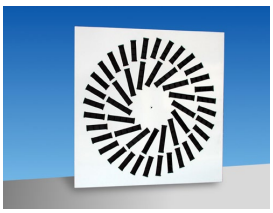


HIGH INDUCTION DIFFUSERS WITH VARIABLE GEOMETRY

OVERVIEW

KQ
SERIES

GENERALITY
Ceiling panel diffusers with adjustable deflectors for horizontal helicoidal or vertical throw.

APPLICATIONS
Diffusers suitable for any mixing ventilation system for installation heights between 2.5 and 5 metres.

MATERIALS
Panel made of carbon steel sheet with white RAL 9010 epoxy paint.Deflectors in black plastic material.Possible realization of special versions with AISI 304 or AISI 316 stainless steel panel with polished or satin finish.

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

FIELD OF USE AND REGULATION
KQ high induction diffusers with variable geometry are suitable for false ceiling installation in rooms with a height between 2.5 and 5 meters such as offices, shops, meeting rooms, corridors, surgeries and similar.They are suitable for both supply and extract air.The two possible positions indicated of the deflectors allow to optimize the diffuser for the use to which it is dedicated.By completely tilting all the deflectors on one side it is possible to have the air outlet along the ceiling with helical motion. This regulation is indicated above all for use in cooling, but guarantees good conditions also for use in heating when there is more than one diffuser in the room.By placing all the horizontal deflectors it is possible to throw the air downwards. This setting is therefore suitable for use in heating only or in extraction.Intermediate positions should be avoided.

FIXING MODE
The KQ series diffusers are normally fixed to the plenum by means of a central screw. They can also be fixed by means of side screws. For this purpose they have a countersunk central hole and are supplied with a screw cover to be used in case of installation with central screw and a closing cap to be used in case of fixing with lateral screws.For sizes over 600, in order to ensure the flatness of the panel, it is advisable to fix it either with a central screw or with lateral screws.

KQ inclined deflectors
Cooling/heating adjustment
Horizontal helicoidal throw
Maximum induction effect

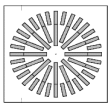
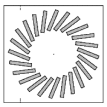
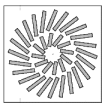
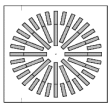
KQ horizontal deflectors
Heating only and extraction adjustment
Vertical throw
Prevents air stratification

HIGH INDUCTION DIFFUSERS WITH VARIABLE GEOMETRY

Ak in m²

KQ
SERIES

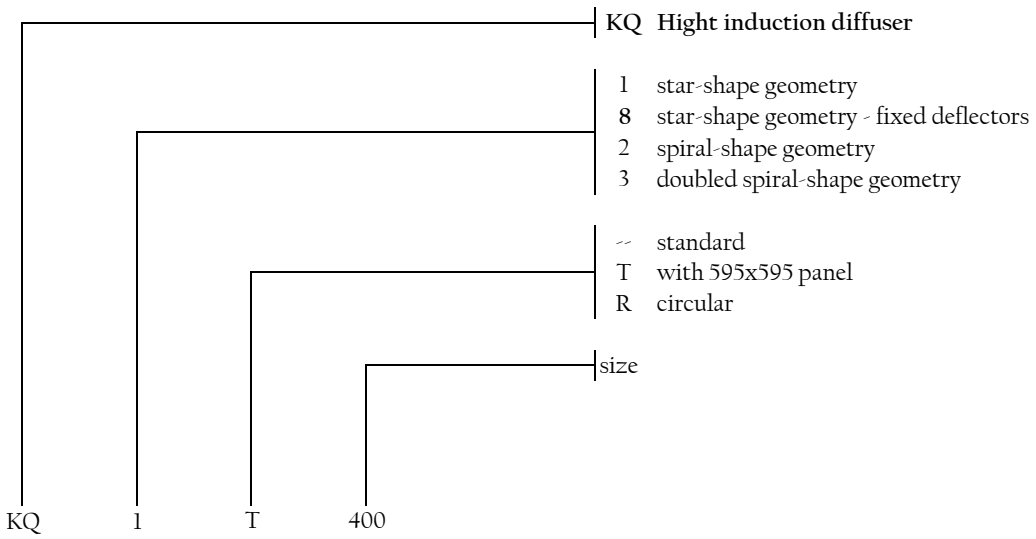
VALUES FOR THE EFFECTIVE AIR PASSAGE SURFACE Ak FOR THE VARIOUS MODELS AVAILABLE FOR KW SERIES DIFFUSERS, MEASURES IN m²

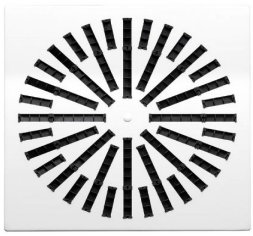
NOMINAL DIMENSIONS					
DIMENSIONS	Setting	KQ 1	KQ 2	KQ 3	KQ 8
300	Horizontal throw	0,00722	0,00831		
	Vertical throw	0,00911	0,00861		
400	Horizontal throw	0,01677	0,01673		0,01677
	Vertical throw	0,02066	0,02001		
500	Horizontal throw		0,02149		
	Vertical throw		0,02707		
500-32	Horizontal throw	0,02690			0,02690
	Vertical throw	0,03362			
500-40	Horizontal throw	0,03724			
	Vertical throw	0,04655			
600	Horizontal throw	0,04296	0,03223		0,04296
	Vertical throw	0,05399	0,04061		
600-36	Horizontal throw			0,03886	
	Vertical throw			0,04950	
600-48	Horizontal throw			0,043243	
	Vertical throw			0,055366	
625	Horizontal throw	0,04296	0,03223		0,04296
	Vertical throw	0,05399	0,04061		
625-36	Horizontal throw			0,03886	
	Vertical throw			0,04950	
625-48	Horizontal throw			0,043243	
	Vertical throw			0,055366	
800	Horizontal throw	0,07035		0,085216	
	Vertical throw	0,08795		0,111466	
825	Horizontal throw	0,07035		0,085216	
	Vertical throw	0,08795		0,111466	

HIGH INDUCTION DIFFUSERS WITH VARIABLE GEOMETRY

KQ
SERIES

HOW TO ORDER





HIGH INDUCTION DIFFUSERS WITH VARIABLE GEOMETRY

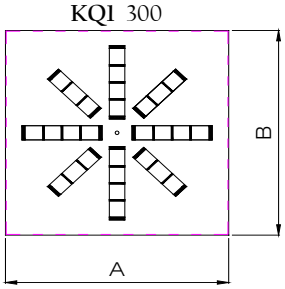
TECHNICAL DIMENTIONS
CONSTRUCTIONS DIMENTIONS

KQ - 1
KQ - 1 R
KQ-8
SERIES

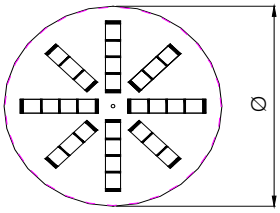
CONSTRUCTION DIMENSIONS :

Picture n° 1
Square and circular standard construction

KQ1 300

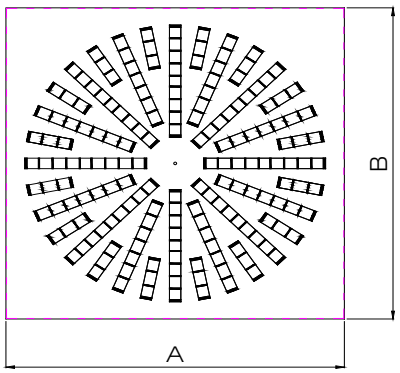


KQ1 300

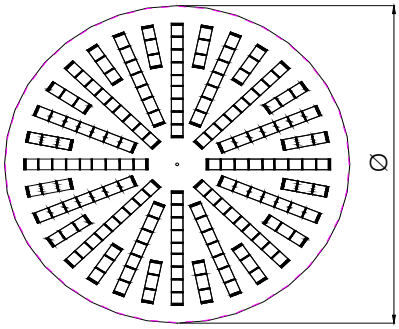


Picture n°2

KQ1 400 500 600 625 800 825

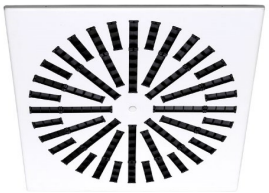


KQ1 R 400 500 600 625 800



Nominal size	Model		A [mm]	B [mm]	Ø
300	KQ1		296	296	296
400	KQ1	KQ8	396	396	396
500-32	KQ1	KQ8	496	496	496
500-40	KQ1				
600	KQ1	KQ8	596	596	596
625	KQ1	KQ8	621	621	621
800	KQ1		796	796	796
825	KQ1		821	821	

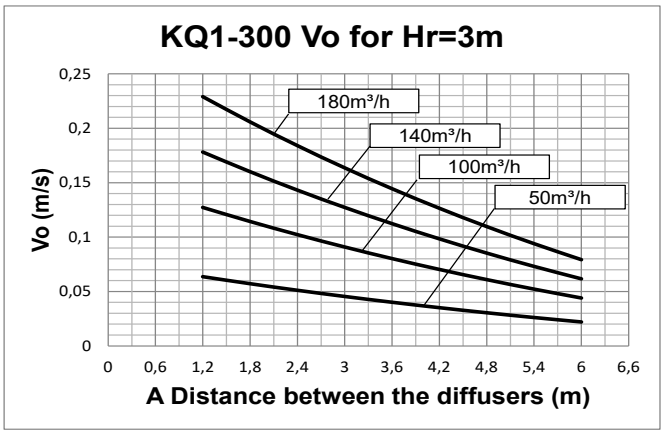
The KQ-8 diffuser has the same geometry as the KQ-1.
The KQ-1 diffuser is equiped with manually adjustable deflectors.
The KQ-8 diffuser is equiped with fixed deplectors.

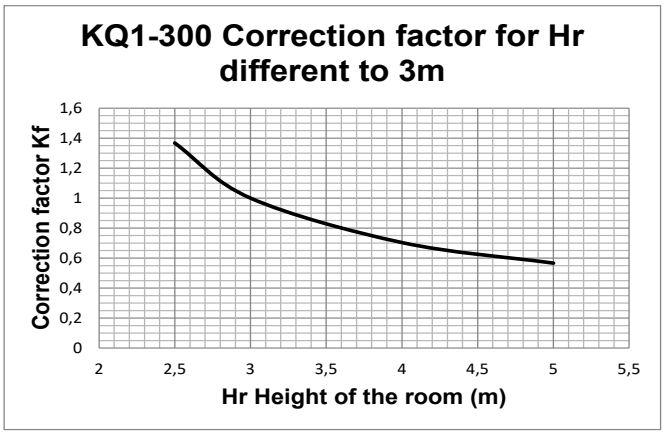


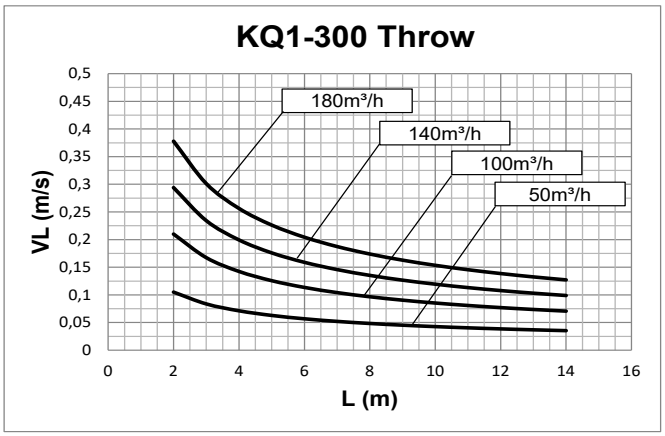
HIGH INDUCTION DIFFUSERS WITH VARIABLE GEOMETRY

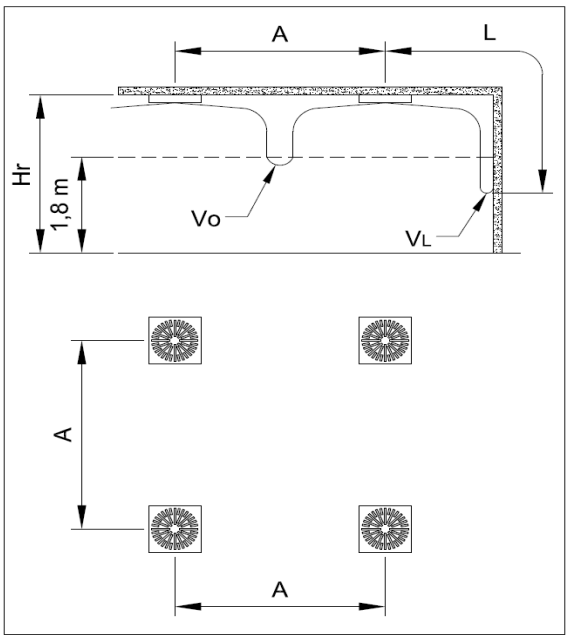
KQ - 1
SERIES

PERFORMANCE KQ1-300





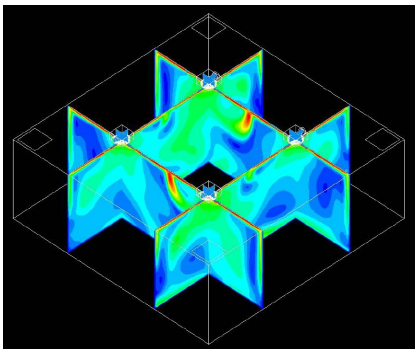


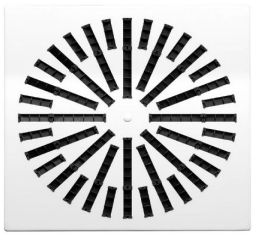


Data obtained from CFD mathematical model in virtual test room operating in isothermal conditions in accordance with the international standard:
ISO 5219 1984: *Air distribution and air diffusion - Laboratory. Aerodynamic testing and rating of air terminal devices.*

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

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

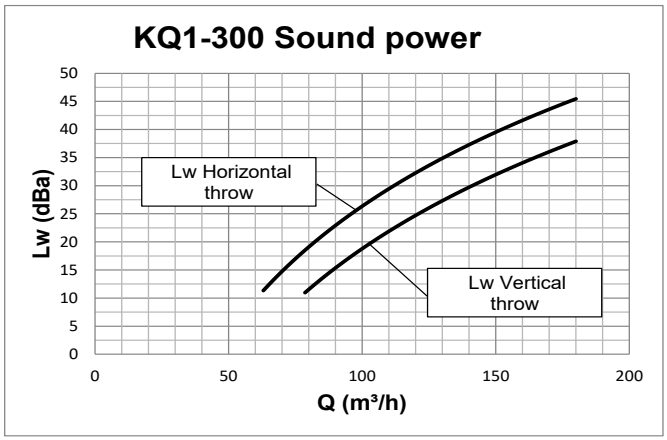




HIGH INDUCTION DIFFUSERS WITH VARIABLE GEOMETRY

PERFORMANCE KQ1-300

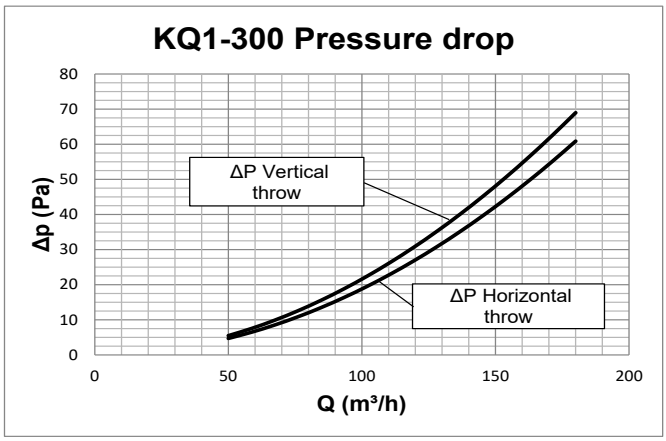
KQ - 1
SERIES



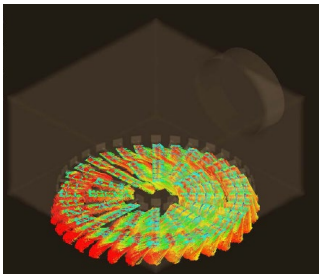
Data measured in reverberation room in accordance with international standards:
ISO 3741 1999: *Acoustic - determination of sound power levels of noise sources using sound pressure - Precision methods for reverberation rooms*

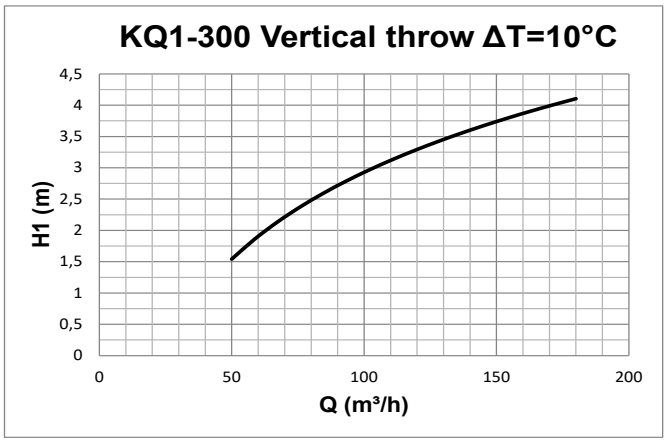
ISO 5135 1997: *Acoustic - determination of sound power levels of noise from air-terminal devices ; air terminal units; dampers and valves by measurement in a reverberation room.*

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.

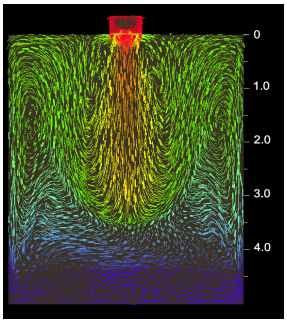


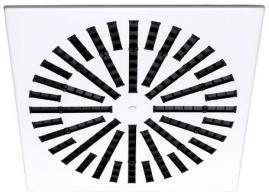
Data obtained by CFD mathematical model in virtual test room operating in accordance with the international standard:
ISO 5219 1984: *Air distribution and air diffusion - Laboratory. Aerodynamic testing and rating of air terminal devices.*





Data obtained from CFD mathematical model in virtual test room operating in heating conditions with ΔT = 10 ° C in accordance with the international standard:
ISO 5219 1984: *Air distribution and air diffusion - Laboratory. Aerodynamic testing and rating of air terminal devices.*
H1 (m) vertical distance in metres from the centre of the diffuser at which there is the inversion of the direction of air

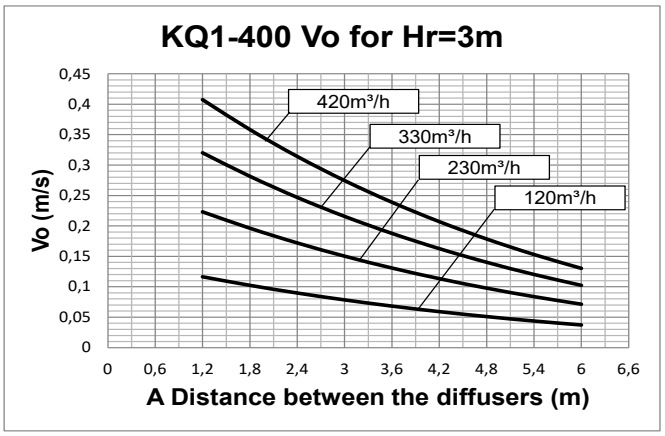


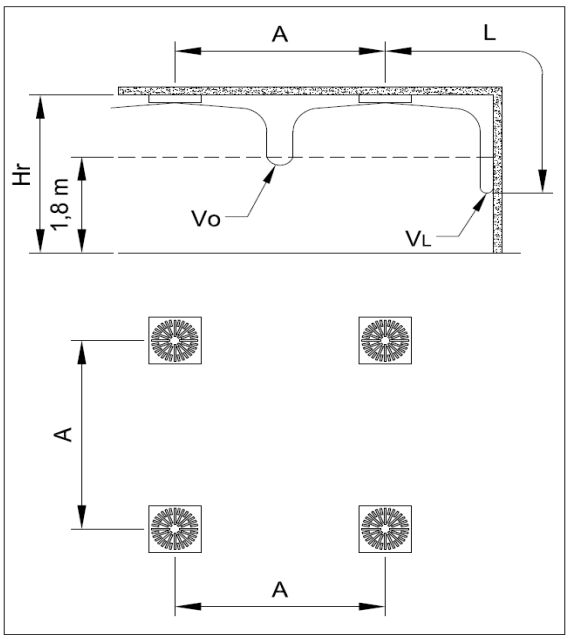


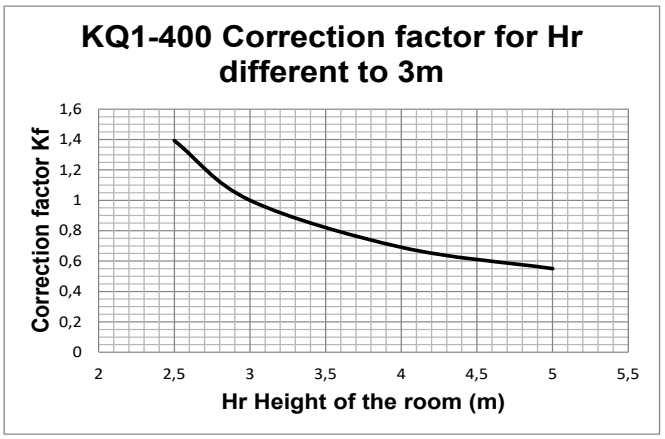
HIGH INDUCTION DIFFUSERS WITH VARIABLE GEOMETRY

PERFORMANCE KQ1-400

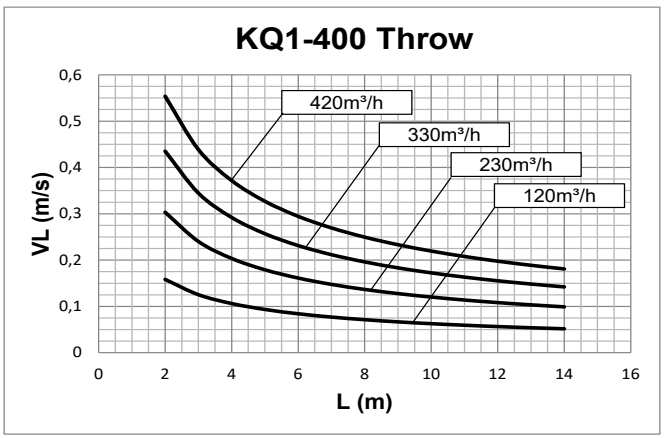
KQ - 1
SERIES





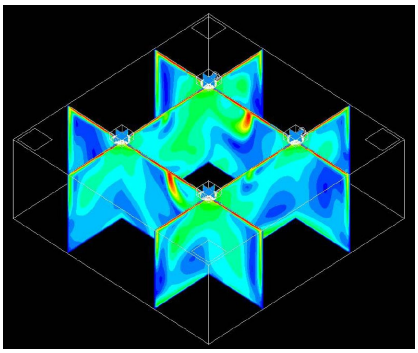


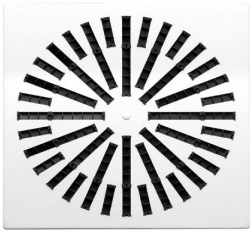
Data obtained from CFD mathematical model in virtual test room operating in isothermal conditions in accordance with the international standard:
ISO 5219 1984: *Air distribution and air diffusion - Laboratory. Aerodynamic testing and rating of air terminal devices.*



