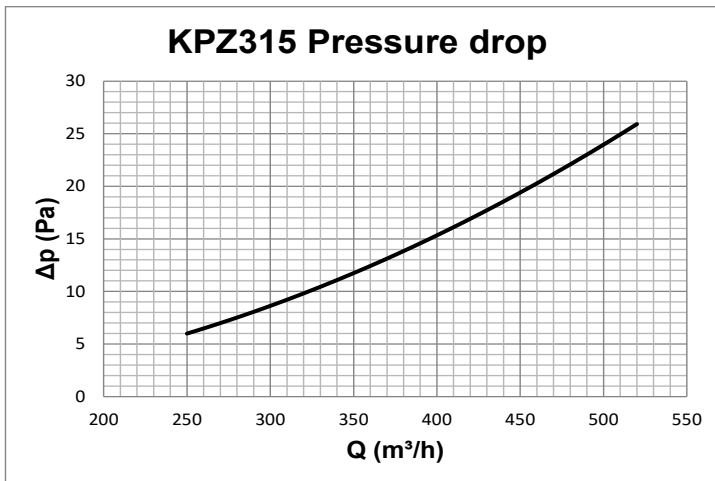


Data measured in reverberation room in accordance with international standards:

**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 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.*

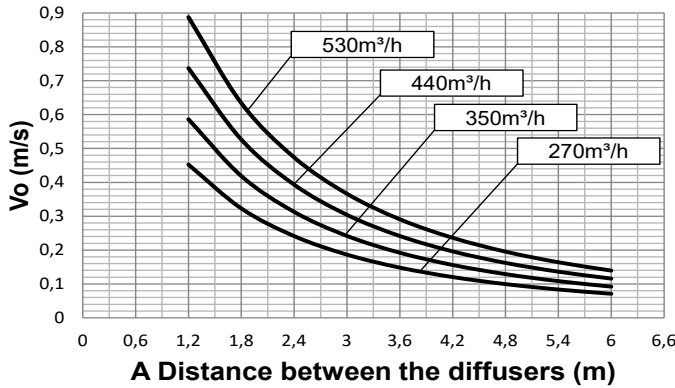


# HIGH INDUCTION DIFFUSER WITH FIXED GEOMETRY ANGLED NECK

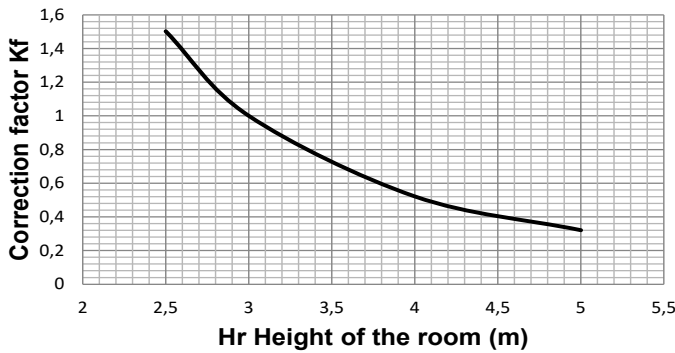
KPZ  
SERIES

PERFORMANCE KPZ 355

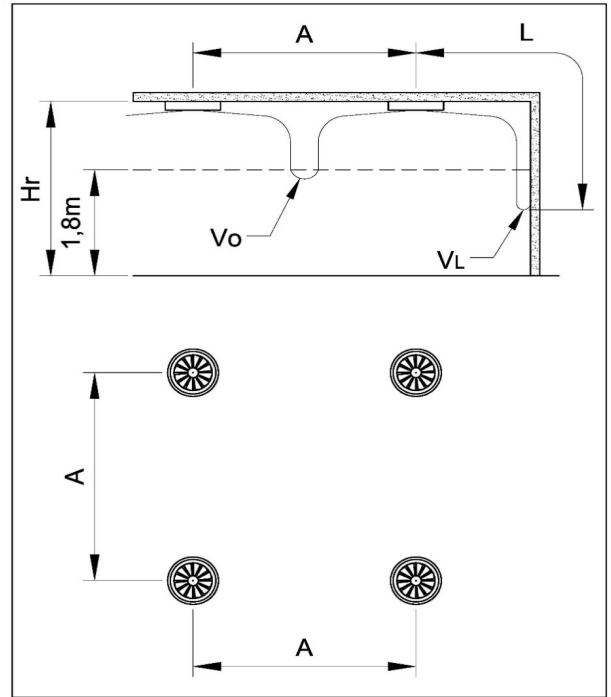
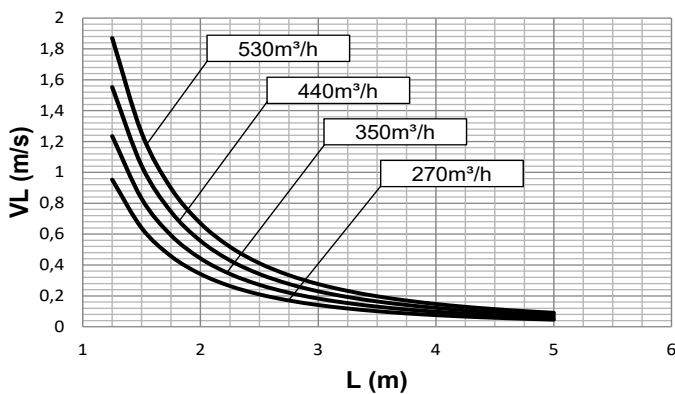
**KPZ355 Vo for Hr=3m**



