

#### **OVERVIEW**

KVL **SERIES** 

#### **OVERVIEW**

Manually adjustable diffuser in any direction with a angle limited to  $30^\circ$  with a long throw. Ideal for installations within large areas such as train stations, airports and hypermarkets. Suggested installation height is of above 3 metres

#### INSTALLATION

Fixing by screws on the front side of the diffusers directly to the wall or to a rectangular duct. Fixing by connector to a circular or flexible duct.

#### MATERIAL

Aluminium

#### FINISH

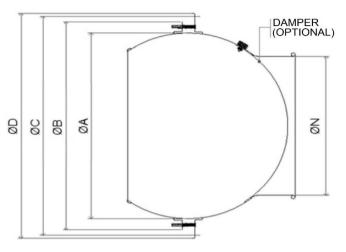
Anodized or painted RAL9010 Other finishes on request.

#### ACCESSORIES

ACCESSORIES	ØB
Screw cover	ØC
Connector for connection to circular duct	ØD
Connector for connection to flexible duct	ØN
Front regulation damper	ØN

#### 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



external diameter of the diffuser diameter of the internal flange diametro cerchio fori fissaggio diameter of the external flange diameter of the diffuser

	DIMENSIONS							AGE SECTIONS
Model	ØN	ØA	ØB	ØC	ØE		Model	Ak (m²)
KV080L	80	160	203	220	254		KV080L	0,0054
KV110L	110	200	246	266	285		KV110L	0,0101
KV150L	150	300	350	368	387	1	KV150L	0,0180
KV200L	200	400	448	472	485		KV200L	0,0310
KV230L	230	400	448	472	485		KV230L	0,0401
KV250L	250	400	448	472	485	1	KV250L	0,0490
KV300L	300	400	448	472	485		KV300L	0,0710

ØA

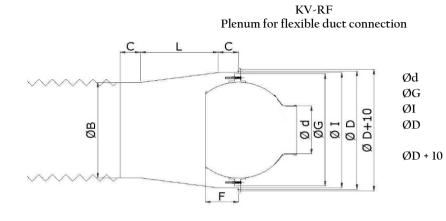
	$\bigcirc$		
KV L	KV L + KV-C	KV LS	KV LS + KV-C
version without front damper	version without front damper	version with front damper	version with front damper
	with cover screws flange	*	with cover screws flange





#### TECHNICAL CHARACTERISTICS

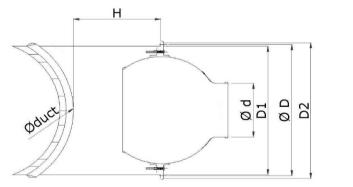
KVL SERIES



Diameter of the diffuser Diameter of the internal flange Internal diameter of the plenum Diameter of the circle of the fixing holes External diameter

Model	ØD [mm]	Ø d [mm]	A [mm]	F [mm]	B [mm]	ØG [mm]	I [mm]	L [mm]	C [mm]
KV-RF080	220	80	131	57	158	203	210	100	60
KV-RF110	266	110	144	60	195	246	251	100	60
KV-RF150	368	150	233	103	298	350	358	170	60
KV-RF200	472	200	308	141	398	448	462	170	60
KV-RF230	472	230	308	141	398	448	462	170	60
KV-RF230	472	250	308	141	398	448	462	170	60
KV-RF230	472	300	308	141	398	448	462	170	60

KV-RC Plenum for circular duct connection



- Diameter of the diffuser
- Internal diameter of the plenum
- Diameter of the circle
- of the fixing holes
- ØD2 External diameter

Ød

ØD1

ØD

Model	nr fori	Ø fori [mm]	Ø D [mm]	Ø d [mm]	Ø DI [mm]	Ø D2 [mm]	H [mm]	Ø duct min-max [mm]
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	460	480	350	500-1000
KV-RC230	6	5	472	230	460	480	350	500-1000
KV-RC230	6	5	472	250	460	480	350	500-1000
KV-RC230	6	5	472	300	460	480	350	500-1000



