

## MULTIDIRECTIONAL DIFFUSERS FIXED SQUARE GEOMETRY

KN  
SERIES

### OVERVIEW AND TECHNICAL DATA

#### TECHNICAL DATA

The multidirectional square and rectangular diffusers KN series in aluminum have an effective inductive capacity and are ideal for all those situations which large temperature differences.

These are made with the removable central part to be able to be installed without the use of any particular subframe. The diffusion of the air flow can be directional and asymmetrical and guarantees a correct operation of the installation heights from a minimum of 2.5 meters to a maximum of 4.5 meters. The speakers in question are realized in 6 combinations to satisfy all the possible applications. These are listed as follows: 4-way, 3-way, 2-way corner, two opposite ways, one way.

#### FIXING

Fixing is by means of hidden screws from the side of the neck of the diffuser.

The diffusers KN model 450 are especially suited for modular suspended due to external measuring 595x595 that allows installation by simply replacing the diffuser to one of the ceiling modules.

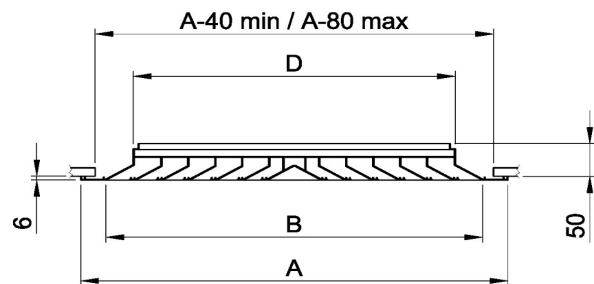
#### FINISH STANDARD

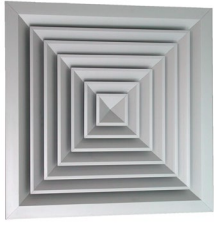
The KN Series speakers are built in the same way both in natural anodized aluminum, either with epoxy powder treatment RAL 9010 colored surface.

#### UNSUITABLE ENVIRONMENTS

The aluminum products are not suitable for installation in environments with an atmosphere containing corrosive substances for this material and in particular containing

NOMINAL	A mm	B mm	D mm
150	294	224	148
225	369	299	223
300	444	374	298
375	519	449	373
450	594	524	448
525	669	599	523
600	744	674	598

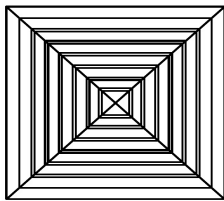




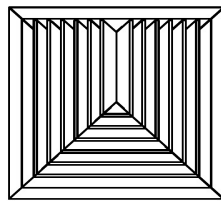
# MULTIDIRECTIONAL DIFFUSERS FIXED SQUARE GEOMETRY

OVERVIEW AND TECHNICAL DATA

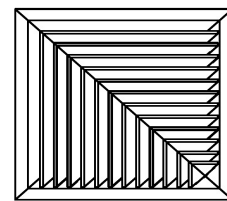
KN  
SERIES



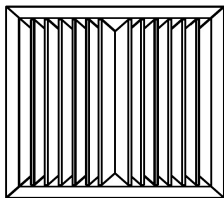
KN4



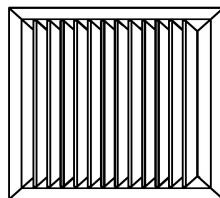
KN3



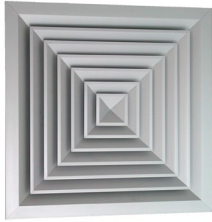
KN2A



KN25



KN1

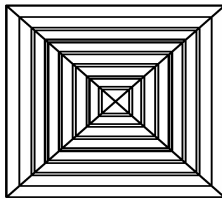


# MULTIDIRECTIONAL DIFFUSERS FIXED SQUARE GEOMETRY

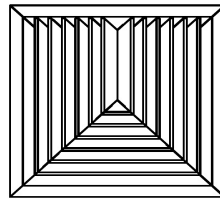
KN  
SERIES

## OVERVIEW AND TECHNICAL DATA

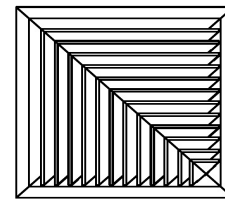
EFFECTIVE AREA	
MODELLO	Ak m <sup>2</sup>
KN4 150	0,0094
KN4 225	0,0212
KN4 300	0,0377
KN4 375	0,0589
KN4 450	0,0848
KN4 525	0,1154
KN4 600	0,1507



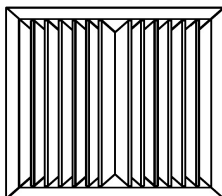
EFFECTIVE AREA	
MODELLO	Ak m <sup>2</sup>
KN3 150	0,0095
KN3 225	0,0202
KN3 300	0,0353
KN3 375	0,0550
KN3 450	0,0791
KN3 525	0,1078
KN3 600	0,1409



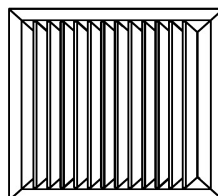
EFFECTIVE AREA	
MODELLO	Ak m <sup>2</sup>
KN2A 150	0,0088
KN2A 225	0,0186
KN2A 300	0,0325
KN2A 375	0,0504
KN2A 450	0,0724
KN2A 525	0,0984
KN2A 600	0,1285

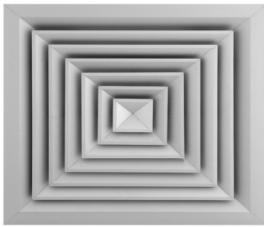


EFFECTIVE AREA	
MODELLO	Ak m <sup>2</sup>
KN2 150	0,0083
KN2 225	0,0187
KN2 300	0,0333
KN2 375	0,0509
KN2 450	0,0738
KN2 525	0,1008
KN2 600	0,1320



EFFECTIVE AREA	
MODELLO	Ak m <sup>2</sup>
KN1 150	0,0083
KN1 225	0,0187
KN1 300	0,0333
KN1 375	0,0509
KN1 450	0,0738
KN1 525	0,1008
KN1 600	0,1320

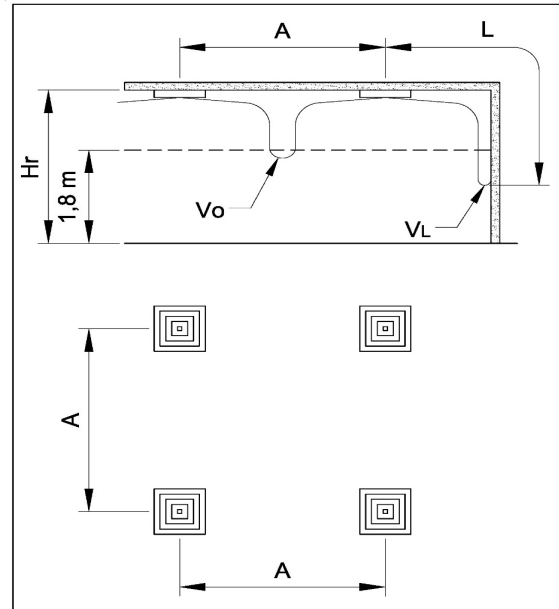
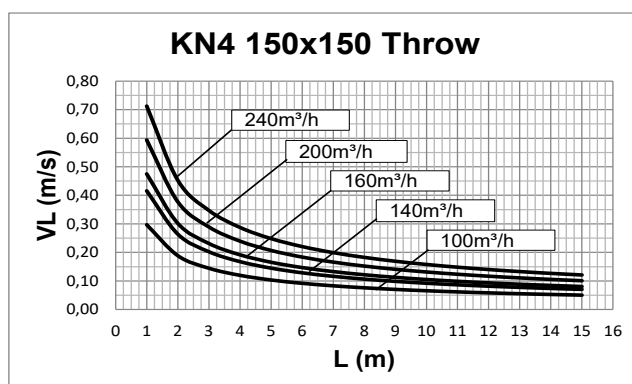
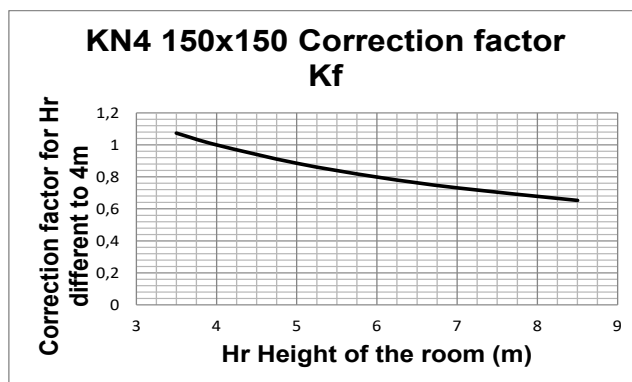
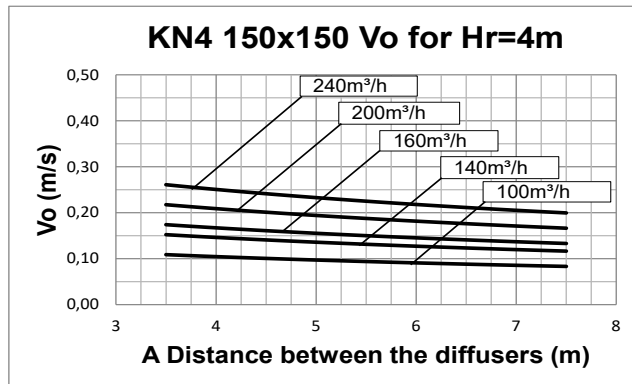




## MULTIDIRECTIONAL DIFFUSERS FIXED SQUARE GEOMETRY

PERFORMANCE K4 150x150

KN  
SERIES



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

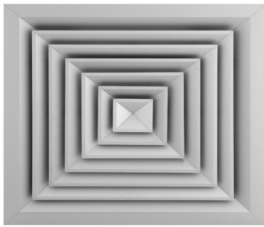
$V_o$  (m/s) speed at the limit of the occupied zone

$L$  (m) horizontal distance in metres from the centre of the diffuser

$V_L$  (m/s) maximum speed in the air stream

For  $H_r$  different from 3m:

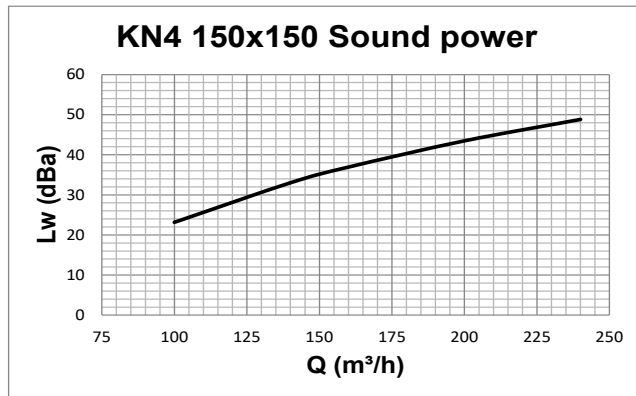
$V_o(h) = V_o \times K_f$



## MULTIDIRECTIONAL DIFFUSERS FIXED SQUARE GEOMETRY

KN  
SERIES

PERFORMANCE K4 150x150

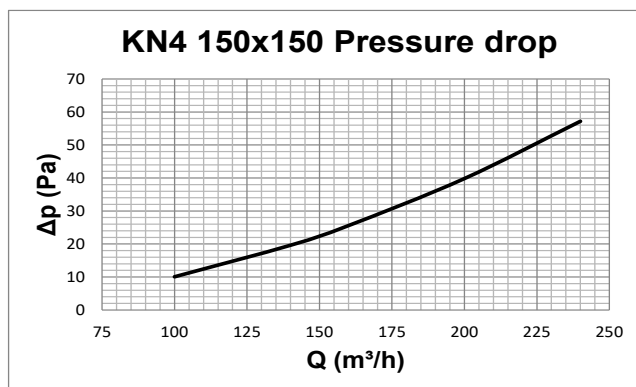


Data measured in reverberation room in accordance with international standards:

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

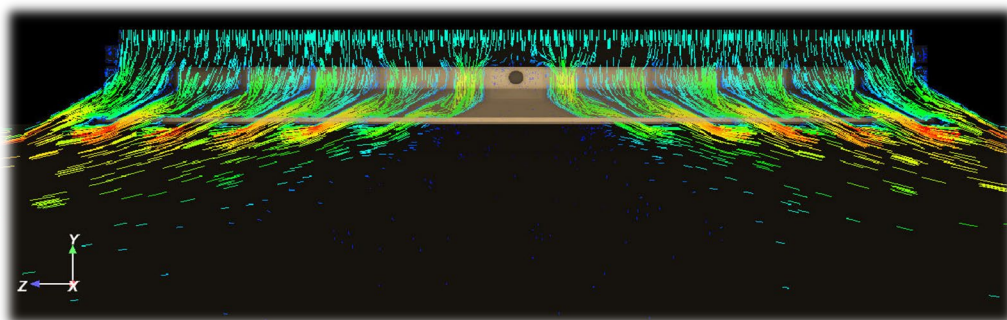
ISO 5135 1997: *Acoustic - determination of sound power levels of noise from air-terminal devices; air terminal units; dampers and valves by measurement in a reverberation room.*

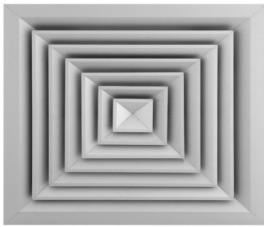
The data presented does not consider the attenuation given by the area of installation. This attenuation is normally between 6 and 10 dBA and is determined by the room size, the shape of the environment and the interior features.



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

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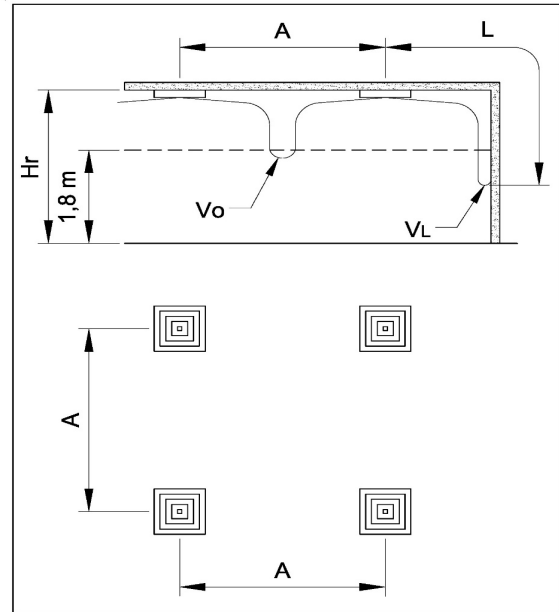
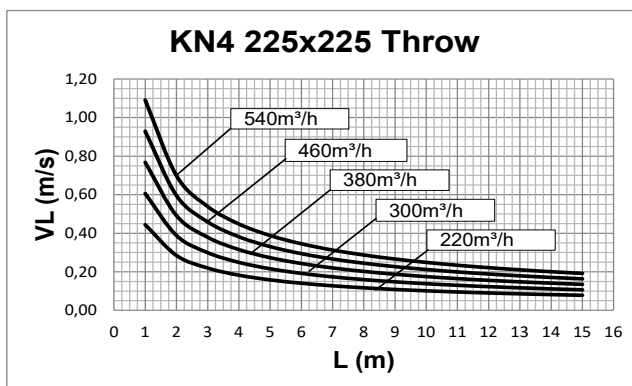
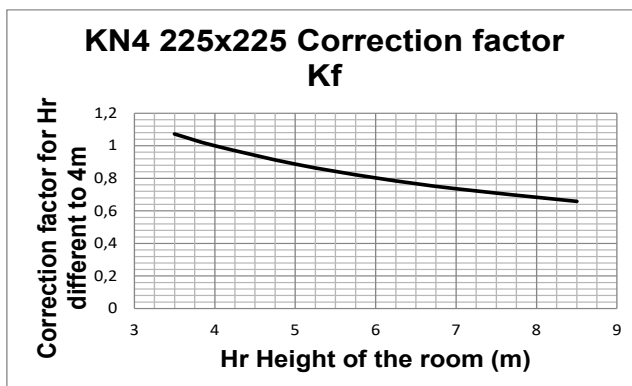
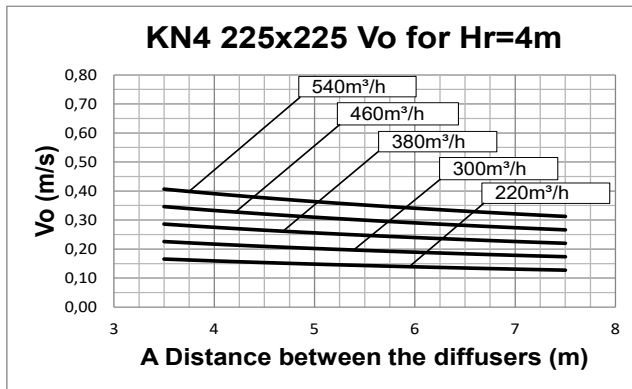




## MULTIDIRECTIONAL DIFFUSERS FIXED SQUARE GEOMETRY

PERFORMANCE K4 225x225

KN  
SERIES



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

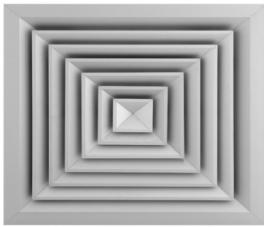
Vo (m/s) speed at the limit of the occupied zone

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:

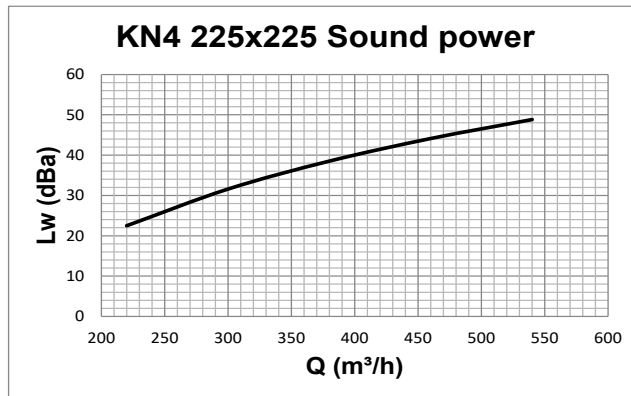
$$Vo(h) = Vo \times Kf$$



## MULTIDIRECTIONAL DIFFUSERS FIXED SQUARE GEOMETRY

KN  
SERIES

PERFORMANCE K4 225x225

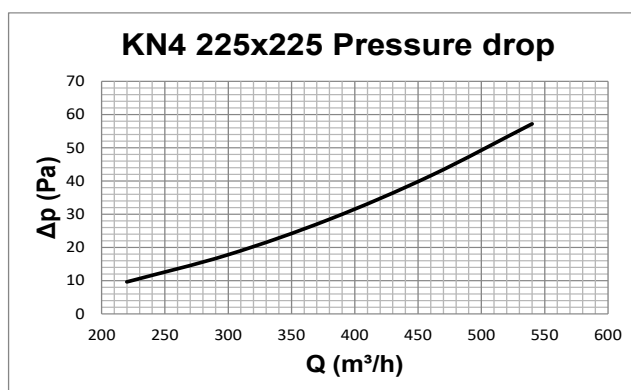


Data measured in reverberation room in accordance with international standards:

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

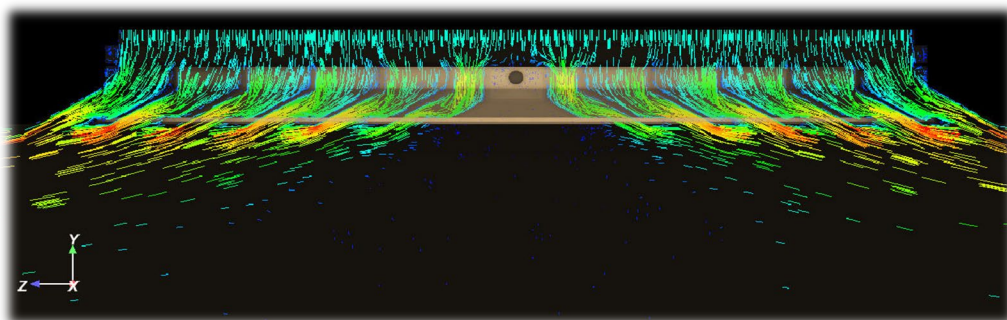
ISO 5135 1997: *Acoustic - determination of sound power levels of noise from air-terminal devices; air terminal units; dampers and valves by measurement in a reverberation room.*

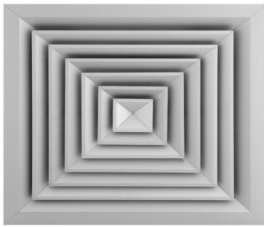
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Data obtained from CFD mathematical model in virtual test chamber operating in isothermal conditions in accordance with the international standard:

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

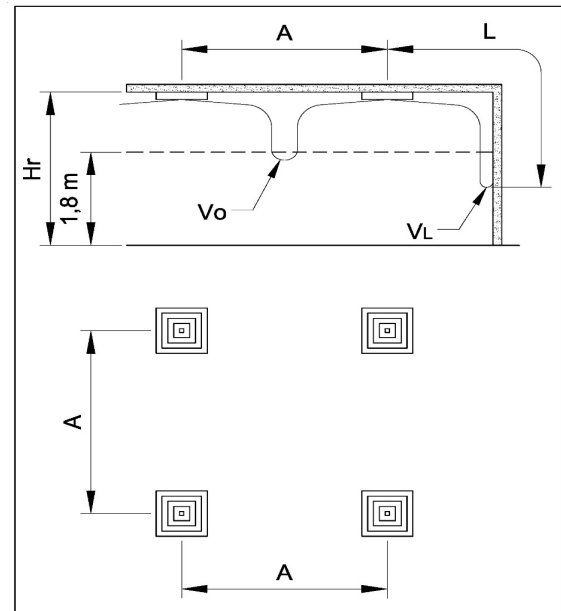
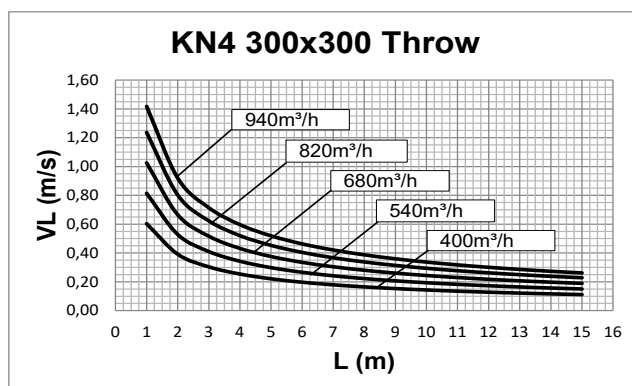
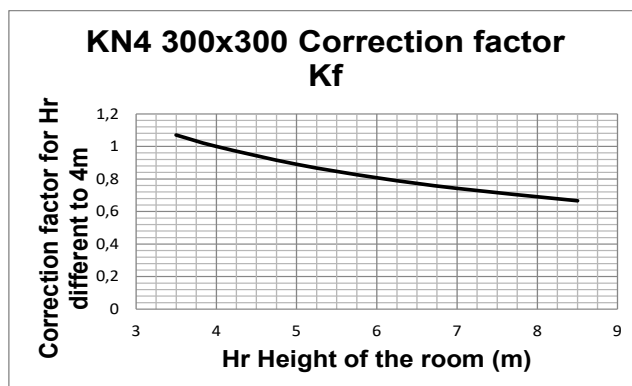
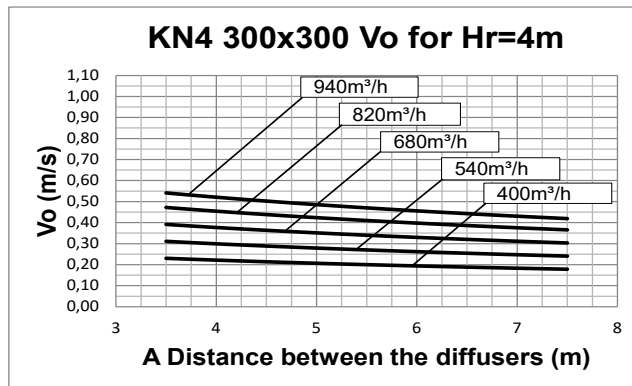




## MULTIDIRECTIONAL DIFFUSERS FIXED SQUARE GEOMETRY

PERFORMANCE K4 300x300

KN  
SERIES



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

$V_o (m/s)$  speed at the limit of the occupied zone

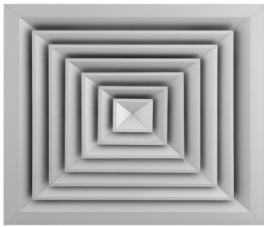
$L (m)$  horizontal distance in metres from the centre of the diffuser

$V_L (m/s)$  maximum speed in the air stream

For  $H_r$  different from 3m:

$$V_o(h) = V_o \times K_f$$

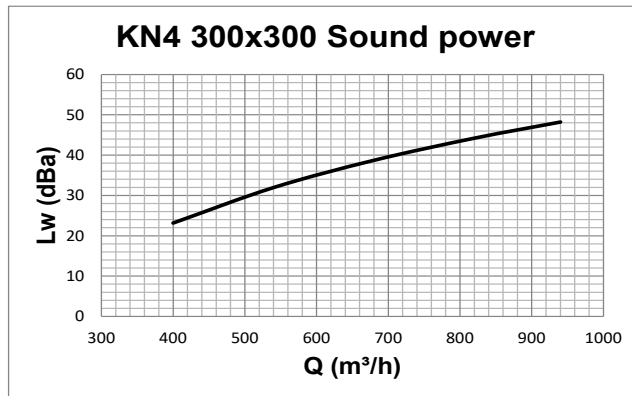




## MULTIDIRECTIONAL DIFFUSERS FIXED SQUARE GEOMETRY

KN  
SERIES

PERFORMANCE K4 300x300

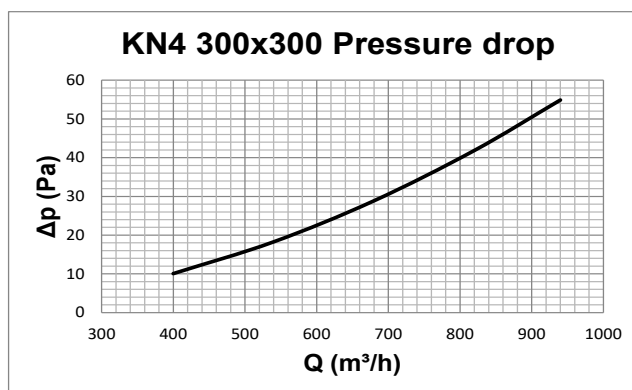


Data measured in reverberation room in accordance with international standards:

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

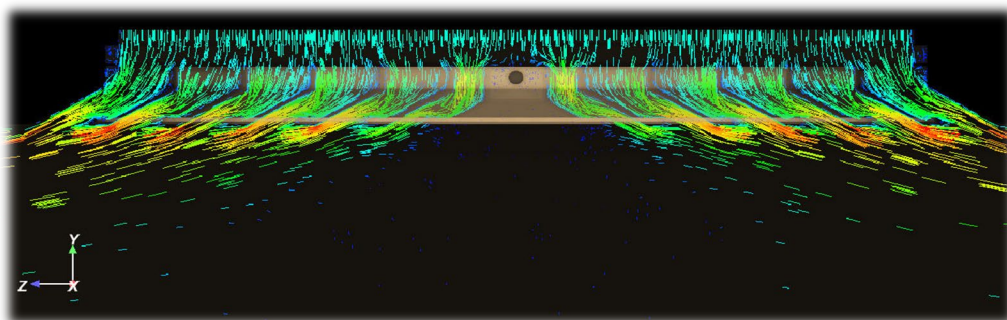
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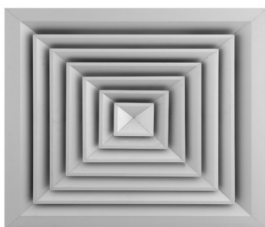
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Data obtained from CFD mathematical model in virtual test chamber operating in isothermal conditions in accordance with the international standard:

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

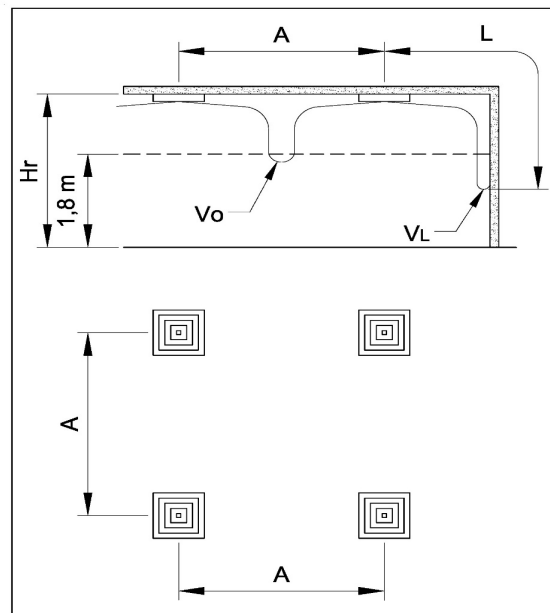
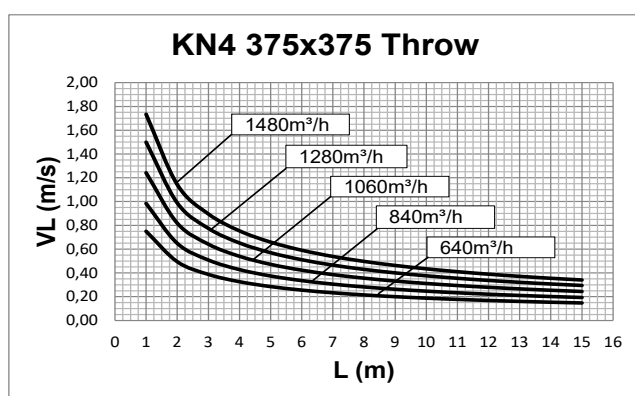
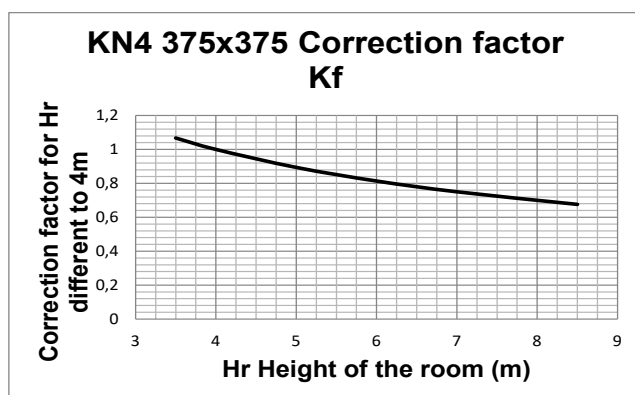
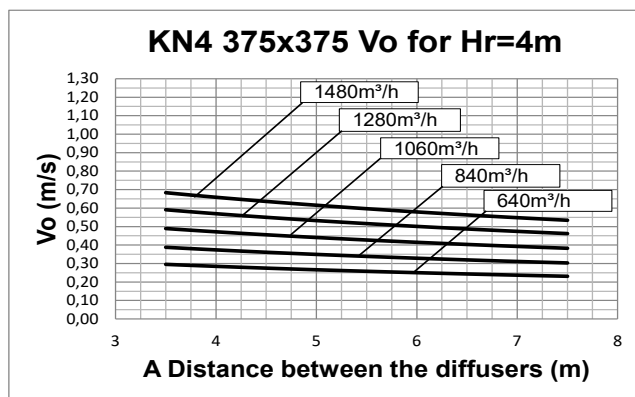




## MULTIDIRECTIONAL DIFFUSERS FIXED SQUARE GEOMETRY

PERFORMANCE K4 375x375

KN  
SERIES

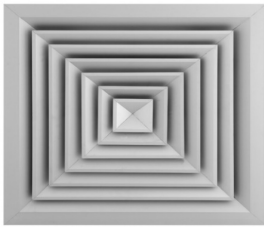


Data obtained from CFD mathematical model in virtual test chamber operating in isothermal conditions in accordance with the international standard:

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

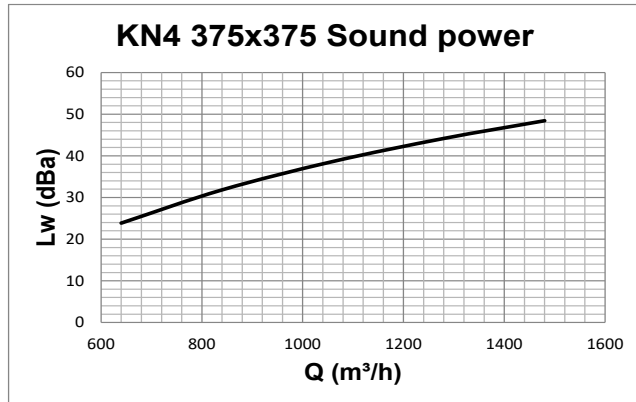
For Hr different from 3m:  
 $Vo(h) = Vo \times Kf$



## MULTIDIRECTIONAL DIFFUSERS FIXED SQUARE GEOMETRY

PERFORMANCE K4 375x375

KN  
SERIES

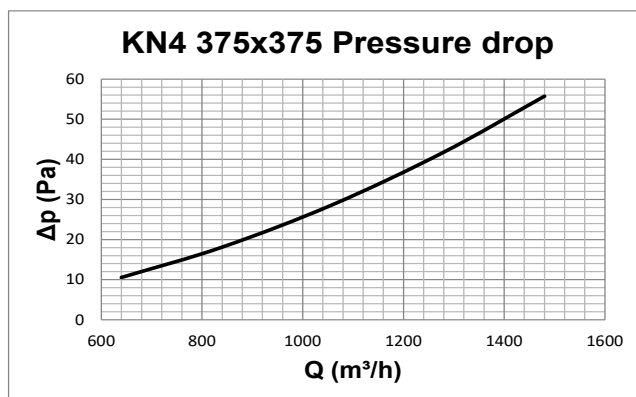


Data measured in reverberation room in accordance with international standards:

