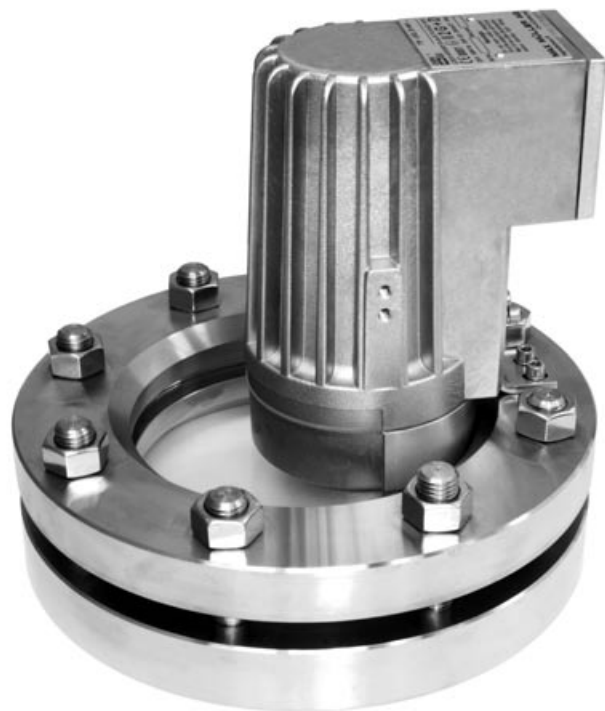
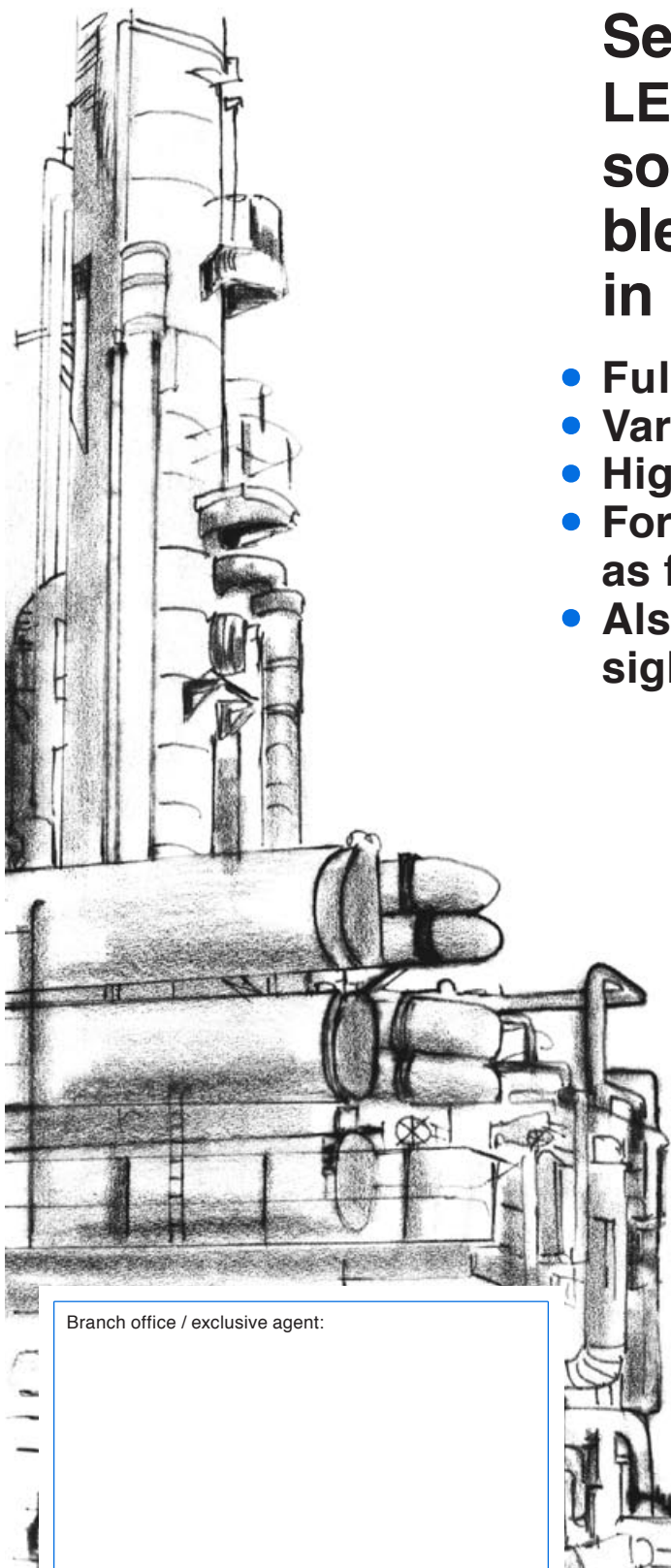