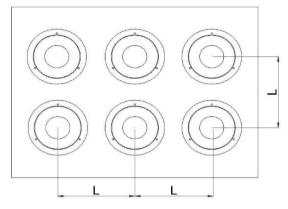


KVL SERIES

### TECHNICAL CHARACTERISTICS

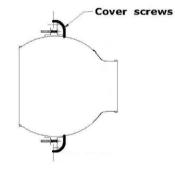
Model	I min (mm)
KV 80 L	300
KV 110 L	350
KV 150 L	430
KV 200 L	430
KV 230 L	550
KV 250 L	550
KV 300 L	550

P30 . . . Diffusers fitted on assembly plate

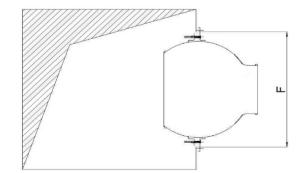




Model	Cover screws flange
KV 80 L	KV-C80
KV 110 L	KV-C110
KV 150 L	KV-C150
KV 200 L	KV-C200
KV 230 L	KV-C230
KV 250 L	KV-C230
KV 300 L	KV-C230



MOUNTING ON DUCT OR WALL



Model	F (mm)
KV 80 L	207
KV 110 L	250
KV 150 L	354
KV 200 L	452
KV 230 L	452
KV 250 L	452
KV 300 L	452



# KVL 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.









# KVL SERIES

#### AUTHOMATIC REGULATION WITH THERMOSTATIC SPRING

#### **OVERVIEW**

The KVLCT 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 KVLCT 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 KVLCT diffuser it is possible to eliminate:

- electric thermostats;
- electrical wiring system;
- servomotors.

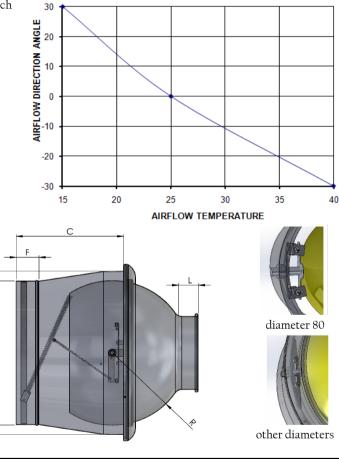
The maximum range is  $+/-30^\circ$ . This can be limited to smaller angles, with a 5° pitch even with a different regulation for heating and cooling, by inserting and regulating stop screws on a predisposed metal plate.

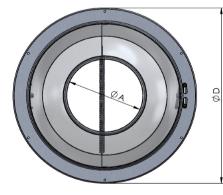
The memory of the form of the spring guarantees the precise relation between the injected air and the inclination angle for an also unlimited number of cycles.

#### AERAULIC PERFORMANCES

The aeraulic performance of the KVLCT diffusers are, in relation to the diameter, is the exact same as for those of the equivalent KVL series diffuser.







26.11	А	В	С	D	Е	F	L	R	regulation	swirl
Model	[mm]	damper	deflector							
80	80	158	200	258	204	50	25	80	optional	optional
110	110	198	215	288	252	60	30	100	optional	optional
150	150	313	283	388	352	60	35	150	optional	optional
200	200	398	283	488	452	60	50	200	optional	optional
230	230	398	283	488	452	60	50	200	optional	optional
250	230	398	283	488	452	60	50	200	optional	optional
300	230	398	283	488	452	60	50	200	optional	optional

ØB est.

ØΕ

Front regulation damper and swirl deflector must be fitted at the factory, not available aftermarket