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

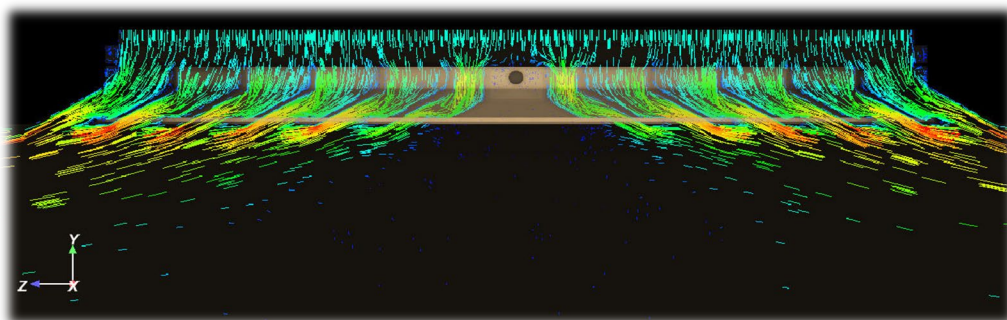
ISO 5135 1997: *Acoustic - determination of sound power levels of noise from air-terminal devices; air terminal units; dampers and valves by measurement in a reverberation room.*

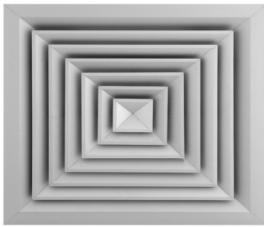
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Data obtained from CFD mathematical model in virtual test chamber operating in isothermal conditions in accordance with the international standard:

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

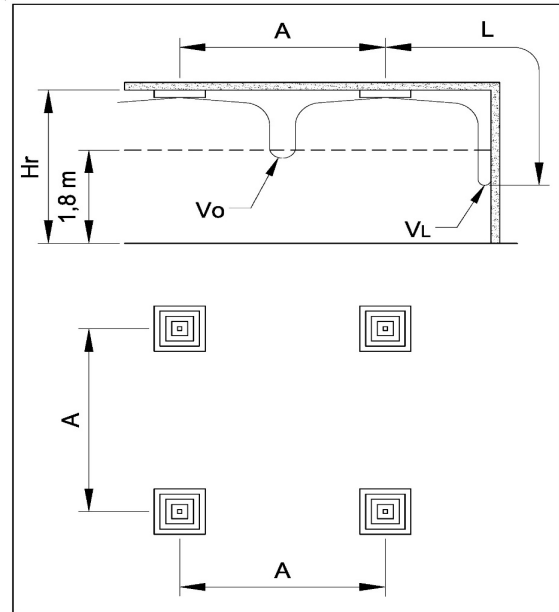
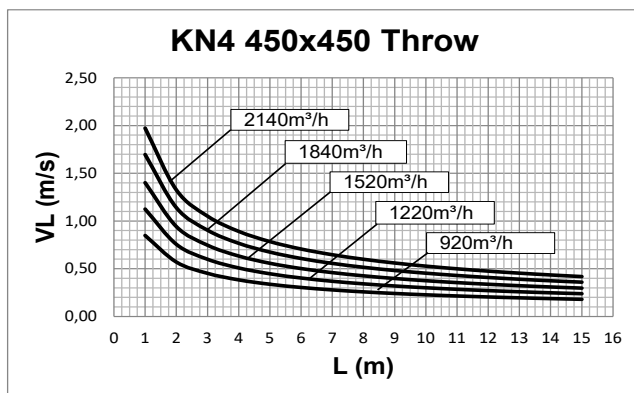
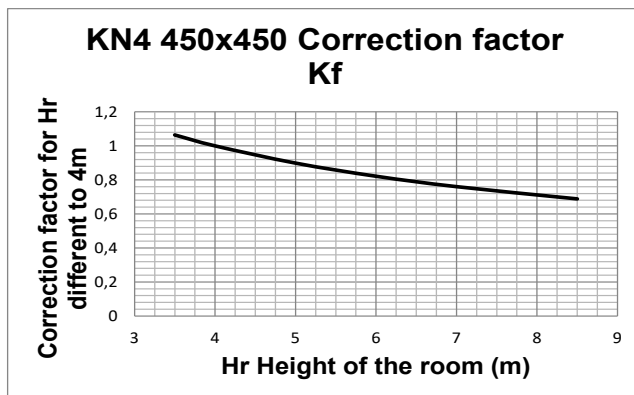
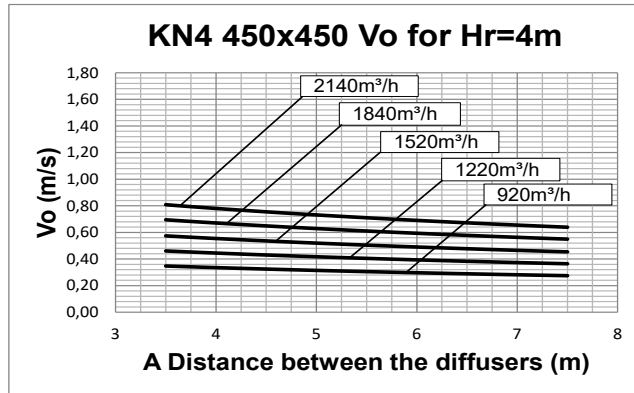




## MULTIDIRECTIONAL DIFFUSERS FIXED SQUARE GEOMETRY

PERFORMANCE K4 450x450

KN  
SERIES

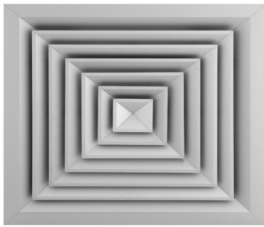


Data obtained from CFD mathematical model in virtual test chamber operating in isothermal conditions in accordance with the international standard:

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

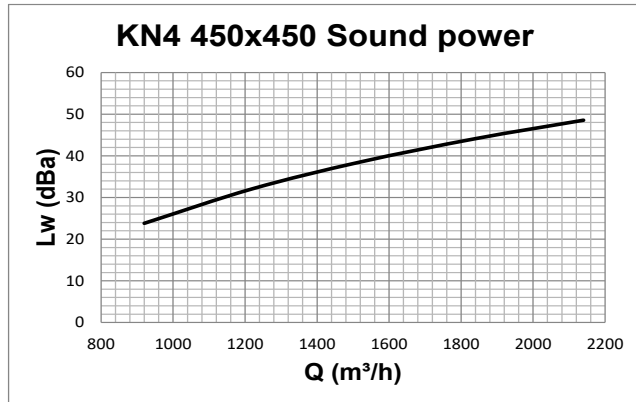
For Hr different from 3m:  
 $V_o(h) = V_o \times K_f$



## MULTIDIRECTIONAL DIFFUSERS FIXED SQUARE GEOMETRY

KN  
SERIES

PERFORMANCE K4 450x450

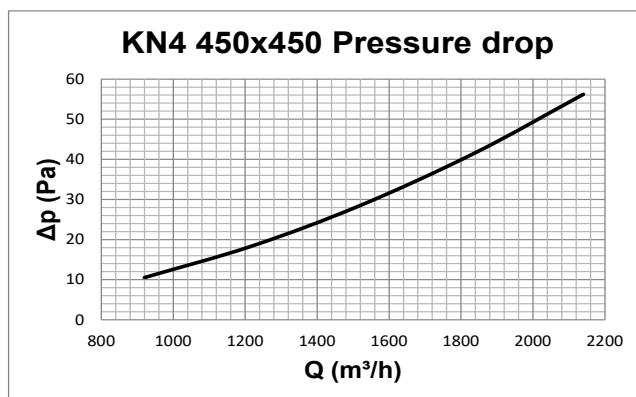


Data measured in reverberation room in accordance with international standards:

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

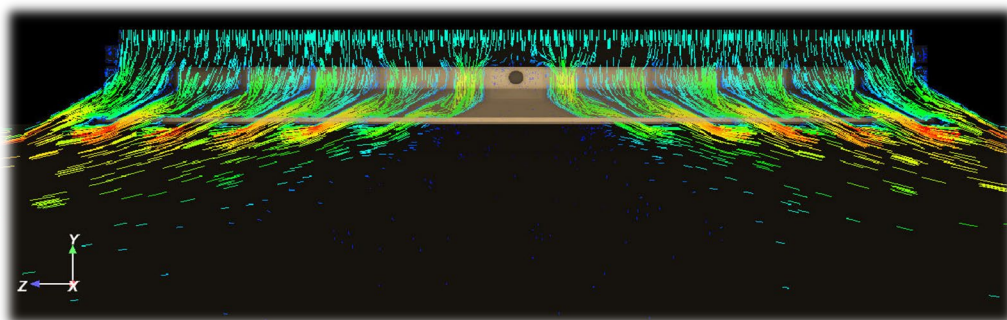
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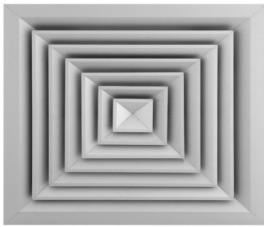
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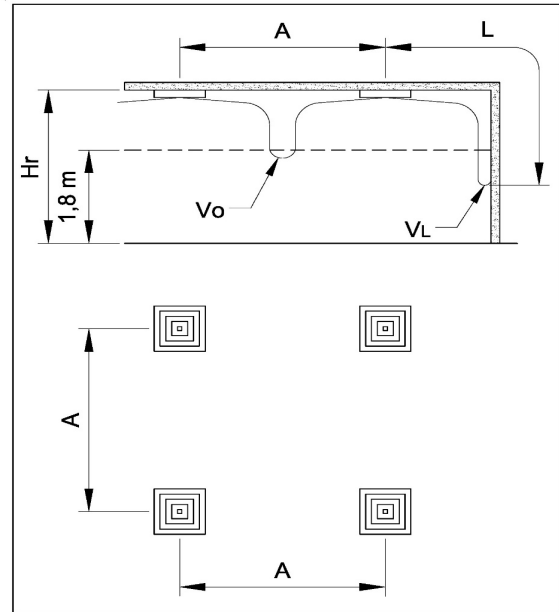
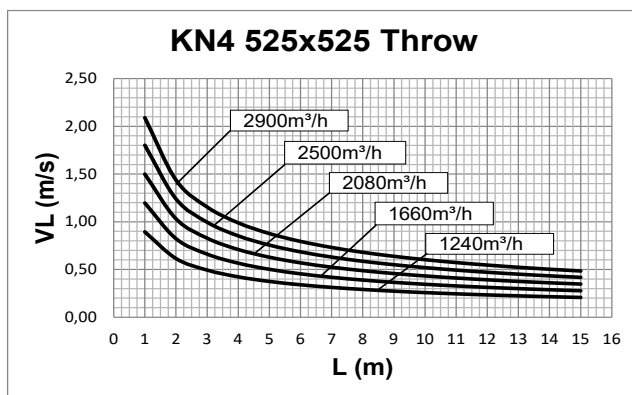
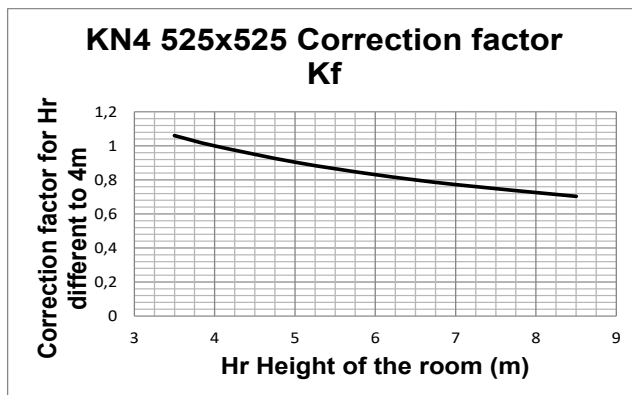
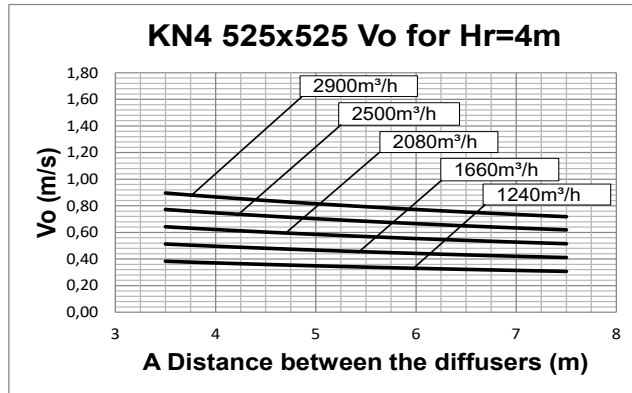




## MULTIDIRECTIONAL DIFFUSERS FIXED SQUARE GEOMETRY

PERFORMANCE K4 525x525

KN  
SERIES



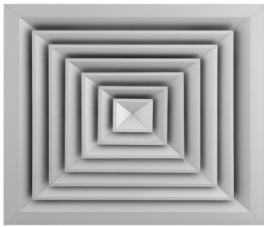
Data obtained from CFD mathematical model in virtual test chamber operating in isothermal conditions in accordance with the international standard:

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:  
 $V_o(h) = V_o \times K_f$

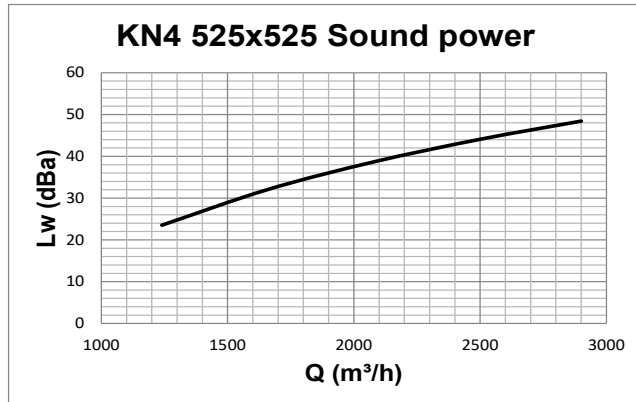




## MULTIDIRECTIONAL DIFFUSERS FIXED SQUARE GEOMETRY

KN  
SERIES

PERFORMANCE K4 525x525

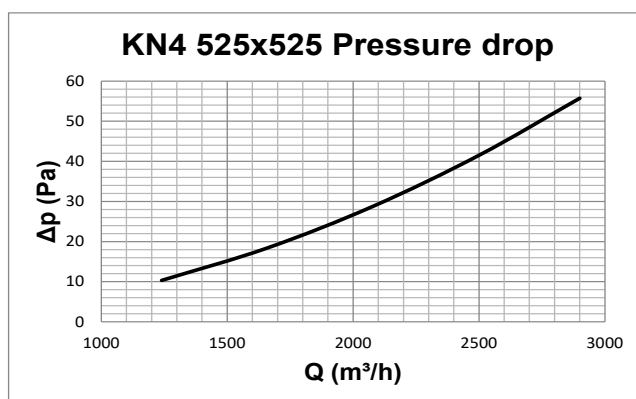


Data measured in reverberation room in accordance with international standards:

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

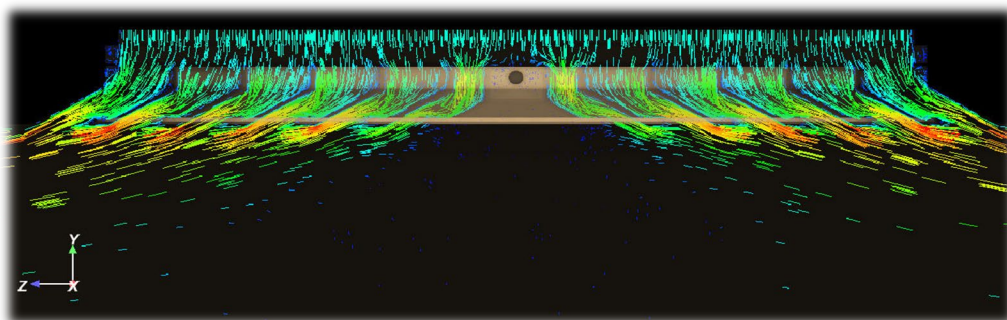
ISO 5135 1997: *Acoustic - determination of sound power levels of noise from air-terminal devices; air terminal units; dampers and valves by measurement in a reverberation room.*

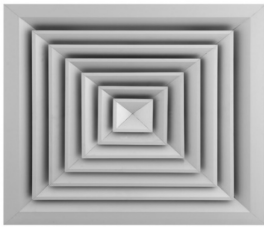
The data presented does not consider the attenuation given by the area of installation. This attenuation is normally between 6 and 10 dBA and is determined by the room size, the shape of the environment and the interior features.



Data obtained 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.*

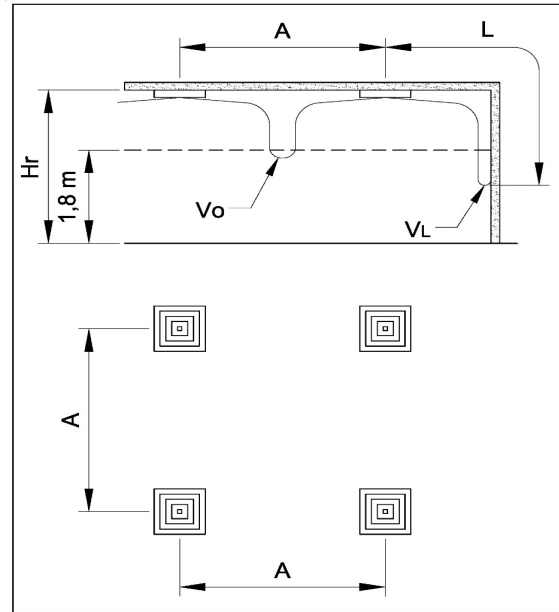
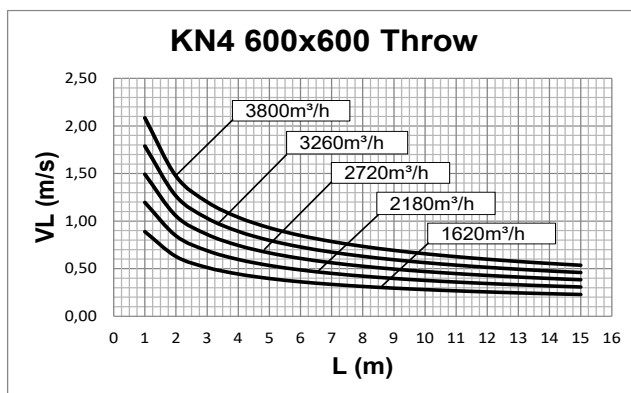
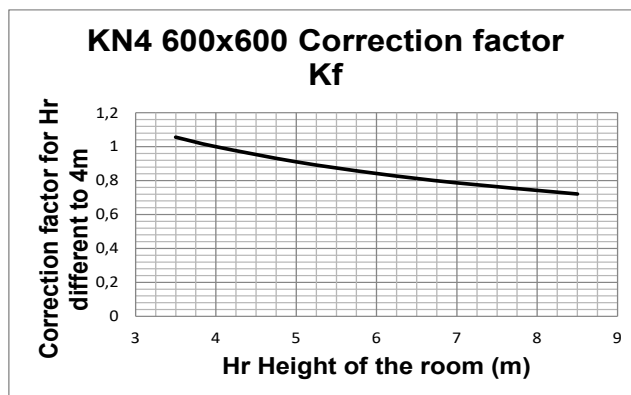
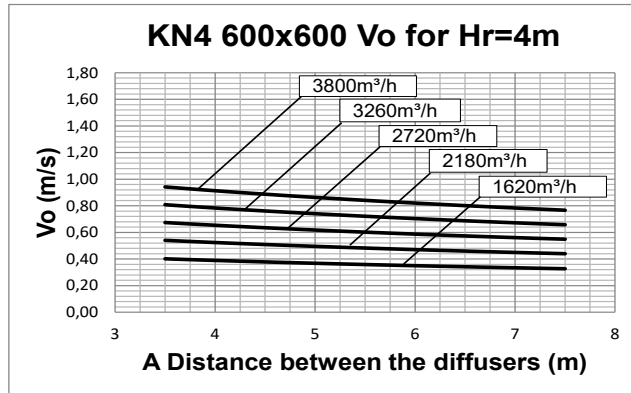




## MULTIDIRECTIONAL DIFFUSERS FIXED SQUARE GEOMETRY

PERFORMANCE K4 600x600

KN  
SERIES



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

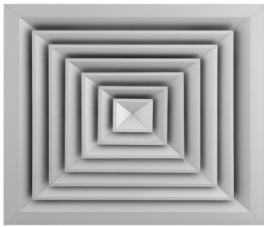
L (m) horizontal distance in metres from the centre of the diffuser

VL (m/s) maximum speed in the air stream

For Hr different from 3m:

$V_o(h) = V_o \times K_f$

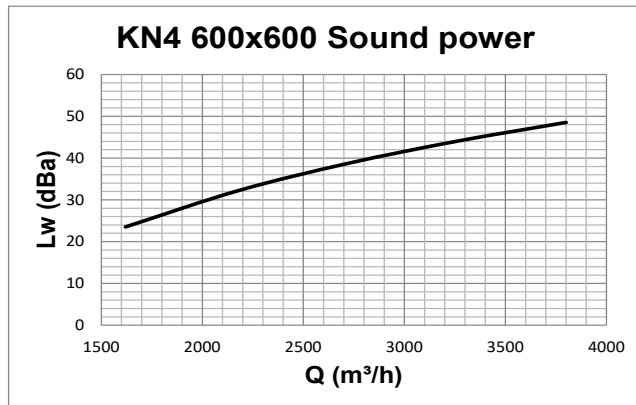




## MULTIDIRECTIONAL DIFFUSERS FIXED SQUARE GEOMETRY

PERFORMANCE K4 600x600

KN  
SERIES

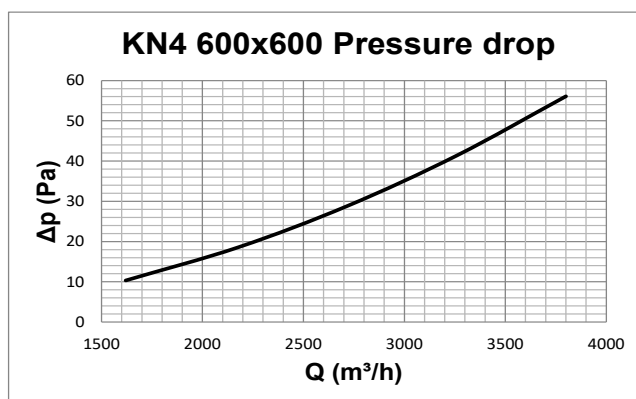


Data measured in reverberation room in accordance with international standards:

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

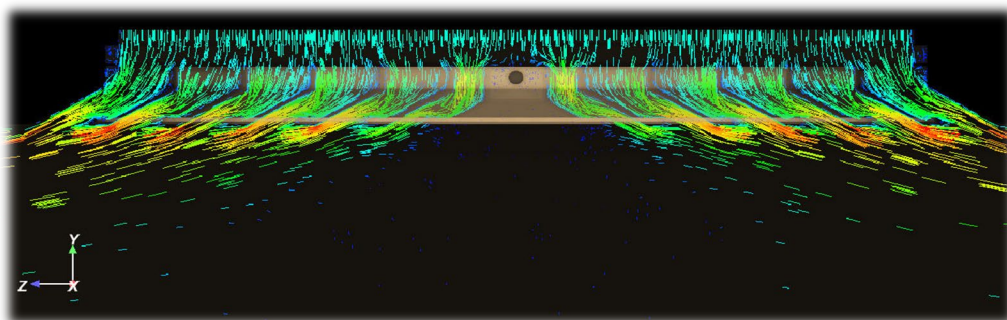
ISO 5135 1997: *Acoustic - determination of sound power levels of noise from air-terminal devices; air terminal units; dampers and valves by measurement in a reverberation room.*

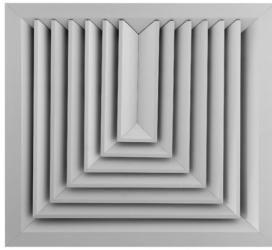
The data presented does not consider the attenuation given by the area of installation. This attenuation is normally between 6 and 10 dBA and is determined by the room size, the shape of the environment and the interior features.



Data obtained 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.*

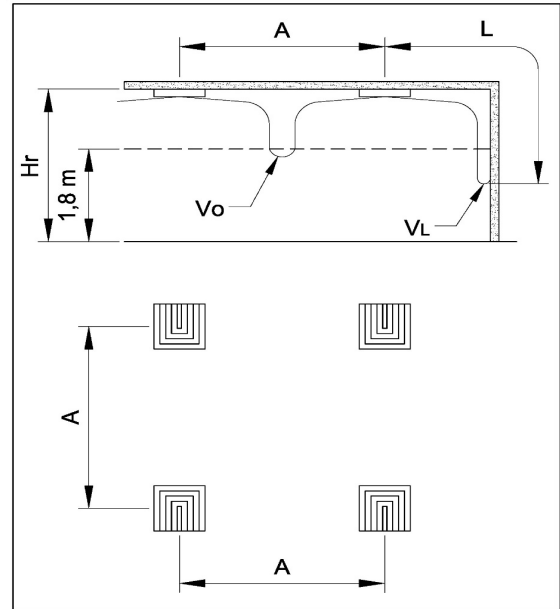
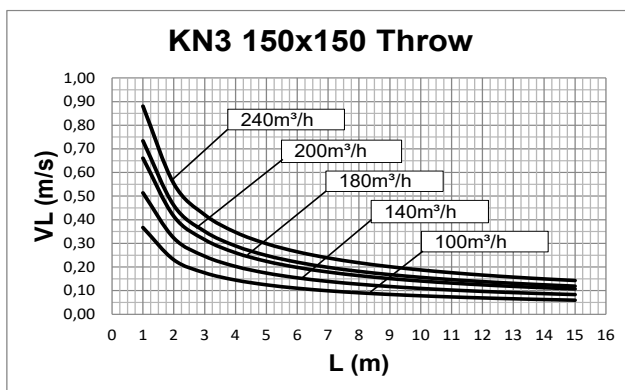
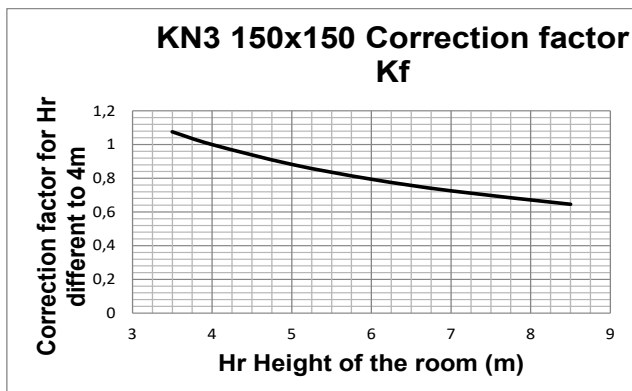
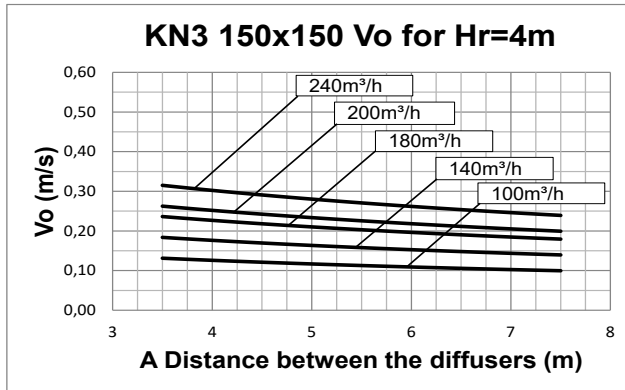




## MULTIDIRECTIONAL DIFFUSERS FIXED SQUARE GEOMETRY

PERFORMANCE KN3 150x150

KN  
SERIES

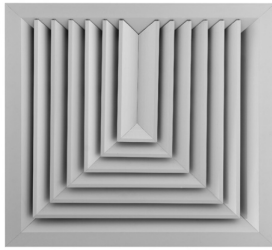


Data obtained from CFD mathematical model in virtual test chamber operating in isothermal conditions in accordance with the international standard:

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

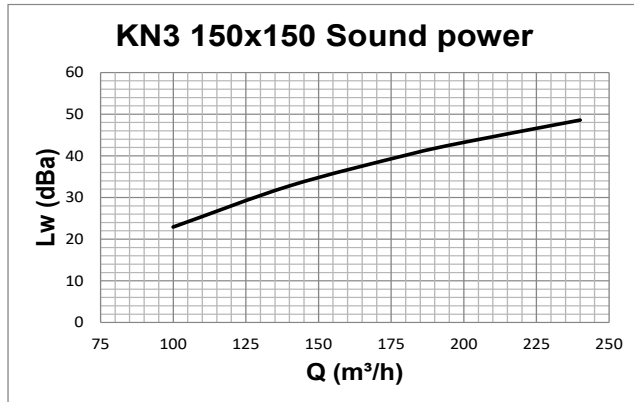
For Hr different from 3m:  
 $Vo(h) = Vo \times Kf$



## MULTIDIRECTIONAL DIFFUSERS FIXED SQUARE GEOMETRY

KN  
SERIES

PERFORMANCE KN3 150x150

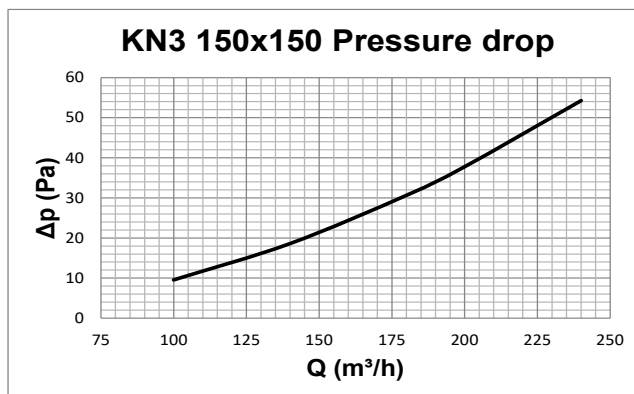


Data measured in reverberation room in accordance with international standards:

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

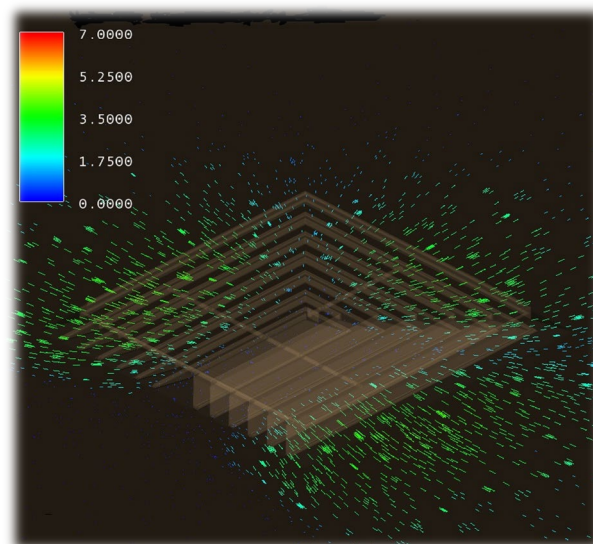
ISO 5135 1997: *Acoustic - determination of sound power levels of noise from air-terminal devices; air terminal units; dampers and valves by measurement in a reverberation room.*

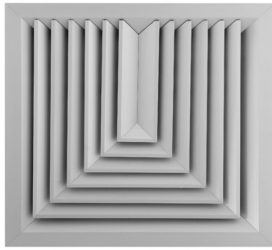
The data presented does not consider the attenuation given by the area of installation. This attenuation is normally between 6 and 10 dBA and is determined by the room size, the shape of the environment and the interior features.