# SIGHTGLASS LIGHT FITTINGS

Series HEL / FHEL / HEL / FHEL  
LED / FHL / FHL LED, the ideal  
solution for your lighting pro-  
blems in hazardous as well as  
in safe areas.

- Fully developed package
- Various mounting options
- Highly competitive prices
- For combination of sight / light unit as well as for separate fitting (2 port version)
- Also supplied complete with VETROLUX<sup>®</sup> sightglasses



Type HEL 50 deHW, Ex de IIC T3, Ex tD A21 IP65 T195°C, Ex II 2 G + D,  
230 V, 50 W, halogen version, mounted on circular sightglass to DIN  
28120, DN 125, PN 10, in 1 port version.

Branch office / exclusive agent:

With the innovative series HEL / FHEL / HEL LED / FHEL LED / FHL / FHL LED, you may choose between 12 standard types to meet your own application needs, offering the following principal advantages:

- For the purchasing department:**
- **Highly competitive prices** due to extremely compact value-engineered design and highly efficient manufacturing techniques
  - **Short lead times**
- For the design engineer or the plant engineer:**
- Versatile design enabling the light fittings to be used as a combination “view **and** light through one assembly” as well as for use as a separate light fitting in a two port system, already from DN 25 on depending on the type of the sightglass
  - **Easy installation** due to the availability of 3 different fixing systems (side feet “Sch”, fixation bracket “W”, flange collar “R”), meeting all applications on:
    - Circular sightglasses to DIN 28120 / 28121 or similar
    - Screwed sightglasses similar to DIN 11851
    - Sight flow indicators
  - **Most compact design** providing brilliant illumination due to high wattage capability up to 50 Watts!
  - Hazardous area types **with or without connection box**. (Ex «de» or Ex «d»)
  - **Dazzle free illumination** due to a wide range of power supplies (refer to page 3) as well as through anti-dazzle shield “B” or opal glass “M”
  - Light units may be **installed in any position without restriction**
  - **Admitted** for food processing applications
  - **Particularly designed for extremely brilliant lighting** of vessels, reactors, tanks or silos
  - All types may be equipped with an electronic timer “U” or “V” or with a built-in push-button for momentaneous operation (“D”) (see “Additional equipment”, page 3)
  - The light fittings for use in hazardous areas are certified to ATEX in the groups G (zones 1 and 2) and D (zones 21 and 22)
  - Safe area models may be equipped with a built-in “ON-OFF”-switch (“E”) for a limited operation period
  - All models may be equipped **with transport handle** (“T”) thus serving as a hand lamp
- For the maintenance electrician:**
- **Easy replacement** of bulbs or LED's
  - **Halogen bulbs** are **industry standards available** from local suppliers (series HEL / FHEL / FHL)
  - **LED types with extremely long life span** (series HEL LED / FHEL LED / FHL LED)

**Operating conditions:** Completely **independent** of vessel internal pressure or vacuum.

**Electrical data:**

|                    |                                      |
|--------------------|--------------------------------------|
| Supply:            | Alternative current (AC)             |
| Terminal voltages: | Refer to table on page 3 for details |
| Power:             | Refer to table on page 3 for details |

