HIGH INDUCTION DIFFUSERS WITH VARIABLE GEOMETRY

OVERVIEW
CHARACTERISTICS
APPLICATIONS

KZ
SERIES

OVERVIEW

Variable geometry high-induction diffusers are a suitable solution for air distribution, especially with very high installations.
Their unique regulation system is suitable for heating and cooling applications. Indeed the throw optimization can be optained by the adjustment of finning inclination. The finning regulation can be controlled by servomotor.
This characteristic together with the good inductive power and the variety of model enables the diffuser to be used in ventilation system for installation height from 3 to 25 meters, with temperature variation from supplied air and ambient from -12° to +30°C (depend on the model, air flow and temperature variation).
Within this range, KZ diffusers ensure the correct air speed in the occupied area, thus maintaining a steady temperature and preventing any irregular unwanted air currents.
Any problems installing the diffusers in false ceiling are solved by the models fitted with a 595x595 panel.

CHARACTERISTICS AND OPERATION

KZ series ceiling diffusers are equipped with 6 pivoting fins, which enable high induction. In this way, the delivery speed and temperature gradient are quickly reduced to the optimum values for the occupied area.
The 6 deflector fins employ a variable horizontal part to subdivide the air flow into radial jets, which are forced to swirl around the main axis.
The KZ diffusers are suitable to application on rooms with high ceiling. Furhtermore the finning configuration can be regulated in 4 ways (depending on the KZ model):
· manual for each fin during installation
· manual with a mechanism that controls all fins simultaneously
· automatic by on-off actuator kind
· automatic by proportional actuator kind

Standard the motor externally , upon request the diffuser can be supplied with motor mounted internally.

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.

APPLICATIONS

The diffuser is designed for civil and industrial applications with any type of mixing ventilation plant and should be installed at heights between 3 and 25 meters. The high induction diffuser with variable geometry, which can be changed during operation, can set flows between 200 and 12.000 m3/h with variable temperature gradients ranging from +30 °C and –11 °C.

SELECTION PROGRAM

MP3 has at its disposal a selection program to identify the most ideal product, the best regulation, the number and layout of diffusers on the basis of the room characteristics and the heat values required.
For this selection it is possible to contact the Sales Department.
The multilingual program, is usable in the customer area of the company website www.mp3-italia.it.
The required password must be requested from the Sales Department.

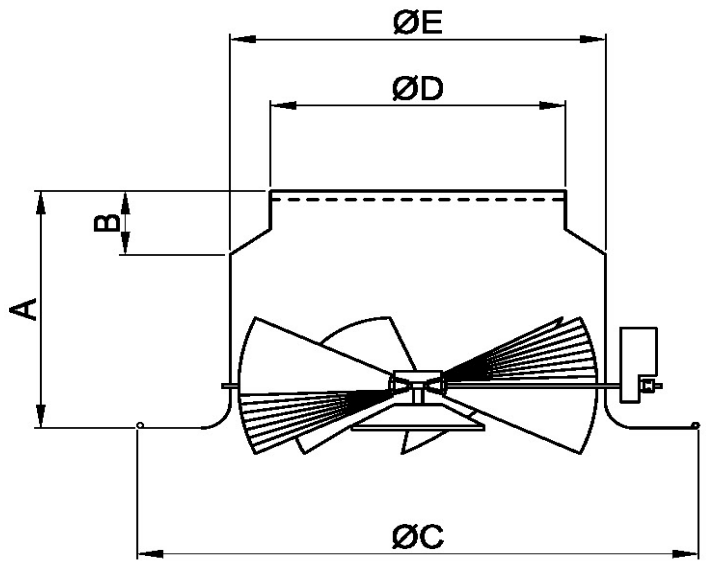
HIGH INDUCTION DIFFUSERS WITH VARIABLE GEOMETRY

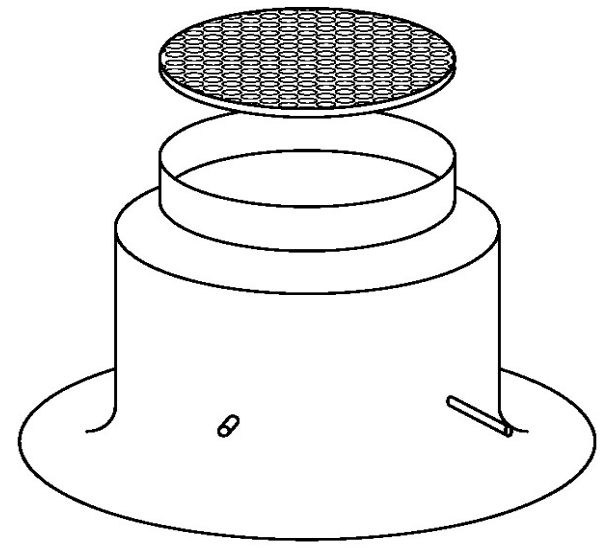
TECHNICAL DRAWINGS
CONSTRUCTION DIMENSIONS

KZ
SERIES

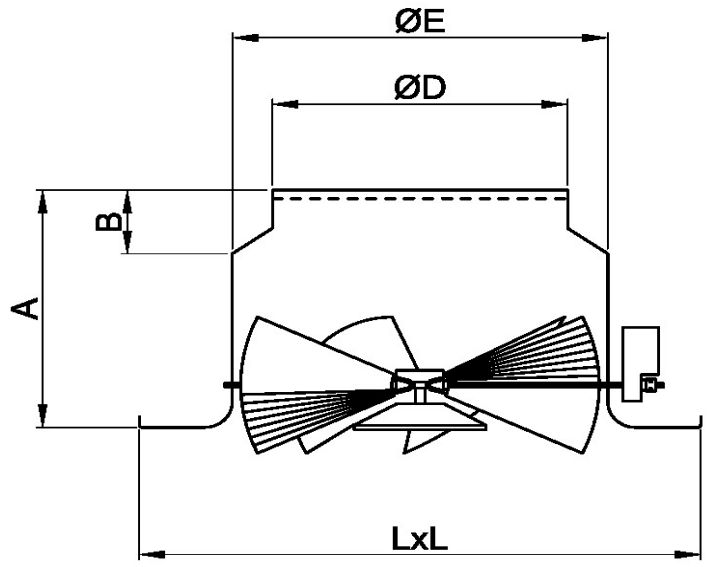
CONSTRUCTION DIMENSIONS :