Data obtained 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.*

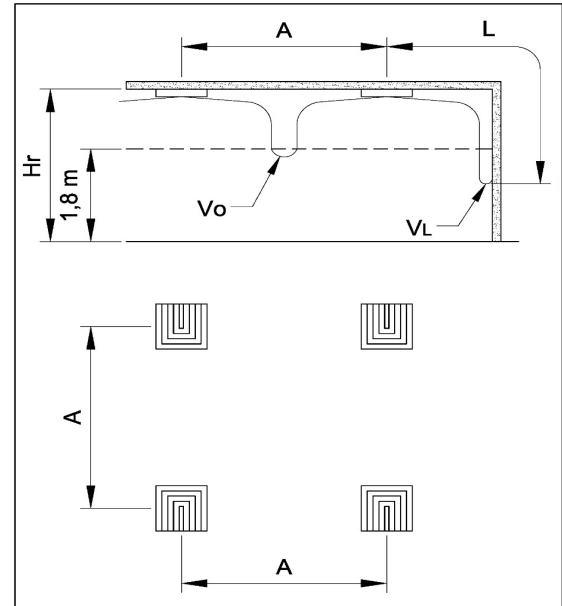
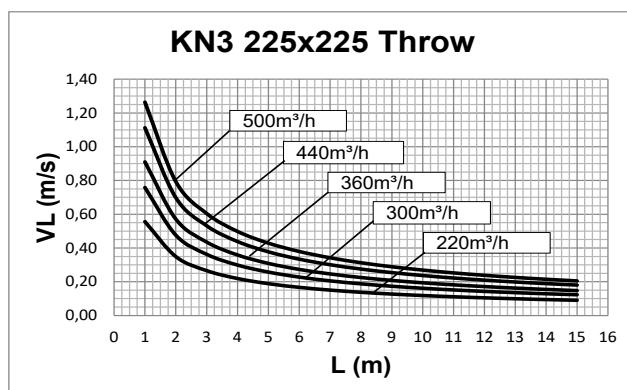
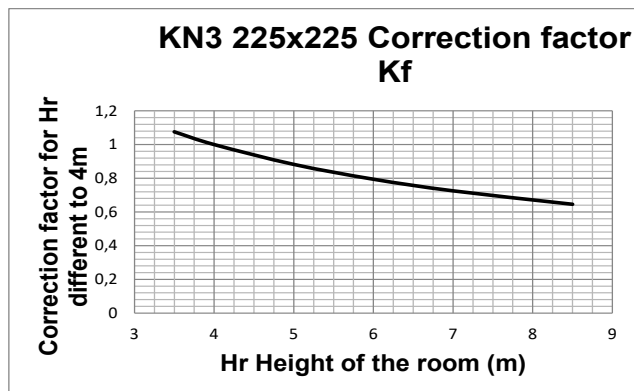
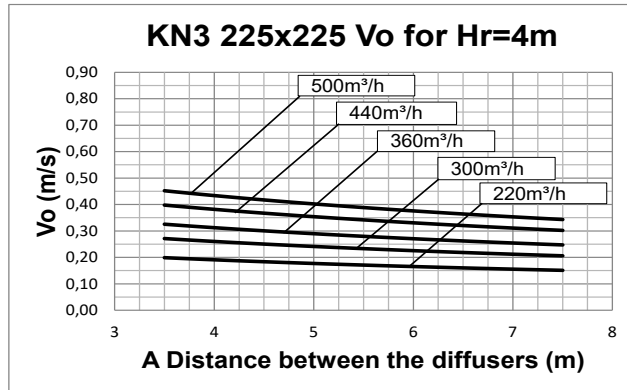




## MULTIDIRECTIONAL DIFFUSERS FIXED SQUARE GEOMETRY

PERFORMANCE KN3 225x225

KN  
SERIES



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

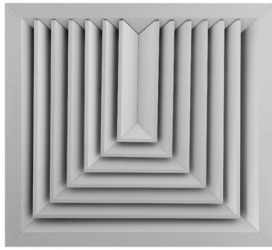
Vo (m/s) speed at the limit of the occupied zone

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:

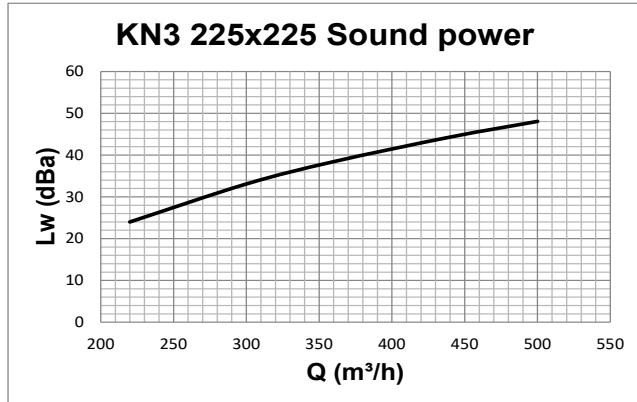
$V_o(h) = V_o \times K_f$



## MULTIDIRECTIONAL DIFFUSERS FIXED SQUARE GEOMETRY

KN  
SERIES

PERFORMANCE KN3 225x225

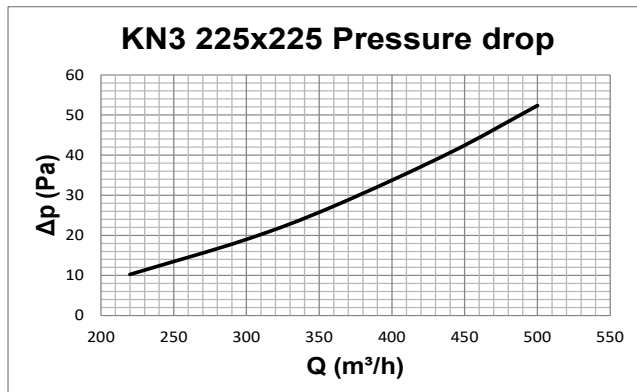


Data measured in reverberation room in accordance with international standards:

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

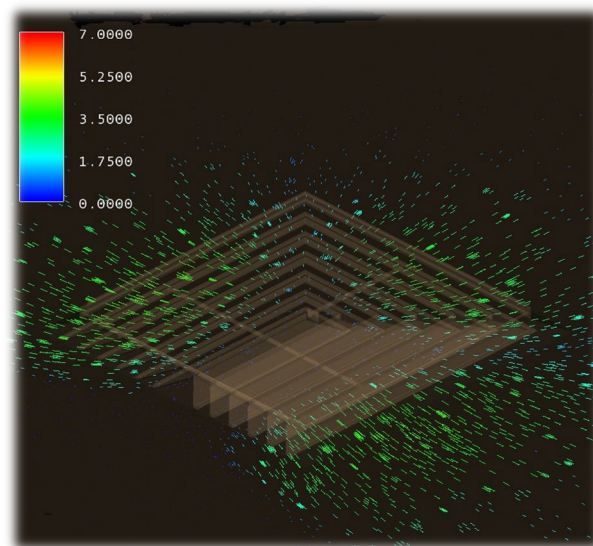
ISO 5135 1997: *Acoustic - determination of sound power levels of noise from air-terminal devices; air terminal units; dampers and valves by measurement in a reverberation room.*

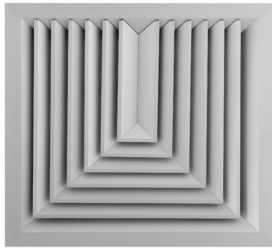
The data presented does not consider the attenuation given by the area of installation. This attenuation is normally between 6 and 10 dBA and is determined by the room size, the shape of the environment and the interior features.



Data obtained 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.*

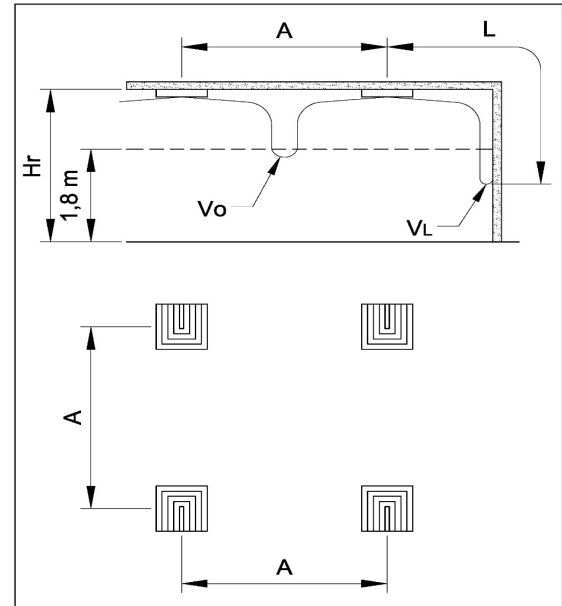
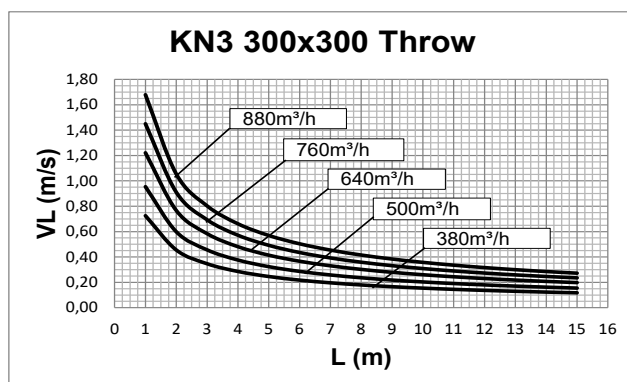
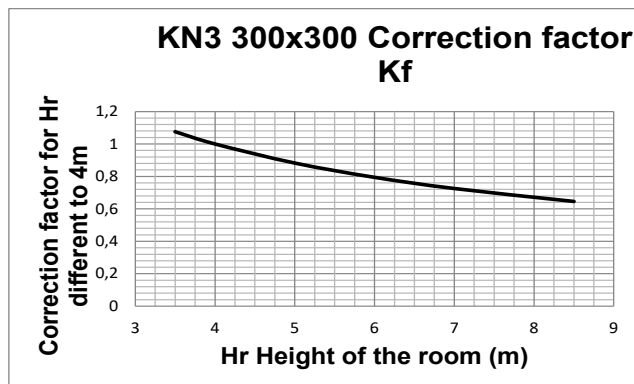
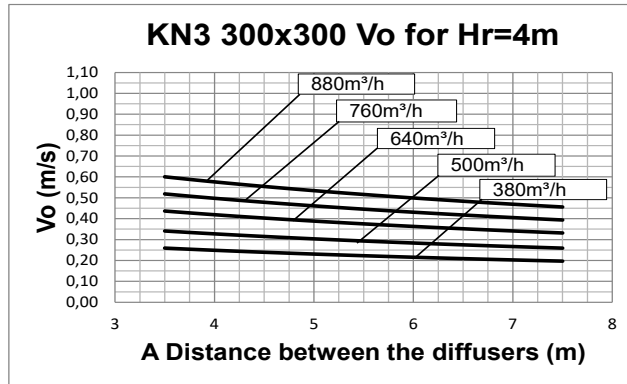




## MULTIDIRECTIONAL DIFFUSERS FIXED SQUARE GEOMETRY

PERFORMANCE KN3 300x300

KN  
SERIES



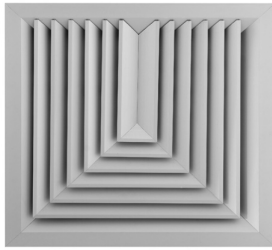
Data obtained from CFD mathematical model in virtual test chamber operating in isothermal conditions in accordance with the international standard:

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:  
 $V_o(h) = V_o \times K_f$

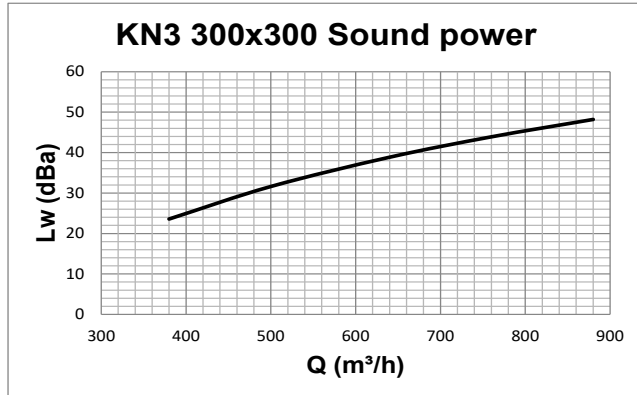




## MULTIDIRECTIONAL DIFFUSERS FIXED SQUARE GEOMETRY

KN  
SERIES

PERFORMANCE KN3 300x300

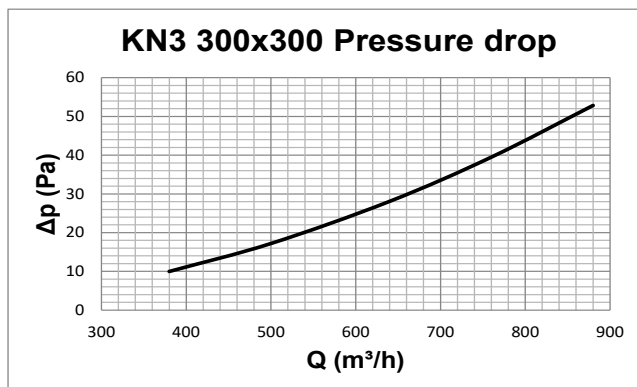


Data measured in reverberation room in accordance with international standards:

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

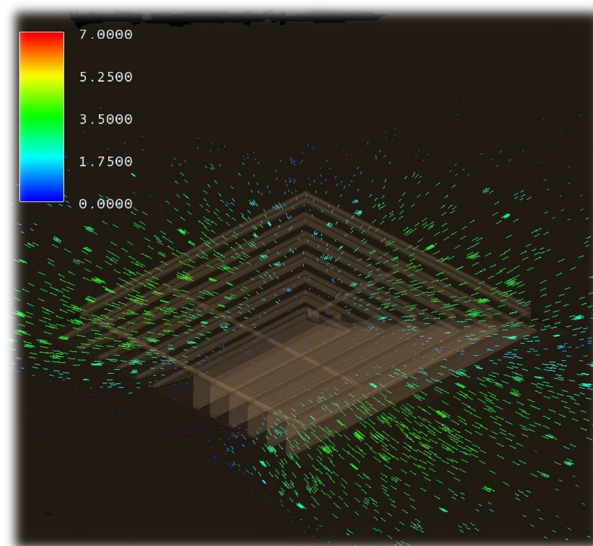
ISO 5135 1997: *Acoustic - determination of sound power levels of noise from air-terminal devices; air terminal units; dampers and valves by measurement in a reverberation room.*

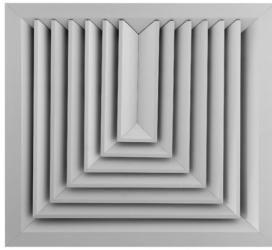
The data presented does not consider the attenuation given by the area of installation. This attenuation is normally between 6 and 10 dBA and is determined by the room size, the shape of the environment and the interior features.



Data obtained 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.*

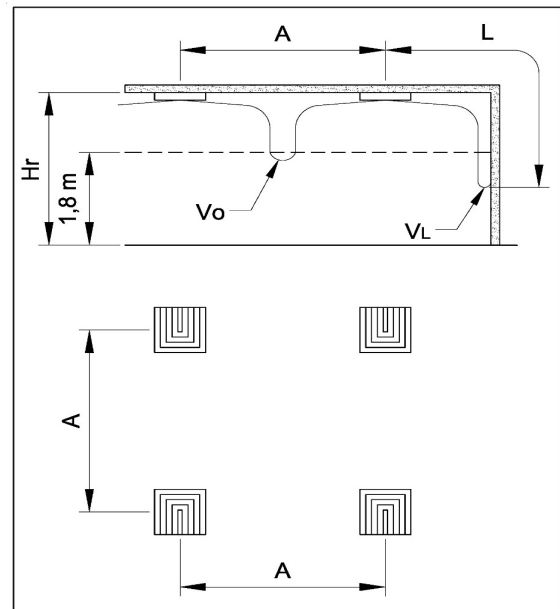
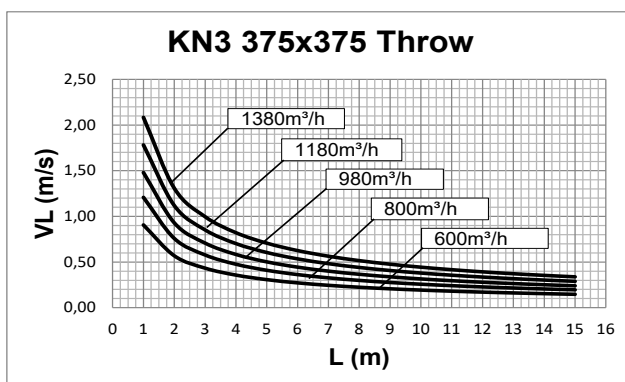
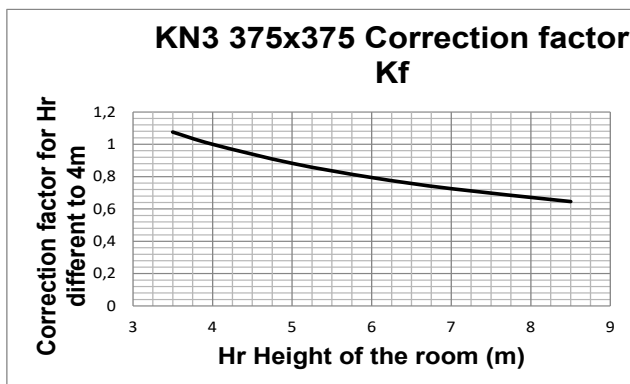
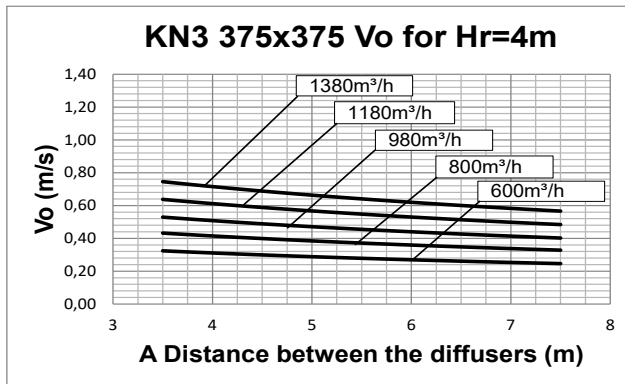




## MULTIDIRECTIONAL DIFFUSERS FIXED SQUARE GEOMETRY

PERFORMANCE KN3 375x375

KN  
SERIES



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

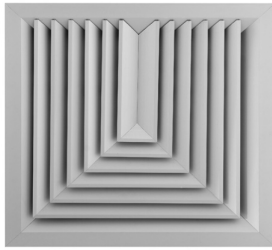
L (m) horizontal distance in metres from the centre of the diffuser

VL (m/s) maximum speed in the air stream

For Hr different from 3m:

$Vo(h) = Vo \times Kf$

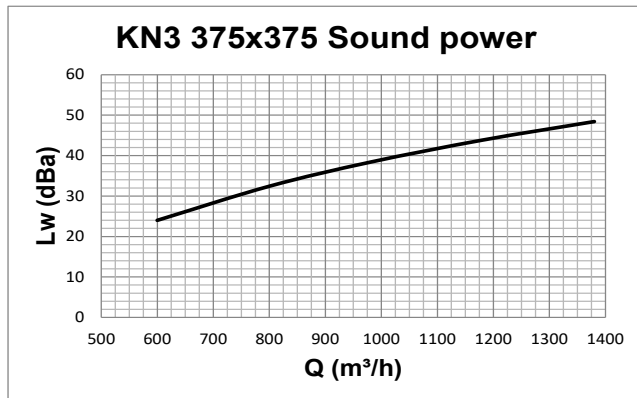




## MULTIDIRECTIONAL DIFFUSERS FIXED SQUARE GEOMETRY

KN  
SERIES

PERFORMANCE KN3 375x375

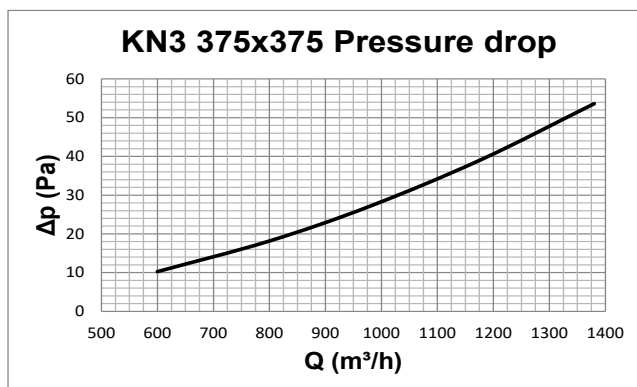


Data measured in reverberation room in accordance with international standards:

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

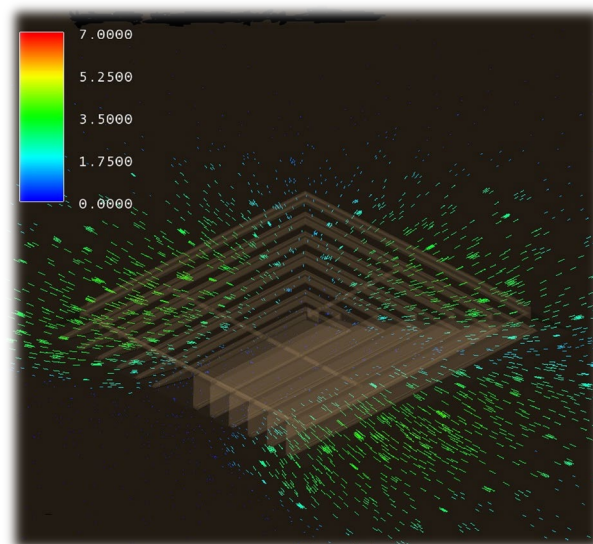
ISO 5135 1997: *Acoustic - determination of sound power levels of noise from air-terminal devices; air terminal units; dampers and valves by measurement in a reverberation room.*

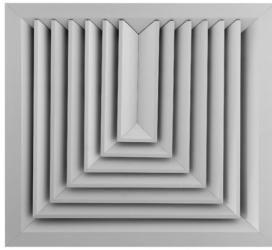
The data presented does not consider the attenuation given by the area of installation. This attenuation is normally between 6 and 10 dBA and is determined by the room size, the shape of the environment and the interior features.



Data obtained 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.*

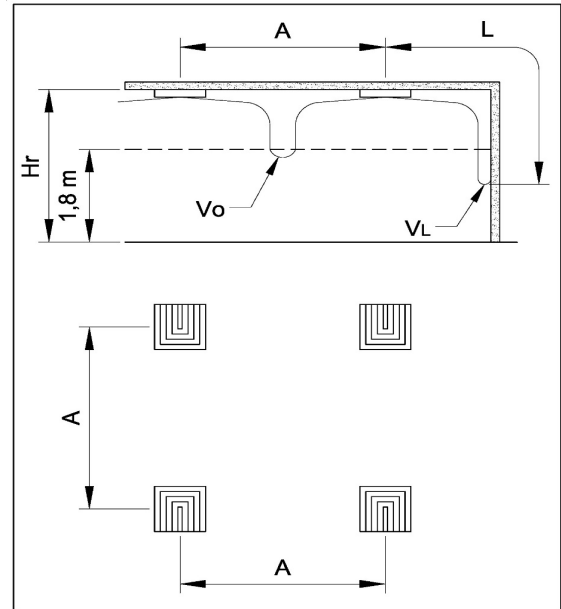
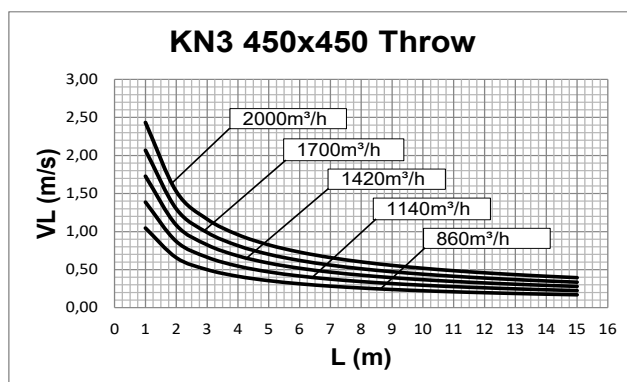
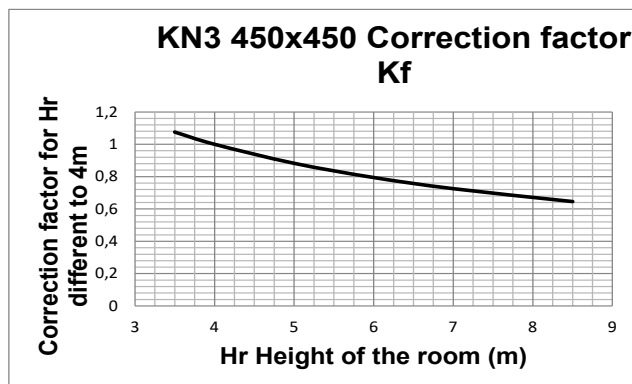
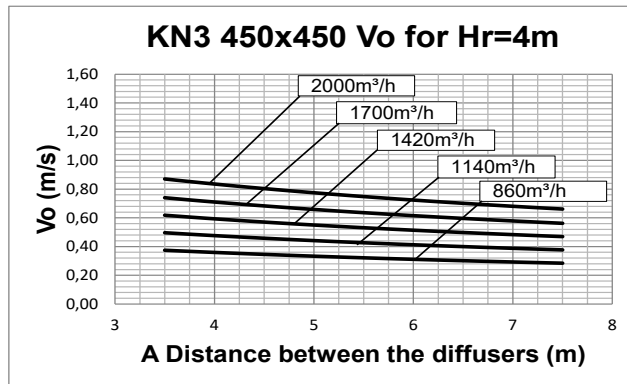




## MULTIDIRECTIONAL DIFFUSERS FIXED SQUARE GEOMETRY

PERFORMANCE KN3 450x450

KN  
SERIES

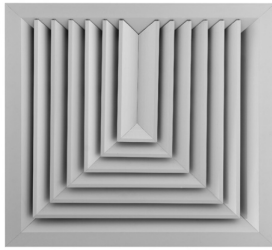


Data obtained from CFD mathematical model in virtual test chamber operating in isothermal conditions in accordance with the international standard:

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

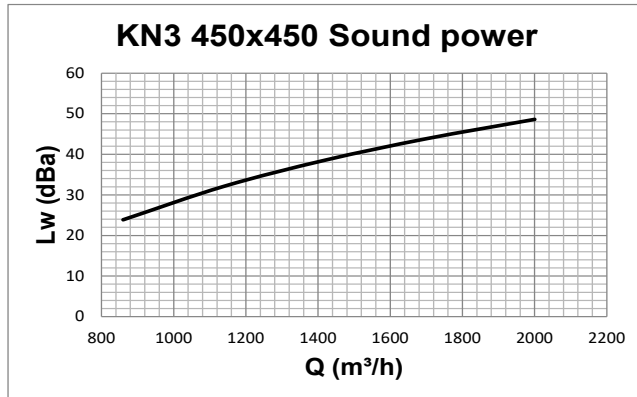
For Hr different from 3m:  
 $V_o(h) = V_o \times K_f$



## MULTIDIRECTIONAL DIFFUSERS FIXED SQUARE GEOMETRY

KN  
SERIES

PERFORMANCE KN3 450x450

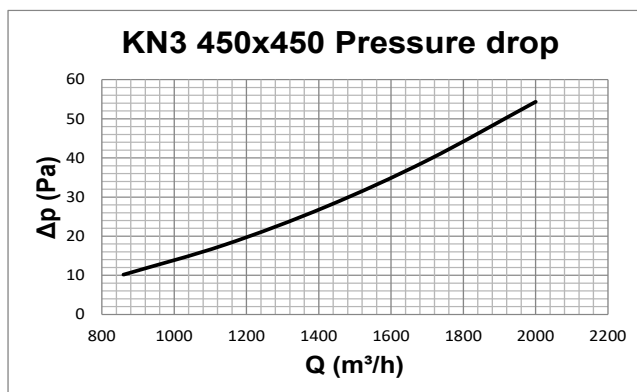


Data measured in reverberation room in accordance with international standards:

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

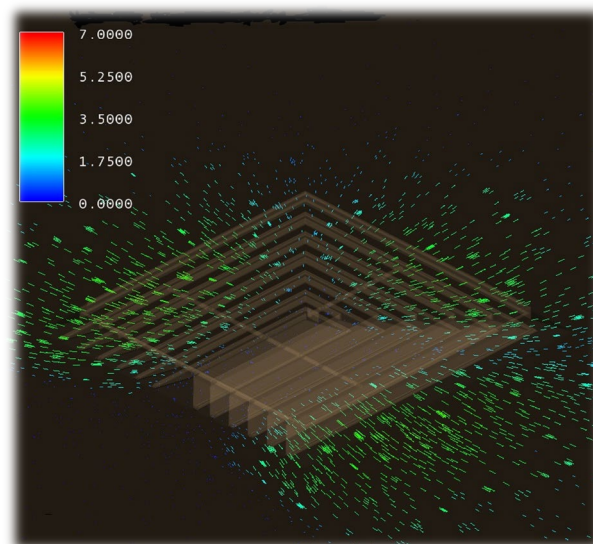
ISO 5135 1997: *Acoustic - determination of sound power levels of noise from air-terminal devices; air terminal units; dampers and valves by measurement in a reverberation room.*

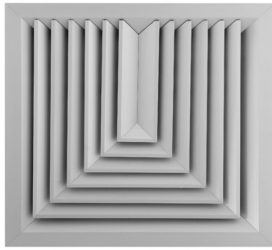
The data presented does not consider the attenuation given by the area of installation. This attenuation is normally between 6 and 10 dBA and is determined by the room size, the shape of the environment and the interior features.



Data obtained 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.*

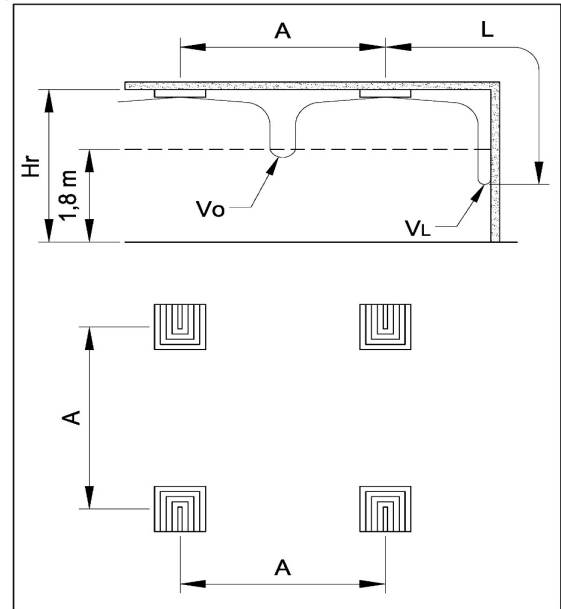
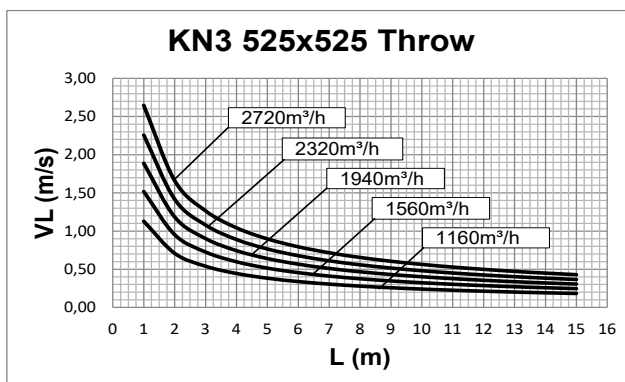
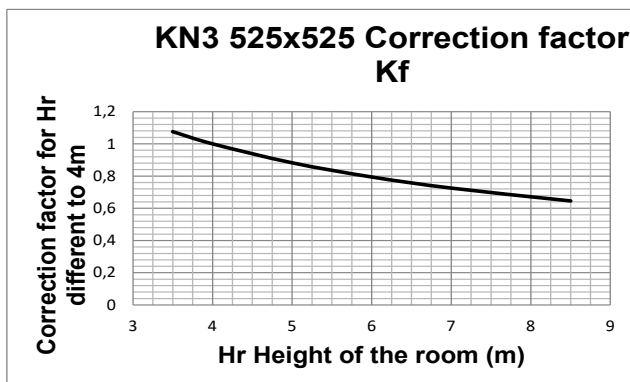
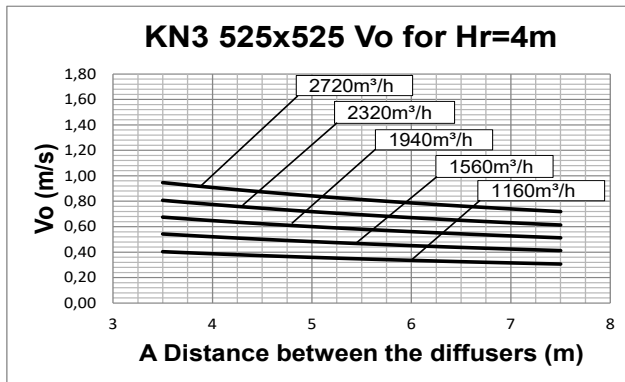




## MULTIDIRECTIONAL DIFFUSERS FIXED SQUARE GEOMETRY

PERFORMANCE KN3 525x525

KN  
SERIES



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

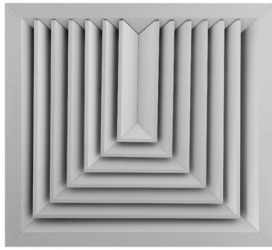
Vo (m/s) speed at the limit of the occupied zone

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:

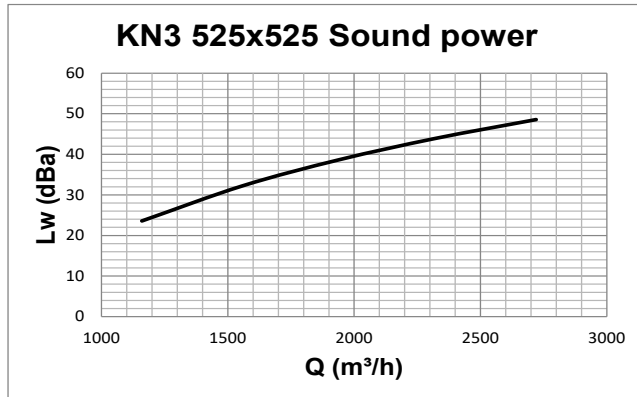
$V_o(h) = V_o \times K_f$



## MULTIDIRECTIONAL DIFFUSERS FIXED SQUARE GEOMETRY

KN  
SERIES

PERFORMANCE KN3 525x525

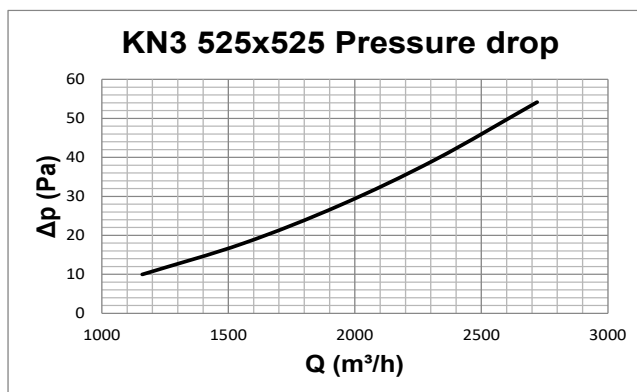


Data measured in reverberation room in accordance with international standards:

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

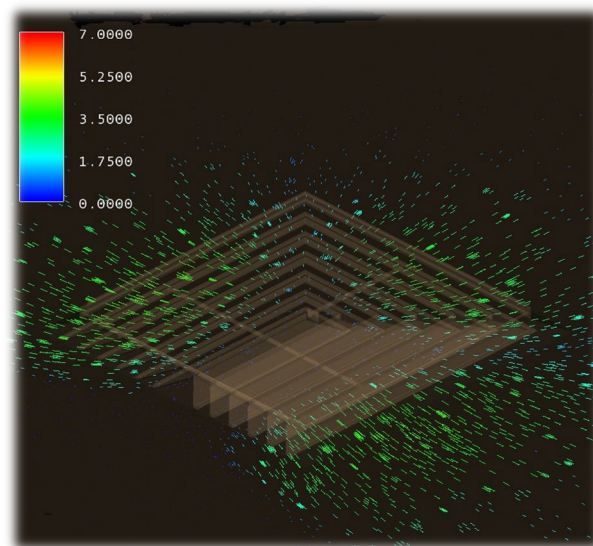
ISO 5135 1997: *Acoustic - determination of sound power levels of noise from air-terminal devices; air terminal units; dampers and valves by measurement in a reverberation room.*

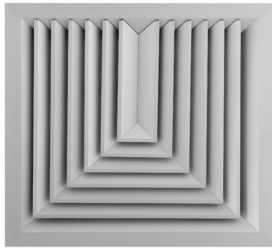
The data presented does not consider the attenuation given by the area of installation. This attenuation is normally between 6 and 10 dBA and is determined by the room size, the shape of the environment and the interior features.



