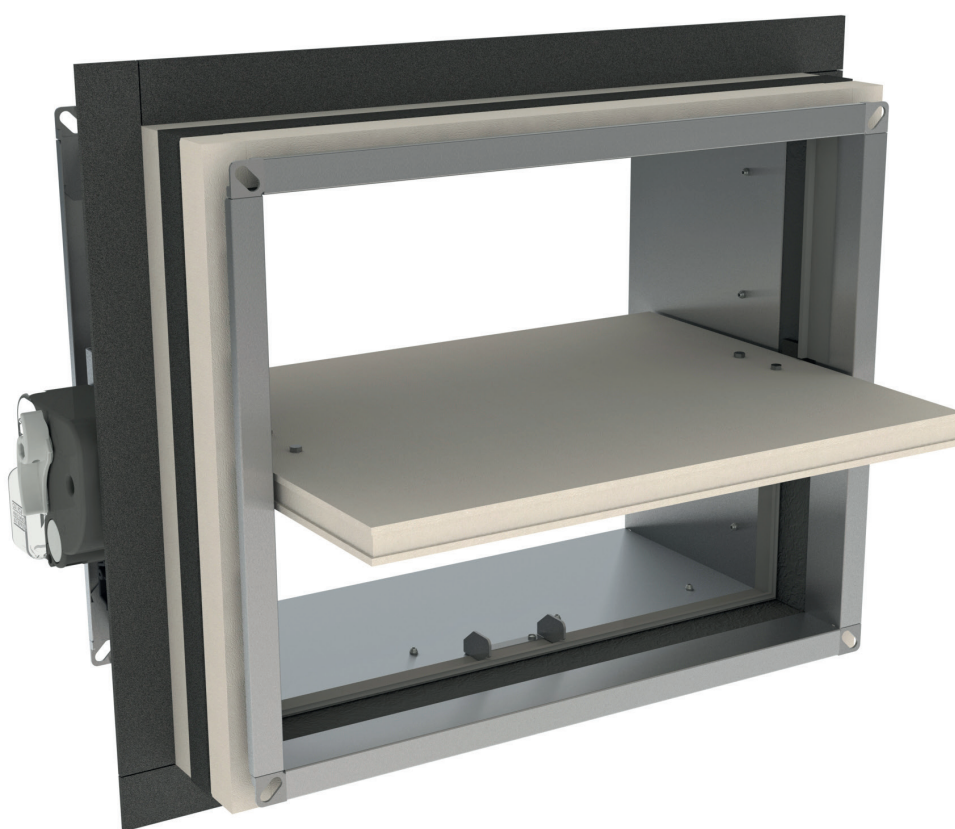


CU-LT-1S

Optimised rectangular surface-mounted fire damper up to 120'



CE
0749










Table of content

| | |
|--|----|
| Declaration of performance | 4 |
| Product presentation CU-LT-1S | 5 |
| Range and dimensions CU-LT-1S | 6 |
| Evolution - kits | 7 |
| Options - at the time of order | 9 |
| Flange types - at the time of order | 9 |
| Storage and handling | 10 |
| Installation | 10 |
| Position of the thermo-electric fuse (spring-return actuator BFLT) | 11 |
| Installation at a minimal distance from another damper or from an adjacent supporting construction | 11 |
| Installation in rigid wall and floor as well as in gypsum block wall | 12 |
| Installation in flexible wall (metal stud gypsum plasterboard wall) | 13 |
| Installation remote from the wall + GEOFLAM | 14 |
| Operation and mechanisms | 16 |
| Electrical connection | 20 |
| Weights | 22 |
| Selection data | 23 |
| Example | 24 |
| Sample order | 27 |
| Approvals and certificates | 28 |

Explanation of the abbreviations and pictograms

| | | |
|--|---|---|
| Wn = nominal width | E.TELE = power supply magnet | Sn = free air passage |
| Hn = nominal height | E.ALIM = power supply motor | ζ [-] = pressure loss coefficient |
| Dn = nominal diameter | V = volt | Q = airflow |
| E = integrity | W = watt | ΔP = static pressure drop |
| I = thermal insulation | Auto = automatic | v = air speed in the duct |
| S = smoke leakage | Tele = remote controlled | Lwa = A-weighted sound power level |
| Pa = pascal | Pnom = nominal capacity | Lw oct = sound power level per octave midband |
| ve = vertical wall penetration | Pmax = maximum capacity | dB(A) = A-weighted decibel value |
| ho = horizontal floor penetration | GKB (type A) / GKF (type F): "GKB" stands for standard plasterboards (type A according to EN 520) while "GKF" plasterboards offer a higher fire resistance for a similar plate thickness (type F according to EN 520) | ΔL = correction factor |
| o -> i = meets the criteria from the outside (o) to the inside (i) | Cal-Sil = calcium silicate | |
| i <-> o = fire side not important | OP = option (delivered with the product) | |
| V AC = Volt alternating current | KIT = kit (delivered separately for repair or upgrade) | |
| V DC = Volt direct current | PG = connection flange to the duct | |

| | | | |
|---|--|---|--|
|  | fast installation |  | optimal acoustic performance |
|  | optimal free air passage and minimal pressure loss |  | air-tightness class C according to EN1751 |
|  | suitable for surface-mount |  | suitable for installation remote from the wall |
|  | intermediate dimensions on request | | |

DECLARATION OF PERFORMANCE

UKCA_DoP_Rf-t_C14_EN - F-01/01/2024



| | |
|--|---|
| 1. Unique identification code of the product-type: | CU-LT-1S |
| 2. Intended use/es: | Rectangular fire damper to be used in conjunction with partitions to maintain fire compartments in heating, ventilating and air conditioning installations. |
| 3. Manufacturer: | Rf-Technologies NV, Lange Ambachtstraat 40, B-9860 Oosterzele |
| 4. System/s of AVCP: | System 1 |
| 5. Designated standard / Approved body; certificate of constancy of performance: | BS EN 15650:2010, BCCA with identification number 0749; 2822-UKCA-CPR-0061 |
| 6. Declared performance according to BS EN 15650:2010 | (Fire resistance according to BS EN 1366-2 and classifications according to BS EN 13501-3) |

| Range | Type | Wall | Sealing | Installation | Performance | |
|------------------------------------|---------------|--|--|--------------|--|---|
| | | | | | Classification | Performance |
| 200x100 mm ≤ CU-LT-1s ≤ 800x600 mm | Rigid wall | Aerated concrete ≥ 100 mm | Not applicable | 1 | EI 120 (V _{e,i} ↔ o) S - (500 Pa) | Designated standard BS EN 15650:2010 |
| | Flexible wall | Metal studs/gypsum plasterboard Type A (EN 520) ≥ 100 mm | Galvanised duct+ GEOFLAM® F 45 mm + mortar | 2 | EI 120 (V _{e,i} ↔ o) S - (500 Pa) | |
| | | Metal studs/gypsum plasterboard Type F (EN 520) ≥ 100 mm | Not applicable | 1 | EI 60 (V _{e,i} ↔ o) S - (500 Pa) | |
| | | Gypsum blocks ≥ 70 mm | Not applicable | 1 | EI 90 (V _{e,i} ↔ o) S - (500 Pa) | |
| 1 | Rigid floor | Aerated concrete ≥ 150 mm | Not applicable | 1 | EI 120 (V _{e,i} ↔ o) S - (500 Pa) | |
| | | | | 2 | EI 120 (V _{e,i} ↔ o) S - (500 Pa) | |

Nominal activation conditions/sensitivity: Pass
 Response delay (response time): closure time Pass
 Operational reliability: cycling MFUSP - 50 cycles; MMAG - 300 cycles; BFL(T) - 10000 cycles; ONE - 10000 cycles; UNIQ - 10000 cycles
 Durability of response delay: Pass
 Durability of operational reliability: Pass
 Protection against corrosion according to EN 60688-2-52: Pass
 Damper casing leakage according to EN 1751: ≥ class C
 The performance of the product identified above is in conformity with the set of declared performance/s. This declaration of performance is issued, in accordance with Regulation (EU) No 305/2011, under the sole responsibility of the manufacturer identified above.

Signed for and on behalf of the manufacturer by:
 Frank Verfinden, Head of Product Management



Oosterzele, 01/01/2024

Product presentation CU-LT-1S

Optimised rectangular surface-mounted fire damper with a fire resistance up to 120 minutes. CU-LT-1s combines the energy efficiency of our range of optimised dampers (minimum pressure loss, small dimensions) with the ease and speed of a dry assembly. Easy to mount and light in weight, CU-LT-1s is the ideal solution for renovation projects and, in general, for building sites where access to the damper is difficult or impossible from one of the wall sides (terminal damper).

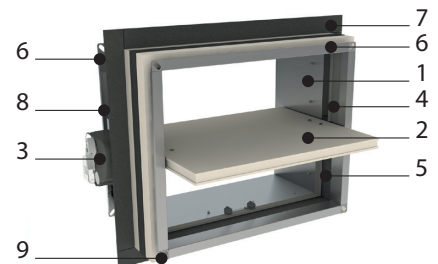
Fire dampers are installed where air ducts penetrate fire-resistant compartment walls. Their role is to restore the fire resistance grade of the penetrated wall and to prevent smoke propagation. Fire dampers are distinguished by their degree of fire resistance, by their aerodynamic properties as well as by their installation ease. Rf-Technologies' fire dampers are all CE marked. They can be equipped with various types of mechanisms depending on the specific needs linked to the project or to the local regulations.

- ✓ fast installation
- ✓ optimal free air passage and minimal pressure loss
- ✓ optimal acoustic performance
- ✓ higher net building volume through compact size
- ✓ air-tightness class C according to EN1751



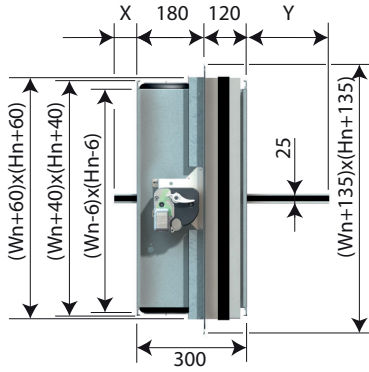
- tested according to EN 1366-2 up to 500 Pa
- suitable for surface-mounting on rigid wall, rigid floor and light wall (metal stud gypsum plasterboard wall, gypsum blocks)
- suitable for installation remote from the wall
- operating mechanism outside the wall
- maintenance-free
- for indoor use
- intermediate dimensions on request
- operating temperature: max. 50°C

1. casing in galvanised steel
2. damper blade
3. operating mechanism
4. sealing cold smoke
5. intumescent strip
6. connection flange PG20
7. surface-mounting frame
8. product identification
9. bolt and cage nut



Range and dimensions CU-LT-1S

Exceeding blade: X = on the mechanism side, Y = on the wall side

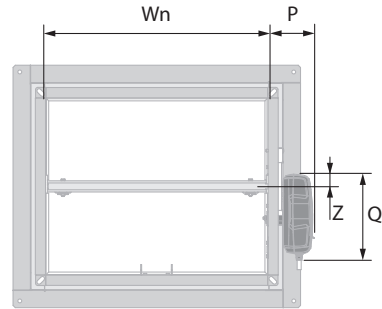
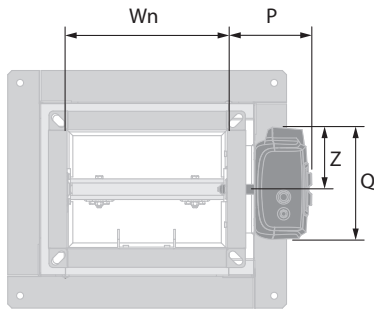


| Hn (mm) | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 |
|---------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| x | - | - | - | - | - | - | - | 17 | 42 | 67 |
| y | 2 | 27 | 52 | 77 | 102 | 127 | 152 | 177 | 202 | 227 |

| (W x H) mm | IV | V |
|------------|---------|---------|
| | 200x100 | 800x600 |










