A.04

Ceiling diffusers and grilles

PS/RWR-N (RAL9016)

▬ Swirl diffusers
▬ Square
▬ Steel
▬ White, RAL 9016

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Swirl diffusers for suspended ceilings type PS/RWR-N (RAL9016)

Swirl diffusers for suspended ceilings with fixed blades

Brand
- Cairox

Application
- For air supply and exhaust in ventilation and air conditioning systems.

Material
- Steel

Colour
- White, RAL 9016
- Other colours available upon request

Composition
- Fixed blades

Mounting
- Fixing directly on the collar of the diffuser

Accessories
- Plenum box, type **RER-LB**
- Insulated plenum box, type **RER-LB ISO**
- Regulating valvle for plenum box, type **CRC**
- Polystyrene plenum box, type **PPS-P** with duct connection **PPS-APD** and mounting bar **PPS-MB**

Order example
- **PS/RWR-N, 315 + RER-LB + CRC 250**

Explanation
PS/RWR-N = Type diffuser
315 = Size diffuser (Ø diffuser neck connection)
Accessories
RER-LB = Plenum box
CRC = Regulating valve for plenum box
250 = Plenum box connection diameter 250

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□596

ØD1

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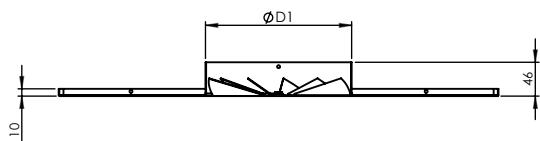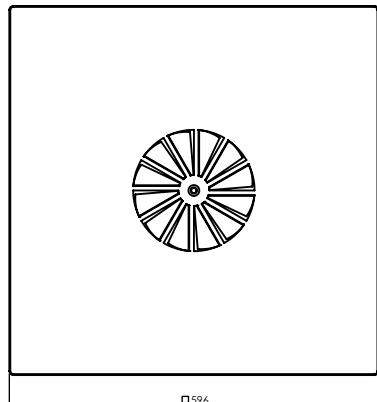
Dimensions		
PS/RWR-N	ØD1 [mm]	#Blades
125	123	8
160	158	10
200	198	12
250	248	14
315	313	16
355	353	17
400	398	18