**KPZ355 Correction factor for Hr different to 3m**



**KPZ355 Throw**



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

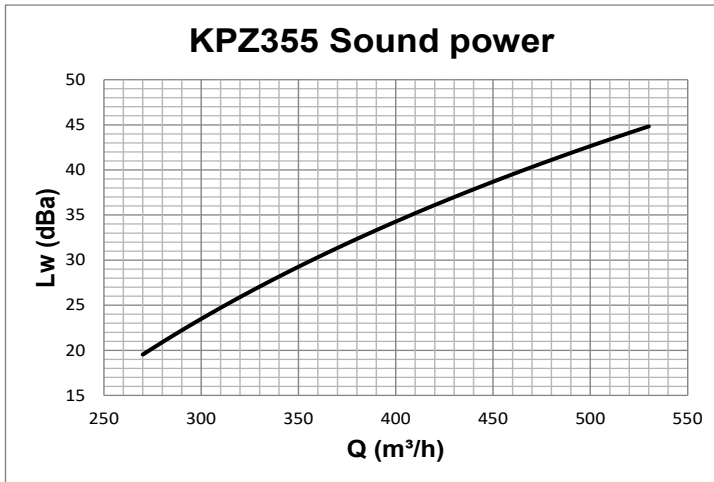
For Hr different from 3m:  
**Vo (h) = Vo x Kf**



## HIGH INDUCTION DIFFUSER WITH FIXED GEOMETRY ANGLED NECK

KPZ  
SERIES

PERFORMANCE KPZ 355

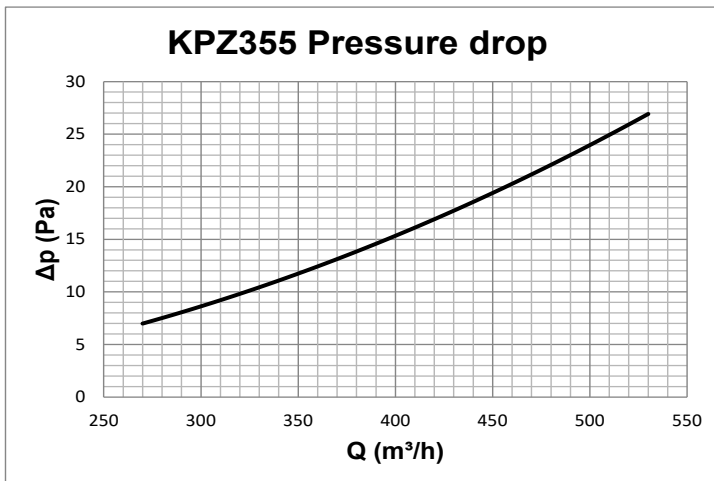


Data measured in reverberation room in accordance with international standards:

**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 measured operating in accordance with the international standard:

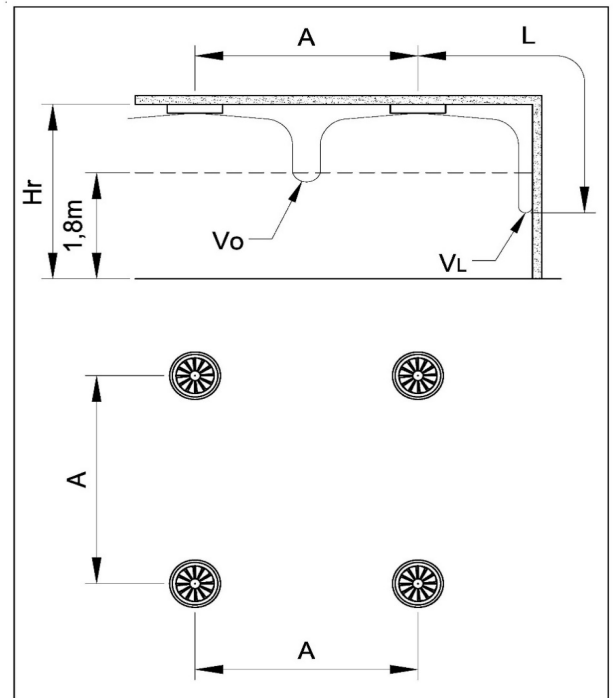
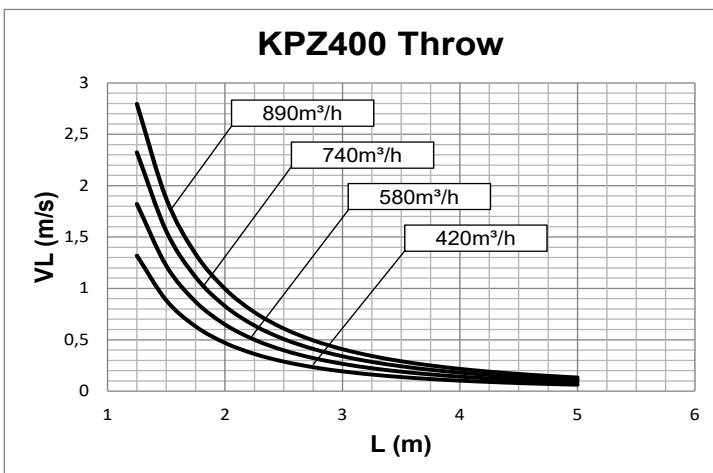
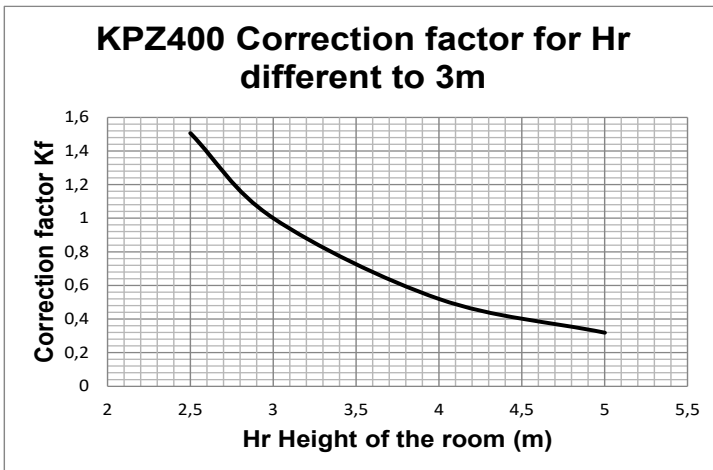
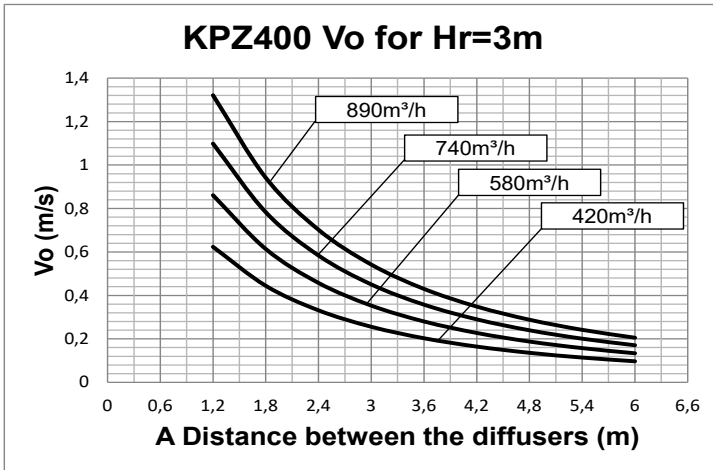
**ISO 5219 1984:** *Air distribution and air diffusion - Laboratory. Aerodynamic testing and rating of air terminal devices.*