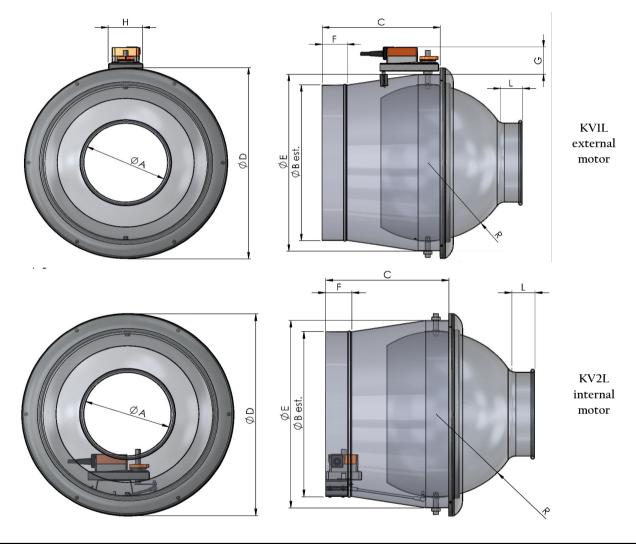


# KVL SERIES

# 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 KV1L-KV2L 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.



Mod.	А	В	С	D	E	F	L	G	Н	R	regulation	swirl
Mod.	[mm]	damper	deflector									
80	80	158	200	258	204	50	25	38	60	80	optional	optional
110	110	198	215	288	252	60	30	70	85	100	optional	optional
150	150	313	283	388	352	60	35	70	85	150	optional	optional
200	200	398	283	488	452	60	50	70	85	200	optional	optional
230	230	398	283	488	452	60	50	70	85	200	optional	optional
250	250	398	283	488	452	60	50	70	85	200	optional	optional
300	300	398	283	488	452	60	50	70	85	200	optional	optional

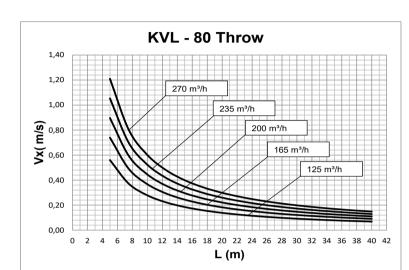
Front regulation damper must be fitted at the factory, not available aftermarket

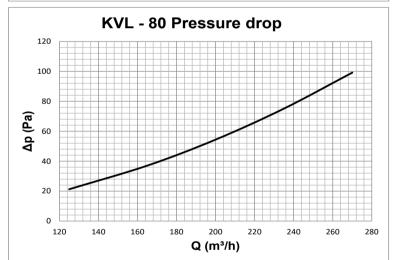


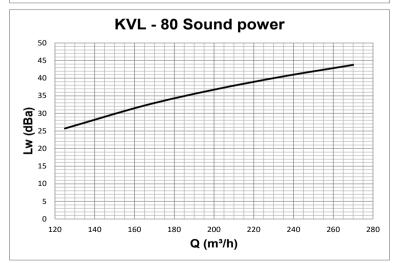


# KVL SERIES

PERFORMANCE KVL 80







Values measured in isothermal conditions with diffuser placed horizontally in accordance with the following international standard: ISO 5219 1984: Air distribution and air diffusion - Laboratory. Aerodynamic testing and rating of air terminal devices.

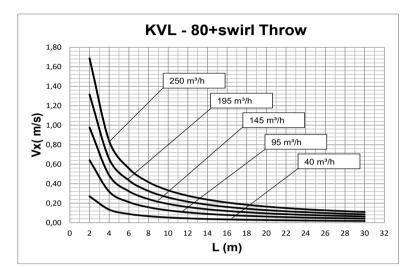
Data measured in reverberation room in accordance with international standards: ISO 3741 1999: Acoustic - determination of sound power levels of noise sources using sound pressure -Precision methods for reverberation rooms ISO 5135 1997: Acoustic - determination of sound power levels of noise from air-terminal devices; air terminal units; dampers and valves by measurement in a reverberation room.

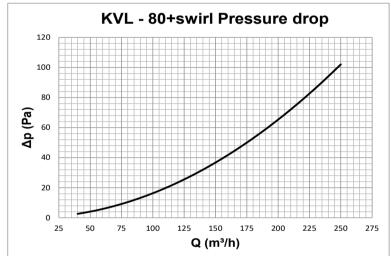


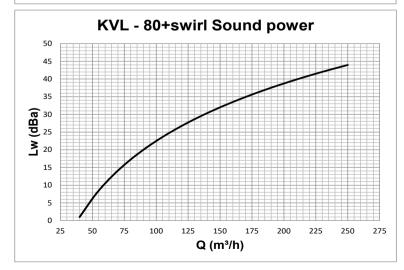


# KVL SERIES

PERFORMANCE KVL 80







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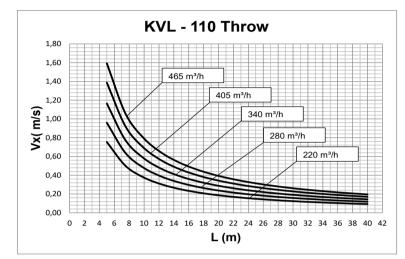
Data measured in reverberation room in accordance with international standards: ISO 3741 1999: Acoustic - determination of sound power levels of noise sources using sound pressure -Precision methods for reverberation rooms ISO 5135 1997: Acoustic - determination of sound power levels of noise from air-terminal devices ; air terminal units; dampers and valves by measurement in a reverberation room.