**Enclosure protection degree:** IP 65, dust and water jet tight to EN 60529 / DIN VDE 0470 part 1.

**Construction and materials:** Housing of corrosion resistant cast aluminium alloy (Anticorodal). Upon request painted with a two component acryl based colour (“K”). Horizontal cable gland with sealing ring M 20 x 1,5 (series HEL [LED]) or M 16 x 1,5 (series FHEL [LED] / FHL [LED]). Vertical cable gland “K1” on demand (only series FHEL [LED]). Hazardous area models without junction box are supplied depending on type with standard 5 metre cable length connected internally at our works. (Other cable lengths may be ordered). Connection to terminals up to 2.5 mm<sup>2</sup>. Additional earth terminal 4 mm<sup>2</sup> external to the housing for hazardous area types. When timer “U” or “V” is included, an operating time of 4 minutes is preprogrammed at our factory. Other operating times may be specified on ordering. Built-in reflector-bulb-unit (series [F]HEL / FHL) or LED-unit (series [F]HEL LED / FHL LED).

**Mounting:**

On circular sightglasses to DIN 28120 or similar:

|                 |                           |
|-----------------|---------------------------|
| DN 25 – DN 150: | With side feet “Sch”      |
| DN 80 – DN 200: | With fixation bracket “W” |

On circular sightglasses to DIN 28121 or similar:

|                 |                           |
|-----------------|---------------------------|
| DN 40 – DN 200: | With side feet “Sch”      |
| DN 80 – DN 200: | With fixation bracket “W” |

On screwed sightglasses similar to DIN 11851:

|                 |   |
|-----------------|---|
| DN 65 – DN 100: | With intermediate flange collar “R” in AISI 304 (DN size should be specified on ordering) |
| From DN 125 on: | With fixation bracket “W” onto the grooved collar nut                                     |

On sight flow indicators:

With fixation bracket “W” or specific customer adaptation (i. e. the light housing has 4 drilled holes M5 size for this purpose)

# Standard types

## Electrical data

### Additional equipment



| Type designation for                   | safe area light fitting      |            |  | FHL 35 H                  | FHL 50 H                  |                           |                           | FHL LED-S <sup>4</sup>    | FHL LED-F <sup>5</sup>    |
|--|------------------------------|------------|--|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|
|  | hazardous area light fitting | HEL 35 deH | HEL 50 deH                               | FHEL 35 dH                | FHEL 50 dH                | HEL de LED-S <sup>4</sup> | HEL de LED-F <sup>5</sup> | FHEL d LED-S <sup>4</sup> | FHEL d LED-F <sup>5</sup> |
| Nominal rating                         | (W)                          | 35         | 50                                       | 35                        | 50                        | 4                         | 5                         | 4                         | 5                         |
| Terminal voltage                       | (V)                          | 230, 240   | 230, 240                                 | 230, 240                  | 230, 240                  | 230 - 240                 | 100 - 240 <sup>6</sup>    | 230 - 240                 | 100 - 240 <sup>6</sup>    |
| Light source                           |                              | Halogen    | Halogen                                  | Halogen                   | Halogen                   | LED                       | LED                       | LED                       | LED                       |
| Socket of the light source             |                              | GU 10      | GZ 10 <sup>2</sup><br>GU 10 <sup>3</sup> | GU 10                     | GU 10                     | GU 10                     | GU 10                     | GU 10                     | GU 10                     |
| Lateral junction box                   |                              | •          | •  |                           |                           | •                         | •                         |                           |                           |
| Weight (without fixation) <sup>1</sup> | (kg)                         | 1.90       | 1.90                                     | 1.50 (FHL)<br>1.70 (FHEL) | 1.50 (FHL)<br>1.70 (FHEL) | 1.85                      | 1.85                      | 1.55 (FHL)<br>1.65 (FHEL) | 1.55 (FHL)<br>1.65 (FHEL) |

<sup>1</sup> Only light fitting. Fixations "W" 0.03 resp. 0.06 ([F]HEL 35 / 50 d[e]H) kg, "Sch" 0.16 kg. <sup>2</sup> In 230 V. <sup>3</sup> In 230 and 240 V.  
<sup>4</sup> "Spot"-version (narrow beam). <sup>5</sup> "Flood"-version (wide beam). <sup>6</sup> With timer "V" or "U" 230 - 240 V only.

