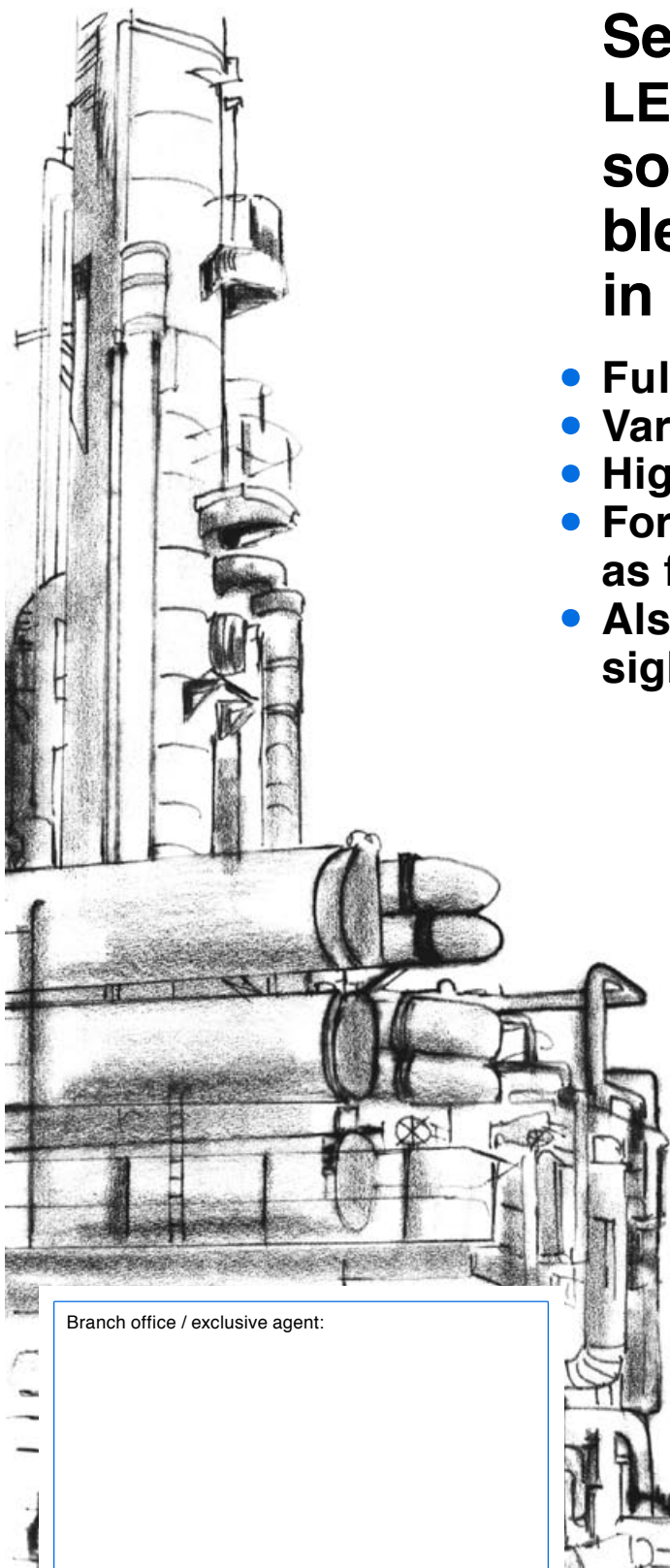


SIGHTGLASS LIGHT FITTINGS

**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[®] 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:



Short information and advantages

General technical data

Mounting possibilities

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 spray water tight

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 mm². Additional earth terminal 4 mm² 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	FHL 50			FHL LED-S ⁴	FHL LED-F ⁵
	hazardous area light fitting	HEL 35 deH	HEL 50 deH	FHEL 35 dH	FHEL 50 dH	HEL de LED-S ⁴	HEL de LED-F ⁵	FHEL d LED-S ⁴	FHEL d LED-F ⁵
Nominal rating	(W)	35	50	35	50	ca. 2	ca. 2	ca. 2	ca. 2
Terminal voltage	(V)	230, 240	230, 240	230, 240	230, 240	230 - 240	230	230 - 240	230
Light source		Halogen	Halogen	Halogen	Halogen	LED	LED	LED	LED
Socket of the light source		GU 10	GZ 10 ² GU 10 ³	GU 10	GU 10	GU 10		GU 10	
Lateral junction box		•	•			•	•		
Weight (without fixation) ¹	(kg)	1.90	1.90	1.50 (FHL) 1.70 (FHEL)	1.50 (FHL) 1.70 (FHEL)	1.85	1.85	1.55 (FHL) 1.65 (FHEL)	1.55 (FHL) 1.65 (FHEL)