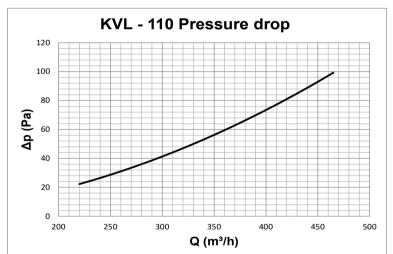


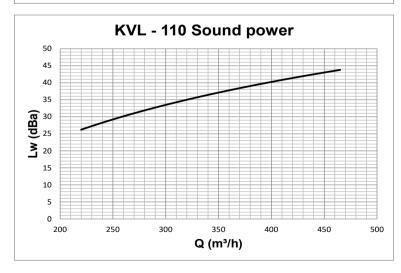


# KVL SERIES

PERFORMANCE KVL 110







Values measured in isothermal conditions with diffuser placed horizontally in accordance with the following international standard: ISO 5219 1984: Air distribution and air diffusion - Laboratory. Aerodynamic testing and rating of air terminal devices.

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.





# KVL SERIES

Values measured in isothermal conditions

ISO 5219 1984: Air distribution and air diffusion

- Laboratory. Aerodynamic testing and rating of air

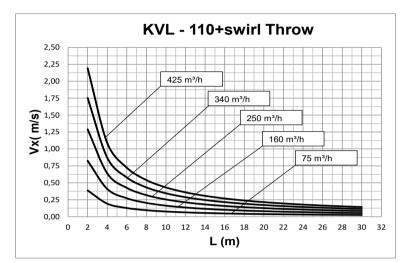
with diffuser placed horizontally in

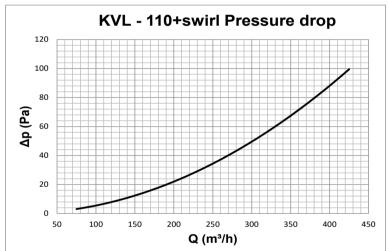
accordance with the following

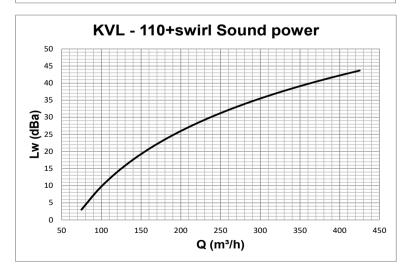
international standard:

terminal devices.

PERFORMANCE KVL 110







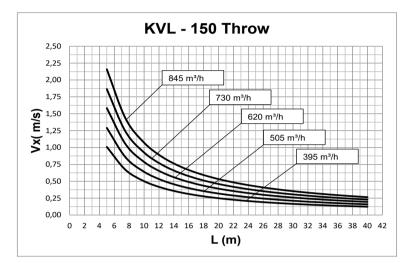
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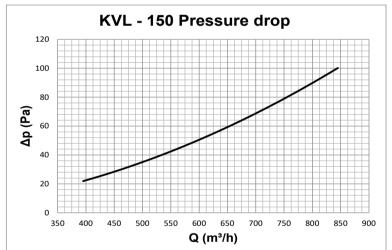


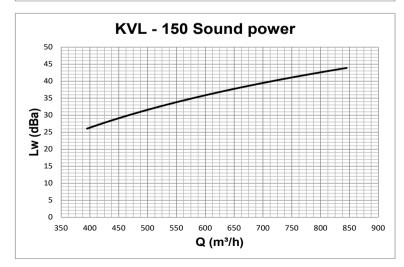


# KVL SERIES

PERFORMANCE KVL 150







Values measured in isothermal conditions with diffuser placed horizontally in accordance with the following international standard: ISO 5219 1984: Air distribution and air diffusion - Laboratory. Aerodynamic testing and rating of air terminal devices.

