

**RWR-N  
(RAL9016)**

- Swirl diffusers
- Circular
- Steel
- White, RAL 9016

**CAIROX**

## Circular swirl diffusers with fixed blades type RWR-N (RAL9016)

Circular swirl ceiling diffusers with fixed blades

### Brand

- Cairox

### Application

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

### Material

- Steel

### Colour

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

### Composition

- Fixed blades

### Mounting

- Fixing with central screw into the crossbar of the plenum box

### Accessories

- Plenum box, type **RER-LB**
- Insulated plenum box, type **RER-LB ISO**
- Regulating valve for plenum box, type **CRC**
- Mounting crossbar for direct duct mounting, type **FGN**
- Mounting crossbar for direct ceiling mounting, type **FHN**

### Text for tender

- The air supply diffusers are of the swirl type with fixed blades. They are made of steel with white powder coating RAL 9016 and supplied with a volume control damper in the plenum box.
- **Cairox** type **RWR-N+RER-L**

### Order example

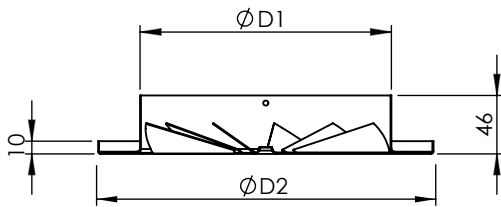
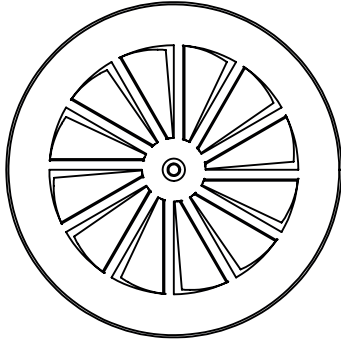
- **RWR-N, 315 + RER-LB + CRC 250**

Explanation

**RWR-N** = Diffuser type

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

## Accessories

**RER-LB** = Plenum box**CRC** = Regulating valve for plenum box**250** = Plenum box connection diameter

| RWR-N | Dimensions |          |         |
|-------|------------|----------|---------|
|       | ØD1 [mm]   | ØD2 [mm] | #Blades |
| 125   | 123        | 171      | 8       |
| 160   | 158        | 214      | 10      |
| 200   | 198        | 264      | 12      |
| 250   | 248        | 326      | 14      |
| 315   | 313        | 404      | 16      |
| 355   | 353        | 448      | 17      |
| 400   | 398        | 500      | 18      |
| 500   | 498        | 596      | 20      |

|       |    | Quick selection |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|-------|----|-----------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| RWR-N |    | 125             |      |      | 160  |      |      | 200  |      |      | 250  |      |      | 315  |      |      | 355  |      |      | 400  |      |      | 500  |      |      |      |
| Q     | Ak | 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  | 1.2  | 2.4  | 3.6  |      |
| 50    | B  | 0.0099          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|       | 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  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 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    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 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  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|       |    | X0.25           |      | 1.4  |      |      | 1.2  |      |      | 1    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|       |    | Ps              |      | 100  |      |      | 41   |      |      | 14   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 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  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|       |    | X0.25           |      | 1.8  |      |      | 1.6  |      |      | 1.4  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|       |    | Ps              |      | 178  |      |      | 72   |      |      | 25   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 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 | 0.24 | 0.17 | 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 | 0.18 | 0.14 | 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 | 0.14 | 0.11 | 0.09 |
|       |    | Vk              |      |      |      |      |      |      |      | 4.7  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|       |    | X0.25           |      |      |      |      |      |      |      | 2.1  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|       |    | Ps              |      |      |      |      |      |      |      | 54   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 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 | 0.24 | 0.17 | 0.13 |
|       |    | 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 | 0.18 | 0.14 | 0.11 |
|       |    | 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 | 0.14 | 0.11 | 0.09 |
|       |    | Vk              |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|       |    | X0.25           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|       |    | Ps              |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 500   | Vz | H= 2.7          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|       |    | H= 3.2          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|       |    | H= 3.8          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|       |    | Vk              |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|       |    | X0.25           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|       |    | Ps              |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 600   | Vz | H= 2.7          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|       |    | H= 3.2          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|       |    | H= 3.8          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|       |    | Vk              |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|       |    | X0.25           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|       |    | Ps              |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 800   | Vz | H= 2.7          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|       |    | H= 3.2          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|       |    | H= 3.8          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|       |    | Vk              |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|       |    | X0.25           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|       |    | Ps              |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 1000  | Vz | H= 2.7          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|       |    | H= 3.2          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|       |    | H= 3.8          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|       |    | Vk              |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|       |    | X0.25           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|       |    | Ps              |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 1200  | Vz | H= 2.7          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|       |    | H= 3.2          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|       |    | H= 3.8          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|       |    | Vk              |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|       |    | X0.25           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|       |    | Ps              |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