Hn < 400 mm

Hn ≥ 400 mm



| | MFUSP | ONE (X) | BFL(T) | | MFUSP | ONE (X) | BFL(T) |
|----------|-------|---------|--------|----------|-------|---------|--------|
| P | 101 | 97 | 81 | P | 101 | 97 | 81 |
| Q | 122 | 136 | 80 | Q | 123 | 191 | 80 |
| Z | 61 | 75 | 40 | Z | 28 | 27 | 40 |

Evolution - kits

| | | |
|---|------------------------------|---|
|  | KIT MFUSP | Automatic unlocking mechanism with fusible link |
|  | KIT ONE T 24 FDCB | Spring return actuator ONE 24V (with fusible link T) + bipolar beginning- and end-of-range switch |
|  | KIT ONE T 24 FDCU | Spring return actuator ONE 24V (with fusible link T) + unipolar beginning- and end-of-range switch |
|  | KIT ONE T 24 FDCU ST | Spring return actuator ONE 24V (with fusible link T) + unipolar beginning- and end-of-range switch + plug (ST) |
|  | KIT ONE T 230 FDCB | Spring return actuator ONE 230V (with fusible link T) + bipolar beginning- and end-of-range switch |
|  | KIT ONE T 230 FDCU | Spring return actuator ONE 230V (with fusible link T) + unipolar beginning- and end-of-range switch |
|  | KIT ONE T 230 FDCU ST | Spring return actuator ONE 230V (with fusible link T) + unipolar beginning- and end-of-range switch + plug (ST) |
|  | KIT ONE-X 24 | Spring return actuator ONE-X 24V (with fusible link T) |
|  | KIT ONE-X 230 | Spring return actuator ONE-X 230V (with fusible link T) |

| | | |
|---|-------------------------|--|
|  | KIT BFL24 | Spring return actuator BFL 24V |
|  | KIT BFL24-ST | Spring return actuator BFL 24V with plug (ST) |
|  | KIT BFL230 | Spring return actuator BFL 230V |
|  | KIT BFLT24 | Spring return actuator BFL 24V with thermo-electric fuse (T) |
|  | KIT BFLT24-ST | Spring return actuator BFL 24V with thermo-electric fuse (T) and plug (ST) |
|  | KIT BFLT230 | Spring return actuator BFL 230V with thermo-electric fuse (T) |
|  | KIT BFLT230-ST | Spring return actuator BFL 230V with thermo-electric fuse (T) |
|  | KIT BFN24 | Spring return actuator BFN 24V (BFN kits must be used instead of BFL kits for fire dampers produced before 1/7/2015) |
|  | KIT FDCU MFUS(P) | Limit switch 'open/closed' |



KIT SN2 BFL/BFN

Auxiliary limit switch 'open/closed'



KIT ZBAT 72

Black spare part for thermo-electric fuse for BFLT/BFNT



KIT FUS 72 MFUS(P)

Fusible link 72°C



FUS72 ONE

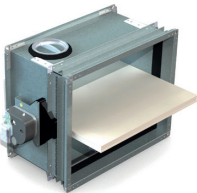
Fusible link 72°C



MECT

Testbox for mechanisms 24/48 V (magnet, motor, beginning and end of range switches)

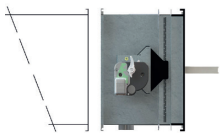
Options - at the time of order



UL

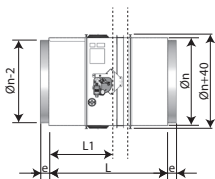
Inspection shutter (set of 2)

Flange types - at the time of order



PG20

Connection to ducts with 20 mm flanges (either with sliding profile or with bolts). Elliptical holes $\varnothing 9,5 \times 16$ mm.



PRJ

Circular connection with rubber sealing ring on a rectangular damper with PG20 flange.

Storage and handling

Storage and handling

As this product is a safety element, it should be stored and handled with care.

Avoid:

- any kind of impact or damage
- contact with water
- deformation of the casing


It is recommended:

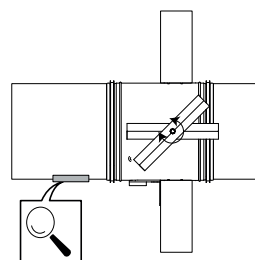
- to unload in a dry area
- not to flip or roll the product to move it
- not to use the damper as a scaffold, working table, etc.
- not to store smaller dampers inside larger ones

Installation

General points

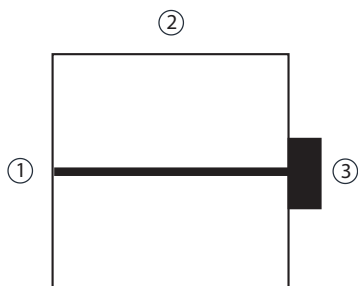
- The installation must comply with the installation manual and the classification report.
- Axis orientation: see the declaration of performance.
- Avoid obstruction of adjoining ducts.
- Product installation: always with closed damper blade.
- Verify if the blade can move freely.
- Please observe safety distances with respect to other construction elements. The operating mechanism must also remain accessible: allow for a clearance of 200 mm around the housing.
- The air tightness class will be maintained if the damper is installed according to the installation manual.
- Rf-t fire dampers are always tested in standardised constructions according to EN 1366-2. The achieved results are valid for similar supporting constructions with a fire resistance, thickness and density equal or superior to the supporting construction used during the test.
- If the wall thickness exceeds the minimum thickness specified in our installation instructions, the following conditions apply to the sealing depth:
 - For flexible walls and sandwich panel system walls, the seal must always be applied over the full depth of the wall.
 - With rigid walls, rigid floors and plaster block walls, the minimum sealing depth as indicated in our installation instructions (often equal to the minimum wall thickness) is sufficient. Apply the seal at the height of the damper blade (from the wall limit indication).
- When installing a fire damper in a flexible metal stud wall, some installation methods do not require reinforcing profiles around the wall opening from a fire protection point of view (see below). Always follow the general instructions of the manufacturer of these wall systems when building this type of wall.
- The damper must remain accessible for inspection and maintenance.
- Schedule at least 2 visual checks each year.

| |  | TEST |
|------|---|-------------------------------------|
| 2021 | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| 2022 | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2023 | <input type="checkbox"/> | <input type="checkbox"/> |
| 2024 | <input type="checkbox"/> | <input type="checkbox"/> |
| 2025 | <input type="checkbox"/> | <input type="checkbox"/> |



Position of the thermo-electric fuse (spring-return actuator BFLT)

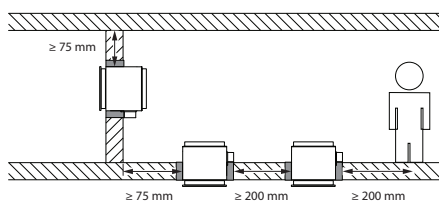
1



1. Position of the thermo-electric fuse on the damper casing: 1. on opposite side of mechanism if $H < 250$ mm and $W < 250$ mm; 2. on top if $H < 250$ mm and $W \geq 250$ mm; 3. on mechanism side if $H \geq 250$ mm.

Installation at a minimal distance from another damper or from an adjacent supporting construction

1



1. Principle

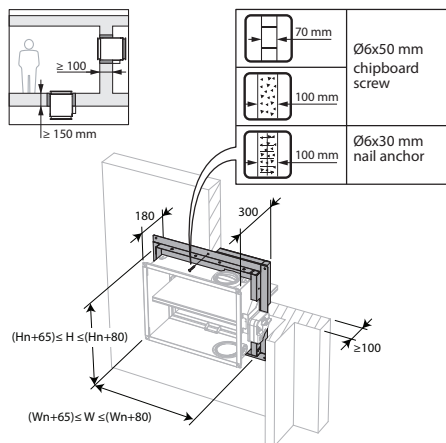
According to the European test standard, a fire damper must be installed at a minimum distance of 75 mm from an adjacent wall and 200 mm from another damper, unless the solution was tested at a shorter distance.

Installation in rigid wall and floor as well as in gypsum block wall

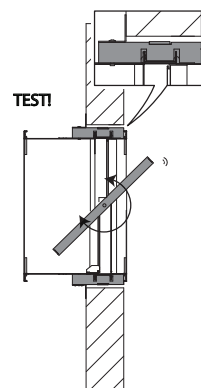
The product was tested and approved in:

| Range | Wall type | Sealing | Classification |
|---|---------------|--|--|
| $200 \times 100 \text{ mm} \leq \text{CU-LT-1s} \leq 800 \times 600 \text{ mm}$ | Rigid wall | Aerated concrete $\geq 100 \text{ mm}$ | EI 120 (v_e i \leftrightarrow o) S - (500 Pa) |
| $200 \times 100 \text{ mm} \leq \text{CU-LT-1s} \leq 800 \times 600 \text{ mm}$ | Rigid floor | Aerated concrete $\geq 150 \text{ mm}$ | EI 120 (h_o i \leftrightarrow o) S - (500 Pa) |
| $200 \times 100 \text{ mm} \leq \text{CU-LT-1s} \leq 800 \times 600 \text{ mm}$ | Flexible wall | Gypsum blocks $\geq 70 \text{ mm}$ | EI 120 (v_e i \leftrightarrow o) S - (500 Pa) |

1



2

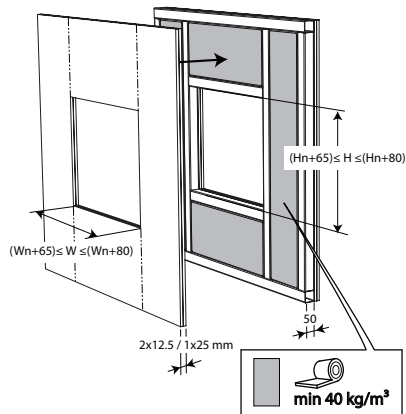


Installation in flexible wall (metal stud gypsum plasterboard wall)

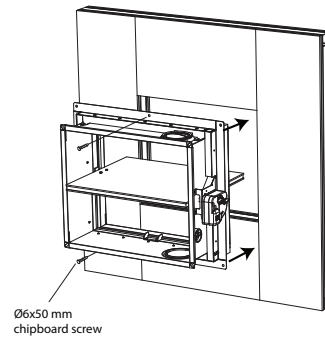
The product was tested and approved in:

| Range | Wall type | Sealing | Classification |
|---|---------------|--|----------------|
| $200 \times 100 \text{ mm} \leq \text{CU-LT-1s} \leq 800 \times 600 \text{ mm}$ | Flexible wall | Metal studs gypsum plasterboard Type F (EN 520) $\geq 100 \text{ mm}$ | Not applicable |
| $200 \times 100 \text{ mm} \leq \text{CU-LT-1s} \leq 800 \times 600 \text{ mm}$ | Flexible wall | Metal studs gypsum plasterboard Type A (EN 520) $\geq 100 \text{ mm}$ | Not applicable |

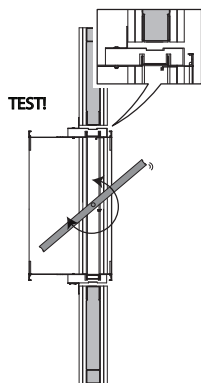
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2



3

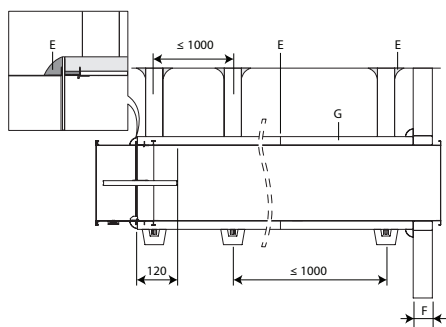


Installation remote from the wall + GEOFLAM

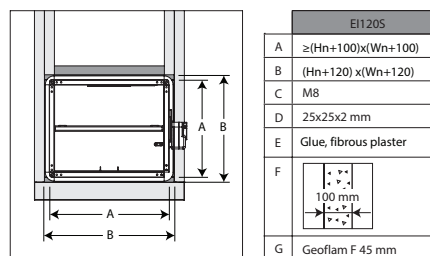
The product was tested and approved in:

| Range | Wall type | Sealing | Classification |
|---|------------|---|------------------------------------|
| $200 \times 100 \text{ mm} \leq \text{CU-LT-1s} \leq 800 \times 600 \text{ mm}$ | Rigid wall | Galvanised duct + GEOFLAM® F 45 mm + mortar | EI 120 (v_e i ↔ o) S - (500 Pa) |