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| Quick selection																							
PS/RWR-N			125			160			200			250			315			355			400		
Ak			0.0099			0.0123			0.0176			0.0226			0.033			0.0359			0.05		
Q		B	1.2	2.4	3.6	1.2	2.4	3.6	1.2	2.4	3.6	1.2	2.4	3.6	1.2	2.4	3.6	1.2	2.4	3.6	1.2	2.4	3.6
50	Vz	H= 2.7	0.08	0.05	0.04																		
		H= 3.2	0.06	0.04	0.04																		
		H= 3.8	0.04	0.04	0.03																		
	Vk			1.4																			
	X0.25			0.5																			
	Ps			11																			
	Lw(A)			<20																			
100	Vz	H= 2.7	0.15	0.11	0.08	0.14	0.1	0.08	0.11	0.08	0.06												
		H= 3.2	0.11	0.09	0.07	0.1	0.08	0.06	0.09	0.07	0.05												
		H= 3.8	0.09	0.07	0.06	0.08	0.06	0.05	0.07	0.05	0.05												
	Vk			2.8			2.3			1.6														
	X0.25			0.9			0.8			0.7														
	Ps			45			19			6														
	Lw(A)			35			26			<20														
150	Vz	H= 2.7	0.23	0.16	0.13	0.21	0.15	0.11	0.17	0.12	0.1	0.15	0.11	0.08									
		H= 3.2	0.17	0.13	0.11	0.15	0.12	0.1	0.13	0.1	0.08	0.11	0.09	0.07									
		H= 3.8	0.13	0.11	0.09	0.12	0.1	0.08	0.1	0.08	0.07	0.09	0.07	0.06									
	Vk			4.2			3.4			2.4			1.8											
	X0.25			1.4			1.2			1			0.9											
	Ps			100			41			14			5											
	Lw(A)			46			38			24			<20											
200	Vz	H= 2.7	0.31	0.22	0.17	0.27	0.2	0.15	0.23	0.16	0.13	0.2	0.14	0.11	0.17	0.12	0.09	0.18	0.13	0.1			
		H= 3.2	0.23	0.18	0.14	0.21	0.16	0.13	0.17	0.13	0.11	0.15	0.12	0.09	0.13	0.1	0.08	0.13	0.1	0.08			
		H= 3.8	0.18	0.14	0.12	0.16	0.13	0.11	0.13	0.11	0.09	0.12	0.09	0.08	0.1	0.08	0.07	0.1	0.08	0.07			
	Vk			5.6			4.5			3.2			2.5			1.7			1.5				
	X0.25			1.8			1.6			1.4			1.2			1			1.1				
	Ps			178			72			25			9			3			2				
	Lw(A)			54			46			32			22			<20			<20				
300	Vz	H= 2.7							0.34	0.25	0.19	0.3	0.22	0.17	0.25	0.18	0.14	0.27	0.19	0.15	0.23	0.16	0.13
		H= 3.2							0.26	0.2	0.16	0.23	0.17	0.14	0.19	0.14	0.12	0.2	0.16	0.13	0.17	0.13	0.11
		H= 3.8							0.2	0.16	0.14	0.17	0.14	0.12	0.14	0.12	0.1	0.16	0.13	0.11	0.13	0.11	0.09
	Vk									4.7			3.7			2.5			2.3			1.7	
	X0.25									2.1			1.8			1.5			1.6			1.4	
	Ps									54			20			6			4			2	
	Lw(A)									43			<20			<20			<20			<20	
400	Vz	H= 2.7										0.4	0.29	0.22	0.33	0.24	0.19	0.36	0.26	0.2	0.3	0.22	0.17
		H= 3.2										0.3	0.23	0.19	0.25	0.19	0.16	0.27	0.21	0.17	0.23	0.18	0.14
		H= 3.8										0.23	0.19	0.16	0.19	0.16	0.13	0.21	0.17	0.14	0.18	0.14	0.12
	Vk											4.9			3.4			3.1			2.2	
	X0.25											2.4			2			2.2			1.8	
	Ps											35			12			8			4	
	Lw(A)											41			27			23			<20	
500	Vz	H= 2.7										0.42	0.3	0.23	0.45	0.32	0.25				0.38	0.27	0.21
		H= 3.2										0.31	0.24	0.2	0.34	0.26	0.21				0.29	0.22	0.18
		H= 3.8										0.24	0.2	0.16	0.26	0.21	0.18				0.22	0.18	0.15
	Vk											4.2			3.9						2.8	
	X0.25											2.5			2.7						2.3	
	Ps											18			13						7	
	Lw(A)											33			30						<20	
600	Vz	H= 2.7										0.5	0.36	0.28	0.54	0.39	0.3				0.46	0.33	0.25
		H= 3.2										0.38	0.29	0.24	0.4	0.31	0.25				0.34	0.26	0.21
		H= 3.8										0.29	0.24	0.2	0.31	0.25	0.21				0.26	0.21	0.18
	Vk											5.1			4.6						3.3	
	X0.25											3			3.2						2.7	
	Ps											26			18						9	
	Lw(A)											38			35						22	
800	Vz	H= 2.7																			0.61	0.44	0.34
		H= 3.2																			0.46	0.35	0.29
		H= 3.8																			0.35	0.29	0.24
	Vk																				4.4	
	X0.25																				3.7	
	Ps																				16	
	Lw(A)																				30	
1000	Vz	H= 2.7																			0.76	0.54	0.42
		H= 3.2																			0.57	0.44	0.36
		H= 3.8																			0.44	0.36	0.3
	Vk																				5.6	
	X0.25																				4.6	
	Ps																				26	
	Lw(A)																				36	

Symbols and specifications

- Q = Air volume in m³/h
- Ak = Effective surface (free area) in m²
- B = Distance between the diffusers in m
- H = Installation height of the diffusers in m
- Vz = Maximum velocity at the occupied zone according to distance between the diffusers and installation height in m/s
- Vk = Average effective velocity through the diffuser in m/s
- X0.25 = Throw length in m at an end velocity Vt of 0,25m/s
- Ps = Static pressure loss given in Pa
- Lw(A) = Acoustic power in dB(A)

- The throw X0.25 is given at an end velocity of 0.25m/s for a smooth ceiling without any obstacles.
- The values are given for isothermal supply air. Throw distances for cooling conditions at -11K can be calculated by dividing the X0.25 values with factor 1.1. For heating purposes at Dt of +11K a multiplier of 1.1 should be applied to the given X0.25 value.
- In order to achieve a high comfort level, selections can be made according to the maximal velocity at the occupied zone Vz. These values are given at distances between diffusers B and installation heights H. Velocities Vz lower than, or equal to 0,25m/s at the occupied zone are advised.
- The pressure losses Ps are given for diffusers without damper of with fully opened damper.

- The acoustic power values Lw(A) are given for diffusers without damper of with fully opened damper without room attenuation. Acoustic powers below 20dB(A) are mentioned as "<20" in the tables.
- For all special requirements, please contact our engineering office.