Data obtained 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.*

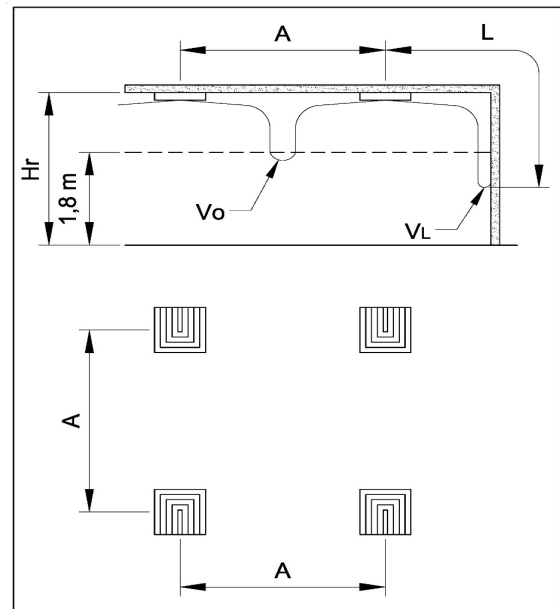
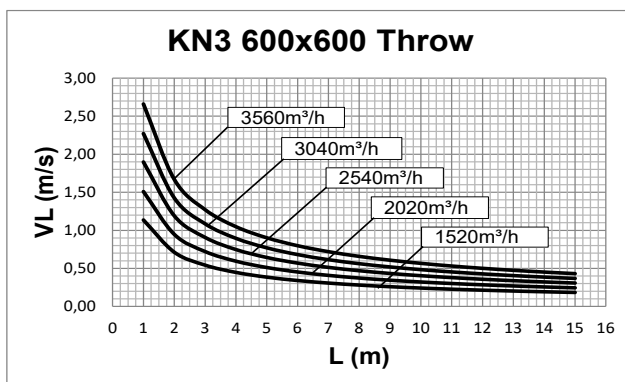
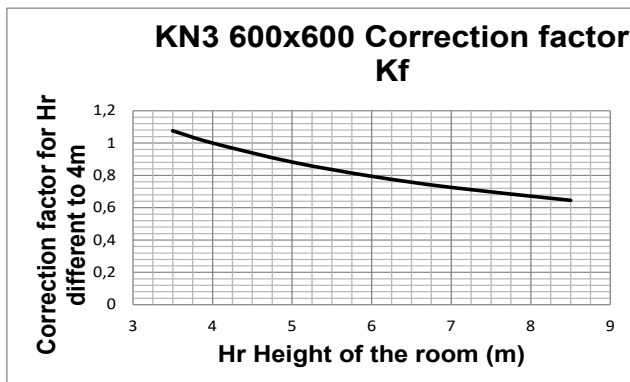
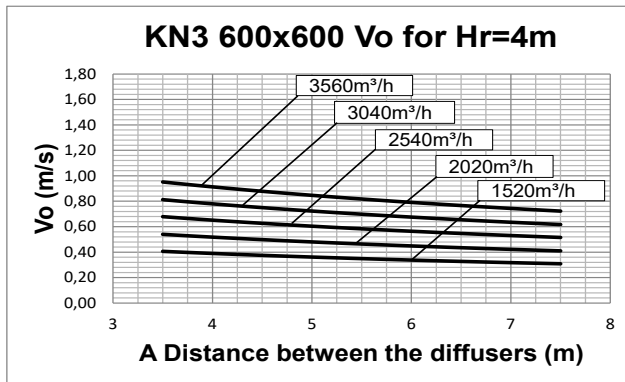




## MULTIDIRECTIONAL DIFFUSERS FIXED SQUARE GEOMETRY

PERFORMANCE KN3 600x600

KN  
SERIES



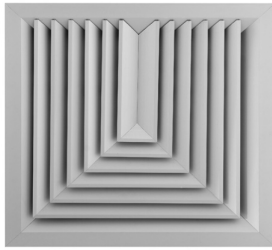
Data obtained from CFD mathematical model in virtual test chamber operating in isothermal conditions in accordance with the international standard:

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:  
 $V_o(h) = V_o \times K_f$

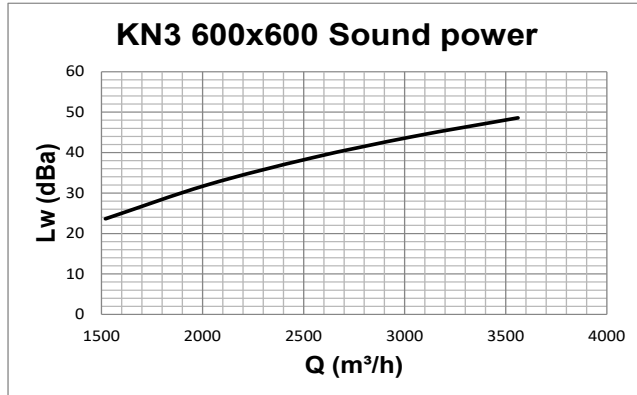




## MULTIDIRECTIONAL DIFFUSERS FIXED SQUARE GEOMETRY

KN  
SERIES

PERFORMANCE KN3 600x600

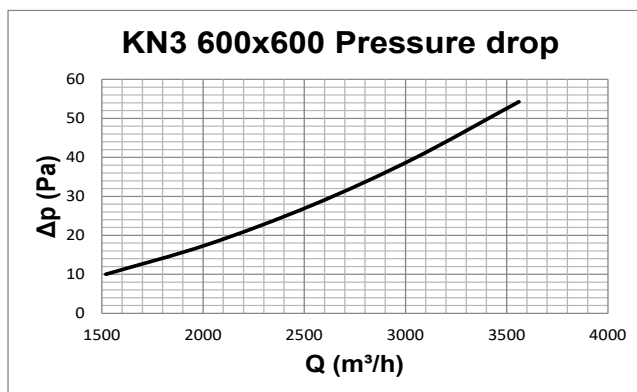


Data measured in reverberation room in accordance with international standards:

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

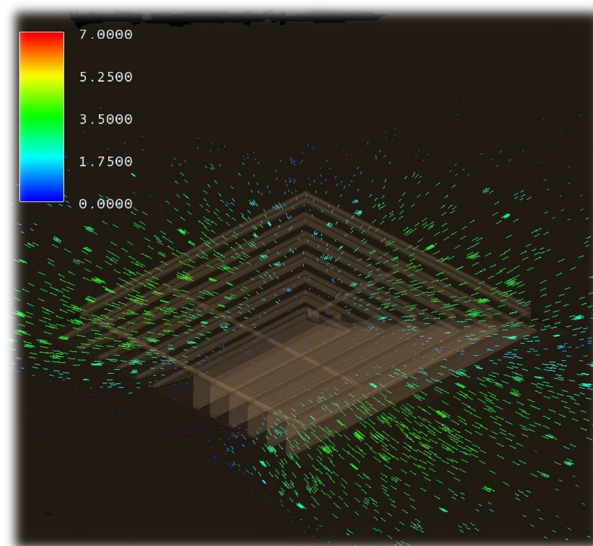
ISO 5135 1997: *Acoustic - determination of sound power levels of noise from air-terminal devices; air terminal units; dampers and valves by measurement in a reverberation room.*

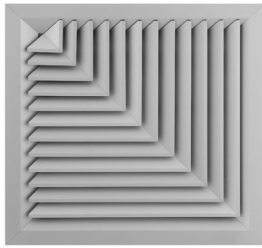
The data presented does not consider the attenuation given by the area of installation. This attenuation is normally between 6 and 10 dBA and is determined by the room size, the shape of the environment and the interior features.



Data obtained 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.*

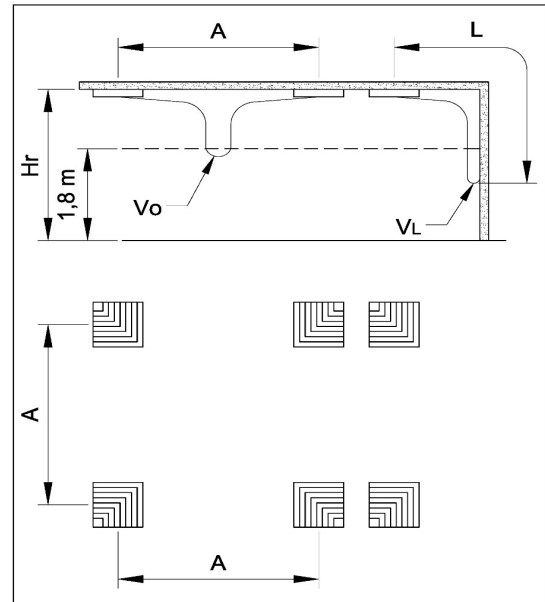
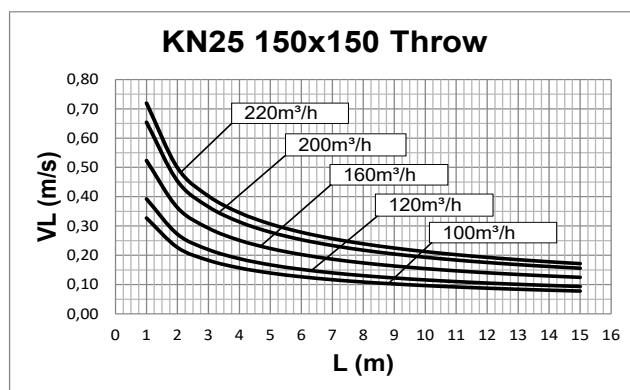
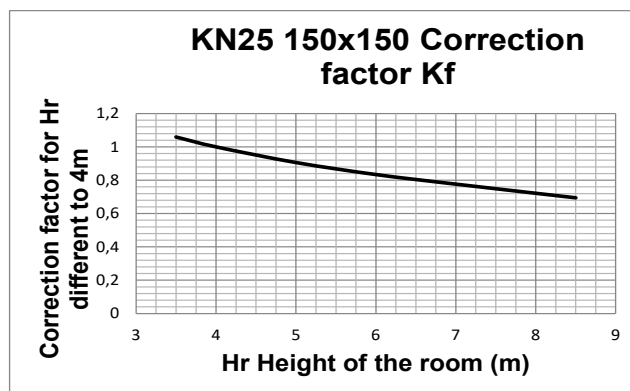
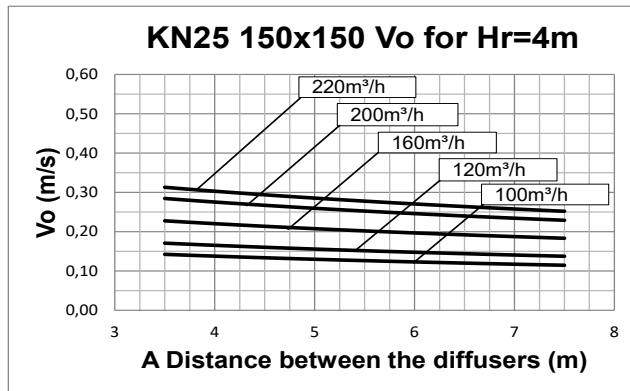




## MULTIDIRECTIONAL DIFFUSERS FIXED SQUARE GEOMETRY

PERFORMANCE KN25 150x150

KN  
SERIES



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

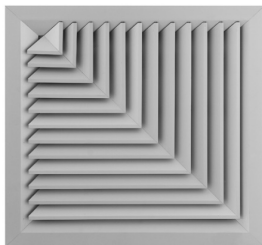
ISO 5219 1984: *Air distribution and air diffusion - Laboratory. Aerodynamic testing and rating of air terminal devices.*

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

For  $H_r$  different from 3m:

$$V_o(h) = V_o \times K_f$$

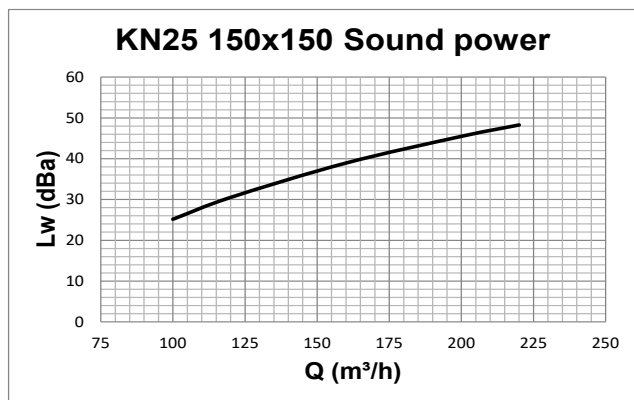




## MULTIDIRECTIONAL DIFFUSERS FIXED SQUARE GEOMETRY

KN  
SERIES

PERFORMANCE KN25 150x150

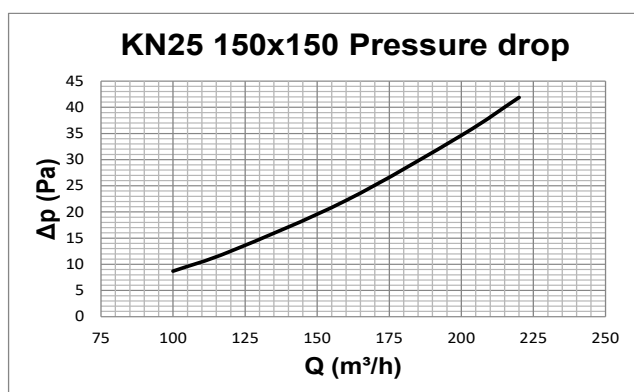


Data measured in reverberation room in accordance with international standards:

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

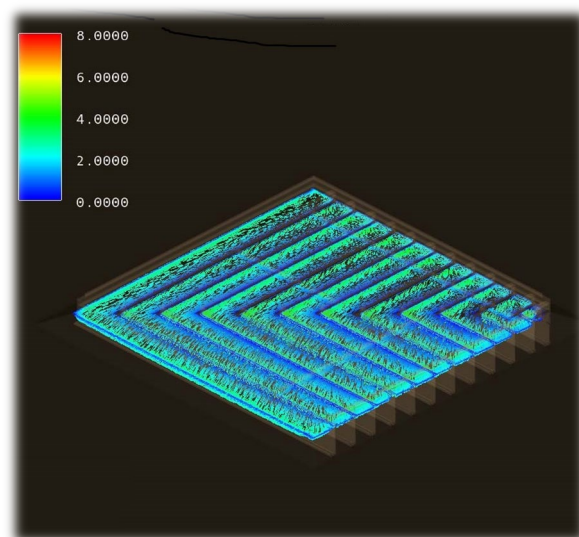
ISO 5135 1997: *Acoustic - determination of sound power levels of noise from air-terminal devices; air terminal units; dampers and valves by measurement in a reverberation room.*

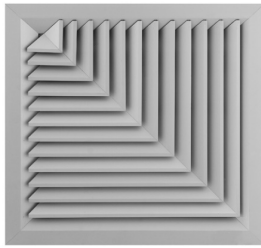
The data presented does not consider the attenuation given by the area of installation. This attenuation is normally between 6 and 10 dBA and is determined by the room size, the shape of the environment and the interior features.



Data obtained 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.*

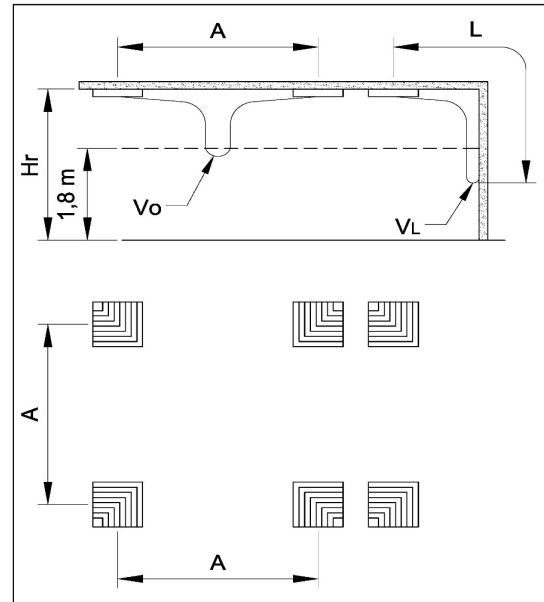
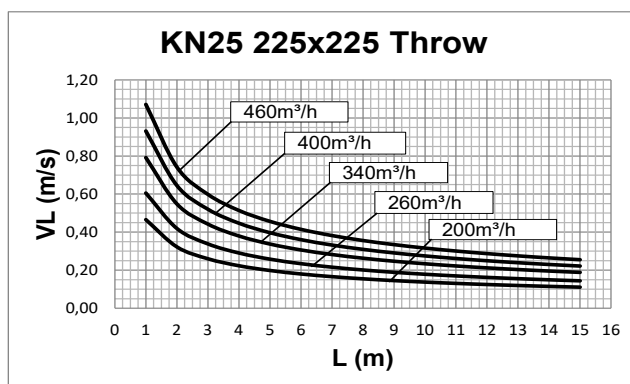
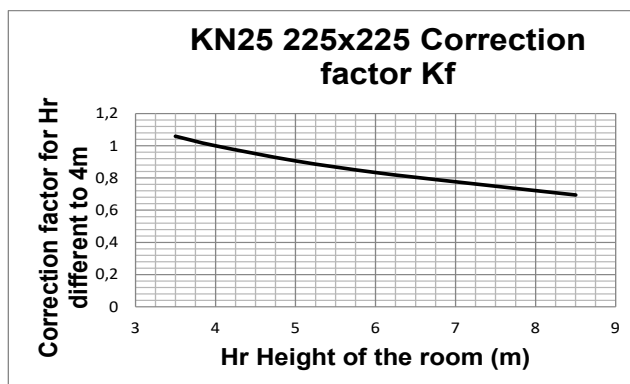
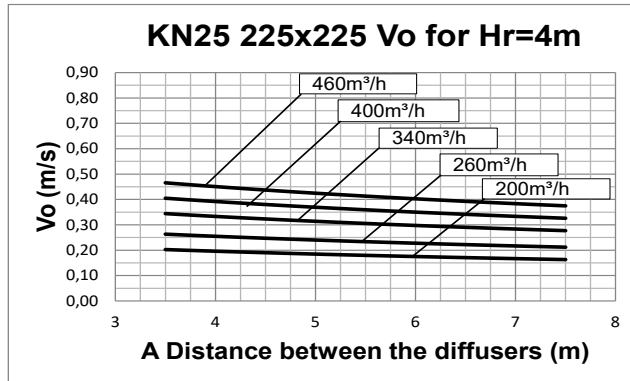




## MULTIDIRECTIONAL DIFFUSERS FIXED SQUARE GEOMETRY

PERFORMANCE KN25 225x225

KN  
SERIES



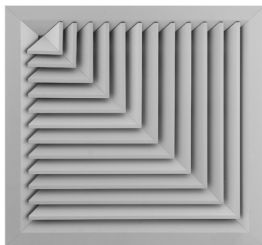
Data obtained from CFD mathematical model in virtual test chamber operating in isothermal conditions in accordance with the international standard:

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:

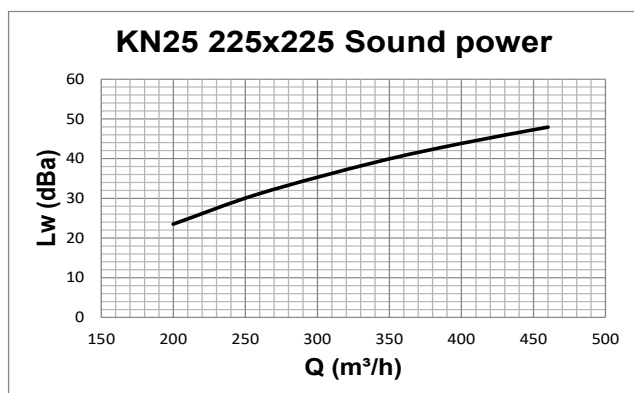
$$Vo(h) = Vo \times Kf$$



## MULTIDIRECTIONAL DIFFUSERS FIXED SQUARE GEOMETRY

KN  
SERIES

PERFORMANCE KN25 225x225

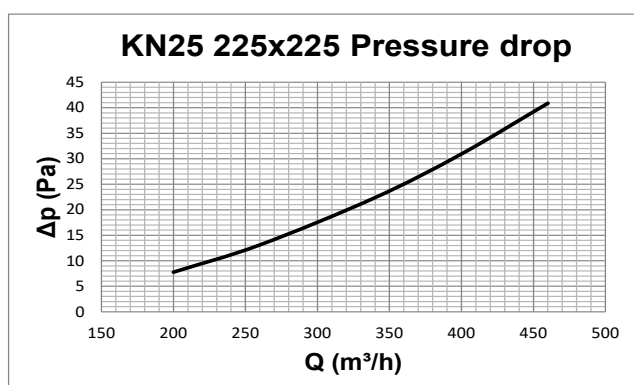


Data measured in reverberation room in accordance with international standards:

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

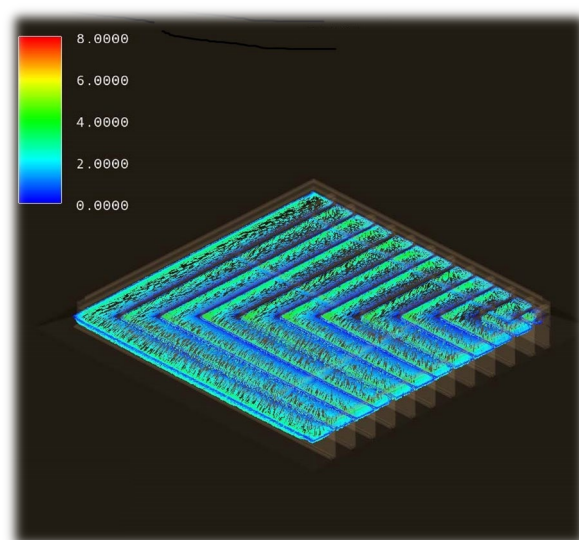
ISO 5135 1997: *Acoustic - determination of sound power levels of noise from air-terminal devices; air terminal units; dampers and valves by measurement in a reverberation room.*

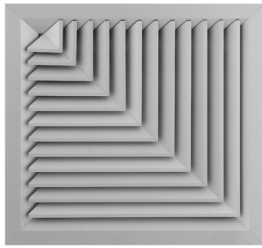
The data presented does not consider the attenuation given by the area of installation. This attenuation is normally between 6 and 10 dBA and is determined by the room size, the shape of the environment and the interior features.



Data obtained 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.*

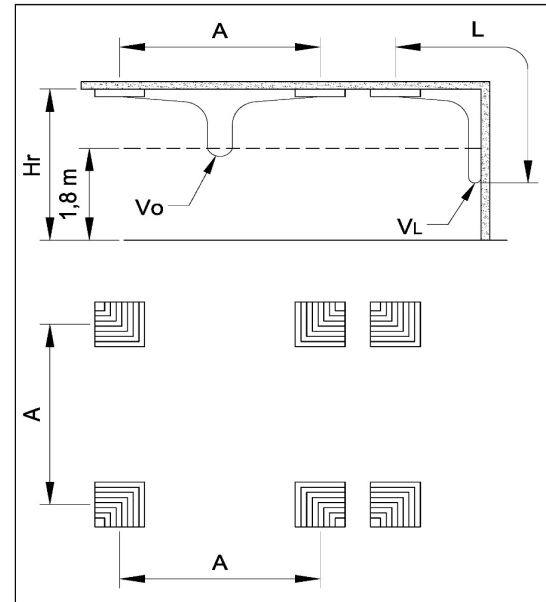
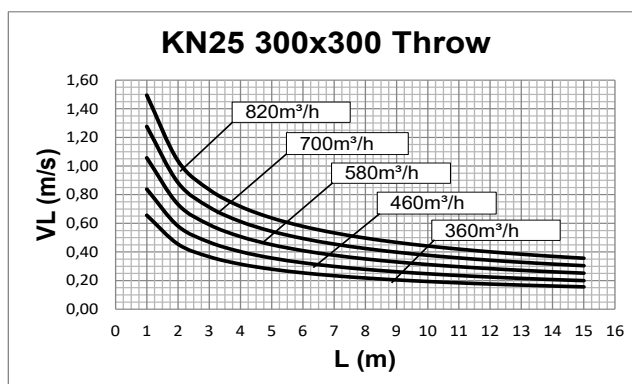
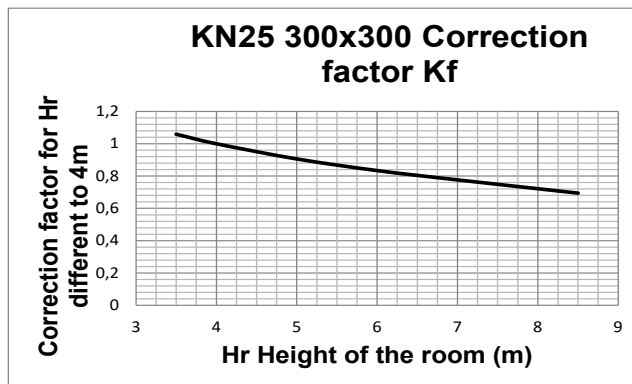
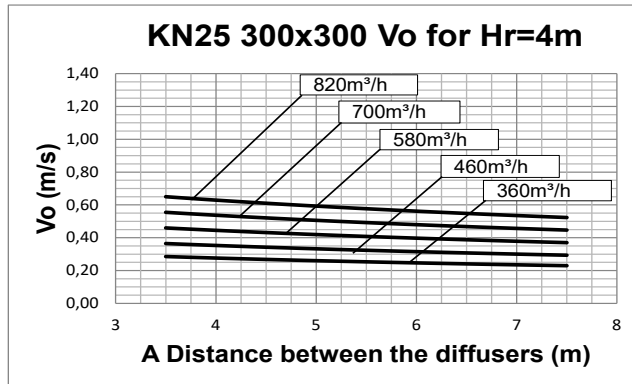




## MULTIDIRECTIONAL DIFFUSERS FIXED SQUARE GEOMETRY

PERFORMANCE KN25 300x300

KN  
SERIES



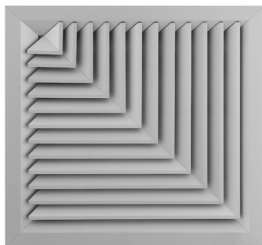
Data obtained from CFD mathematical model in virtual test chamber operating in isothermal conditions in accordance with the international standard:

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:

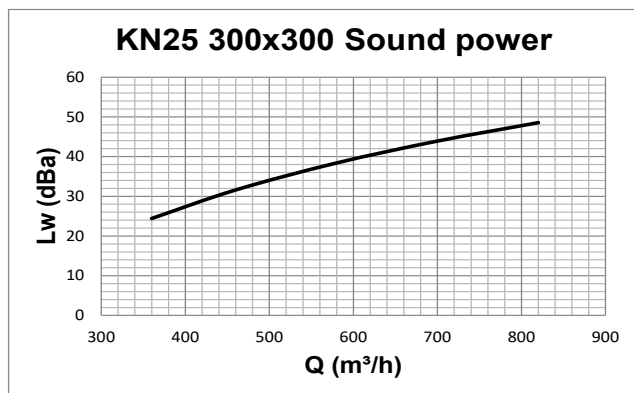
$$Vo(h) = Vo \times Kf$$



## MULTIDIRECTIONAL DIFFUSERS FIXED SQUARE GEOMETRY

KN  
SERIES

PERFORMANCE KN25 300x300

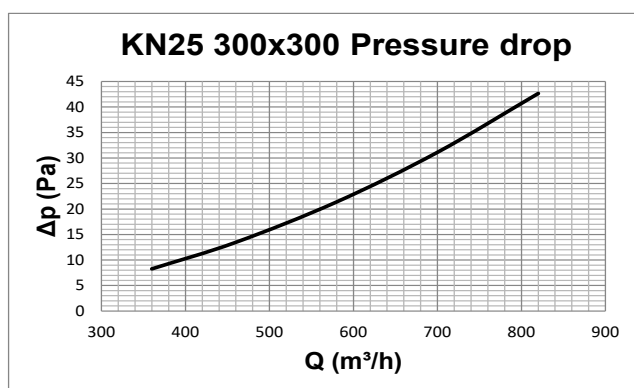


Data measured in reverberation room in accordance with international standards:

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

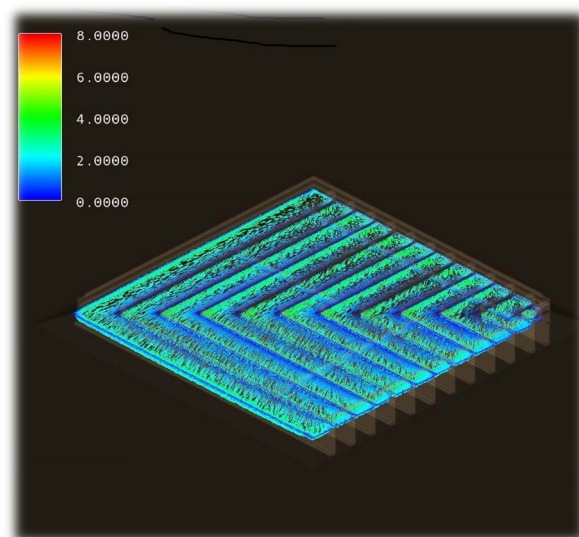
ISO 5135 1997: *Acoustic - determination of sound power levels of noise from air-terminal devices; air terminal units; dampers and valves by measurement in a reverberation room.*

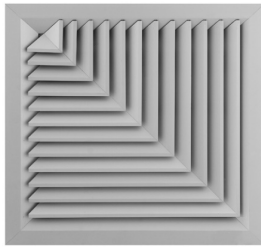
The data presented does not consider the attenuation given by the area of installation. This attenuation is normally between 6 and 10 dBA and is determined by the room size, the shape of the environment and the interior features.



Data obtained 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.*

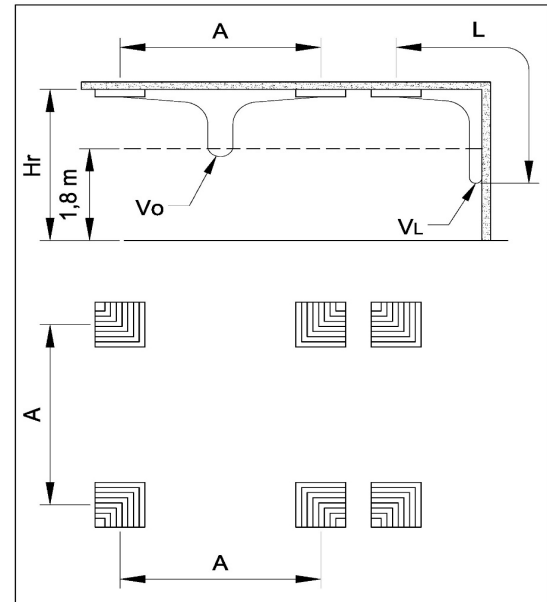
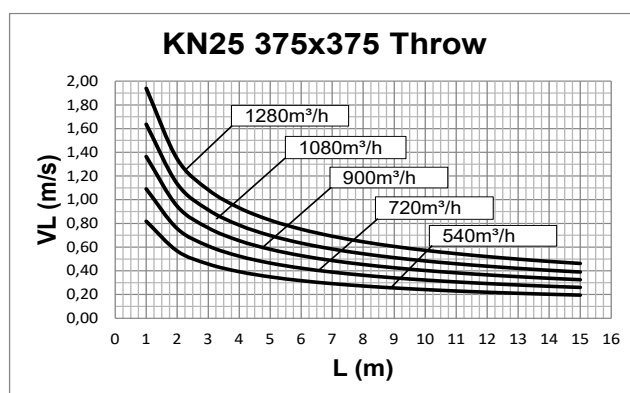
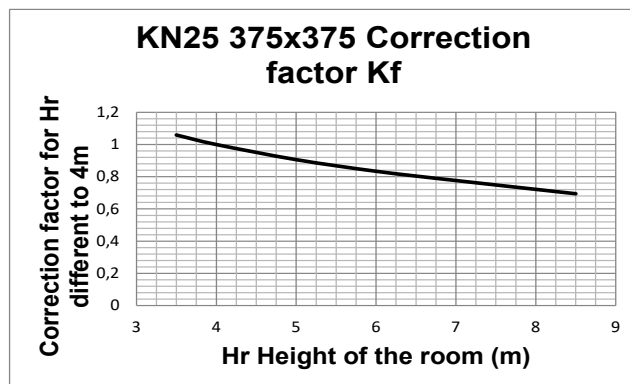
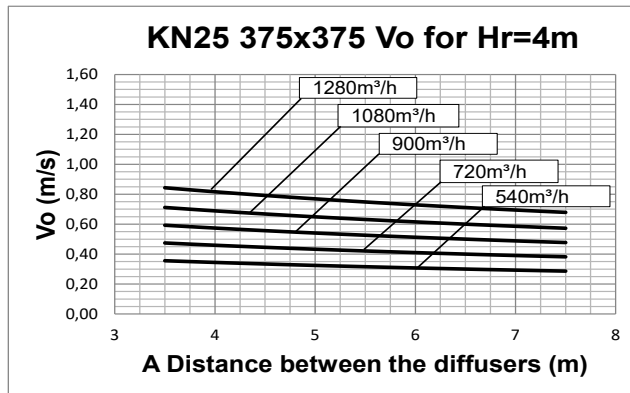




## MULTIDIRECTIONAL DIFFUSERS FIXED SQUARE GEOMETRY

PERFORMANCE KN25 375x375

KN  
SERIES



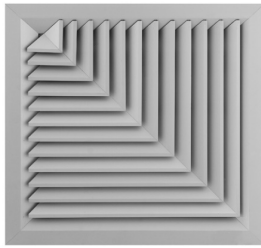
Data obtained from CFD mathematical model in virtual test chamber operating in isothermal conditions in accordance with the international standard:

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:

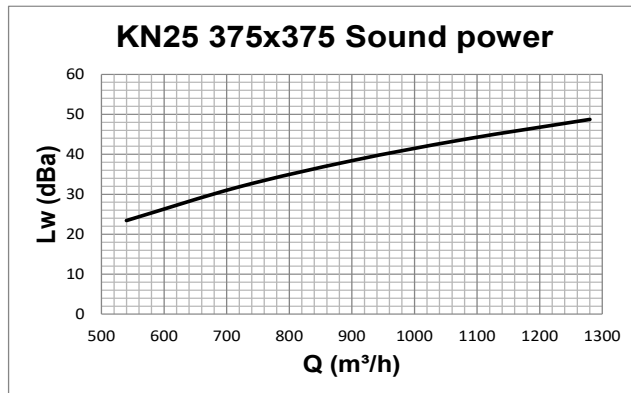
$$Vo(h) = Vo \times Kf$$



## MULTIDIRECTIONAL DIFFUSERS FIXED SQUARE GEOMETRY

KN  
SERIES

PERFORMANCE KN25 375x375

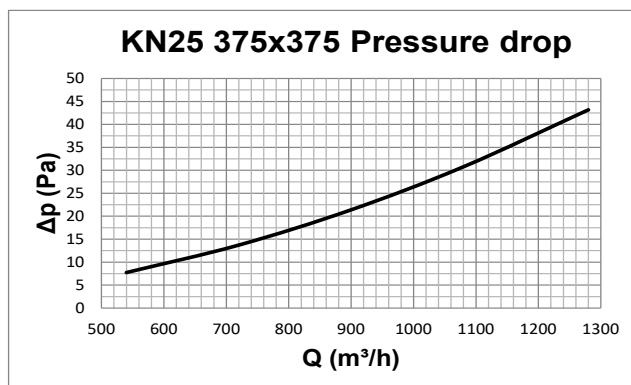


Data measured in reverberation room in accordance with international standards:

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

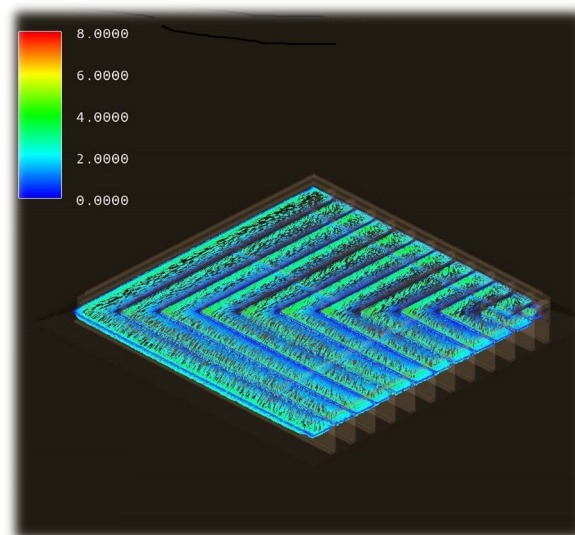
ISO 5135 1997: *Acoustic - determination of sound power levels of noise from air-terminal devices; air terminal units; dampers and valves by measurement in a reverberation room.*

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.