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

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

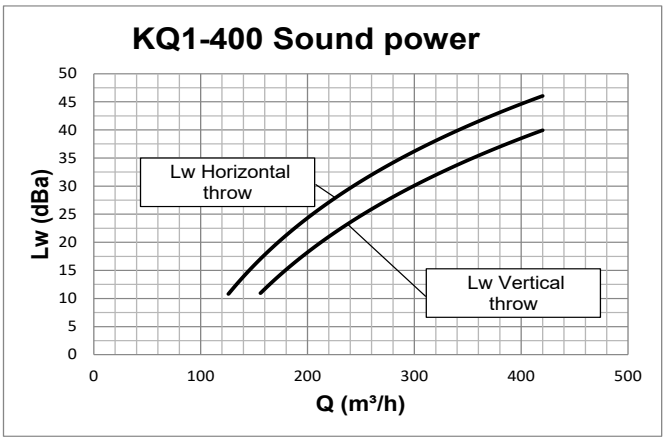




HIGH INDUCTION DIFFUSERS WITH VARIABLE GEOMETRY

PERFORMANCE KQ1-400

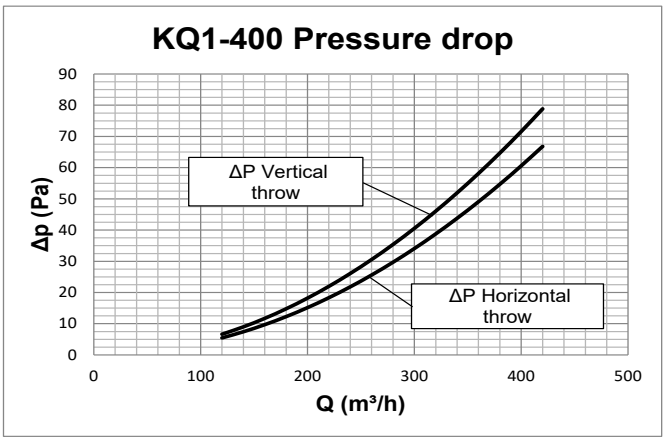
KQ - 1
SERIES



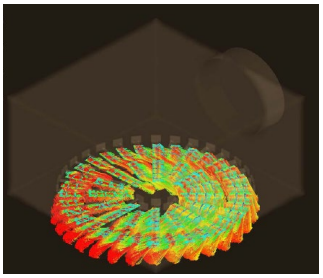
Data measured in reverberation room in accordance with international standards:
ISO 3741 1999: *Acoustic - determination of sound power levels of noise sources using sound pressure - Precision methods for reverberation rooms*

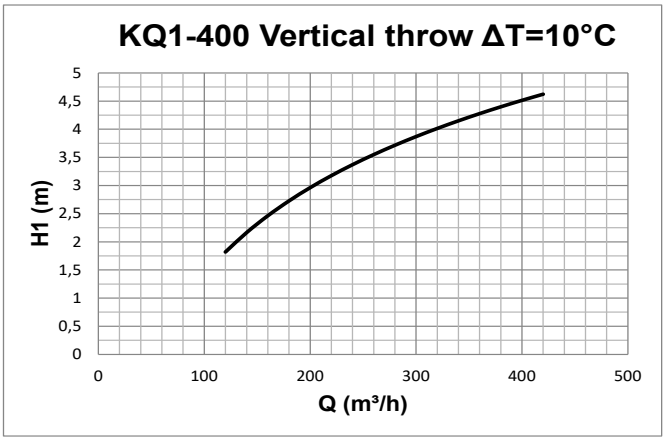
ISO 5135 1997: *Acoustic - determination of sound power levels of noise from air-terminal devices ; air terminal units; dampers and valves by measurement in a reverberation room.*

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.

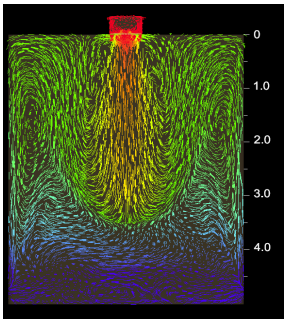


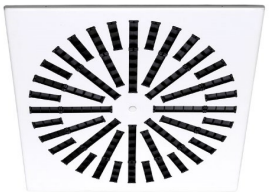
Data obtained by CFD mathematical model in virtual test room operating in accordance with the international standard:
ISO 5219 1984: *Air distribution and air diffusion - Laboratory. Aerodynamic testing and rating of air terminal devices.*





Data obtained from CFD mathematical model in virtual test room operating in heating conditions with ΔT = 10 ° C in accordance with the international standard:
ISO 5219 1984: *Air distribution and air diffusion - Laboratory. Aerodynamic testing and rating of air terminal devices.*
H1 (m) vertical distance in metres from the centre of the diffuser at which there is the inversion of the direction of air

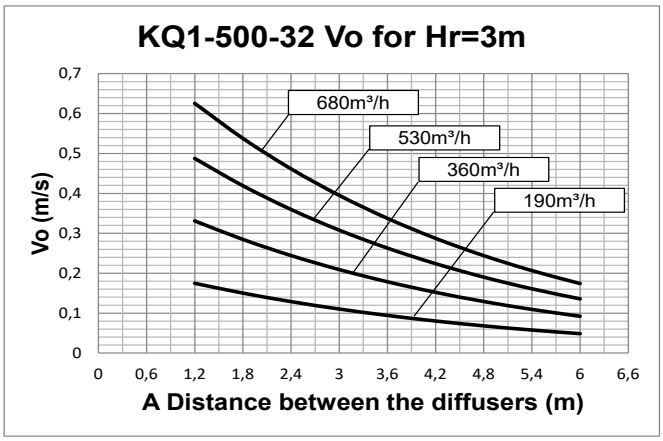


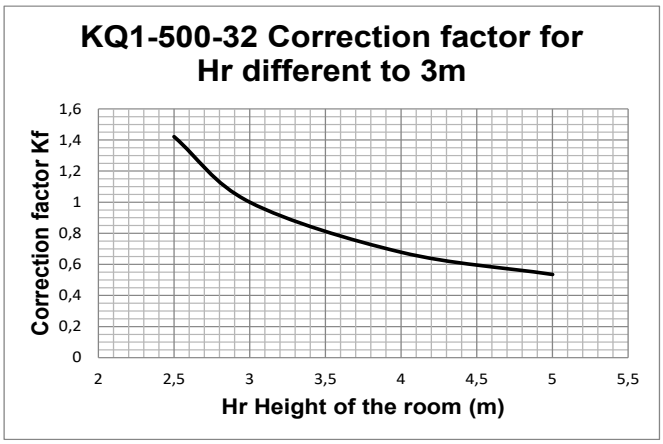


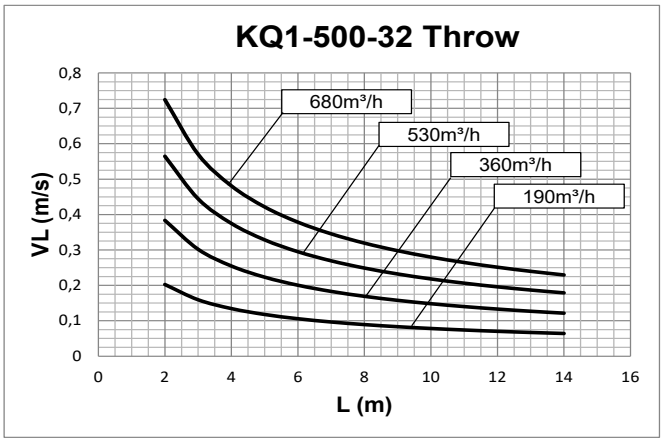
HIGH INDUCTION DIFFUSERS WITH VARIABLE GEOMETRY

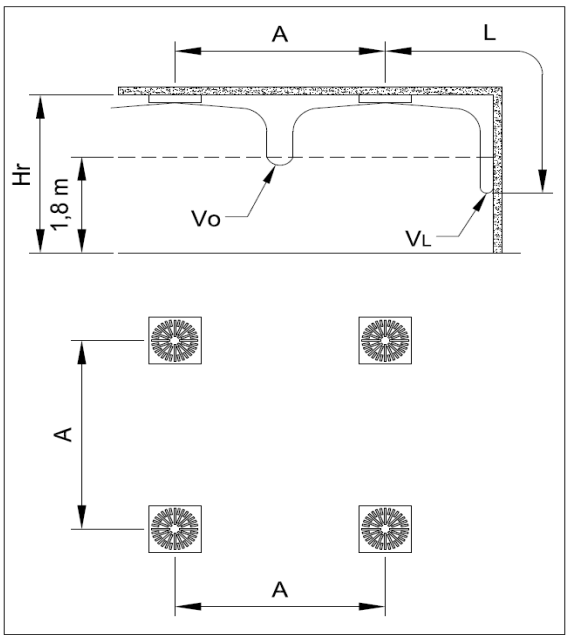
PERFORMANCE KQ1-500-32

KQ - 1
SERIES





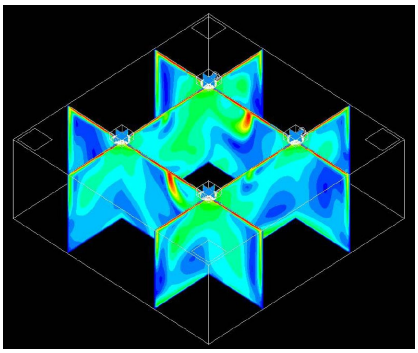


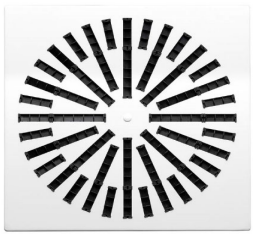


Data obtained from CFD mathematical model in virtual test room operating in isothermal conditions in accordance with the international standard:
ISO 5219 1984: *Air distribution and air diffusion - Laboratory. Aerodynamic testing and rating of air terminal devices.*

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

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

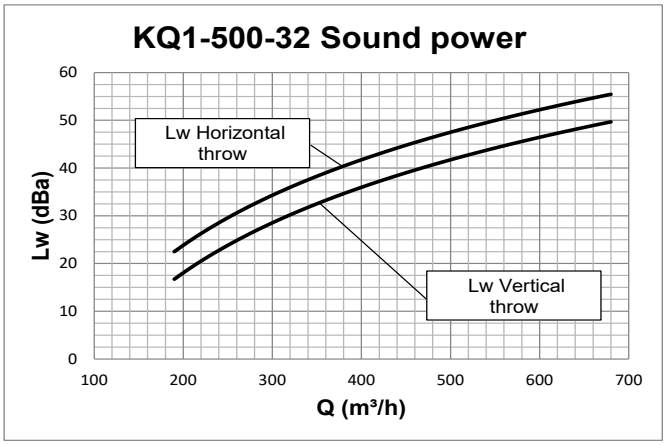




HIGH INDUCTION DIFFUSERS WITH VARIABLE GEOMETRY

PERFORMANCE KQ1-500-32

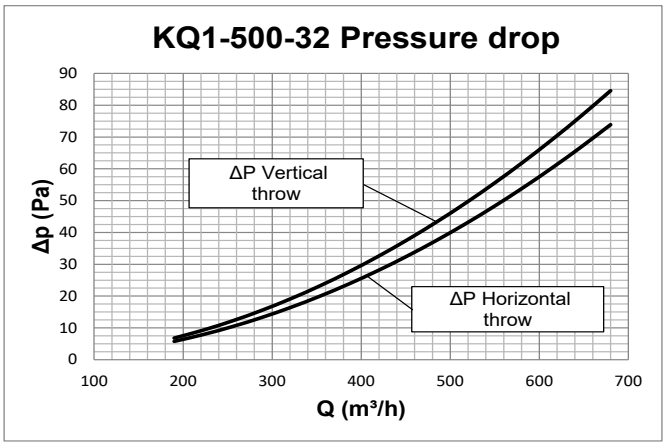
KQ - 1
SERIES



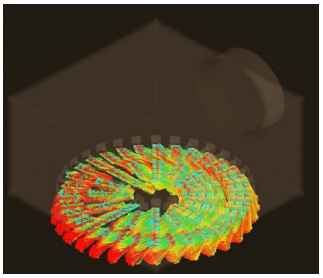
Data measured in reverberation room in accordance with international standards:
ISO 3741 1999: *Acoustic - determination of sound power levels of noise sources using sound pressure - Precision methods for reverberation rooms*

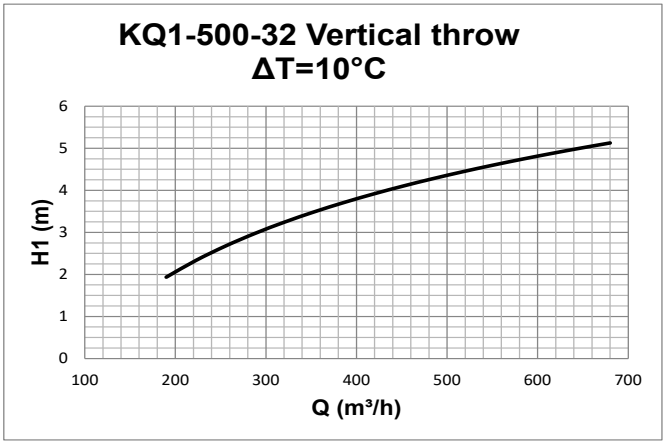
ISO 5135 1997: *Acoustic - determination of sound power levels of noise from air-terminal devices ; air terminal units; dampers and valves by measurement in a reverberation room.*

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.

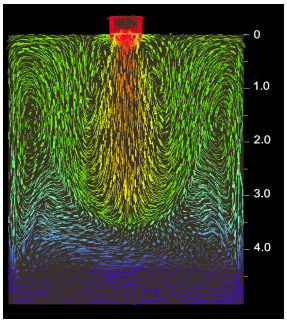


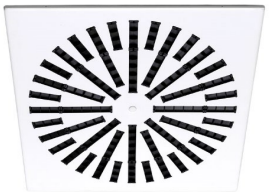
Data obtained by CFD mathematical model in virtual test room operating in accordance with the international standard:
ISO 5219 1984: *Air distribution and air diffusion - Laboratory. Aerodynamic testing and rating of air terminal devices.*





Data obtained from CFD mathematical model in virtual test room operating in heating conditions with ΔT = 10 ° C in accordance with the international standard:
ISO 5219 1984: *Air distribution and air diffusion - Laboratory. Aerodynamic testing and rating of air terminal devices.*
H1 (m) vertical distance in metres from the centre of the diffuser at which there is the inversion of the direction of air

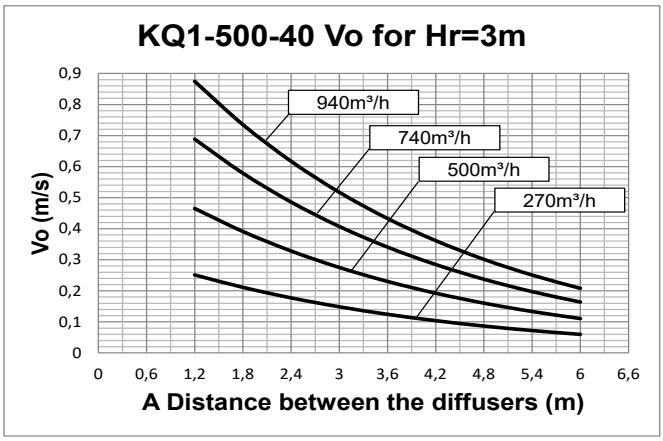


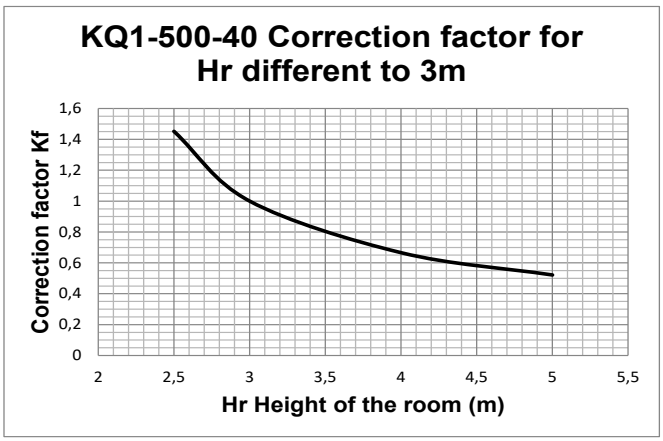


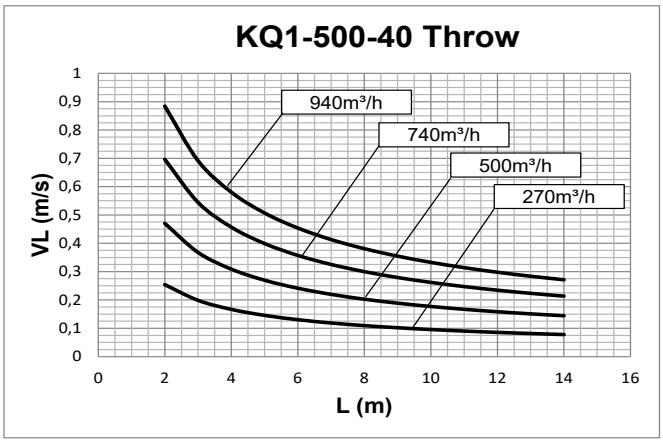
HIGH INDUCTION DIFFUSERS WITH VARIABLE GEOMETRY

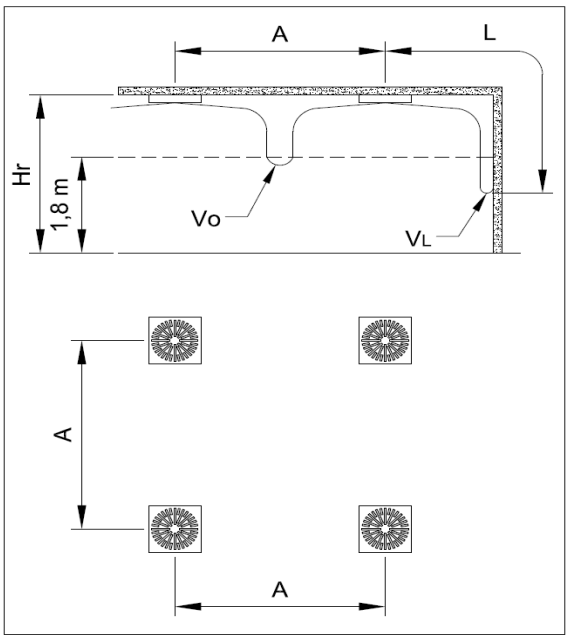
KQ - 1
SERIES

PERFORMANCE KQ1-500-40





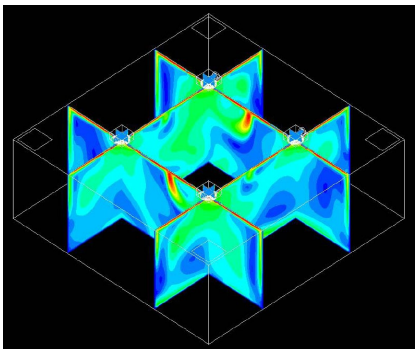


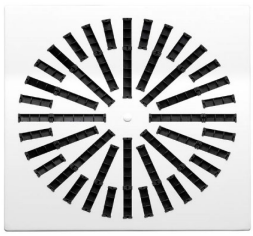


Data obtained from CFD mathematical model in virtual test room operating in isothermal conditions in accordance with the international standard:
ISO 5219 1984: *Air distribution and air diffusion - Laboratory. Aerodynamic testing and rating of air terminal devices.*