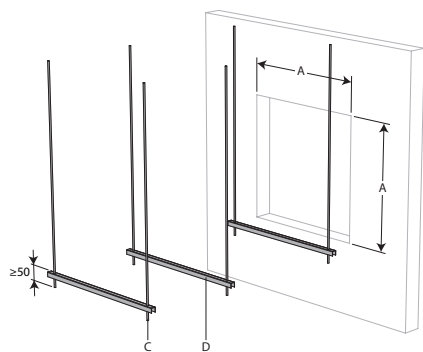
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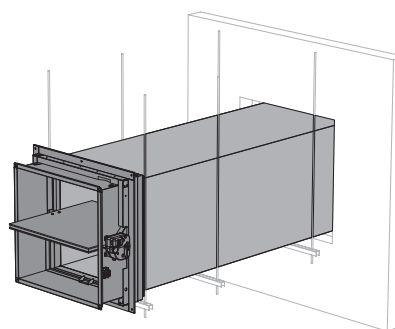
2



3



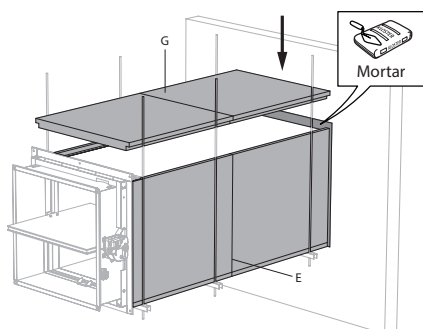
4



3. An opening with maximal dimensions "A" is made in the wall.

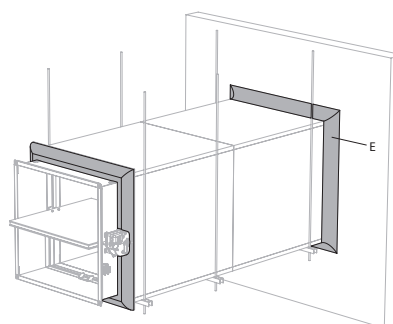
4. The fire damper is mounted remote from the wall at the end of a metal duct. The duct is supported every 1000 mm. The suspensions consist of threaded rods "C" and U-shaped steel profiles "D". A free space of maximum 25 mm is left between the threaded rods and the vertical walls of the casing "B".

5



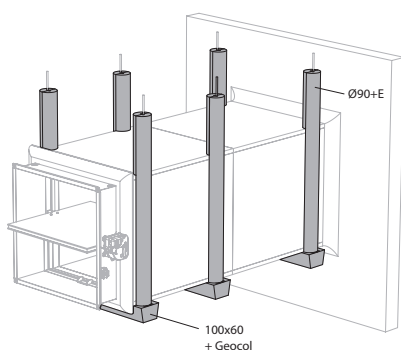
5. The opening around the duct is sealed with standard mortar. The duct is covered with 45 mm thick GEOFLAM F plates or 35 mm thick GEOFLAM Light plates "G". The plates adhere to each other with glue and fibrous plaster "E". The damper casing is also covered on a length of 120 mm.

6



6. The GEOFLAM F plates stop at a distance of 15 mm from the wall. The free space is filled with fibrous plaster. The same filling is applied to seal off the connection between the GEOFLAM F plates and the damper casing.

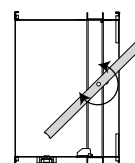
7



7. The threaded rods are covered with U-shaped plates of GEOFLAM (Ø 90 mm) and affixed with glue and fibrous plaster. The profiles are covered with U-shaped shells GEOFLAM 100 x 60 mm, which are affixed to the underside of the shaft with GEOCOL (GEOSTAFF) cement plaster.

8

TEST!



Maintenance

- No specific maintenance required.
- Schedule at least 2 visual checks each year.
- Remove dust and all other particles before use.
- Follow local maintenance regulations (i.e. BS9999 Annex V; NF S 61-933) and EN13306.
- Read the maintenance instructions on our website:
https://www.rft.eu/assets/PIM/DOCUMENTS/BROCHURE%20KITS/BRO_K139_MAINTENANCE_C.pdf
- Use the damper at up to 95% humidity, non-condensing.
- The fire damper can be cleaned with a dry or slightly damp cloth. It is forbidden to use abrasive cleaners or mechanical cleaning techniques (brush).

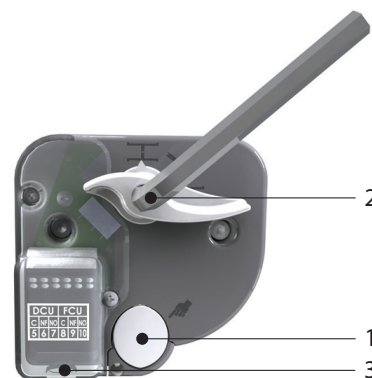
Operation and mechanisms



MFUS(P) Mechanism with fusible link

The operating mechanism MFUS(P) automatically unlocks the blade when the temperature in the duct exceeds 72°C. The damper can also be unlocked and reset manually.

1. unlocking button
2. resetting handle
3. cable entrance



Options - at the time of order

FDCU Limit switch 'open/closed'

Unlocking

- **manual unlocking:** press the unlocking button (1).
- **automatic unlocking:** the fusible link melts when the temperature reaches 72°C in the duct.
- **remote unlocking:** n/a

Resetting

- **manual resetting:** turn the resetting handle (2) 90° clockwise (or use a 10 mm hex key).
- **motorised resetting:** n/a

Caution:

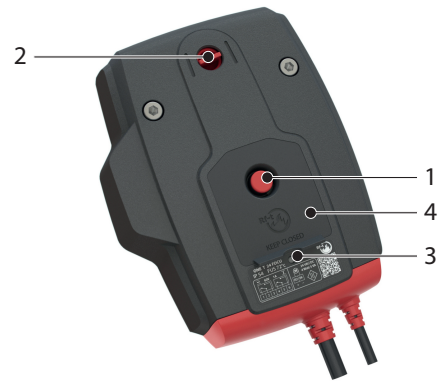
- ▲ The mechanism may never be tested on its own, without being attached to the damper. Such a test might damage the mechanism or the operator might be injured.



ONE Spring return actuator for remote control

The spring-return actuator ONE is designed to easily operate Rf-t fire dampers of all sizes, automatically or remotely. Six models are available, 24 or 230 volt, with FDCU or FDCB position switches; and optionally with plug (ST).

1. unlocking button
2. blade position indicator
3. LED
4. battery compartment to reset motor



Unlocking

- **manual unlocking:** shortly press the unlocking button (1) once.
- **automatic unlocking:** the fusible link reacts as soon as the temperature in the duct reaches 72°C.
- **remote unlocking:** by interrupting the power supply.

Resetting

- **manual resetting:** open the battery compartment (4) and press a 9V battery against the contact springs. Hold this position until the LED (3) emits a continuous light.
Check whether the indicator (2) shows that the damper blade is in the open position.
Remove the battery, the LED fades away.
Close the battery compartment.
- **motorised resetting:** switch off the power supply for at least 5 sec. Power the actuator (respect the prescribed voltage) for at least 75 sec. The resetting stops automatically when the end of range is reached (damper open).

Caution:

- ⚠ If the LED (3) flickers fast (3x/sec.), the battery is discharged: use a new battery.
- ⚠ If the LED (3) flickers slowly (1x/sec), the resetting is in progress.
- ⚠ If the LED (3) is continuously on, the resetting is complete and the motor is powered.
- ⚠ If the actuator detects voltage on the power cable, a brief contact of the battery is enough to start the resetting process.
- ⚠ The power supply of this actuator cannot be individually replaced. If the cable is damaged, the whole unit must be discarded and replaced.
- ⚠ The housing of the mechanism contains a temperature sensor. When the temperature in the housing exceeds 72°C, the mechanism unlocks. The LED flashes twice per second. When the temperature drops below 72°C, the mechanism can only be reset in a motorised manner after a manual reset (with a battery).
- ⚠ The end of range switches need 1 second after operation to adopt a stable position.
- ⚠ Make sure the thermal trigger device is present in the actuator. The actuator might not function properly if this is not the case.

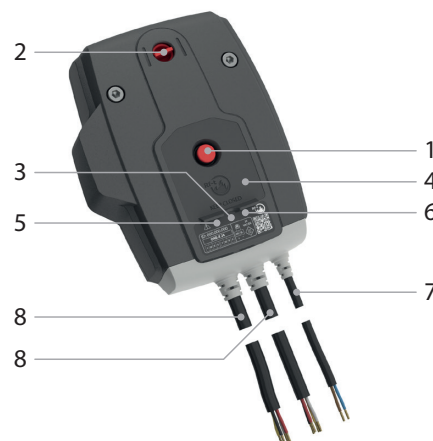
| | prod. < 1/7/2015 | | | | prod. ≥ 1/7/2015 | | | |
|---------|-------------------|-------------------|---------------------|---------------------|-----------------------|-------------------|---------------------|---------------------|
| | CR60(1s) CR120 | CU-LT CU-LT-1s | CR2≤400 CU2≤1200 | CR2>400 CU2>1200 | CR60(1s) CR120(1s) | CU-LT CU-LT-1s | CR2≤400 CU2≤1200 | CR2>400 CU2>1200 |
| Kit ONE | ● | ● | ● | | ● | ● | ● | ● |



ONE-X Spring return actuator with integrated communication module.

The ONE-X is a spring return actuator with integrated communication module designed to simply operate Rf-t fire dampers of all sizes, automatically or remotely. The ONE-X is available in two versions: 24 V and 230 V.

1. unlocking button
2. blade position indicator
3. LED red: status
4. battery compartment
5. LED blue: communication
6. LED orange: error message
7. supply
8. bus cable



Unlocking

- **manual unlocking:** shortly press the unlocking button (1) once.
- **automatic unlocking:** the fusible link reacts as soon as the temperature in the duct reaches 72°C.
- **remote unlocking:** via ZENiX controller

Resetting

- **manual resetting:** Open the battery compartment (4) and press a 9V battery against the contact springs. Hold this position until the red LED (3) emits a continuous light. Control whether the indicator (2) indicates that the damper blade is open. Remove the battery. Close the battery compartment.
- **motorised resetting:** via ZENiX controller. By applying voltage during first use.

Caution:

- ⚠ If the ONE-X detects voltage on the power cable, a brief contact of the battery is enough to start the resetting process, provided the ZENiX controller has sent the damper to open position or the ONE-X is being operated for the first time.
- ⚠ The power supply of this actuator cannot be individually replaced. If the cable is damaged, the whole unit must be discarded and replaced.
- ⚠ The housing of the mechanism contains a temperature sensor. When the temperature in the housing exceeds 72°C, the mechanism unlocks. The LED flashes twice per second. When the temperature drops below 72°C, the mechanism can only be reset in a motorised manner after a manual reset (with a battery).
- ⚠ The end of range switches need 1 second after operation to adopt a stable position.

Safety regulations:

- ⚠ Do not use the ONE-X for any application other than the specified applications, in particular not in aircraft or other airborne vehicles.
- ⚠ The company that purchases and/or installs the ONE-X is fully responsible for the correct operation of the entire system. Only authorised specialists may perform the installation. All rules and regulations, including statutory regulations, must be observed during installation.
- ⚠ This device contains electrical or electronic components and must not be disposed of as household waste. All locally applicable regulations and requirements must be strictly observed.