Placement instruction

A.04

Ceiling diffusers
and grilles
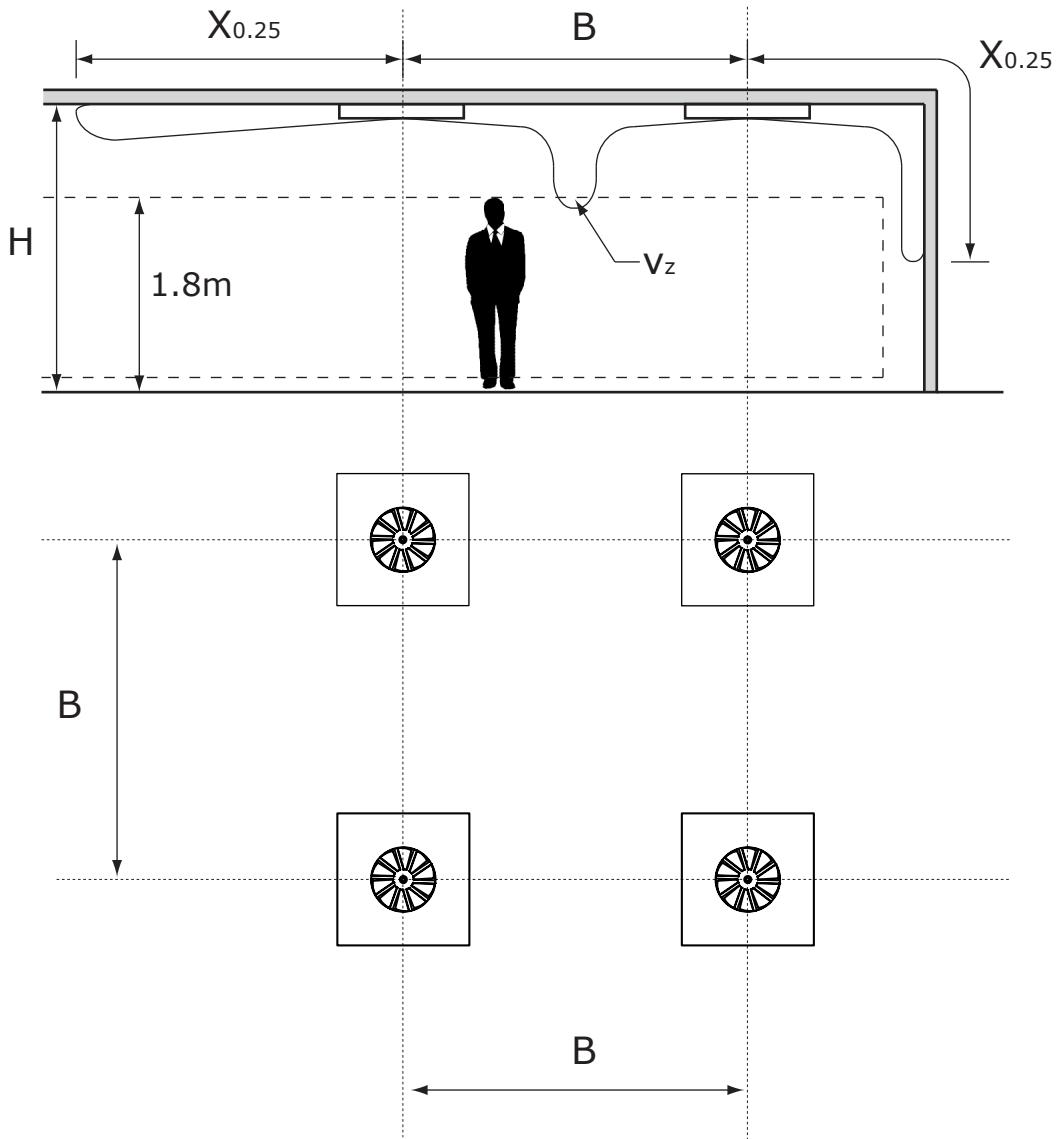
RER-LB

◾ Plenum boxes
◾ Circular
◾ Steel

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Circular plenum boxes type RER-LB

Circular galvanized steel plenum box **RER-LB** with crossbar. To be combined with
(PS/)RWR-N, VWR-N, RWR-2 and PRN

Brand
◾ Cairox

Application
◾ Connection of circular ductwork and circular diffusers
◾ Velocity reduction towards diffusers
◾ Diffuser mounting in plasterboard or false system ceilings

Material
◾ Galvanized steel

Composition
◾ Circular plenum box made out of galvanized steel
◾ Circular side entry spigot
◾ Mounted crossbar with M6 screw connection in the middle
◾ Rubber seal between plenum box and diffuser to make an airtight connection

Accessoiries
◾ Circular regulating valve, type **CRC**

Order example
◾ **RER-LB, 200 + CRC 160**
Explanation
**RER-LB =** Plenum box type
200 = Size according to diffuser (Ø diffuser neck connection)
Accessory
CRC 160 = Volume control damper for plenumbox connection Ø160

Other available products
◾ Insulated plenum box type **RER-LB ISO**

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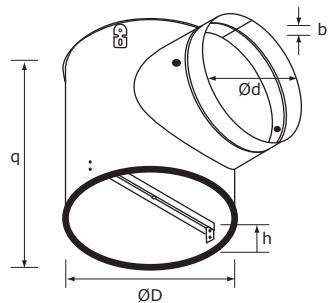
Dimensions					
RER-LB	**ØD [mm]**	**q [mm]**	**Ød [mm]**	**b [mm]**	**h [mm]**
100	111	148	80	15	65
125	136	168	100	15	65
160	171	193	125	15	65
200	211	228	160	15	65
250	261	268	200	15	65
315	326	318	250	15	65
355	366	318	250	15	65
400	411	383	315	15	65
500	511	383	315	15	65