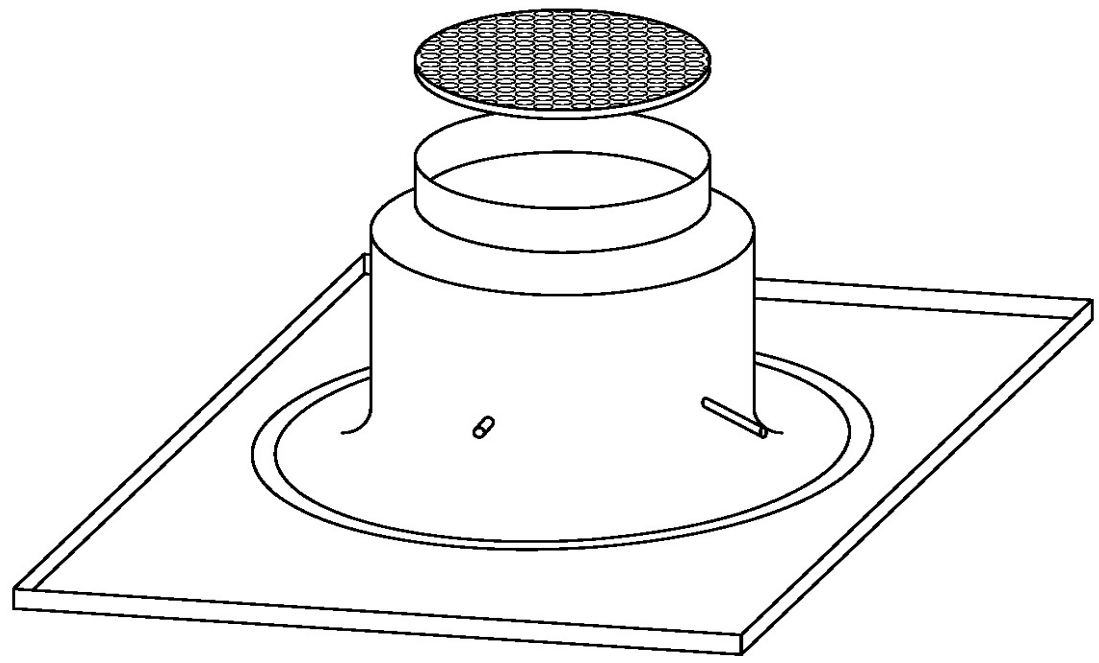
Standard cicular construction





Construction with counterceiling panel





Nominal diameter	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	L [mm]	[kg]
160	155	65	300	158	198	595	1,3
200	180	60	350	198	248	595	2,0
250	205	70	400	248	298	595	2,7
315	230	70	500	313	398	595	3,8
400	270	105	615	398	465	=	6,3
500	320	95	780	498	565	=	8,9
630	390	105	935	628	665	=	14,5
800	390	0	1020	798	798	=	30,0

Note: equalizer optional

HIGH INDUCTION DIFFUSERS WITH VARIABLE GEOMETRY

INSTALLATION EXAMPLE

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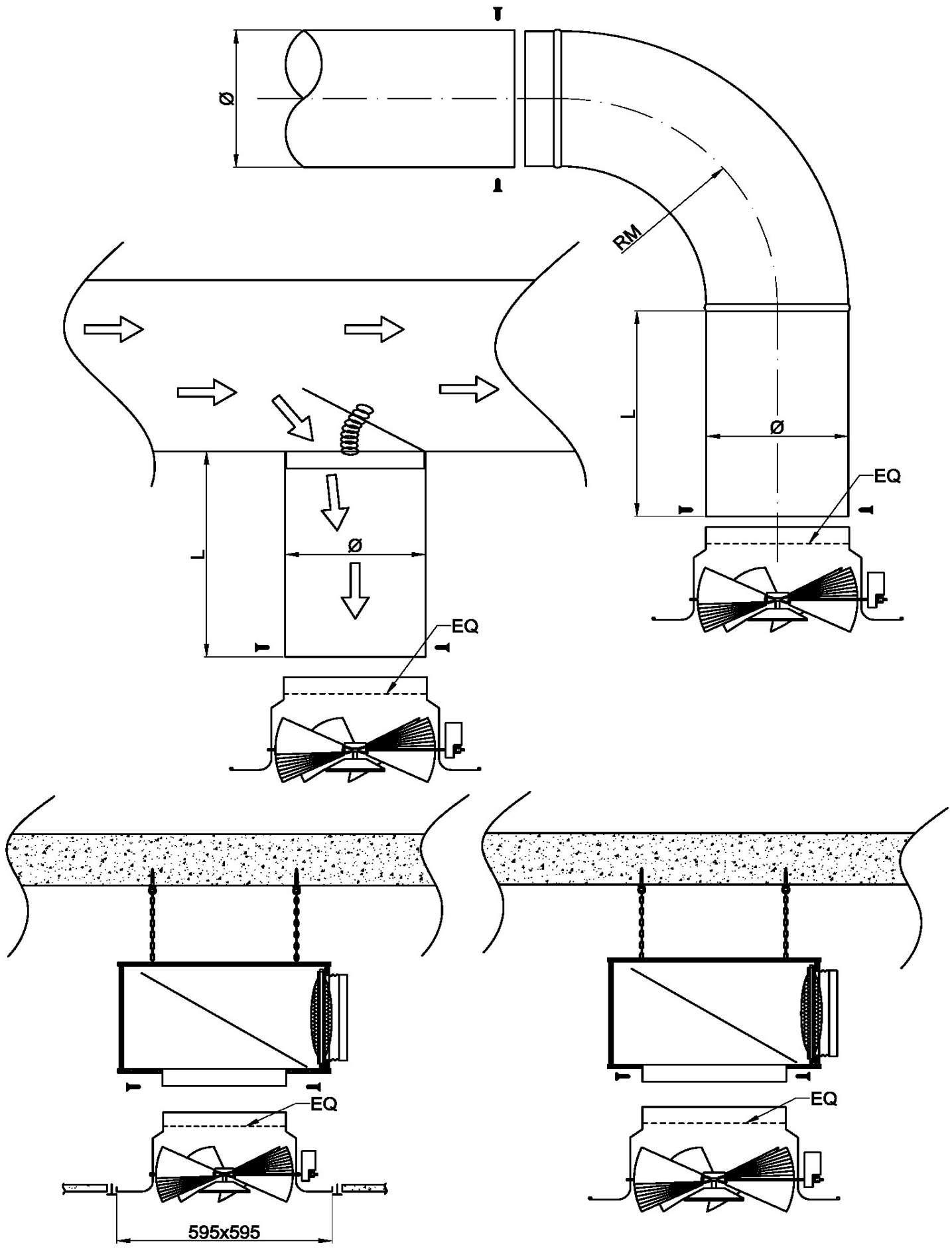
INSTALLATION INSTRUCTIONS:

The diffuser is installed directly in both the channel (side or inferior) and the plenum, as illustrated below.
The diffuser is fitted directly onto the channel or the plenum itself with screws at the side. The 595x595 integrated panel is installed as a standard false ceiling panel would be.



Ø diameter of the diffuser
L length of the connection
L minimum = 1,5 x Ø
RM medium degree of curvage
RM minimum = Ø
RM optimum = 1,5 x Ø
EQ equalizer (optional)

HIGH INDUCTION DIFFUSERS WITH VARIABLE GEOMETRY

OPERATIONS

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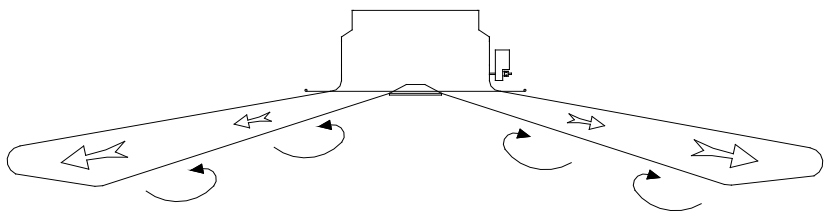
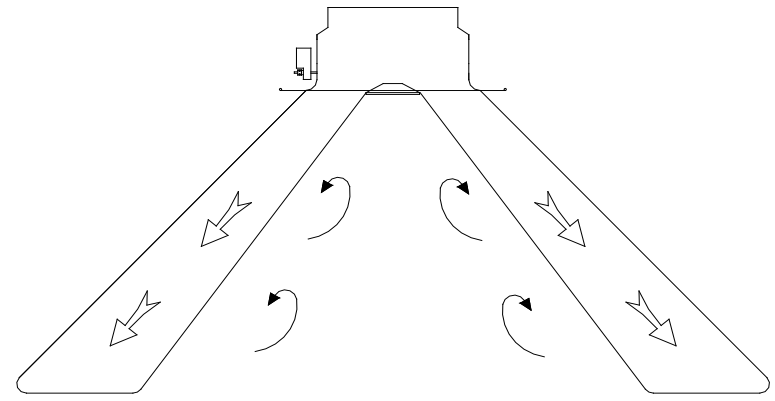
OPERATIONS:
Depending on the installation angle, different types of airflow are given off.
When the fixture is fitted into the ceiling and with the blades at an angle of more than 50°, there is coanda effect, in this case the throw is increased by approx. 40%.
For cooling, the neck speed must not be less than the speeds given in the table below:

