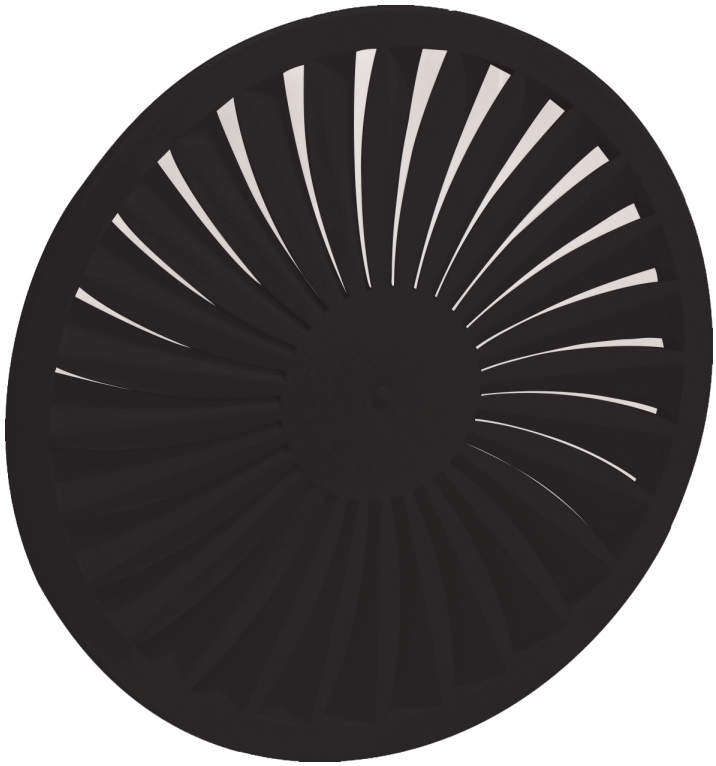
**RWR-FCSA (RAL9005)**

- Swirl diffusers
- Circular
- Steel
- Black, RAL 9005



# Black circular swirl diffusers with fixed curved blades type RWR-FCSA (RAL9005)

Swirl ceiling diffusers with high induction rate, consisting of a circular plate with multiple fixed curved blades arranged in a circular pattern, to be equipped with galvanized steel plenum box

### Brand
- Cairox

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

### Material
- Steel

### Colour
- Black, RAL 9005
- Other colours available upon request

### Composition
- Front plate made of powder coated steel
- Central screw mounting

### Mounting
- Fixing by central screw in the crossbar of the plenum box.

### Accessories
- Circular plenum box, type **RER-B**
- Insulated circular plenum box, type **RER-B ISO**
- Regulating valve for plenum box, type **CRC**

### Text for tender
- The ceiling swirl diffusers are round with fixed, curved blades with high induction power and horizontal discharge. The front grilles and blades are made of steel. The diffusers are powder-coated black in RAL 9005. They are mounted in an insulated or non-insulated round plenum by means of a central concealed screw

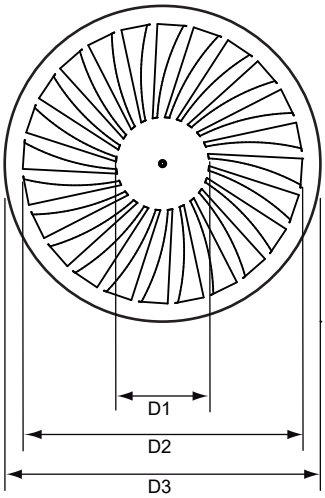
fixing. The galvanized steel plenums are provided with a perforated plate to obtain a homogeneous distribution over the grille and a flow regulator in the side connection.

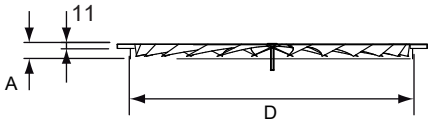
- **Cairox** type **RWR-FCSA (RAL9005) + RER-B(ISO) + CRC**

## Order example

- **RWR-FCSA (RAL9005), 600 + RER-B 600 + CRC 250**

Explanation
**RWR-FCSA (RAL9005) =** Diffuser type
**600** = Diffuser size/swirl size
Accessories
**RER-B** = Type plenum box
**600** = Size plenum box
**CRC** = Regulating valve for plenum box
**250** = Plenum box connection diameter 250




| Dimensions | | | | | | |
|---|---|---|---|---|---|---|
| | D [mm] | D1 [mm] | D2 [mm] | D3 [mm] | A | #Blades |
| RWR-FCSA 300 | 238 | 86 | 236 | 296 | 41 | 16 |
| RWR-FCSA 400 | 338 | 140 | 336 | 396 | 41 | 22 |
| RWR-FCSA 500 | 438 | 170 | 436 | 496 | 41 | 24 |
| RWR-FSCA 600 | 538 | 170 | 536 | 596 | 22 | 24 |
| RWR-FSCA 625* | 538 | 170 | 536 | 621 | 22 | 24 |