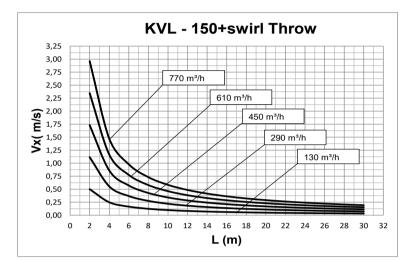
Data measured in reverberation room in accordance with international standards: ISO 3741 1999: Acoustic - determination of sound power levels of noise sources using sound pressure -Precision methods for reverberation rooms ISO 5135 1997: Acoustic - determination of sound power levels of noise from air-terminal devices; air terminal units; dampers and valves by measurement in a reverberation room.

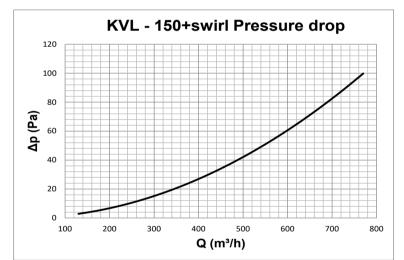




# KVL SERIES

PERFORMANCE KVL 150





KVL - 150+swirl Sound power 50 45 40 35 **C** (**dBa**) 25 20 20 15 10 5 0 100 200 300 400 500 600 700 800 Q (m<sup>3</sup>/h)

Values measured in isothermal conditions with diffuser placed horizontally in accordance with the following international standard: ISO 5219 1984: Air distribution and air diffusion - Laboratory. Aerodynamic testing and rating of air terminal devices.

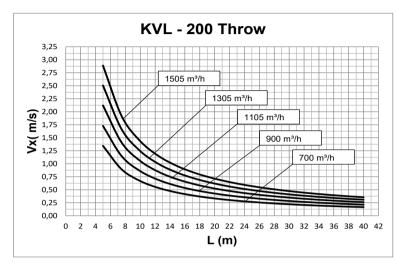
Data measured in reverberation room in accordance with international standards: ISO 3741 1999: Acoustic - determination of sound power levels of noise sources using sound pressure -Precision methods for reverberation rooms ISO 5135 1997: Acoustic - determination of sound power levels of noise from air-terminal devices ; air terminal units; dampers and valves by measurement in a reverberation room.

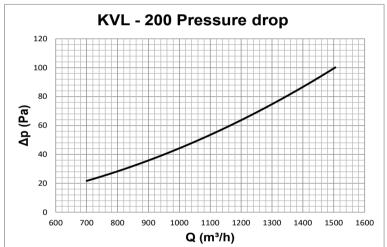


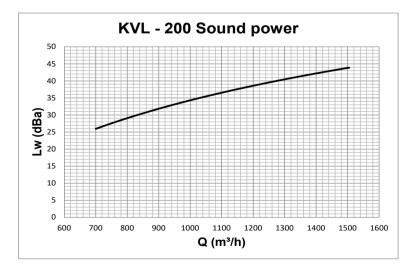


# KVL SERIES

PERFORMANCE KVL 200







Values measured in isothermal conditions with diffuser placed horizontally in accordance with the following international standard: ISO 5219 1984: Air distribution and air diffusion - Laboratory. Aerodynamic testing and rating of air terminal devices.

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.





# KVL SERIES

Values measured in isothermal conditions

ISO 5219 1984: Air distribution and air diffusion

- Laboratory. Aerodynamic testing and rating of air

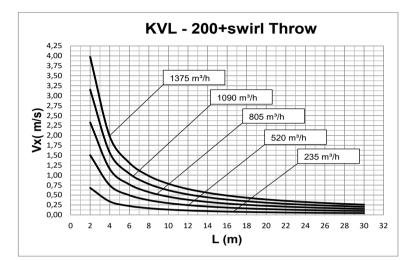
with diffuser placed horizontally in

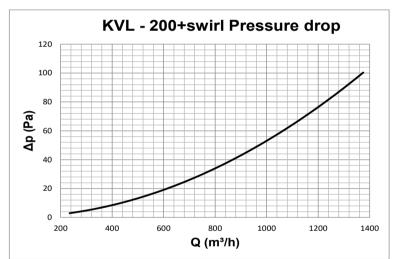
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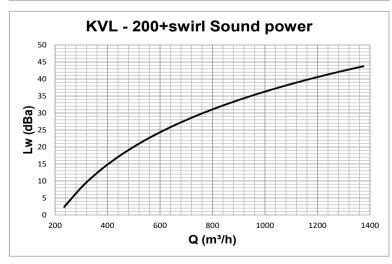
international standard:

terminal devices.