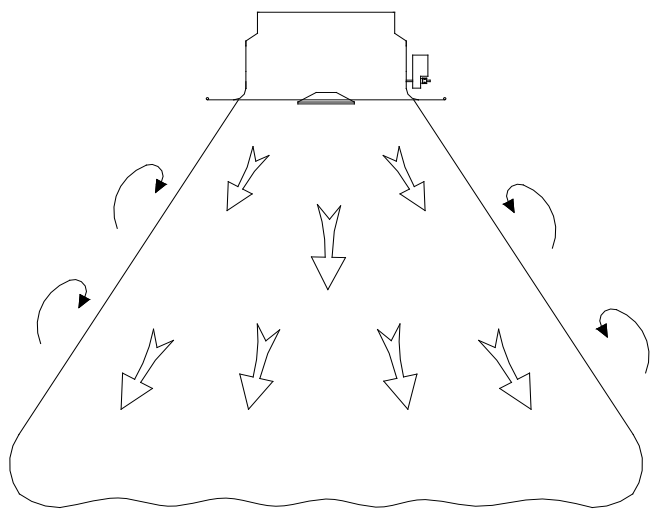
Blade angle: 67°
Immission angle : 150°
Radial throw



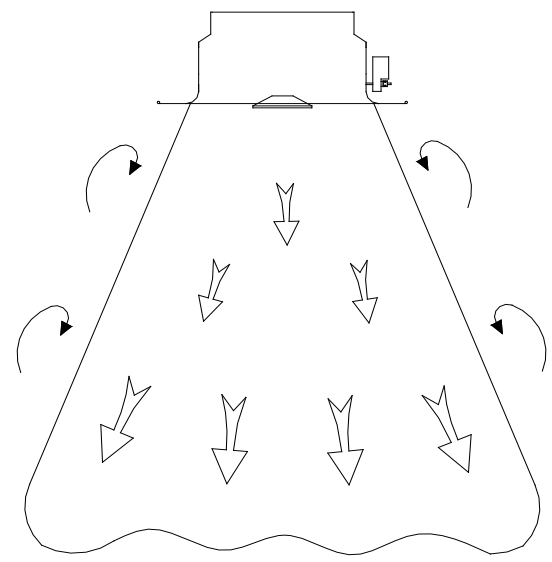
Blade angle: 45°
Immission angle: 95°
Radial/axial throw



Blade angle: 30°
Immission angle: 50°
Axial throw



Blade angle: 15°
Immission angle: 30°
Axial throw



HIGH INDUCTION DIFFUSERS WITH VARIABLE GEOMETRY

WITH AUTOMATIC REGULATION WITH THERMOSTATIC SPRING

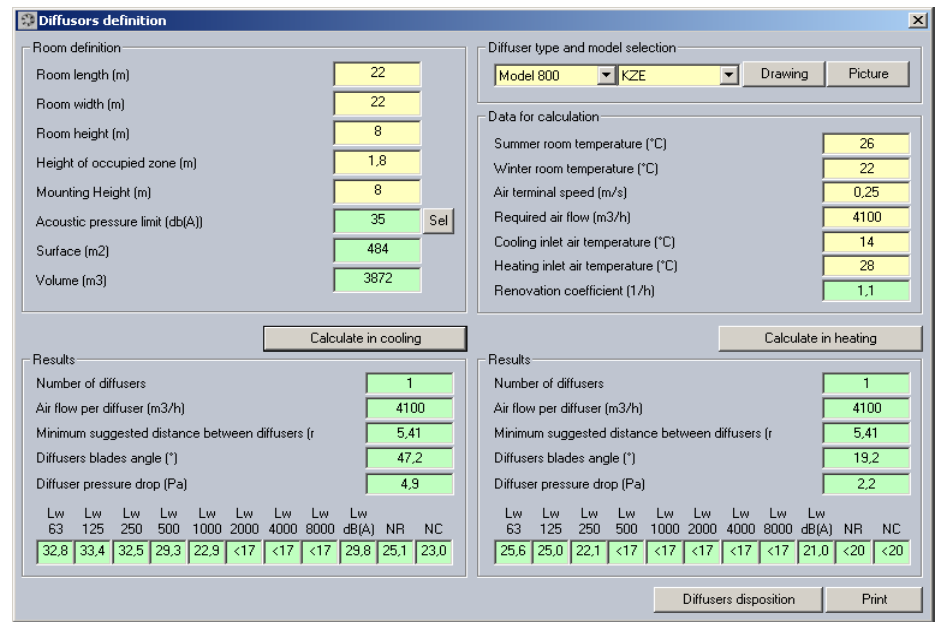
KZ-CT SERIES

OVERVIEW :
The KZ-CT series of high induction diffusers use a thermostatic spring with form memory mechanism for the simultaneous inclination of the blades. this systems allows to better obtain an optimum air flow direction in relation to the temperature, in an automatic way.
The injected air temperature, in fact, determines the dilation or contraction of the thermostatic spring, which in turn determines the simultaneous rotation of the distribution blades reaching the ideal angel on inclination.
By choosing the KZ-CT diffuser, one can eliminate:
- electric thermostats
- electric circuit
- servomotors.

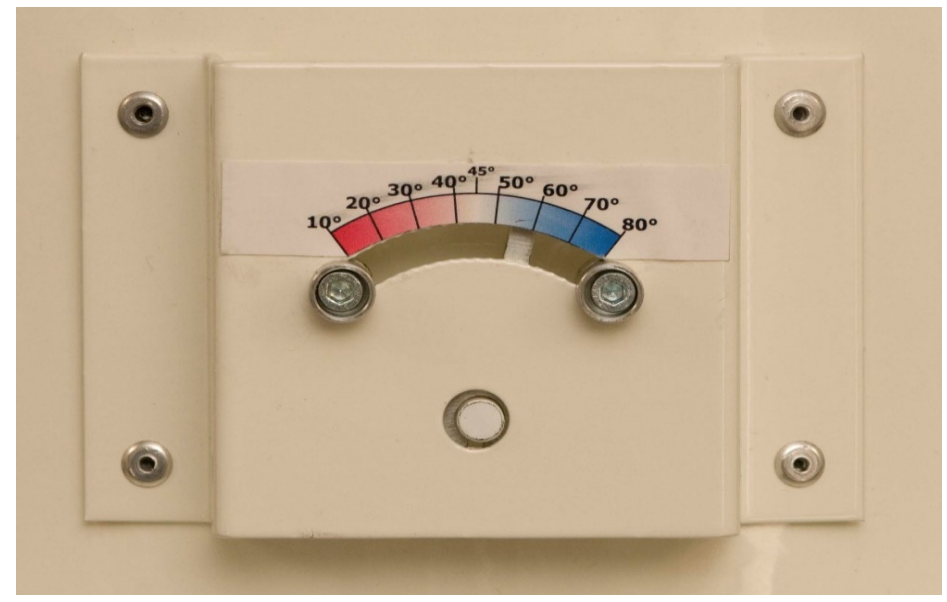
CHARACTERISTICS :
The directional blades inject air into the room at a horizontal to vertical directional throw.
In the case of a horizontal air flow, the 6 blades divide the flow in 6 radiant jets and at the same time form a rotary motion around the axis of the diffuser. A helicoidal air flow is therefore had , capable of injecting a large volume of air in the room and mixing it with the injected air.
In the case of a vertical flow, the phenomenon of stratification is eliminated.
The rotation of the blades from the maximum to the minimum angle of inclination corresponds to a range in temperature of the injected air from 16° C to 35° C and occurs in less than 5 minutes.
The maximum and minimum angle can be determined and regulated very simply acting on the two screws having a hexagon shape.

