



**FLEXIBLE CIRCULAR  
SILENCER TYPE CF**

## CF

### FOR THE REDUCTION OF NOISE IN CIRCULAR DUCTS, FLEXIBLE ALUMINIUM CONSTRUCTION

Circular silencers, of a flexible aluminium construction, for the reduction of noise in the circular ducts of ventilation and air conditioning systems

- The sound absorbing material is non-combustible mineral wool with RAL quality mark, biosoluble and hence hygienically safe according to the German TRGS 905 (Technical Rules for Hazardous Substances) and EU directive 97/69/EC
- Casing and perforated inner duct made of aluminium
- Variant with spigot has a groove for a lip seal, suitable for circular connecting ducts to EN 1506 or EN 13180
- Insertion loss measured according to ISO 7235
- Casing air leakage to EN 15727, class D

#### Optional equipment and accessories

- Socket-type spigots on both ends
- Raised edges at both ends
- With lip seals on both ends

## General Information

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#### Application

- Flexible circular silencer for the reduction of noise in the circular ducts of ventilation and air conditioning systems
- For the reduction of air-regenerated noise of air terminal units LVC, TVR, TVE and of mechanical self-powered control units RN and VFC
- For the reduction of fan noise
- Can be used as cross talk silencer to reduce the transfer of noise through ducts between neighbouring rooms

#### Special characteristics

- Insertion loss measured according to ISO 7235
- Very flexible and consequently suitable for installation in complicated duct systems and restricted spaces
- The sound absorbing material is non-combustible

- Insulation thickness 25 mm or 50 mm
- Smallest bend radius  $3 \times$  outer diameter  $\varnothing D_3$

#### Nominal sizes

- 80, 100, 125, 160, 200, 250, 315, 400 mm

#### Variants

- 025: Circular silencer with 25 mm insulation
- 050: Circular silencer with 50 mm insulation
- AS2: Circular silencer with socket-type spigots on both ends
- BK2: Circular silencer with raised edges at both ends

#### Parts and characteristics

- Casing
- Perforated inner tube
- Absorption material

#### Accessories

- VD2: With lip seals on both ends
- AS2: Socket-type spigots on both ends
- BK2: Raised edges at both ends

#### Construction features

- Circular casing
- Flexible construction
- Spigot suitable for circular ducts to EN 1506 or EN 13180
- Spigot with groove for lip seal
- Max. operating pressure 1000 Pa
- Max. operating temperature 100 °C

Material and surfaces

- Casing and perforated inner duct made of aluminium
- Lining is mineral wool
- End pieces made of aluminium

Mineral wool

- To EN 13501, fire rating Class A1, non-combustible
- RAL quality mark RAL-GZ 388
- Non-hazardous thanks to high biosolubility according to the German Ordinance on Hazardous Substances and Note Q of the European Regulation (EC) No. 1272/2008
- Inert to fungal and bacterial growth

Standards and guidelines

- Insertion loss measured according to ISO 7235
- Casing air leakage to EN 15727, class D

Maintenance

- Low-maintenance as construction and materials are not subject to wear

TECHNICAL INFORMATION

Technical data, Quick sizing, Specification text, Order code



|                       |              |
|-----------------------|--------------|
| Nominal sizes         | 80 – 400 mm  |
| Operating pressure    | 1000 Pa max. |
| Operating temperature | 100 °C max.  |

The stated differential pressures for circular silencers correspond to the values for plain, unprofiled ducts. Deviations, if any, are of no practical relevance. For ductwork calculation, if the length of a circular silencer is included in the total length of the ductwork, no extra length must be added.

CF025 (insulation thickness 25 mm), insertion loss  $D_e$  [dB]

