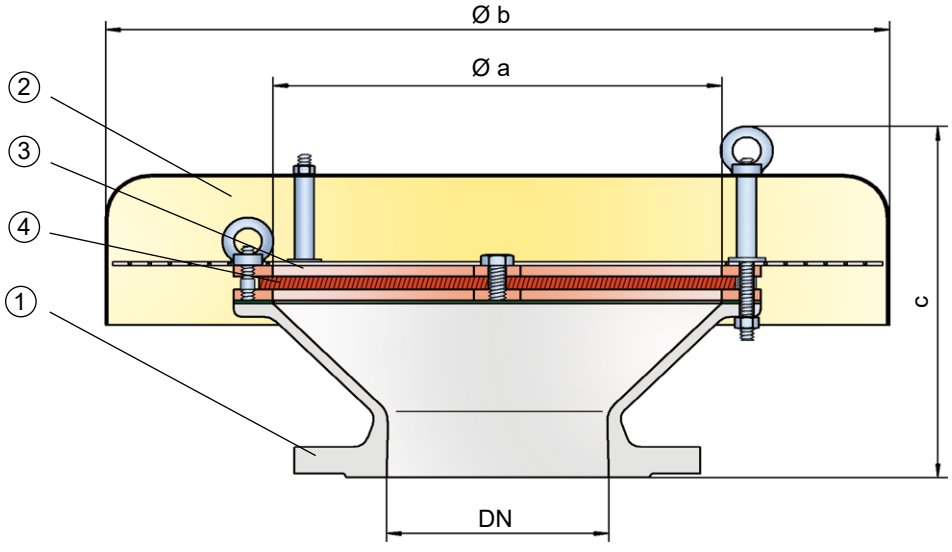


# Deflagration Flame Arrester, End-of-Line

## PROTEGO® LH/AD




### Function and Description

The PROTEGO® LH/AD end-of-line deflagration flame arrester provides protection against flame transmission through atmospheric deflagration. The device is typically installed on vent lines of vessels and plant equipment which are not pressurized. For safe application, it is important that an endurance burning situation can be excluded. So typically, it is installed on vent lines which discharge vapor for a short time period. The device prevents flame transmission from atmospheric deflagration into the vessel or plant.

The PROTEGO® LH/AD consists of the housing (1), a weather hood (2), and the PROTEGO® flame arrester unit (3). The device is equipped with a metal weather hood. A protection screen is installed between the weather hood and the housing to keep out animals and foreign bodies. The FLAMEFILTER® (4) gap size depends on the device's intended use. Specifying the operating conditions, such as the temperature, explosion group and the composition of the fluid, enables PROTEGO® to select the best end-of-line deflagration flame arrester for your application.

The PROTEGO® LH/AD series end-of-line deflagration flame arrester is available for substances from explosion groups IIA to IIC (NEC groups D to B). Special certifications for carbon disulfide are available.

The standard design can be used with an operating temperature of up to +60°C / 140°F. Devices with special approval for higher temperatures are available upon request.

EU conformity according to the currently valid ATEX directive. Approvals according to other national/international regulations on request.

### Special Features and Advantages

- weather hood with protection screen protects the PROTEGO® flame arrester unit against environmental impact, such as nesting animals and weather conditions
- available for DN 50/2"- bis DN 800/32"- pipes
- trouble-free maintenance
- advanced design for higher operating temperatures
- provides protection against atmospheric deflagrations
- low operating and lifecycle costs
- cost-effective Flame arrester
- cost-effective spare parts

### Design Type and Specification

| | |
|---|---|
| End-of-line deflagration flame arrester, basic design | **LH/AD** |
| End-of-line deflagration flame arrester for carbon disulfide | **LH/AD-CS2** |

Special designs available upon request.

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**Table 1: Dimensions** Dimensions in mm / inches

To select the nominal size (DN), please use the flow capacity charts on the following pages.

