HIGH INDUCTION LONG THROW DIFFUSERS FOR DEEP JET

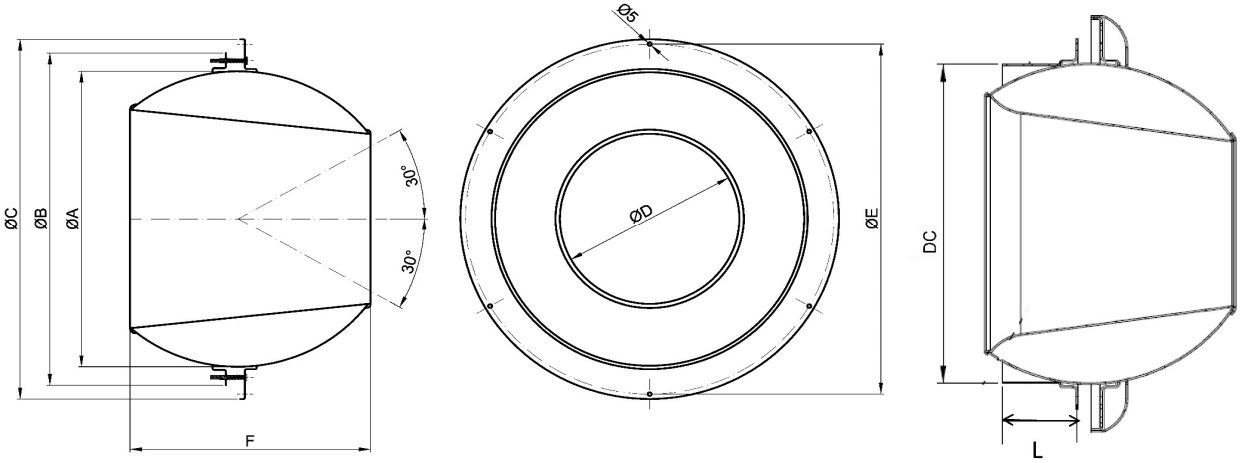
KV
SERIES

TECHNICAL CHARACTERISTICS

TECHNICAL DATA: High induction long throw diffuser with adjustable directional jet to operate for heights from 2,80 to 30 meters.
FINISH: KV in aluminium - KVR painted white epoxy in powder finish RAL 9010 - plates painted white epoxy in powder finish RAL 9010 .
MATERIALS: KV e KVR manufactured from aluminum sheet - plates manufactured from galvanized sheet steel.
FITTING: With front screws (not supplied) directly to the duct or to the plenum.
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 chlorine, such as swimming pools, spas and some types of food industries

STANDARD

WITH CONNECTION FOR FLEXIBLE DUCT



ØA	external diameter of the diffuser	ØE	diameter of the circle of the fixing holes
ØB	diameter of the internal flange	F	thickness of the diffuser
ØC	diameter of the external flange	DC	diameter of the flexible duct
ØD	diameter of the diffuser	L	length of the connector

Model	Ø A (mm)	Ø B (mm)	Ø C (mm)	Ø D (mm)	Ø E (mm)	N° holes	F (mm)	DC (mm)	L (mm)	Ak (m²)
40	80	109	135	40	119	3	56	------	------	0,0013
50	102	132	166	50	148	3	78	------	------	0,0020
80	160	203	254	80	220	3	131	160	45	0,0050
110	200	246	285	110	266	3	144	200	45	0,0095
150	300	350	387	150	368	6	233	300	45	0,0177
200	400	448	485	200	472	6	308	400	45	0,0314
230	400	448	485	230	472	6	308	400	45	0,0415
230S*	400	448	485	230	472	6	308	400	45	0,0415

*KV 230S: without internal cone

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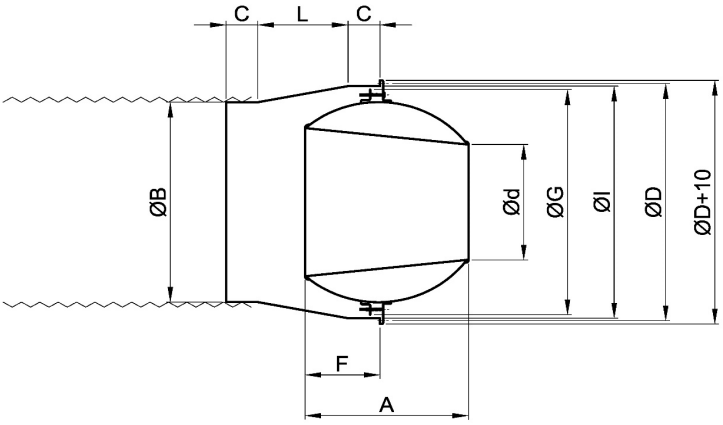
SERIES

TECHNICAL CHARACTERISTICS

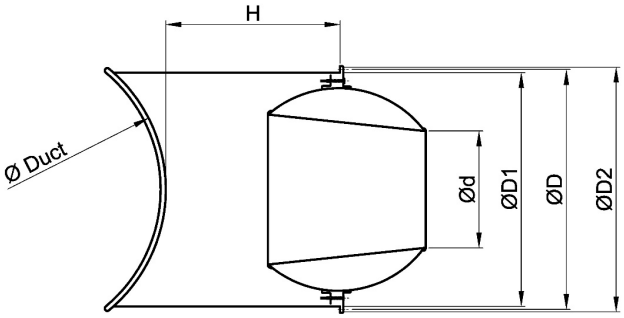
KV-RF
Plenum for flexible duct connection



Ød	Diameter of the diffuser
ØG	Diameter of the internal flange
ØI	Internal diameter of the plenum
ØD	Diameter of the circle of the fixing holes
ØD + 10	External diameter

Model	Ø D [mm]	Ø d [mm]	A [mm]	F [mm]	B [mm]	Ø G [mm]	I [mm]	L [mm]	C [mm]	Installation hole [mm]
KV-RF040	119	40	56	22	78	109	113	40	40	113
KV-RF050	148	50	78	30	98	132	138	40	60	136
KV-RF080	220	80	131	57	158	203	210	100	60	207
KV-RF110	266	110	144	60	195	246	251	100	60	250
KV-RF150	368	150	233	103	298	350	358	170	60	354
KV-RF200	472	200	308	141	398	448	462	170	60	452
KV-RF230	472	230	308	141	398	448	462	170	60	452

KV-RC
Plenum for circular duct connection



Ød	Diameter of the diffuser
ØD1	Internal diameter of the plenum
ØD	Diameter of the circle of the fixing holes
ØD2	External diameter

Model	nr holes	Ø holes [mm]	Ø D [mm]	Ø d [mm]	Ø D1 [mm]	Ø D2 [mm]	H [mm]	Ø duct min-max [mm]
KV-RC040	3	4,2	119	40	113	129	150	160-450
KV-RC050	3	4,2	148	50	138	158	150	200-500
KV-RC080	3	5	220	80	210	230	200	315-630
KV-RC110	3	5	266	110	251	282	300	315-800
KV-RC150	6	5	368	150	358	378	300	500-800
KV-RC200	6	5	472	200	462	480	350	500-1000
KV-RC230	6	5	472	230	462	480	350	500-1000

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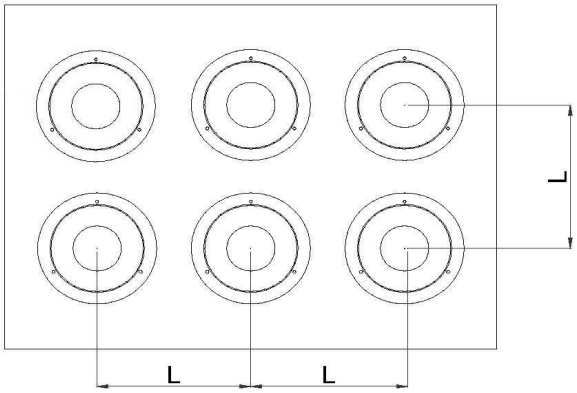
TECHNICAL CHARACTERISTICS

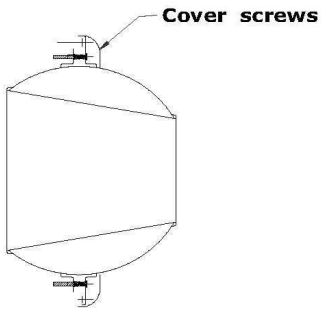
P30 . . .
Diffusers fitted on assembly plate

Model	I min (mm)
KV 40	170
KV 50	210
KV 80	300
KV 110	350
KV 150	430
KV 200	550
KV 230	550



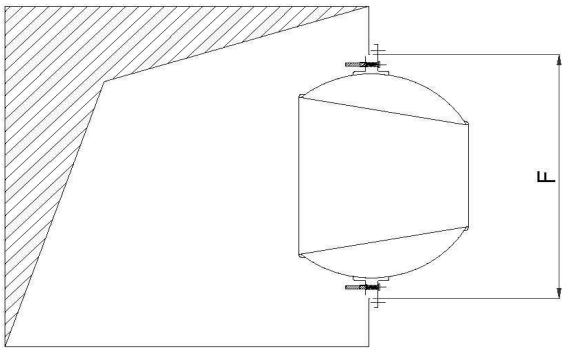
KV-C COVER SCREWS FLANGE

Model	Cover screws flange
KV 40	KV-C40
KV 50	KV-C50
KV 80	KV-C80
KV 110	KV-C110
KV 150	KV-C150
KV 200	KV-C200
KV 230	KV-C230



MOUNTING ON DUCT OR WALL

Model	F (mm)
KV 40	113
KV 50	136
KV 80	207
KV 110	250
KV 150	354
KV 200	452
KV 230	452



HIGH INDUCTION LONG THROW DIFFUSERS FOR DEEP JET

KV
SERIES

SWIRL DEFLECTOR

SWIRL DEFLECTOR:
applied in the rear of the speaker generates a rotation motion which increases the induction and reduces the launch of the diffuser
The swirl deflector is particularly suitable for the entry of high flow rates in medium-sized spaces preventing the onset of sensitive drafts in the occupied zone.

HIGH INDUCTION LONG THROW DIFFUSERS FOR DEEP JET

AUTHOMATIC REGULATION
WITH THERMOSTATIC SPRING

KV-CT
SERIES

OVERVIEW
The KVCT diffuser series come equipped with a thermostatic return spring to regulate the angle of the jet.