SELECTION SOFTWARE :
The aeraulic qualities of the KZ-CT are identical to those of the KZ diffusers as they only differ in the way in which the blades are regulated.
The company MP3 makes use of a selection program to identify the best product, the best regulation, the number and arrangement of diffusers on the basis of the room characteristics and of the thermal values required.
The multilingual program, is available inside the registered customer area of the company web site (www.mp3-italia.it).
The access password can be request from our Export Office.

METHOD OF REGULATION :
With the use of the selection program it is possible to determine the most appropriate model of diffuser for each application.
The software also indicates, as output data, the maximum and minimum angles of inclination of the blades equal to the heating and cooling conditions.
The plate on the side of the diffuser indicates a graduated scale for the inclination of the blades and two slidable blocks fixable in correspondence to the angle indicated by the program for the heating (red zone of the scale) and for the cooling (the blue zone of the scale).
The diffuser now regulated is ready to be installed.



Output date from the selection software



Detail of the graduate plate

HIGH INDUCTION DIFFUSERS WITH VARIABLE GEOMETRY

WITH AUTOMATIC REGULATION WITH THERMOSTATIC SPRING

KZ-CT SERIES

WORKING PRINCIPLE :

The angle of the blades is adjusted by rotating the central axis of the diffuser, connected to the adjustable blades with the use of cone shaped grooved wheels.
The central axis of the diffuser is connected to two springs, of which one is in thermo sensitive material and the another in steel.
The thermo sensitive spring varies its own elasticity in relation of the injected air temperature, where as the steel spring maintains constant its own characteristics.
The balance between the two springs determines the different angles of rotation of the axis and therefore the angles of inclination of the blades - in relation to the Supply air temperature.

Ordering codes

Diffuser	Diffuser on 595x595 pannel
KZCT200	KZCT200T
KZCT250	KZCT250T
KZCT315	KZCT315T
KZCT400	
KZCT500	
KZCT630	

HIGH INDUCTION DIFFUSERS WITH VARIABLE GEOMETRY

PERFORMANCE

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The described features allow for approximate sizing.
The MP3 company has a selection program to locate the most suitable product, the best setting, number and speaker layout based on room features and thermal values to be obtained.
For your selection, you can contact our Sales Office.
The program, in multilingual version, can be used within the restricted area of the website www.mp3-italia.it.
The access password should be requested to our Sales Department.

Air flow		Model	velocity in the neck in m/s	regulation 0° (heating)								regulation 67° (cooling)					
				Vertical throw						ΔP	Lw	Vertical throw				ΔP	Lw
				Temperature difference								Temperature difference					
l/s	m³/h			+5	+10	+15	+20	+25	+30	Pa	dB(A)	-3	-5	-10	-15	Pa	dB(A)
63	225	**200**	2,0	5,4	3,8	3,1	2,7	2,4	2,2	1,7	21	0,5	0,5	0,5	0,5	15,2	32
		250	1,3	4,2	3,0	2,4	2,1	1,9	1,7	0,7	19	0,7	0,7	0,7	0,7	6,0	23
83	300	**200**	2,7	6,9	4,9	4,0	3,4	3,1	2,8	3,0	29	0,5	0,5	0,5	0,5	26,9	41
		250	1,7	5,4	3,8	3,1	2,7	2,4	2,2	1,2	19	0,7	0,7	0,7	0,7	10,6	32
97	350	**200**	3,2	7,8	5,5	4,5	3,9	3,5	3,2	4,1	33	0,5	0,5	0,5	0,5	36,7	46
		250	2,0	6,1	4,3	3,5	3,1	2,7	2,5	1,6	21	0,7	0,7	0,7	0,7	14,4	36
		315	1,3	4,6	3,3	2,7	2,3	2,1	1,9	0,6	19	1,0	1,0	1,0	1,0	5,8	23
125	450	**200**	4,1	9,7	6,8	5,6	4,8	4,3	3,9	6,7	41	0,5	0,5	0,5	0,5	60,6	53
		250	2,6	7,5	5,3	4,3	3,8	3,4	3,1	2,6	27	0,7	0,7	0,7	0,7	23,8	44
		315	1,6	5,9	4,2	3,4	3,0	2,6	2,4	1,1	19	1,0	1,0	1,0	1,0	9,5	30
153	550	**200**	5,0	11,4	8,1	6,6	5,7	5,1	4,7	10,1	47	0,5	0,5	0,5	0,6	90,5	59
		250	3,2	8,9	6,3	5,1	4,4	4,0	3,6	4,0	33	0,7	0,7	0,7	0,7	35,6	50
		315	2,0	7,2	5,1	4,2	3,6	3,2	2,9	1,6	20	1,0	1,0	1,0	1,0	14,3	37
174	625	**200**	5,6	12,7	9,0	7,3	6,3	5,7	5,2	13,0	51	0,5	0,5	0,6	0,7	116,9	62
		250	3,6	9,9	7,0	5,7	4,9	4,4	4,0	5,1	37	0,7	0,7	0,7	0,7	46,0	54
		315	2,3	8,2	5,8	4,7	4,1	3,6	3,3	2,0	23	1,0	1,0	1,0	1,0	18,4	40
201	725	**200**	6,5	14,4	10,2	8,3	7,2	6,4	5,9	17,5	55	0,5	0,6	0,7	0,8	157,3	66
		250	4,2	11,2	7,9	6,5	5,6	5,0	4,6	6,9	42	0,7	0,7	0,7	0,7	61,9	58
		315	2,6	9,4	6,7	5,5	4,7	4,2	3,9	2,8	27	1,0	1,0	1,0	1,0	24,8	45
		400	1,6	6,3	4,5	3,6	3,1	2,8	2,6	1,1	20	1,0	1,0	1,0	1,0	9,7	31
250	900	**250**	5,2	13,4	9,5	7,7	6,7	6,0	5,5	10,6	48	0,7	0,7	0,7	0,8	95,3	64
		315	3,3	11,7	8,3	6,7	5,8	5,2	4,8	4,2	34	1,0	1,0	1,0	1,0	38,2	51
		400	2,0	7,8	5,5	4,5	3,9	3,5	3,2	1,7	22	1,0	1,0	1,0	1,0	15,0	38
299	1075	**250**	6,2	15,5	11,0	9,0	7,8	6,9	6,3	15,1	54	0,7	0,7	0,8	0,9	136,0	69
		315	3,9	13,9	9,8	8,0	7,0	6,2	5,7	6,0	39	1,0	1,0	1,0	1,0	54,5	57
		400	2,4	9,3	6,6	5,4	4,7	4,2	3,8	2,4	27	1,0	1,0	1,0	1,0	21,4	43
		500	1,5	6,7	4,8	3,9	3,4	3,0	2,7	0,9	19	1,0	1,0	1,0	1,0	8,5	33
347	1250	**315**	4,5	16,1	11,4	9,3	8,1	7,2	6,6	8,2	44	1,0	1,0	1,0	1,0	73,6	61
		400	2,8	10,8	7,7	6,2	5,4	4,8	4,4	3,2	32	1,0	1,0	1,0	1,0	28,9	48
		500	1,8	7,8	5,5	4,5	3,9	3,5	3,2	1,3	20	1,0	1,0	1,0	1,0	11,5	38
		630	1,1	5,2	3,7	3,0	2,6	2,3	2,1	0,5	19	1,0	1,0	1,0	1,0	4,7	25
403	1450	**315**	5,2	18,7	13,2	10,8	9,3	8,4	7,6	11,0	48	1,0	1,0	1,0	1,0	99,1	65
		400	3,2	12,5	8,9	7,2	6,3	5,6	5,1	4,3	36	1,0	1,0	1,0	1,0	38,9	52
		500	2,1	9,1	6,5	5,3	4,6	4,1	3,7	1,7	22	1,0	1,0	1,0	1,0	15,5	42
451	1625	**315**	5,9	20,9	14,8	12,1	10,5	9,4	8,5	13,8	52	1,0	1,0	1,0	1,0	124,4	68
		400	3,6	14,0	9,9	8,1	7,0	6,3	5,7	5,4	40	1,0	1,0	1,0	1,0	48,9	56
		500	2,3	10,3	7,3	5,9	5,1	4,6	4,2	2,2	25	1,0	1,0	1,0	1,0	19,5	46
		630	1,5	6,8	4,8	3,9	3,4	3,1	2,8	0,9	19	1,0	1,0	1,0	1,0	7,9	33