| DN | a | b | IIB3 | IIC |
|---|---|---|---|---|
| | | | c* | c* |
| 50 / 2" | 100 / 3.94 | 200 / 7.87 | 175 / 6.89 | 185 / 7.28 |
| 65 / 2 ½" | 150 / 5.91 | 240 / 9.45 | 183 / 7.20 | 190 / 7.48 |
| 80 / 3" | 150 / 5.91 | 240 / 9.45 | 183 / 7.20 | 190 / 7.48 |
| 100 / 4" | 200 / 7.87 | 295 / 11.61 | 220 / 8.66 | 235 / 9.25 |
| 125 / 5" | 250 / 9.84 | 350 / 13.78 | 240 / 9.45 | - |
| 150 / 6" | 300 / 11.81 | 550 / 21.65 | 260 / 10.24 | 270 / 10.63 |
| 200 / 8" | 300 / 11.81 | 550 / 21.65 | 260 / 10.24 | 270 / 10.63 |
| 250 / 10" | 400 / 15.75 | 600 / 23.62 | 355 / 13.98 | 365 / 14.37 |
| 300 / 12" | 400 / 15.75 | 600 / 23.62 | 340 / 13.39 | 350 / 13.78 |
| 350 / 14" | 600 / 23.62 | 800 / 31.50 | 390 / 15.35 | 400 / 15.75 |
| 400 / 16" | 600 / 23.62 | 800 / 31.50 | 380 / 14.96 | 390 / 15.35 |
| 500 / 20" | 700 / 27.56 | 1000 / 39.37 | 400 / 15.75 | 410 / 16.14 |
| 600 / 24" | 800 / 31.50 | 1200 / 47.24 | 475 / 18.70 | 485 / 19.09 |
| 700 / 28" | 1000 / 39.37 | 1400 / 55.12 | 505 / 19.88 | 515 / 20.28 |
| 800 / 32" | 1200 / 47.24 | 1600 / 62.99 | 550 / 21.65 | 560 / 22.05 |

* "c" is reference values. Exact measures depend on the flange connection.

**Table 2: Selection of explosion group**

| MESG | Expl. Gr. (IEC/CEN) | Gas Group (NEC) | |
|---|---|---|---|
| ≥ 0,65 mm | IIB3 | C | Special approvals upon request. |
| < 0,5 mm | IIC | B | |

**Table 3: Specification of max. operating temperature**

| | | |
|---|---|---|
| ≤ 60°C / 140°F | Tmaximum allowable operating temperature in °C | Higher operating temperatures upon request. |
| - | Classification | |

**Table 4: Material selection for housing**

| Design | A | B | |
|---|---|---|---|
| Housing | Steel | Stainless Steel | |
| Weather hood | Stainless Steel | Stainless Steel | Special materials upon request. |
| Protection screen | Stainless Steel | Stainless Steel | |
| Flame arrester unit | A, B | B | |

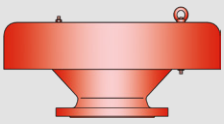
**Table 5: Material combinations of flame arrester unit**

| Design | A | B | |
|---|---|---|---|
| FLAMEFILTER® casing | Steel | Stainless Steel | Special materials upon request. |
| FLAMEFILTER® | Stainless Steel | Stainless Steel | |

**Table 6: Flange connection type**

| | |
|---|---|
| EN 1092-1; Form B1 | Other types upon request. |
| ASME B16.5 CL 150 R.F. | |