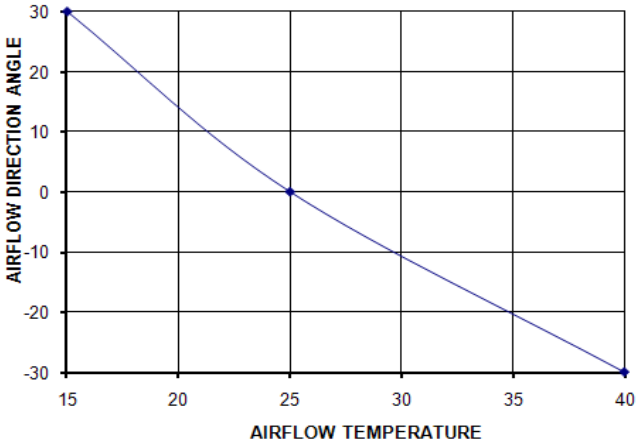
THROW REGULATION
To obtain the best heating comfort levels it is necessary to direct the flow of air downwards to eliminate the stratification of the air. Where as in cooling conditions is best to aim the flow of air towards the ceiling to eliminate the forming or air currents in the occupied zone.
The KVCT diffusers automatically regulate the angle of the jet to obtain the optimal throw angle.
The temperature of the injected air is in fact determines the extension or retraction of the thermostatic spring which itself determines the rotation of the jet downwards or upwards.
By choosing the KVCT diffuser it is possible to eliminate:
- **electric thermostats;**
- **electrical wiring system;**
- **servomotors.**

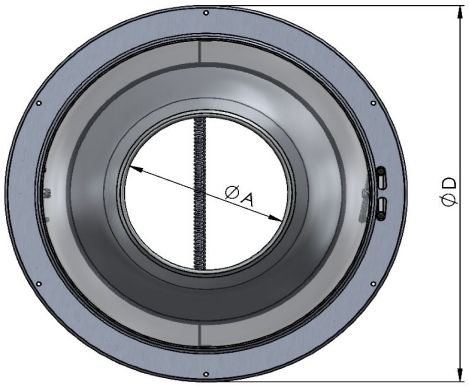
The maximum range is +/- 30°. This can be limited to smaller angles, with a 5° pitch even with a different regulation for heating and cooling, by inserting and regulating stop screws on a predisposed metal plate.

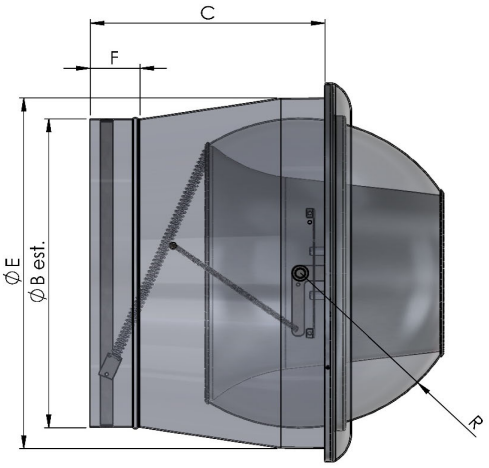
The memory of the form of the spring guarantees the precise relation between the injected air and the inclination angle for an also unlimited number of cycles.

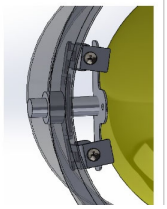
AERAULIC PERFORMANCES
The aeraulic performance of the KVCT diffusers are, in relation to the diameter, is the exact same as for those of the equivalent KV series diffuser.

AVERAGE DIRECTIONAL AIRFLOW ANGLE IN RELATION TO THE TEMPERATURE OF THE AIRFLOW

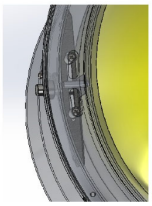








Dn 80



other diameters

Model	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	R [mm]	regulation damper	swirl deflector
80	80	158	200	258	204	50	80	yes	yes
110	110	198	215	288	252	60	100	yes	yes
150	150	313	283	388	352	60	150	yes	yes
200	200	398	283	488	452	60	200	yes	yes
230	230	398	283	488	452	60	200	yes	yes

HIGH INDUCTION LONG THROW DIFFUSERS FOR DEEP JET

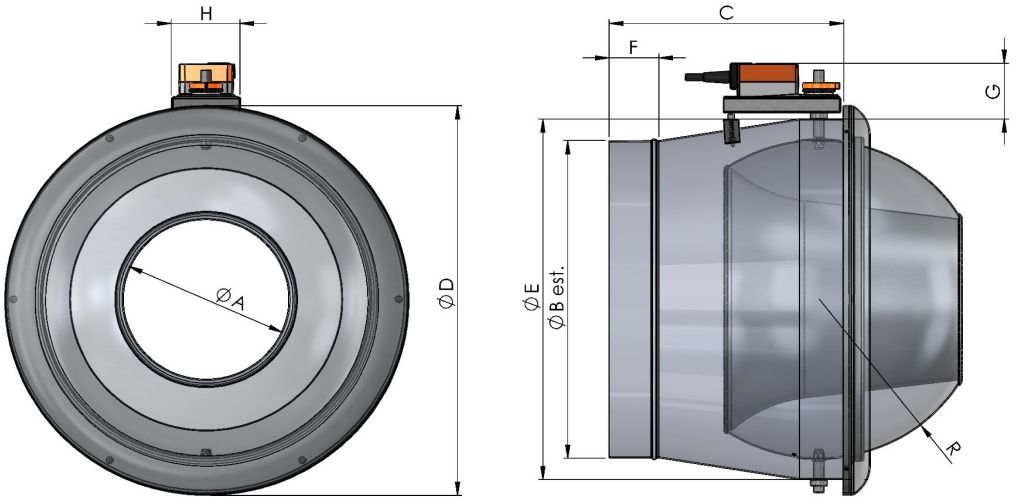
KV
SERIES

AUTHOMATIC REGULATION
WITH SERVOMOTOR

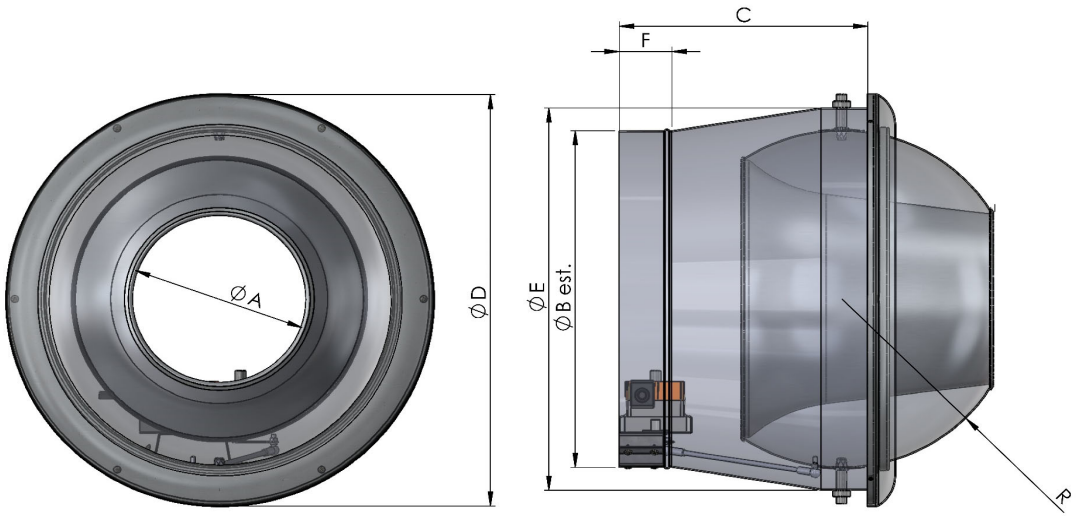
THROW REGULATION

To obtain the best heating comfort levels it is necessary to direct the flow of air downwards to eliminate the stratification of the air. Where as in cooling conditions is best to aim the flow of air towards the ceiling to eliminate the forming or air currents in the occupied zone.

With the diffusers KV1-KV2 series the inclination of the jet is controlled by servo motor ON / OFF or modulating to obtain the optimum launch angle.
The maximum range is + / -30 °. This excursion may be limited to smaller angles with different adjustment for heating and cooling.



KV1
external
motor



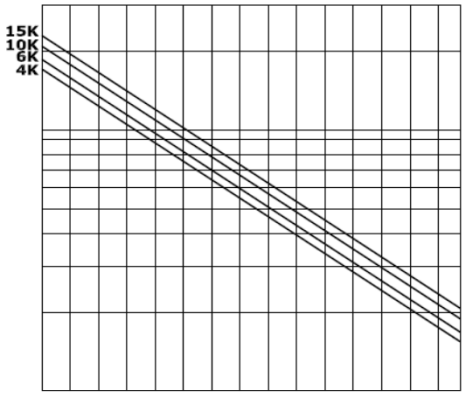
KV2
internal
motor

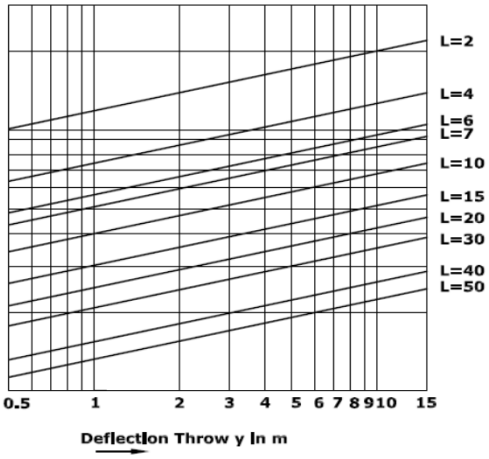
Model	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]	R [mm]	regulation damper	swirl deflector
80	80	158	200	258	204	50	38	60	80	yes	yes
110	110	198	215	288	252	60	70	85	100	yes	yes
150	150	313	283	388	352	60	70	85	150	yes	yes
200	200	398	283	488	452	60	70	85	200	yes	yes
230	230	398	283	488	452	60	70	85	200	yes	yes

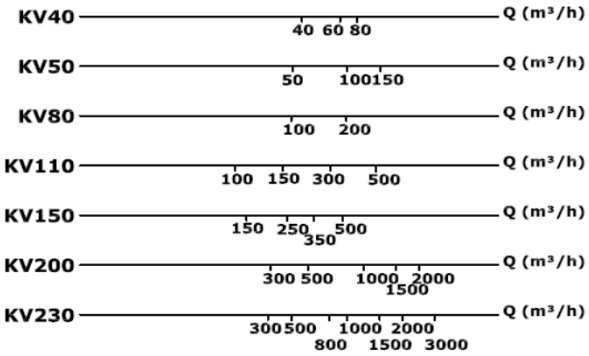
HIGH INDUCTION LONG THROW DIFFUSERS FOR DEEP JET

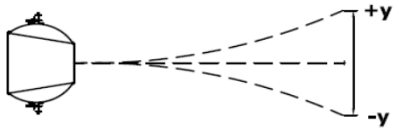
KV
SERIES

PERFORMANCES









ΔK temperature difference between injected air and ambient temperature

The diagram allows to obtain the width of the opening of the throw at the preferred distance from the diffuser.
On the line relative to the size of the diffuser, trace a vertical line from the required air flow rate.
At the intersection between this line and the line at an angle relative to the temperature difference chosen, trace a secon horiaontal line.
At the intersection between this line and the that at an angle relative to the distance that is of interest, trace a third vertical line.
On the diagram scale of the right hand side, it is therefore possible to read the opening of the throw in the required conditions.