HIGH INDUCTION DIFFUSERS WITH VARIABLE GEOMETRY

PERFORMANCE

KZ
SERIES

Air flow		Model	velocity in the neck in m/s	regulation 0° (heating)								regulation 67° (cooling)					
				Vertical throw						ΔP	Lw	Vertical throw				ΔP	Lw
				Temperature difference								Temperature difference					
l/s	m^3/h			+5	+10	+15	+20	+25	+30	Pa	dB(A)	-3	-5	-10	-15	Pa	dB(A)
500	1800	**315**	6,5	23,1	16,4	13,4	11,6	10,3	9,4	17,0	53	1,0	1,0	1,0	1,0	152,7	71
		400	4,0	15,5	11,0	9,0	7,8	7,0	6,3	6,7	41	1,0	1,0	1,0	1,0	60,0	59
		500	2,6	11,4	8,1	6,6	5,7	5,1	4,6	2,7	26	1,0	1,0	1,0	1,0	23,9	49
		630	1,6	7,6	5,4	4,4	3,8	3,4	3,1	1,1	19	1,0	1,0	1,0	1,0	9,7	37
597	2150	**400**	4,8	18,6	13,1	10,7	9,3	8,3	7,6	9,5	47	1,0	1,0	1,0	1,0	85,6	64
		500	3,1	13,7	9,7	7,9	6,8	6,1	5,6	3,8	31	1,0	1,0	1,0	1,0	34,2	54
		630	1,9	9,1	6,4	5,2	4,5	4,1	3,7	1,5	20	1,0	1,0	1,0	1,0	13,9	42
701	2525	**400**	5,6	21,8	15,4	12,6	10,9	9,7	8,9	13,1	52	1,0	1,0	1,0	1,0	118,1	69
		500	3,6	16,1	11,4	9,3	8,0	7,2	6,6	5,2	37	1,0	1,0	1,0	1,1	47,1	59
		630	2,3	10,7	7,5	6,2	5,3	4,8	4,4	2,1	21	1,0	1,0	1,0	1,0	19,1	47
799	2875	**400**	6,4	24,8	17,5	14,3	12,4	11,1	10,1	17,0	56	1,0	1,0	1,0	1,0	153,1	72
		500	4,1	18,4	13,0	10,6	9,2	8,2	7,5	6,8	41	1,0	1,0	1,1	1,3	61,1	63
		630	2,6	12,2	8,6	7,0	6,1	5,4	5,0	2,8	24	1,0	1,0	1,0	1,0	24,8	51
903	3250	**500**	4,6	20,8	14,7	12,0	10,4	9,3	8,5	8,7	44	1,0	1,0	1,2	1,4	78,0	66
		630	2,9	13,8	9,7	7,9	6,9	6,2	5,6	3,5	27	1,0	1,0	1,0	1,1	31,7	55
1000	3600	**500**	5,1	23,1	16,4	13,4	11,6	10,3	9,4	10,6	48	1,1	1,1	1,4	1,6	95,7	69
		630	3,2	15,3	10,8	8,8	7,6	6,8	6,2	4,3	30	1,0	1,0	1,1	1,3	38,9	58
1097	3950	**500**	5,6	25,4	18,0	14,7	12,7	11,4	10,4	12,8	51	1,2	1,3	1,5	1,7	115,3	72
		630	3,5	16,8	11,8	9,7	8,4	7,5	6,8	5,2	33	1,0	1,0	1,2	1,4	46,8	60
1201	4325	**500**	6,2	27,9	19,7	16,1	14,0	12,5	11,4	15,3	53	1,3	1,4	1,6	1,9	138,2	74
		630	3,9	18,4	13,0	10,6	9,2	8,2	7,5	6,2	36	1,0	1,1	1,3	1,6	56,1	63
1299	4675	**630**	4,2	19,9	14,0	11,5	9,9	8,9	8,1	7,3	39	1,1	1,2	1,4	1,7	65,6	65
1403	5050	**630**	4,5	21,5	15,2	12,4	10,7	9,6	8,8	8,5	41	1,2	1,3	1,6	1,8	76,5	68
1500	5400	**630**	4,8	23,0	16,3	13,3	11,5	10,3	9,4	9,7	43	1,3	1,4	1,7	2,0	87,5	69
1701	6125	**630**	5,5	26,1	18,5	15,1	13,1	11,7	10,7	12,5	47	1,5	1,6	1,9	2,3	112,6	73
1903	6850	**630**	6,1	29,2	20,7	16,9	14,6	13,1	11,9	15,6	50	1,7	1,8	2,2	2,6	140,8	76

The throw values are based on a terminal velocity of 0,20 m/s.
The values of pressure drop are for the diffuser without plenum
The acoustic data are in sound power and do not consider the attenuation due to the environment, and in particular due to the distance.
All values are for diffuser without equalizer (see correction factors).
Intermediate values can be calculated by interpolation.

Indicative noise attenuation values depending on the distance from the diffuser			
distance [m]	attenuation [dBa]	distance [m]	attenuation [dBa]
1	-8,0	9	-27,1
2	-14,0	10	-28,0
3	-17,5	11	-28,8
4	-20,0	12	-29,6
5	-22,0	13	-30,3
6	-23,6	14	-30,9
7	-24,9	15	-31,5
8	-26,1	16	-32,1

The values in the table refer to the attenuation in function of the distance in hemispheric space.

HIGH INDUCTION DIFFUSERS WITH VARIABLE GEOMETRY

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The described features allow for approximate sizing.
The MP3 company has a selection program to locate the most suitable product, the best setting, number and speaker layout based on room features and thermal values to be obtained.
For your selection, you can contact our Sales Office.
The program, in multilingual version, can be used within the restricted area of the website www.mp3-italia.it.
The access password should be requested to our Sales Department.