BFL(T) Remotely controlled spring return actuator

The spring return actuator BFL(T) is especially designed to operate fire dampers remotely. The BFL(T) variant is intended for fire dampers with smaller dimensions (CR60, CR120, CR2 with $\varnothing \leq 400$ mm, CRS60 with $\varnothing \leq 315$ mm, CU2 / CU2-15 / CU4 with $B+H \leq 1200$ mm or for CU-LT and CU-LT-1s). For Markage FD with $H = 200$ mm or $H = 2200$ mm (in combination with BFT motor).

1. locking button
2. plug (ST)
3. access for manual resetting
4. thermo-electric tripping device (T)



Options - at the time of order

SN2 BFL/BFN Auxiliary limit switch 'open/closed'

Unlocking

- **manual unlocking:** place the locking button on "unlock". (In case of BFLT: the damper can alternatively be unlocked by pushing the "test" button on the thermo-electric fuse)
- **automatic unlocking:** the thermo-electric fuse reacts as soon as the temperature reaches 72°C (type BFLT).
- **remote unlocking:** by interrupting the power supply.

Caution:

- ⚠ The thermo-electric fuse will not move the damper into its safety position (when the temperature reaches 72°C) if the motor is not powered.

Resetting

- **manual resetting:** turn the enclosed handle anti-clockwise. To block the motor, place the locking button on "lock"
- **motorised resetting:** switch off the power supply for at least 10 seconds. Supply the actuator (respect the prescribed voltage) for at least 75 seconds. The resetting stops automatically when the end of range is reached (damper open) - it takes about 60 seconds to reset the damper - or when the power supply is interrupted.

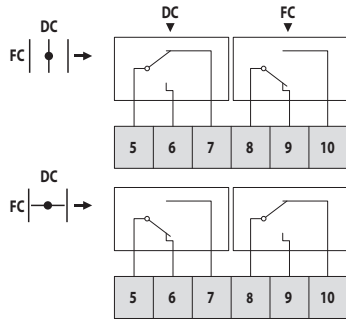
Caution:

- ⚠ Do not use a drill or powered screwdriver.
- ⚠ Stop as soon as the motor is completely rearmed (end of range).

| | prod. < 1/7/2015 | | | | prod. ≥ 1/7/2015 | | | |
|---------|-------------------|-------------------|---------------------|---------------------|------------------------|-------------------|---------------------|---------------------|
| | CR60(1s) CR120 | CU-LT CU-LT-1s | CR2≤400 CU2≤1200 | CR2>400 CU2>1200 | CR60(1s) CR120 (1s) | CU-LT CU-LT-1s | CR2≤400 CU2≤1200 | CR2>400 CU2>1200 |
| Kit BFL | | | | | ● | ● | ● | |
| Kit BFN | ● | ● | ● | | | | | ● |
| Kit BF | | | | ● | | | | |

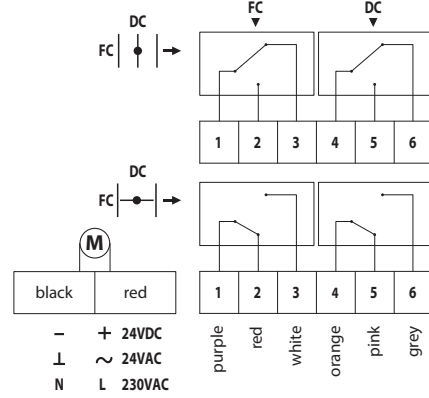
Electrical connection

MFUS(P)



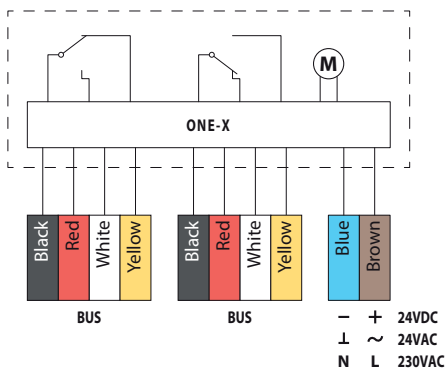
DC : Switch open position fire damper
 FC : Switch closed position fire damper

ONE

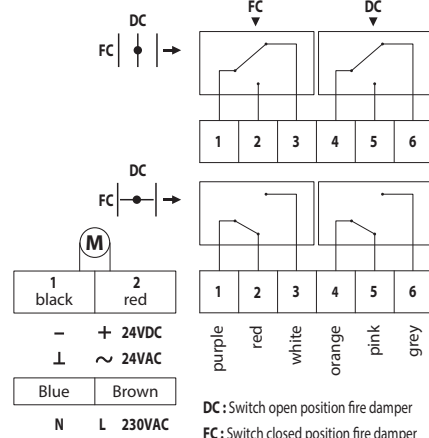


DC : Switch open position fire damper
 FC : Switch closed position fire damper

ONE-X



BFL(T)



DC : Switch open position fire damper
 FC : Switch closed position fire damper

| MEC | Nominal voltage motor | Nominal voltage magnet | Power consumption (stand-by) | Power consumption (operating) | Standard switches | Resetting time motor |
|-------------------|-----------------------|------------------------|------------------------------|-------------------------------|--------------------------|-----------------------------------|
| MFUSP | N/A | N/A | N/A | N/A | 1mA...1A, DC 5V...AC 48V | N/A |
| ONE T 24 FDCU | 24 V AC/DC (-10/+20%) | N/A | 0,28 W | 4,2 W | 1mA...1A 60V | < 75 s (cabled) / <85 s (battery) |
| ONE T 24 FDCU ST | 24 V AC/DC (-10/+20%) | N/A | 0,28 W | 4,2 W | 1mA...1A 60V | < 75 s (cabled) / <85 s (battery) |
| ONE T 230 FDCU | 230 V AC (-15/+15%) | N/A | 0,57 W | 4,2 W | 1mA...100mA 230V | < 75 s (cabled) / <85 s (battery) |
| ONE T 230 FDCU ST | 230 V AC (-15/+15%) | N/A | 0,57 W | 4,2 W | 1mA...100mA 230V | < 75 s (cabled) / <85 s (battery) |
| ONE T 24 FDCB | 24 V AC/DC (-10/+20%) | N/A | 0,28 W | 4,2 W | 1mA...1A 60V | < 75 s (cabled) / <85 s (battery) |
| ONE T 230 FDCB | 230 V AC (-15/+15%) | N/A | 0,57 W | 4,2 W | 1mA...1A 60V | < 75 s (cabled) / <85 s (battery) |
| ONE-X 24 | 24 V AC/DC (-10/+20%) | N/A | 0,28 W | 4,2 W | | < 75 s (cabled) / <85 s (battery) |
| ONE-X 230 | 230 V AC (-15/+15%) | N/A | 0,57 W | 4,2 W | | < 75 s (cabled) / <85 s (battery) |
| BFL24 | 24 V AC/DC | N/A | 0,7 W | 2,5 W | 1mA...3A, AC 250V | < 60 s |
| BFL24-ST | 24 V AC/DC | N/A | 0,7 W | 2,5 W | 1mA...3A, AC 250V | < 60 s |
| BFL230 | 230 V AC | N/A | 0,9 W | 3 W | 1mA...3A, AC 250V | < 60 s |
| BFLT24 | 24 V AC/DC | N/A | 0,8 W | 2,5 W | 1mA...3A, AC 250V | < 60 s |
| BFLT24-ST | 24 V AC/DC | N/A | 0,8 W | 2,5 W | 1mA...3A, AC 250V | < 60 s |
| BFLT230 | 230 V AC | N/A | 1,1 W | 3,5 W | 1mA...3A, AC 250V | < 60 s |
| BFLT230-ST | 230 V AC | N/A | 1,1 W | 3,5 W | 1mA...3A, AC 250V | < 60 s |

| MEC | Running time spring | Noise level motor | Noise level spring | Cable supply / control | Cable auxiliary switch | Protection class |
|-------------------|---------------------|-------------------|--------------------|--|--|------------------|
| MFUSP | 1 s | N/A | N/A | | | IP 42 |
| ONE T 24 FDCU | < 30 s | < 64 dB (A) | < 67 dB (A) | 1 m, 2 x 0.75 mm ² (halogen-free) | 1 m, 6 x 0.75 mm ² (halogen-free) | IP 54 |
| ONE T 24 FDCU ST | < 30 s | < 64 dB (A) | < 67 dB (A) | 1 m, 2 x 0.75 mm ² (halogen-free) | 1 m, 6 x 0.75 mm ² (halogen-free) | IP 54 |
| ONE T 230 FDCU | < 30 s | < 64 dB (A) | < 67 dB (A) | 1 m, 2 x 0.75 mm ² (halogen-free) | 1 m, 6 x 0.75 mm ² (halogen-free) | IP 54 |
| ONE T 230 FDCU ST | < 30 s | < 64 dB (A) | < 67 dB (A) | 1 m, 2 x 0.75 mm ² (halogen-free) | 1 m, 6 x 0.75 mm ² (halogen-free) | IP 54 |
| ONE T 24 FDCB | < 30 s | < 64 dB (A) | < 67 dB (A) | 1 m, 2 x 0.75 mm ² (halogen-free) | (2x) 1 m, 6 x 0,75 mm ² (halogen-free) | IP 54 |
| ONE T 230 FDCB | < 30 s | < 64 dB (A) | < 67 dB (A) | 1 m, 2 x 0.75 mm ² (halogen-free) | (2x) 1 m, 6 x 0,75 mm ² (halogen-free) | IP 54 |
| ONE-X 24 | < 30 s | < 64 dB (A) | < 67 dB (A) | 1 m, 2 x 0.75 mm ² (halogen-free) | bus cable: (2x) 1 m, 4 x 0,75 mm ² (halogen-free) | IP 54 |
| ONE-X 230 | < 30 s | < 64 dB (A) | < 67 dB (A) | 1 m, 2 x 0.75 mm ² (halogen-free) | bus cable: (2x) 1 m, 4 x 0,75 mm ² (halogen-free) | IP 54 |
| BFL24 | 20 s | < 43 dB (A) | < 62 dB (A) | 1 m, 2 x 0.75 mm ² (halogen-free) | 1 m, 6 x 0.75 mm ² (halogen-free) | IP 54 |
| BFL24-ST | 20 s | < 43 dB (A) | < 62 dB (A) | 1 m, 2 x 0.75 mm ² (halogen-free) | 1 m, 6 x 0.75 mm ² (halogen-free) | IP 54 |
| BFL230 | 20 s | < 43 dB (A) | < 62 dB (A) | 1 m, 2 x 0.75 mm ² (halogen-free) | 1 m, 6 x 0.75 mm ² (halogen-free) | IP 54 |
| BFLT24 | 20 s | < 43 dB (A) | < 62 dB (A) | 1 m, 2 x 0.75 mm ² (halogen-free) | 1 m, 6 x 0.75 mm ² (halogen-free) | IP 54 |
| BFLT24-ST | 20 s | < 43 dB (A) | < 62 dB (A) | 1 m, 2 x 0.75 mm ² (halogen-free) | 1 m, 6 x 0.75 mm ² (halogen-free) | IP 54 |
| BFLT230 | 20 s | < 43 dB (A) | < 62 dB (A) | 1 m, 2 x 0.75 mm ² (halogen-free) | 1 m, 6 x 0.75 mm ² (halogen-free) | IP 54 |
| BFLT230-ST | 20 s | < 43 dB (A) | < 62 dB (A) | 1 m, 2 x 0.75 mm ² (halogen-free) | 1 m, 6 x 0.75 mm ² (halogen-free) | IP 54 |

