series

CEVH

Smoke Evacuation Damper

www.koolair.com
Series CEVH

CEVH Smoke Evacuation Damper

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**CEVH Smoke Evacuation Damper**

**Description**
Smoke evacuation damper with 2-blade (2P), double door type swiveling closure, designed to be used for the supply of primary air and smoke evacuation in buildings with high levels of public footfall and in high-rise buildings. Approved in accordance with test standard UNE EN 1366-10 and classified according to EN 13501-4: EI120 (ved i→o) S 1500 AA multi.

Designed according to EN 12101-8 specifications. Composed of a structure with a refractory material externally, sheet steel internally and two hinged doors made of a refractory material.

Installed vertically within the wall or in a vertical smoke evacuation duct, with the optional of a metal mounting frame previously fastened to the duct.

Includes an RPK protective and decorative grille, specific for smoke evacuation and manufactured with anodised aluminium profiles, fitted to the front side of the damper, i.e. the side on display in the building.

Can be used for smoke extraction and air intake (air flow in either direction).

CEVH smoke evacuation dampers carry CE marking No. 0370-CPR-1687 in accordance with the Construction Product Directive 89/106/EEC, according to EN12101-8.

**Operation**
Operation (opening) by means of electric shunt release coil with manual reset (closing) (CE and NF marking). Optional limit switch/es:

Types of coil (electromagnet) available:
- 24V electric shunt release coil DC
- 48V electric shunt release coil DC
- 24V electric shunt release coil AC
- 48V electric shunt release coil AC

The operating and reset mechanism is incorporated in the central part of the damper where it is protected from smoke and high temperatures.
CEVH Smoke Evacuation Damper

CE Marking

NF Marking
The Koolair CEVH smoke evacuation damper, is certified for NF marking. (NF264 Certification Standard, NF S 61-937-10 smoke evacuation dampers).

Standard
The CEVH damper is approved according to the European Test Standard UNE-EN 1366-10 and European classification standard UNE-EN 13501-4, where EI 120 (ved i↔o) S 1500 AA multi:

(E) Integrity
(I) Isolation
(120) 120 minute resistance (ved)
(i ↔ o) Symmetric. Suitable for fire in both directions (interior-exterior and exterior-interior)
(S) Airtightness. Leakage through the damper closing blades <200 m³/h*m²
(1500) Suitable for a working pressure range from 1500 Pa negative (extract) to 500 Pa positive (supply). (AA) Automatic intervention.

(multi) Suitable for multi-compartment systems.

To guarantee correct fire damper operation, it is essential to read and follow the recommendations in the installation and operation manual. In addition, the installation must comply with all current national standards. Further information and updates, as well as the installation and operating manual, can be found on our website (www.koolair.com).

Declared smoke extraction performance

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<tr>
<th>CEVH CPR-1687</th>
<th>Dimensions (mm)</th>
<th>Installation location</th>
<th>Installation</th>
<th>Classification</th>
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<td>L: 400 → 1100 H: 400 → 1100</td>
<td>Smoke extract duct</td>
<td>1366-8 certified vertical duct</td>
<td>EI-120 (ved i↔o) S 1500 AA multi (500 Pa)</td>
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CEVH Smoke Evacuation Damper Dimensions

Damper Drawing

Dimensions and openings

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<th>Nominal length Ln (mm)</th>
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Dimensions in mm
CEVH damper application in installations which employ ductwork different from that which has been submitted for certification testing: CEVH smoke control dampers, for use in multi-compartment systems (multi), are applicable in ducts that are tested in accordance with EN1366-8 as appropriate for each particular case or manufactured from materials with the same density or greater thickness than those used in the certification test. Ductwork must be installed in accordance with the manufacturer’s latest drawings.
CEVH Smoke Evacuation Damper Assembly

Use of mounting frame

Ductwork in accordance with UNE-EN

Mounting frame

4 Screws

Precautions:
• Make sure the mounting frame is perpendicular before installation.
• Fix the frame to the duct using the 4 screws provided with the frame.
• Drill a hole to allow ductwork connections to pass.

CEVH damper installation

CEVH

x4 Screws

• Install the damper in the mounting frame or duct. Use the collapsible pins included in the damper frame as a stop.
• Fasten the damper to the frame using the 4 screws provided with the damper.
• Complete the assembly by filling all the screw holes with intumescent putty.

As it is a critical safety item, the damper must be stored and handled with care. Precautions:
- Store in a place protected from moisture.
- Avoid contact with water.
- Avoid deformation of the damper body during installation and sealing.
- Prevent the damper from being knocked or swung during transport.
- Use of the metal mounting frame is recommended to make damper installation easy.
CEVH Smoke Evacuation Damper
Connections

Electrical connections

FCU: safety position (end of run) one-pole contact.
DCU: waiting position (start of run) one-pole contact.
FCB: safety position (end of run) two-pole contact.
DCB: waiting position (start of run) two-pole contact.

Access to coil’s electrical connections and start and end of run switches

• Activation by electric shunt release (current driven) coil:
  - Power supply options
    24V DC electric shunt release coil
    48V DC electric shunt release coil
    24V AC electric shunt release coil
    48V AC electric shunt release coil

* CE Marking does not require duplication of the start (DCU, DCB) and end of run limit switch (FCU, FCB).
CEVH Smoke Evacuation Damper
Technical Data

Free area table (dm²)

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**KEY**

- **P** = Blade depth.
- **Lt** = Total exterior length.
- **Ht** = Total exterior height.
- **Lh** = Interior duct length.
- **Hh** = Interior duct height.
- **Ln** = Nominal damper length.
- **Hn** = Nominal damper height.
CEVH Smoke Evacuation Damper
Technical Data

CEVH Graph

Key:
- $V_p$ damper air velocity in m/s.
- $\Delta P_{est}$ damper static pressure.
- $\Delta P_{est}$ loss in Pa.

Selection example:
To calculate the static pressure loss across a CEVH damper for a given flow rate $Q$ (m$^3$/h) the air velocity $V_p$ (m/s) is calculated in relation to the damper air passage (dm$^2$) as free area table. Using this area and a given flow rate, the air velocity is obtained, which, when introduced in the previous graph gives the pressure loss.

Example:
A damper with nominal dimensions of 600x600 mm we will have a free area of 25.4 dm$^2$. For a design flow rate of 5000 m$^3$/h, the flow velocity is calculated using the formula $V_p = (Q / \text{air pass}) / 36$.

In this case the $V_p = 5.46$ m/s that introduced in the previous table would give us a static load loss $\Delta P_{est} = 9$ Pa.
CEVH Smoke Evacuation Damper Coding

Damper dimensions and model

CEVH – L x H (mm)

Activation. Components

+ SHUNT RELEASE 24 V DC + ER/SR LS
+ SHUNT RELEASE 48 V DC + ER/SR LS
+ SHUNT RELEASE 24 V AC + ER/SR LS
+ SHUNT RELEASE 48 V AC + ER/SR LS

Accessories

MM (Metal mounting frame)
RPK (protective smoke evacuation grille)