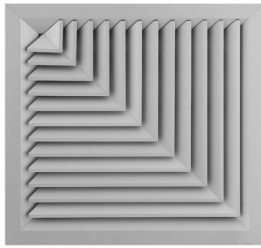


Data obtained from CFD mathematical model in virtual test chamber operating in isothermal conditions in accordance with the international standard:

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



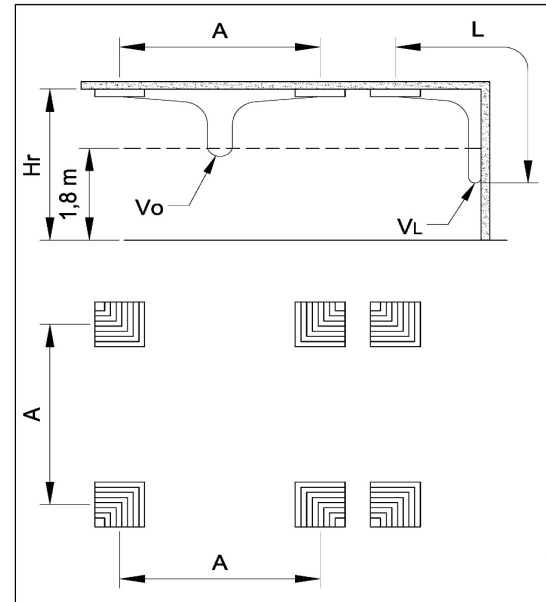
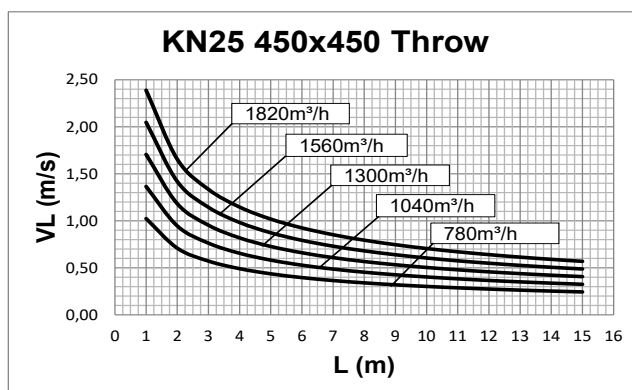
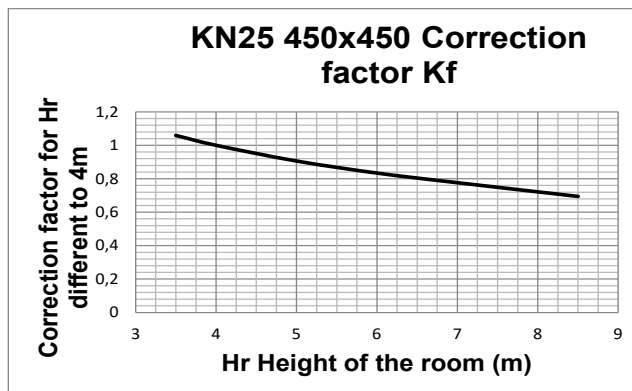
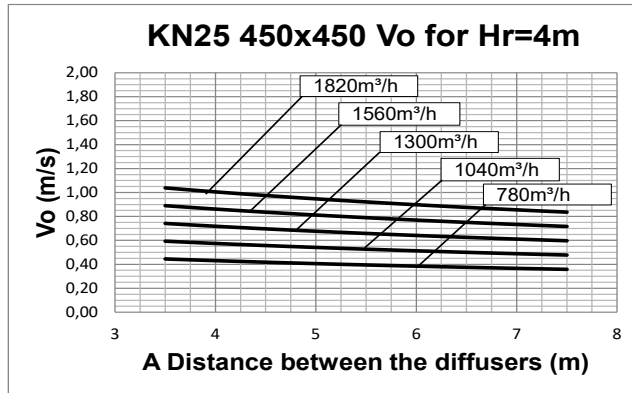




## MULTIDIRECTIONAL DIFFUSERS FIXED SQUARE GEOMETRY

PERFORMANCE KN25 450x450

KN  
SERIES



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

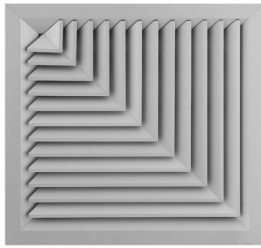
ISO 5219 1984: *Air distribution and air diffusion - Laboratory. Aerodynamic testing and rating of air terminal devices.*

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:

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

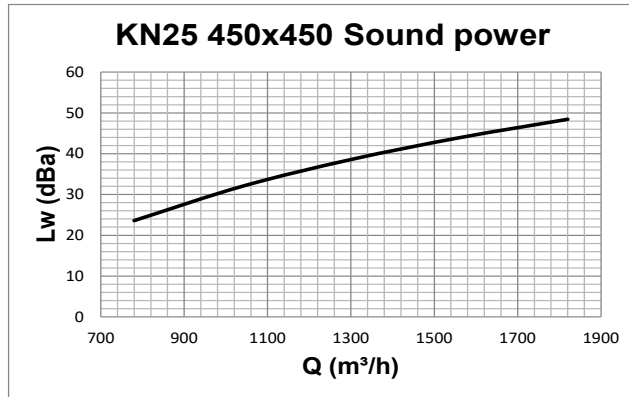




## MULTIDIRECTIONAL DIFFUSERS FIXED SQUARE GEOMETRY

KN  
SERIES

PERFORMANCE KN25 450x450

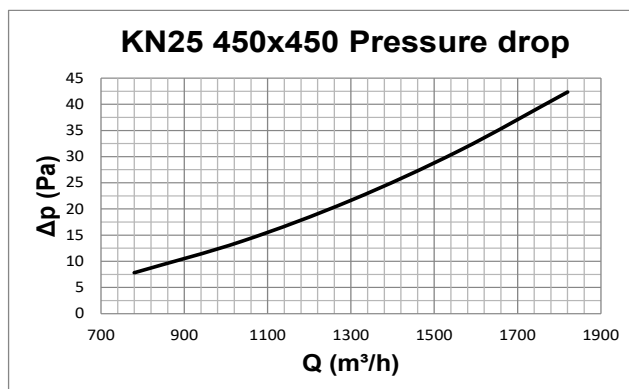


Data measured in reverberation room in accordance with international standards:

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

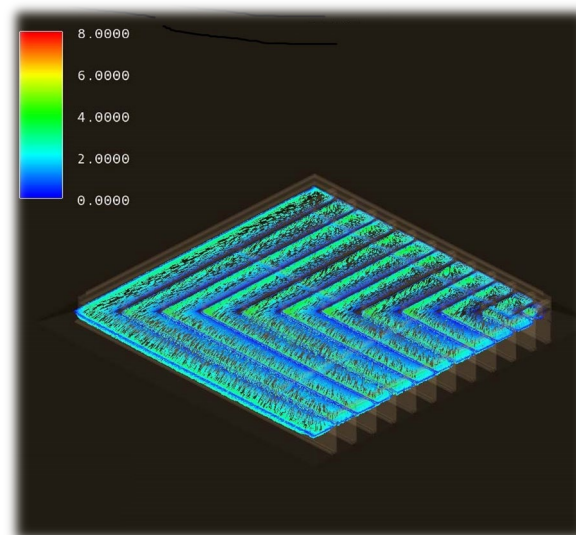
ISO 5135 1997: *Acoustic - determination of sound power levels of noise from air-terminal devices; air terminal units; dampers and valves by measurement in a reverberation room.*

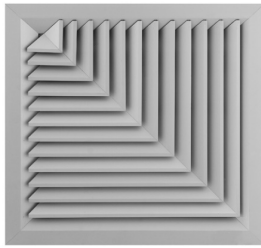
The data presented does not consider the attenuation given by the area of installation. This attenuation is normally between 6 and 10 dBA and is determined by the room size, the shape of the environment and the interior features.



Data obtained 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.*

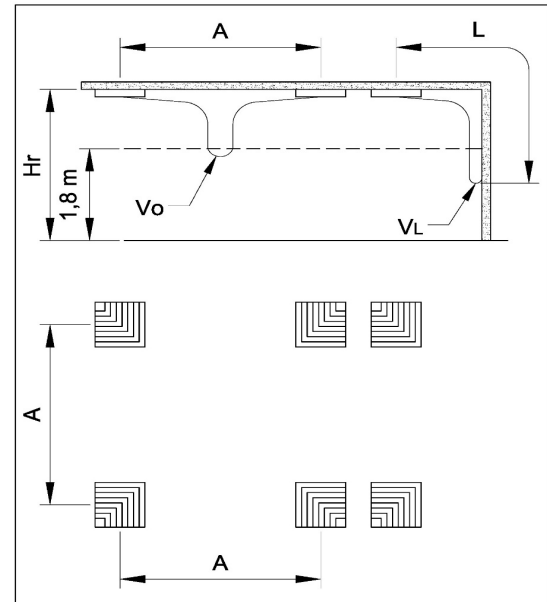
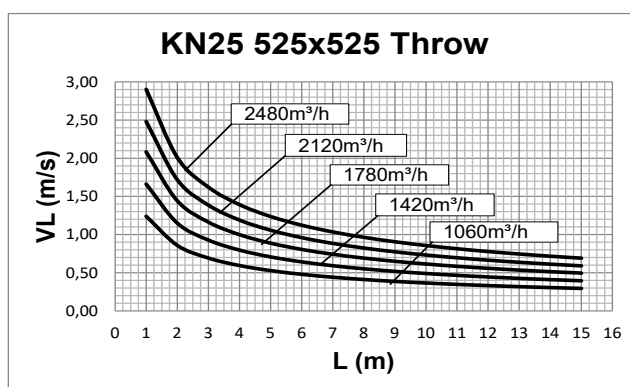
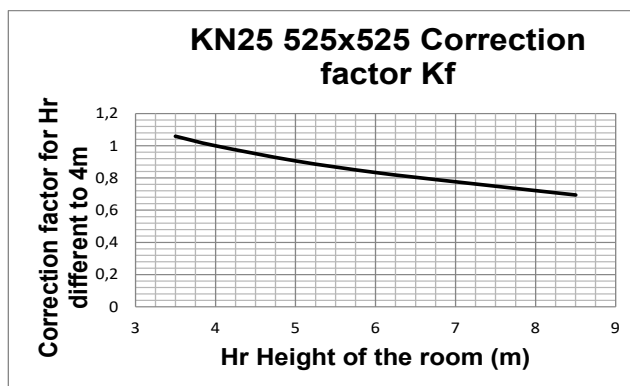
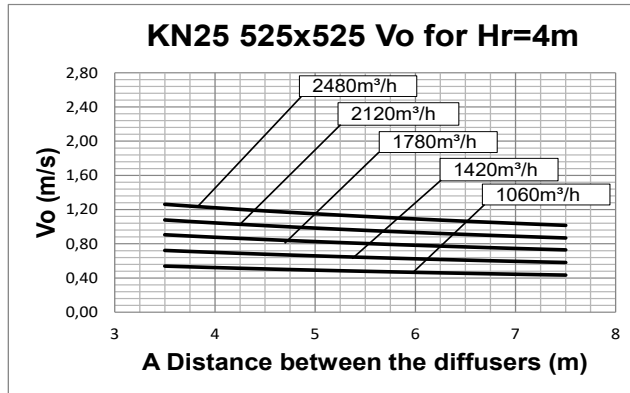




## MULTIDIRECTIONAL DIFFUSERS FIXED SQUARE GEOMETRY

PERFORMANCE KN25 525x525

KN  
SERIES



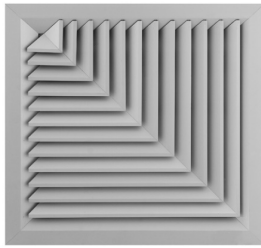
Data obtained from CFD mathematical model in virtual test chamber operating in isothermal conditions in accordance with the international standard:

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:

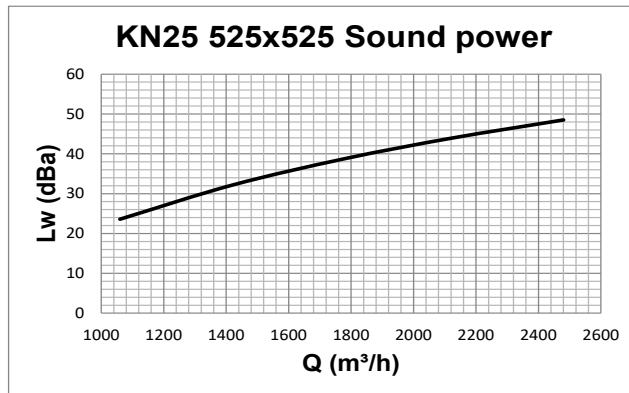
$$Vo(h) = Vo \times Kf$$



## MULTIDIRECTIONAL DIFFUSERS FIXED SQUARE GEOMETRY

KN  
SERIES

PERFORMANCE KN25 525x525

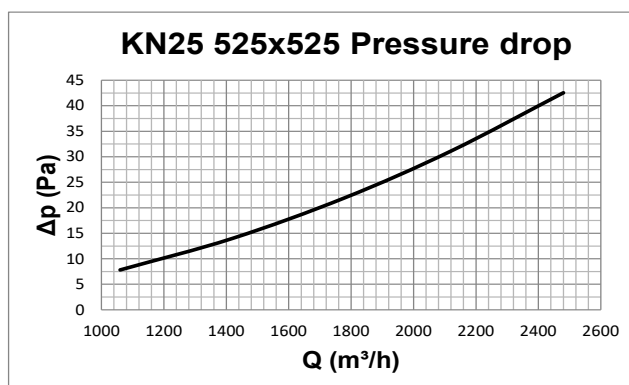


Data measured in reverberation room in accordance with international standards:

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

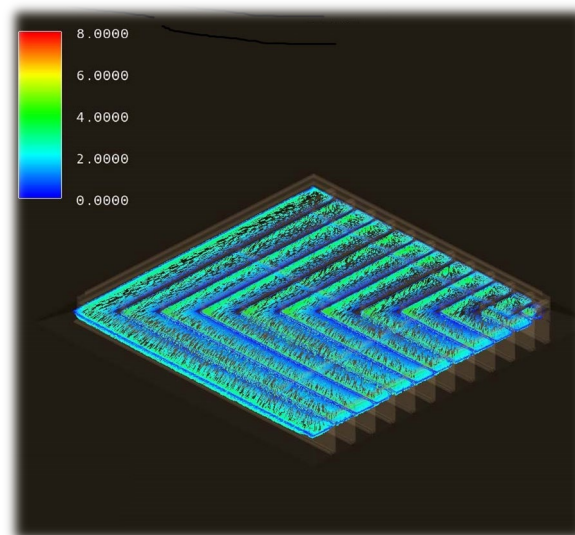
ISO 5135 1997: *Acoustic - determination of sound power levels of noise from air-terminal devices; air terminal units; dampers and valves by measurement in a reverberation room.*

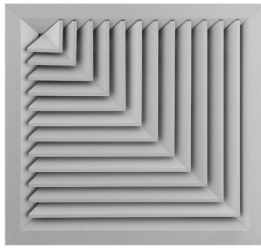
The data presented does not consider the attenuation given by the area of installation. This attenuation is normally between 6 and 10 dBA and is determined by the room size, the shape of the environment and the interior features.



Data obtained 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.*

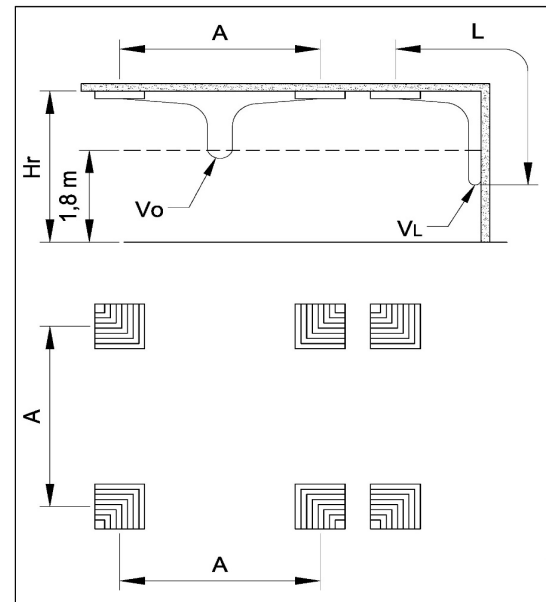
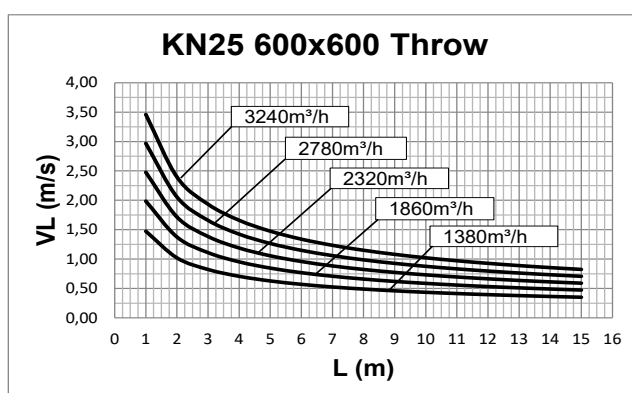
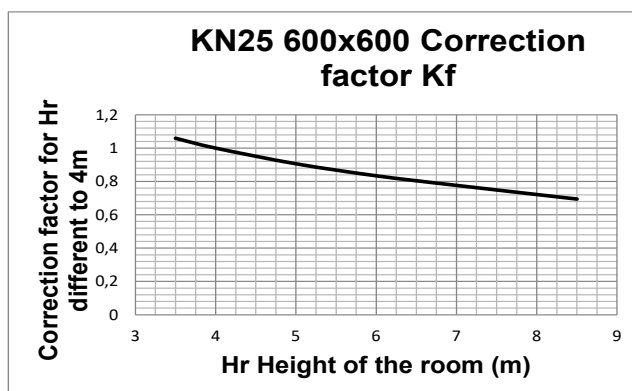
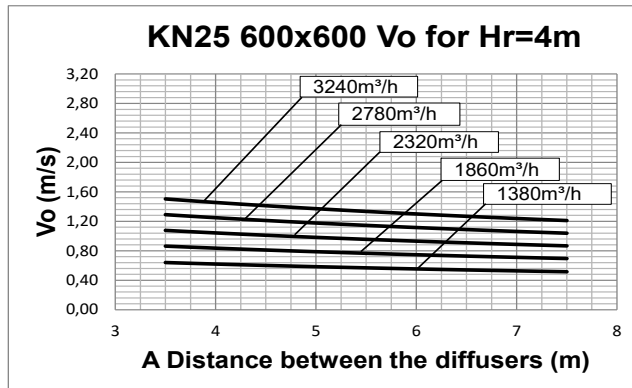




## MULTIDIRECTIONAL DIFFUSERS FIXED SQUARE GEOMETRY

PERFORMANCE KN25 600x600

KN  
SERIES



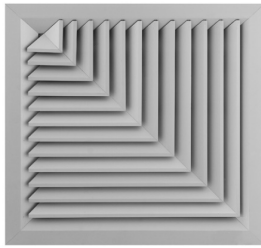
Data obtained from CFD mathematical model in virtual test chamber operating in isothermal conditions in accordance with the international standard:

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:

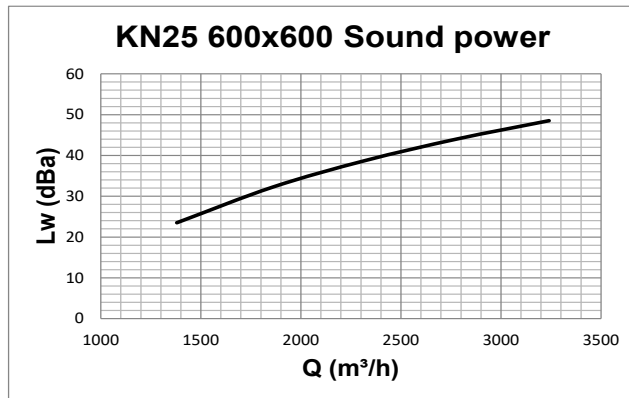
$$Vo(h) = Vo \times Kf$$



## MULTIDIRECTIONAL DIFFUSERS FIXED SQUARE GEOMETRY

KN  
SERIES

PERFORMANCE KN25 600x600

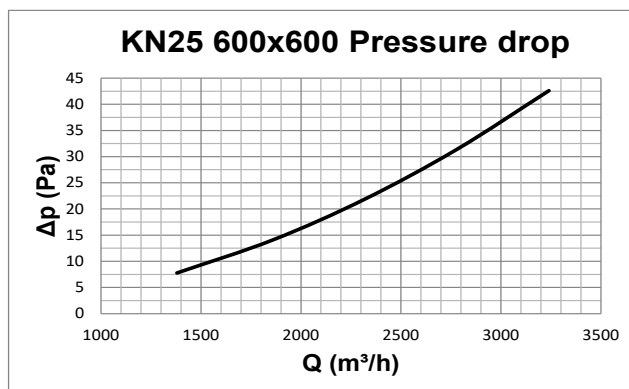


Data measured in reverberation room in accordance with international standards:

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

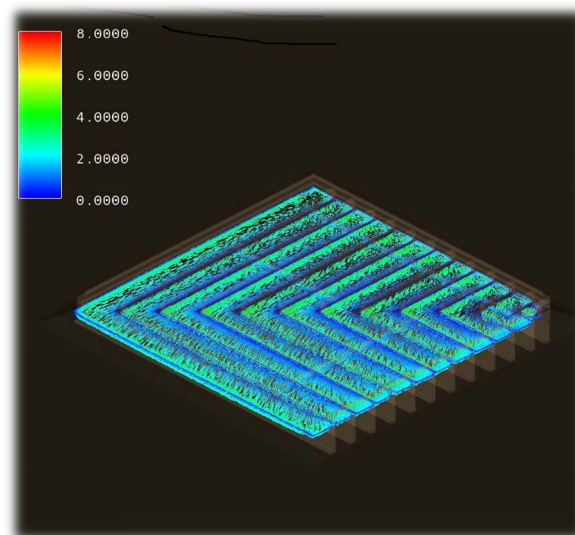
ISO 5135 1997: *Acoustic - determination of sound power levels of noise from air-terminal devices; air terminal units; dampers and valves by measurement in a reverberation room.*

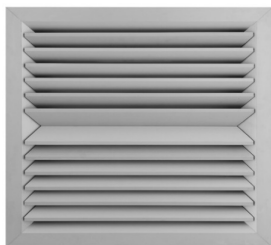
The data presented does not consider the attenuation given by the area of installation. This attenuation is normally between 6 and 10 dBA and is determined by the room size, the shape of the environment and the interior features.



Data obtained 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.*

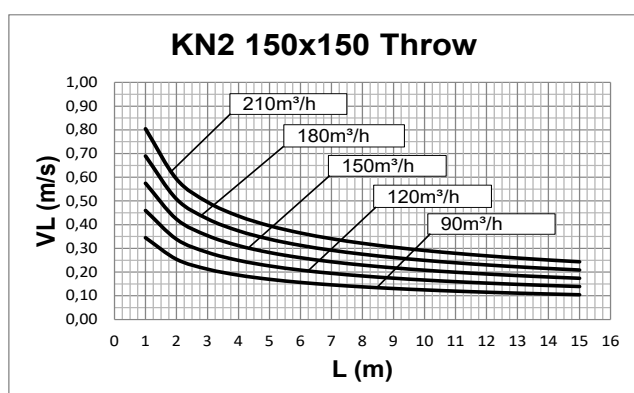
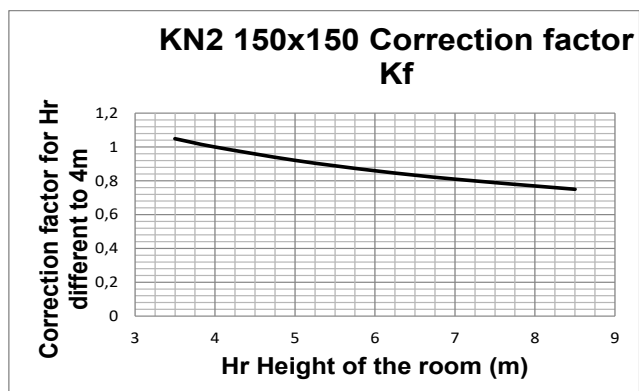
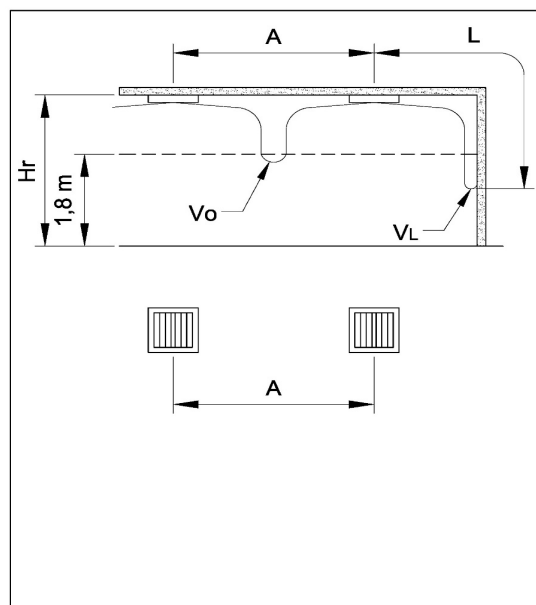
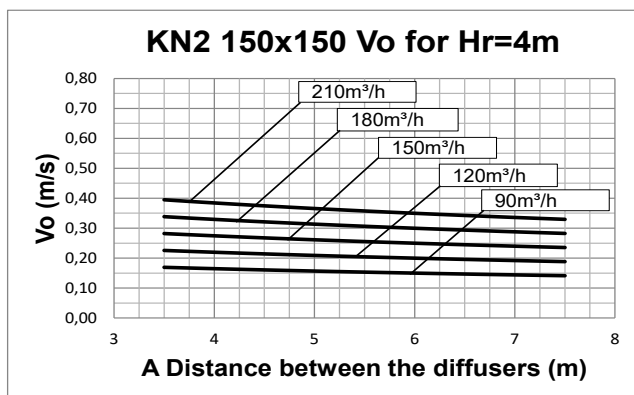




## MULTIDIRECTIONAL DIFFUSERS FIXED SQUARE GEOMETRY

KN  
SERIES

PERFORMANCE KN2 150x150



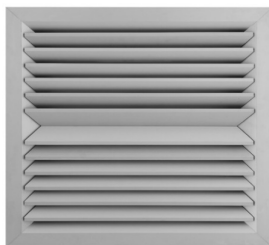
Data obtained from CFD mathematical model in virtual test chamber operating in isothermal conditions in accordance with the international standard:

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:

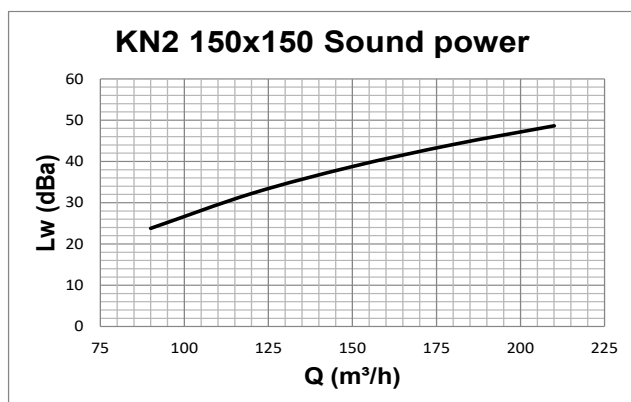
$$Vo(h) = Vo \times Kf$$



## MULTIDIRECTIONAL DIFFUSERS FIXED SQUARE GEOMETRY

KN  
SERIES

PERFORMANCE KN2 150x150

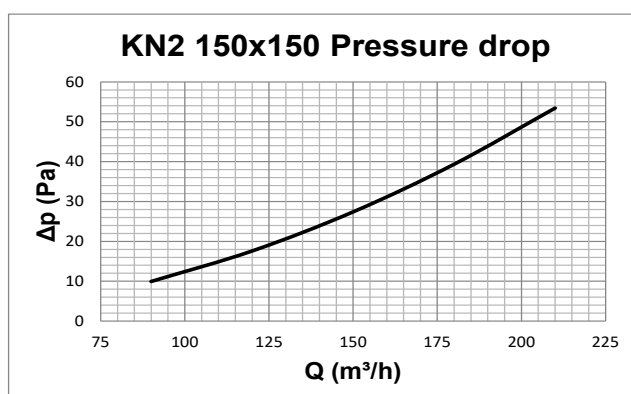


Data measured in reverberation room in accordance with international standards:

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

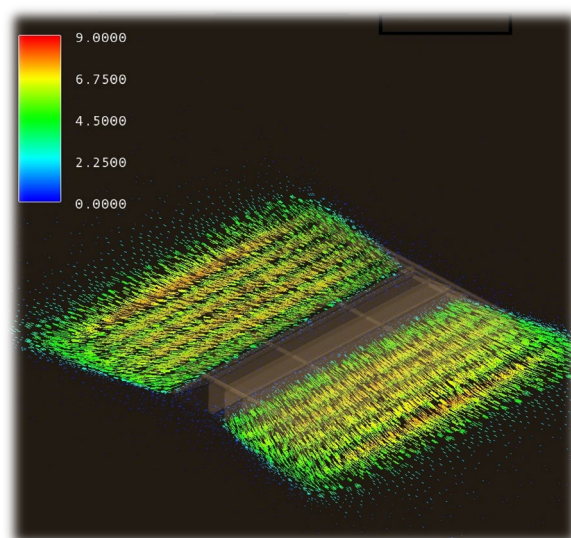
ISO 5135 1997: *Acoustic - determination of sound power levels of noise from air-terminal devices; air terminal units; dampers and valves by measurement in a reverberation room.*

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.