PERFORMANCE KVL 200







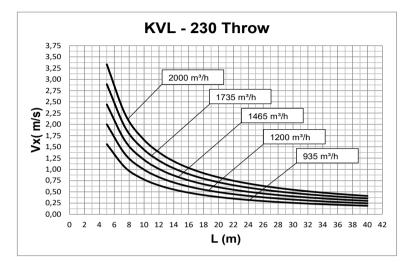
Data measured in reverberation room in accordance with international standards: ISO 3741 1999: Acoustic - determination of sound power levels of noise sources using sound pressure -Precision methods for reverberation rooms ISO 5135 1997: Acoustic - determination of sound power levels of noise from air-terminal devices; air terminal units; dampers and valves by measurement in a reverberation room.

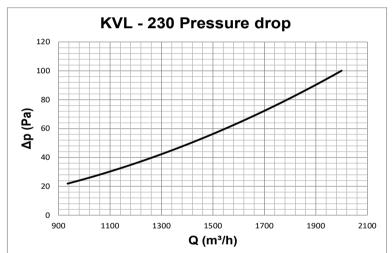


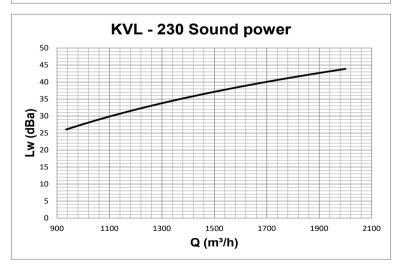


# KVL SERIES

PERFORMANCE KVL 230







terminal devices.

Values measured in isothermal conditions

ISO 5219 1984: Air distribution and air diffusion

- Laboratory. Aerodynamic testing and rating of air

with diffuser placed horizontally in

accordance with the following

international standard:

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.







# KVL SERIES

Values measured in isothermal conditions

ISO 5219 1984: Air distribution and air diffusion

- Laboratory. Aerodynamic testing and rating of air

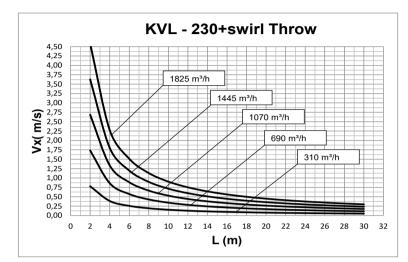
with diffuser placed horizontally in

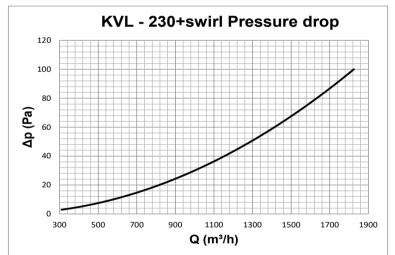
accordance with the following

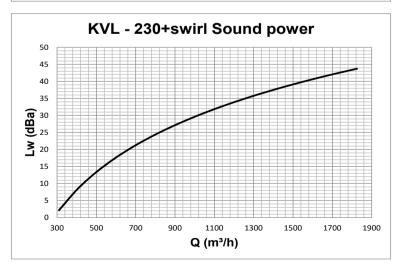
international standard:

terminal devices.

PERFORMANCE KVL 230







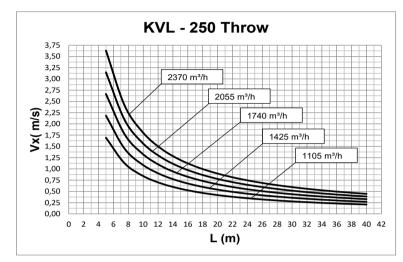
Data measured in reverberation room in accordance with international standards: ISO 3741 1999: Acoustic - determination of sound power levels of noise sources using sound pressure -Precision methods for reverberation rooms ISO 5135 1997: Acoustic - determination of sound power levels of noise from air-terminal devices ; air terminal units; dampers and valves by measurement in a reverberation room.