Weights

CU-LT-1S + MFUSP

| Hn\Wn (mm) | | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 700 | 750 | 800 | | |
|------------|----|------|------|------|------|------|------|------|------|------|------|------|------|------|--|--|
| 100 | kg | 6,6 | 7,3 | 8,0 | 8,7 | 9,4 | 10,2 | 10,9 | 11,6 | 12,3 | 13,0 | 13,7 | 14,4 | 15,2 | | |
| 150 | kg | 7,5 | 8,3 | 9,1 | 10,0 | 10,8 | 11,6 | 12,4 | 13,3 | 14,1 | 14,9 | 15,7 | 16,6 | 17,4 | | |
| 200 | kg | 8,4 | 9,4 | 10,3 | 11,2 | 12,2 | 13,1 | 14,0 | 14,9 | 15,9 | 16,8 | 17,7 | 18,7 | 19,6 | | |
| 250 | kg | 9,4 | 10,4 | 11,4 | 12,5 | 13,5 | 14,5 | 15,6 | 16,6 | 17,7 | 18,7 | 19,7 | 20,8 | 21,8 | | |
| 300 | kg | 10,3 | 11,4 | 12,6 | 13,7 | 14,9 | 16,0 | 17,1 | 18,3 | 19,4 | 20,6 | 21,7 | 22,9 | 24,0 | | |
| 350 | kg | 11,2 | 12,5 | 13,7 | 15,0 | 16,2 | 17,5 | 18,7 | 20,0 | 21,2 | 22,5 | 23,7 | 25,0 | 26,2 | | |
| 400 | kg | 12,2 | 13,5 | 14,9 | 16,2 | 17,6 | 18,9 | 20,3 | 21,6 | 23,0 | 24,4 | 25,7 | 27,1 | 28,4 | | |
| 450 | kg | 13,1 | 14,5 | 16,0 | 17,5 | 18,9 | 20,4 | 21,9 | 23,3 | 24,8 | 26,2 | 27,7 | 29,2 | 30,6 | | |
| 500 | kg | 14,0 | 15,6 | 17,1 | 18,7 | 20,3 | 21,9 | 23,4 | 25,0 | 26,6 | 28,1 | 29,7 | 31,3 | 32,8 | | |
| 550 | kg | 14,9 | 16,6 | 18,3 | 20,0 | 21,6 | 23,3 | 25,0 | 26,7 | 28,4 | 30,0 | 31,7 | 33,4 | 35,1 | | |
| 600 | kg | 15,9 | 17,7 | 19,4 | 21,2 | 23,0 | 24,8 | 26,6 | 28,4 | 30,1 | 31,9 | 33,7 | 35,5 | 37,3 | | |

CU-LT-1S + ONE T

| Hn\Wn (mm) | | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 700 | 750 | 800 | | |
|------------|----|------|------|------|------|------|------|------|------|------|------|------|------|------|--|--|
| 100 | kg | 7,8 | 8,5 | 9,2 | 9,9 | 10,6 | 11,4 | 12,1 | 12,8 | 13,5 | 14,2 | 14,9 | 15,6 | 16,4 | | |
| 150 | kg | 8,7 | 9,5 | 10,3 | 11,2 | 12,0 | 12,8 | 13,6 | 14,5 | 15,3 | 16,1 | 16,9 | 17,8 | 18,6 | | |
| 200 | kg | 9,6 | 10,6 | 11,5 | 12,4 | 13,4 | 14,3 | 15,2 | 16,1 | 17,1 | 18,0 | 18,9 | 19,9 | 20,8 | | |
| 250 | kg | 10,6 | 11,6 | 12,6 | 13,7 | 14,7 | 15,7 | 16,8 | 17,8 | 18,9 | 19,9 | 20,9 | 22,0 | 23,0 | | |
| 300 | kg | 11,5 | 12,6 | 13,8 | 14,9 | 16,1 | 17,2 | 18,3 | 19,5 | 20,6 | 21,8 | 22,9 | 24,1 | 25,2 | | |
| 350 | kg | 12,4 | 13,7 | 14,9 | 16,2 | 17,4 | 18,7 | 19,9 | 21,2 | 22,4 | 23,7 | 24,9 | 26,2 | 27,4 | | |
| 400 | kg | 13,4 | 14,7 | 16,1 | 17,4 | 18,8 | 20,1 | 21,5 | 22,8 | 24,2 | 25,6 | 26,9 | 28,3 | 29,6 | | |
| 450 | kg | 14,3 | 15,7 | 17,2 | 18,7 | 20,1 | 21,6 | 23,1 | 24,5 | 26,0 | 27,4 | 28,9 | 30,4 | 31,8 | | |
| 500 | kg | 15,2 | 16,8 | 18,3 | 19,9 | 21,5 | 23,1 | 24,6 | 26,2 | 27,8 | 29,3 | 30,9 | 32,5 | 34,0 | | |
| 550 | kg | 16,1 | 17,8 | 19,5 | 21,2 | 22,8 | 24,5 | 26,2 | 27,9 | 29,6 | 31,2 | 32,9 | 34,6 | 36,3 | | |
| 600 | kg | 17,1 | 18,9 | 20,6 | 22,4 | 24,2 | 26,0 | 27,8 | 29,6 | 31,3 | 33,1 | 34,9 | 36,7 | 38,5 | | |

CU-LT-1S + ONE-X

| Hn\Wn (mm) | | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 700 | 750 | 800 | | |
|------------|----|------|------|------|------|------|------|------|------|------|------|------|------|------|--|--|
| 100 | kg | 7,8 | 8,5 | 9,2 | 9,9 | 10,6 | 11,4 | 12,1 | 12,8 | 13,5 | 14,2 | 14,9 | 15,6 | 16,4 | | |
| 150 | kg | 8,7 | 9,5 | 10,3 | 11,2 | 12,0 | 12,8 | 13,6 | 14,5 | 15,3 | 16,1 | 16,9 | 17,8 | 18,6 | | |
| 200 | kg | 9,6 | 10,6 | 11,5 | 12,4 | 13,4 | 14,3 | 15,2 | 16,1 | 17,1 | 18,0 | 18,9 | 19,9 | 20,8 | | |
| 250 | kg | 10,6 | 11,6 | 12,6 | 13,7 | 14,7 | 15,7 | 16,8 | 17,8 | 18,9 | 19,9 | 20,9 | 22,0 | 23,0 | | |
| 300 | kg | 11,5 | 12,6 | 13,8 | 14,9 | 16,1 | 17,2 | 18,3 | 19,5 | 20,6 | 21,8 | 22,9 | 24,1 | 25,2 | | |
| 350 | kg | 12,4 | 13,7 | 14,9 | 16,2 | 17,4 | 18,7 | 19,9 | 21,2 | 22,4 | 23,7 | 24,9 | 26,2 | 27,4 | | |
| 400 | kg | 13,4 | 14,7 | 16,1 | 17,4 | 18,8 | 20,1 | 21,5 | 22,8 | 24,2 | 25,6 | 26,9 | 28,3 | 29,6 | | |
| 450 | kg | 14,3 | 15,7 | 17,2 | 18,7 | 20,1 | 21,6 | 23,1 | 24,5 | 26,0 | 27,4 | 28,9 | 30,4 | 31,8 | | |
| 500 | kg | 15,2 | 16,8 | 18,3 | 19,9 | 21,5 | 23,1 | 24,6 | 26,2 | 27,8 | 29,3 | 30,9 | 32,5 | 34,0 | | |
| 550 | kg | 16,1 | 17,8 | 19,5 | 21,2 | 22,8 | 24,5 | 26,2 | 27,9 | 29,6 | 31,2 | 32,9 | 34,6 | 36,3 | | |
| 600 | kg | 17,1 | 18,9 | 20,6 | 22,4 | 24,2 | 26,0 | 27,8 | 29,6 | 31,3 | 33,1 | 34,9 | 36,7 | 38,5 | | |

CU-LT-1S + BFL

| Hn\Wn [mm] | | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 700 | 750 | 800 | | |
|------------|----|------|------|------|------|------|------|------|------|------|------|------|------|------|--|--|
| 100 | kg | 7,3 | 8,0 | 8,7 | 9,4 | 10,1 | 10,9 | 11,6 | 12,3 | 13,0 | 13,7 | 14,4 | 15,1 | 15,9 | | |
| 150 | kg | 8,2 | 9,0 | 9,8 | 10,7 | 11,5 | 12,3 | 13,1 | 14,0 | 14,8 | 15,6 | 16,4 | 17,3 | 18,1 | | |
| 200 | kg | 9,1 | 10,1 | 11,0 | 11,9 | 12,9 | 13,8 | 14,7 | 15,6 | 16,6 | 17,5 | 18,4 | 19,4 | 20,3 | | |
| 250 | kg | 10,1 | 11,1 | 12,1 | 13,2 | 14,2 | 15,2 | 16,3 | 17,3 | 18,4 | 19,4 | 20,4 | 21,5 | 22,5 | | |
| 300 | kg | 11,0 | 12,1 | 13,3 | 14,4 | 15,6 | 16,7 | 17,8 | 19,0 | 20,1 | 21,3 | 22,4 | 23,6 | 24,7 | | |
| 350 | kg | 11,9 | 13,2 | 14,4 | 15,7 | 16,9 | 18,2 | 19,4 | 20,7 | 21,9 | 23,2 | 24,4 | 25,7 | 26,9 | | |
| 400 | kg | 12,9 | 14,2 | 15,6 | 16,9 | 18,3 | 19,6 | 21,0 | 22,3 | 23,7 | 25,1 | 26,4 | 27,8 | 29,1 | | |
| 450 | kg | 13,8 | 15,2 | 16,7 | 18,2 | 19,6 | 21,1 | 22,6 | 24,0 | 25,5 | 26,9 | 28,4 | 29,9 | 31,3 | | |
| 500 | kg | 14,7 | 16,3 | 17,8 | 19,4 | 21,0 | 22,6 | 24,1 | 25,7 | 27,3 | 28,8 | 30,4 | 32,0 | 33,5 | | |
| 550 | kg | 15,6 | 17,3 | 19,0 | 20,7 | 22,3 | 24,0 | 25,7 | 27,4 | 29,1 | 30,7 | 32,4 | 34,1 | 35,8 | | |
| 600 | kg | 16,6 | 18,4 | 20,1 | 21,9 | 23,7 | 25,5 | 27,3 | 29,1 | 30,8 | 32,6 | 34,4 | 36,2 | 38,0 | | |

CU-LT-1S + BFLT

| Hn\Wn [mm] | | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 700 | 750 | 800 | | |
|------------|----|------|------|------|------|------|------|------|------|------|------|------|------|------|--|--|
| 100 | kg | 7,4 | 8,1 | 8,8 | 9,5 | 10,2 | 11,0 | 11,7 | 12,4 | 13,1 | 13,8 | 14,5 | 15,2 | 16,0 | | |
| 150 | kg | 8,3 | 9,1 | 9,9 | 10,8 | 11,6 | 12,4 | 13,2 | 14,1 | 14,9 | 15,7 | 16,5 | 17,4 | 18,2 | | |
| 200 | kg | 9,2 | 10,2 | 11,1 | 12,0 | 13,0 | 13,9 | 14,8 | 15,7 | 16,7 | 17,6 | 18,5 | 19,5 | 20,4 | | |
| 250 | kg | 10,2 | 11,2 | 12,2 | 13,3 | 14,3 | 15,3 | 16,4 | 17,4 | 18,5 | 19,5 | 20,5 | 21,6 | 22,6 | | |
| 300 | kg | 11,1 | 12,2 | 13,4 | 14,5 | 15,7 | 16,8 | 17,9 | 19,1 | 20,2 | 21,4 | 22,5 | 23,7 | 24,8 | | |
| 350 | kg | 12,0 | 13,3 | 14,5 | 15,8 | 17,0 | 18,3 | 19,5 | 20,8 | 22,0 | 23,3 | 24,5 | 25,8 | 27,0 | | |
| 400 | kg | 13,0 | 14,3 | 15,7 | 17,0 | 18,4 | 19,7 | 21,1 | 22,4 | 23,8 | 25,2 | 26,5 | 27,9 | 29,2 | | |
| 450 | kg | 13,9 | 15,3 | 16,8 | 18,3 | 19,7 | 21,2 | 22,7 | 24,1 | 25,6 | 27,0 | 28,5 | 30,0 | 31,4 | | |
| 500 | kg | 14,8 | 16,4 | 17,9 | 19,5 | 21,1 | 22,7 | 24,2 | 25,8 | 27,4 | 28,9 | 30,5 | 32,1 | 33,6 | | |
| 550 | kg | 15,7 | 17,4 | 19,1 | 20,8 | 22,4 | 24,1 | 25,8 | 27,5 | 29,2 | 30,8 | 32,5 | 34,2 | 35,9 | | |
| 600 | kg | 16,7 | 18,5 | 20,2 | 22,0 | 23,8 | 25,6 | 27,4 | 29,2 | 30,9 | 32,7 | 34,5 | 36,3 | 38,1 | | |

