

PRN (RAL9016)

- Circular conical diffusers
- Circular
- Aluminium
- White, RAL 9016



Round ceiling diffusers type PRN (RAL9016)

Round ceiling diffusers with fixed diffusion rings for radial air discharge

Brand

- Cairox

Application

- Used 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.
- Installation height between 2.7 and 4 m.

Material

- Aluminium

Colour

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

Composition

- Fixed diffusion rings

Mounting

- Fixing directly on the collar
- Fixing with central screw

Accessories

- Plenum box, type **RER-LB**
- Plenum box, type **RER-LB ISO**
- Plenumbox connection valve, type **CRC**
- Crossbar for ceiling mounting, type **FHN**
- Crossbar for mounting in circular duct, type **FGN**

Order example

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

Explanation

PRN = Diffuser type

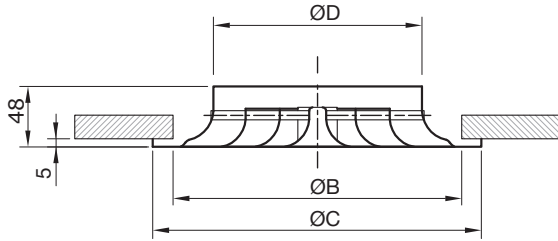
200 = Diffuser size (Ø diffuser neck connection)

Accessories

RER-LB = Plenumbox

CRC = Plenumbox connection valve

160 = Plenumbox connection diameter 160



Dimensions			
PRN	ØC [mm]	ØB [mm]	ØD [mm]
150	250	210	149
200	300	260	199
250	342	300	249
300	398	350	314

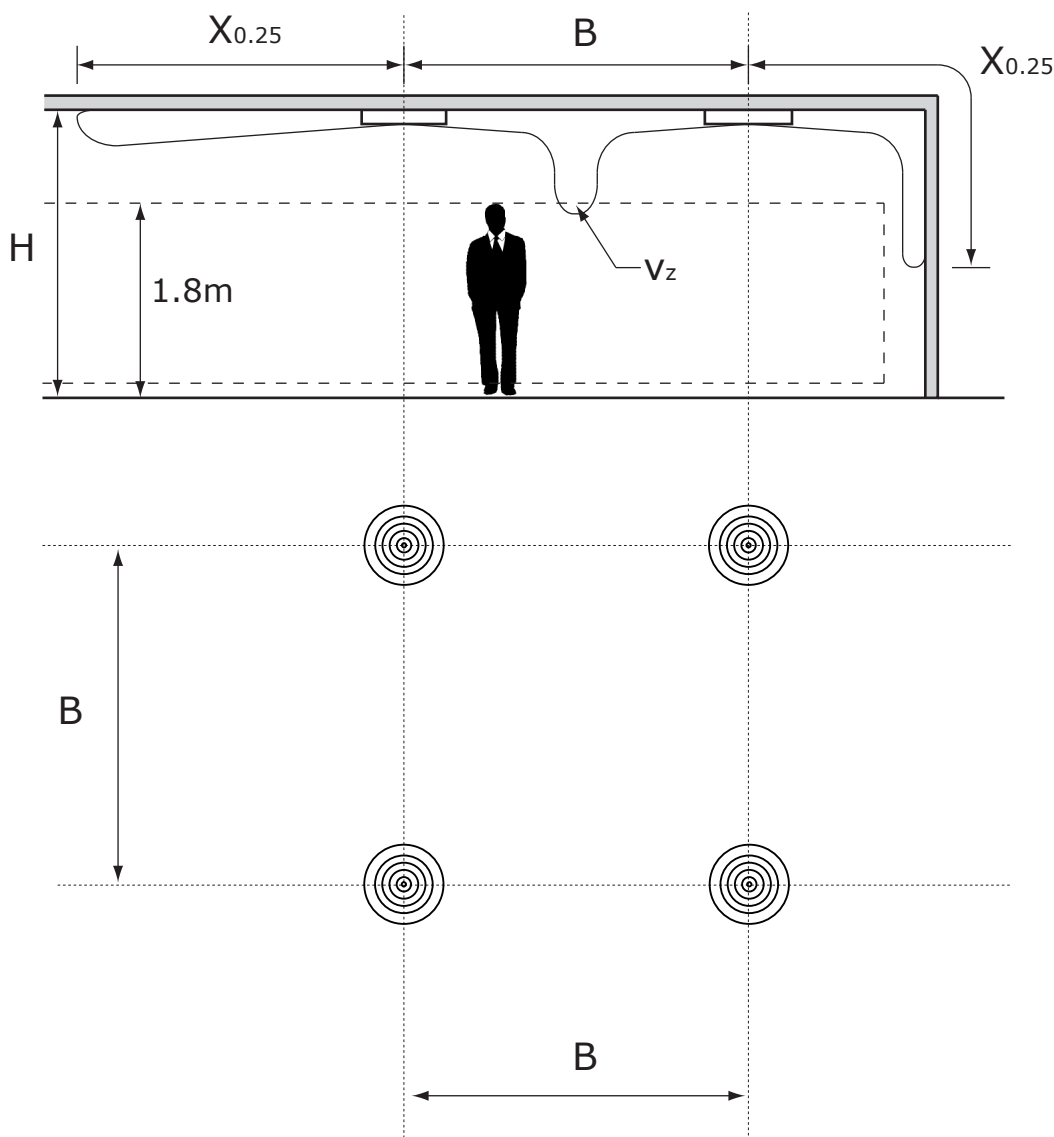
Quick selection																	
Q	PRN	Ak	150			200			250			300					
			1.2	2.4	3.6	1.2	2.4	3.6	1.2	2.4	3.6	1.2	2.4	3.6			
50	Vz	H= 2.7	0.38	0.13	0.08												
		H= 3.2	0.14	0.08	0.06												
		H= 3.8	0.08	0.06	0.04												
	Vk		1.5														
	X0,25		1.7														
100	Vz	H= 2.7	0.77	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					
800	Lw(A)											20					
												43					

Symbols and specifications

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

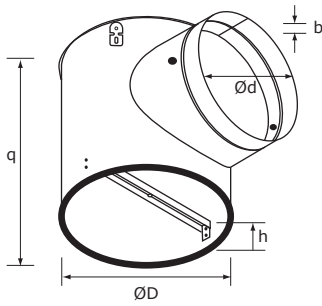
200 = Size according to diffuser (Ø diffuser neck connection)

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