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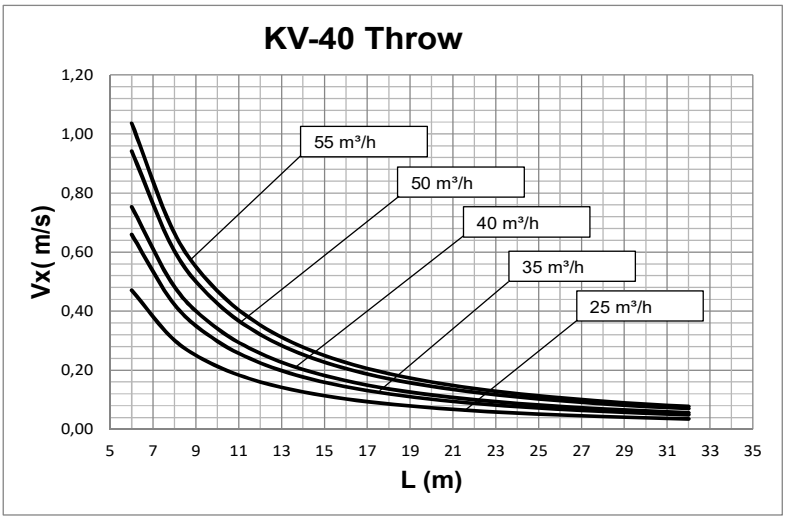
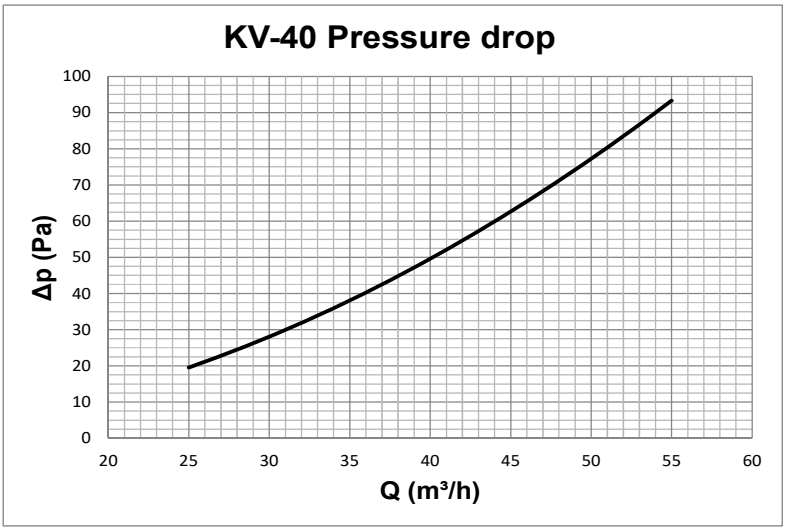
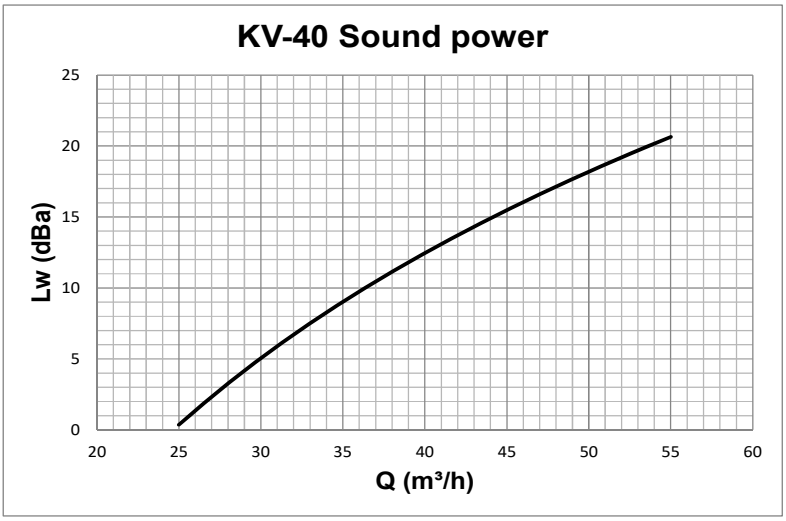
PERFORMANCE
KV 40



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





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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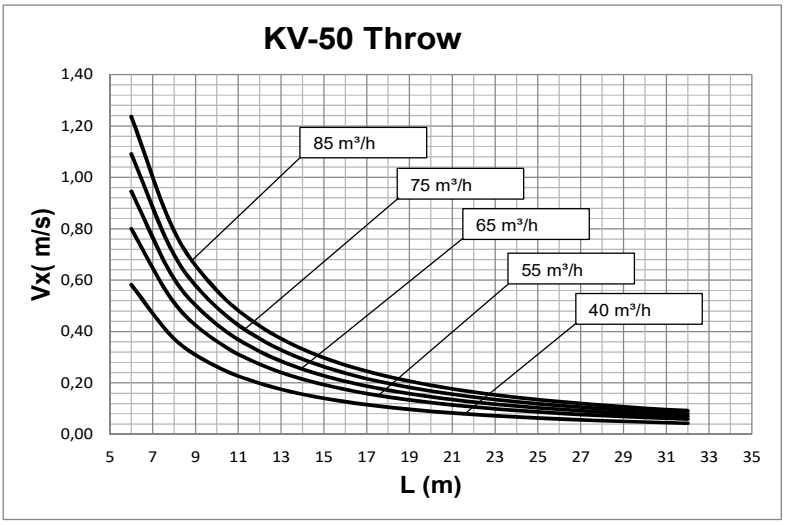
HIGH INDUCTION LONG THROW DIFFUSERS FOR DEEP JET

KV
SERIES

PERFORMANCE
KV 50



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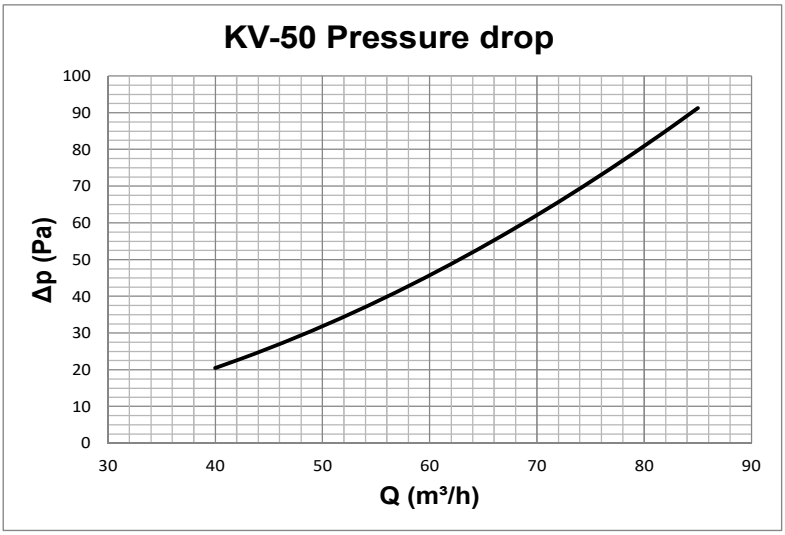