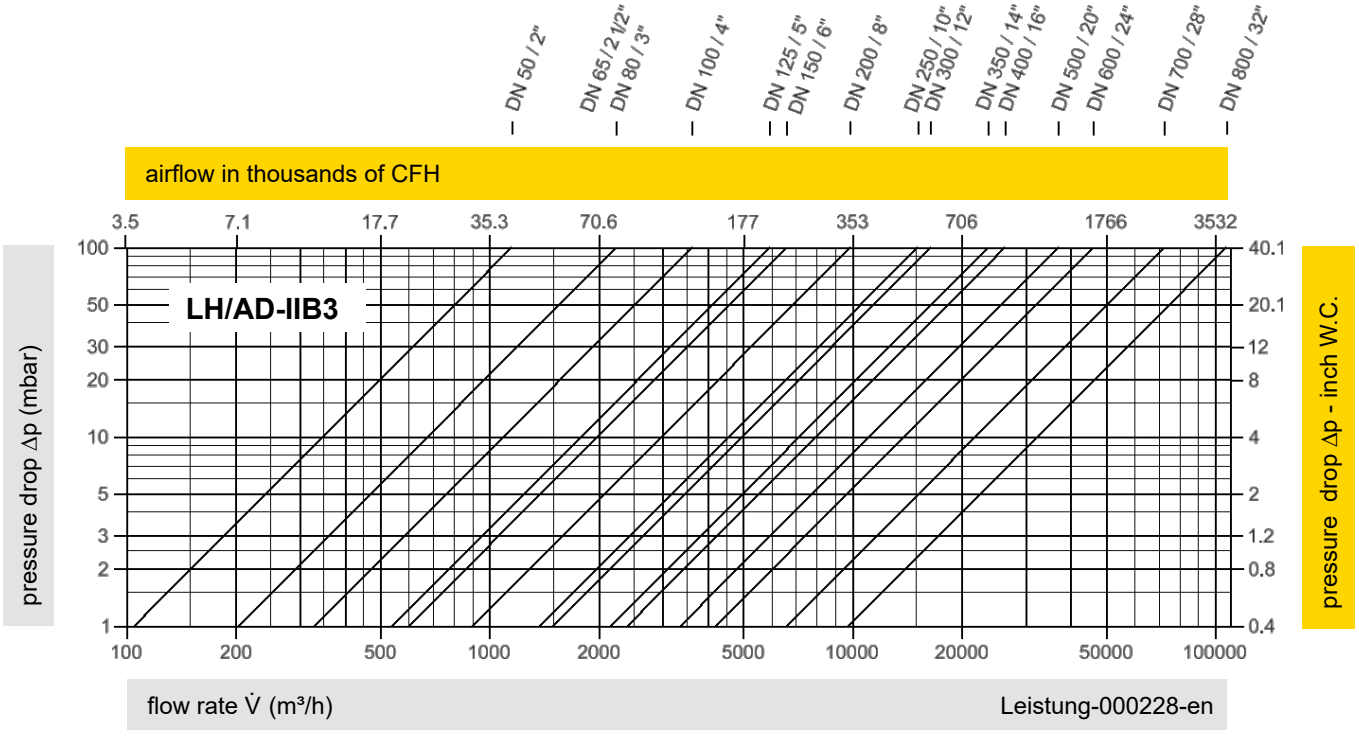
PROTEGO
*for safety and environment*

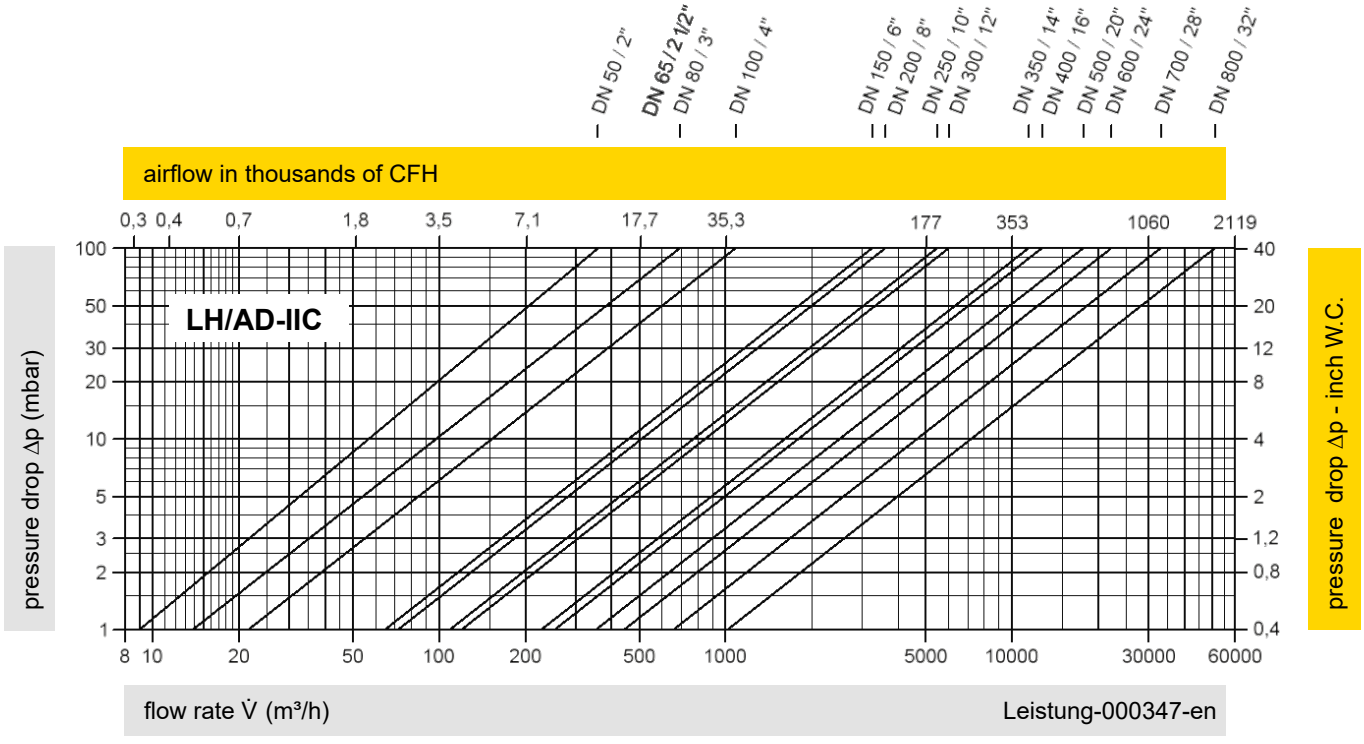


# Deflagration Flame Arrester, End-of-Line

## Flow Capacity Charts

## PROTEGO® LH/AD




The flow capacity charts have been determined with a calibrated and TÜV certified flow capacity test rig.

Volume flow V̇ in (m³/h) and CFH refer to the standard reference conditions of air in ISO 6358 (20°C, 1bar).
For conversion to other densities and temperatures, refer to Sec. 1: “Technical Fundamentals.”

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