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

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

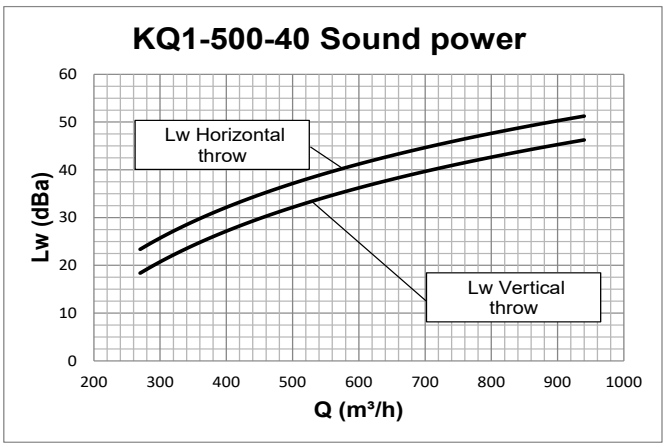




HIGH INDUCTION DIFFUSERS WITH VARIABLE GEOMETRY

PERFORMANCE KQ1-500-40

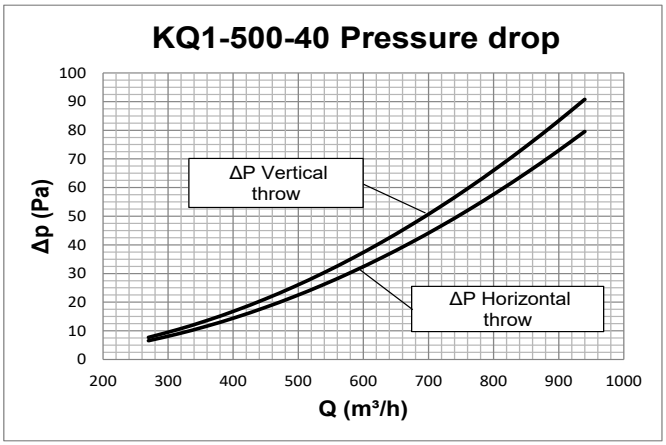
KQ - 1
SERIES



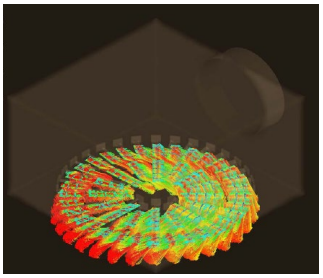
Data measured in reverberation room in accordance with international standards:
ISO 3741 1999: *Acoustic - determination of sound power levels of noise sources using sound pressure - Precision methods for reverberation rooms*

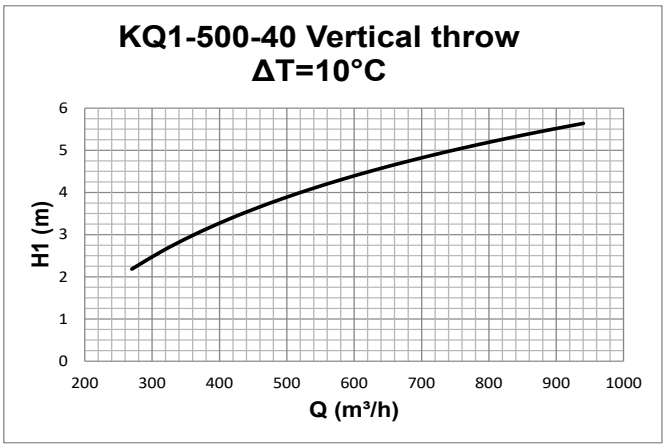
ISO 5135 1997: *Acoustic - determination of sound power levels of noise from air-terminal devices ; air terminal units; dampers and valves by measurement in a reverberation room.*

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.

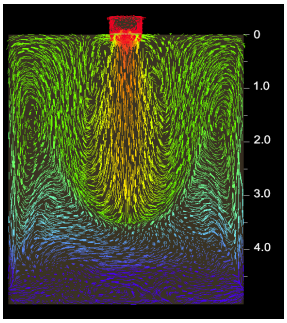


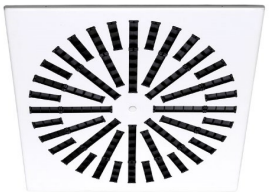
Data obtained by CFD mathematical model in virtual test room operating in accordance with the international standard:
ISO 5219 1984: *Air distribution and air diffusion - Laboratory. Aerodynamic testing and rating of air terminal devices.*





Data obtained from CFD mathematical model in virtual test room operating in heating conditions with ΔT = 10 ° C in accordance with the international standard:
ISO 5219 1984: *Air distribution and air diffusion - Laboratory. Aerodynamic testing and rating of air terminal devices.*
H1 (m) vertical distance in metres from the centre of the diffuser at which there is the inversion of the direction of air

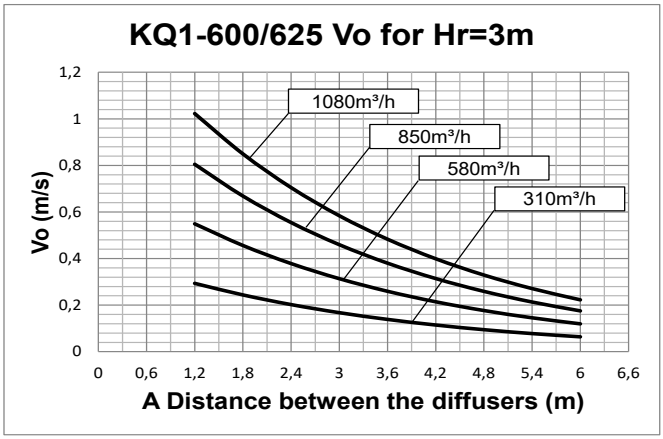


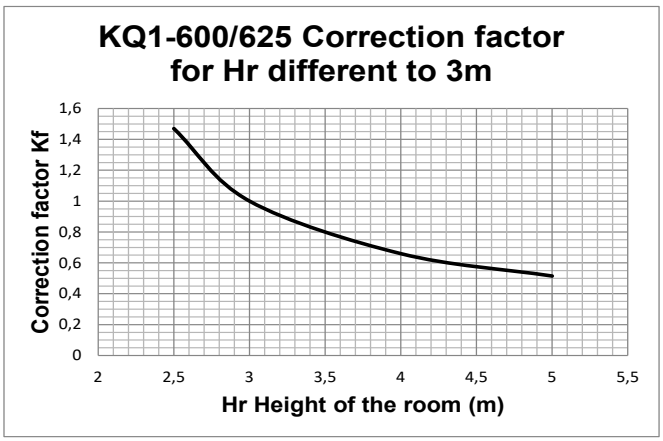


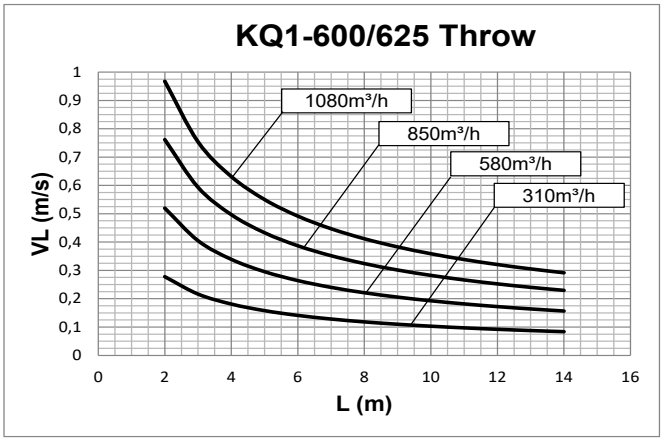
HIGH INDUCTION DIFFUSERS WITH VARIABLE GEOMETRY

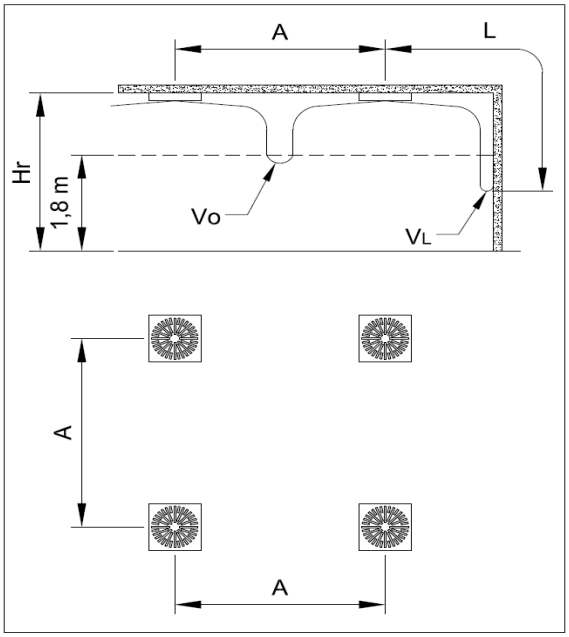
PERFORMANCE KQ1-600 KQ1-625

KQ - 1
SERIES





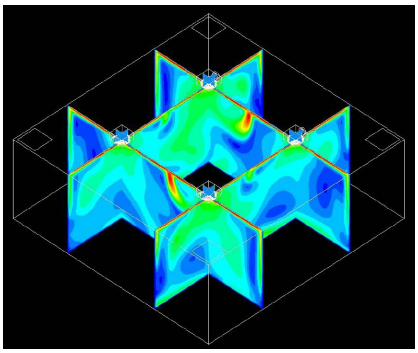


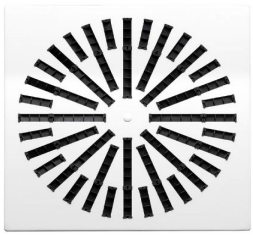


Data obtained from CFD mathematical model in virtual test room operating in isothermal conditions in accordance with the international standard:
ISO 5219 1984: *Air distribution and air diffusion - Laboratory. Aerodynamic testing and rating of air terminal devices.*

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

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

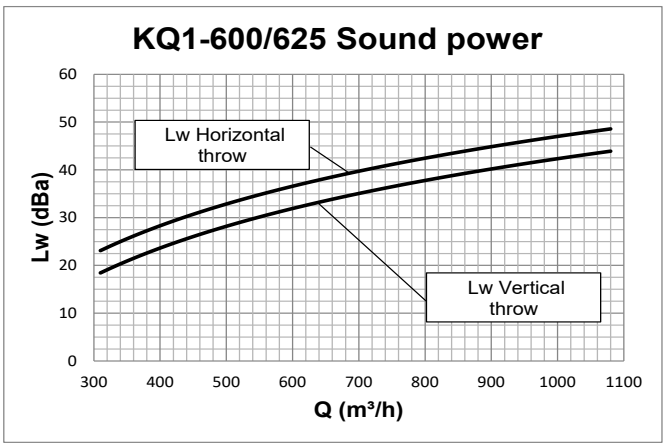




HIGH INDUCTION DIFFUSERS WITH VARIABLE GEOMETRY

PERFORMANCE KQ1-600 KQ1-625

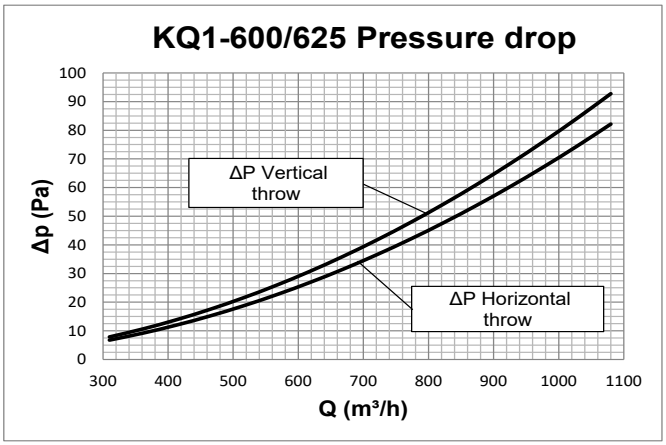
KQ - 1
SERIES



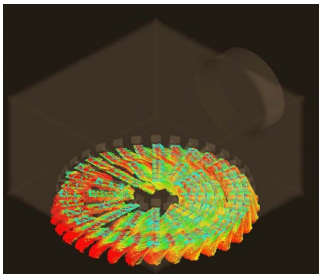
Data measured in reverberation room in accordance with international standards:
ISO 3741 1999: *Acoustic - determination of sound power levels of noise sources using sound pressure - Precision methods for reverberation rooms*

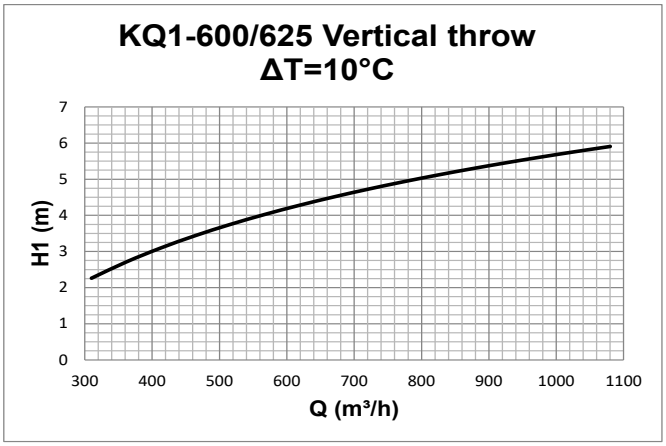
ISO 5135 1997: *Acoustic - determination of sound power levels of noise from air-terminal devices ; air terminal units; dampers and valves by measurement in a reverberation room.*

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.

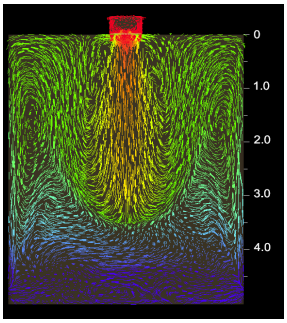


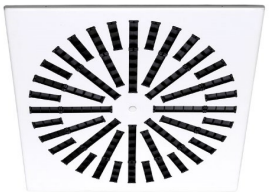
Data obtained by CFD mathematical model in virtual test room operating in accordance with the international standard:
ISO 5219 1984: *Air distribution and air diffusion - Laboratory. Aerodynamic testing and rating of air terminal devices.*





Data obtained from CFD mathematical model in virtual test room operating in heating conditions with ΔT = 10 ° C in accordance with the international standard:
ISO 5219 1984: *Air distribution and air diffusion - Laboratory. Aerodynamic testing and rating of air terminal devices.*
H1 (m) vertical distance in metres from the centre of the diffuser at which there is the inversion of the direction of air

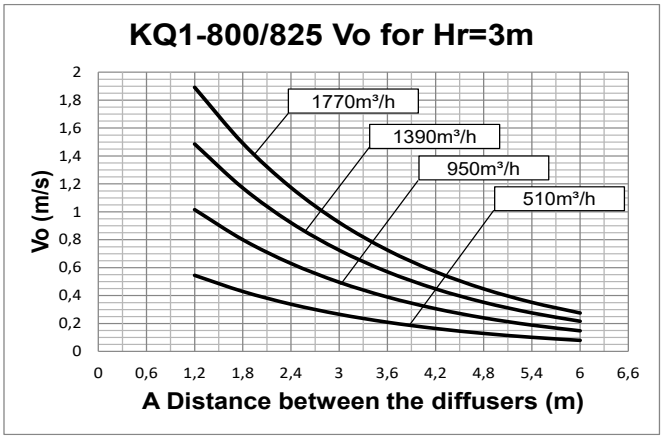


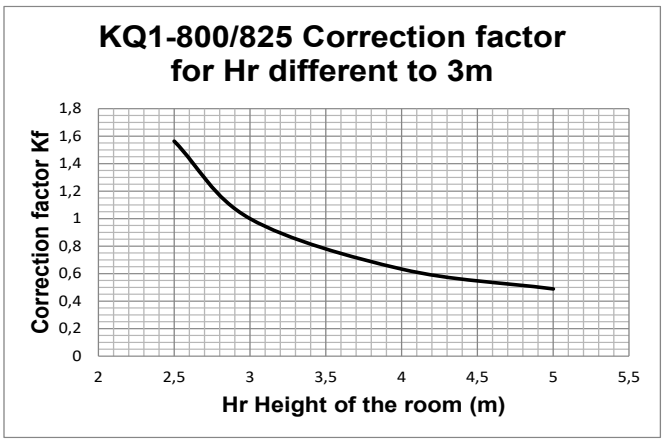


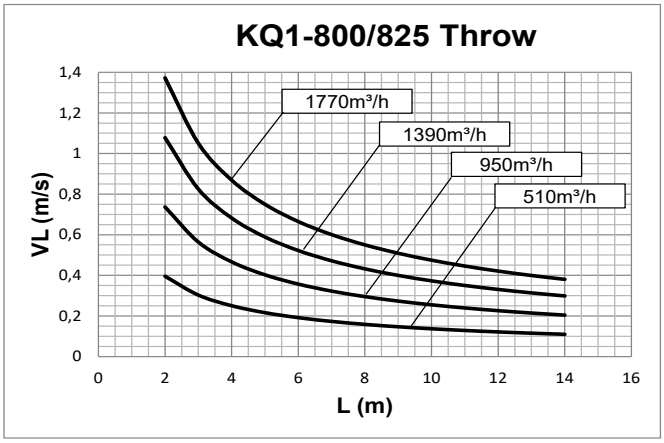
HIGH INDUCTION DIFFUSERS WITH VARIABLE GEOMETRY

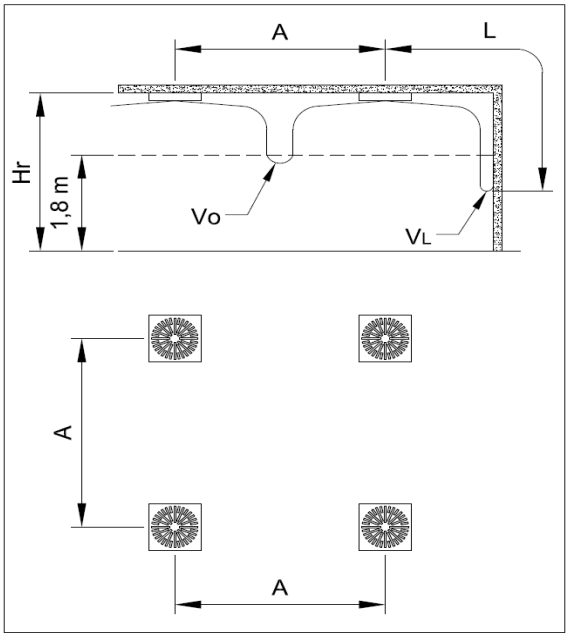
PERFORMANCE KQ1-800 KQ1-825

KQ - 1
SERIES





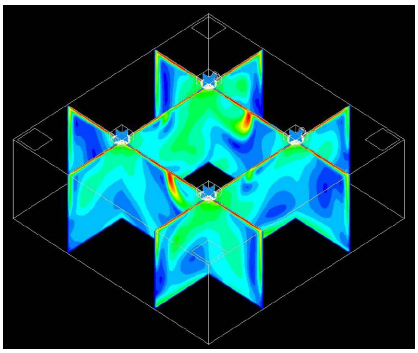


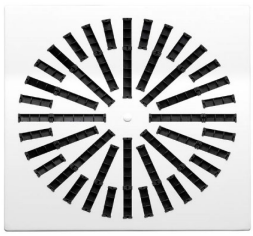


Data obtained from CFD mathematical model in virtual test room operating in isothermal conditions in accordance with the international standard:
ISO 5219 1984: *Air distribution and air diffusion - Laboratory. Aerodynamic testing and rating of air terminal devices.*

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

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

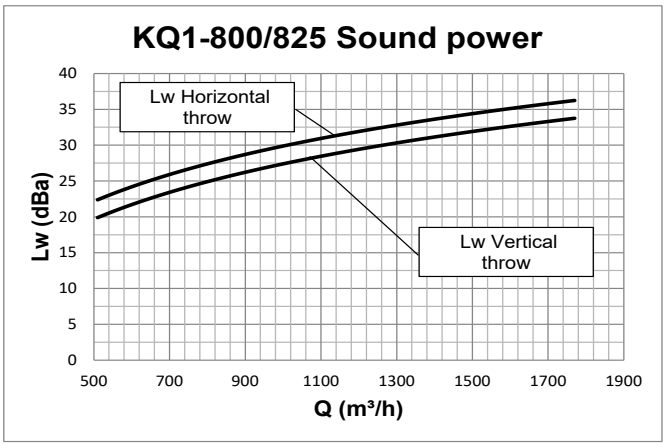




HIGH INDUCTION DIFFUSERS WITH VARIABLE GEOMETRY

PERFORMANCE KQ1-800 KQ1-825

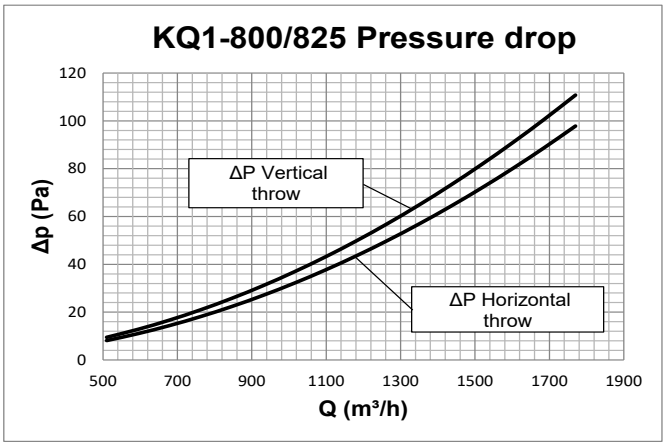
KQ - 1
SERIES



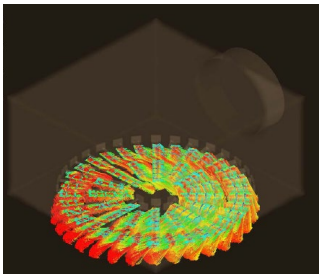
Data measured in reverberation room in accordance with international standards:
ISO 3741 1999: *Acoustic - determination of sound power levels of noise sources using sound pressure - Precision methods for reverberation rooms*

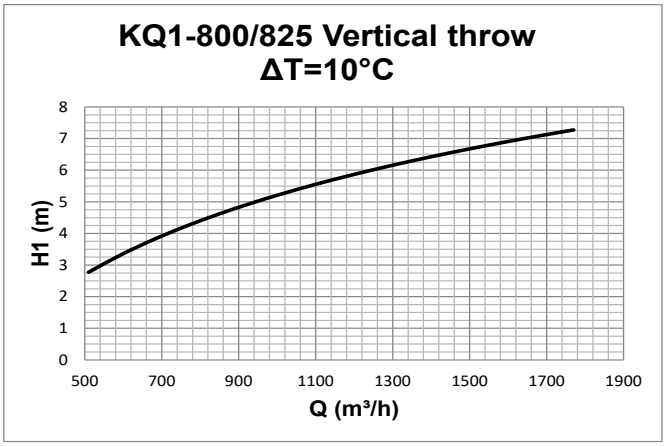
ISO 5135 1997: *Acoustic - determination of sound power levels of noise from air-terminal devices ; air terminal units; dampers and valves by measurement in a reverberation room.*

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.