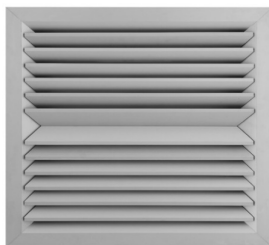


Data obtained from CFD mathematical model in virtual test chamber operating in isothermal conditions in accordance with the international standard:

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



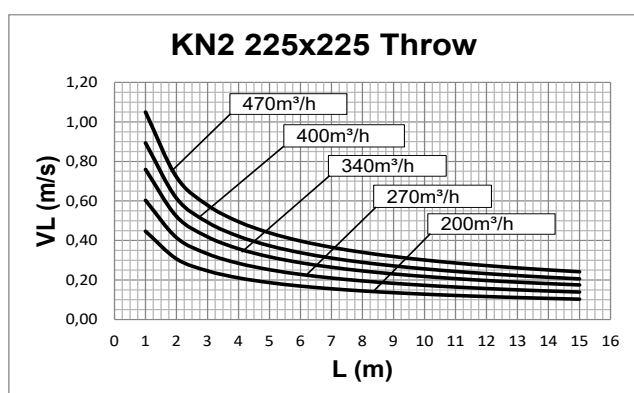
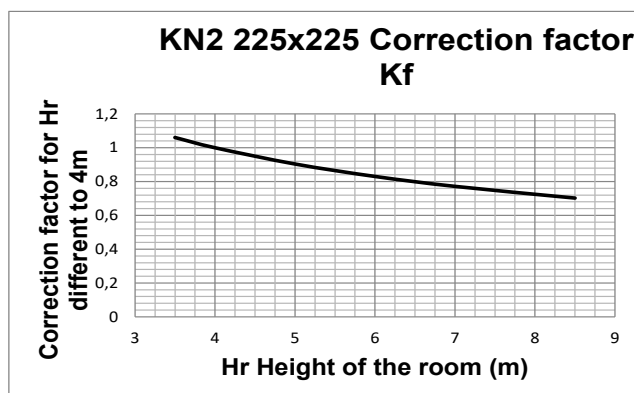
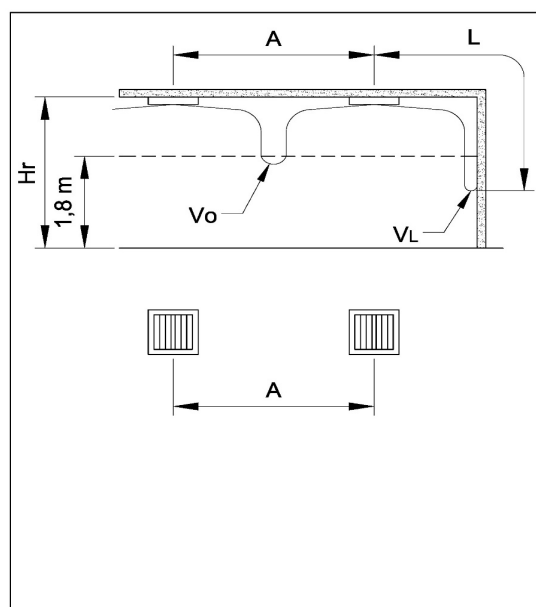
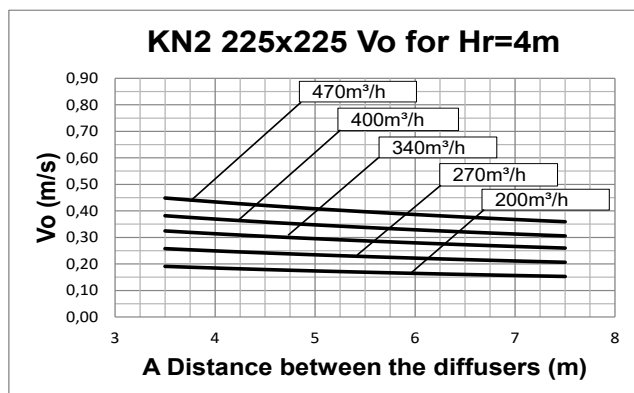




## MULTIDIRECTIONAL DIFFUSERS FIXED SQUARE GEOMETRY

KN  
SERIES

PERFORMANCE KN2 225x225



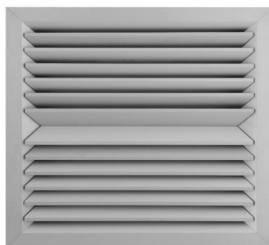
Data obtained from CFD mathematical model in virtual test chamber operating in isothermal conditions in accordance with the international standard:

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:

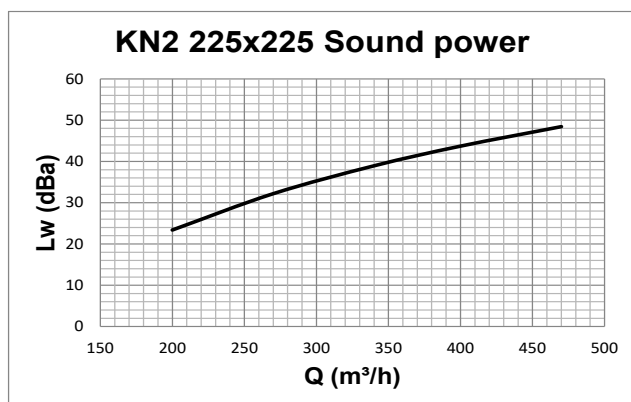
$$Vo(h) = Vo \times Kf$$



## MULTIDIRECTIONAL DIFFUSERS FIXED SQUARE GEOMETRY

KN  
SERIES

PERFORMANCE KN2 225x225

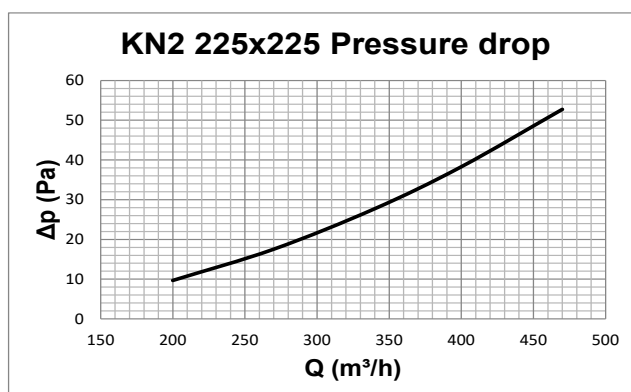


Data measured in reverberation room in accordance with international standards:

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

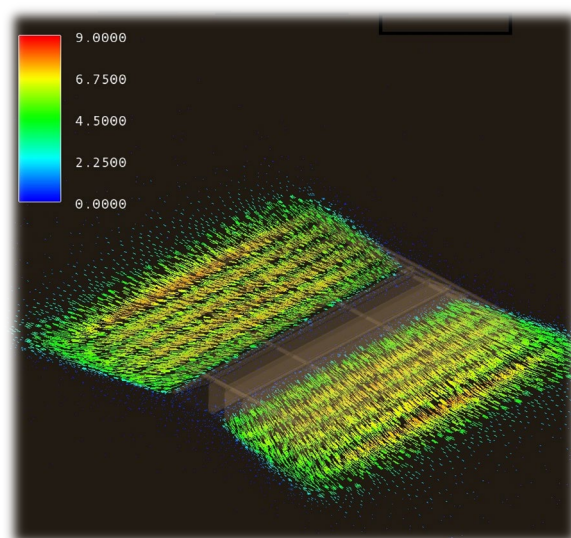
ISO 5135 1997: *Acoustic - determination of sound power levels of noise from air-terminal devices; air terminal units; dampers and valves by measurement in a reverberation room.*

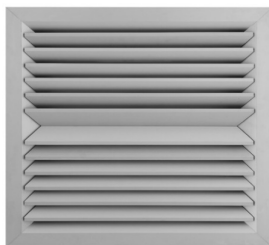
The data presented does not consider the attenuation given by the area of installation. This attenuation is normally between 6 and 10 dBA and is determined by the room size, the shape of the environment and the interior features.



Data obtained 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.*

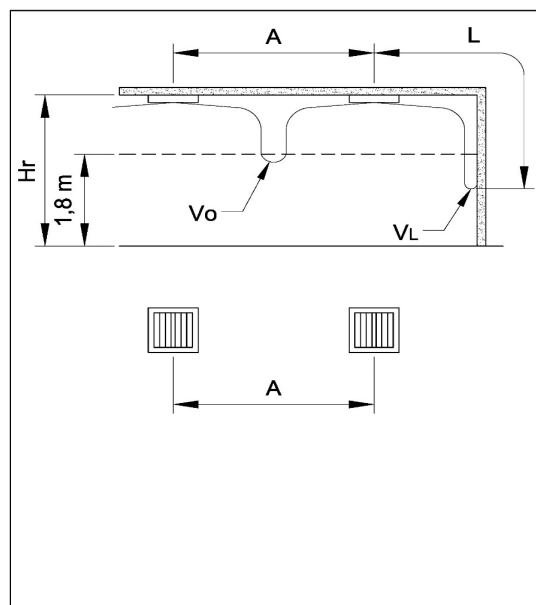
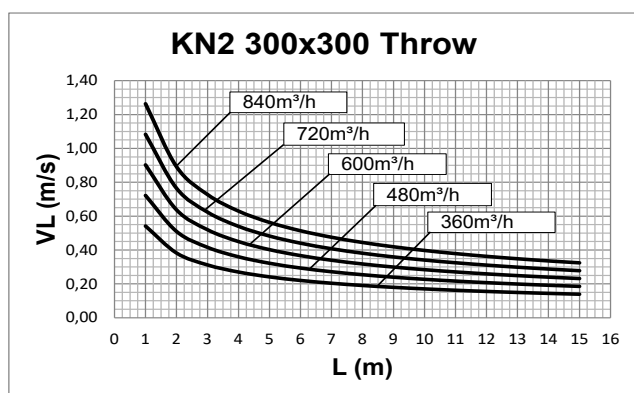
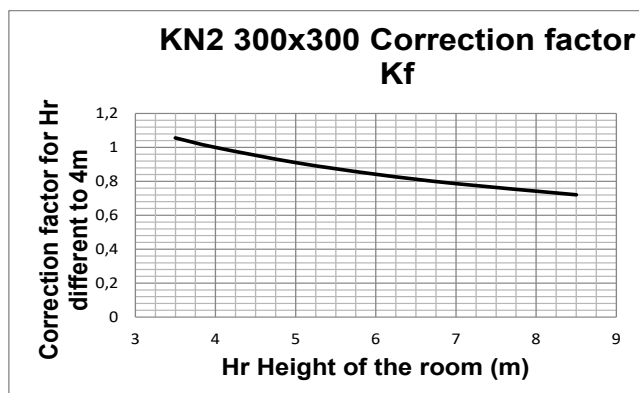
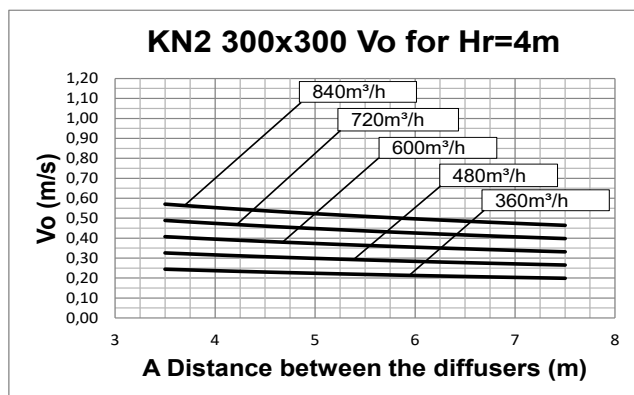




## MULTIDIRECTIONAL DIFFUSERS FIXED SQUARE GEOMETRY

KN  
SERIES

PERFORMANCE KN2 300x300



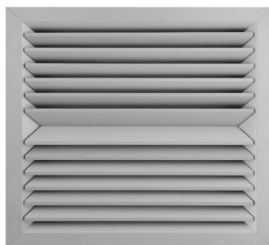
Data obtained from CFD mathematical model in virtual test chamber operating in isothermal conditions in accordance with the international standard:

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:

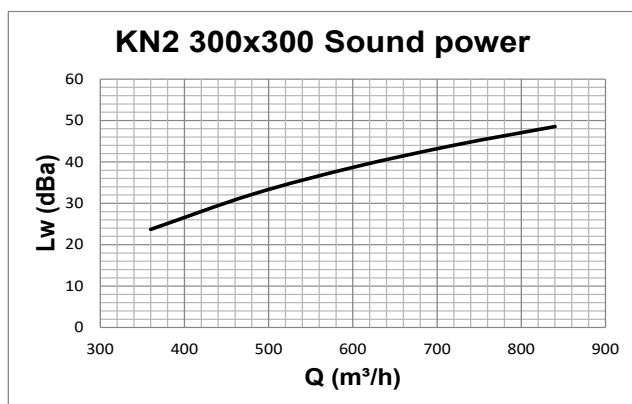
$$Vo(h) = Vo \times Kf$$



## MULTIDIRECTIONAL DIFFUSERS FIXED SQUARE GEOMETRY

KN  
SERIES

PERFORMANCE KN2 300x300

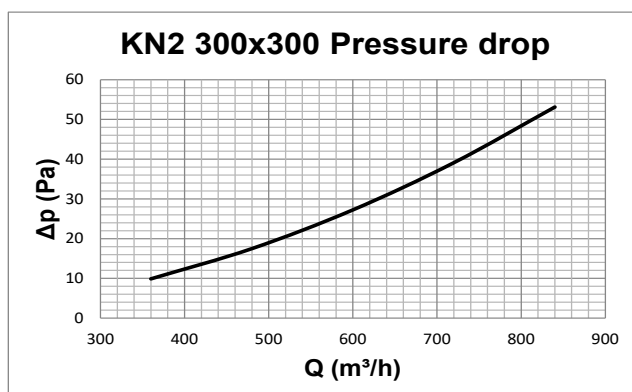


Data measured in reverberation room in accordance with international standards:

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

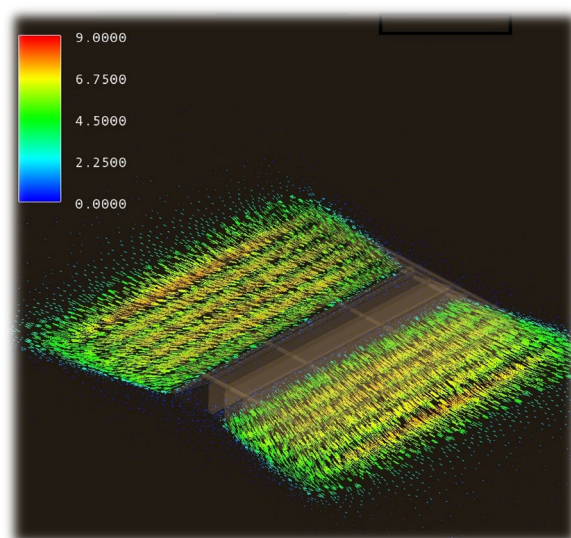
ISO 5135 1997: *Acoustic - determination of sound power levels of noise from air-terminal devices; air terminal units; dampers and valves by measurement in a reverberation room.*

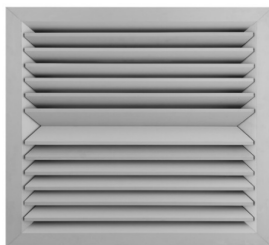
The data presented does not consider the attenuation given by the area of installation. This attenuation is normally between 6 and 10 dBA and is determined by the room size, the shape of the environment and the interior features.



Data obtained 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.*

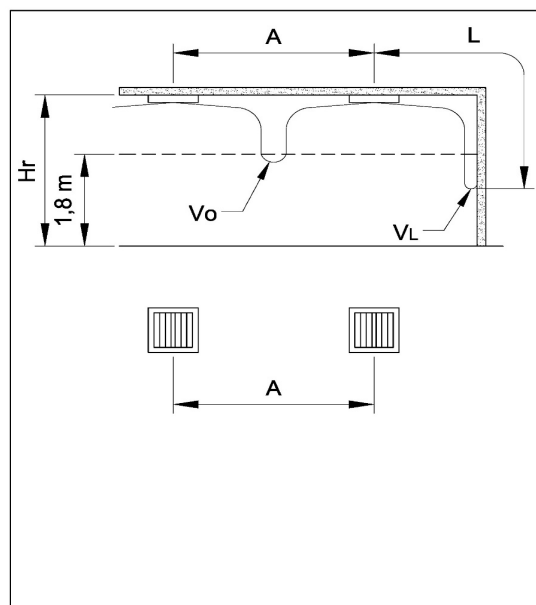
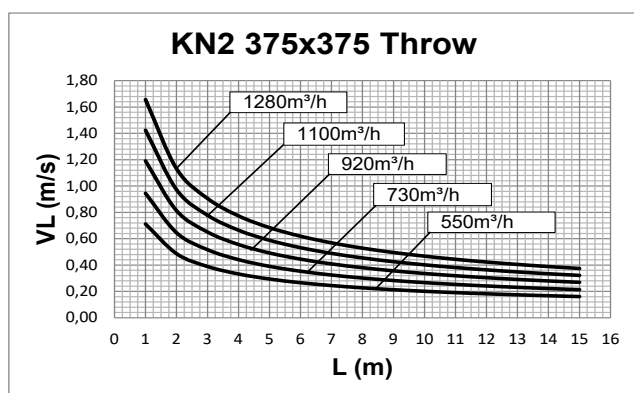
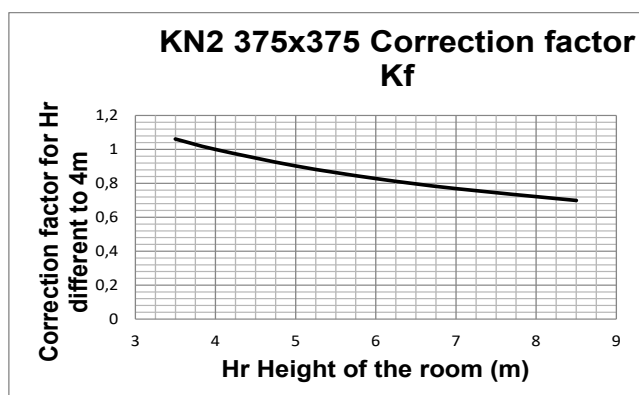
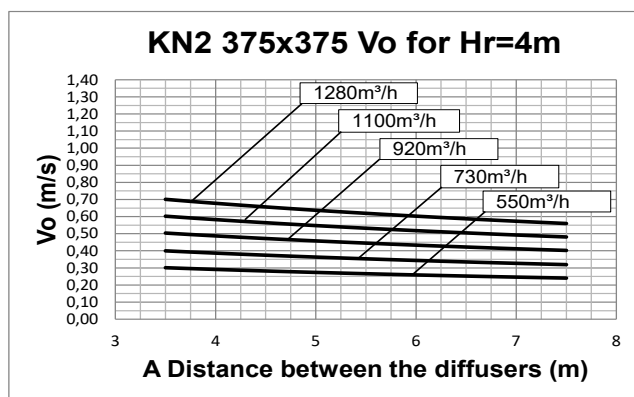




## MULTIDIRECTIONAL DIFFUSERS FIXED SQUARE GEOMETRY

KN  
SERIES

PERFORMANCE KN2 375x375



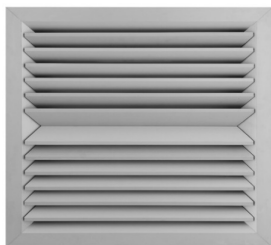
Data obtained from CFD mathematical model in virtual test chamber operating in isothermal conditions in accordance with the international standard:

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:

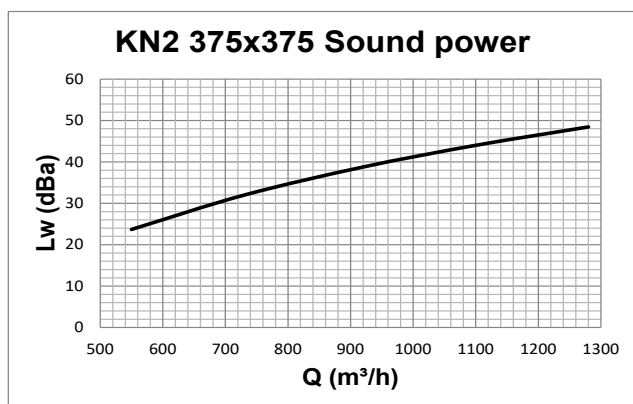
$V_o(h) = V_o \times K_f$



## MULTIDIRECTIONAL DIFFUSERS FIXED SQUARE GEOMETRY

KN  
SERIES

PERFORMANCE KN2 375x375

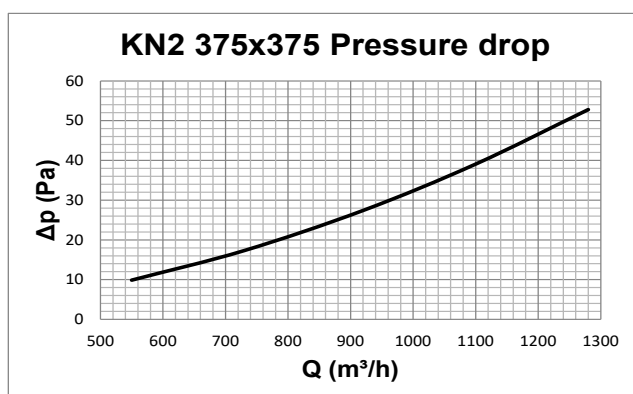


Data measured in reverberation room in accordance with international standards:

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

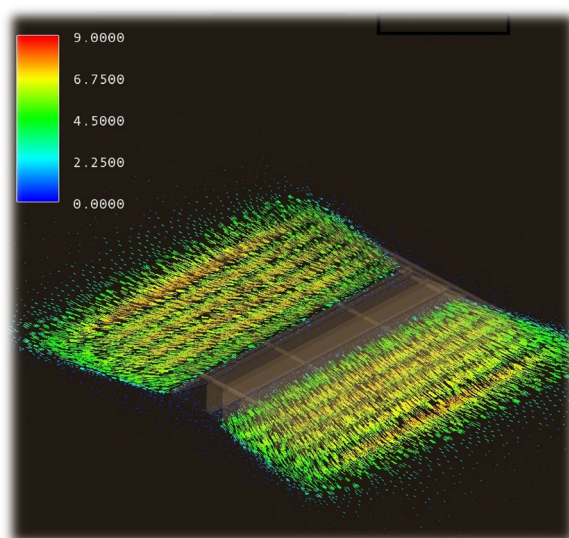
ISO 5135 1997: *Acoustic - determination of sound power levels of noise from air-terminal devices; air terminal units; dampers and valves by measurement in a reverberation room.*

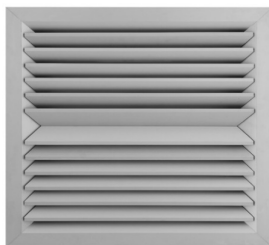
The data presented does not consider the attenuation given by the area of installation. This attenuation is normally between 6 and 10 dBA and is determined by the room size, the shape of the environment and the interior features.



Data obtained 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.*

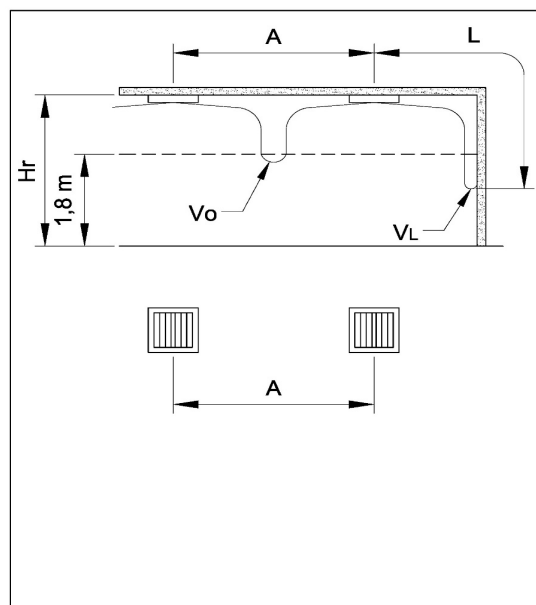
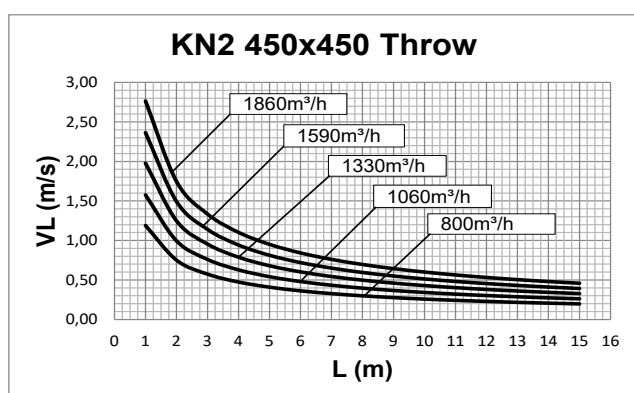
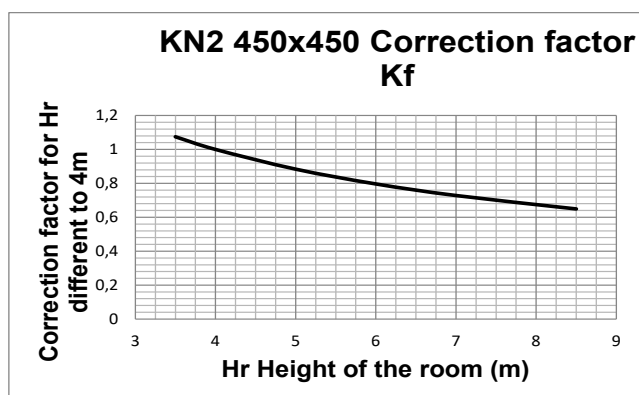
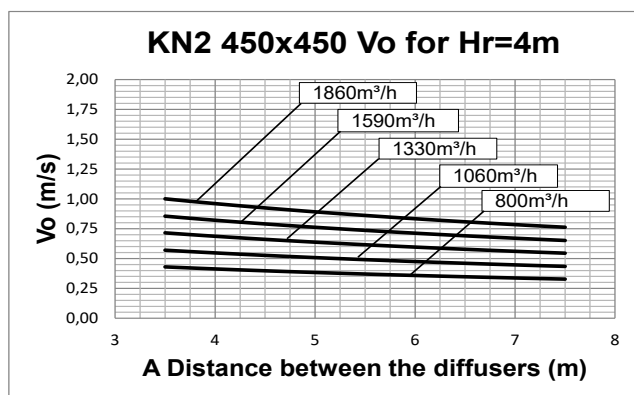




## MULTIDIRECTIONAL DIFFUSERS FIXED SQUARE GEOMETRY

KN  
SERIES

PERFORMANCE KN2 450x450



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

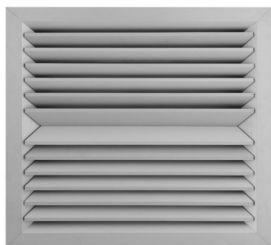
ISO 5219 1984: *Air distribution and air diffusion - Laboratory. Aerodynamic testing and rating of air terminal devices.*

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:

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

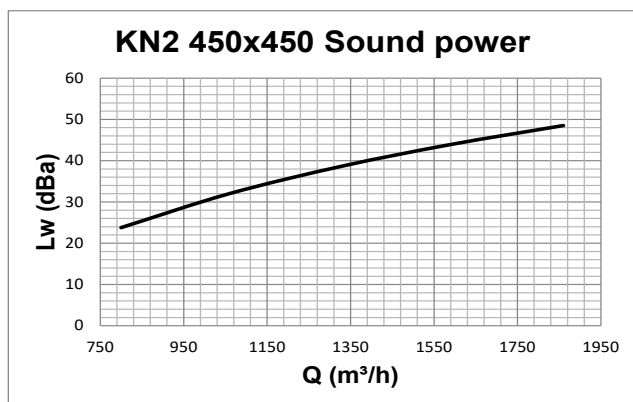




## MULTIDIRECTIONAL DIFFUSERS FIXED SQUARE GEOMETRY

KN  
SERIES

PERFORMANCE KN2 450x450

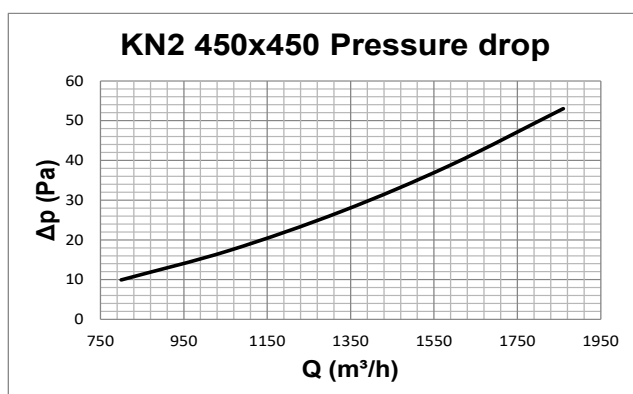


Data measured in reverberation room in accordance with international standards:

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

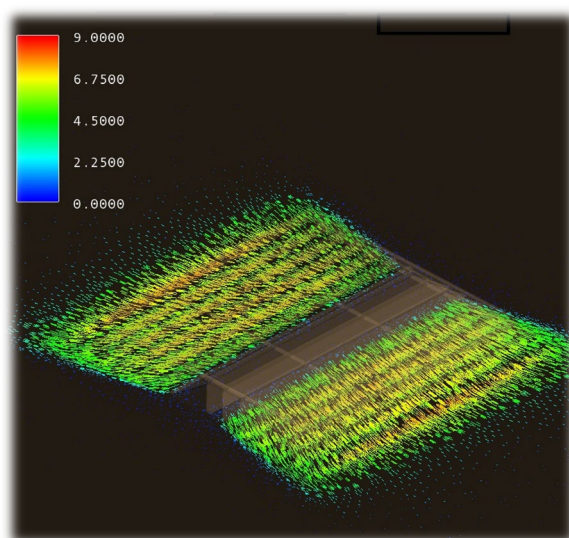
ISO 5135 1997: *Acoustic - determination of sound power levels of noise from air-terminal devices; air terminal units; dampers and valves by measurement in a reverberation room.*

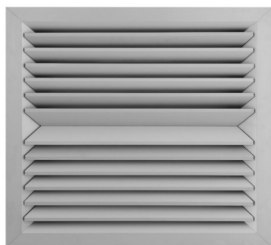
The data presented does not consider the attenuation given by the area of installation. This attenuation is normally between 6 and 10 dBA and is determined by the room size, the shape of the environment and the interior features.



Data obtained 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.*

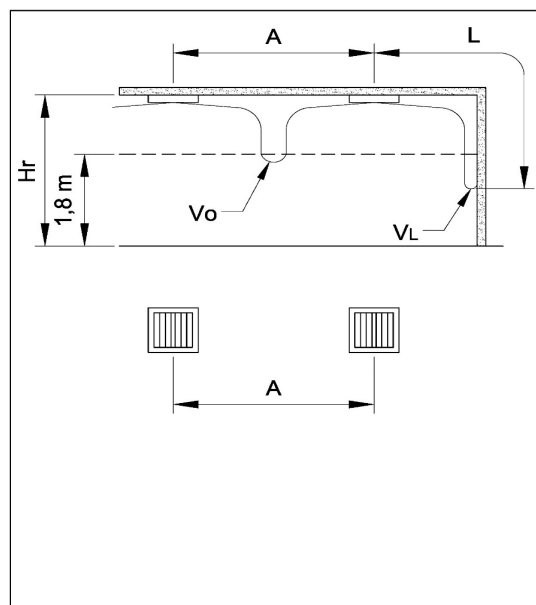
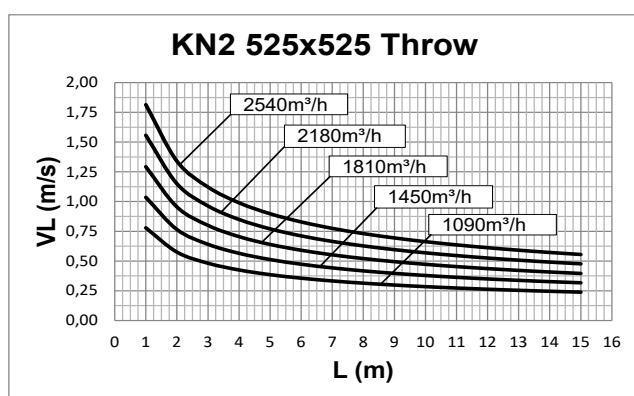
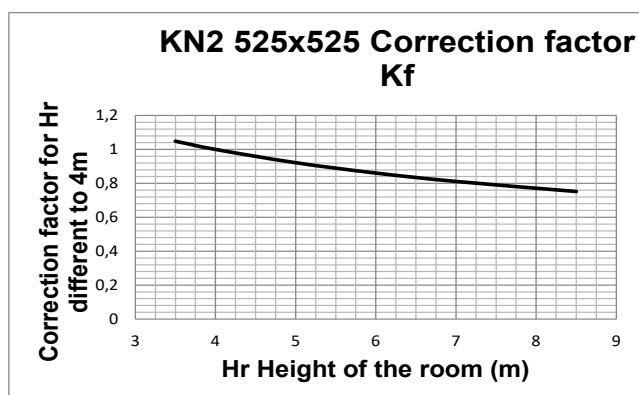
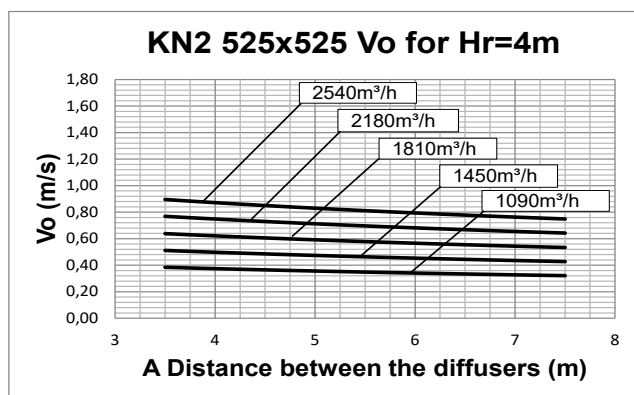




## MULTIDIRECTIONAL DIFFUSERS FIXED SQUARE GEOMETRY

KN  
SERIES

PERFORMANCE KN2 525x525



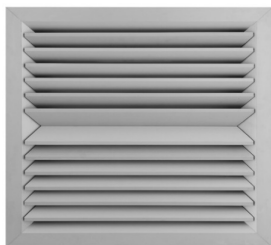
Data obtained from CFD mathematical model in virtual test chamber operating in isothermal conditions in accordance with the international standard:

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

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

For  $H_r$  different from 3m:

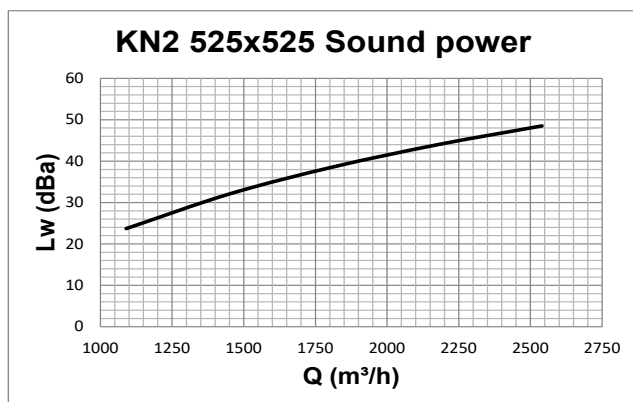
$$V_o(h) = V_o \times K_f$$



## MULTIDIRECTIONAL DIFFUSERS FIXED SQUARE GEOMETRY

KN  
SERIES

PERFORMANCE KN2 525x525

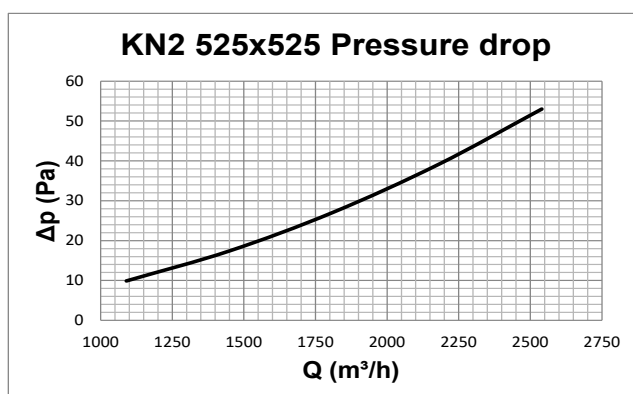


Data measured in reverberation room in accordance with international standards:

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

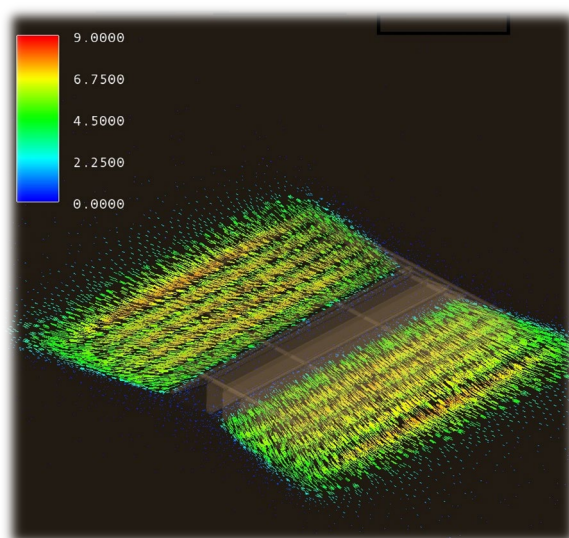
ISO 5135 1997: *Acoustic - determination of sound power levels of noise from air-terminal devices; air terminal units; dampers and valves by measurement in a reverberation room.*

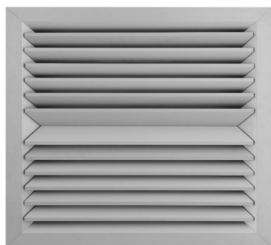
The data presented does not consider the attenuation given by the area of installation. This attenuation is normally between 6 and 10 dBA and is determined by the room size, the shape of the environment and the interior features.