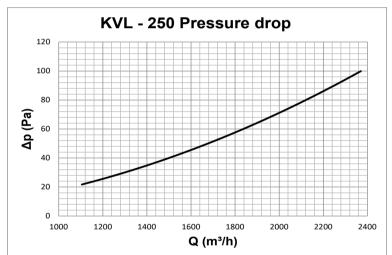


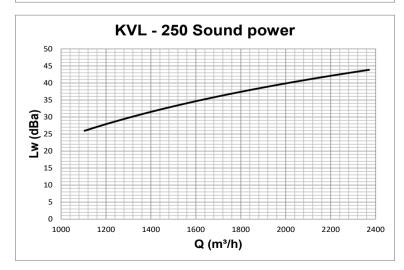


# KVL SERIES

PERFORMANCE KVL 250







Values measured in isothermal conditions with diffuser placed horizontally in accordance with the following international standard: ISO 5219 1984: Air distribution and air diffusion - Laboratory. Aerodynamic testing and rating of air terminal devices.

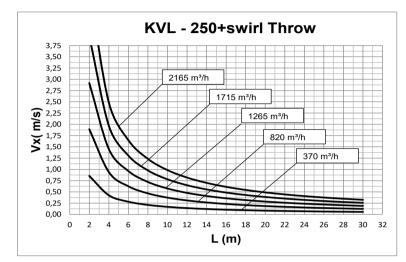
Data measured in reverberation room in accordance with international standards: ISO 3741 1999: Acoustic - determination of sound power levels of noise sources using sound pressure -Precision methods for reverberation rooms ISO 5135 1997: Acoustic - determination of sound power levels of noise from air-terminal devices ; air terminal units; dampers and valves by measurement in a reverberation room.



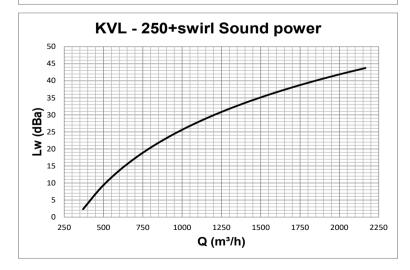


# KVL SERIES

PERFORMANCE KVL 250



KVL - 250+swirl Pressure drop 120 100 80 Δp (Pa) 60 40 20 0 250 500 750 1000 1250 1500 1750 2000 2250 Q (m<sup>3</sup>/h)



Values measured in isothermal conditions with diffuser placed horizontally in accordance with the following international standard: ISO 5219 1984: Air distribution and air diffusion - Laboratory. Aerodynamic testing and rating of air terminal devices.

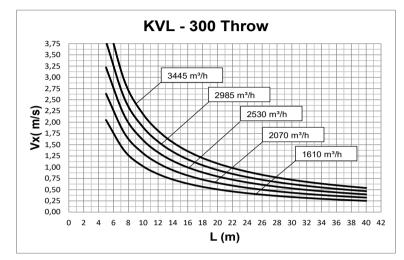
Data measured in reverberation room in accordance with international standards: ISO 3741 1999: Acoustic - determination of sound power levels of noise sources using sound pressure -Precision methods for reverberation rooms ISO 5135 1997: Acoustic - determination of sound power levels of noise from air-terminal devices ; air terminal units; dampers and valves by measurement in a reverberation room.

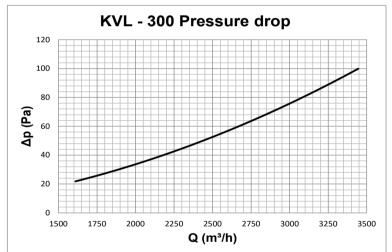




# KVL SERIES

PERFORMANCE KVL 300



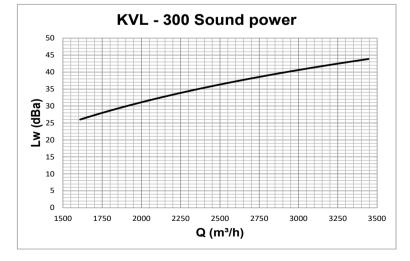


Values measured in isothermal conditions with diffuser placed horizontally in accordance with the following international standard: ISO 5219 1984: Air distribution and air diffusion - Laboratory. Aerodynamic testing and rating of air

terminal devices.