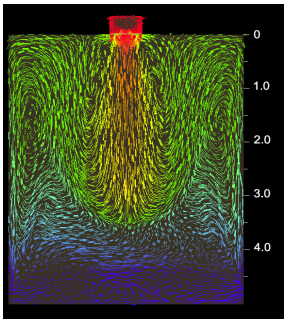


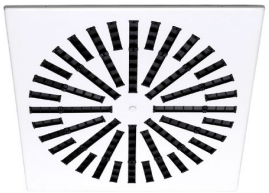
Data obtained by CFD mathematical model in virtual test room operating in accordance with the international standard:
ISO 5219 1984: *Air distribution and air diffusion - Laboratory. Aerodynamic testing and rating of air terminal devices.*





Data obtained from CFD mathematical model in virtual test room operating in heating conditions with ΔT = 10 ° C in accordance with the international standard:
ISO 5219 1984: *Air distribution and air diffusion - Laboratory. Aerodynamic testing and rating of air terminal devices.*
H1 (m) vertical distance in metres from the centre of the diffuser at which there is the inversion of the direction of air

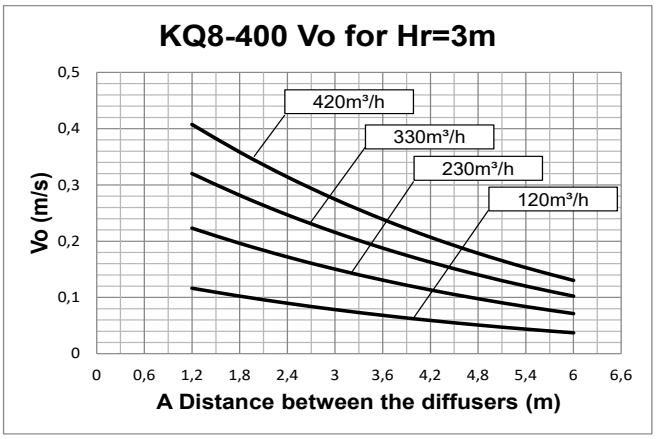


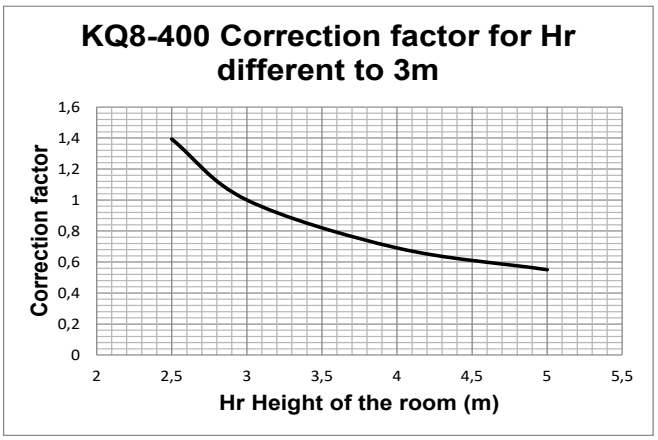


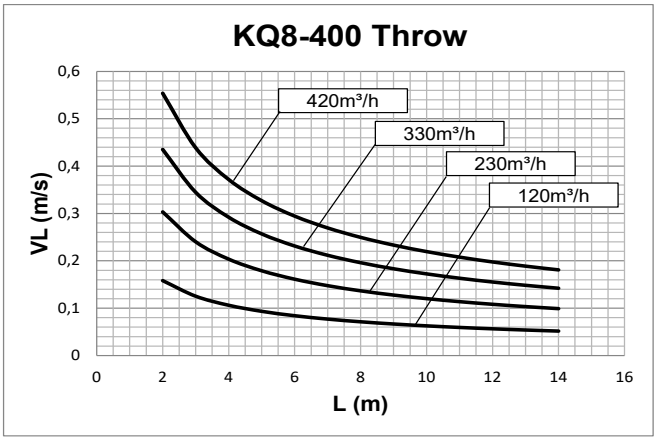
HIGH INDUCTION DIFFUSERS

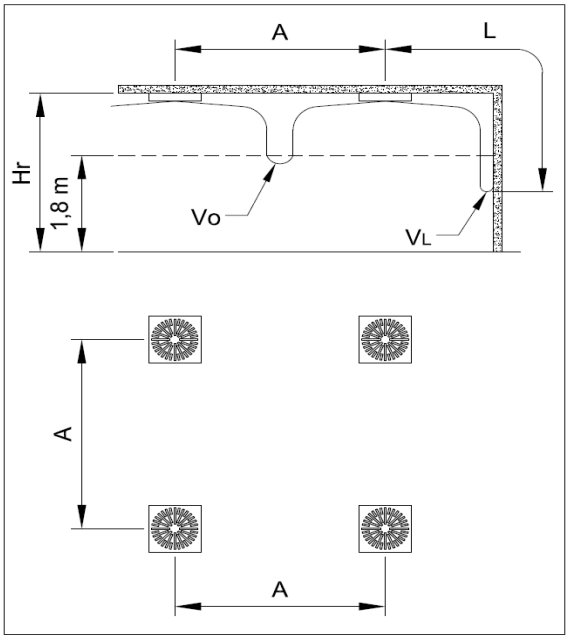
KQ - 8
SERIES

PERFORMANCE KQ8-400





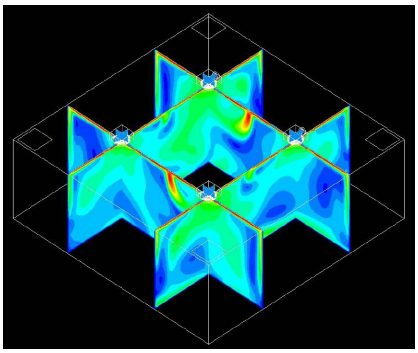


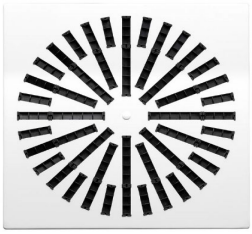


Data obtained from CFD mathematical model in virtual test room operating in isothermal conditions in accordance with the international standard:
ISO 5219 1984: *Air distribution and air diffusion - Laboratory. Aerodynamic testing and rating of air terminal devices.*

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

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

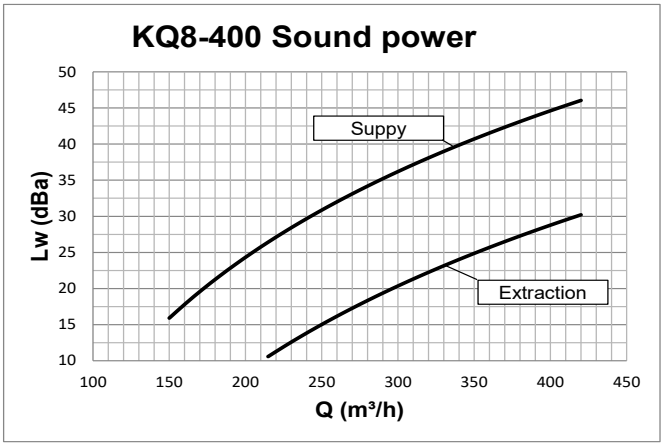




HIGH INDUCTION DIFFUSERS

KQ - 8
SERIES

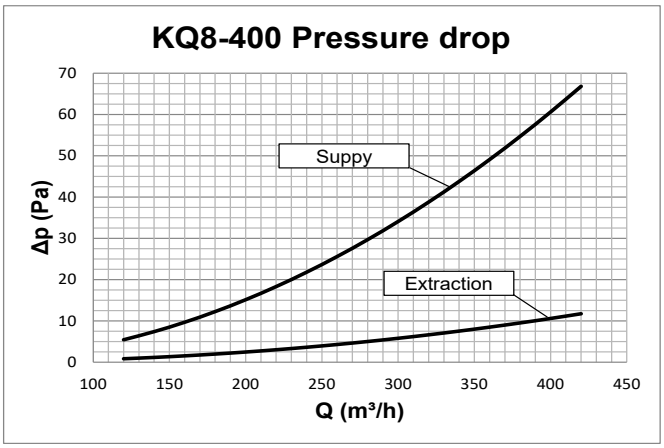
PERFORMANCE KQ8-400



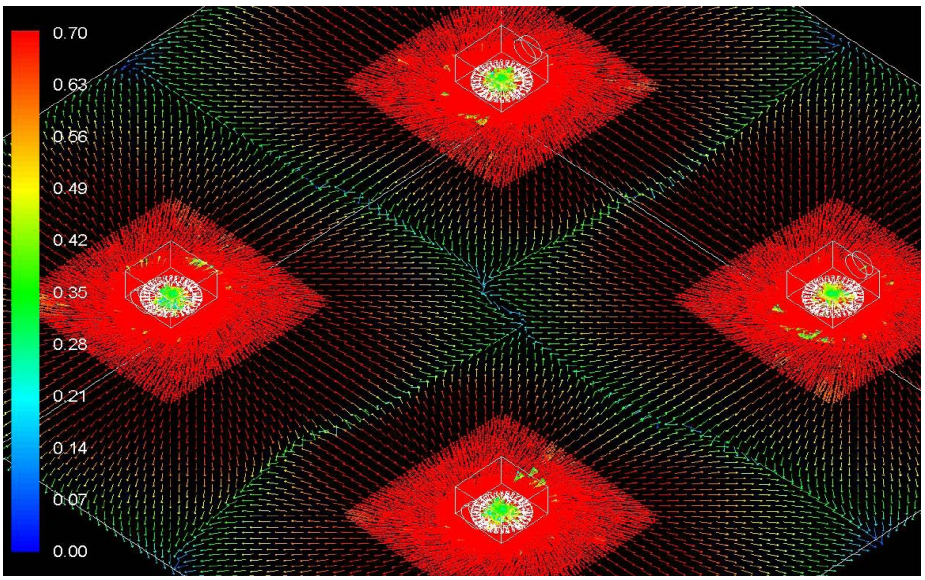
Data measured in reverberation room in accordance with international standards:
ISO 3741 1999: *Acoustic - determination of sound power levels of noise sources using sound pressure - Precision methods for reverberation rooms*

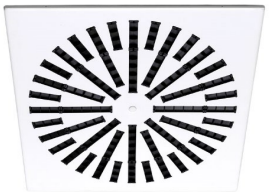
ISO 5135 1997: *Acoustic - determination of sound power levels of noise from air-terminal devices ; air terminal units; dampers and valves by measurement in a reverberation room.*

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



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

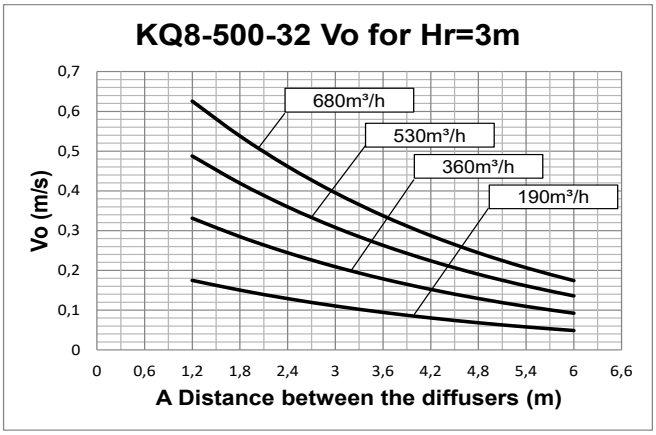


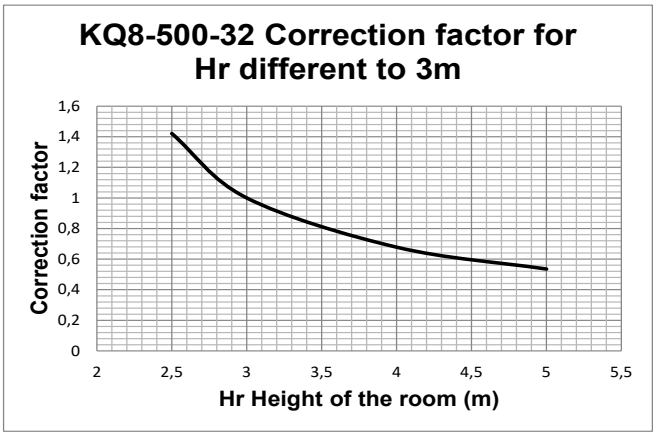


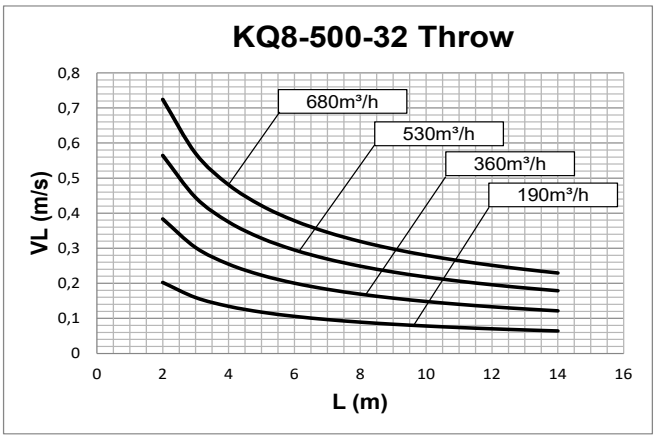
HIGH INDUCTION DIFFUSERS

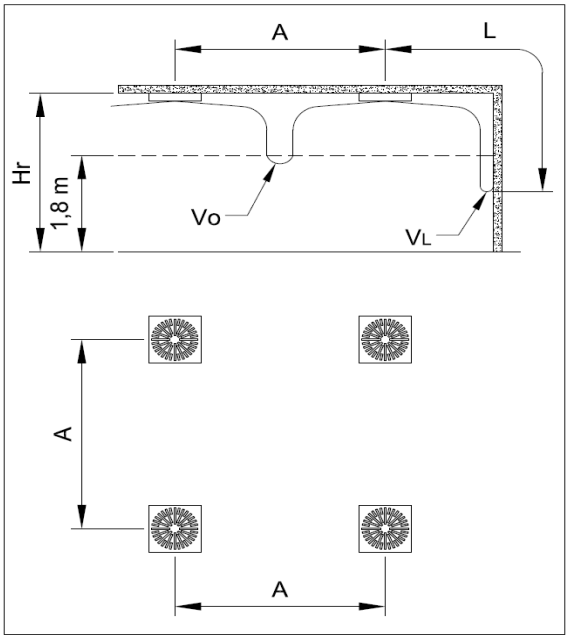
KQ - 8
SERIES

PERFORMANCE KQ8-500-32





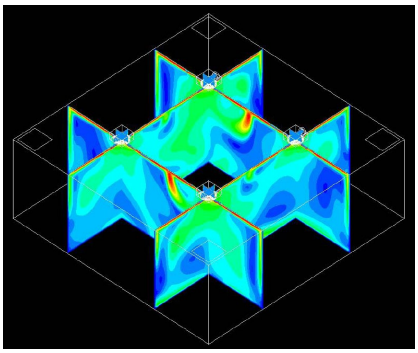


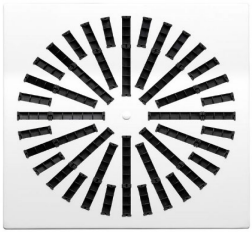


Data obtained from CFD mathematical model in virtual test room operating in isothermal conditions in accordance with the international standard:
ISO 5219 1984: *Air distribution and air diffusion - Laboratory. Aerodynamic testing and rating of air terminal devices.*

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

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

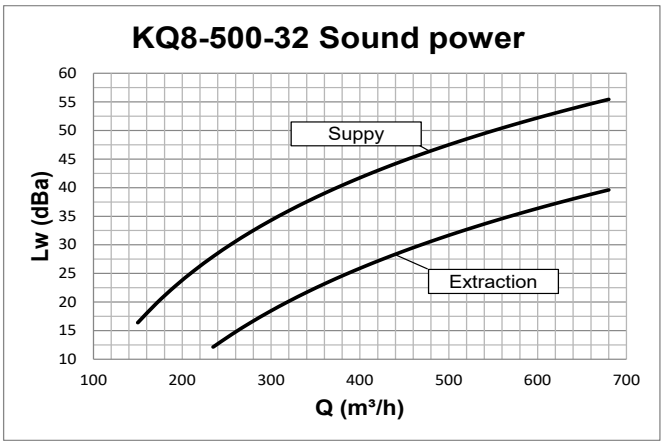




HIGH INDUCTION DIFFUSERS

KQ - 8
SERIES

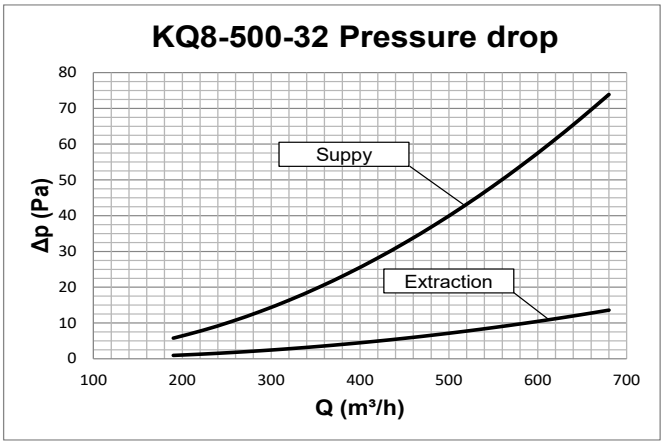
PERFORMANCE KQ8-500-32



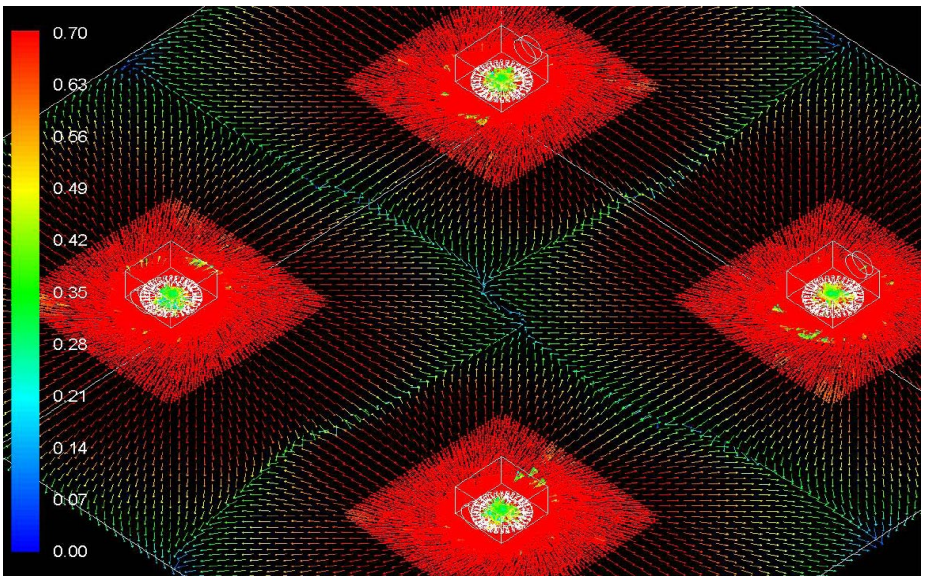
Data measured in reverberation room in accordance with international standards:
ISO 3741 1999: *Acoustic - determination of sound power levels of noise sources using sound pressure - Precision methods for reverberation rooms*

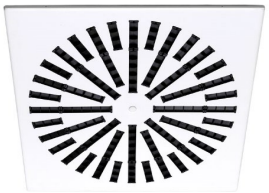
ISO 5135 1997: *Acoustic - determination of sound power levels of noise from air-terminal devices ; air terminal units; dampers and valves by measurement in a reverberation room.*