Data obtained 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.*

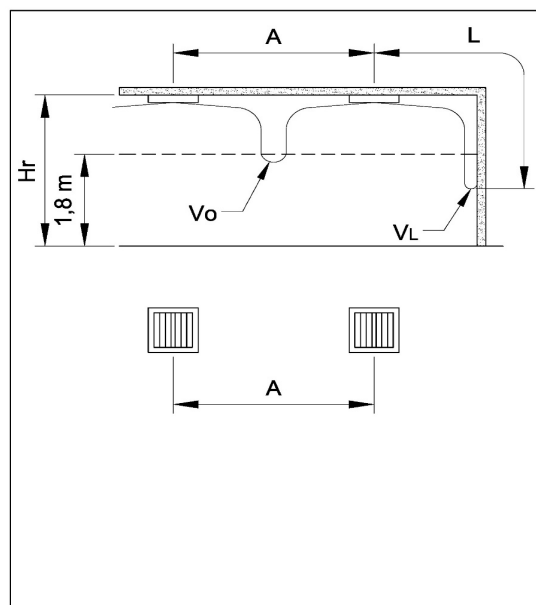
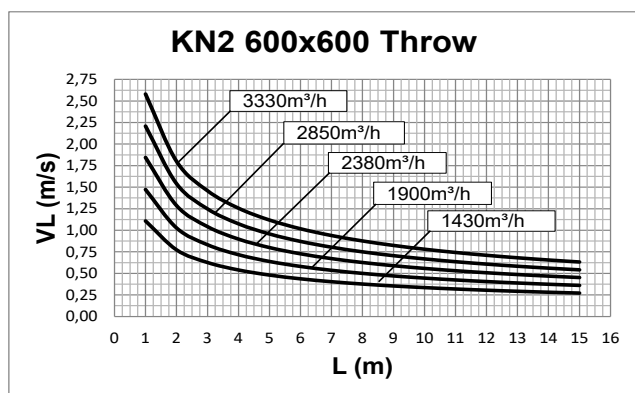
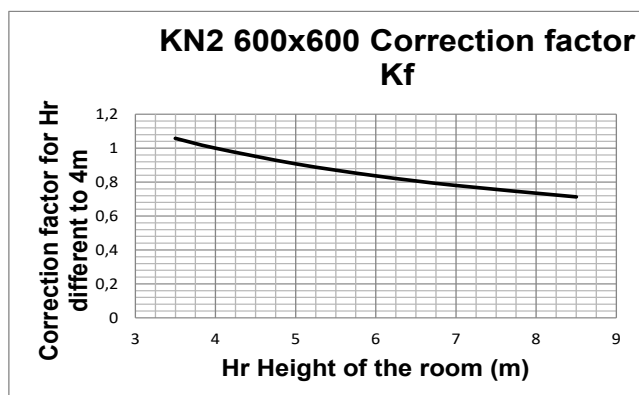
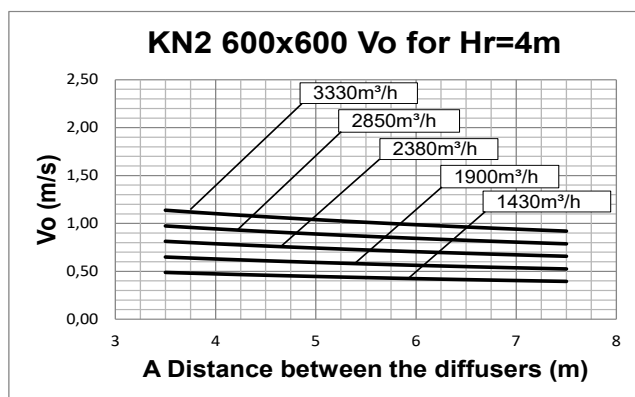




## MULTIDIRECTIONAL DIFFUSERS FIXED SQUARE GEOMETRY

KN  
SERIES

PERFORMANCE KN2 600x600



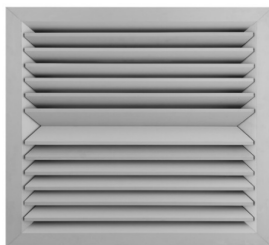
Data obtained from CFD mathematical model in virtual test chamber operating in isothermal conditions in accordance with the international standard:

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:

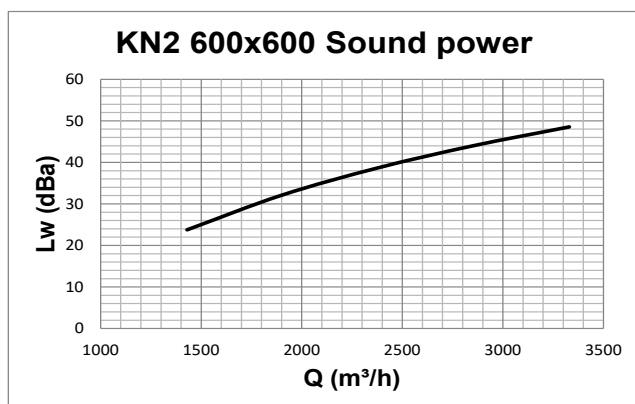
$$Vo(h) = Vo \times Kf$$



## MULTIDIRECTIONAL DIFFUSERS FIXED SQUARE GEOMETRY

KN  
SERIES

PERFORMANCE KN2 600x600

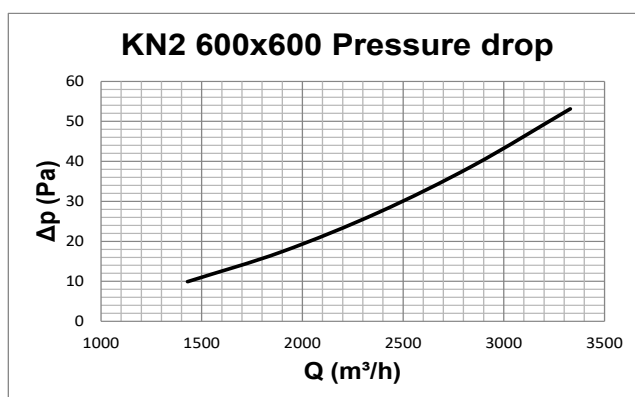


Data measured in reverberation room in accordance with international standards:

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

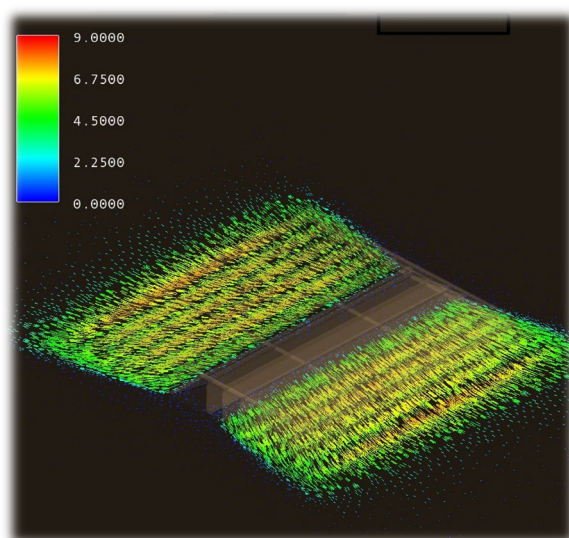
ISO 5135 1997: *Acoustic - determination of sound power levels of noise from air-terminal devices; air terminal units; dampers and valves by measurement in a reverberation room.*

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 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.*

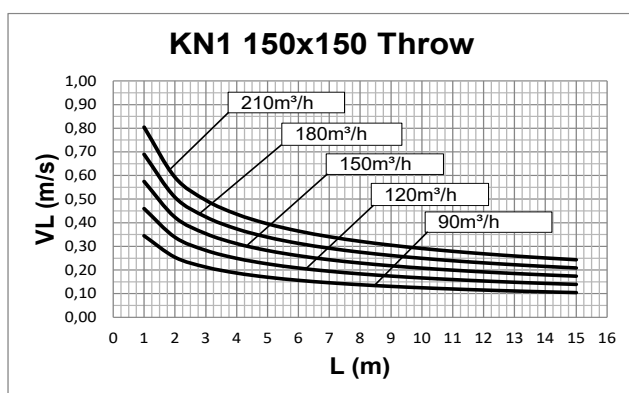
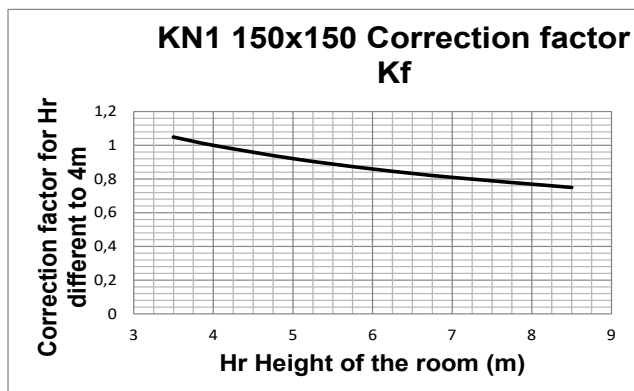
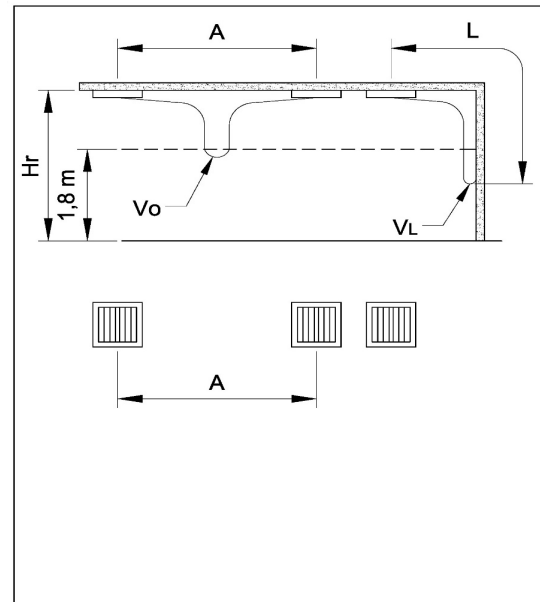
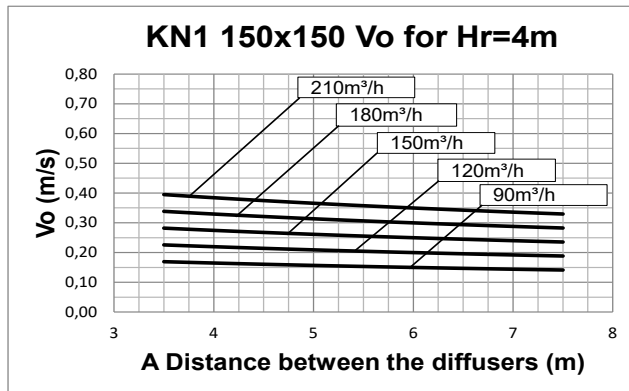




## MULTIDIRECTIONAL DIFFUSERS FIXED SQUARE GEOMETRY

PERFORMANCE KNI 150x150

KN  
SERIES



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

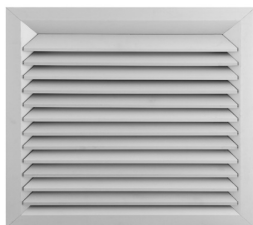
ISO 5219 1984: *Air distribution and air diffusion - Laboratory. Aerodynamic testing and rating of air terminal devices.*

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:

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

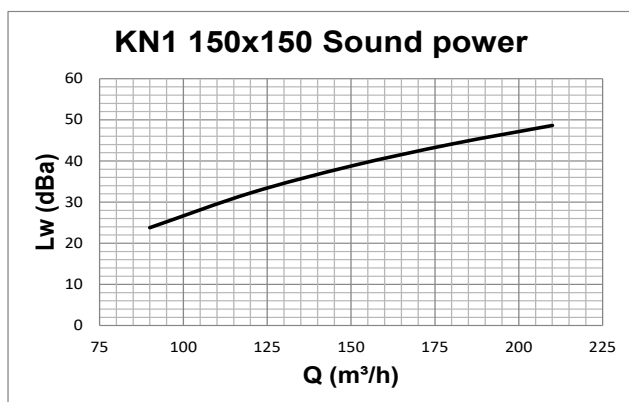




# SQUARE MULTIDIRECTIONAL 1-WAY-DIFFUSERS WITH EXTRACTABLE CONES

KN  
SERIES

PERFORMANCE KNI 150x150

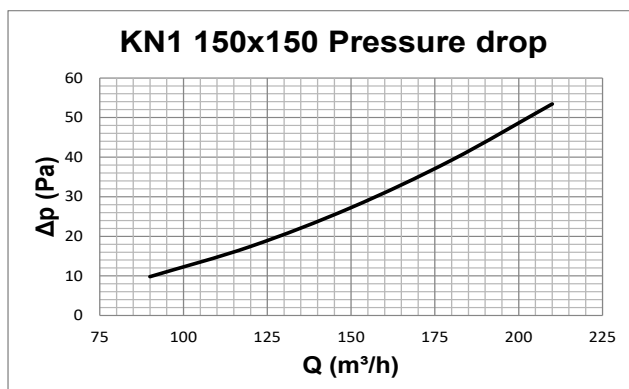


Data measured in reverberation room in accordance with international standards:

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

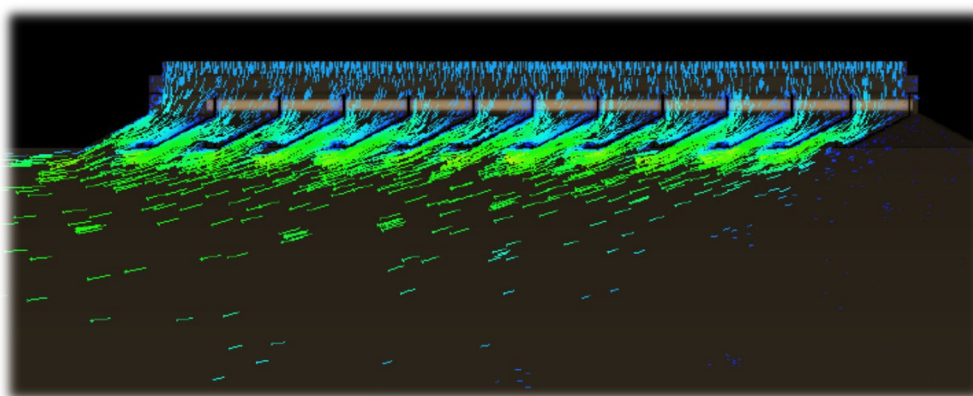
ISO 5135 1997: *Acoustic - determination of sound power levels of noise from air-terminal devices; air terminal units; dampers and valves by measurement in a reverberation room.*

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 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.*



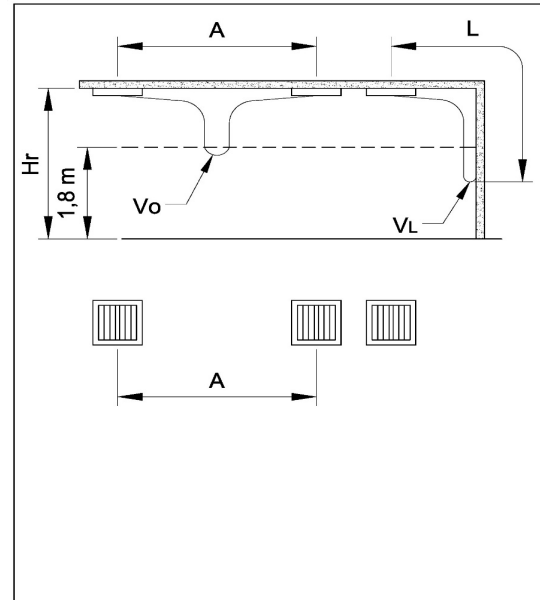
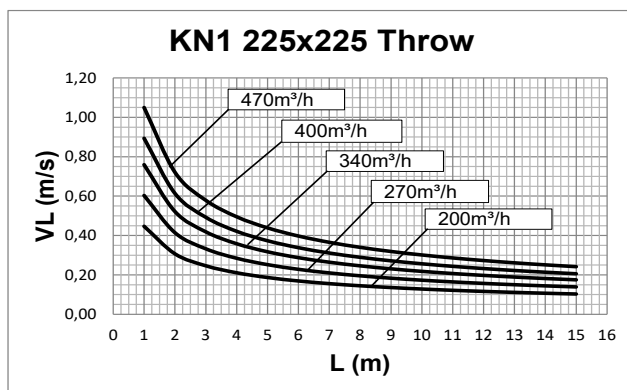
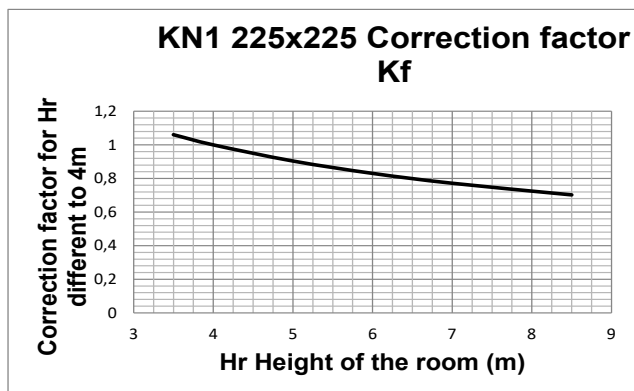
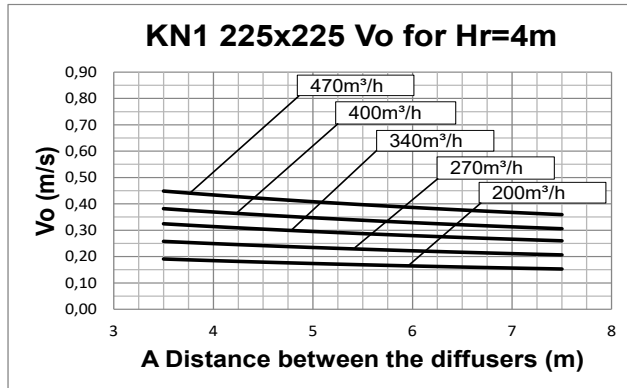




## MULTIDIRECTIONAL DIFFUSERS FIXED SQUARE GEOMETRY

PERFORMANCE KNI 225x225

KN  
SERIES



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:

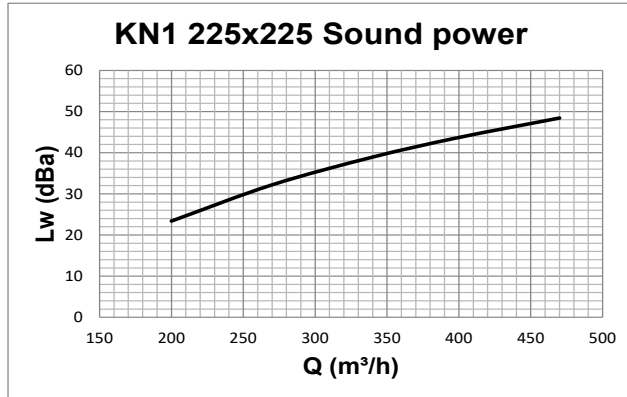
$$Vo(h) = Vo \times Kf$$



## MULTIDIRECTIONAL DIFFUSERS FIXED SQUARE GEOMETRY

KN  
SERIES

PERFORMANCE KNI 225x225

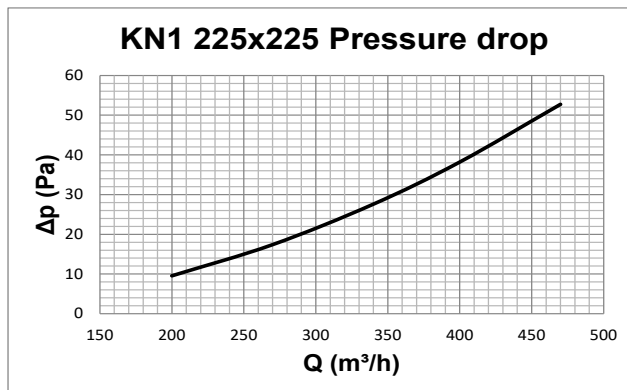


Data measured in reverberation room in accordance with international standards:

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

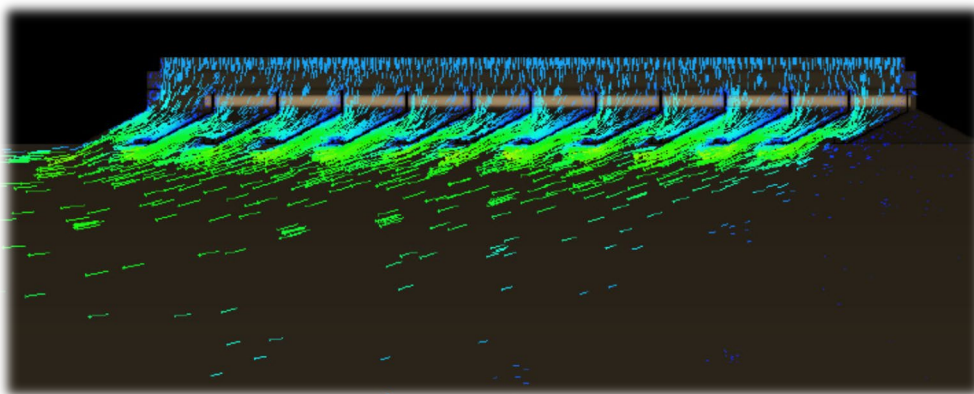
ISO 5135 1997: *Acoustic - determination of sound power levels of noise from air-terminal devices; air terminal units; dampers and valves by measurement in a reverberation room.*

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 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.*

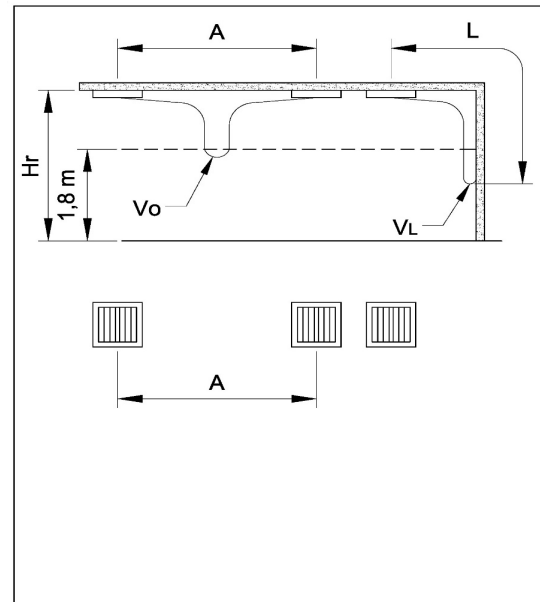
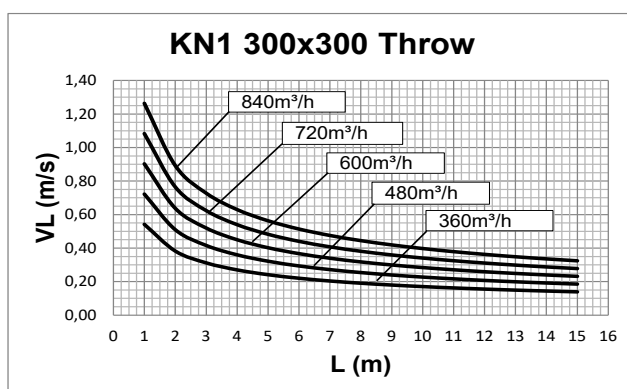
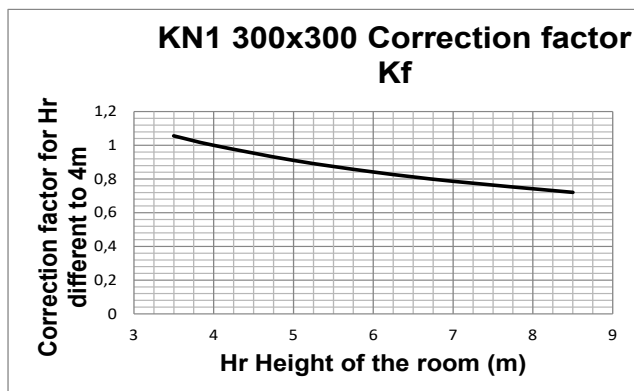
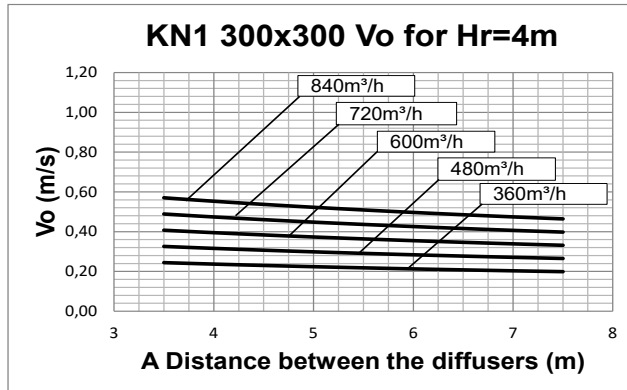




## MULTIDIRECTIONAL DIFFUSERS FIXED SQUARE GEOMETRY

PERFORMANCE KNI 300x300

KN  
SERIES



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:

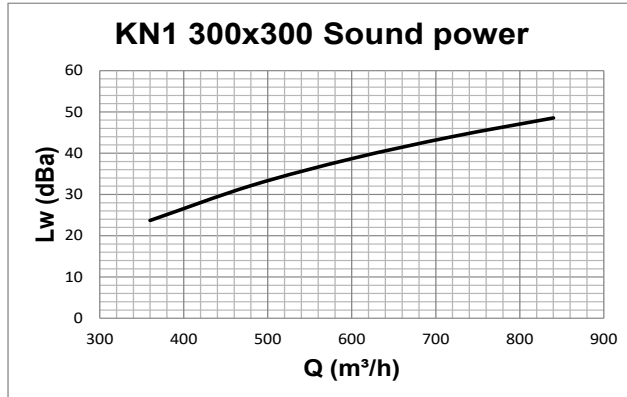
$V_o(h) = V_o \times K_f$



## MULTIDIRECTIONAL DIFFUSERS FIXED SQUARE GEOMETRY

KN  
SERIES

PERFORMANCE KNI 300x300

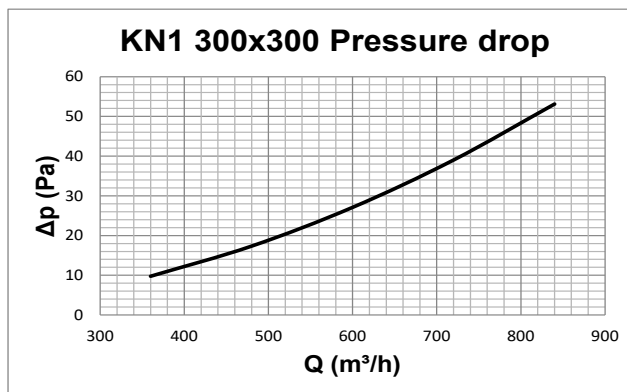


Data measured in reverberation room in accordance with international standards:

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

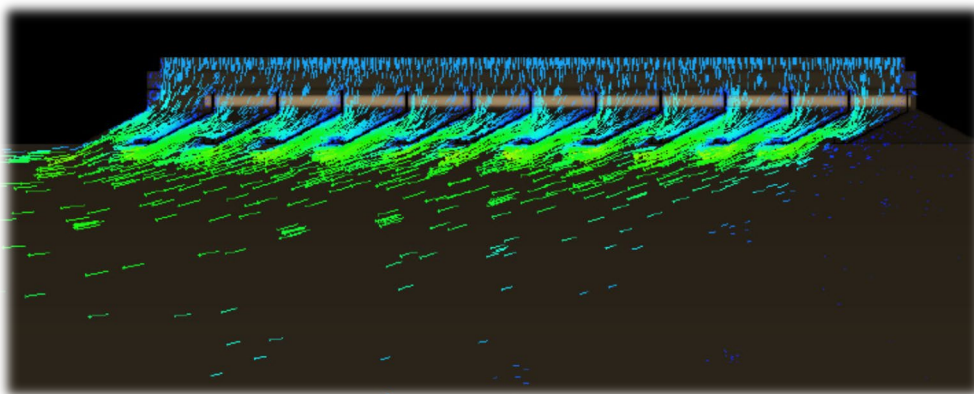
ISO 5135 1997: *Acoustic - determination of sound power levels of noise from air-terminal devices; air terminal units; dampers and valves by measurement in a reverberation room.*

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 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.*

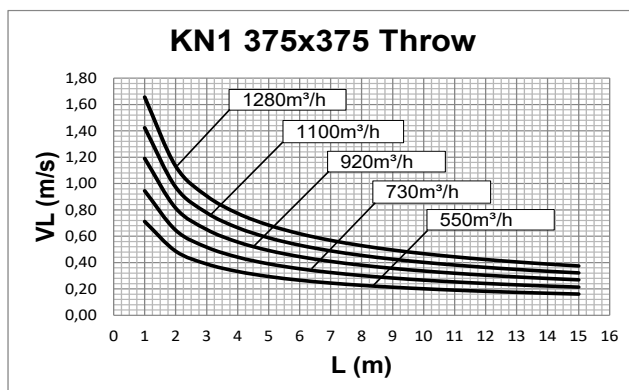
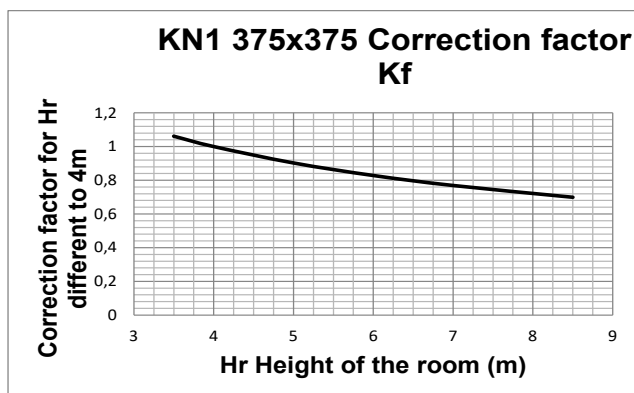
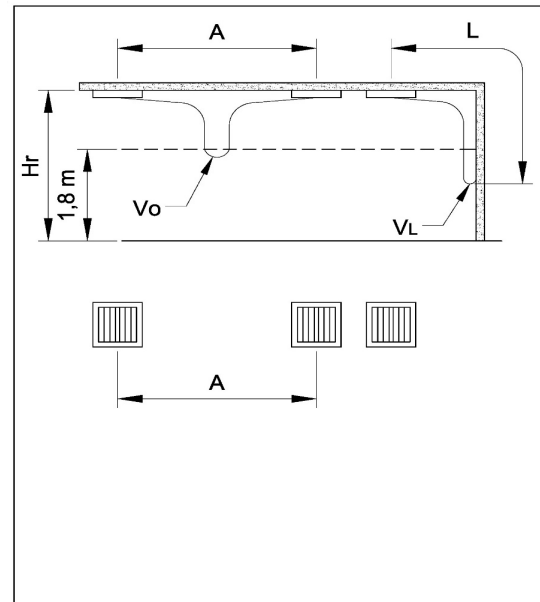
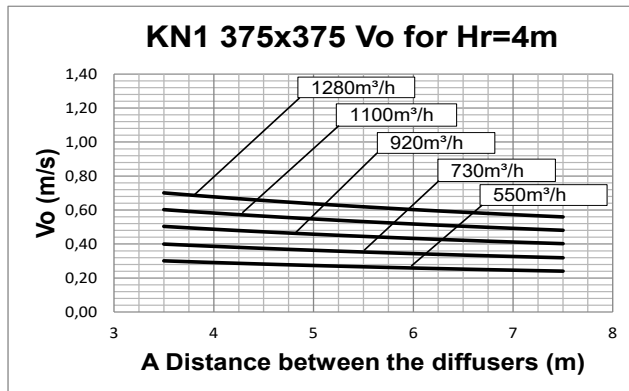