* niet meer verkrijgbaar / n'est plus disponible / no longer available

| Quick selection | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RWR-FCSA | | | 300 | | | 400 | | | 500 | | | 600 | | | 625* | | | |
| Q | Ak | | 0.023 | | | 0.03 | | | 0.0465 | | | 0.07 | | | 0.07 | | | |
| | 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 | |
| 100 | Vz | H= 2.7 | 0.17 | 0.13 | 0.11 | | | | | | | | | | | | | |
| | | H= 3.2 | 0.14 | 0.11 | 0.09 | | | | | | | | | | | | | |
| | | H= 3.8 | 0.11 | 0.09 | 0.08 | | | | | | | | | | | | | |
| | Vk | | | 1.2 | | | | | | | | | | | | | | |
| | X0,25 | | | 0.9 | | | | | | | | | | | | | | |
| | Ps | | | 7 | | | | | | | | | | | | | | |
| | Lw(A) | | | <20 | | | | | | | | | | | | | | |
| 150 | Vz | H= 2.7 | 0.26 | 0.2 | 0.16 | 0.23 | 0.18 | 0.15 | | | | | | | | | | |
| | | H= 3.2 | 0.2 | 0.17 | 0.14 | 0.18 | 0.15 | 0.13 | | | | | | | | | | |
| | | H= 3.8 | 0.17 | 0.14 | 0.12 | 0.15 | 0.13 | 0.12 | | | | | | | | | | |
| | Vk | | | 1.8 | | | 1.4 | | | | | | | | | | | |
| | X0,25 | | | 1.6 | | | 1.3 | | | | | | | | | | | |
| | Ps | | | 17 | | | 5 | | | | | | | | | | | |
| | Lw(A) | | | 26 | | | <20 | | | | | | | | | | | |
| 200 | Vz | H= 2.7 | 0.34 | 0.26 | 0.21 | 0.29 | 0.23 | 0.2 | 0.21 | 0.17 | 0.14 | | | | | | | |
| | | H= 3.2 | 0.27 | 0.22 | 0.19 | 0.24 | 0.2 | 0.17 | 0.17 | 0.15 | 0.13 | | | | | | | |
| | | H= 3.8 | 0.22 | 0.19 | 0.16 | 0.2 | 0.17 | 0.15 | 0.15 | 0.13 | 0.12 | | | | | | | |
| | Vk | | | 2.4 | | | 1.9 | | | 1.2 | | | | | | | | |
| | X0,25 | | | 2.2 | | | 1.9 | | | 1.1 | | | | | | | | |
| | Ps | | | 30 | | | 8 | | | 2 | | | | | | | | |
| | Lw(A) | | | 34 | | | <20 | | | <20 | | | | | | | | |
| 250 | Vz | H= 2.7 | 0.43 | 0.33 | 0.27 | 0.36 | 0.29 | 0.24 | 0.25 | 0.2 | 0.17 | | | | | | | |
| | | H= 3.2 | 0.34 | 0.28 | 0.23 | 0.3 | 0.25 | 0.21 | 0.21 | 0.18 | 0.16 | | | | | | | |
| | | H= 3.8 | 0.28 | 0.23 | 0.2 | 0.25 | 0.21 | 0.19 | 0.18 | 0.16 | 0.14 | | | | | | | |
| | Vk | | | 3 | | | 2.3 | | | 1.5 | | | | | | | | |
| | X0,25 | | | 2.9 | | | 2.5 | | | 1.5 | | | | | | | | |
| | Ps | | | 47 | | | 13 | | | 3 | | | | | | | | |
| | Lw(A) | | | 41 | | | 24 | | | <20 | | | | | | | | |
| 300 | Vz | H= 2.7 | 0.51 | 0.39 | 0.32 | 0.43 | 0.34 | 0.28 | 0.29 | 0.24 | 0.2 | 0.22 | 0.17 | 0.15 | 0.22 | 0.17 | 0.15 | |
| | | H= 3.2 | 0.41 | 0.33 | 0.28 | 0.35 | 0.29 | 0.25 | 0.25 | 0.21 | 0.18 | 0.18 | 0.15 | 0.13 | 0.18 | 0.15 | 0.13 | |
| | | H= 3.8 | 0.33 | 0.28 | 0.24 | 0.29 | 0.25 | 0.22 | 0.21 | 0.18 | 0.17 | 0.15 | 0.13 | 0.12 | 0.15 | 0.13 | 0.12 | |
| | Vk | | | 3.6 | | | 2.8 | | | 1.8 | | | 1.2 | | | 1.2 | | |
| | X0,25 | | | 3.7 | | | 3.2 | | | 1.9 | | | 1.2 | | | 1.2 | | |