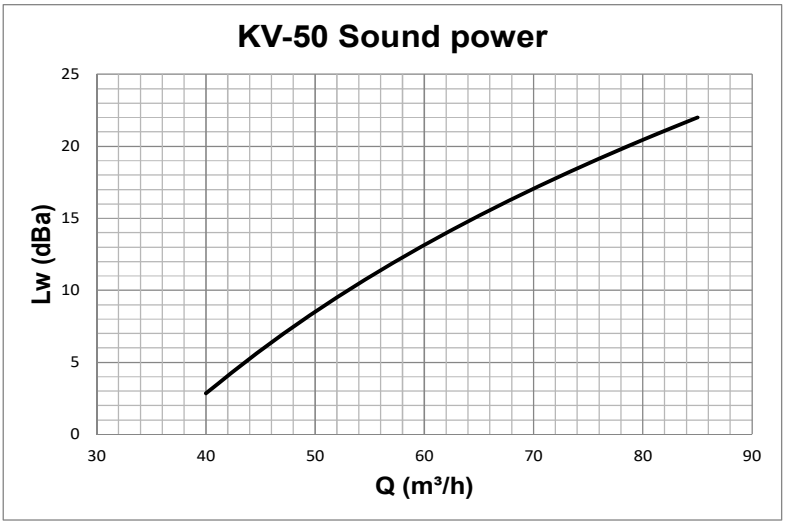

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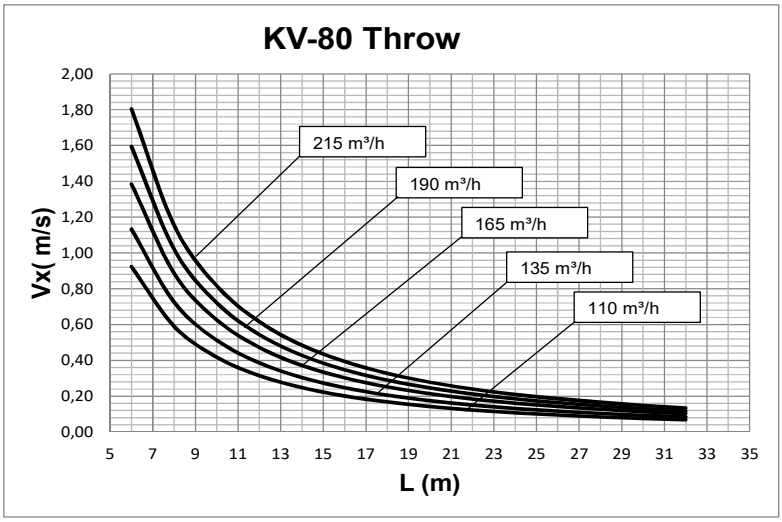
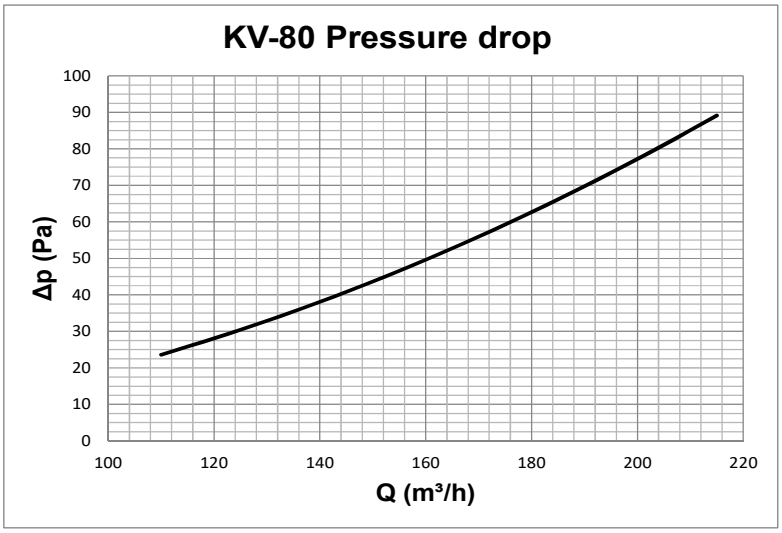
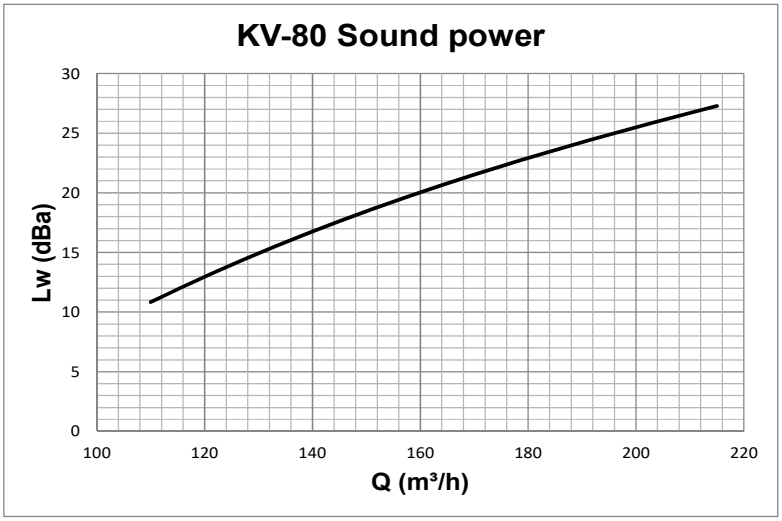
PERFORMANCE
KV 80







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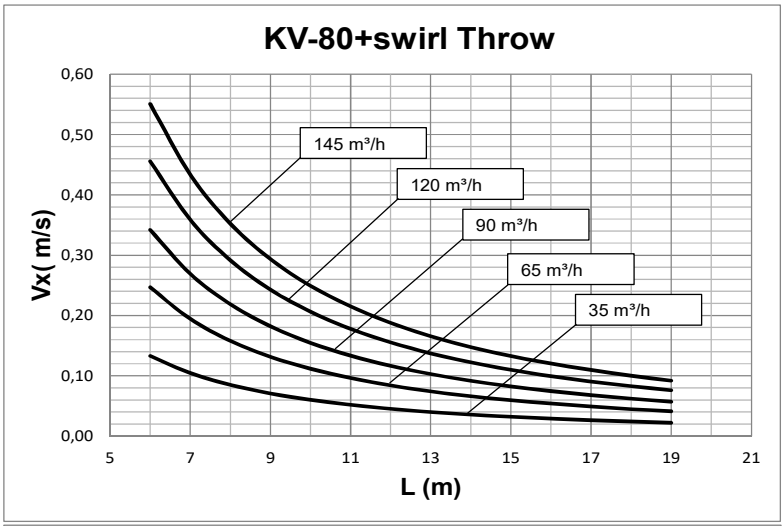
PERFORMANCE
KV 80



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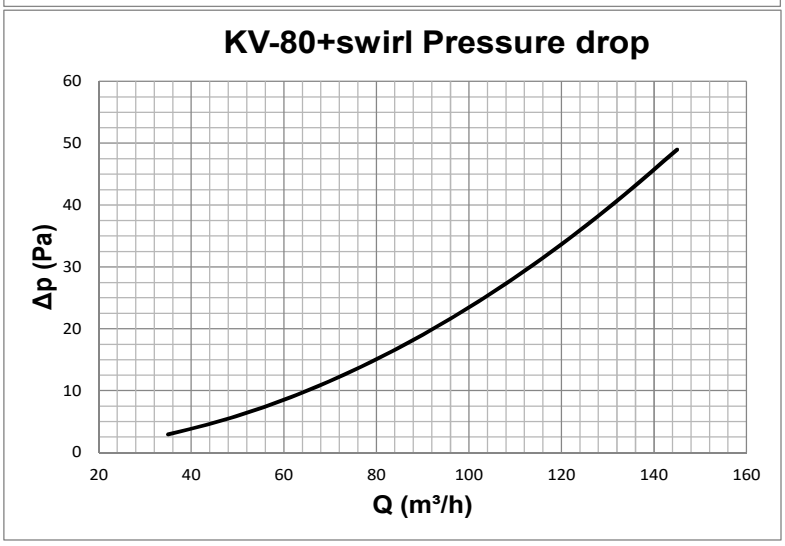

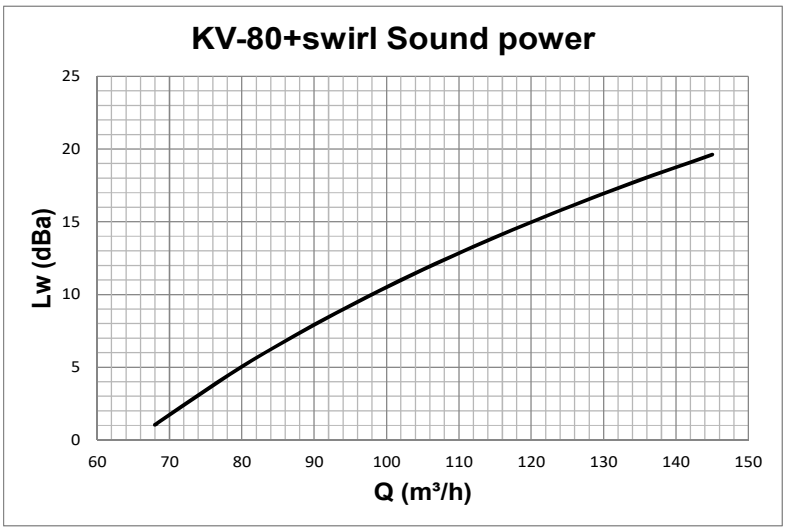

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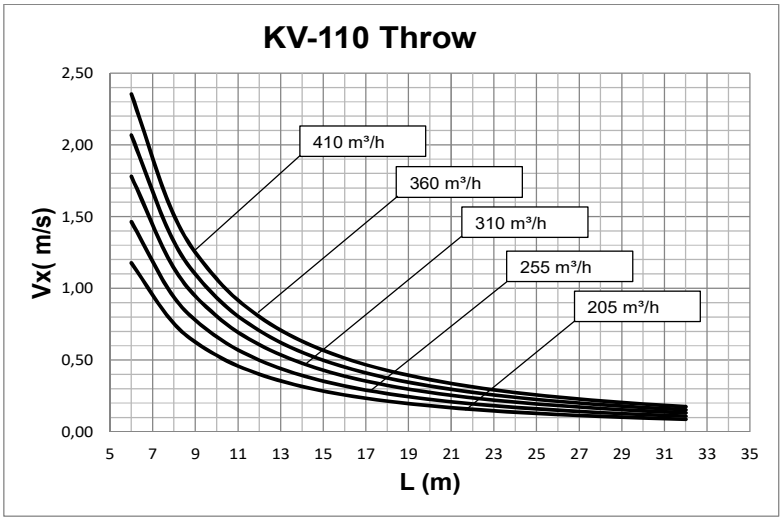
HIGH INDUCTION LONG THROW DIFFUSERS FOR DEEP JET

KV
SERIES

PERFORMANCE
KV 110



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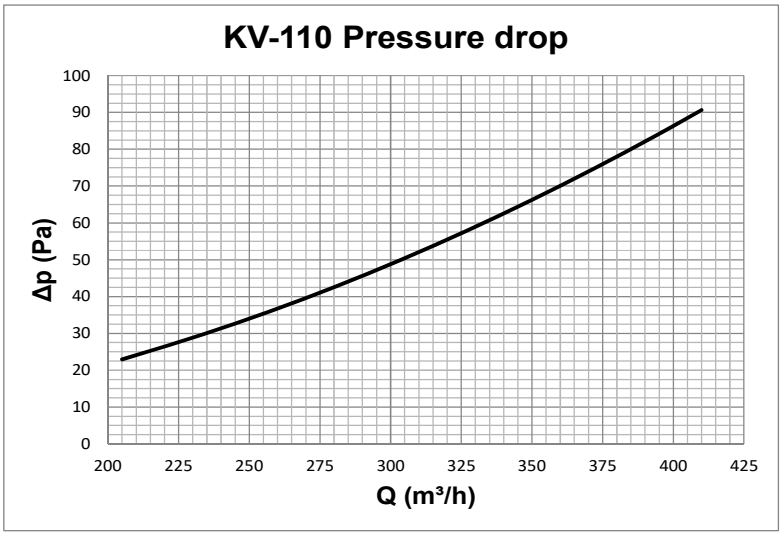