| NS  | FL <sub>N</sub> | Centre frequency f <sub>m</sub> [Hz] |     |     |     |      |      |      |      |
|-----|-----------------|--------------------------------------|-----|-----|-----|------|------|------|------|
|     |                 | 63                                   | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
| 80  | 500             | 1                                    | 2   | 4   | 9   | 20   | 16   | 15   | 10   |
| 80  | 1000            | 3                                    | 5   | 10  | 21  | 44   | 46   | 37   | 23   |
| 80  | 1500            | 3                                    | 5   | 13  | 28  | 47   | 48   | 44   | 31   |
| 80  | 2000            | 3                                    | 6   | 15  | 35  | 50   | 50   | 50   | 39   |
| 100 | 500             | 1                                    | 1   | 4   | 8   | 17   | 14   | 12   | 9    |
| 100 | 1000            | 2                                    | 3   | 8   | 17  | 44   | 34   | 28   | 21   |
| 100 | 1500            | 2                                    | 4   | 12  | 24  | 47   | 41   | 34   | 26   |
| 100 | 2000            | 2                                    | 5   | 15  | 30  | 50   | 49   | 41   | 31   |
| 125 | 500             | 1                                    | 1   | 3   | 8   | 15   | 11   | 9    | 7    |
| 125 | 1000            | 2                                    | 3   | 7   | 17  | 43   | 30   | 24   | 17   |
| 125 | 1500            | 2                                    | 3   | 10  | 22  | 45   | 34   | 28   | 20   |
| 125 | 2000            | 2                                    | 4   | 12  | 28  | 48   | 37   | 32   | 23   |
| 160 | 500             | 1                                    | 1   | 2   | 5   | 14   | 10   | 8    | 6    |
| 160 | 1000            | 1                                    | 1   | 4   | 12  | 40   | 27   | 20   | 16   |
| 160 | 1500            | 2                                    | 2   | 6   | 16  | 42   | 30   | 25   | 19   |
| 160 | 2000            | 2                                    | 3   | 8   | 20  | 47   | 34   | 28   | 21   |
| 200 | 500             | 1                                    | 1   | 2   | 5   | 14   | 9    | 6    | 5    |
| 200 | 1000            | 1                                    | 1   | 3   | 11  | 35   | 22   | 16   | 13   |
| 200 | 1500            | 2                                    | 2   | 5   | 15  | 41   | 27   | 19   | 15   |
| 200 | 2000            | 1                                    | 3   | 7   | 19  | 47   | 32   | 20   | 16   |
| 250 | 500             | 0                                    | 1   | 2   | 5   | 13   | 8    | 5    | 4    |
| 250 | 1000            | 1                                    | 1   | 3   | 11  | 30   | 19   | 12   | 10   |
| 250 | 1500            | 1                                    | 2   | 5   | 15  | 38   | 25   | 14   | 11   |
| 250 | 2000            | 1                                    | 3   | 6   | 17  | 43   | 30   | 15   | 13   |
| 315 | 500             | 0                                    | 1   | 1   | 4   | 9    | 7    | 4    | 3    |
| 315 | 1000            | 0                                    | 1   | 3   | 9   | 21   | 10   | 12   | 8    |
| 315 | 1500            | 1                                    | 2   | 4   | 12  | 27   | 19   | 13   | 10   |
| 315 | 2000            | 1                                    | 2   | 6   | 14  | 32   | 27   | 13   | 11   |
| 400 | 500             | 0                                    | 0   | 1   | 3   | 6    | 5    | 3    | 3    |
| 400 | 1000            | 0                                    | 1   | 3   | 8   | 16   | 8    | 8    | 7    |
| 400 | 1500            | 1                                    | 1   | 4   | 10  | 23   | 17   | 11   | 8    |
| 400 | 2000            | 1                                    | 2   | 4   | 10  | 23   | 22   | 11   | 9    |

CF050 (insulation thickness 50 mm), insertion loss D<sub>e</sub> [dB]