The lower indications are **only valid for the hazardous area models.**

|                                |                                |                    |  |                    |                    |                    |                    |                    |                    |
|--------------------------------|--------------------------------|--------------------|--|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| Ignition protection type to EN | 60079-0<br>60079-1<br>60079-7  | Ex de              | Ex de  | Ex d               | Ex d               | Ex de              | Ex de              | Ex d               | Ex d               |
| Explosion group                |                                | II C               | II C   | II C               | II C               | II C               | II C               | II C               | II C               |
| Protection mode to EN          | 61421-0<br>61421-1             | Ex tD A21<br>IP 65 | Ex tD A21<br>IP 65                               | Ex tD A21<br>IP 65 | Ex tD A21<br>IP 65 | Ex tD A21<br>IP 65 | Ex tD A21<br>IP 65 | Ex tD A21<br>IP 65 | Ex tD A21<br>IP 65 |
| Temperature class (G / D) at   | T <sub>a</sub> = -20°C / +40°C | T4/T130°C          | T4/T130°C <sup>7</sup><br>T3/T195°C <sup>8</sup> | T4/T130°C          | T3/T195°C          | T6/T80°C           | T6/T80°C           | T6/T80°C           | T6/T80°C           |
|                                | T <sub>a</sub> = -20°C / +60°C | T3/T195°C          | T3/T195°C  | T3/T195°C          | T3/T195°C          | T6/T80°C           | T6/T80°C           | T6/T80°C           | T6/T80°C           |
| ATEX                           |                                | Ex II 2 G+D        | Ex II 2 G+D                                      | Ex II 2 G+D        | Ex II 2 G+D        | Ex II 2 G+D        | Ex II 2 G+D        | Ex II 2 G+D        | Ex II 2 G+D        |

<sup>7</sup> With socket GZ 10 (230 V). <sup>8</sup> With socket GU10 (230 and 240 V).

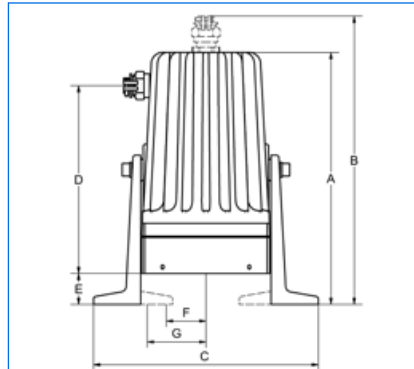
### Additional equipment:

|  |   |
|--|---|
| <p><b>Opal glass</b> ... M<br/>In some cases, such as in pipeline flow indicator applications, a strong blinding effect occurs. For such situations we offer an opalised glass fitted into the unit, which increases the dispersion of the light and eliminates glare.</p>   | <p><b>Transport handle</b> ... T<br/>This ergonomic and insulated handle makes transport around the plant easy, and also facilitates the use of the light fitting for inspection inside a vessel on a trailing lead.</p>  |
| <p><b>Device for momentary operation</b> ... D<br/>In order to cut down on wasted energy and improve the bulb or LED life, the light fittings may be equipped with a built-in device providing momentary illumination. This device <b>cannot be combined</b> with timers "V" or "U". (Please refer to our leaflet "switches, push-buttons and timers").</p>  | <p><b>Paint finish</b> ... K<br/>The special two component acrylic paint finish protects against corrosion in excessively aggressive environments, and may satisfy customers special aesthetic requirements. RAL 9001 is standard, other colours on demand.</p> |
| <p><b>Timers</b> ... V / U<br/>The timers for operation <b>on</b> the unit or <b>at a distance</b> ... V or at distance only ... U save energy and increase the lifetime of the bulb by limiting operation to approximately 4 minutes. They are particularly recommended for short or sporadic observation of the vessel contents. The timers <b>cannot</b> be combined with the device ... D.</p> | <p><b>ON-OFF-switch</b> ... E<br/>This switch is available for the types FHL 35, FHL LED-S und FHL LED-F. (Please refer to our leaflet "switches, push-buttons and timers").</p>  |