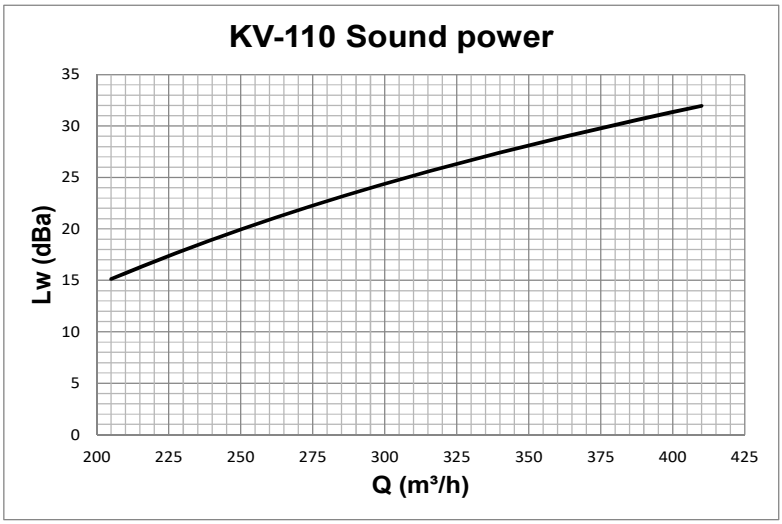

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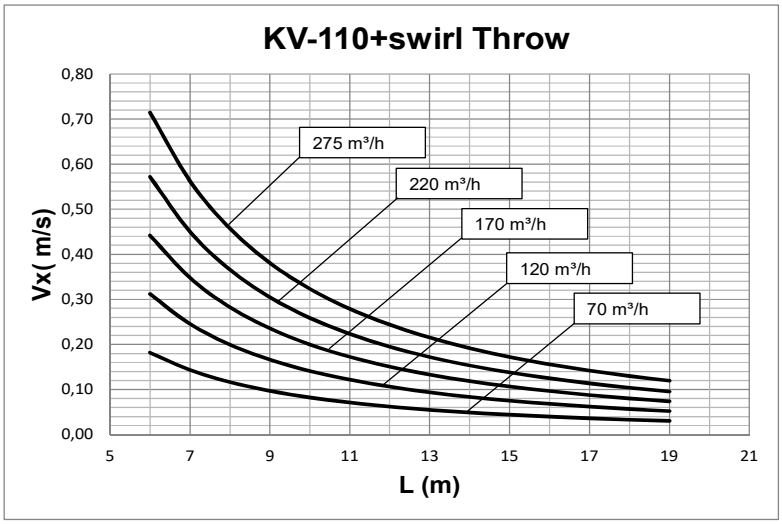
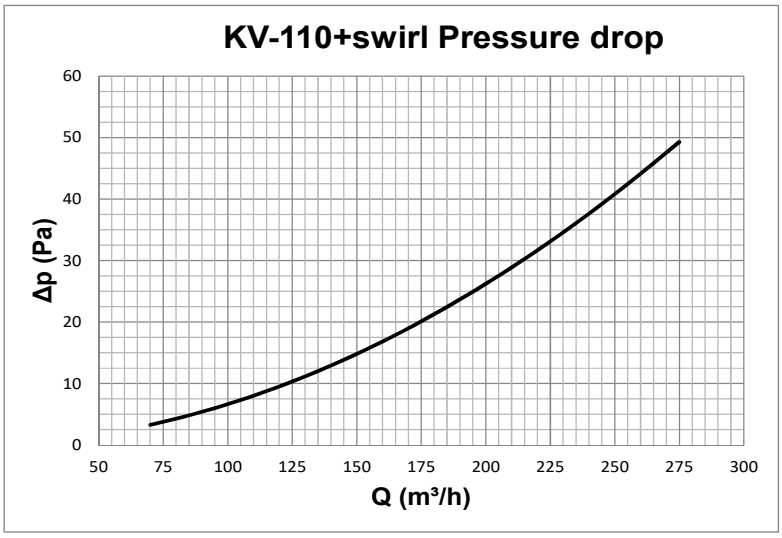
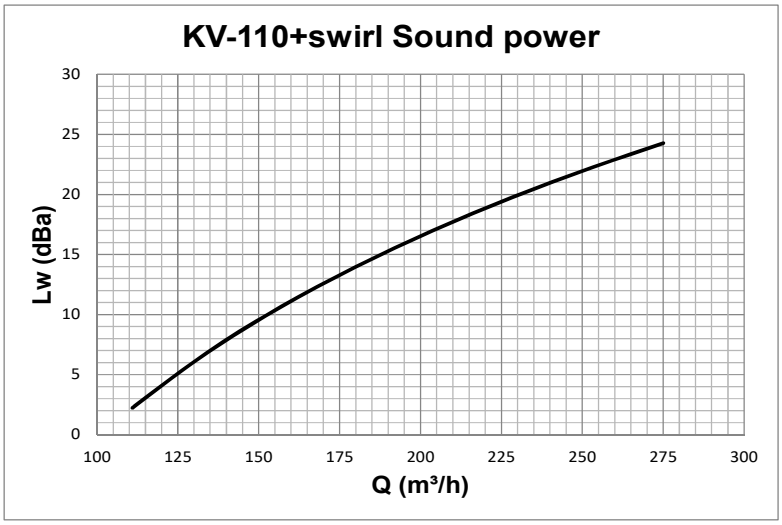
KV
SERIES

PERFORMANCE
KV 110



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





Data measured in reverberation room in accordance with international standards:
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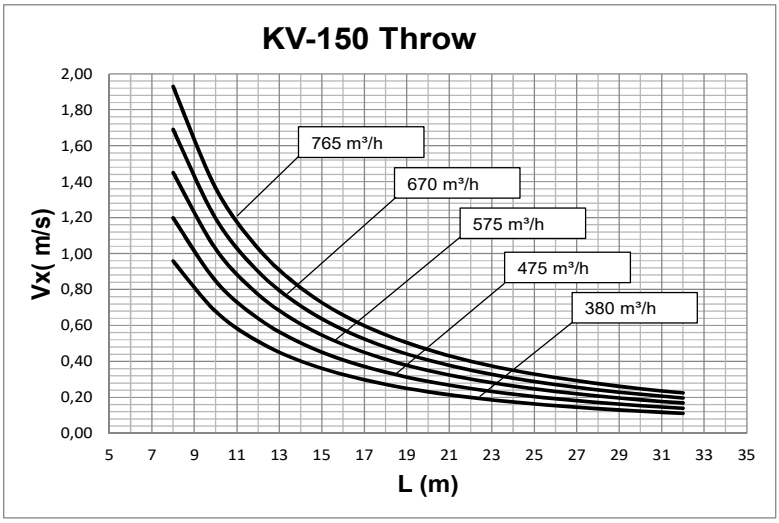
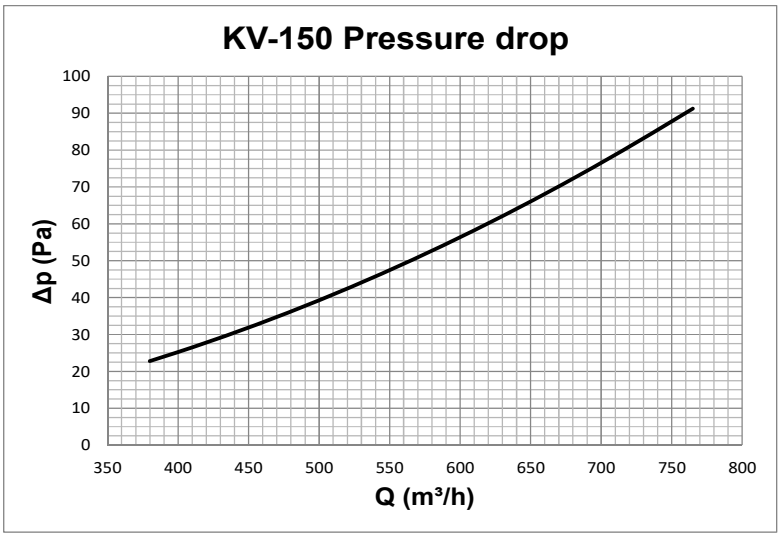
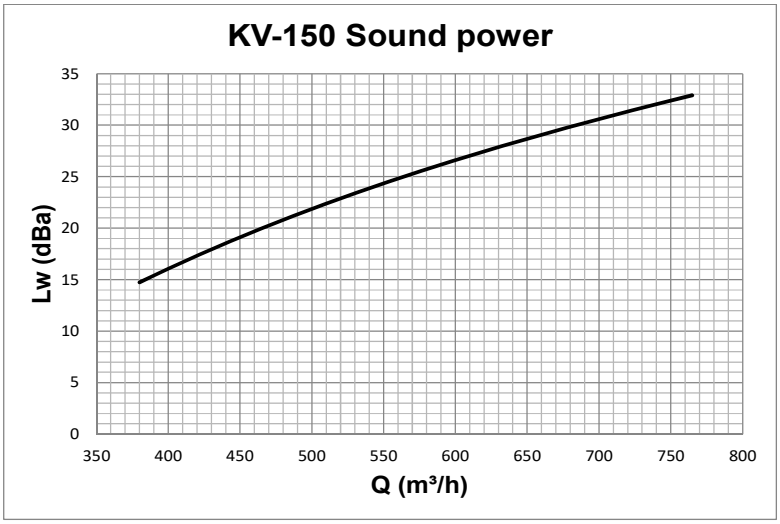
HIGH INDUCTION LONG THROW DIFFUSERS FOR DEEP JET

KV
SERIES

PERFORMANCE
KV 150







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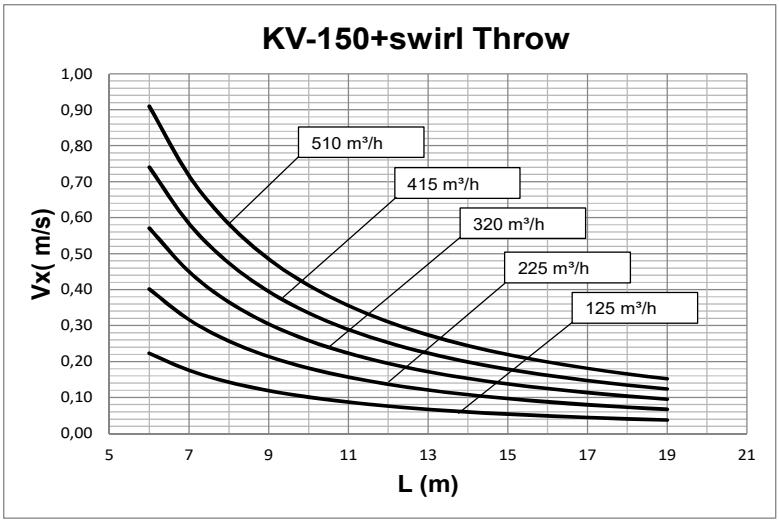
HIGH INDUCTION LONG THROW DIFFUSERS FOR DEEP JET

