

**PS/PRN  
(RAL9016)**

- Circular conical diffusers
- Square
- Aluminium & steel
- White, RAL 9016



## Diffusers for system ceilings type PS/PRN (RAL9016)

Round ceiling diffusers with fixed diffusion rings in plate for system ceiling 600 X 600 for radial air discharge

### Brand

- Cairox

### Application

- For air supply and exhaust in ventilation and air conditioning systems
- Simple to integrate into suspended ceiling.
- Suitable for areas with high comfort requirements due to rapid reduction of temperature and air velocity because of an high induction rate.

### Material

- Aluminium and steel combination

### Colour

- Standard colour white, RAL 9016
- Other colours available upon request

### Composition

- fixed diffusion rings

### Mounting

- Fixing directly on the collar

### Accessories

- Plenum box type **RER-LB**
- Insulated plenum box type **RER-LB ISO**
- Plenumbox connection valve type **CRC**
- Butterfly volume control damper for mounting on the neck of the diffuser, type **DR**

### Text for tender

- The circular ceiling diffusers have fixed diffusion blades. They are made of steel and aluminium with white powdercoating finish RAL 9016 and supplied with a volume control damper in the plenum box.
- **Cairox type PS/PRN+RER-LB**

### Order example

- PS/PRN, 200 + RER-LB + CRC 160

Explanation

**PS/PRN** = Diffuser type

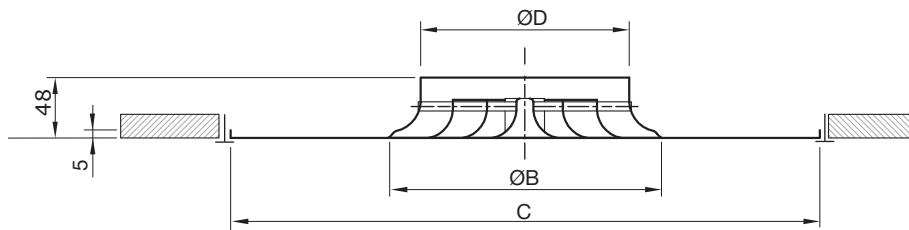
**200** = Diffuser size (Ø diffuser neck connection)

Accessories

**RER-LB** = Plenum box

**CRC** = Plenumbox connection valve

**160** = Plenumbox connection diameter 160

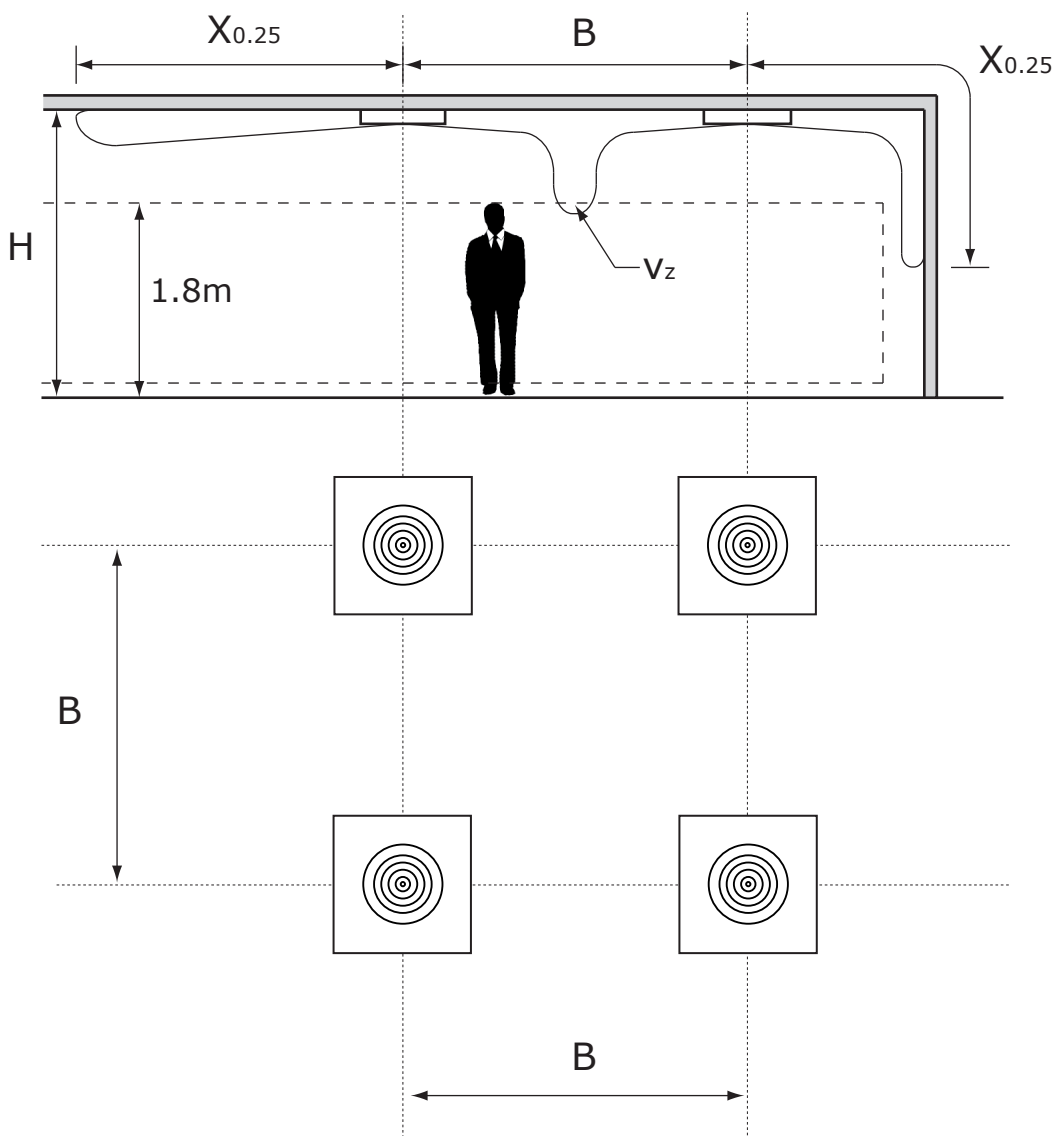


Dimensions			
PS/PRN	C [mm]	ØB [mm]	ØD [mm]
150	595	210	149
200	595	260	199
250	595	300	249
300	595	350	314