Selection data

$$\Delta p \text{ [Pa]} = \zeta \cdot v^2 \cdot 0,6$$

| Hn\Wn [mm] | | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 700 | 750 | 800 | | |
|------------|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|--|--|
| 100 | ζ [-] | 1,69 | 1,65 | 1,62 | 1,60 | 1,59 | 1,58 | 1,57 | 1,56 | 1,55 | 1,55 | 1,54 | 1,54 | 1,54 | | |
| 150 | ζ [-] | 0,98 | 0,93 | 0,89 | 0,87 | 0,85 | 0,83 | 0,82 | 0,81 | 0,80 | 0,80 | 0,79 | 0,79 | 0,78 | | |
| 200 | ζ [-] | 0,69 | 0,63 | 0,60 | 0,57 | 0,55 | 0,54 | 0,52 | 0,51 | 0,51 | 0,50 | 0,49 | 0,49 | 0,49 | | |
| 250 | ζ [-] | 0,54 | 0,48 | 0,44 | 0,42 | 0,40 | 0,39 | 0,37 | 0,37 | 0,36 | 0,35 | 0,35 | 0,34 | 0,34 | | |
| 300 | ζ [-] | 0,45 | 0,39 | 0,35 | 0,33 | 0,31 | 0,30 | 0,29 | 0,28 | 0,27 | 0,26 | 0,26 | 0,26 | 0,25 | | |
| 350 | ζ [-] | 0,39 | 0,33 | 0,30 | 0,27 | 0,25 | 0,24 | 0,23 | 0,22 | 0,22 | 0,21 | 0,21 | 0,20 | 0,20 | | |
| 400 | ζ [-] | 0,34 | 0,29 | 0,26 | 0,23 | 0,22 | 0,20 | 0,19 | 0,18 | 0,18 | 0,17 | 0,17 | 0,16 | 0,16 | | |
| 450 | ζ [-] | 0,31 | 0,26 | 0,23 | 0,20 | 0,19 | 0,17 | 0,16 | 0,16 | 0,15 | 0,15 | 0,14 | 0,14 | 0,13 | | |
| 500 | ζ [-] | 0,29 | 0,24 | 0,20 | 0,18 | 0,17 | 0,15 | 0,14 | 0,14 | 0,13 | 0,13 | 0,12 | 0,12 | 0,12 | | |
| 550 | ζ [-] | 0,27 | 0,22 | 0,19 | 0,16 | 0,15 | 0,14 | 0,13 | 0,12 | 0,12 | 0,11 | 0,11 | 0,10 | 0,10 | | |
| 600 | ζ [-] | 0,25 | 0,20 | 0,17 | 0,15 | 0,14 | 0,12 | 0,12 | 0,11 | 0,10 | 0,10 | 0,10 | 0,09 | 0,09 | | |

Example

Data

$H_n = 350 \text{ mm}$, $B_n = 400 \text{ mm}$, $v = 5 \text{ m/s}$

Calculation

$\Delta p = 0.25 * (5 \text{ m/s})^2 * 0.6 = 3.75 \text{ Pa}$

CU-LT-15 - A-weighted sound power level L_{wa} in the room

| $H_n \backslash W_n$ [mm] | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 700 | 750 | 800 | | |
|---------------------------|-------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|
| 100 | S_n [m ²] | 0,0099 | 0,0127 | 0,0154 | 0,0182 | 0,0209 | 0,0237 | 0,0264 | 0,0292 | 0,0319 | 0,0347 | 0,0374 | 0,0402 | 0,0429 | |
| | S_n [%] | 54,29 | 55,15 | 55,72 | 56,13 | 56,43 | 56,67 | 56,85 | 57,00 | 57,13 | 57,24 | 57,33 | 57,41 | 57,48 | |
| | Q [m ³ /h] | 690 | 860 | 1.030 | 1.200 | 1.360 | 1.530 | 1.700 | 1.870 | 2.030 | 2.200 | 2.370 | 2.540 | 2.700 | 45 dB |
| | Δp [Pa] | 93,34 | 90,41 | 88,50 | 87,16 | 84,91 | 84,29 | 83,80 | 83,41 | 82,26 | 82,05 | 81,86 | 81,70 | 80,97 | |
| | Q [m ³ /h] | 560 | 700 | 840 | 970 | 1.110 | 1.250 | 1.380 | 1.520 | 1.650 | 1.790 | 1.930 | 2.060 | 2.200 | 40 dB |
| | Δp [Pa] | 61,48 | 59,90 | 58,86 | 56,95 | 56,56 | 56,26 | 55,22 | 55,11 | 54,35 | 54,32 | 54,29 | 53,74 | 53,75 | |
| | Q [m ³ /h] | 460 | 570 | 680 | 790 | 900 | 1.010 | 1.120 | 1.230 | 1.350 | 1.460 | 1.570 | 1.680 | 1.790 | 35 dB |
| | Δp [Pa] | 41,49 | 39,71 | 38,57 | 37,77 | 37,19 | 36,73 | 36,38 | 36,08 | 36,38 | 36,13 | 35,92 | 35,74 | 35,59 | |
| | Q [m ³ /h] | 370 | 460 | 550 | 640 | 730 | 820 | 910 | 1.000 | 1.090 | 1.180 | 1.270 | 1.360 | 1.450 | 30 dB |
| | Δp [Pa] | 26,84 | 25,87 | 25,23 | 24,79 | 24,46 | 24,21 | 24,01 | 23,85 | 23,72 | 23,60 | 23,51 | 23,42 | 23,35 | |
| | Q [m ³ /h] | 310 | 380 | 450 | 520 | 600 | 670 | 740 | 820 | 890 | 960 | 1.040 | 1.110 | 1.180 | 25 dB |
| | Δp [Pa] | 18,84 | 17,65 | 16,89 | 16,37 | 16,53 | 16,16 | 15,88 | 16,04 | 15,81 | 15,62 | 15,76 | 15,60 | 15,46 | |
| 150 | S_n [m ²] | 0,0189 | 0,0242 | 0,0294 | 0,0347 | 0,0399 | 0,0452 | 0,0504 | 0,0557 | 0,0609 | 0,0662 | 0,0714 | 0,0767 | 0,0819 | |
| | S_n [%] | 67,65 | 68,73 | 69,44 | 69,95 | 70,33 | 70,62 | 70,85 | 71,04 | 71,20 | 71,33 | 71,45 | 71,54 | 71,63 | |
| | Q [m ³ /h] | 940 | 1.170 | 1.390 | 1.610 | 1.840 | 2.060 | 2.290 | 2.510 | 2.730 | 2.960 | 3.180 | 3.410 | 3.630 | 45 dB |
| | Δp [Pa] | 44,54 | 41,91 | 39,31 | 37,88 | 37,01 | 35,79 | 35,39 | 34,71 | 34,08 | 34,14 | 33,55 | 33,60 | 33,04 | |
| | Q [m ³ /h] | 770 | 950 | 1.130 | 1.310 | 1.490 | 1.680 | 1.860 | 2.040 | 2.220 | 2.400 | 2.590 | 2.770 | 2.950 | 40 dB |
| | Δp [Pa] | 30,00 | 27,56 | 26,02 | 24,96 | 24,18 | 23,87 | 23,37 | 22,97 | 22,64 | 22,36 | 22,30 | 22,08 | 21,90 | |
| | Q [m ³ /h] | 620 | 770 | 920 | 1.070 | 1.220 | 1.360 | 1.510 | 1.660 | 1.810 | 1.960 | 2.100 | 2.250 | 2.400 | 35 dB |
| | Δp [Pa] | 19,45 | 18,11 | 17,25 | 16,65 | 16,21 | 15,64 | 15,40 | 15,21 | 15,05 | 14,91 | 14,66 | 14,57 | 14,49 | |
| | Q [m ³ /h] | 510 | 630 | 750 | 870 | 990 | 1.110 | 1.230 | 1.350 | 1.470 | 1.590 | 1.710 | 1.830 | 1.950 | 30 dB |
| | Δp [Pa] | 13,16 | 12,12 | 11,46 | 11,01 | 10,67 | 10,42 | 10,22 | 10,06 | 9,93 | 9,81 | 9,72 | 9,64 | 9,57 | |
| | Q [m ³ /h] | 410 | 510 | 610 | 710 | 810 | 900 | 1.000 | 1.100 | 1.200 | 1.290 | 1.390 | 1.490 | 1.590 | 25 dB |
| | Δp [Pa] | 8,51 | 7,94 | 7,58 | 7,33 | 7,15 | 6,85 | 6,76 | 6,68 | 6,61 | 6,46 | 6,42 | 6,39 | 6,36 | |
| 200 | S_n [m ²] | 0,0279 | 0,0357 | 0,0434 | 0,0512 | 0,0589 | 0,0667 | 0,0744 | 0,0822 | 0,0899 | 0,0977 | 0,1054 | 0,1132 | 0,1209 | |
| | S_n [%] | 74,13 | 75,31 | 76,09 | 76,65 | 77,06 | 77,38 | 77,63 | 77,84 | 78,01 | 78,16 | 78,29 | 78,39 | 78,49 | |
| | Q [m ³ /h] | 1.190 | 1.470 | 1.750 | 2.030 | 2.310 | 2.590 | 2.860 | 3.140 | 3.420 | 3.700 | 3.980 | 4.260 | 4.530 | 45 dB |
| | Δp [Pa] | 28,38 | 25,37 | 23,49 | 22,20 | 21,26 | 20,55 | 19,85 | 19,42 | 19,06 | 18,77 | 18,51 | 18,29 | 18,02 | |
| | Q [m ³ /h] | 970 | 1.200 | 1.420 | 1.650 | 1.880 | 2.100 | 2.330 | 2.550 | 2.780 | 3.010 | 3.230 | 3.460 | 3.690 | 40 dB |
| | Δp [Pa] | 18,85 | 16,91 | 15,46 | 14,67 | 14,08 | 13,51 | 13,18 | 12,81 | 12,60 | 12,42 | 12,19 | 12,07 | 11,96 | |
| | Q [m ³ /h] | 790 | 970 | 1.160 | 1.340 | 1.530 | 1.710 | 1.890 | 2.080 | 2.260 | 2.450 | 2.630 | 2.810 | 3.000 | 35 dB |
| | Δp [Pa] | 12,51 | 11,05 | 10,32 | 9,67 | 9,33 | 8,96 | 8,67 | 8,52 | 8,32 | 8,23 | 8,08 | 7,96 | 7,90 | |
| | Q [m ³ /h] | 640 | 790 | 940 | 1.090 | 1.240 | 1.390 | 1.540 | 1.690 | 1.840 | 1.990 | 2.140 | 2.290 | 2.440 | 30 dB |
| | Δp [Pa] | 8,21 | 7,33 | 6,78 | 6,40 | 6,13 | 5,92 | 5,76 | 5,63 | 5,52 | 5,43 | 5,35 | 5,29 | 5,23 | |
| | Q [m ³ /h] | 520 | 640 | 770 | 890 | 1.010 | 1.130 | 1.250 | 1.370 | 1.500 | 1.620 | 1.740 | 1.860 | 1.980 | 25 dB |
| | Δp [Pa] | 5,42 | 4,81 | 4,55 | 4,27 | 4,06 | 3,91 | 3,79 | 3,70 | 3,67 | 3,60 | 3,54 | 3,49 | 3,44 | |