## Dimensions Application examples

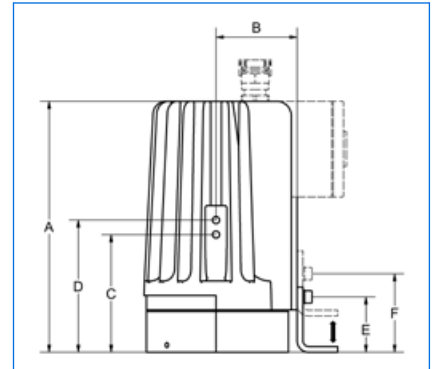


Type HEL 35 deHSchB, Ex de IIC T4, Ex tD A21 IP65 T130°C, Ex II 2 G + D, 230 V, 35 W, halogen version, with anti-dazzle shield "B", on circular sightglass to DIN 28120, DN 150, PN 6, in version "view and light through one sightglass".



| A    | B    | C   | D    | E  | F  | G  |
|------|------|-----|------|----|----|----|
| 198* | 226* | 176 | 147* | 24 | 31 | 46 |

\* Types LED: - 10 mm.

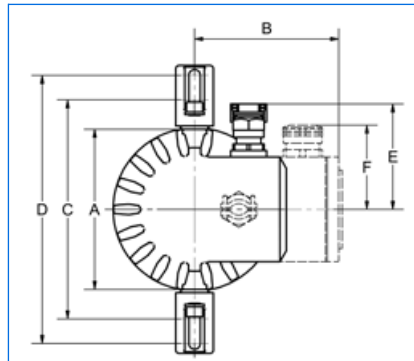


| A    | B  | C   | D   | E   | F   |
|------|----|-----|-----|-----|-----|
| 173* | 56 | 81* | 91* | 38* | 54* |

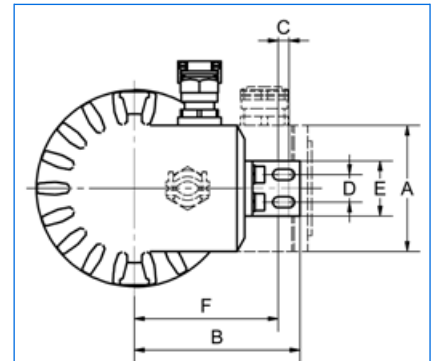
\* Types LED: - 10 mm.



Type FHEL 35 dhVRK1, Ex d IIC T4, Ex tD A21 IP65 T130°C, Ex II 2 G + D, 230 V, 35 W, halogen version, with timer "V", on screwed sightglass similar to DIN 11851, DN 65, PN 6. Fixation with intermediate flange collar "R".



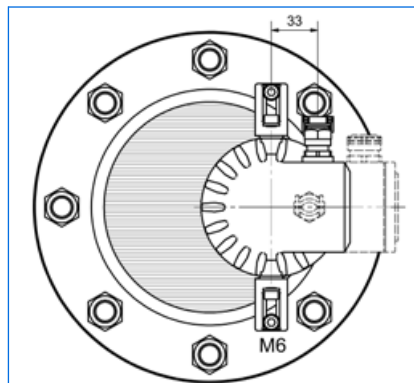
| A  | B  | C   | D   | E  | F  |
|----|----|-----|-----|----|----|
| 98 | 88 | 134 | 164 | 65 | 52 |



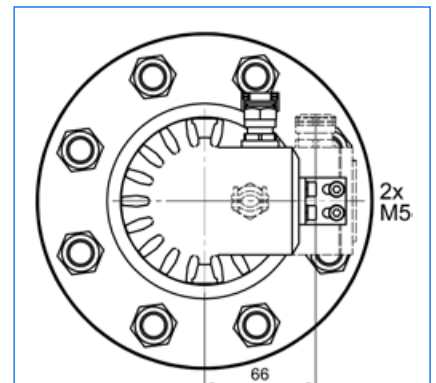
| A  | B  | C | D  | E  | F  |
|----|----|---|----|----|----|
| 64 | 84 | 5 | 14 | 28 | 73 |



Type FHEL d LED-F MWSp, Ex d IIC T6, Ex tD A21 IP65 T80°C, Ex II 2 G + D, 230 V, ca. 2 W, LED version, with optical glass "M", on pipeline flow indicator type FDE 50, DN 50.



Fixation «Sch»



Fixation «W»

All dimensions in mm.

Subject to changes without preliminary notice.

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