KV
SERIES

PERFORMANCE
KV 150



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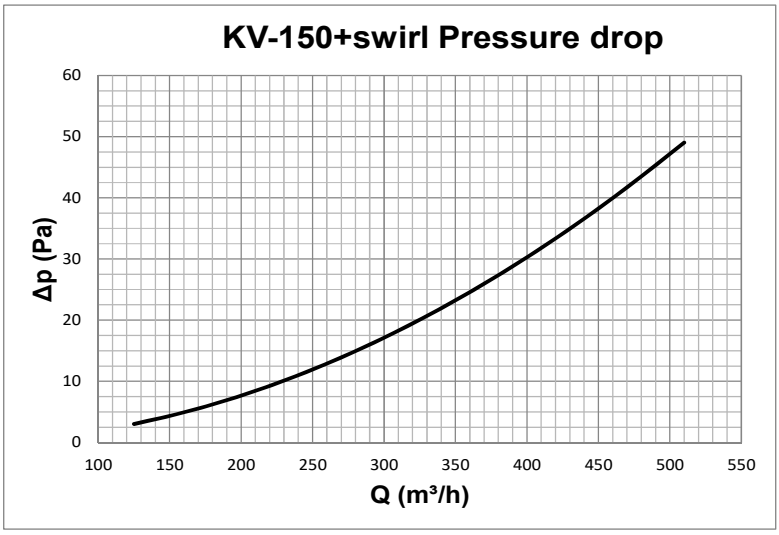

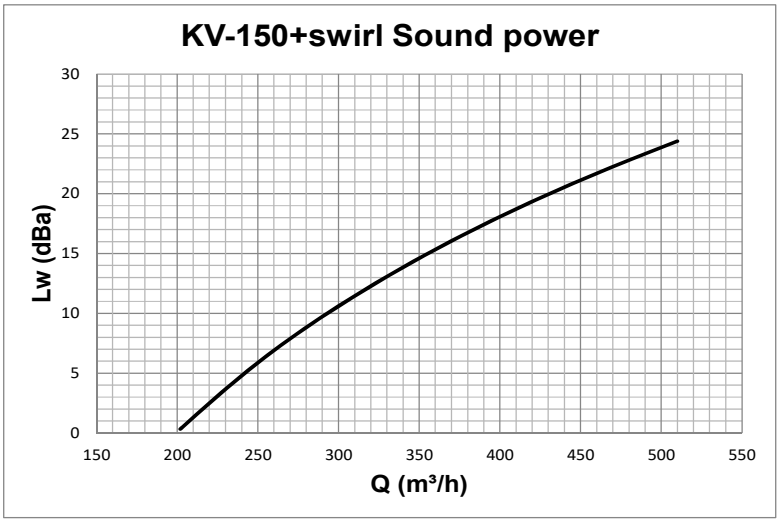

Data measured in reverberation room in accordance with international standards:
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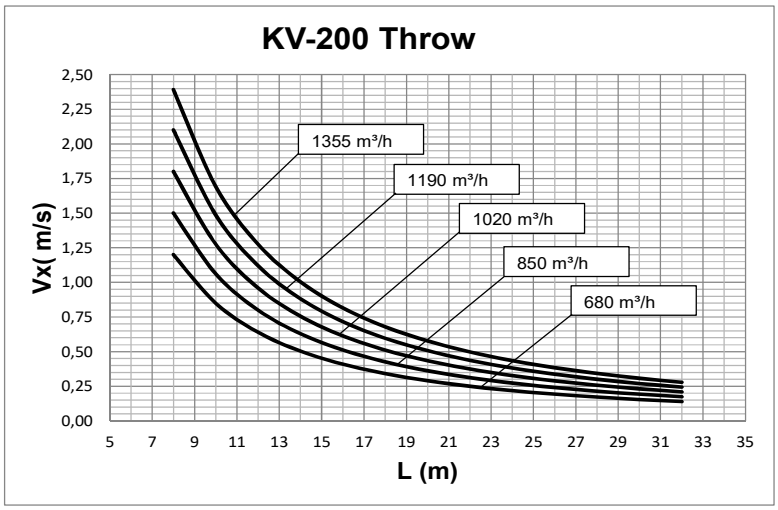
HIGH INDUCTION LONG THROW DIFFUSERS FOR DEEP JET

KV
SERIES

PERFORMANCE
KV 200



Data obtained from CFD mathematical model in virtual test room operating in isothermal conditions in accordance with the international standard:
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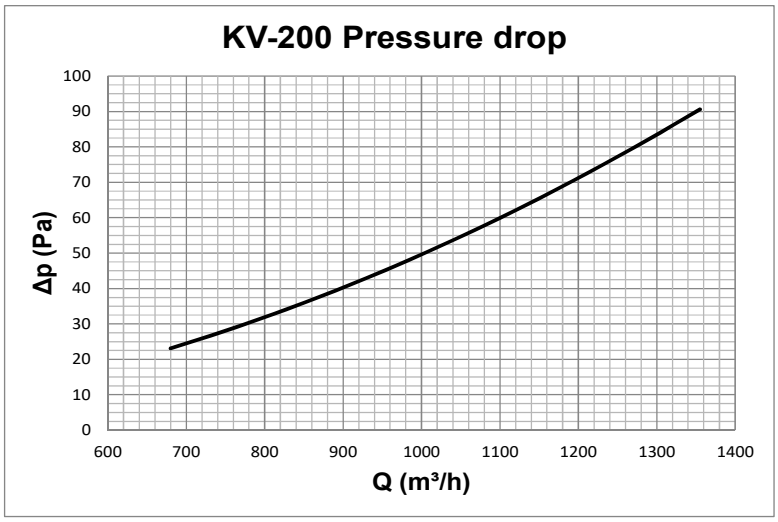
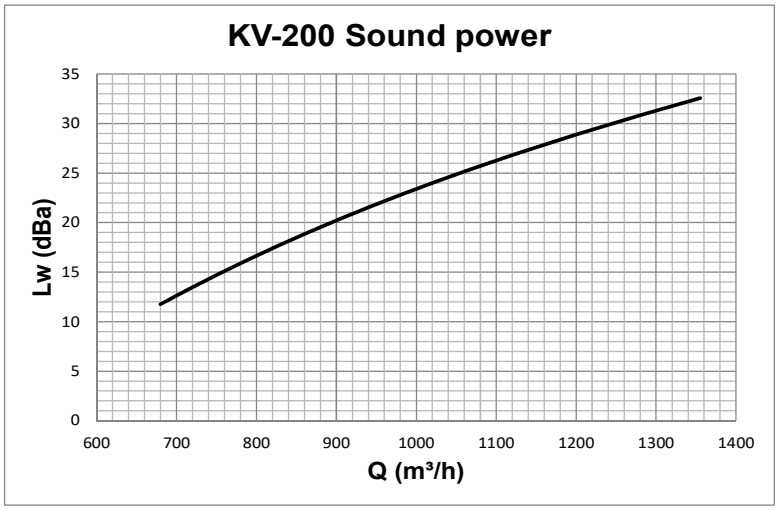
L (m) horizontal distance in metres from the centre of the diffuser
VL (m/s) maximum speed in the air stream





Data measured in reverberation room in accordance with international standards:
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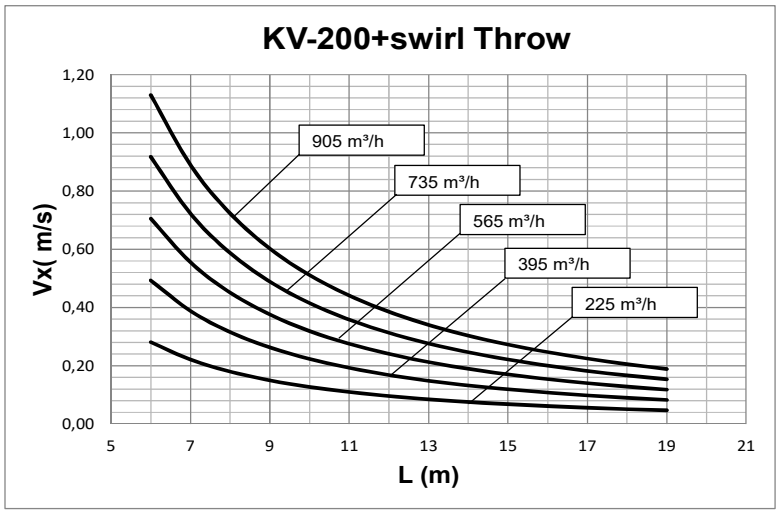
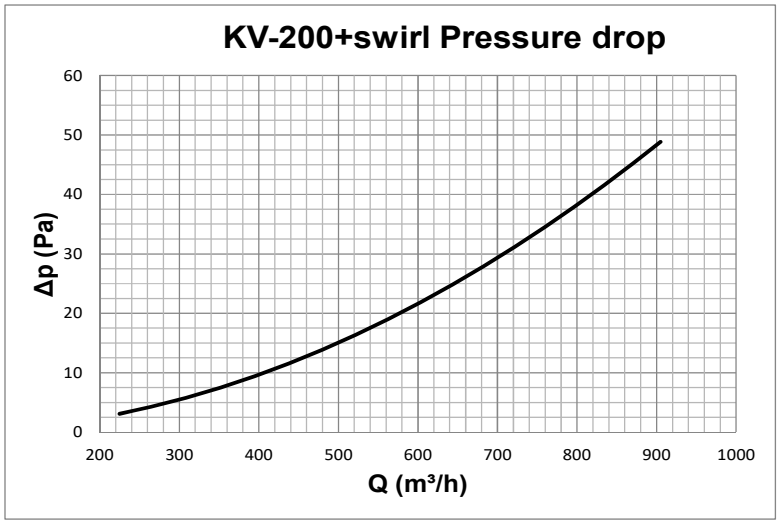
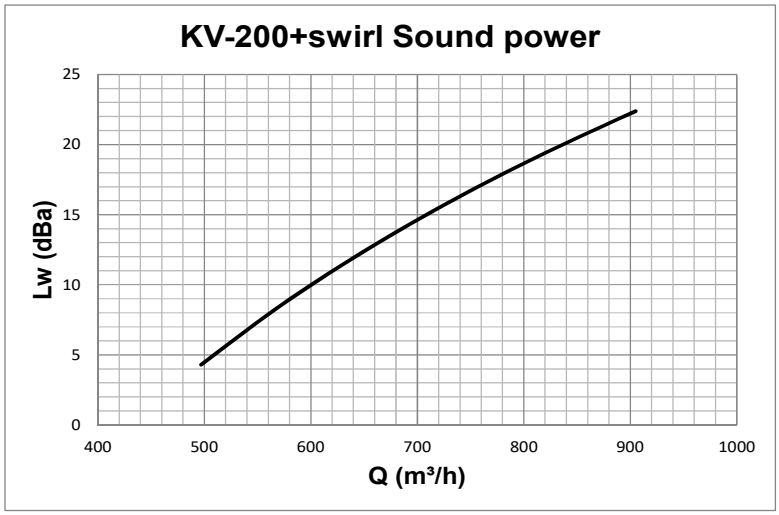
HIGH INDUCTION LONG THROW DIFFUSERS FOR DEEP JET