Air flow		Model	velocity in the neck in m/s	Distance in m	regualtion 45°						regulation 30°					
					Vertical throw				ΔP	Lw	Vertical throw				ΔP	Lw
					Temperature difference						Temperature difference					
l/s	m^3/h				-10	-5	+5	+15	Pa	dB(A)	-10	-5	+5	+15	Pa	dB(A)
63	225	**200**	2,0	1,9	2,4	2,0	1,7	1,2	3,8	25	5,5	4,6	3,6	2,1	2,4	22
		250	1,3	1,7	1,8	1,5	1,3	0,9	1,5	19	4,1	3,5	2,8	1,6	0,9	19
83	300	**200**	2,7	2,6	3,2	2,7	2,3	1,7	6,7	33	7,4	6,2	4,5	2,6	4,2	30
		250	1,7	1,9	2,4	2,0	1,8	1,3	2,6	22	5,6	4,7	3,5	2,0	1,6	20
97	350	**200**	3,2	3,0	3,7	3,1	2,7	1,9	9,2	38	8,6	7,2	5,2	3,0	5,7	35
		250	2,0	2,2	2,8	2,4	2,1	1,5	3,6	26	6,6	5,5	4,0	2,3	2,2	23
		315	1,3	2,1	1,7	1,5	1,3	1,0	1,4	19	4,0	3,4	3,0	1,8	0,9	19
125	450	**200**	4,1	3,9	4,9	4,1	3,5	2,5	15,1	46	11,2	9,4	6,4	3,7	9,4	43
		250	2,6	2,8	3,7	3,1	2,7	1,9	6,0	33	8,5	7,1	5,0	2,9	3,7	30
		315	1,6	2,1	2,3	1,9	1,7	1,2	2,4	21	5,2	4,4	3,9	2,2	1,5	20
153	550	**200**	5,0	4,7	6,0	5,0	4,3	3,1	22,6	52	13,7	11,5	7,5	4,3	14,1	49
		250	3,2	3,5	4,6	3,8	3,3	2,4	8,9	40	10,5	8,8	5,9	3,4	5,5	36
		315	2,0	2,4	2,8	2,3	2,1	1,5	3,6	25	6,4	5,4	4,7	2,7	2,2	22
174	625	**200**	5,6	5,4	6,8	5,7	4,9	3,5	29,2	55	15,7	13,1	8,4	4,8	18,2	53
		250	3,6	3,9	5,2	4,4	3,8	2,7	11,5	43	12,0	10,0	6,5	3,8	7,1	40
		315	2,3	2,7	3,2	2,7	2,4	1,7	4,6	29	7,3	6,2	5,4	3,1	2,9	25
201	725	**200**	6,5	6,2	7,9	6,6	5,7	4,1	39,3	60	18,2	15,3	9,5	5,5	24,5	57
		250	4,2	4,6	6,1	5,1	4,4	3,1	15,4	48	14,0	11,7	7,4	4,3	9,6	44
		315	2,6	3,1	3,7	3,1	2,8	2,0	6,2	34	8,6	7,2	6,2	3,6	3,8	30
		400	1,6	2,7	2,2	1,8	1,7	1,2	2,4	22	5,0	4,2	4,1	2,4	1,5	20
250	900	**250**	5,2	5,7	7,6	6,4	5,5	3,9	23,8	54	17,5	14,6	8,8	5,1	14,8	51
		315	3,3	3,9	4,7	3,9	3,5	2,5	9,5	40	10,7	9,0	7,7	4,4	5,9	36
		400	2,0	2,7	2,7	2,3	2,1	1,5	3,7	28	6,3	5,3	5,1	3,0	2,3	24
299	1075	**250**	6,2	6,8	9,1	7,6	6,6	4,7	34,0	60	21,0	17,6	10,2	5,9	21,1	56
		315	3,9	4,7	5,6	4,7	4,2	3,0	13,6	46	12,9	10,8	9,2	5,3	8,5	42
		400	2,4	3,2	3,3	2,8	2,6	1,8	5,3	33	7,6	6,3	6,1	3,5	3,3	29
		500	1,5	3,5	4,4	3,7	3,3	2,4	2,1	21	10,1	8,4	4,4	2,6	1,3	20
347	1250	**315**	4,5	5,4	6,6	5,5	5,0	3,5	18,4	50	15,1	12,7	10,6	6,1	11,4	46
		400	2,8	3,7	3,8	3,2	3,0	2,1	7,2	38	8,8	7,4	7,1	4,1	4,5	34
		500	1,8	3,5	5,1	4,3	3,9	2,8	2,9	25	11,8	9,9	5,2	3,0	1,8	21
		630	1,1	4,1	3,9	3,3	2,9	2,1	1,2	19	9,1	7,6	3,5	2,0	0,7	19
403	1450	**315**	5,2	6,3	7,7	6,4	5,8	4,1	24,7	55	17,6	14,8	12,3	7,1	15,4	51
		400	3,2	4,3	4,5	3,7	3,5	2,5	9,7	42	10,3	8,6	8,3	4,8	6,1	39
		500	2,1	3,5	6,0	5,0	4,6	3,3	3,9	29	13,8	11,6	6,0	3,5	2,4	25
451	1625	**315**	5,9	7,0	8,6	7,2	6,5	4,7	31,1	58	19,8	16,6	13,8	8,0	19,3	54
		400	3,6	4,8	5,0	4,2	3,9	2,8	12,2	46	11,6	9,7	9,3	5,3	7,6	42
		500	2,3	3,7	6,8	5,7	5,2	3,7	4,9	33	15,5	13,0	6,8	3,9	3,0	28
		630	1,5	4,1	5,2	4,4	3,9	2,8	2,0	20	12,1	10,1	4,5	2,6	1,2	19