# HIGH INDUCTION DIFFUSER WITH FIXED GEOMETRY ANGLED NECK

KPZ  
SERIES

PERFORMANCE KPZ 400



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**

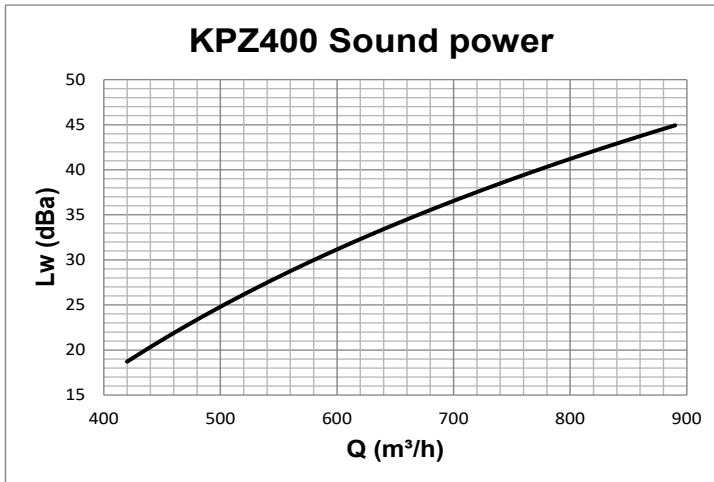




## HIGH INDUCTION DIFFUSER WITH FIXED GEOMETRY ANGLED NECK

KPZ  
SERIES

PERFORMANCE KPZ 400

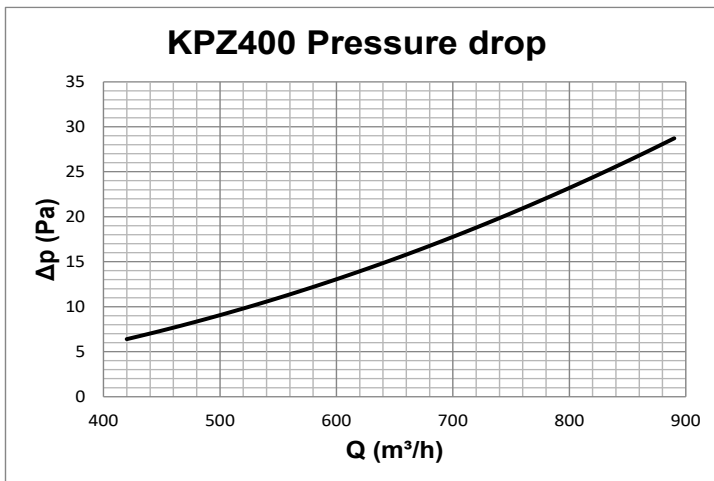


Data measured in reverberation room in accordance with international standards:

**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 measured operating in accordance with the international standard:

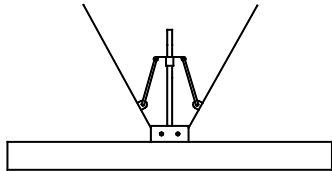
**ISO 5219 1984:** *Air distribution and air diffusion - Laboratory. Aerodynamic testing and rating of air terminal devices.*