## MULTIDIRECTIONAL DIFFUSERS FIXED SQUARE GEOMETRY

PERFORMANCE KNI 375x375

KN  
SERIES



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:

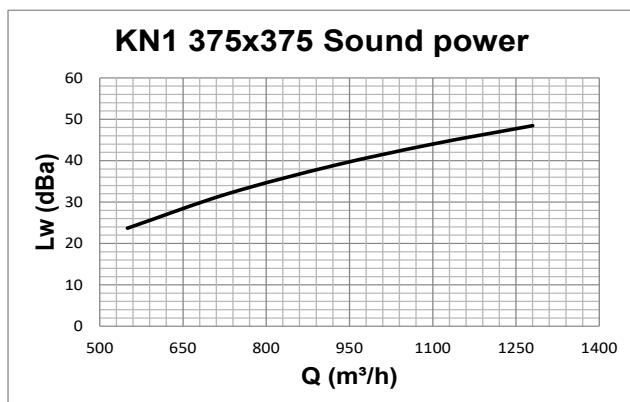
$$Vo(h) = Vo \times Kf$$



## MULTIDIRECTIONAL DIFFUSERS FIXED SQUARE GEOMETRY

KN  
SERIES

PERFORMANCE KNI 375x375

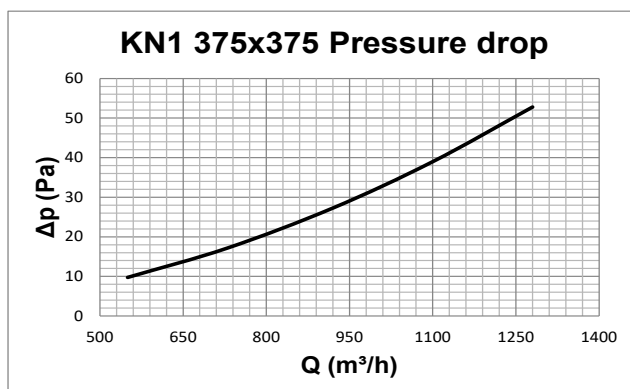


Data measured in reverberation room in accordance with international standards:

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

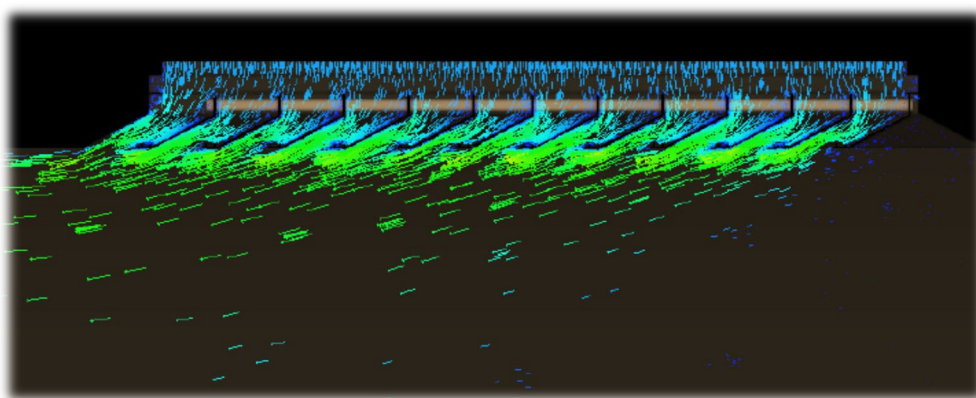
ISO 5135 1997: *Acoustic - determination of sound power levels of noise from air-terminal devices; air terminal units; dampers and valves by measurement in a reverberation room.*

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 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.*

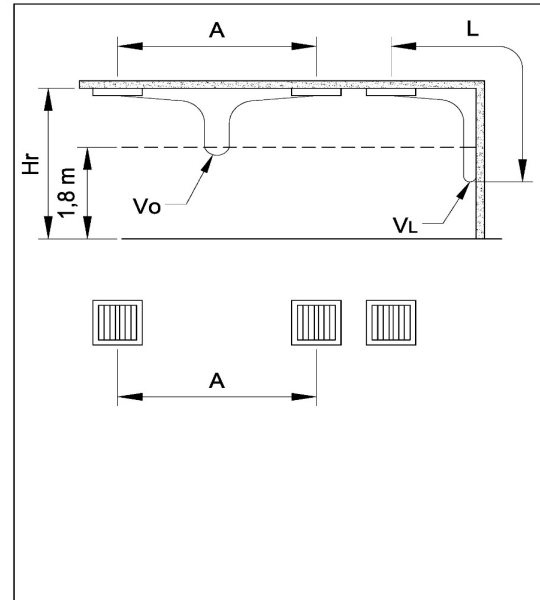
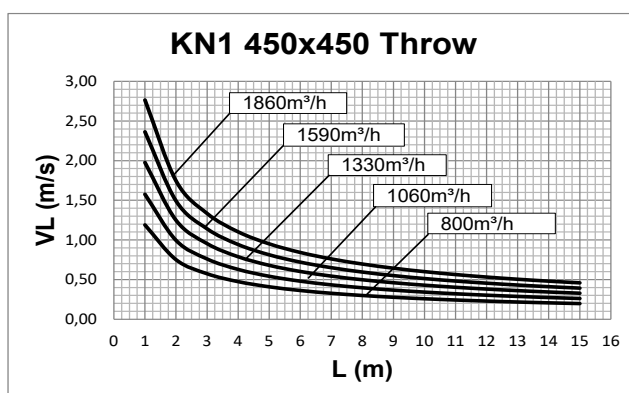
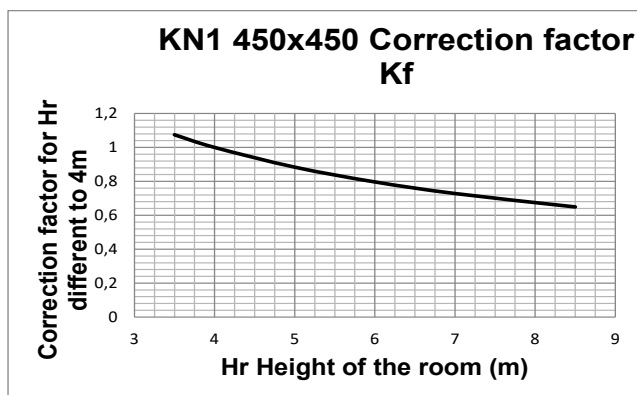
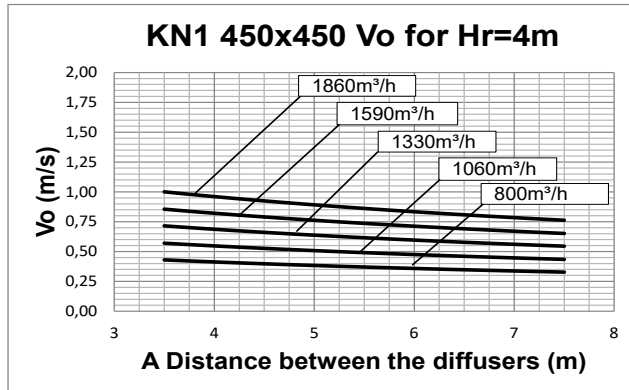




## MULTIDIRECTIONAL DIFFUSERS FIXED SQUARE GEOMETRY

PERFORMANCE KN1 450x450

KN  
SERIES



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:

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

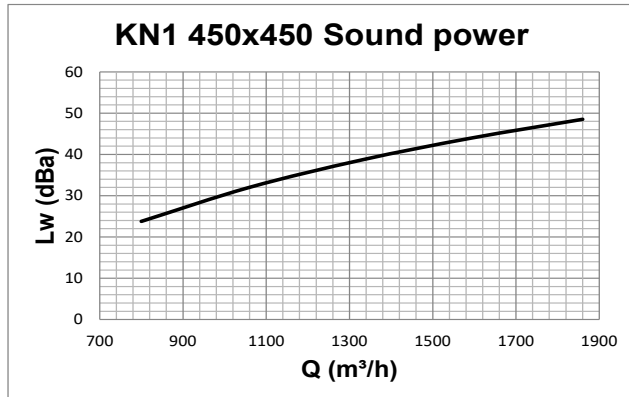




## MULTIDIRECTIONAL DIFFUSERS FIXED SQUARE GEOMETRY

KN  
SERIES

PERFORMANCE KN1 450x450

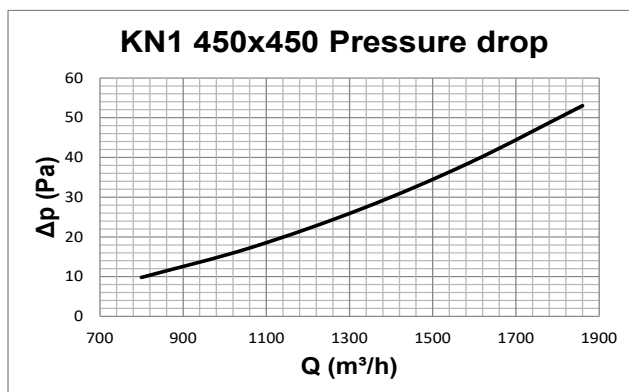


Data measured in reverberation room in accordance with international standards:

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

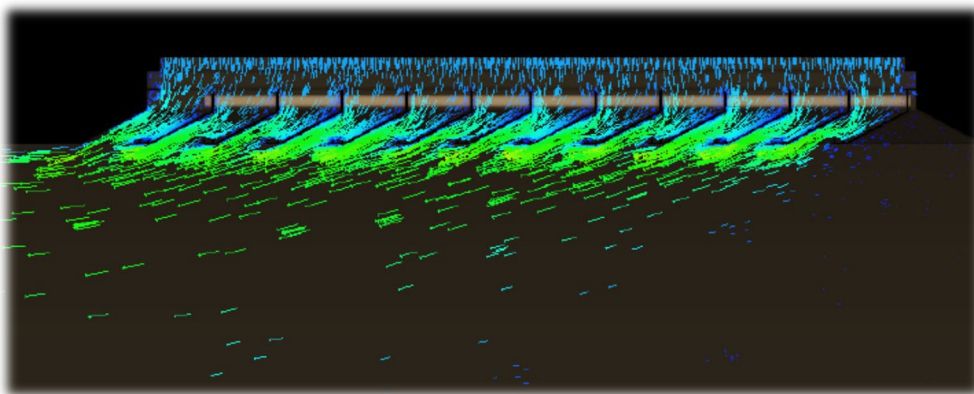
ISO 5135 1997: *Acoustic - determination of sound power levels of noise from air-terminal devices; air terminal units; dampers and valves by measurement in a reverberation room.*

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 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.*

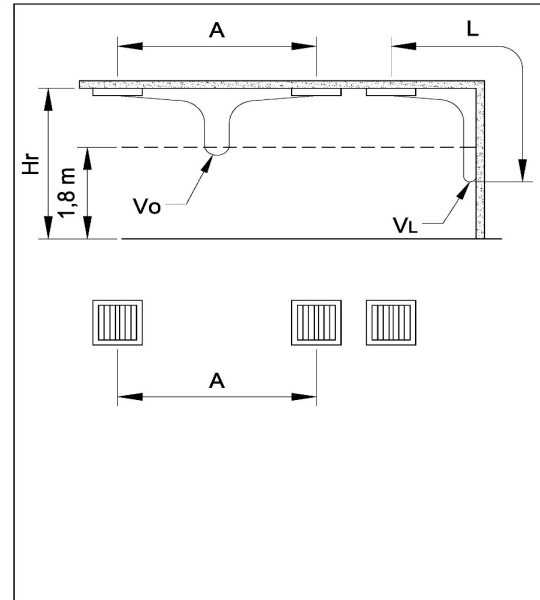
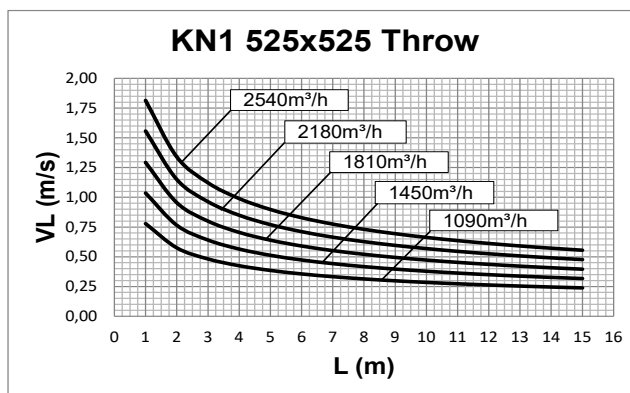
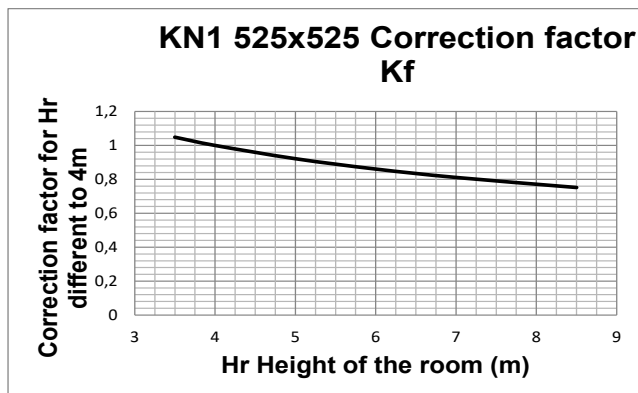
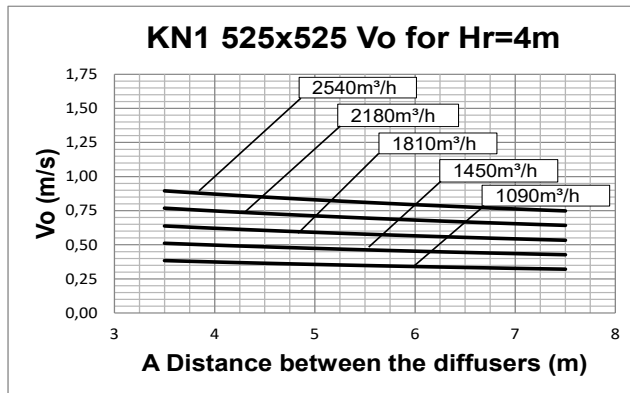




## MULTIDIRECTIONAL DIFFUSERS FIXED SQUARE GEOMETRY

PERFORMANCE KN1 525x525

KN  
SERIES



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:

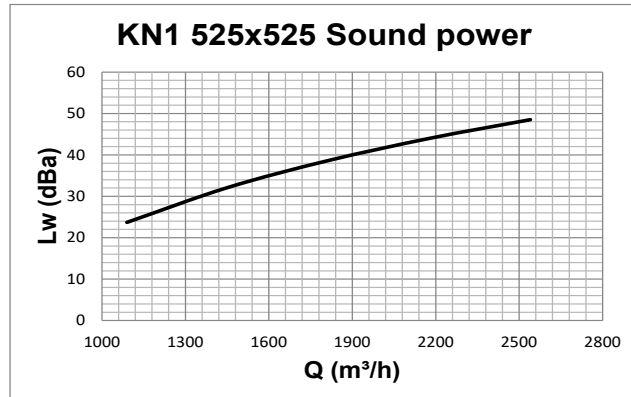
$$Vo(h) = Vo \times Kf$$



## MULTIDIRECTIONAL DIFFUSERS FIXED SQUARE GEOMETRY

KN  
SERIES

PERFORMANCE KNI 525x525

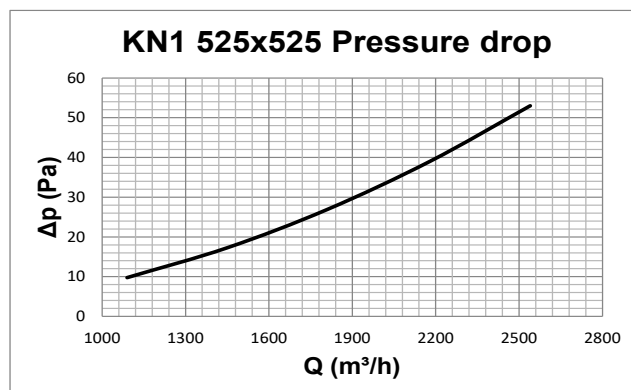


Data measured in reverberation room in accordance with international standards:

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

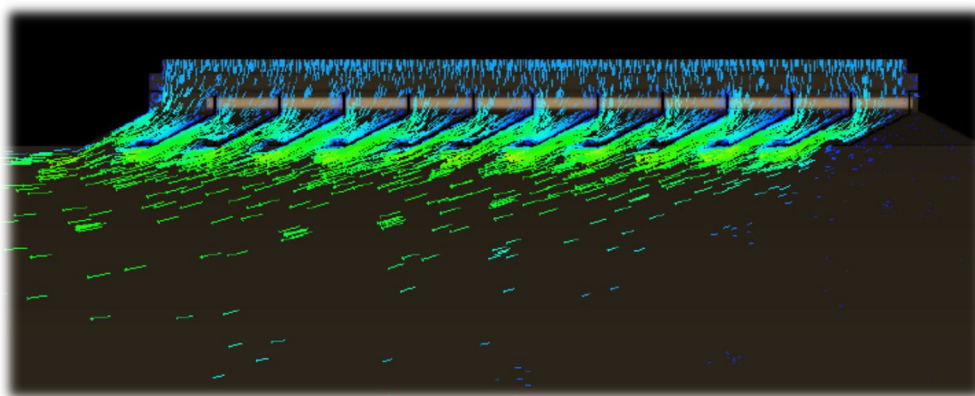
ISO 5135 1997: *Acoustic - determination of sound power levels of noise from air-terminal devices; air terminal units; dampers and valves by measurement in a reverberation room.*

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 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.*

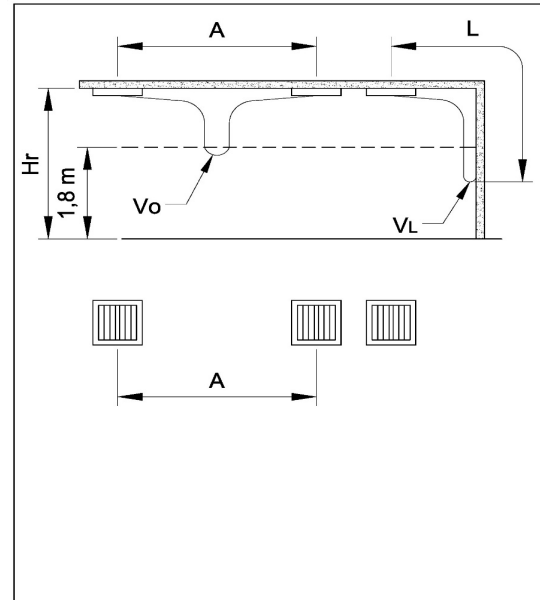
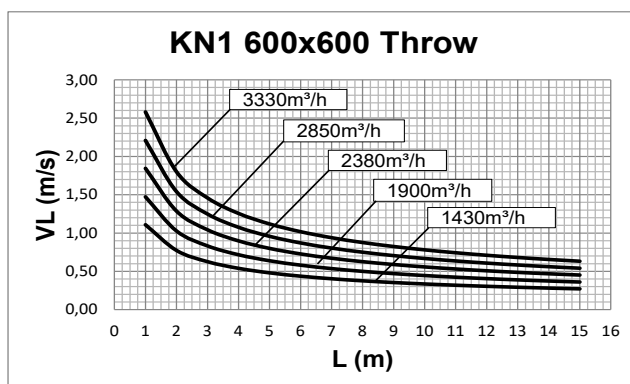
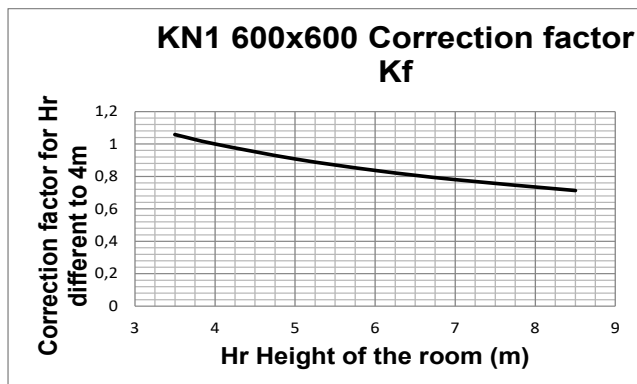
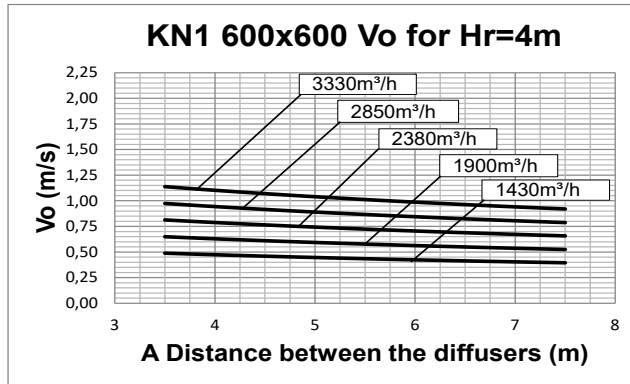




## MULTIDIRECTIONAL DIFFUSERS FIXED SQUARE GEOMETRY

PERFORMANCE KN1 600x600

KN  
SERIES



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:

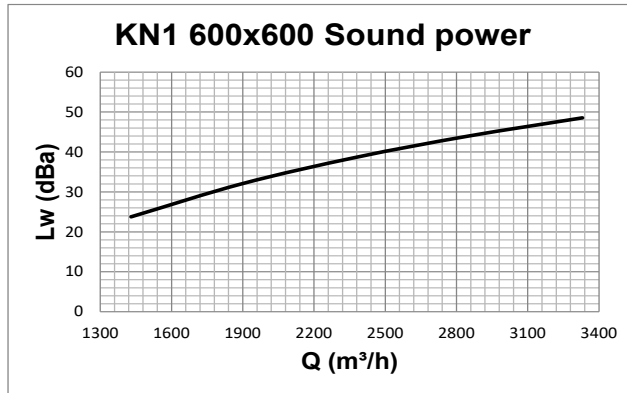
$$Vo(h) = Vo \times Kf$$



## MULTIDIRECTIONAL DIFFUSERS FIXED SQUARE GEOMETRY

KN  
SERIES

PERFORMANCE KN1 600x600

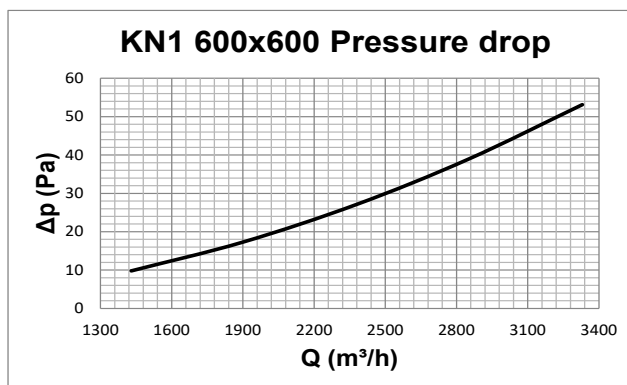


Data measured in reverberation room in accordance with international standards:

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

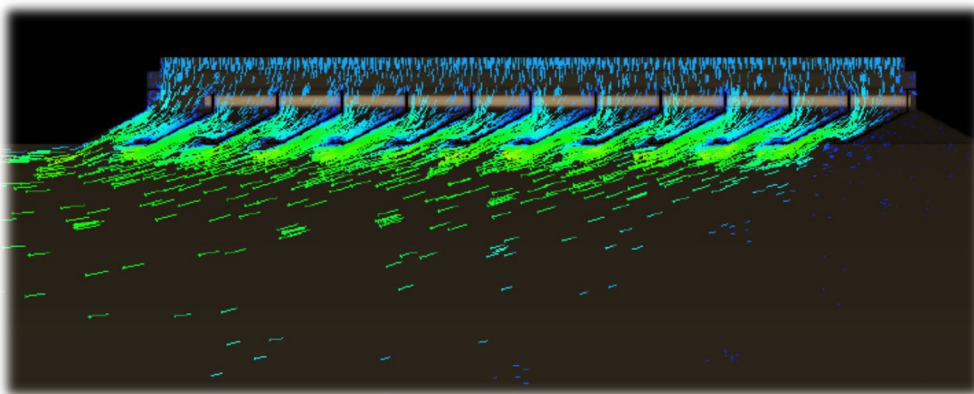
ISO 5135 1997: *Acoustic - determination of sound power levels of noise from air-terminal devices; air terminal units; dampers and valves by measurement in a reverberation room.*

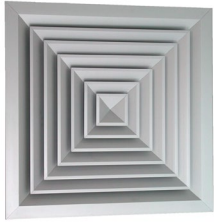
The data presented does not consider the attenuation given by the area of installation. This attenuation is normally between 6 and 10 dBA and is determined by the room size, the shape of the environment and the interior features.



Data obtained 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.*



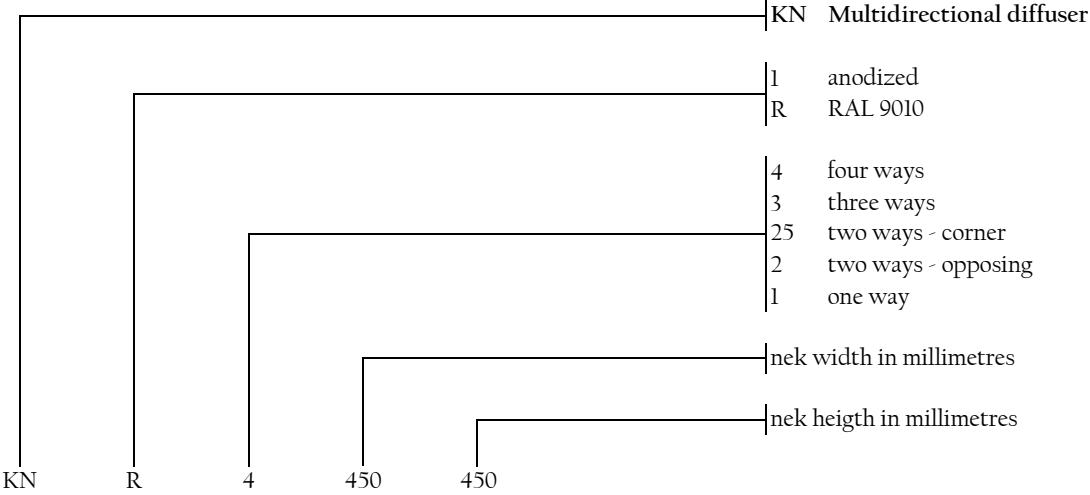


MULTIDIRECTIONAL DIFFUSERS  
WITH EXTRACTABLE CONES

KN  
SERIES

CODES

SQUARE SERIES



KN4	KN3	KN25	KN2	KN1



## CONTROL DAMPERS

## SC SERIES

### OVERVIEW TECHNICAL CHARACTERISTICS

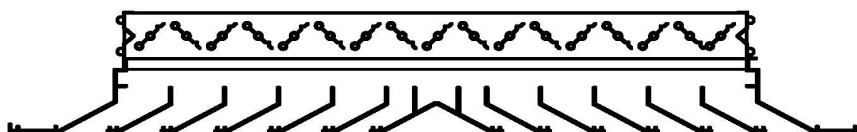
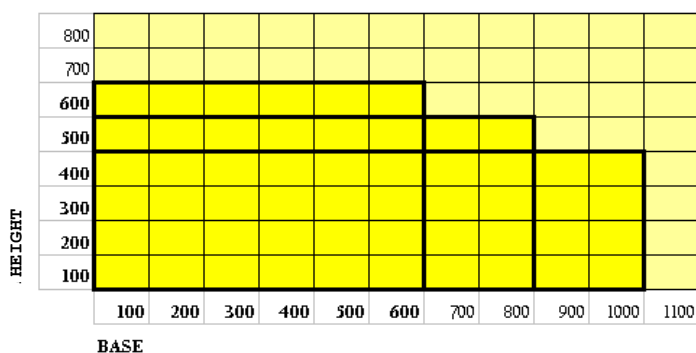
#### OVERVIEW AND CHARACTERISTICS :

The contrast control dampers of SC series can be fitted to UF KG UM UR GI KN e CR-KN series . They are held in place by special patented clips, designed both for fitting the damper to the grill and for fitting it on a false frame.

The SC series dampers are made entirely of galvanised steel and have a mechanism for moving and closing all the blades simultaneously.

This mechanism is a simple longitudinal plate that links all the blades, and can be removed by unscrewing a nut using a screwdriver. The careful design, precise assembly, and the quality of the materials used, make this an economical, practical, and efficient component.

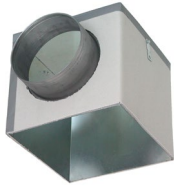
Contrast control damper- dimensions that can be created in a single solution



application on KN or CR-KN



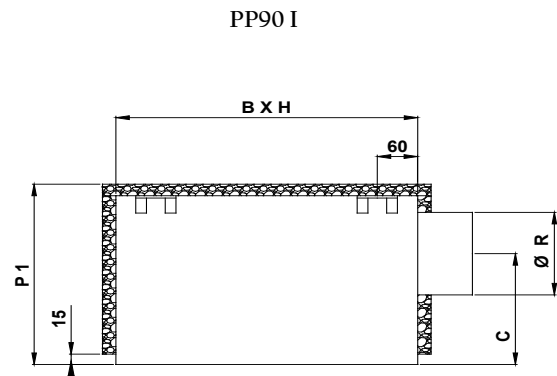
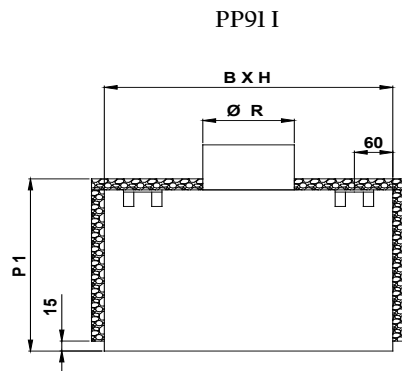
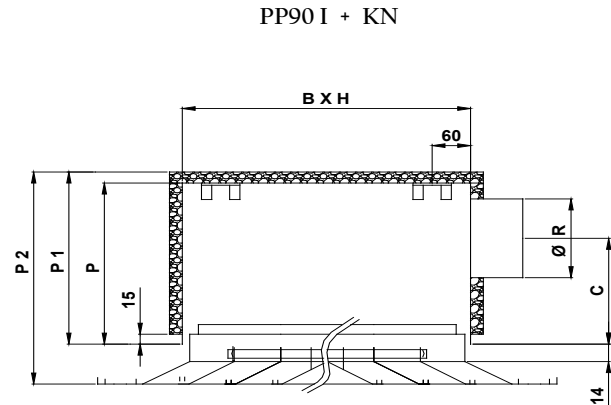
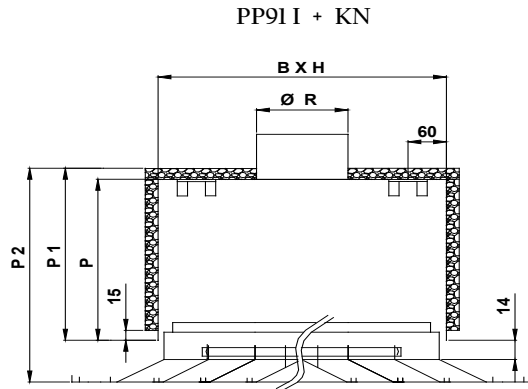




**PLENUM FOR  
MULTIDIRECTIONAL DIFFUSERS  
FIXED GEOMETRY**

OVERVIEW AND TECHNICAL CHARACTERISTICS

PP 90  
PP 91  
SERIES



B	x	H	P2	P1	P	Ø R	Connection	C	N° Couplins
150	x	150	254	216	210	123	ABS (*)	112	2
225	x	225	274	236	230	143	Steel	120	2
300	x	300	334	296	290	195	ABS (*)	155	2
375	x	375	334	296	290	195	ABS (*)	155	2
450	x	450	394	356	350	253	ABS (*)	185	4
525	x	525	444	406	400	296	Steel	215	4
600	x	600	444	406	400	296	Steel	215	4

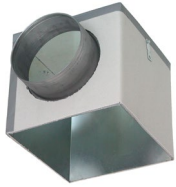
(\*) Steel on request

**CONSTRUCTION CHARACTERISTICS:**

**MATERIALS :** The plenum is manufactured from galvanized sheet steel, external insulation has fire reaction class I.

**MOUNTING OF PLENUM :** The plenums are fixed and adjusted to the ceiling by threaded bars, putted into suitable supports.

**MOUNTING OF DIFFUSER:** The diffusers have to be fixed on the plenum by screws directly on the plenum's assembly bar.



PLENUM FOR  
MULTIDIRECTIONAL DIFFUSERS  
FIXED GEOMETRY

HOW TO ORDER

PP 90  
PP 91  
SERIES