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 shown data does not take into consideration the attenuation resulting from the surroundings where the diffuser is installed. Such attenuation is normally included between 6 and 10 dBa and is determined by the size of the surrounding space, its shape and the characteristics of the furniture and room fittings.



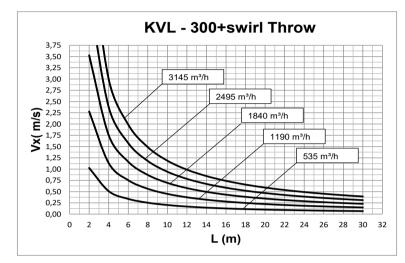
KVL\_P

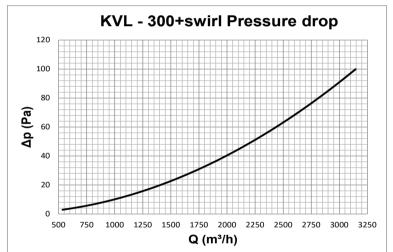


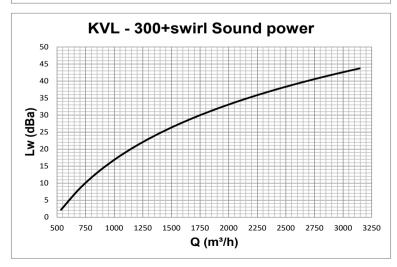


# KVL SERIES

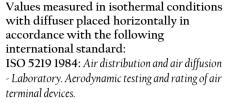
PERFORMANCE KVL 300



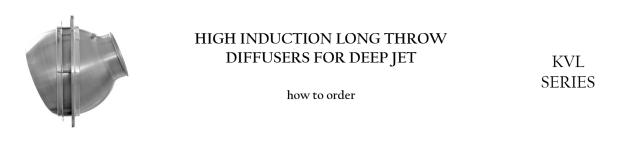


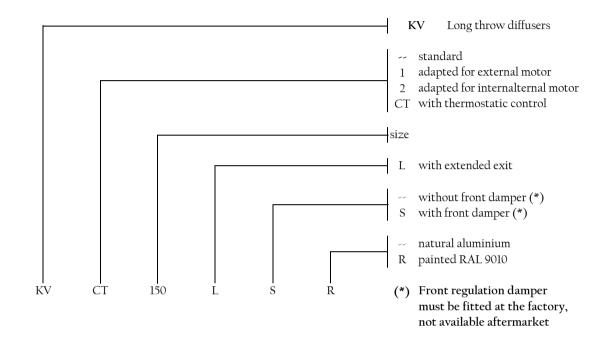


Data measured in reverberation room in accordance with international standards: ISO 3741 1999: Acoustic - determination of sound power levels of noise sources using sound pressure -Precision methods for reverberation rooms ISO 5135 1997: Acoustic - determination of sound power levels of noise from air-terminal devices ; air terminal units; dampers and valves by measurement in a reverberation room.









KV L	KV L	KV LS	KV LS + KV-C
version without front damper	version without front damper	version with front damper	version with front damper
	with cover screws flange		with cover screws flange



KVL SERIES

accessories

Model	Cover scr	ews flange	Connector		
Model	Anodized	RAL 9010	Circular duct	Flexible duct	
KV080L	KV-C80	KVR-C80	KV-RC80*	KV-RF80	
KV110L	KV-C110	KVR-C110	KV-RC110*	KV-RF110	
KV150L	KV-C150	KVR-C150	KV-RC150*	KV-RF150	
KV200L	KV-C200	KVR-C200	KV-RC200*	KV-RF200	
KV230L	KV-C230	KVR-C230	KV-RC230*	KV-RF230	
KV250L	KV-C230	KVR-C230	KV-RC230*	KV-RF230	
KV300L	KV-C230	KVR-C230	KV-RC230*	KV-RF230	

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

Model	Regulation damper		Swirl deflector	
KV80L	KV-S080		KV-T080	
KV110L	KV-S110		KV-T110	
KV150L	KV-S150	SAL IU	KV-T150	
KV200L	KV-S200		KV-T200	
KV230L	KV-S230		KV-T230	

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