Quick selection															
Q	PS/PRN		150			200			250			300			
	Ak	B	0.0092			0.0138			0.0206			0.0312			
50	Vz	H= 2.7	1.2	2.4	3.6	1.2	2.4	3.6	1.2	2.4	3.6	1.2	2.4	3.6	
		H= 3.2	0.38	0.13	0.08										
		H= 3.8	0.14	0.08	0.06										
	Vk		1.5												
	X0,25		1.7												
100	Vz	H= 2.7	0.77	0.26	0.15	0.63	0.21	0.13							
		H= 3.2	0.29	0.16	0.11	0.23	0.13	0.09							
		H= 3.8	0.16	0.11	0.09	0.13	0.09	0.07							
	Vk		3			2									
	X0,25		2.1			2									
150	Vz	H= 2.7	1.15	0.38	0.23	0.94	0.31	0.19	0.77	0.26	0.15				
		H= 3.2	0.43	0.25	0.17	0.35	0.2	0.14	0.29	0.16	0.12				
		H= 3.8	0.25	0.17	0.13	0.2	0.14	0.11	0.16	0.12	0.09				
	Vk		4.5			3			2						
	X0,25		2.6			2.3			2.1						
300	Vz	H= 2.7	2.3	0.77	0.46	1.88	0.63	0.38	1.54	0.51	0.31	1.25	0.42	0.25	
		H= 3.2	0.86	0.49	0.34	0.7	0.4	0.28	0.58	0.33	0.23	0.47	0.27	0.19	
		H= 3.8	0.49	0.34	0.27	0.4	0.28	0.22	0.33	0.23	0.18	0.27	0.19	0.14	
	Vk		9.1			6			4			2.7			
	X0,25		4			3.5			3			2.7			
400	Vz	H= 2.7				2.5	0.83	0.5	2.05	0.68	0.41	1.66	0.55	0.33	
		H= 3.2				0.94	0.54	0.38	0.77	0.44	0.31	0.62	0.36	0.25	
		H= 3.8				0.54	0.38	0.29	0.44	0.31	0.24	0.36	0.25	0.19	
	Vk					8.1			5.4			3.6			
	X0,25					4.2			3.7			3.2			
500	Vz	H= 2.7							2.56	0.85	0.51	2.08	0.69	0.42	
		H= 3.2							0.96	0.55	0.38	0.78	0.45	0.31	
		H= 3.8							0.55	0.38	0.3	0.45	0.31	0.24	
	Vk								6.7			4.5			
	X0,25								4.3			3.7			
600	Vz	H= 2.7							3.07	1.02	0.61	2.5	0.83	0.5	
		H= 3.2							1.15	0.66	0.46	0.94	0.53	0.37	
		H= 3.8							0.66	0.46	0.35	0.53	0.37	0.29	
	Vk								8.1			5.3			
	X0,25								4.9			4.2			
800	Vz	H= 2.7										3.33	1.11	0.67	
		H= 3.2										1.25	0.71	0.5	
		H= 3.8										0.71	0.5	0.38	
	Vk											7.1			
	X0,25											5.2			

**Symbols and specifications**

- $Q$  = Air Volume in  $m^3/h$
  - $A_k$  = Effective surface (free area) in  $m^2$
  - $B$  = Distance between diffusers in m
  - $H$  = Installation height of the diffusers in m
  - $V_z$  = Maximum velocity at the occupied zone regarding distance between diffusers and installation height in m/s
  - $V_k$  = Average effective velocity through the grill in m/s
  - $X_{0.25}$  = Throw length in m at an endvelocity  $V_t$  of 0,25m/s
  - $P_s$  = Static pressure loss given in Pa
  - $L_w(A)$  = Acoustic power in dB(A)
- The throw  $X_{0.25}$  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 deviding the  $X_{0.25}$  values with factor 1.1. For heating purposes at Dt of +11K a multiplier of 1.1 should be applied to the given  $X_{0.25}$  value.
  - In order to achieve a high comfort level, selections can be made according to the maximal velocity at the occupied zone  $V_z$ . These values are given at distances between diffusers  $B$  and installation heights  $H$ . Velocities  $V_z$  lower than, or equal to 0,25m/s at the occupied zone are advised.
  - The pressure losses  $P_s$  are given for grilles without damper or with fully opened damper.
  - The acoustic power  $L_w(A)$  are given for grilles without damper or 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**

- Plenum boxes
- Circular
- Steel



## 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

### Accessories

- Circular regulating valve, type **CRC**

### Order example

- **RER-LB, 200 + CRC 160**

Explanation

**RER-LB** = Plenum box type

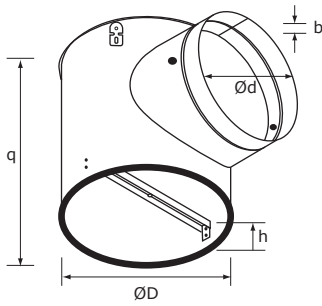
**200** = Size according to diffuser (Ø diffuser neck connection)

Accessory

**CRC 160** = Volume control damper for plenumbox connection Ø160

### Other available products

- Insulated plenum box type **RER-LB ISO**



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