**Symbols and specifications**

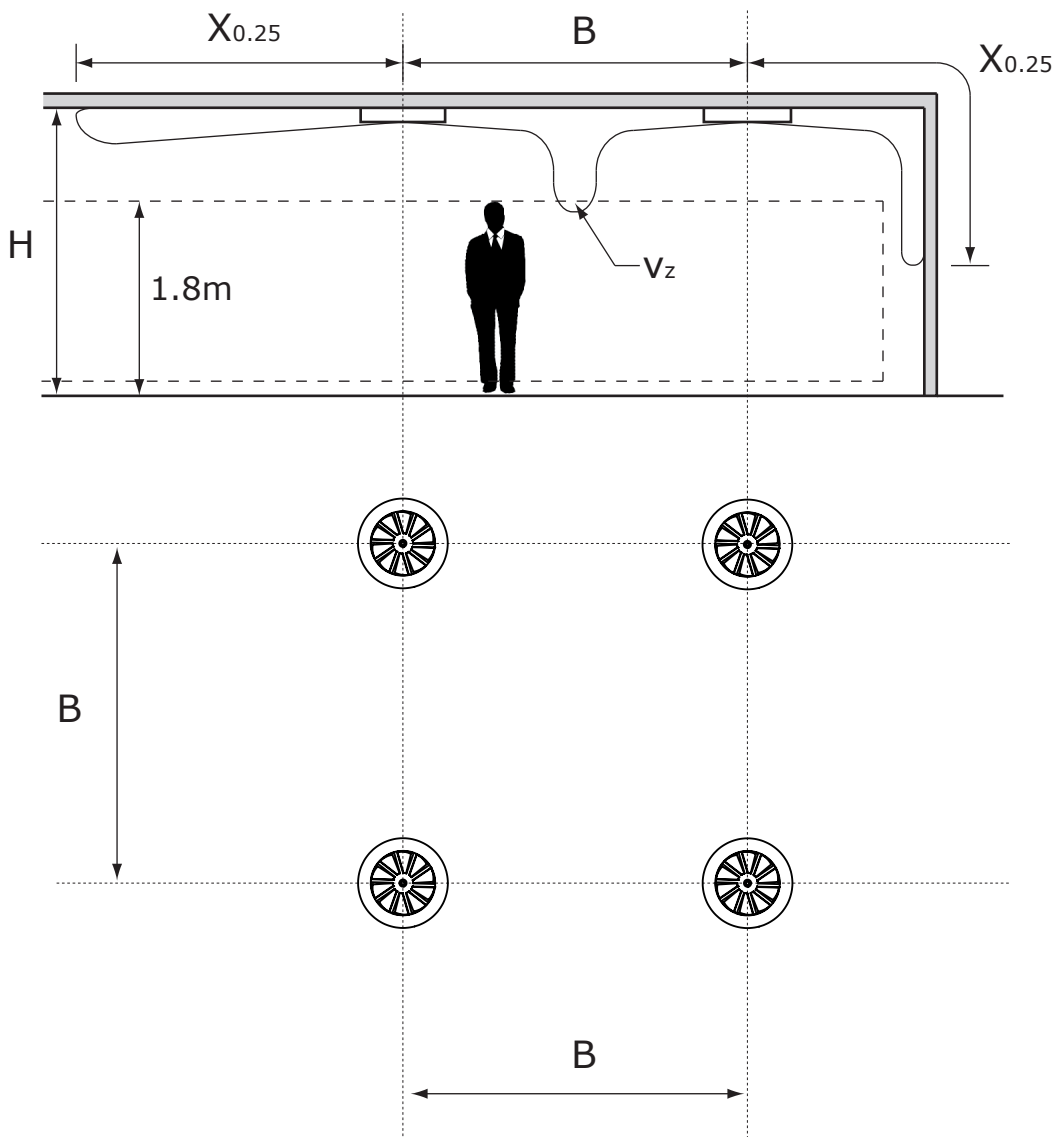
- Q = Air volume in m³/h
- Ak = Effective surface (free area) in m²
- B = Distance between the diffusers in m
- H = Installation height of the diffusers in m
- Vz = Maximum velocity at the occupied zone according to distance between the diffusers and installation height in m/s
- Vk = Average effective 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  $X_{0.25}$  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  $0,25\text{m/s}$  at the occupied zone are advised.
- The pressure losses  $P_s$  are given for diffusers without damper or with fully opened damper.
- The acoustic power values  $L_w(A)$  are given for diffusers without damper or with fully opened damper without room attenuation. Acoustic powers below  $20\text{dB}(A)$  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

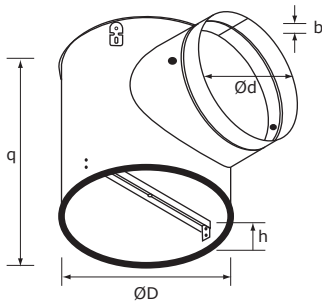
**200** = Size according to diffuser (Ø diffuser neck connection)

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     |