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

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

Ignition protection type to EN	60079-0 60079-1 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 61421-1	Ex tD A21 IP 65	Ex tD A21 IP 65	Ex tD A21 IP 65	Ex tD A21 IP 65	Ex tD A21 IP 65	Ex tD A21 IP 65	Ex tD A21 IP 65	Ex tD A21 IP 65
Temperature class (G / D) at	T _a = -20°C / +40°C	T4/T130°C	T4/T130°C ⁶ T3/T195°C ⁷	T4/T130°C	T3/T195°C	T6/T80°C	T6/T80°C	T6/T80°C	T6/T80°C
	T _a = -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

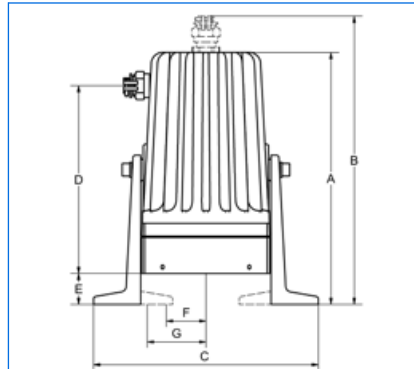
⁶ With socket GZ 10 (230 V). ⁷ With socket GU10 (230 and 240 V).

Additional equipment:

<p>Opal glass ... M 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>Transport handle ... T 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>Device for momentary operation ... D 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 cannot be combined with timers "V" or "U". (Please refer to our leaflet "switches, push-buttons and timers").</p>	<p>Paint finish ... K 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>Timers ... V / U The timers for operation on the unit or at a distance ... 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 cannot be combined with the device ... D.</p>	<p>ON-OFF-switch ... E 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>

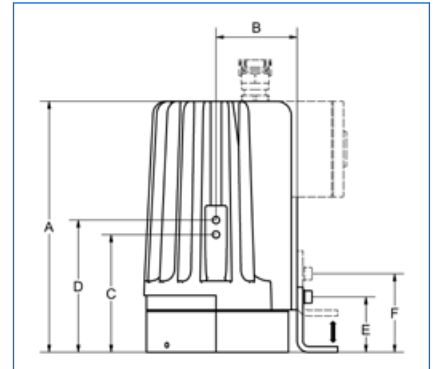


Type HEL 35 deHSchB, Ex de IIC T4, Ex tD A21 IP65 T130°C, Ex II 2 G + D, 230 V, 35 W, halogen version, with anti-dazzle shield "B", on circular sightglass to DIN 28120, DN 150, PN 6, in version "view and light through one sightglass".



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

* Types LED: - 10 mm.

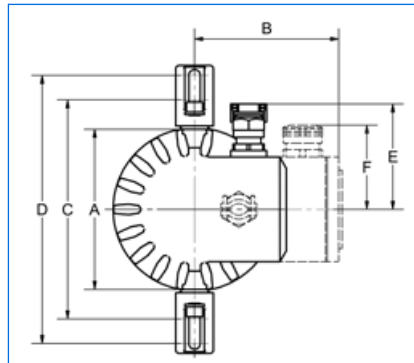


A	B	C	D	E	F
173*	56	81*	91*	38*	54*

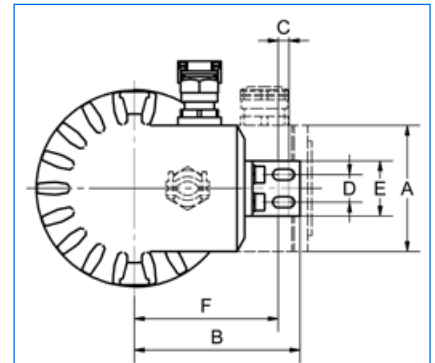
* Types LED: - 10 mm.



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".



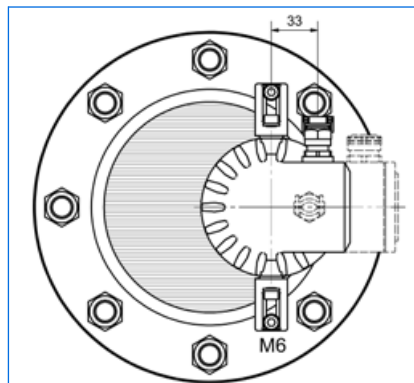
A	B	C	D	E	F
98	88	134	164	65	52



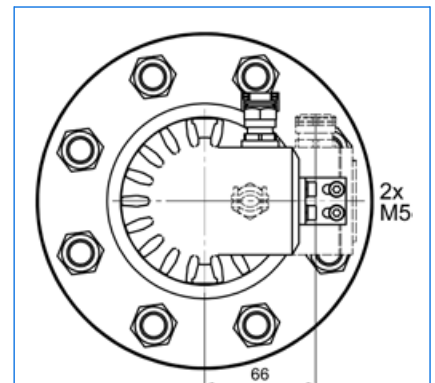
A	B	C	D	E	F
64	84	5	14	28	73



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.