KV
SERIES

PERFORMANCE
KV 200







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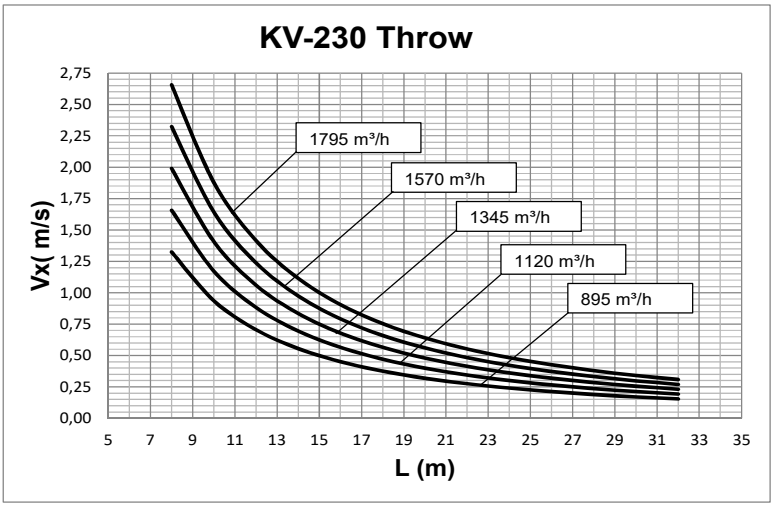
HIGH INDUCTION LONG THROW DIFFUSERS FOR DEEP JET

KV
SERIES

PERFORMANCE
KV 230



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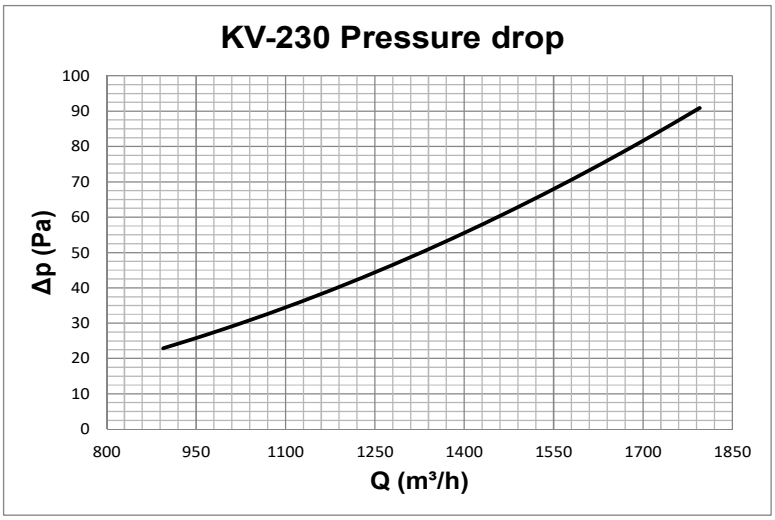
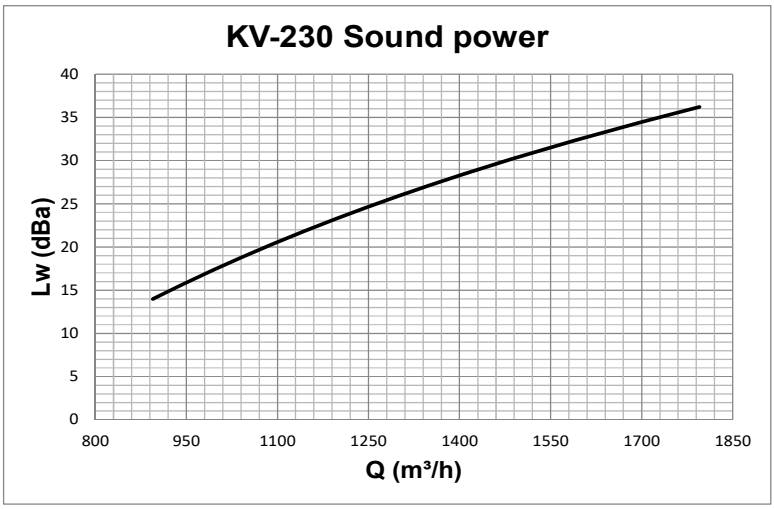
L (m) horizontal distance in metres from the centre of the diffuser
VL (m/s) maximum speed in the air stream





Data measured in reverberation room in accordance with international standards:
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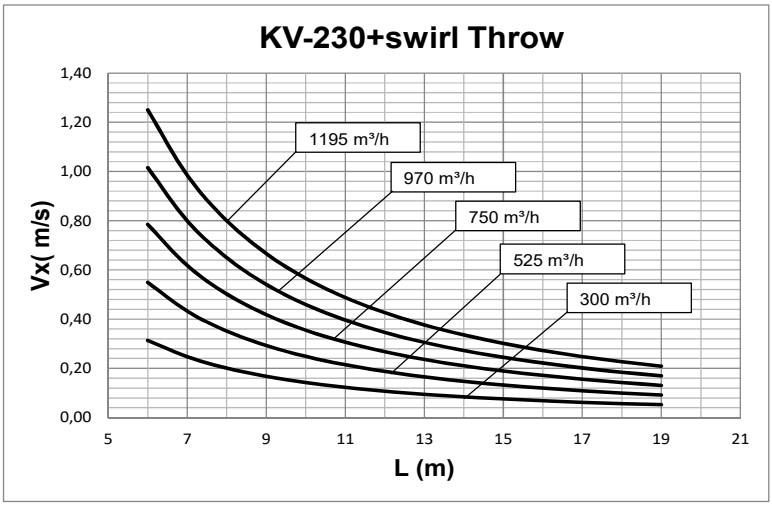
HIGH INDUCTION LONG THROW DIFFUSERS FOR DEEP JET

KV
SERIES

PERFORMANCE
KV 230



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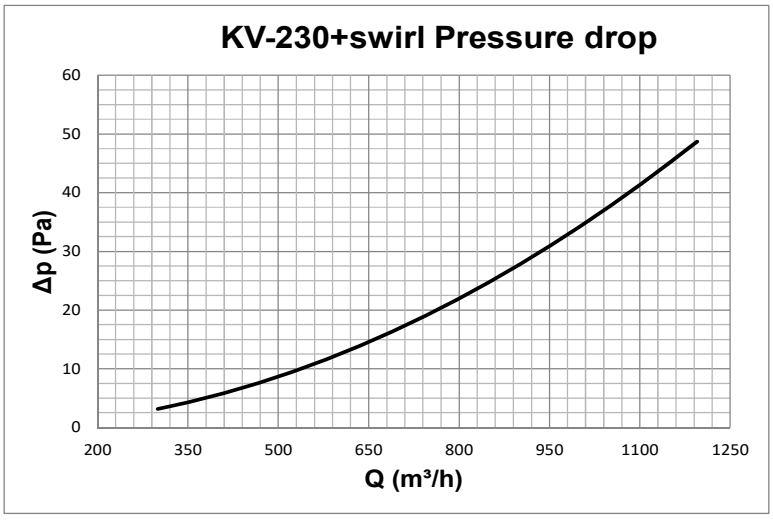

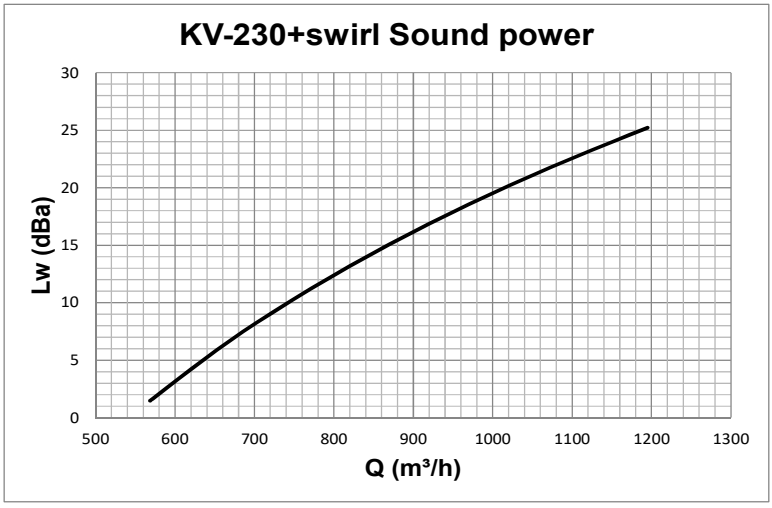

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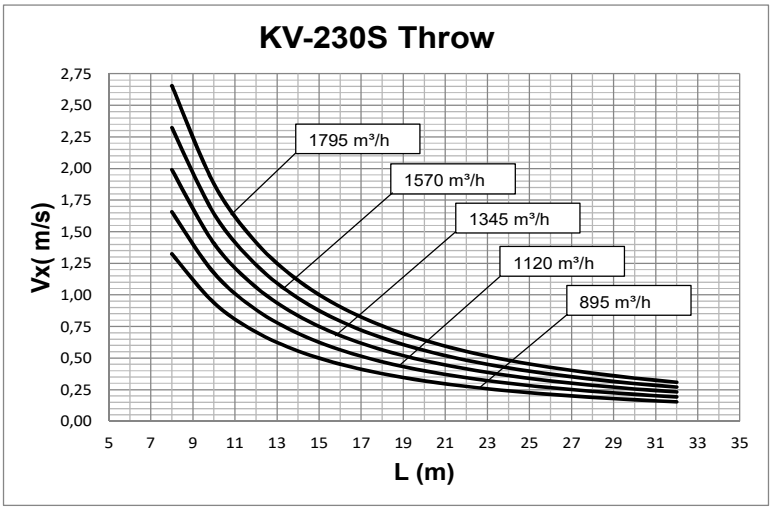
HIGH INDUCTION LONG THROW DIFFUSERS FOR DEEP JET