HIGH INDUCTION DIFFUSERS WITH VARIABLE GEOMETRY

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Air flow		Model	velocity in the neck in m/s	Distance in m	regualtion 45°						regulation 30°					
					Vertical throw				ΔP	Lw	Vertical throw				ΔP	Lw
					Temperature difference						Temperature difference					
l/s	m³/h				-10	-5	+5	+15	Pa	dB(A)	-10	-5	+5	+15	Pa	dB(A)
500	1800	**315**	6,5	7,8	9,6	8,0	7,2	5,2	38,1	60	22,1	18,5	15,2	8,8	23,7	56
		400	4,0	5,4	5,6	4,7	4,3	3,1	15,0	48	12,8	10,8	10,2	5,9	9,3	44
		500	2,6	4,1	7,5	6,3	5,7	4,1	6,0	35	17,3	14,5	7,5	4,3	3,7	30
		630	1,6	4,1	5,9	4,9	4,4	3,1	2,4	21	13,5	11,3	5,0	2,9	1,5	19
597	2150	**400**	4,8	6,4	6,7	5,6	5,2	3,7	21,4	53	15,4	12,9	12,2	7,1	13,3	50
		500	3,1	4,9	9,1	7,6	6,9	4,9	8,5	40	20,8	17,5	9,0	5,2	5,3	35
		630	1,9	4,1	7,1	6,0	5,3	3,8	3,5	25	16,4	13,7	6,0	3,4	2,2	21
701	2525	**400**	5,6	7,5	7,9	6,6	6,2	4,4	29,5	58	18,2	15,2	14,3	8,3	18,4	54
		500	3,6	5,7	10,7	9,0	8,2	5,9	11,8	45	24,7	20,7	10,6	6,1	7,3	40
		630	2,3	4,1	8,5	7,1	6,3	4,5	4,8	30	19,5	16,4	7,0	4,1	3,0	24
799	2875	**400**	6,4	8,6	9,0	7,6	7,0	5,0	38,2	62	20,8	17,4	16,3	9,4	23,8	58
		500	4,1	6,5	12,3	10,3	9,4	6,7	15,3	49	28,3	23,7	12,1	7,0	9,5	44
		630	2,6	4,7	9,8	8,2	7,2	5,2	6,2	34	22,5	18,8	8,0	4,6	3,9	28
903	3250	**500**	4,6	7,3	14,0	11,7	10,7	7,6	19,5	53	32,2	26,9	13,7	7,9	12,1	48
		630	2,9	5,3	11,2	9,4	8,3	5,9	7,9	38	25,7	21,5	9,1	5,2	4,9	32
1000	3600	**500**	5,1	8,1	15,5	13,0	11,9	8,5	23,9	56	35,8	30,0	15,2	8,8	14,9	51
		630	3,2	5,8	12,5	10,5	9,3	6,6	9,7	41	28,7	24,1	10,1	5,8	6,0	35
1097	3950	**500**	5,6	8,9	17,1	14,4	13,1	9,4	28,8	59	39,5	33,1	16,8	9,7	17,9	54
		630	3,5	6,4	13,8	11,6	10,2	7,3	11,7	44	31,8	26,6	11,0	6,4	7,3	38
1201	4325	**500**	6,2	9,8	18,8	15,8	14,4	10,3	34,5	61	43,4	36,4	18,4	10,6	21,5	57
		630	3,9	7,0	15,2	12,8	11,3	8,1	14,0	46	35,1	29,4	12,1	7,0	8,7	40
1299	4675	**630**	4,2	7,6	16,6	13,9	12,3	8,8	16,4	49	38,2	32,0	13,1	7,6	10,2	43
1403	5050	**630**	4,5	8,2	18,0	15,1	13,4	9,6	19,1	51	41,5	34,8	14,2	8,2	11,9	45
1500	5400	**630**	4,8	8,8	19,4	16,3	14,4	10,3	21,9	53	44,7	37,4	15,1	8,7	13,6	47
1701	6125	**630**	5,5	9,9	22,3	18,7	16,5	11,8	28,1	57	51,2	42,9	17,2	9,9	17,5	51
1903	6850	**630**	6,1	11,1	25,1	21,1	18,7	13,3	35,2	60	57,9	48,5	19,3	11,1	21,9	55

The throw values are based on a terminal velocity of 0,20 m/s.

The values of pressure drop are for the diffuser without plenum

The acoustic data are in sound power and do not consider the attenuation due to the environment, and in particular due to the distance.

All values are for diffuser without equalizer (see correction factors).

Intermediate values can be calculated by interpolation.

Indicative noise attenuation values depending on the distance from the diffuser			
distance [m]	attenuation [dBa]	distance [m]	attenuation [dBa]
1	-8,0	9	-27,1
2	-14,0	10	-28,0
3	-17,5	11	-28,8
4	-20,0	12	-29,6
5	-22,0	13	-30,3
6	-23,6	14	-30,9
7	-24,9	15	-31,5
8	-26,1	16	-32,1

The values in the table refer to the attenuation in function of the distance in hemispheric space.

HIGH INDUCTION DIFFUSERS WITH VARIABLE GEOMETRY

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CORRECTION FACTOR FOR DIFFUSER WITH EQUALIZER :

Model	Multiplying factor of throw			
	Blades angle			
	0°	30°	45°	67°
160				
200	0,70	0,78	0,85	1,00
250				
315				
400				
500				
630				

Model	Multiplying factor of pressure drop			
	Blades angle			
	0°	30°	45°	67°
160				
200	4,7	3,7	2,7	1,4
250	4,9	3,8	2,7	1,4
315	5,5	4,2	3,0	1,5
400	5,7	4,4	3,1	1,5
500	5,9	4,5	3,2	1,5
630	5,9	4,5	3,2	1,5

Model	Addiction factor of noise			
	Blades angle			
	0°	30°	45°	67°
160				
200	9	9	7	5
250	10	9	8	4
315	13	11	9	5
400	13	12	10	6
500	15	13	11	5
630	18	16	12	6

HIGH INDUCTION DIFFUSERS WITH VARIABLE GEOMETRY

KZ
SERIES

HOW TO ORDER

KZAB Hight induction diffuser with variable geometry
simultaneous fin movement
aluminum outer structure, steel fins and central disk
ABS gears for simultaneous fin movement
only manual fin adjustment

-- painted RAL 9010 GLOSS 85%
L painted RAL 9003 Gloss 30%

-- circular
T with 595x595 panel (a)
D with 620x620 panel (a)
F with 670x670 panel (a)

size

KZAB L T 315

(a) Only diameters 160 - 200 - 250 - 315
the versions with panel has steel external structure

KZAC Hight induction diffuser with variable geometry
simultaneous fin movement
aluminum outer structure, steel fins and central disk
ABS gears for simultaneous fin movement
standard manual fin adjustment - prepared for motorized adjustment

-- painted RAL 9010 GLOSS 85%
L painted RAL 9003 Gloss 30%

-- circular
T with 595x595 panel (a)
D with 620x620 panel (a)
F with 670x670 panel (a)

size

KZAC L T 315

(a) Only diameters 160 - 200 - 250 - 315
the versions with panel has steel external structure

HIGH INDUCTION DIFFUSERS WITH VARIABLE GEOMETRY

KZ
SERIES

HOW TO ORDER

KZB Hight induction diffuser with variable geometry
simultaneous fin movement
aluminum outer structure, nylon fins and ABS central disk
ABS gears for simultaneous fin movement
standard manual fin adjustment - prepared for motorized adjustment
painted RAL 9010 GLOSS 85% (b)

-- circular
T with 595x595 panel (a)
D with 620x620 panel (a)
F with 670x670 panel (a)

size

KZB T 315

(a) Only diameters 160 - 200 - 250 - 315
the versions with panel has steel external structure
(b) non-standard coatings are not available

KZS Hight induction diffuser with variable geometry
simultaneous fin movement
aluminum outer structure, steel fins and central disk
aluminium gears for simultaneous fin movement
standard manual fin adjustment - prepared for motorized adjustment
standard painted RAL 9010 GLOSS 85% other colors on request

-- painted RAL 9010 GLOSS 85%
L painted RAL 9003 Gloss 30%

-- circular
T with 595x595 panel (a)
D with 620x620 panel (a)
F with 670x670 panel (a)

size

KZS L T 315

(a) Only diameters 160 - 200 - 250 - 315
the versions with panel has steel external structure