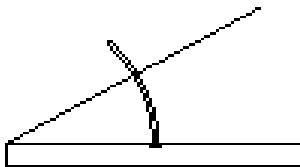
## HIGH INDUCTION DIFFUSER WITH FIXED GEOMETRY ANGLED NECK

KPZ  
SERIES

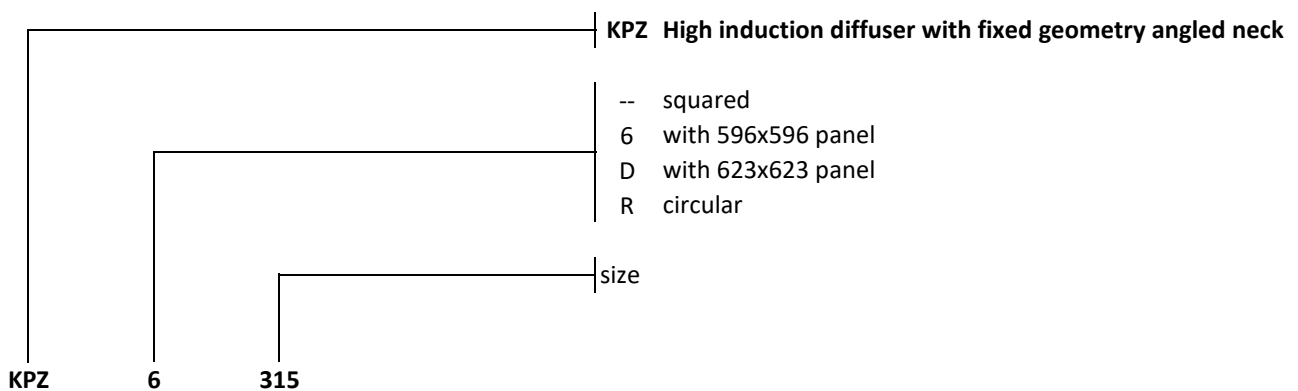
### ACCESSORIES HOW TO ORDER



- SF Butterfly damper  
available for all diameters  
specify diameter at order stage  
Installation on the diffuser: specify the diameter of the diffuser  
Installation on the connector PPKPY: specify the size  $\varnothing A$  of the connector



- SB Collection damper for KU5/6/9 diffusers  
available for diameters 100 to 500 included  
specify diameter at order stage





## PLENUM FOR CIRCULAR DIFFUSER

PP 60  
SERIES

### OVERVIEW

#### PLENUM :

The PP60 plenums, also named "calm cases", allow the correct entry of air in the neck of the diffuser thus ensuring that the throw of air in the room is homogenous along all the circumference of the diffuser.

#### Materials :

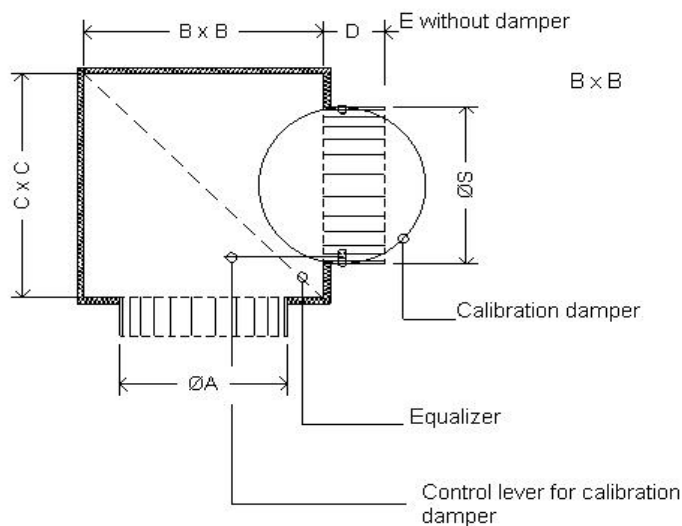
PP 60 standard plenum : galvanized steel sheet.  
Insulation: expanded polyethylene certified for the reaction to fire according to european class B-s2 d0.

#### Versions :

Made from insulated steel sheet with expanded polyethylene, ideal for the supply of air, and in simple sheet steel normally used for air extraction.

#### Accessories:

Regulation damper and equalizing net in the connection of the plenum.



| nominal deck diameter<br>mm | A<br>mm | B<br>mm | C<br>mm | D<br>mm | E<br>mm | N° of connections | S [mm]<br>mm | connection and damper material |
|-----------------------------|---------|---------|---------|---------|---------|-------------------|--------------|--------------------------------|
| 125                         | 127     | 225     | 225     | 90      | 60      | 1                 | 121          | ABS (*)                        |
| 160                         | 162     | 250     | 250     | 90      | 60      | 1                 | 156          | ABS (*)                        |
| 200                         | 202     | 300     | 300     | 90      | 60      | 1                 | 196          | ABS (*)                        |
| 250                         | 252     | 350     | 350     | 90      | 60      | 1                 | 246          | ABS (*)                        |
| 315                         | 317     | 400     | 400     | 90      | 60      | 1                 | 311          | steel                          |
| 355                         | 357     | 450     | 450     | 90      | 90      | 1                 | 346          | steel                          |
| 400                         | 402     | 500     | 500     | 90      | 90      | 1                 | 396          | steel                          |

(\*) steel on request



# PLENUM FOR CIRCULAR DIFFUSER

## PP 60 SERIES

### HOW TO ORDER