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



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

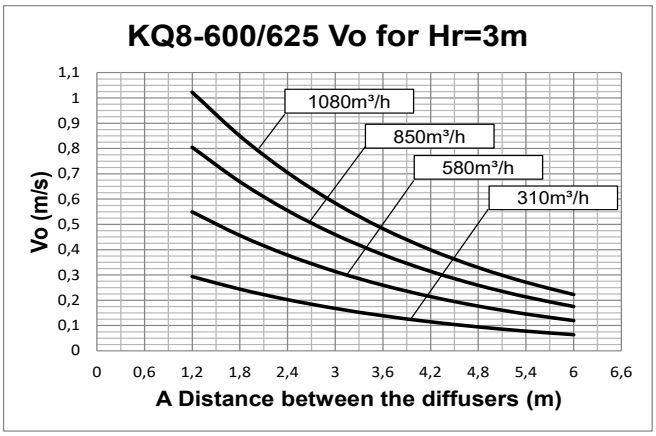


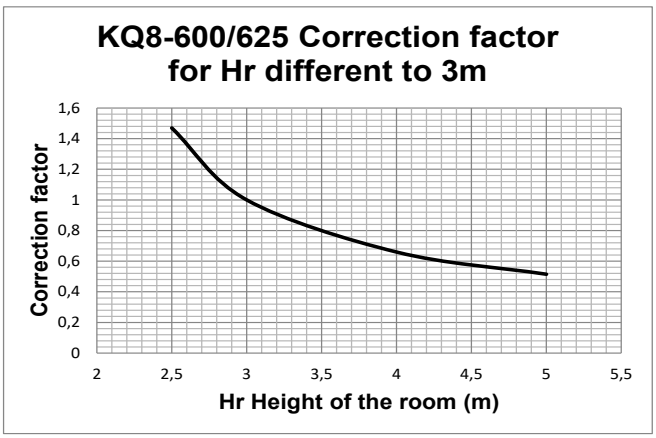


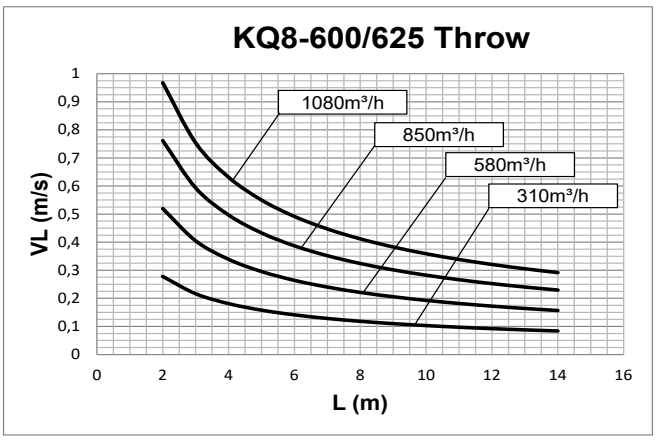
HIGH INDUCTION DIFFUSERS

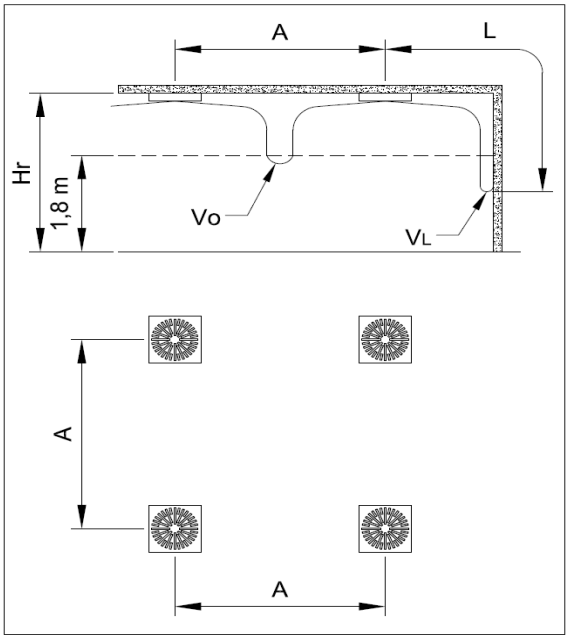
PERFORMANCE KQ8-600 KQ8-625

KQ - 8
SERIES





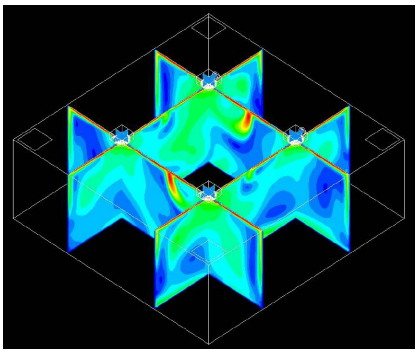


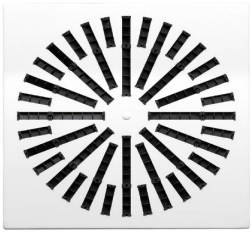


Data obtained from CFD mathematical model in virtual test room operating in isothermal conditions in accordance with the international standard:
ISO 5219 1984: *Air distribution and air diffusion - Laboratory. Aerodynamic testing and rating of air terminal devices.*

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

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

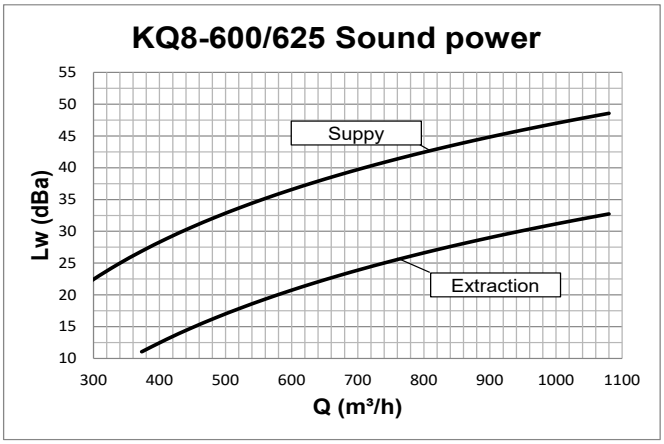




HIGH INDUCTION DIFFUSERS

PERFORMANCE KQ8-600 KQ8-625

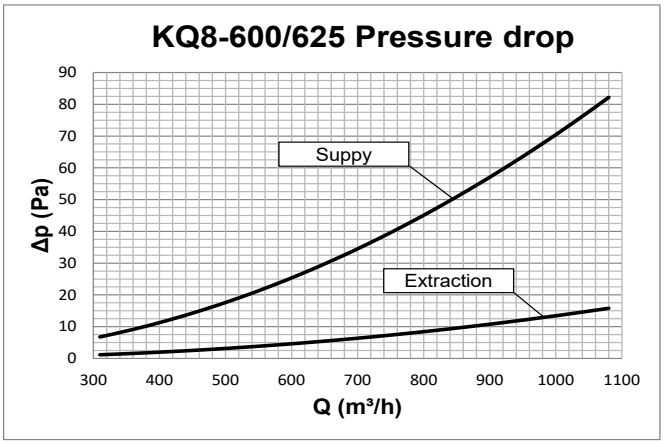
KQ - 8
SERIES



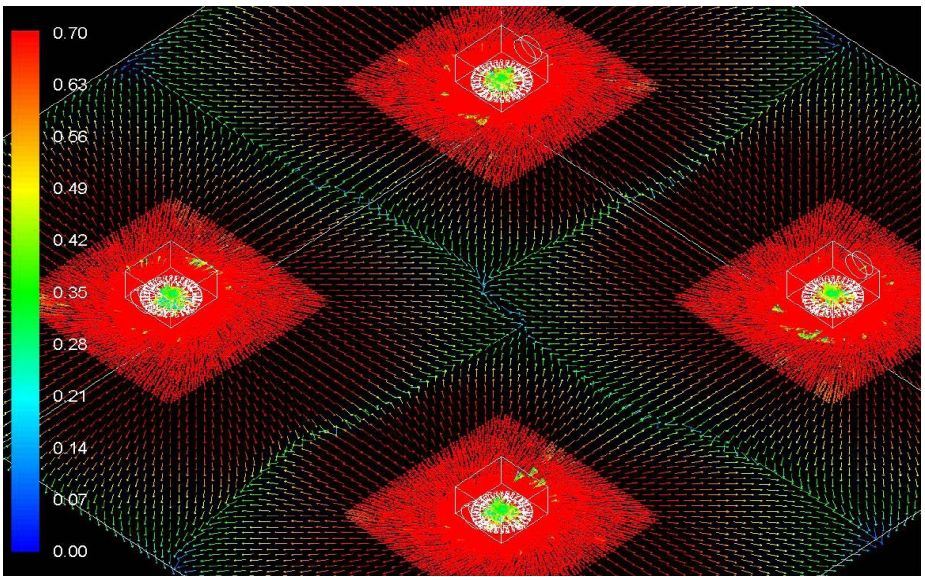
Data measured in reverberation room in accordance with international standards:
ISO 3741 1999: *Acoustic - determination of sound power levels of noise sources using sound pressure - Precision methods for reverberation rooms*

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.



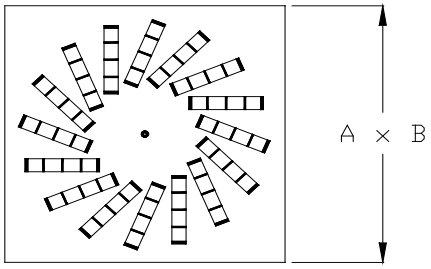
Data obtained by CFD mathematical model in virtual test room operating in accordance with the international standard:
ISO 5219 1984: *Air distribution and air diffusion - Laboratory. Aerodynamic testing and rating of air terminal devices.*



CONSTRUCTION DIMENSIONS :

Figure no. 3
Standard square and circular construction

KQ2 300x300 400x400 500x500



KQ2 R Ø 300 Ø 400 Ø 500

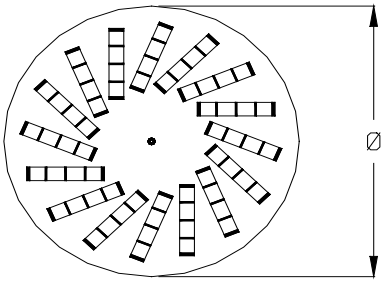
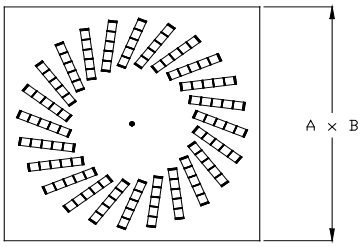
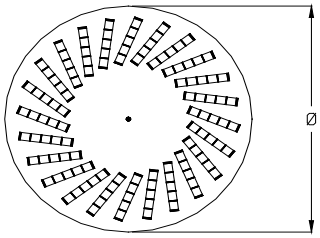


Figure no. 4
Standard square and circular construction

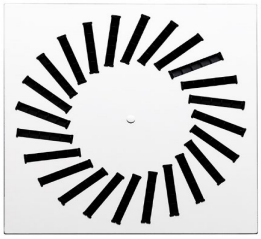
KQ2 600x600 625x625



KQ2 R Ø 600 Ø 625



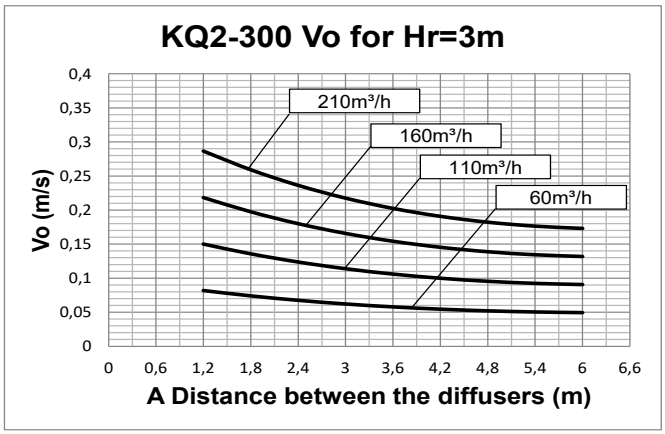
Nominal diameter	A [mm]	B [mm]	Ø
300	296	296	296
400	396	396	396
500	496	496	496
600	596	596	596
625	621	621	

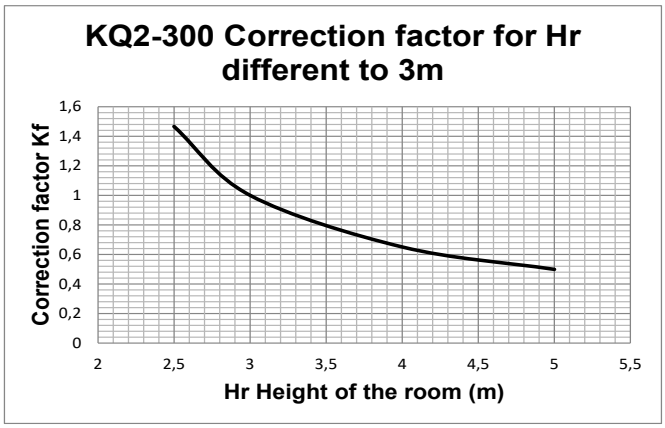


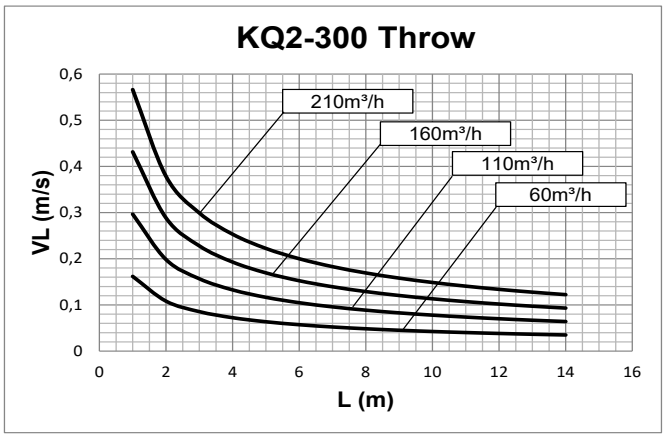
HIGH INDUCTION DIFFUSERS WITH VARIABLE GEOMETRY

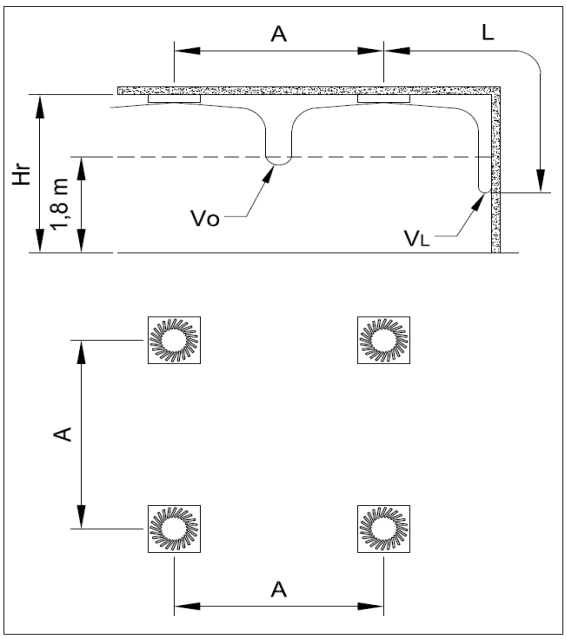
KQ - 2 SERIES

PERFORMANCE KQ2-300





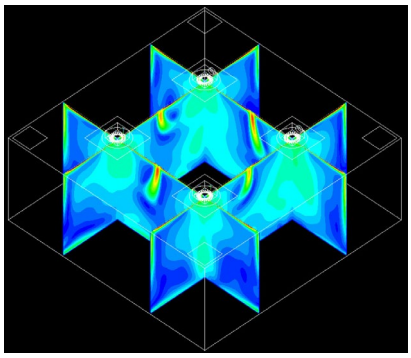




Data obtained from CFD mathematical model in virtual test room operating in isothermal conditions in accordance with the international standard:
ISO 5219 1984: *Air distribution and air diffusion - Laboratory. Aerodynamic testing and rating of air terminal devices.*

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

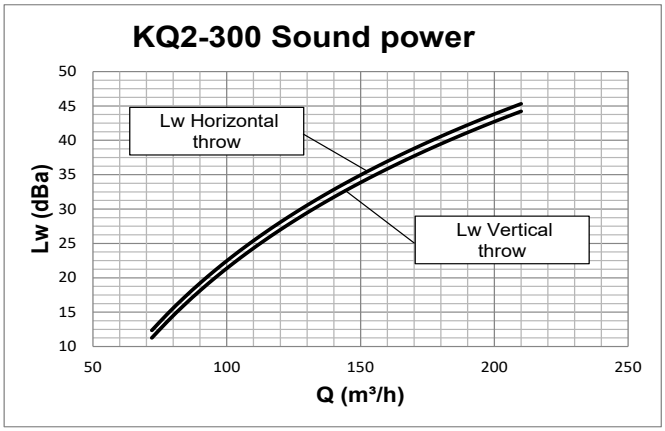
For Hr different from 3m:
Vo (h) = Vo x Kf



HIGH INDUCTION DIFFUSERS WITH VARIABLE GEOMETRY

PERFORMANCE KQ2-300

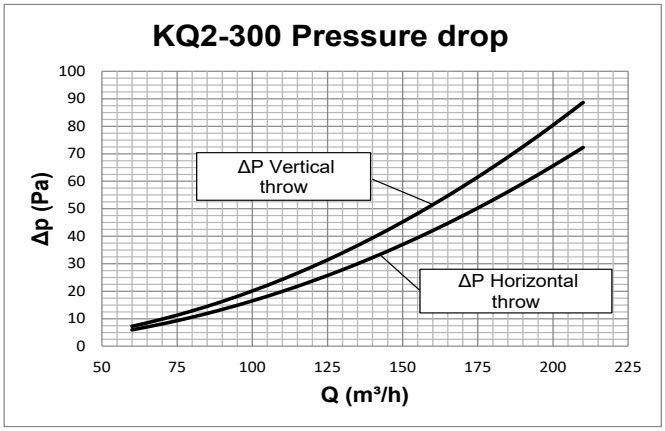
KQ - 2
SERIES



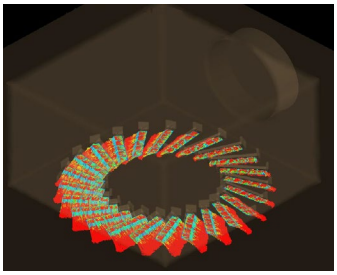
Data measured in reverberation room in accordance with international standards:
ISO 3741 1999: *Acoustic - determination of sound power levels of noise sources using sound pressure - Precision methods for reverberation rooms*

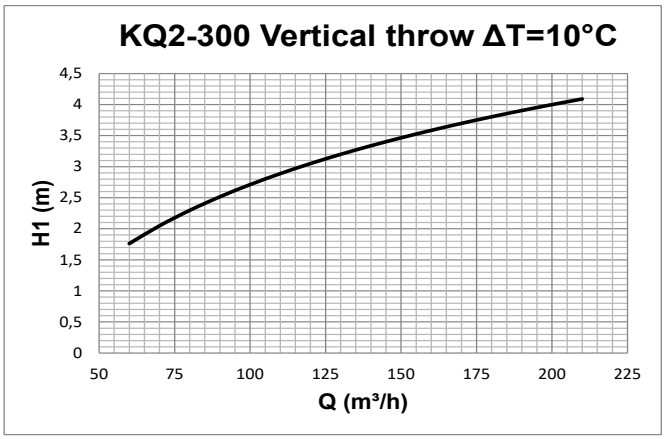
ISO 5135 1997: *Acoustic - determination of sound power levels of noise from air-terminal devices ; air terminal units; dampers and valves by measurement in a reverberation room.*

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.