| Hn\Wn [mm] | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 700 | 750 | 800 | | |
|------------|-----------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------------|
| 250 | Sn [m ²] | 0,0369 | 0,0472 | 0,0574 | 0,0677 | 0,0779 | 0,0882 | 0,0984 | 0,1087 | 0,1189 | 0,1292 | 0,1394 | 0,1497 | 0,1599 | |
| | Sn [%] | 77,95 | 79,20 | 80,02 | 80,60 | 81,03 | 81,37 | 81,64 | 81,85 | 82,04 | 82,19 | 82,32 | 82,44 | 82,53 | |
| | Q [m ³ /h] | 1.440 | 1.770 | 2.100 | 2.440 | 2.770 | 3.100 | 3.430 | 3.760 | 4.090 | 4.420 | 4.750 | 5.090 | 5.420 | 45 dB |
| | Δp [Pa] | 20,74 | 17,89 | 16,14 | 15,08 | 14,21 | 13,56 | 13,05 | 12,64 | 12,31 | 12,03 | 11,80 | 11,64 | 11,46 | |
| | Q [m ³ /h] | 1.170 | 1.440 | 1.710 | 1.980 | 2.250 | 2.520 | 2.790 | 3.060 | 3.330 | 3.600 | 3.870 | 4.130 | 4.400 | 40 dB |
| | Δp [Pa] | 13,69 | 11,84 | 10,70 | 9,93 | 9,38 | 8,96 | 8,63 | 8,37 | 8,16 | 7,98 | 7,83 | 7,66 | 7,55 | |
| | Q [m ³ /h] | 950 | 1.170 | 1.390 | 1.610 | 1.830 | 2.050 | 2.270 | 2.490 | 2.710 | 2.920 | 3.140 | 3.360 | 3.580 | 35 dB |
| | Δp [Pa] | 9,03 | 7,82 | 7,07 | 6,57 | 6,20 | 5,93 | 5,71 | 5,54 | 5,40 | 5,25 | 5,15 | 5,07 | 5,00 | |
| | Q [m ³ /h] | 780 | 950 | 1.130 | 1.310 | 1.490 | 1.670 | 1.840 | 2.020 | 2.200 | 2.380 | 2.560 | 2.730 | 2.910 | 30 dB |
| | Δp [Pa] | 6,08 | 5,15 | 4,67 | 4,35 | 4,11 | 3,93 | 3,75 | 3,65 | 3,56 | 3,49 | 3,43 | 3,35 | 3,30 | |
| | Q [m ³ /h] | 630 | 780 | 920 | 1.070 | 1.210 | 1.360 | 1.500 | 1.640 | 1.790 | 1.930 | 2.080 | 2.220 | 2.370 | 25 dB |
| | Δp [Pa] | 3,97 | 3,47 | 3,10 | 2,90 | 2,71 | 2,61 | 2,50 | 2,40 | 2,36 | 2,29 | 2,26 | 2,21 | 2,19 | |
| 300 | Sn [m ²] | 0,0459 | 0,0587 | 0,0714 | 0,0842 | 0,0969 | 0,1097 | 0,1224 | 0,1352 | 0,1479 | 0,1607 | 0,1734 | 0,1862 | 0,1989 | |
| | Sn [%] | 80,48 | 81,76 | 82,60 | 83,20 | 83,65 | 84,00 | 84,28 | 84,50 | 84,69 | 84,85 | 84,99 | 85,10 | 85,21 | |
| | Q [m ³ /h] | 1.533 | 1.954 | 2.377 | 2.802 | 3.227 | 3.653 | 4.080 | 4.507 | 4.934 | 5.361 | 5.788 | 6.216 | 6.644 | 45 dB |
| | Δp [Pa] | 13,50 | 12,30 | 11,50 | 10,90 | 10,40 | 10,10 | 9,80 | 9,60 | 9,40 | 9,30 | 9,10 | 9,00 | 8,90 | |
| | Q [m ³ /h] | 1.267 | 1.616 | 1.966 | 2.317 | 2.668 | 3.020 | 3.373 | 3.726 | 4.079 | 4.432 | 4.786 | 5.139 | 5.493 | 40 dB |
| | Δp [Pa] | 9,30 | 8,40 | 7,80 | 7,40 | 7,10 | 6,90 | 6,70 | 6,60 | 6,40 | 6,30 | 6,20 | 6,20 | 6,10 | |
| | Q [m ³ /h] | 1.048 | 1.336 | 1.625 | 1.915 | 2.206 | 2.497 | 2.789 | 3.080 | 3.372 | 3.664 | 3.956 | 4.249 | 4.541 | 35 dB |
| | Δp [Pa] | 6,30 | 5,70 | 5,40 | 5,10 | 4,90 | 4,70 | 4,60 | 4,50 | 4,40 | 4,30 | 4,30 | 4,20 | 4,20 | |
| | Q [m ³ /h] | 866 | 1.104 | 1.343 | 1.583 | 1.824 | 2.065 | 2.305 | 2.547 | 2.788 | 3.029 | 3.271 | 3.513 | 3.754 | 30 dB |
| | Δp [Pa] | 4,30 | 3,90 | 3,70 | 3,50 | 3,30 | 3,20 | 3,10 | 3,10 | 3,00 | 3,00 | 2,90 | 2,90 | 2,90 | |
| | Q [m ³ /h] | 716 | 913 | 1.111 | 1.309 | 1.508 | 1.707 | 1.906 | 2.105 | 2.305 | 2.505 | 2.704 | 2.904 | 3.104 | 25 dB |
| | Δp [Pa] | 3,00 | 2,70 | 2,50 | 2,40 | 2,30 | 2,20 | 2,10 | 2,10 | 2,10 | 2,00 | 2,00 | 2,00 | 1,90 | |
| 350 | Sn [m ²] | 0,0549 | 0,0702 | 0,0854 | 0,1007 | 0,1159 | 0,1312 | 0,1464 | 0,1617 | 0,1769 | 0,1922 | 0,2074 | 0,2227 | 0,2379 | |
| | Sn [%] | 82,26 | 83,58 | 84,44 | 85,05 | 85,51 | 85,87 | 86,15 | 86,38 | 86,57 | 86,74 | 86,87 | 86,99 | 87,10 | |
| | Q [m ³ /h] | 1.826 | 2.334 | 2.844 | 3.356 | 3.870 | 4.384 | 4.900 | 5.416 | 5.932 | 6.449 | 6.966 | 7.484 | 8.001 | 45 dB |
| | Δp [Pa] | 12,20 | 10,90 | 10,00 | 9,40 | 9,00 | 8,70 | 8,40 | 8,20 | 8,00 | 7,80 | 7,70 | 7,60 | 7,50 | |
| | Q [m ³ /h] | 1.510 | 1.929 | 2.351 | 2.775 | 3.199 | 3.625 | 4.051 | 4.478 | 4.905 | 5.332 | 5.759 | 6.187 | 6.615 | 40 dB |
| | Δp [Pa] | 8,30 | 7,50 | 6,90 | 6,50 | 6,20 | 5,90 | 5,70 | 5,60 | 5,40 | 5,30 | 5,20 | 5,20 | 5,10 | |
| | Q [m ³ /h] | 1.248 | 1.595 | 1.944 | 2.294 | 2.645 | 2.997 | 3.349 | 3.702 | 4.055 | 4.408 | 4.762 | 5.115 | 5.469 | 35 dB |
| | Δp [Pa] | 5,70 | 5,10 | 4,70 | 4,40 | 4,20 | 4,00 | 3,90 | 3,80 | 3,70 | 3,70 | 3,60 | 3,50 | 3,50 | |
| | Q [m ³ /h] | 1.032 | 1.319 | 1.607 | 1.897 | 2.187 | 2.478 | 2.769 | 3.061 | 3.352 | 3.644 | 3.937 | 4.229 | 4.521 | 30 dB |
| | Δp [Pa] | 3,90 | 3,50 | 3,20 | 3,00 | 2,90 | 2,80 | 2,70 | 2,60 | 2,50 | 2,50 | 2,50 | 2,40 | 2,40 | |
| | Q [m ³ /h] | 853 | 1.090 | 1.329 | 1.568 | 1.808 | 2.048 | 2.289 | 2.530 | 2.772 | 3.013 | 3.255 | 3.496 | 3.738 | 25 dB |
| | Δp [Pa] | 2,70 | 2,40 | 2,20 | 2,10 | 2,00 | 1,90 | 1,80 | 1,80 | 1,70 | 1,70 | 1,70 | 1,70 | 1,60 | |