KV
SERIES

PERFORMANCE
KV 230S



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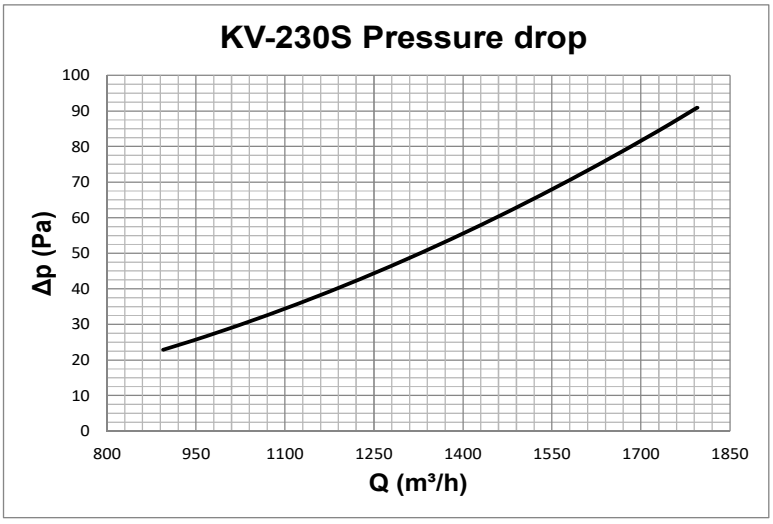

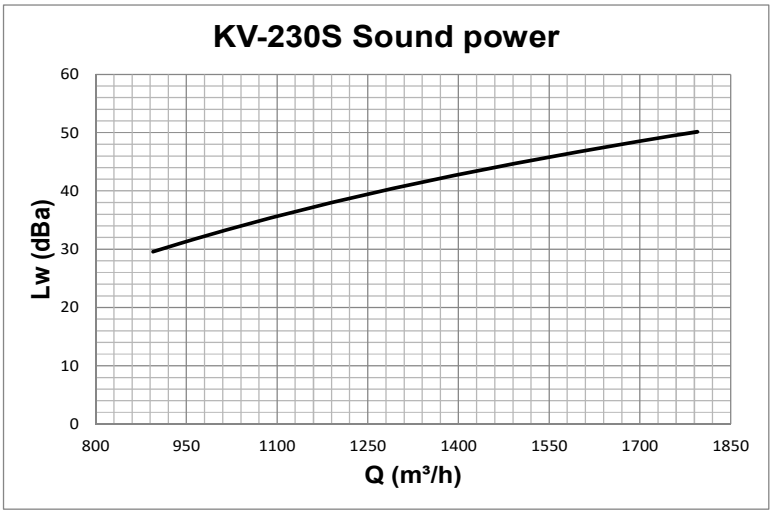

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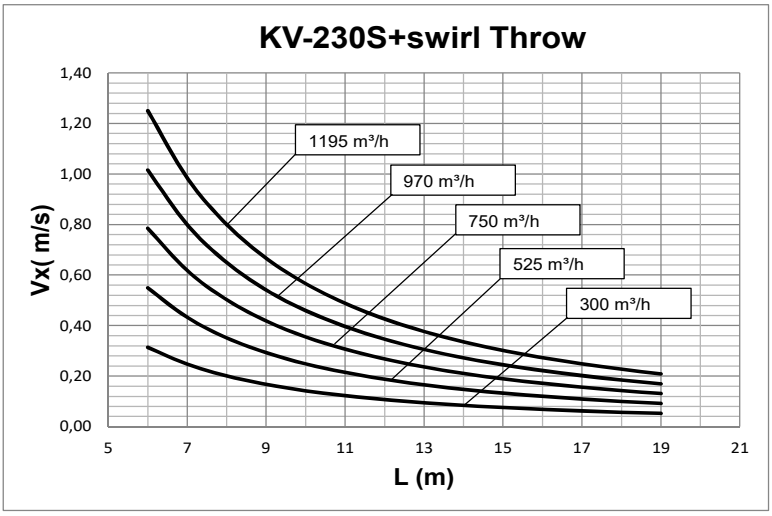
HIGH INDUCTION LONG THROW DIFFUSERS FOR DEEP JET

KV
SERIES

PERFORMANCE
KV 230S



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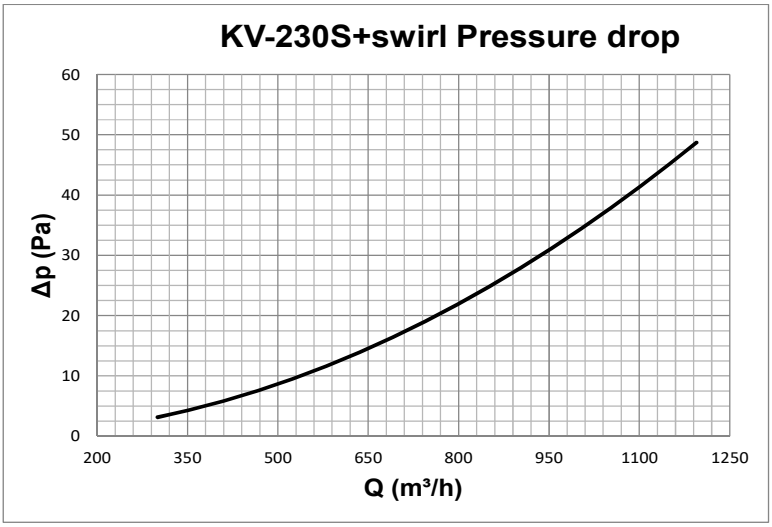

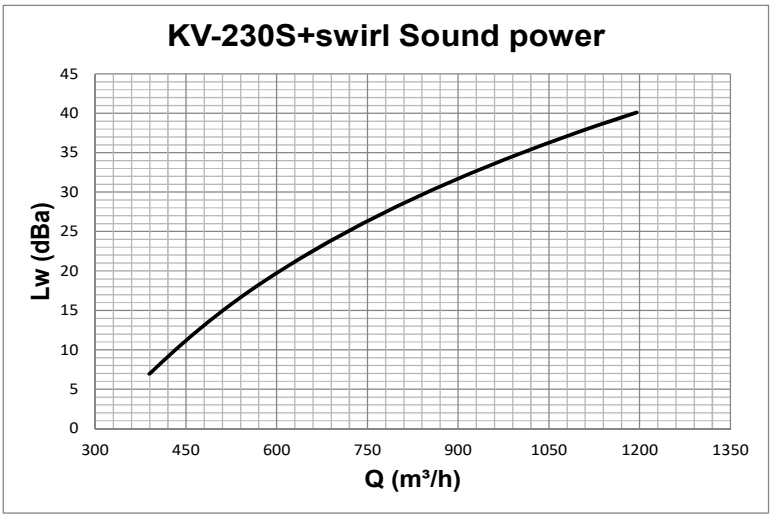

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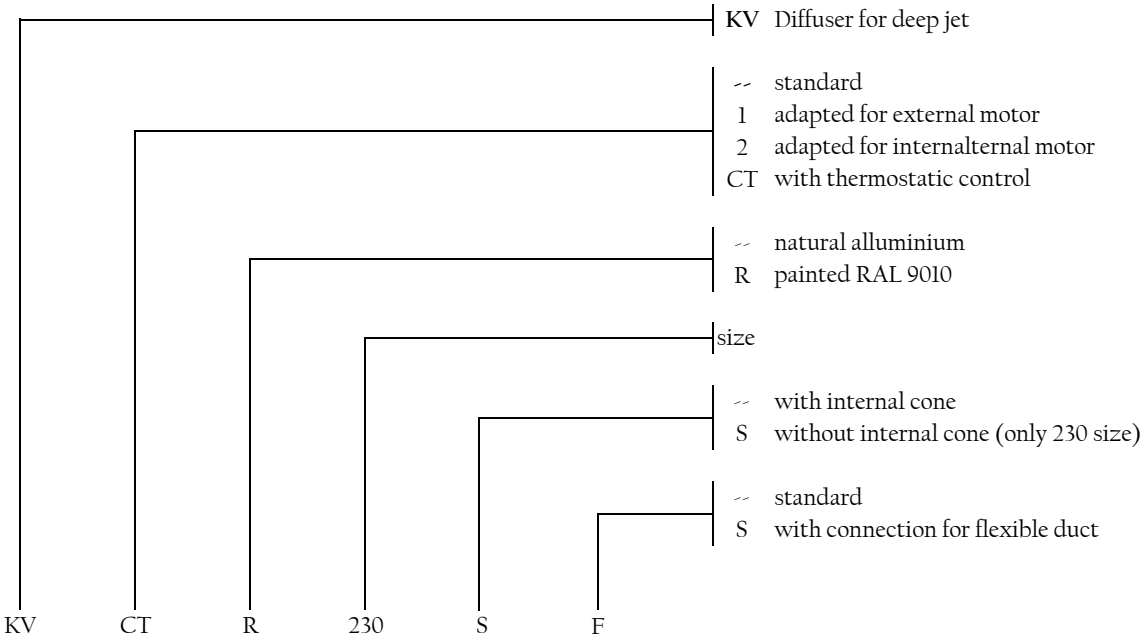
HIGH INDUCTION LONG THROW DIFFUSERS FOR DEEP JET

KV
SERIES

CODES AND ACCESSORIES



Model	Cover screws flange		Connector	
	Anodized	RAL 9010	Circular duct	Flexible duct
KV40	KV-C40	KVR-C40	KV-RC40*	KV-RF40
KV50	KV-C50	KVR-C50	KV-RC50*	KV-RF50
KV80	KV-C80	KVR-C80	KV-RC80*	KV-RF80
KV110	KV-C110	KVR-C110	KV-RC110*	KV-RF110
KV150	KV-C150	KVR-C150	KV-RC150*	KV-RF150
KV200	KV-C200	KVR-C200	KV-RC200*	KV-RF200
KV230	KV-C230	KVR-C230	KV-RC230*	KV-RF230

* when ordering, it is important to speify the duct diameter required

Model	Regulation damper		Swirl deflector	
KV80	KV-S080		KV-T080	
KV110	KV-S110		KV-T110	
KV150	KV-S150		KV-T150	
KV200	KV-S200		KV-T200	
KV230	KV-S230		KV-T230	

Model	ON / OFF MOTOR		PROPORTIONAL MOTOR	
	24V	230V	24V	230V
KV1-80 KV2-80	CM24-L	CM230-1-L	CM24-SR-L	----------
KV1-110 KV2-110	NM24 A	NM230 A	NM24 A SR	NM230 A SR
KV1-150 KV2-150	NM24 A	NM230 A	NM24 A SR	NM230 A SR
KV1-200 KV2-200	NM24 A	NM230 A	NM24 A SR	NM230 A SR
KV1-230 KV2-230	NM24 A	NM230 A	NM24 A SR	NM230 A SR