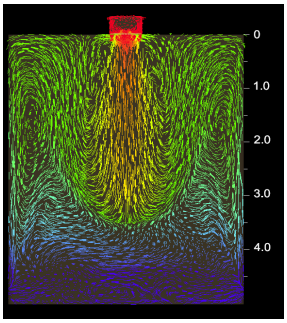


Data obtained by CFD mathematical model in virtual test room operating in accordance with the international standard:
ISO 5219 1984: *Air distribution and air diffusion - Laboratory. Aerodynamic testing and rating of air terminal devices.*





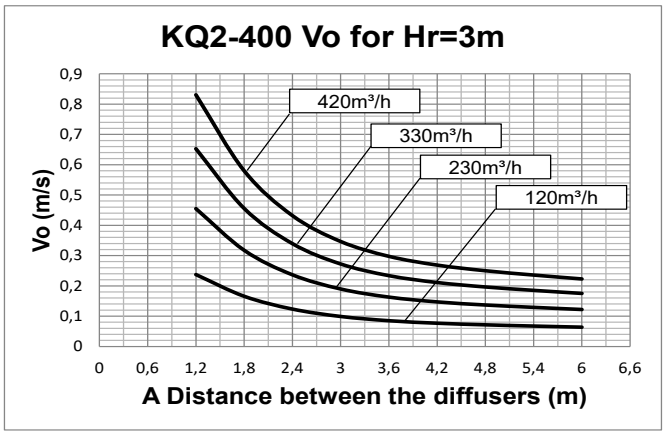
Data obtained from CFD mathematical model in virtual test room operating in heating conditions with ΔT = 10 ° C in accordance with the international standard:
ISO 5219 1984: *Air distribution and air diffusion - Laboratory. Aerodynamic testing and rating of air terminal devices.*
H1 (m) vertical distance in metres from the centre of the diffuser at which there is the inversion of the direction of air

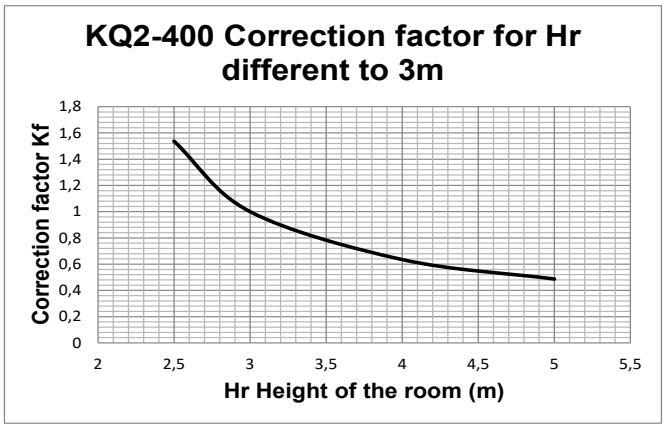


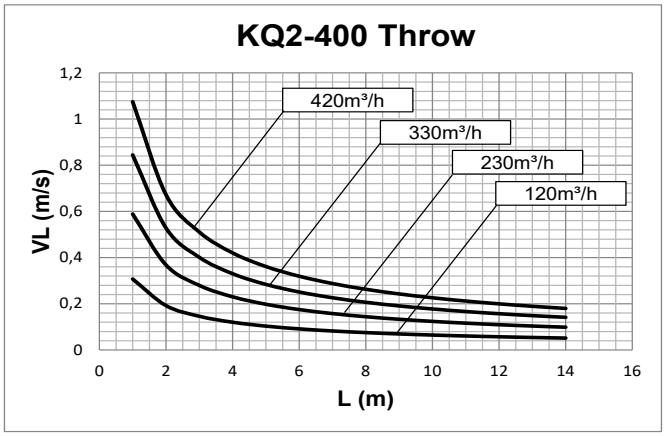
HIGH INDUCTION DIFFUSERS WITH VARIABLE GEOMETRY

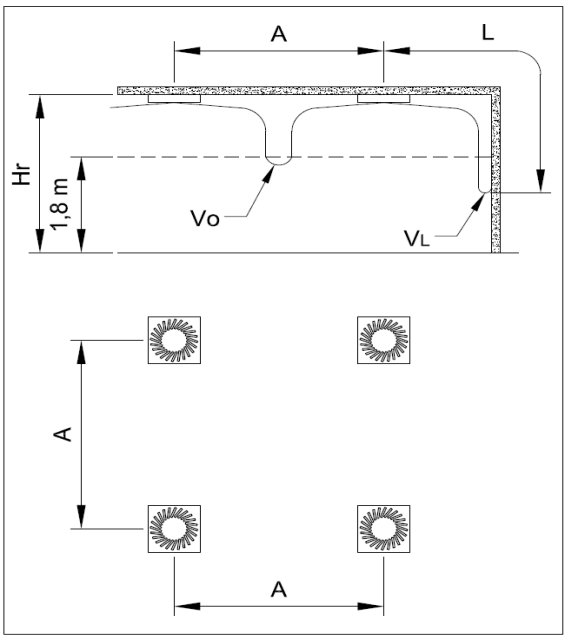
KQ - 2 SERIES

PERFORMANCE KQ2-400





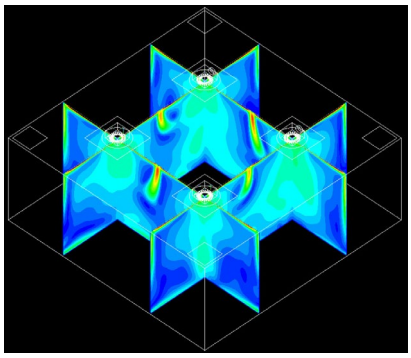




Data obtained from CFD mathematical model in virtual test room operating in isothermal conditions in accordance with the international standard:
ISO 5219 1984: *Air distribution and air diffusion - Laboratory. Aerodynamic testing and rating of air terminal devices.*

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

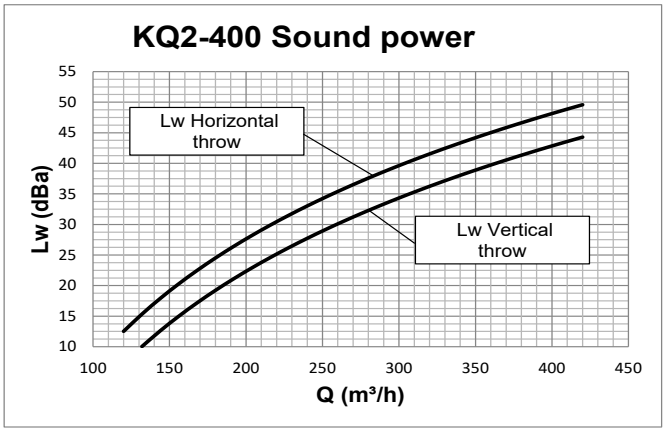
For Hr different from 3m:
Vo (h) = Vo x Kf



HIGH INDUCTION DIFFUSERS WITH VARIABLE GEOMETRY

PERFORMANCE KQ2-400

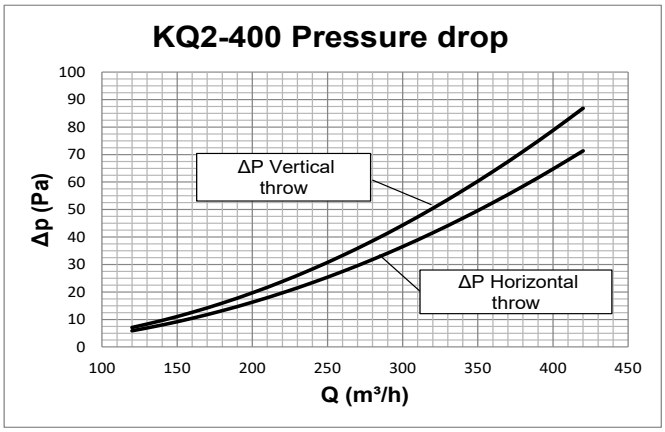
KQ - 2
SERIES



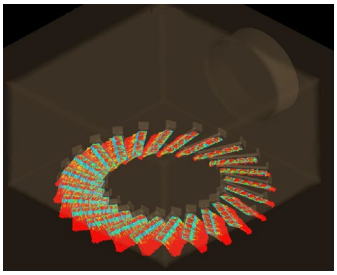
Data measured in reverberation room in accordance with international standards:
ISO 3741 1999: *Acoustic - determination of sound power levels of noise sources using sound pressure - Precision methods for reverberation rooms*

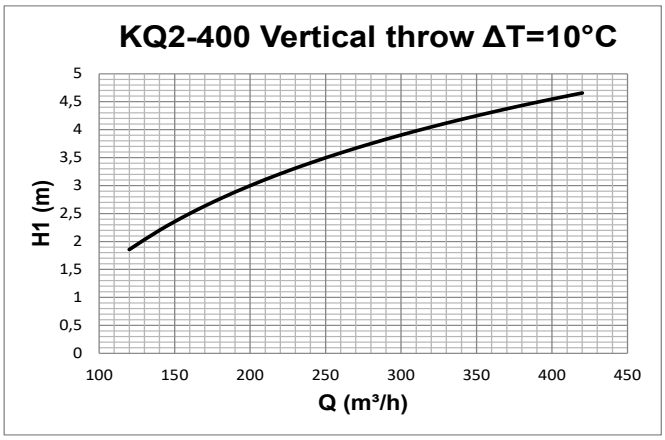
ISO 5135 1997: *Acoustic - determination of sound power levels of noise from air-terminal devices ; air terminal units; dampers and valves by measurement in a reverberation room.*

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.

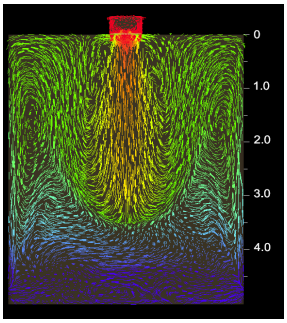


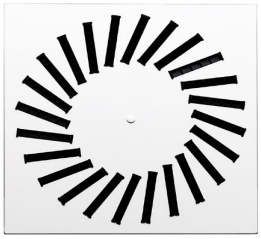
Data obtained by CFD mathematical model in virtual test room operating in accordance with the international standard:
ISO 5219 1984: *Air distribution and air diffusion - Laboratory. Aerodynamic testing and rating of air terminal devices.*





Data obtained from CFD mathematical model in virtual test room operating in heating conditions with ΔT = 10 ° C in accordance with the international standard:
ISO 5219 1984: *Air distribution and air diffusion - Laboratory. Aerodynamic testing and rating of air terminal devices.*
H1 (m) vertical distance in metres from the centre of the diffuser at which there is the inversion of the direction of air

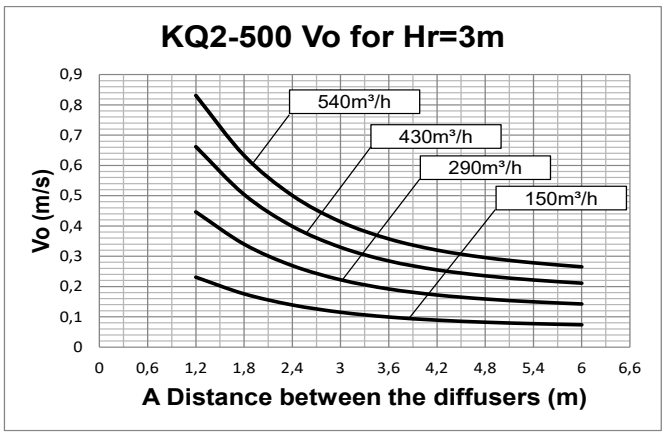


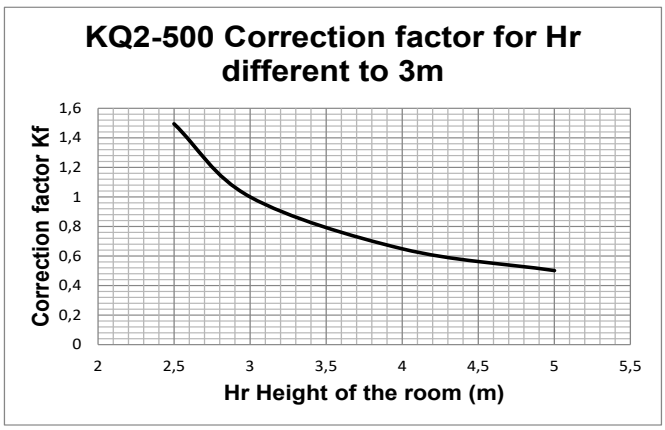


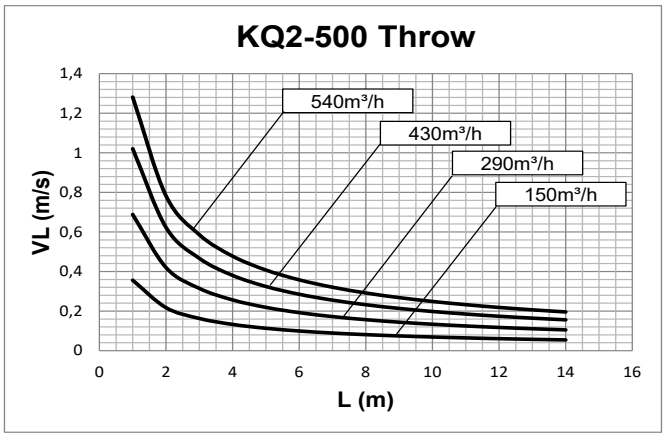
HIGH INDUCTION DIFFUSERS WITH VARIABLE GEOMETRY

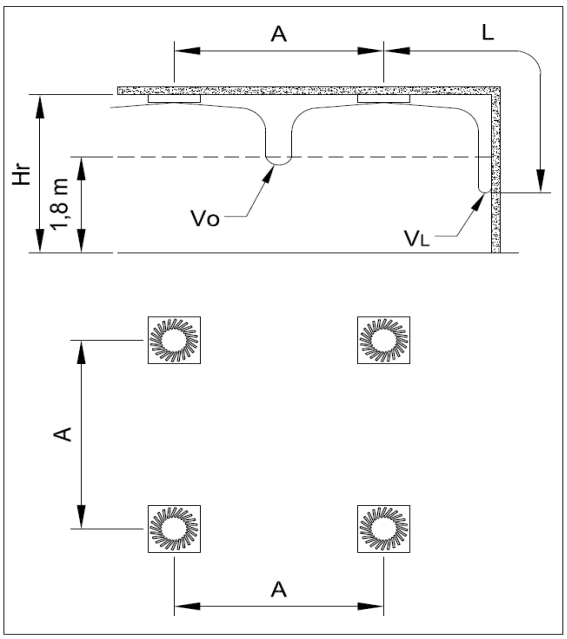
KQ - 2 SERIES

PERFORMANCE KQ2-500





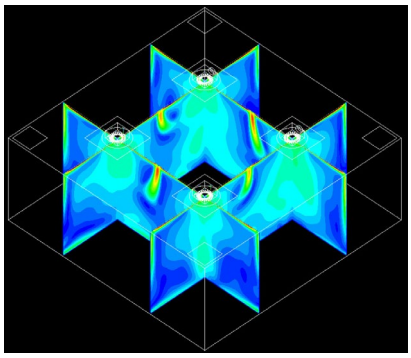




Data obtained from CFD mathematical model in virtual test room operating in isothermal conditions in accordance with the international standard:
ISO 5219 1984: *Air distribution and air diffusion - Laboratory. Aerodynamic testing and rating of air terminal devices.*

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

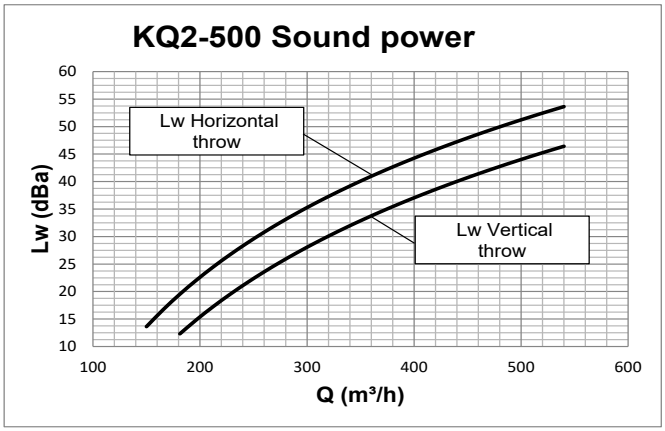
For Hr different from 3m:
Vo (h) = Vo x Kf



HIGH INDUCTION DIFFUSERS WITH VARIABLE GEOMETRY

PERFORMANCE KQ2-500

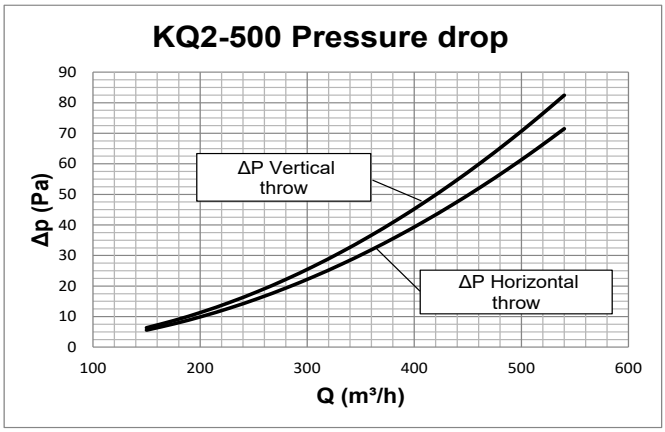
KQ - 2
SERIES



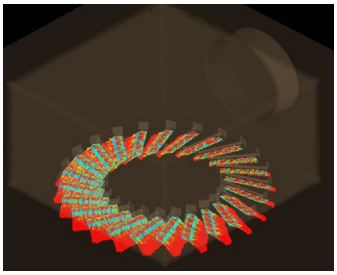
Data measured in reverberation room in accordance with international standards:
ISO 3741 1999: *Acoustic - determination of sound power levels of noise sources using sound pressure - Precision methods for reverberation rooms*

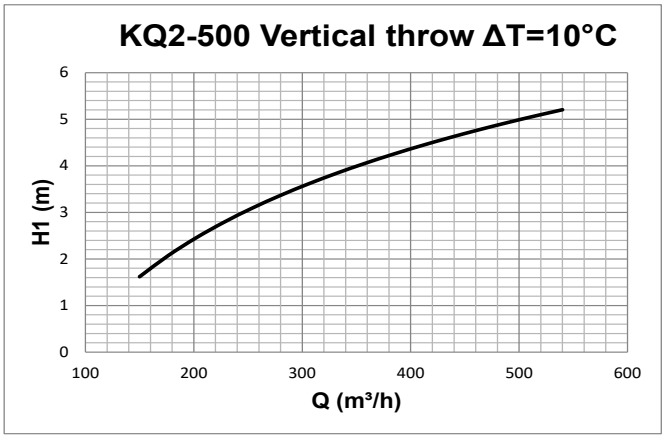
ISO 5135 1997: *Acoustic - determination of sound power levels of noise from air-terminal devices ; air terminal units; dampers and valves by measurement in a reverberation room.*

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.

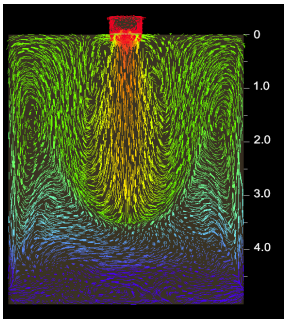


Data obtained by CFD mathematical model in virtual test room operating in accordance with the international standard:
ISO 5219 1984: *Air distribution and air diffusion - Laboratory. Aerodynamic testing and rating of air terminal devices.*





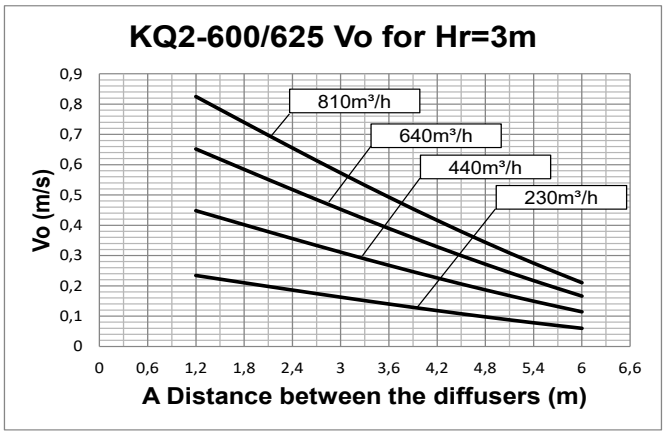
Data obtained from CFD mathematical model in virtual test room operating in heating conditions with ΔT = 10 ° C in accordance with the international standard:
ISO 5219 1984: *Air distribution and air diffusion - Laboratory. Aerodynamic testing and rating of air terminal devices.*
H1 (m) vertical distance in metres from the centre of the diffuser at which there is the inversion of the direction of air

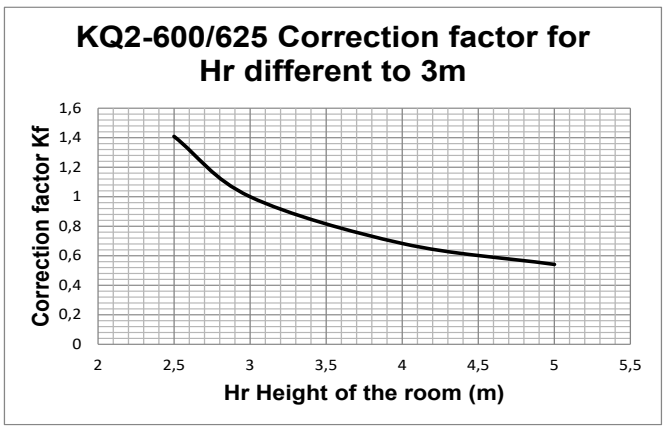


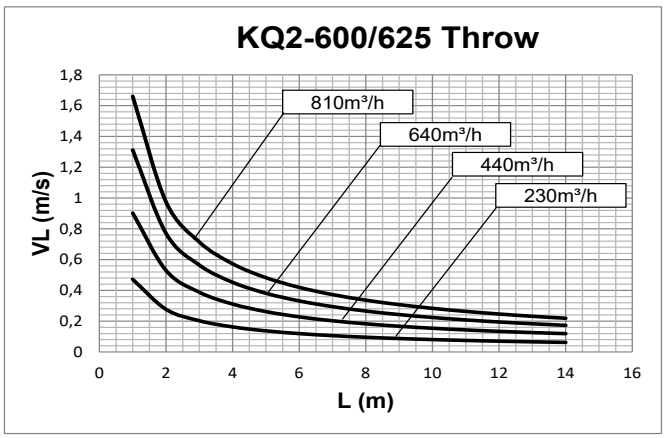
HIGH INDUCTION DIFFUSERS WITH VARIABLE GEOMETRY

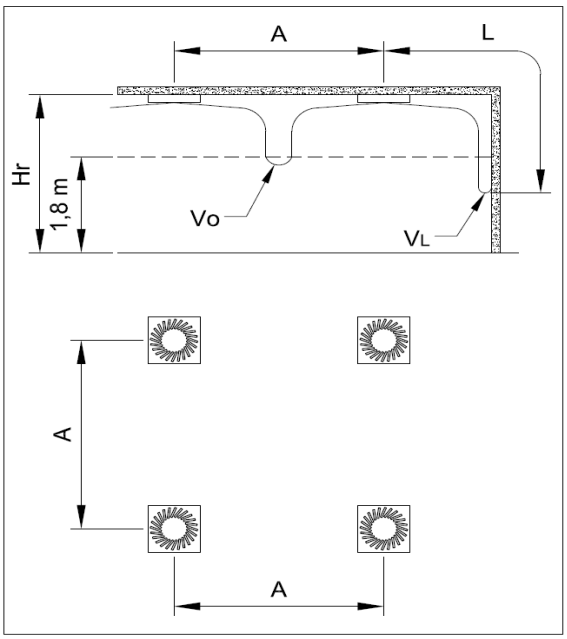
KQ - 2 SERIES

PERFORMANCE KQ2-600 KQ2-625





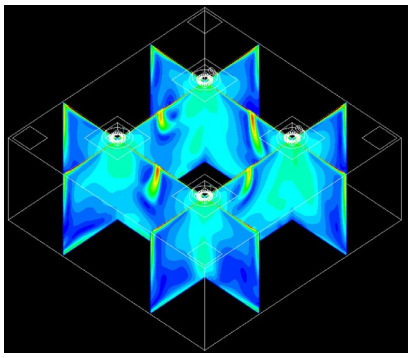




Data obtained from CFD mathematical model in virtual test room operating in isothermal conditions in accordance with the international standard:
ISO 5219 1984: *Air distribution and air diffusion - Laboratory. Aerodynamic testing and rating of air terminal devices.*