| | Ps | | | 67 | | | 19 | | | 5 | | | 2 | | | 2 | | |
| | Lw(A) | | | 47 | | | 30 | | | <20 | | | <20 | | | <20 | | |
| 400 | Vz | H= 2.7 | | | | 0.56 | 0.44 | 0.37 | 0.38 | 0.31 | 0.26 | 0.29 | 0.24 | 0.2 | 0.29 | 0.24 | 0.2 | |
| | | H= 3.2 | | | | 0.46 | 0.38 | 0.33 | 0.32 | 0.27 | 0.24 | 0.24 | 0.2 | 0.18 | 0.24 | 0.2 | 0.18 | |
| | | H= 3.8 | | | | 0.38 | 0.33 | 0.29 | 0.27 | 0.24 | 0.21 | 0.2 | 0.18 | 0.16 | 0.2 | 0.18 | 0.16 | |
| | Vk | | | | | | 3.7 | | | 2.4 | | | 1.6 | | | 1.6 | | |
| | X0,25 | | | | | | 4.7 | | | 2.9 | | | 1.9 | | | 1.9 | | |
| | Ps | | | | | | 33 | | | 9 | | | 4 | | | 4 | | |
| | Lw(A) | | | | | | 39 | | | 21 | | | <20 | | | <20 | | |
| 500 | Vz | H= 2.7 | | | | 0.69 | 0.54 | 0.46 | 0.46 | 0.38 | 0.32 | 0.37 | 0.3 | 0.25 | 0.37 | 0.3 | 0.25 | |
| | | H= 3.2 | | | | 0.56 | 0.47 | 0.41 | 0.39 | 0.33 | 0.29 | 0.31 | 0.26 | 0.22 | 0.31 | 0.26 | 0.22 | |
| | | H= 3.8 | | | | 0.47 | 0.41 | 0.36 | 0.33 | 0.29 | 0.26 | 0.26 | 0.22 | 0.2 | 0.26 | 0.22 | 0.2 | |
| | Vk | | | | | | 4.6 | | | 3 | | | 2 | | | 2 | | |
| | X0,25 | | | | | | 6.4 | | | 4 | | | 2.7 | | | 2.7 | | |
| | Ps | | | | | | 51 | | | 14 | | | 6 | | | 6 | | |
| | Lw(A) | | | | | | 45 | | | 28 | | | <20 | | | <20 | | |
| 600 | Vz | H= 2.7 | | | | | | | 0.54 | 0.44 | 0.38 | 0.45 | 0.36 | 0.3 | 0.45 | 0.36 | 0.3 | |
| | | H= 3.2 | | | | | | | 0.45 | 0.39 | 0.34 | 0.37 | 0.31 | 0.27 | 0.37 | 0.31 | 0.27 | |
| | | H= 3.8 | | | | | | | 0.39 | 0.34 | 0.31 | 0.31 | 0.27 | 0.24 | 0.31 | 0.27 | 0.24 | |
| | Vk | | | | | | | | | 3.6 | | | 2.4 | | | 2.4 | | |
| | X0,25 | | | | | | | | | 5.2 | | | 3.6 | | | 3.6 | | |
| | Ps | | | | | | | | | 20 | | | 9 | | | 9 | | |
| | Lw(A) | | | | | | | | | 34 | | | 23 | | | 23 | | |
| 800 | Vz | H= 2.7 | | | | | | | 0.7 | 0.57 | 0.49 | 0.61 | 0.48 | 0.41 | 0.61 | 0.48 | 0.41 | |
| | | H= 3.2 | | | | | | | 0.59 | 0.5 | 0.44 | 0.5 | 0.42 | 0.36 | 0.5 | 0.42 | 0.36 | |
| | | H= 3.8 | | | | | | | 0.5 | 0.44 | 0.39 | 0.42 | 0.36 | 0.33 | 0.42 | 0.36 | 0.33 | |
| | Vk | | | | | | | | | 4.8 | | | 3.2 | | | 3.2 | | |
| | X0,25 | | | | | | | | | 7.9 | | | 5.6 | | | 5.6 | | |
| | Ps | | | | | | | | | 35 | | | 15 | | | 15 | | |
| | Lw(A) | | | | | | | | | 43 | | | 32 | | | 32 | | |
| 1000 | Vz | H= 2.7 | | | | | | | | | | 0.76 | 0.61 | 0.52 | 0.76 | 0.61 | 0.52 | |
| | | H= 3.2 | | | | | | | | | | 0.63 | 0.53 | 0.46 | 0.63 | 0.53 | 0.46 | |
| | | H= 3.8 | | | | | | | | | | 0.53 | 0.46 | 0.41 | 0.53 | 0.46 | 0.41 | |
| | Vk | | | | | | | | | | | | 4 | | | 4 | | |
| | X0,25 | | | | | | | | | | | | 8 | | | 8 | | |
| | Ps | | | | | | | | | | | | 24 | | | 24 | | |
| | Lw(A) | | | | | | | | | | | | 39 | | | 39 | | |

## 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**