| Hn\Wn [mm] | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 700 | 750 | 800 | | |
|------------|-----------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|
| 400 | Sn [m ²] | 0,0639 | 0,0817 | 0,0994 | 0,1172 | 0,1349 | 0,1527 | 0,1704 | 0,1882 | 0,2059 | 0,2237 | 0,2414 | 0,2592 | 0,2769 | |
| | Sn [%] | 83,60 | 84,93 | 85,81 | 86,43 | 86,90 | 87,26 | 87,55 | 87,78 | 87,98 | 88,14 | 88,28 | 88,41 | 88,51 | |
| | Q [m ³ /h] | 2.122 | 2.717 | 3.316 | 3.918 | 4.522 | 5.127 | 5.734 | 6.341 | 6.950 | 7.558 | 8.168 | 8.777 | 9.387 | 45 dB |
| | Δp [Pa] | 11,20 | 9,90 | 9,00 | 8,40 | 8,00 | 7,60 | 7,30 | 7,10 | 6,90 | 6,80 | 6,60 | 6,50 | 6,40 | |
| | Q [m ³ /h] | 1.754 | 2.246 | 2.741 | 3.239 | 3.738 | 4.239 | 4.740 | 5.243 | 5.746 | 6.249 | 6.753 | 7.256 | 7.761 | 40 dB |
| | Δp [Pa] | 7,70 | 6,80 | 6,20 | 5,70 | 5,40 | 5,20 | 5,00 | 4,90 | 4,70 | 4,60 | 4,50 | 4,40 | 4,40 | |
| | Q [m ³ /h] | 1.450 | 1.857 | 2.266 | 2.678 | 3.091 | 3.505 | 3.919 | 4.334 | 4.750 | 5.166 | 5.583 | 5.999 | 6.416 | 35 dB |
| | Δp [Pa] | 5,20 | 4,60 | 4,20 | 3,90 | 3,70 | 3,60 | 3,40 | 3,30 | 3,20 | 3,20 | 3,10 | 3,00 | 3,00 | |
| | Q [m ³ /h] | 1.199 | 1.535 | 1.874 | 2.214 | 2.555 | 2.897 | 3.240 | 3.583 | 3.927 | 4.271 | 4.615 | 4.960 | 5.305 | 30 dB |
| | Δp [Pa] | 3,60 | 3,20 | 2,90 | 2,70 | 2,50 | 2,40 | 2,30 | 2,30 | 2,20 | 2,20 | 2,10 | 2,10 | 2,00 | |
| | Q [m ³ /h] | 991 | 1.269 | 1.549 | 1.830 | 2.113 | 2.395 | 2.679 | 2.963 | 3.247 | 3.531 | 3.816 | 4.101 | 4.386 | 25 dB |
| | Δp [Pa] | 2,40 | 2,20 | 2,00 | 1,80 | 1,70 | 1,70 | 1,60 | 1,50 | 1,50 | 1,50 | 1,40 | 1,40 | 1,40 | |
| 450 | Sn [m ²] | 0,0729 | 0,0932 | 0,1134 | 0,1337 | 0,1539 | 0,1742 | 0,1944 | 0,2147 | 0,2349 | 0,2552 | 0,2754 | 0,2957 | 0,3159 | |
| | Sn [%] | 84,63 | 85,98 | 86,87 | 87,50 | 87,98 | 88,34 | 88,63 | 88,87 | 89,07 | 89,23 | 89,38 | 89,50 | 89,61 | |
| | Q [m ³ /h] | 2.420 | 3.103 | 3.792 | 4.485 | 5.181 | 5.880 | 6.579 | 7.280 | 7.982 | 8.685 | 9.389 | 10.093 | 10.797 | 45 dB |
| | Δp [Pa] | 10,50 | 9,10 | 8,20 | 7,60 | 7,20 | 6,80 | 6,50 | 6,30 | 6,10 | 6,00 | 5,80 | 5,70 | 5,60 | |
| | Q [m ³ /h] | 2.000 | 2.565 | 3.135 | 3.708 | 4.284 | 4.861 | 5.439 | 6.019 | 6.599 | 7.180 | 7.762 | 8.344 | 8.926 | 40 dB |
| | Δp [Pa] | 7,10 | 6,20 | 5,60 | 5,20 | 4,90 | 4,70 | 4,50 | 4,30 | 4,20 | 4,10 | 4,00 | 3,90 | 3,80 | |
| | Q [m ³ /h] | 1.654 | 2.121 | 2.592 | 3.066 | 3.542 | 4.019 | 4.497 | 4.976 | 5.456 | 5.936 | 6.417 | 6.898 | 7.380 | 35 dB |
| | Δp [Pa] | 4,90 | 4,30 | 3,80 | 3,60 | 3,30 | 3,20 | 3,00 | 2,90 | 2,90 | 2,80 | 2,70 | 2,70 | 2,60 | |
| | Q [m ³ /h] | 1.367 | 1.753 | 2.143 | 2.535 | 2.928 | 3.322 | 3.718 | 4.114 | 4.511 | 4.908 | 5.305 | 5.703 | 6.101 | 30 dB |
| | Δp [Pa] | 3,30 | 2,90 | 2,60 | 2,40 | 2,30 | 2,20 | 2,10 | 2,00 | 2,00 | 1,90 | 1,90 | 1,80 | 1,80 | |
| | Q [m ³ /h] | 1.130 | 1.450 | 1.772 | 2.095 | 2.421 | 2.747 | 3.074 | 3.401 | 3.729 | 4.058 | 4.386 | 4.715 | 5.044 | 25 dB |
| | Δp [Pa] | 2,30 | 2,00 | 1,80 | 1,70 | 1,60 | 1,50 | 1,40 | 1,40 | 1,30 | 1,30 | 1,30 | 1,20 | 1,20 | |
| 500 | Sn [m ²] | 0,0819 | 0,1047 | 0,1274 | 0,1502 | 0,1729 | 0,1957 | 0,2184 | 0,2412 | 0,2639 | 0,2867 | 0,3094 | 0,3322 | 0,3549 | |
| | Sn [%] | 85,46 | 86,82 | 87,72 | 88,36 | 88,83 | 89,20 | 89,49 | 89,73 | 89,93 | 90,10 | 90,25 | 90,37 | 90,48 | |
| | Q [m ³ /h] | 2.718 | 3.491 | 4.272 | 5.058 | 5.847 | 6.640 | 7.434 | 8.231 | 9.028 | 9.827 | 10.627 | 11.427 | 12.228 | 45 dB |
| | Δp [Pa] | 9,90 | 8,50 | 7,60 | 7,00 | 6,50 | 6,20 | 5,90 | 5,70 | 5,50 | 5,30 | 5,20 | 5,10 | 5,00 | |
| | Q [m ³ /h] | 2.247 | 2.886 | 3.532 | 4.181 | 4.834 | 5.489 | 6.146 | 6.805 | 7.464 | 8.124 | 8.786 | 9.447 | 10.109 | 40 dB |
| | Δp [Pa] | 6,70 | 5,80 | 5,20 | 4,80 | 4,50 | 4,20 | 4,00 | 3,90 | 3,80 | 3,60 | 3,60 | 3,50 | 3,40 | |
| | Q [m ³ /h] | 1.858 | 2.386 | 2.920 | 3.457 | 3.997 | 4.538 | 5.082 | 5.626 | 6.171 | 6.717 | 7.263 | 7.811 | 8.358 | 35 dB |
| | Δp [Pa] | 4,60 | 4,00 | 3,60 | 3,30 | 3,10 | 2,90 | 2,80 | 2,70 | 2,60 | 2,50 | 2,40 | 2,40 | 2,30 | |
| | Q [m ³ /h] | 1.536 | 1.973 | 2.414 | 2.858 | 3.304 | 3.752 | 4.201 | 4.651 | 5.102 | 5.553 | 6.005 | 6.457 | 6.910 | 30 dB |
| | Δp [Pa] | 3,10 | 2,70 | 2,40 | 2,20 | 2,10 | 2,00 | 1,90 | 1,80 | 1,80 | 1,70 | 1,70 | 1,60 | 1,60 | |
| | Q [m ³ /h] | 1.270 | 1.631 | 1.996 | 2.363 | 2.732 | 3.102 | 3.473 | 3.845 | 4.218 | 4.591 | 4.965 | 5.339 | 5.713 | 25 dB |
| | Δp [Pa] | 2,20 | 1,90 | 1,70 | 1,50 | 1,40 | 1,30 | 1,30 | 1,20 | 1,20 | 1,20 | 1,10 | 1,10 | 1,10 | |

| Hn\Wn [mm] | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 700 | 750 | 800 | | |
|------------|-----------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|
| 550 | Sn [m ²] | 0,0909 | 0,1162 | 0,1414 | 0,1667 | 0,1919 | 0,2172 | 0,2424 | 0,2677 | 0,2929 | 0,3182 | 0,3434 | 0,3687 | 0,3939 | |
| | Sn [%] | 86,13 | 87,50 | 88,41 | 89,05 | 89,53 | 89,90 | 90,20 | 90,44 | 90,64 | 90,81 | 90,96 | 91,08 | 91,19 | |
| | Q [m ³ /h] | 3.018 | 3.882 | 4.755 | 5.634 | 6.519 | 7.407 | 8.298 | 9.191 | 10.086 | 10.982 | 11.879 | 12.778 | 13.677 | 45 dB |
| | Δp [Pa] | 9,40 | 8,00 | 7,10 | 6,50 | 6,00 | 5,70 | 5,40 | 5,20 | 5,00 | 4,80 | 4,70 | 4,60 | 4,50 | |
| | Q [m ³ /h] | 2.495 | 3.209 | 3.931 | 4.658 | 5.389 | 6.123 | 6.860 | 7.598 | 8.338 | 9.079 | 9.821 | 10.564 | 11.307 | 40 dB |
| | Δp [Pa] | 6,40 | 5,50 | 4,90 | 4,40 | 4,10 | 3,90 | 3,70 | 3,50 | 3,40 | 3,30 | 3,20 | 3,10 | 3,10 | |
| | Q [m ³ /h] | 2.063 | 2.653 | 3.250 | 3.851 | 4.456 | 5.063 | 5.672 | 6.282 | 6.894 | 7.506 | 8.120 | 8.734 | 9.348 | 35 dB |
| | Δp [Pa] | 4,40 | 3,70 | 3,30 | 3,00 | 2,80 | 2,70 | 2,50 | 2,40 | 2,30 | 2,30 | 2,20 | 2,10 | 2,10 | |
| | Q [m ³ /h] | 1.706 | 2.194 | 2.687 | 3.184 | 3.684 | 4.186 | 4.689 | 5.194 | 5.699 | 6.206 | 6.713 | 7.221 | 7.729 | 30 dB |
| | Δp [Pa] | 3,00 | 2,60 | 2,30 | 2,10 | 1,90 | 1,80 | 1,70 | 1,70 | 1,60 | 1,50 | 1,50 | 1,50 | 1,40 | |
| | Q [m ³ /h] | 1.410 | 1.813 | 2.221 | 2.632 | 3.045 | 3.460 | 3.877 | 4.294 | 4.712 | 5.131 | 5.550 | 5.970 | 6.390 | 25 dB |
| | Δp [Pa] | 2,00 | 1,70 | 1,60 | 1,40 | 1,30 | 1,20 | 1,20 | 1,10 | 1,10 | 1,10 | 1,00 | 1,00 | 1,00 | |
| 600 | Sn [m ²] | 0,0999 | 0,1277 | 0,1554 | 0,1832 | 0,2109 | 0,2387 | 0,2664 | 0,2942 | 0,3219 | 0,3497 | 0,3774 | 0,4052 | 0,4329 | |
| | Sn [%] | 86,69 | 88,07 | 88,99 | 89,63 | 90,11 | 90,49 | 90,79 | 91,03 | 91,23 | 91,40 | 91,55 | 91,68 | 91,79 | |
| | Q [m ³ /h] | 3.319 | 4.274 | 5.240 | 6.214 | 7.194 | 8.179 | 9.168 | 10.159 | 11.153 | 12.148 | 13.145 | 14.143 | 15.142 | 45 dB |
| | Δp [Pa] | 9,00 | 7,60 | 6,70 | 6,10 | 5,60 | 5,30 | 5,00 | 4,80 | 4,60 | 4,40 | 4,30 | 4,20 | 4,10 | |
| | Q [m ³ /h] | 2.744 | 3.533 | 4.332 | 5.137 | 5.948 | 6.762 | 7.580 | 8.399 | 9.220 | 10.043 | 10.867 | 11.693 | 12.519 | 40 dB |
| | Δp [Pa] | 6,10 | 5,20 | 4,60 | 4,20 | 3,80 | 3,60 | 3,40 | 3,30 | 3,10 | 3,00 | 2,90 | 2,90 | 2,80 | |
| | Q [m ³ /h] | 2.269 | 2.921 | 3.581 | 4.247 | 4.918 | 5.591 | 6.266 | 6.944 | 7.623 | 8.303 | 8.985 | 9.667 | 10.350 | 35 dB |
| | Δp [Pa] | 4,20 | 3,50 | 3,10 | 2,80 | 2,60 | 2,50 | 2,30 | 2,20 | 2,10 | 2,10 | 2,00 | 2,00 | 1,90 | |
| | Q [m ³ /h] | 1.876 | 2.415 | 2.961 | 3.512 | 4.066 | 4.622 | 5.181 | 5.741 | 6.302 | 6.865 | 7.428 | 7.992 | 8.557 | 30 dB |
| | Δp [Pa] | 2,90 | 2,40 | 2,10 | 1,90 | 1,80 | 1,70 | 1,60 | 1,50 | 1,50 | 1,40 | 1,40 | 1,30 | 1,30 | |
| | Q [m ³ /h] | 1.551 | 1.997 | 2.448 | 2.903 | 3.361 | 3.821 | 4.283 | 4.746 | 5.210 | 5.675 | 6.141 | 6.607 | 7.074 | 25 dB |
| | Δp [Pa] | 2,00 | 1,70 | 1,50 | 1,30 | 1,20 | 1,20 | 1,10 | 1,00 | 1,00 | 1,00 | 0,90 | 0,90 | 0,90 | |

Every air flow lower than the above mentioned maximum value, will meet the listed A-weighted sound power level for the respective dimension. More information on sound power can be found in the product information on our website (documents).

Sample order



1. product
2. width
3. height
4. mechanism type
5. option: type magnet and voltage
6. option: resetting motor
7. option: uni/bipolar switches
8. option: inspection shutter

Approvals and certificates

All our dampers are submitted to a number of tests by official test institutes. Reports of these tests form the basis for the approvals of our dampers.



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The NF-label guarantees: conformity with the standard NF S 61-937 Parts 1 and 5: "Systèmes de Sécurité Incendie Dispositifs Actionnés de Sécurité"; conformity with the national decree of March 22, 2004, changed on 14 March 2011 for the classification of fire resistance; the values of the characteristics mentioned in this document. Organisme Certificateur: AFNOR Certification, 11 Rue Francis de Pressensé, F93571 La Plaine Saint-Denis Cedex; Website: <http://www.afnor.org> and <http://www.marque-nf.com>; Phone: +33 (0)1.41.62.80.00, Fax: +33 (0)1.49.17.90.00, Email: certification@afnor.org