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

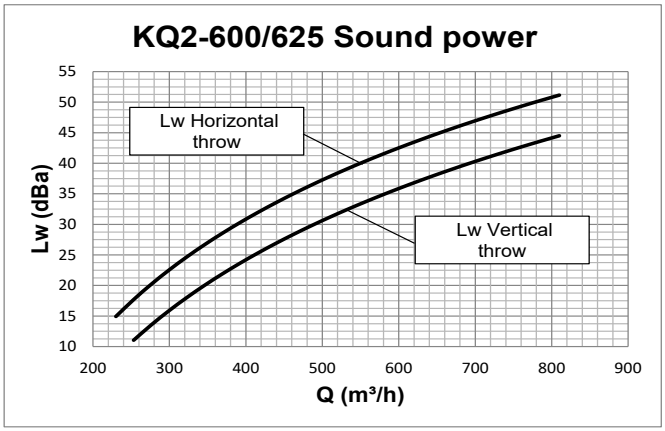
For Hr different from 3m:
Vo (h) = Vo x Kf



HIGH INDUCTION DIFFUSERS WITH VARIABLE GEOMETRY

PERFORMANCE KQ2-600 KQ2-625

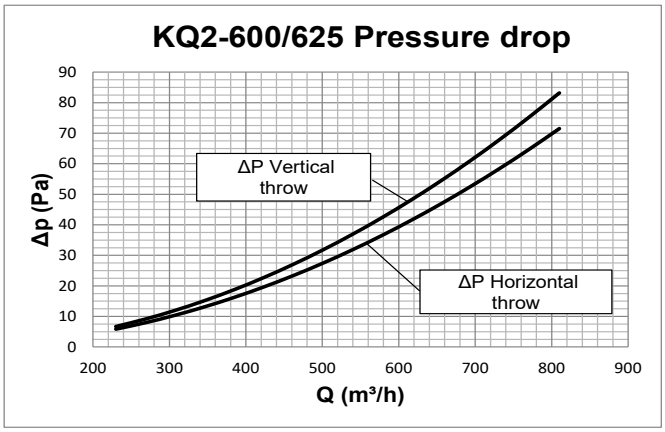
KQ - 2
SERIES



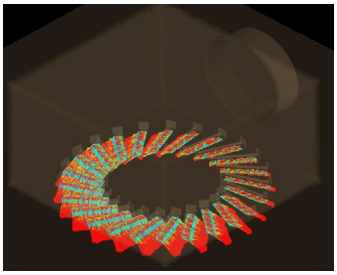
Data measured in reverberation room in accordance with international standards:
ISO 3741 1999: *Acoustic - determination of sound power levels of noise sources using sound pressure - Precision methods for reverberation rooms*

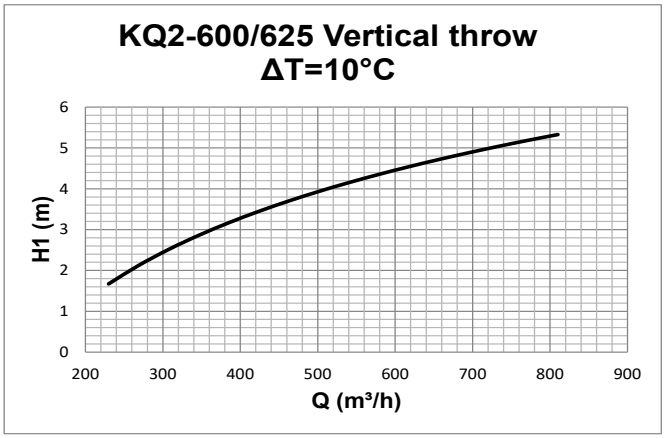
ISO 5135 1997: *Acoustic - determination of sound power levels of noise from air-terminal devices ; air terminal units; dampers and valves by measurement in a reverberation room.*

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.

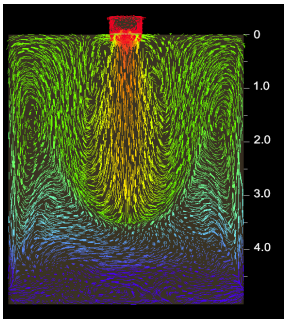


Data obtained by CFD mathematical model in virtual test room operating in accordance with the international standard:
ISO 5219 1984: *Air distribution and air diffusion - Laboratory. Aerodynamic testing and rating of air terminal devices.*





Data obtained from CFD mathematical model in virtual test room operating in heating conditions with ΔT = 10 ° C in accordance with the international standard:
ISO 5219 1984: *Air distribution and air diffusion - Laboratory. Aerodynamic testing and rating of air terminal devices.*
H1 (m) vertical distance in metres from the centre of the diffuser at which there is the inversion of the direction of air



HIGH INDUCTION DIFFUSERS WITH VARIABLE GEOMETRY

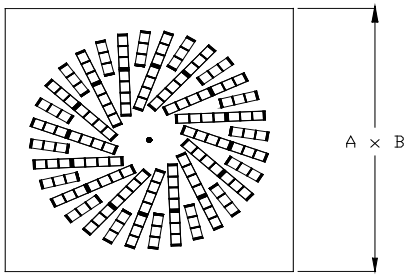
TECHNICAL DRAWINGS
CONSTRUCTION DIMENSIONS

KQ - 3
KQ - 3 R
SERIES

CONSTRUCTION DIMENSIONS :

Figure no. 5
Standard square and circular construction

KQ3 600X600 625X625



KQ3 R Ø 600 Ø 625

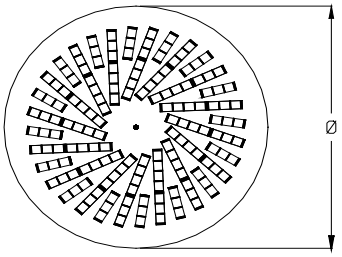
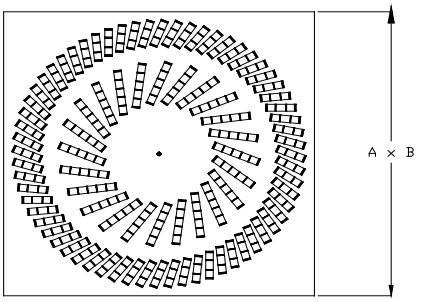
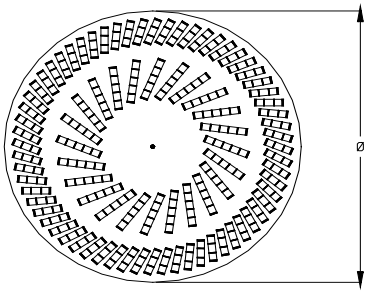


Figure no. 6
Standard square and circular construction

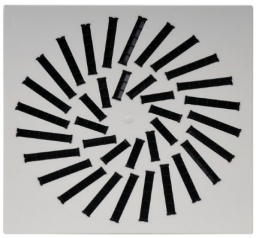
KQ3 800x800 825x825



KQ3 R Ø 800 Ø 825



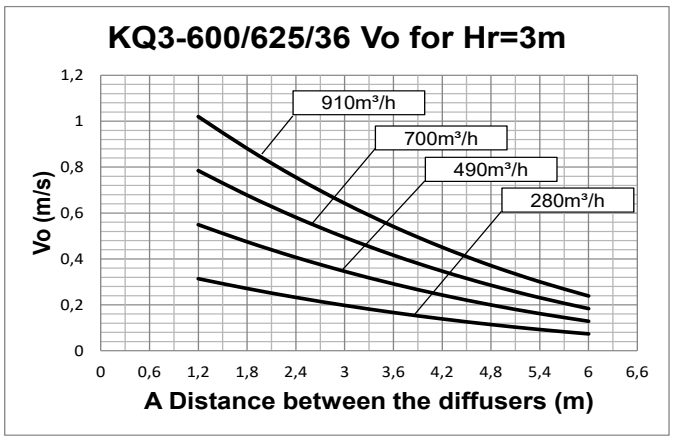
Nominal Diameter	A [mm]	B [mm]	Ø
300	296	296	296
400	396	396	396
500	496	496	496
600	596	596	596
625	621	621	
800	796	796	796
825	821	821	

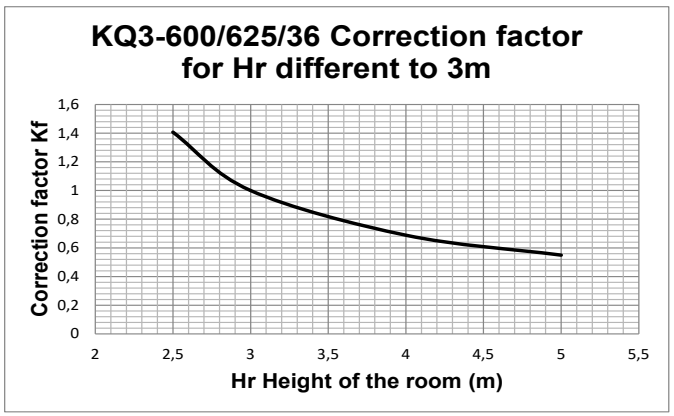


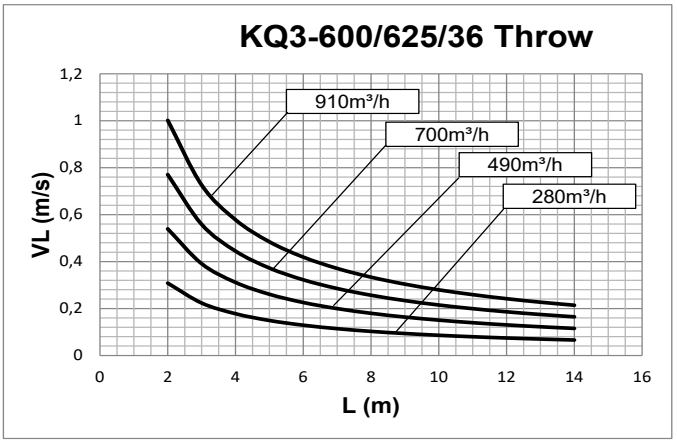
HIGH INDUCTION DIFFUSERS WITH VARIABLE GEOMETRY

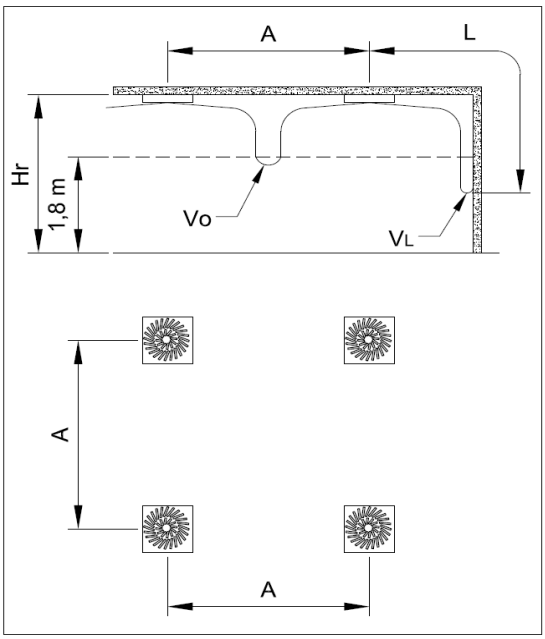
PERFORMANCE KQ3-600-36 KQ3-625-36

KQ - 3
SERIES









Aeraulic data and pressure losses measured in isothermic conditions in accordance with international standards:
ISO 5219 1984: *Air distribution and air diffusion - Laboratory. Aerodynamic testing and rating of air terminal devices.*

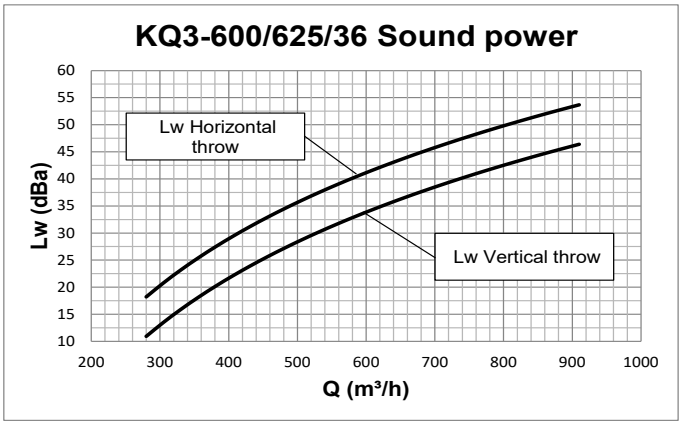
A (m) distance between the diffusers
Vo (m/s) speed at the limit of the occupied zone
L (m) horizontal distance in metres from the centre of the diffuser
VL (m/s) maximum speed in the air stream

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

HIGH INDUCTION DIFFUSERS WITH VARIABLE GEOMETRY

PERFORMANCE KQ3-600-36 KQ3-625-36

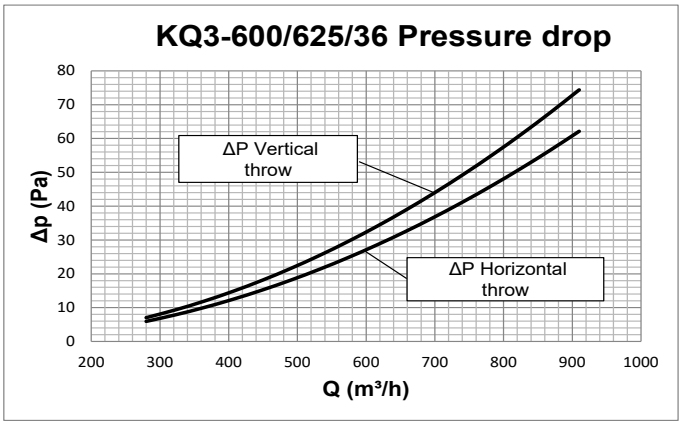
KQ - 3
SERIES



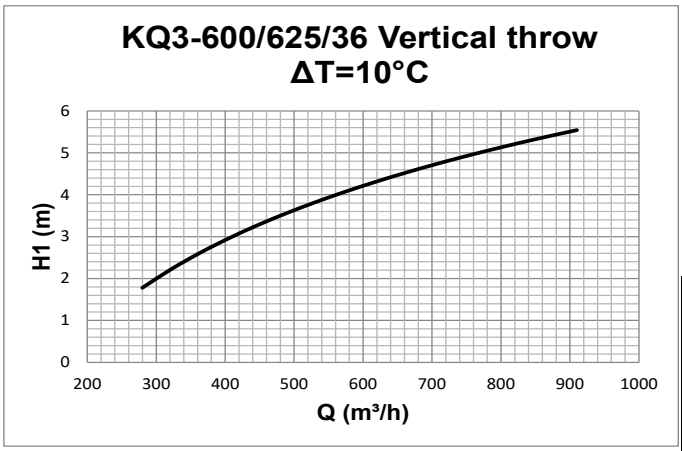
Data measured in reverberation room in accordance with international standards:
ISO 3741 1999: *Acoustic - determination of sound power levels of noise sources using sound pressure - Precision methods for reverberation rooms*

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.*

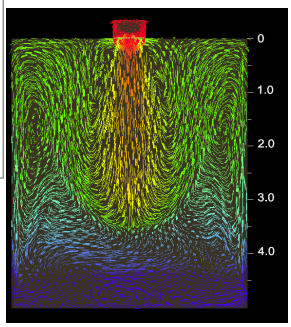
The data presented does not consider the attenuation given by the area of installation. This attenuation is normally between 6 and 10 dBA and is determined by the room size, the shape of the environment and the interior features.

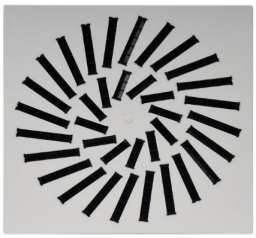


Aeraulic data and pressure losses measured in isothermic conditions in accordance with international standards:
ISO 5219 1984: *Air distribution and air diffusion - Laboratory. Aerodynamic testing and rating of air terminal devices.*



Data measured operating in heating conditions with ΔT = 10 ° C in accordance with the international standard:
ISO 5219 1984: *Air distribution and air diffusion - Laboratory. Aerodynamic testing and rating of air terminal devices.*
H1 (m) vertical distance in metres from the centre of the diffuser at which there is the inversion of the direction of air

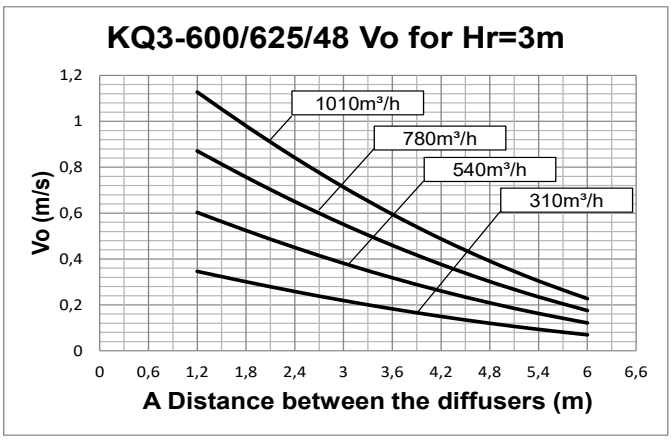


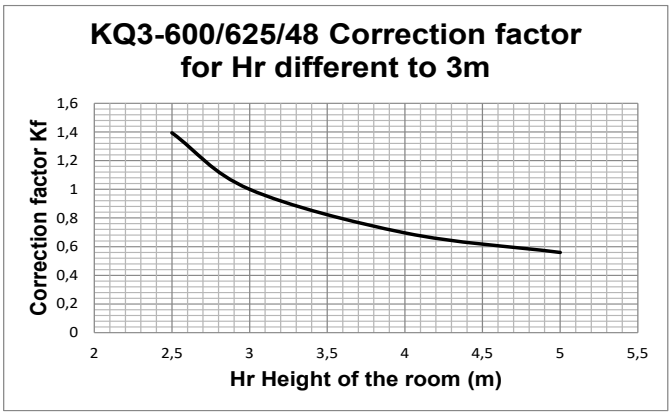


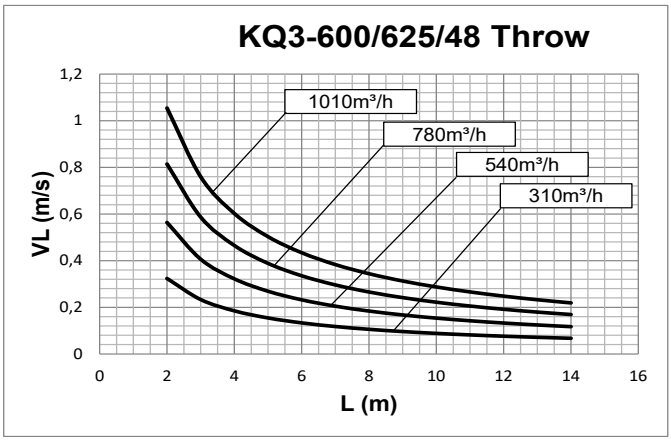
HIGH INDUCTION DIFFUSERS WITH VARIABLE GEOMETRY

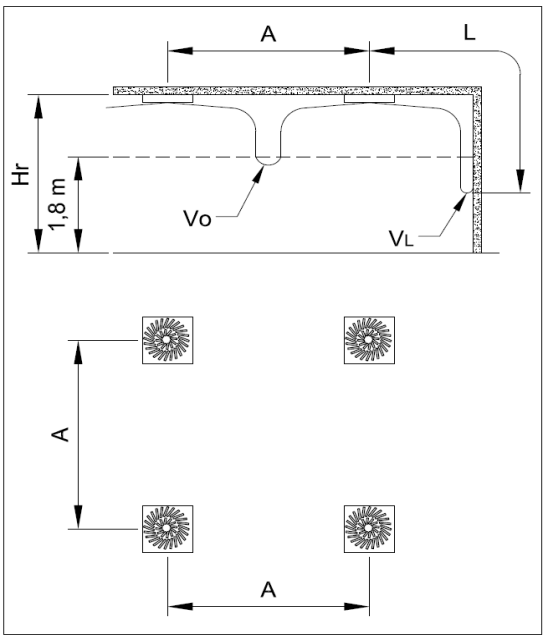
PERFORMANCE KQ3-600-48 KQ3-625-48

KQ - 3
SERIES









Aeraulic data and pressure losses measured in isothermic conditions in accordance with international standards:
ISO 5219 1984: *Air distribution and air diffusion - Laboratory. Aerodynamic testing and rating of air terminal devices.*