| NS  | FL <sub>N</sub> | Centre frequency f <sub>m</sub> [Hz] |     |     |     |      |      |      |      |
|-----|-----------------|--------------------------------------|-----|-----|-----|------|------|------|------|
|     |                 | 63                                   | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
| 80  | 500             | 4                                    | 5   | 11  | 20  | 30   | 27   | 16   | 12   |
| 80  | 1000            | 8                                    | 14  | 23  | 47  | 50   | 50   | 44   | 27   |
| 80  | 1500            | 11                                   | 14  | 33  | 48  | 50   | 50   | 47   | 37   |
| 80  | 2000            | 15                                   | 15  | 42  | 50  | 50   | 50   | 50   | 47   |
| 100 | 500             | 3                                    | 4   | 9   | 17  | 24   | 21   | 12   | 10   |
| 100 | 1000            | 7                                    | 10  | 21  | 38  | 50   | 50   | 29   | 22   |
| 100 | 1500            | 10                                   | 11  | 27  | 44  | 50   | 50   | 37   | 30   |
| 100 | 2000            | 12                                   | 12  | 34  | 50  | 50   | 50   | 46   | 37   |
| 125 | 500             | 2                                    | 3   | 7   | 14  | 20   | 16   | 11   | 9    |
| 125 | 1000            | 5                                    | 7   | 16  | 32  | 50   | 42   | 25   | 22   |
| 125 | 1500            | 7                                    | 9   | 21  | 41  | 50   | 46   | 33   | 27   |
| 125 | 2000            | 9                                    | 11  | 27  | 50  | 50   | 50   | 40   | 31   |
| 160 | 500             | 2                                    | 2   | 6   | 12  | 17   | 14   | 8    | 6    |
| 160 | 1000            | 4                                    | 5   | 12  | 26  | 47   | 34   | 20   | 16   |
| 160 | 1500            | 5                                    | 7   | 17  | 37  | 48   | 42   | 24   | 19   |
| 160 | 2000            | 6                                    | 9   | 22  | 48  | 50   | 50   | 29   | 21   |
| 200 | 500             | 1                                    | 2   | 5   | 12  | 16   | 11   | 6    | 5    |
| 200 | 1000            | 3                                    | 5   | 11  | 25  | 45   | 26   | 16   | 13   |
| 200 | 1500            | 4                                    | 6   | 14  | 37  | 48   | 34   | 18   | 15   |
| 200 | 2000            | 5                                    | 8   | 18  | 47  | 50   | 42   | 22   | 18   |
| 250 | 500             | 1                                    | 2   | 4   | 12  | 15   | 8    | 5    | 4    |
| 250 | 1000            | 2                                    | 4   | 9   | 25  | 40   | 19   | 12   | 10   |
| 250 | 1500            | 3                                    | 5   | 11  | 35  | 45   | 25   | 14   | 11   |
| 250 | 2000            | 4                                    | 6   | 15  | 45  | 50   | 30   | 16   | 13   |
| 315 | 500             | 1                                    | 1   | 3   | 9   | 12   | 6    | 4    | 3    |
| 315 | 1000            | 1                                    | 4   | 8   | 22  | 28   | 13   | 12   | 8    |
| 315 | 1500            | 2                                    | 4   | 10  | 26  | 35   | 19   | 12   | 10   |
| 315 | 2000            | 3                                    | 4   | 12  | 33  | 41   | 27   | 14   | 11   |
| 400 | 500             | 1                                    | 1   | 3   | 7   | 9    | 6    | 4    | 3    |
| 400 | 1000            | 1                                    | 4   | 8   | 18  | 23   | 11   | 10   | 7    |
| 400 | 1500            | 2                                    | 4   | 9   | 20  | 26   | 17   | 11   | 8    |
| 400 | 2000            | 3                                    | 3   | 9   | 22  | 29   | 22   | 11   | 9    |

CF, differential pressure  $\Delta p_t$  [Pa]