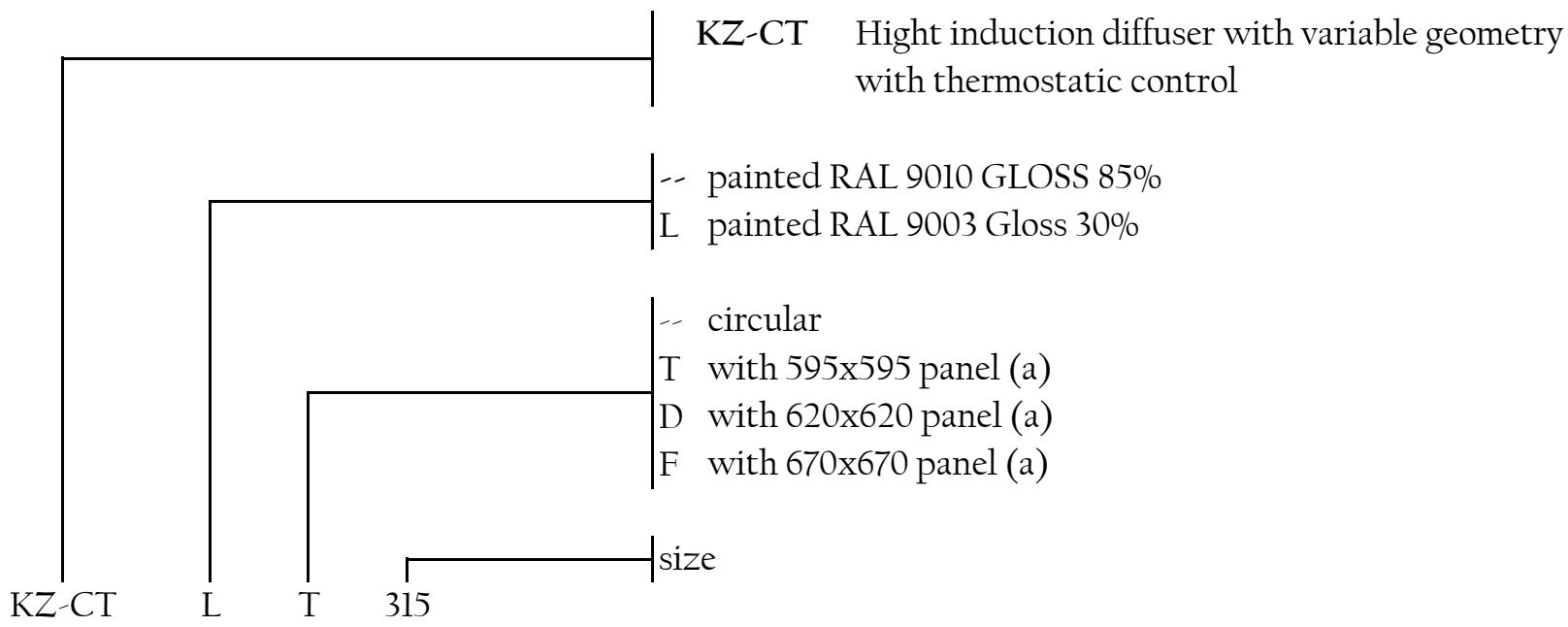
HIGH INDUCTION DIFFUSERS WITH VARIABLE GEOMETRY

KZ
SERIES

HOW TO ORDER

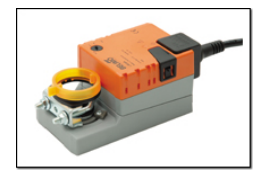
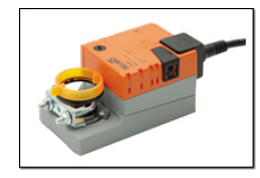
Steel central disk

ABS central disk



(a) Solamente per diametri 160 - 200 - 250 - 315
le versioni con pannello hanno pannello e campana esterna in acciaio

Nominal diameter	Equalizer
160	KZ-EQ160
200	KZ-EQ200
250	KZ-EQ250
315	KZ-EQ315
400	KZ-EQ400
500	KZ-EQ500
630	KZ-EQ630
800	KZ-EQ800

			
Nominal diameter	manifacturer	Electric proportional actuator 24 V	Electric on-off actuator 24 V
200 - 250 - 315	Belimo	WM-LM24ASR	WM-LM24A
	Siemens	WM-GDB161.1E	WM-GDB131.1E
400 - 500	Belimo	WM-NM24ASR	WM-NM24A
	Siemens	WM-GDB161.1E	WM-GDB131.1E
630 - 800	Belimo	WM-SM24ASR	WM-SM24A
	Siemens	WM-GDB161.1E	WM-GDB131.1E

PLENUM FOR CIRCULAR DIFFUSER

OVERVIEW

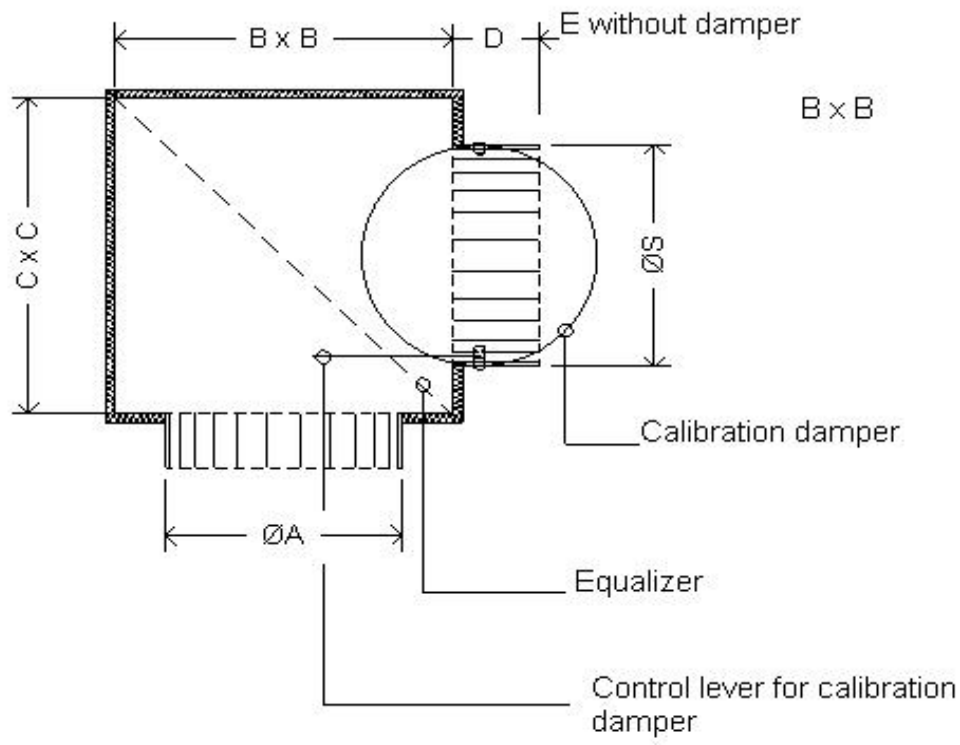
PP 60
SERIES

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

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

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

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



nominal neck diameter mm	A mm	B mm	C mm	D mm	E mm	N° of connections	S [mm] mm	connection and damper material
160	162	250	250	90	60	1	156	ABS (*)
200	202	300	300	90	60	1	196	ABS (*)
250	252	350	350	90	60	1	246	ABS (*)
315	317	400	400	90	60	1	311	steeel
400	402	500	500	90	90	1	396	steeel
500	503	600	600	100	100	1	496	steeel
630	633	730	730	100	100	1	600	steeel

(*) steel on request

PLENUM FOR CIRCULAR DIFFUSER

HOW TO ORDER

PP 60
SERIES

PP60	Z	ESI	A	200

- **PP60** Plenum for circular diffuser
- Z without mounting bridge (for diffusers KU and KZ series)
- -- Base
  E equalizer
  S damper
  I external insulation
  IN internal insulation
- -- steel connection without gasket
  G steel connection with gasket
  A ABS connection (only diameters 160 200 250)
- size