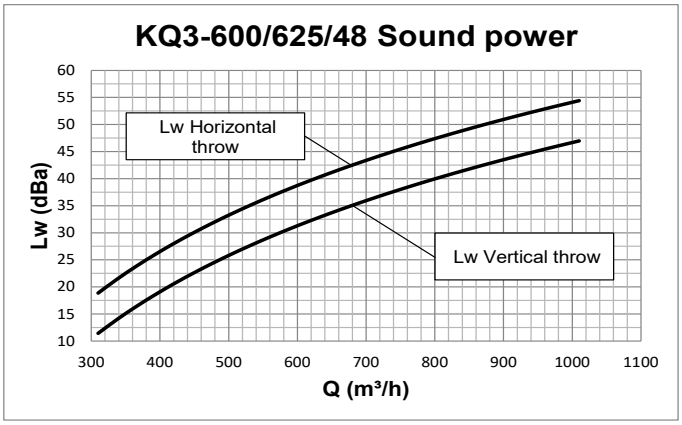
A (m) distance between the diffusers
Vo (m/s) speed at the limit of the occupied zone
L (m) horizontal distance in metres from the centre of the diffuser
VL (m/s) maximum speed in the air stream

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

HIGH INDUCTION DIFFUSERS WITH VARIABLE GEOMETRY

PERFORMANCE KQ3-600-48 KQ3-625-48

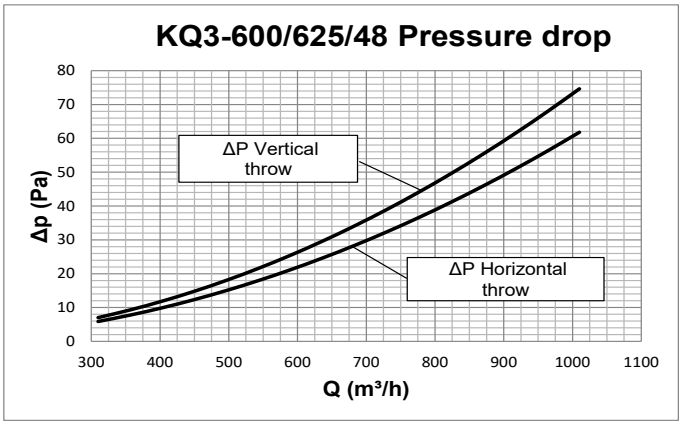
KQ - 3 SERIES



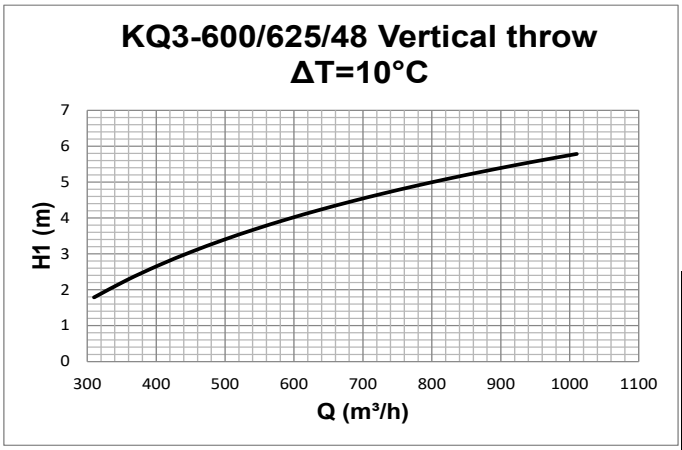
Data measured in reverberation room in accordance with international standards:
ISO 3741 1999: *Acoustic - determination of sound power levels of noise sources using sound pressure - Precision methods for reverberation rooms*

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.*

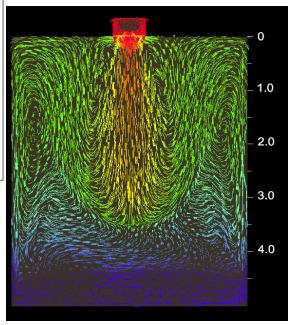
The data presented does not consider the attenuation given by the area of installation. This attenuation is normally between 6 and 10 dBA and is determined by the room size, the shape of the environment and the interior features.

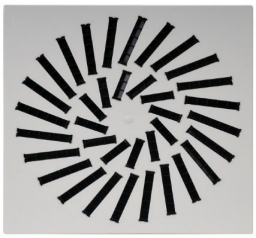


Aeraulic data and pressure losses measured in isothermic conditions in accordance with international standards:
ISO 5219 1984: *Air distribution and air diffusion - Laboratory. Aerodynamic testing and rating of air terminal devices.*



Data measured operating in heating conditions with ΔT = 10 ° C in accordance with the international standard:
ISO 5219 1984: *Air distribution and air diffusion - Laboratory. Aerodynamic testing and rating of air terminal devices.*
H1 (m) vertical distance in metres from the centre of the diffuser at which there is the inversion of the direction of air

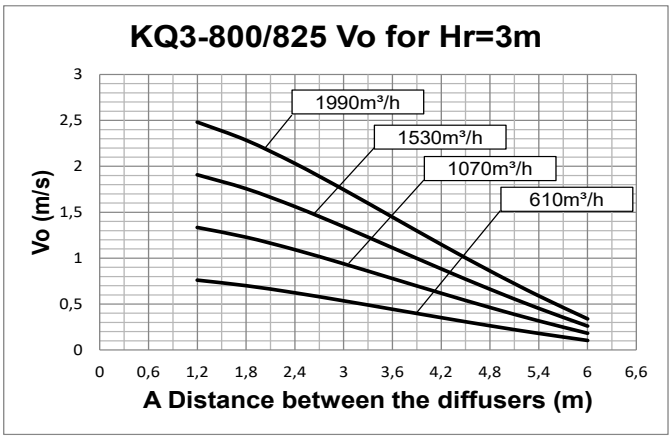


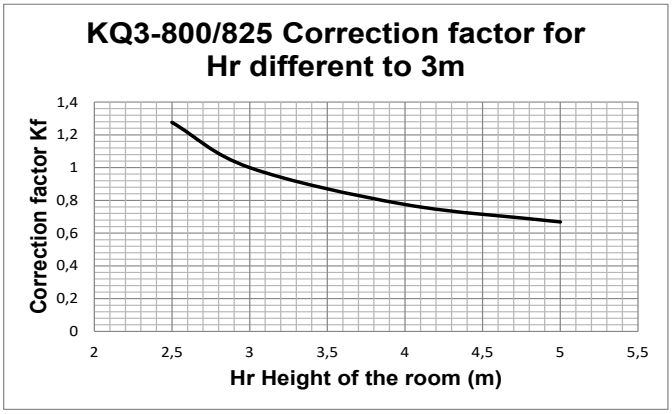


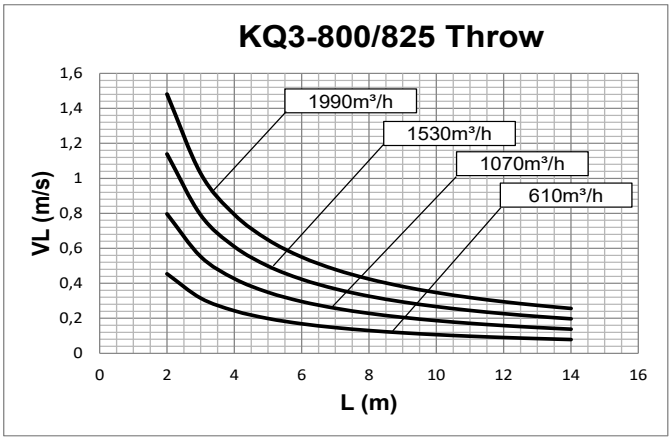
HIGH INDUCTION DIFFUSERS WITH VARIABLE GEOMETRY

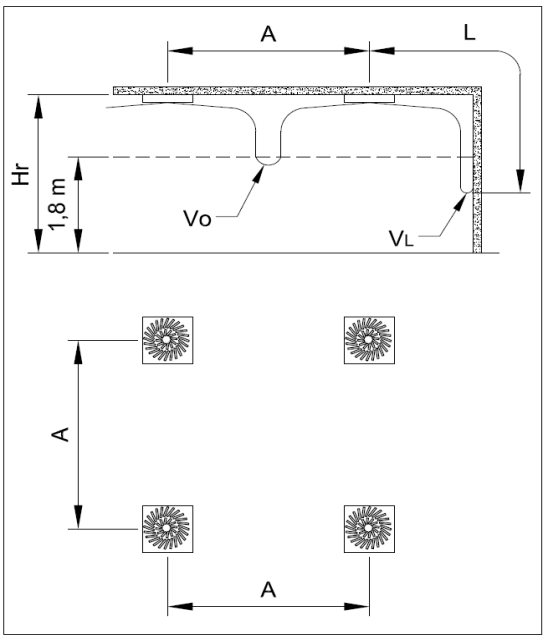
PERFORMANCE KQ3-800 KQ3-825

KQ - 3
SERIES









Aeraulic data and pressure losses measured in isothermic conditions in accordance with international standards:
ISO 5219 1984: *Air distribution and air diffusion - Laboratory. Aerodynamic testing and rating of air terminal devices.*

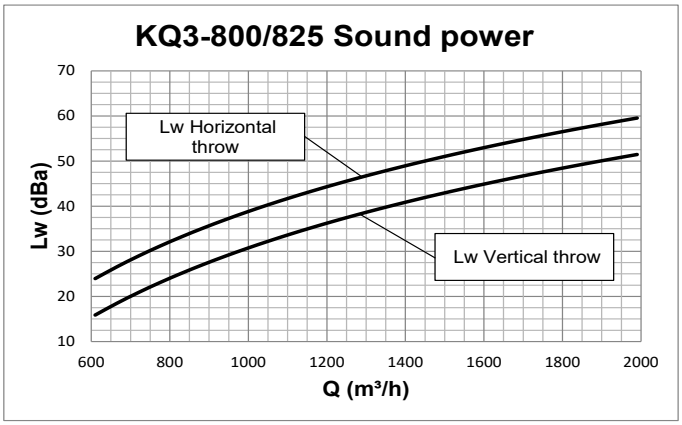
A (m) distance between the diffusers
Vo (m/s) speed at the limit of the occupied zone
L (m) horizontal distance in metres from the centre of the diffuser
VL (m/s) maximum speed in the air stream

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

HIGH INDUCTION DIFFUSERS WITH VARIABLE GEOMETRY

PERFORMANCE KQ3-800 KQ3-825

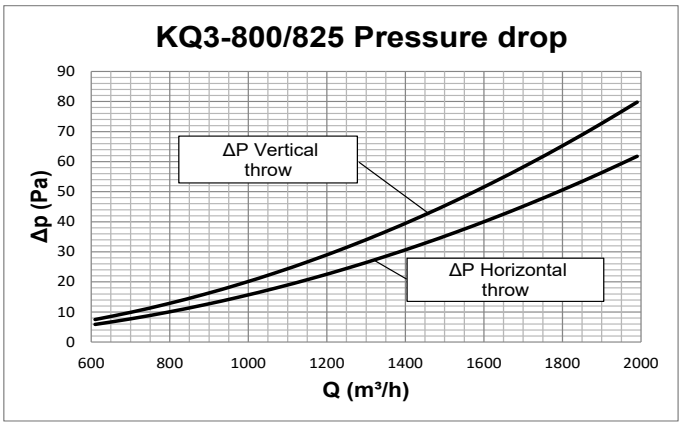
KQ - 3
SERIES



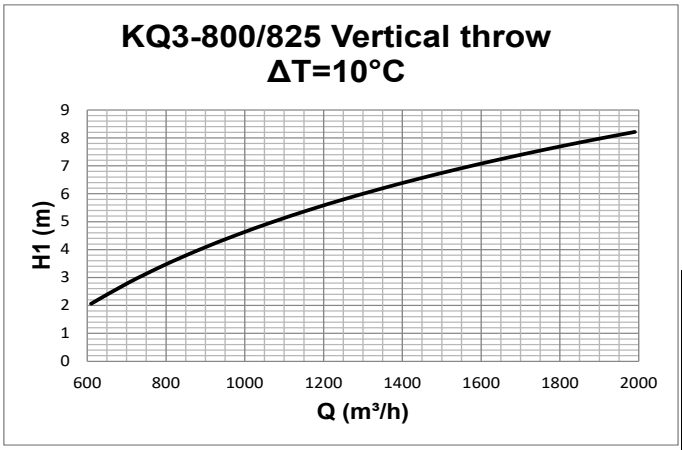
Data measured in reverberation room in accordance with international standards:
ISO 3741 1999: *Acoustic - determination of sound power levels of noise sources using sound pressure - Precision methods for reverberation rooms*

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.*

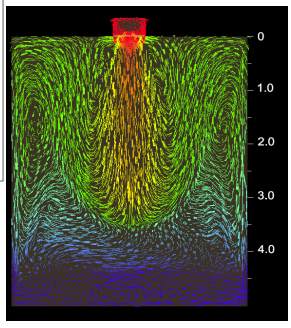
The data presented does not consider the attenuation given by the area of installation. This attenuation is normally between 6 and 10 dBA and is determined by the room size, the shape of the environment and the interior features.

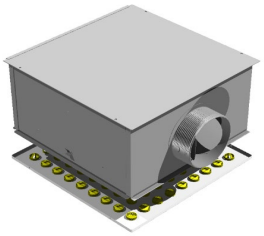


Aeraulic data and pressure losses measured in isothermic conditions in accordance with international standards:
ISO 5219 1984: *Air distribution and air diffusion - Laboratory. Aerodynamic testing and rating of air terminal devices.*



Data measured operating in heating conditions with ΔT = 10 ° C in accordance with the international standard:
ISO 5219 1984: *Air distribution and air diffusion - Laboratory. Aerodynamic testing and rating of air terminal devices.*
H1 (m) vertical distance in metres from the centre of the diffuser at which there is the inversion of the direction of air

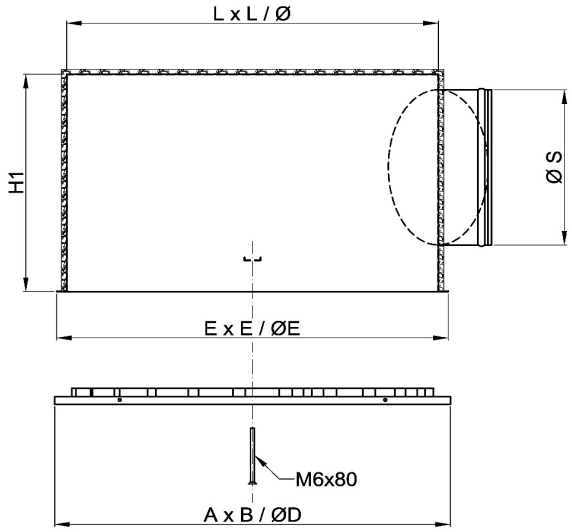




HIGH INDUCTION DIFFUSERS WITH VARIABLE GEOMETRY

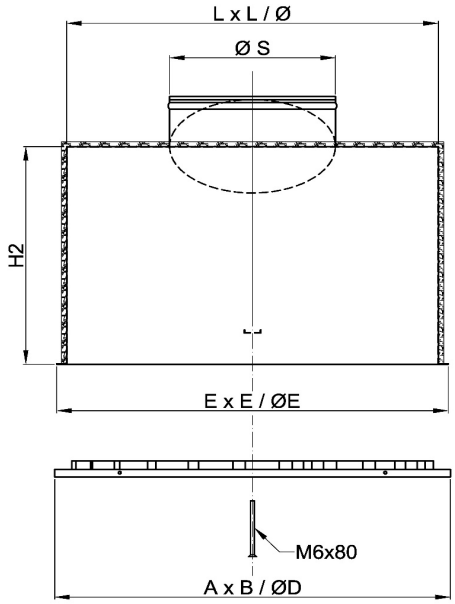
PP80
PP81

PLENUM IN SEEL SHEET



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

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



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

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

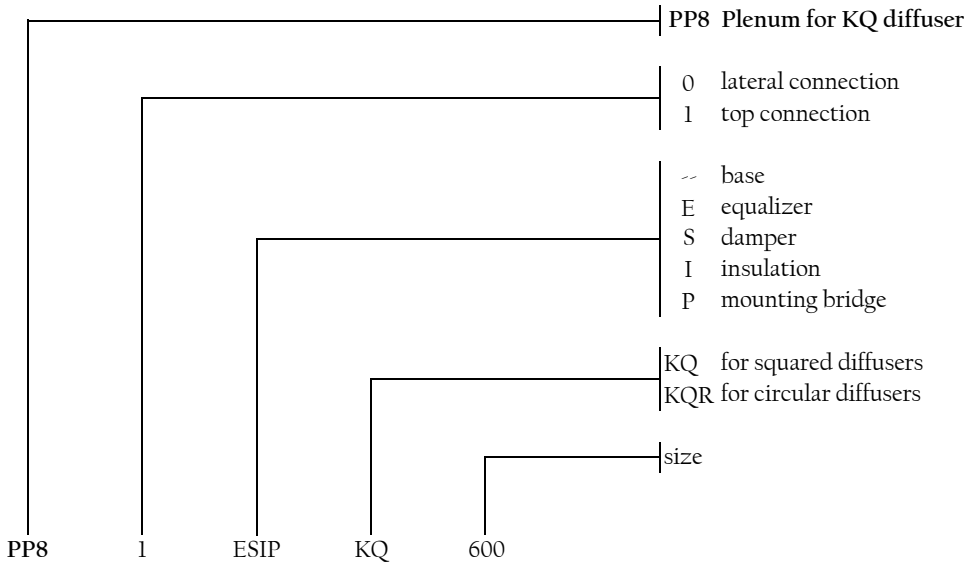
Nominal size of the diffuser	AxB ØD	L x L Ø	E x E ØE	H1	H2	N° connec-tions	S	Connection and damper material
300	296	260	290	250	150	1	123	ABS (*)
400	396	360	390	350	200	1	195	ABS (*)
500	496	460	490	350	200	1	195	ABS (*)
600	596	560	590	350	200	1	245	ABS (*)
625	621	585	615	350	200	1	245	ABS (*)
800	796	760	790	400	250	1	296	steel
825	821	785	815	400	250	1	296	steel

(*) Steel on request

HIGH INDUCTION DIFFUSERS WITH VARIABLE GEOMETRY

PP80
PP81

HOW TO ORDER



Standard sizes
200
300
400
500
600
625
800
825

PS PLENUM

OVERVIEW

PPS
SERIES

OVERVIEW :

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

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

These special features combined to the trapezoidal shape that distinguish it, allows the fixing of the unit in completed countersealing structure. This facilitates both the realisation and maintenance of the system. Given the light weight, the plenum is positioned on the structure of the counter ceiling, eliminating therefore the necessity of using hanging clips for fixing to the ceiling.
This has the advantage of reducing considerably the fitting time and a saving of the space used of over 50%, compared to a traditional plenum box.

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

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

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

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

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

TECHNICAL CHARACTERISTICS:

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

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

Water absorption:
Increase average volume 3,26% in full immersion, tested according to UNI EN 12087 method 2A - Test report CSI 0936/FPM/MATs/07_2.

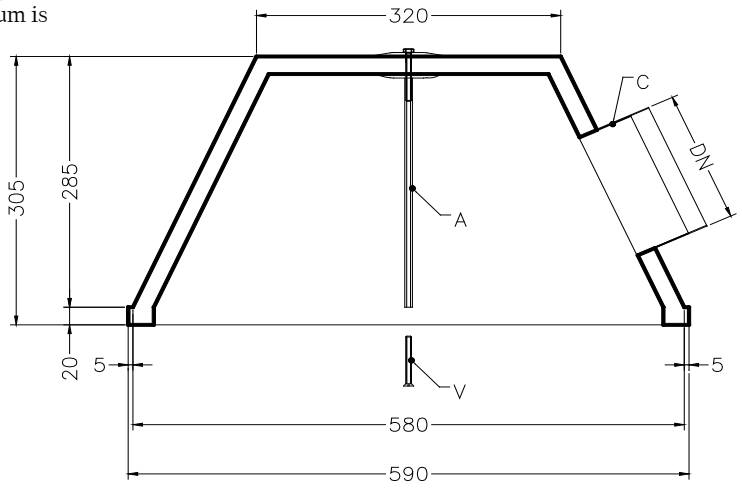
Thermal conductivity:
Δ (average) 0,0320 W/mK - Test report CSI 0037/DC/TTS/07.

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

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

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

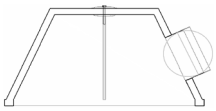
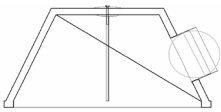
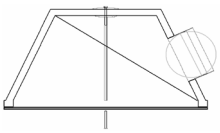
ASSEMBLED PPS



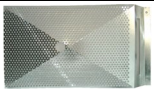
PS PLENUM

CODES

PPS
SERIES

Image	Description	Connector diameter	Code
	Plenum in PS already assembled with connector in ABS with damper and without equalizer.	125	PPS-PS125
		160	PPS-PS160
		200	PPS-PS200
		250	PPS-PS250
	Plenum in PS already assembled, complete with connector in ABS with damper and equalizer.	125	PPS-PES125
		160	PPS-PES160
		200	PPS-PES200
		250	PPS-PES250
	Plenum in PS already assembled, complete with connector in ABS with damper, equalizer and diffuser KQ1 600.	125	PPS-KQ1PES125
		160	PPS-KQ1PES160
		200	PPS-KQ1PES200
		250	PPS-KQ1PES250

ACCESSORIES

	Only PS bell shape body with fixing bar (withour connector)		PPS-KIT
	Equalizer for plenum		PPS-E
	Connector in ABS	125 160 200 250	RR10-125 RR10-160 RR10-200 RR10-250
	Damper for connectors in ABS	125 160 200 250	RRS10-125 RRS10-160 RRS10-200 RRS10-250
	Fixing screw (usually already included in the DIFFUSER)		PPS-V680T