| NS  | q <sub>v</sub> [l/s] | q <sub>v</sub> (m³/h) | 500               | 1000 | 1500 | 2000 |
|-----|----------------------|-----------------------|-------------------|------|------|------|
|     |                      |                       | $\Delta p_t$ [Pa] |      |      |      |
| 80  | 20                   | 72                    | 2                 | 4    | 6    | 6    |
| 80  | 40                   | 144                   | 6                 | 12   | 16   | 25   |
| 80  | 50                   | 180                   | 8                 | 16   | 25   | 35   |
| 80  | 55                   | 198                   | 12                | 25   | 35   | 45   |
| 100 | 30                   | 108                   | 2                 | 2    | 4    | 5    |
| 100 | 60                   | 216                   | 4                 | 8    | 12   | 16   |
| 100 | 75                   | 270                   | 6                 | 12   | 18   | 25   |
| 100 | 90                   | 324                   | 8                 | 18   | 25   | 35   |
| 125 | 50                   | 180                   | 2                 | 2    | 4    | 4    |
| 125 | 95                   | 342                   | 4                 | 6    | 10   | 12   |
| 125 | 120                  | 432                   | 6                 | 10   | 14   | 18   |
| 125 | 145                  | 522                   | 6                 | 14   | 20   | 25   |
| 160 | 80                   | 288                   | 2                 | 2    | 2    | 4    |
| 160 | 155                  | 558                   | 2                 | 6    | 8    | 10   |
| 160 | 195                  | 702                   | 4                 | 8    | 10   | 14   |
| 160 | 235                  | 846                   | 6                 | 10   | 14   | 18   |
| 200 | 125                  | 450                   | 2                 | 2    | 2    | 2    |
| 200 | 245                  | 882                   | 2                 | 4    | 6    | 8    |
| 200 | 310                  | 1116                  | 4                 | 6    | 8    | 10   |
| 200 | 370                  | 1332                  | 4                 | 8    | 10   | 14   |
| 250 | 195                  | 702                   | <2                | <2   | <2   | 2    |
| 250 | 385                  | 1386                  | <2                | 4    | 4    | 6    |
| 250 | 485                  | 1746                  | 2                 | 4    | 6    | 8    |
| 250 | 580                  | 2088                  | 4                 | 6    | 8    | 10   |
| 315 | 310                  | 1116                  | <2                | <2   | <2   | <2   |
| 315 | 615                  | 2214                  | <2                | 2    | 4    | 4    |
| 315 | 770                  | 2772                  | <2                | 4    | 4    | 6    |
| 315 | 925                  | 3330                  | 2                 | 4    | 6    | 8    |
| 400 | 500                  | 1800                  | <2                | <2   | <2   | <2   |
| 400 | 995                  | 3582                  | <2                | <2   | 2    | 4    |
| 400 | 1245                 | 4482                  | <2                | 2    | 4    | 4    |
| 400 | 1495                 | 5382                  | <2                | 4    | 4    | 6    |

#### Specification text

Circular silencers for ventilation and air conditioning systems, flexible construction, available in 8 nominal sizes. Insertion loss measured according to ISO 7235. Casing with acoustic and thermal insulation. Spigot with lip seal for circular ducts according to EN 1506 or EN 13180. Casing leakage to EN 15727, class D.

#### Special features

- Insertion loss measured according to ISO 7235
- Very flexible and consequently suitable for installation in complicated duct systems and restricted spaces
- The sound absorbing material is non-combustible
- Insulation thickness 25 mm or 50 mm
- Smallest bend radius 3 × outer diameter ØD<sub>s</sub>

#### Material and surfaces

- Casing and perforated inner duct made of aluminium
- Lining is mineral wool
- End pieces made of aluminium

#### Mineral wool

- To EN 13501, fire rating Class A1, non-combustible
- RAL quality mark RAL-GZ 388
- Non-hazardous thanks to high biosolubility according to the German Ordinance on Hazardous Substances and Note Q of the European Regulation (EC) No. 1272/2008
- Inert to fungal and bacterial growth

#### Technical data

- Nominal sizes: 80 to 400 mm
- Operating pressure: 1000 Pa max.
- Operating temperature: 100 °C max.

#### Sizing data

- ØD [mm]
- H [mm]
- Insulation thickness [mm]
- $q_v$  (m³/h)
- $D_e$  At 250 Hz [dB]
- $\Delta p_t$  [Pa]

|    |   |     |   |     |   |      |   |     |
|----|---|-----|---|-----|---|------|---|-----|
| CF | - | 025 | / | 160 | x | 1000 | / | VD2 |
| 1  |   | 2   |   | 3   |   | 4    |   | 5   |

1 TypeCF flexible circular silencer 2 Insulation thickness [mm]025 25050 50 3 Nominal size [mm]80, 100, 125, 160, 200, 250, 315, 400 4 Nominal length [mm]500, 1000, 1500, 2000 5 Type of connectionNo entry: spigotVD2 Spigot with lip seal on both endsAS2 Socket-type spigots on both endsBK2 Raised edges at both ends  
Order example: CF-050/160x1000/VD2  
Insulation thickness 50 mm  
Nominal size 160 mm  
Length 1000 mm  
Type of connection Spigot with lip seal on both ends

Variants, Product details



CF

Variant

- Circular silencer for the reduction of noise
- Spigot

CF/ .../AS2

Variant

- Circular silencer for the reduction of noise
- Socket-type spigots to make connections to the ducting

CF/ .../BK2

Variant

- Circular silencer for the reduction of noise
- With raised edges to make detachable connections to the ducting

- Any installation orientation
- Installation in ducts outside closed rooms requires sufficient protection against the effects of weather