

Lumistar Luminaire REL 01/REL 01-Ex, Stainless Steel



II 2G Ex ia IIC T4/T5/T6 Gb
I M2 Ex ia I Mb

- For mounting on rectangular sight glass units.

The REL 01 is a sight glass luminaire that has been specifically designed for attaching onto the side of rectangular sight glass units to achieve a combined sight and light port, enabling the convenient observation of filling levels. Lumiglas supply this stainless glass luminaire in two versions for use in potentially explosive environments and for normal operating conditions.

The Lumistar luminaire REL 01/REL 01-Ex is a complete unit ready for fitting. It is attached directly to the cover flange of a rectangular sight glass unit by means of two screws.

- **Compact design, high light output, low energy consumption:** 21 specialLEDs ensure dazzle-free illumination. Together with the corresponding electronic switchgear, these LED are resin-cast into the **stainless steel housing** which is then secured to the rectangular fitting.

The service life of this luminaire is virtually unlimited; even if one of the diodes fails after a long period of operation, the remaining LED still provide more than enough light intensity.

• Application:

Designed for use with rectangular / longitudinal sight glass units installed in bioreactors, laboratory mixers, filters and, generally, all normally closed tanks, agitators, separators, pipelines and other vessels operated in explosion-hazardous environments (Zones 1 and 2) as well as in non-hazardous work areas.

- **Suitable for use in the food processing sector**

• Type of protection:

Provided the luminaire has been properly installed, it is dust- and splash-proof, IP65 acc. to DIN EN 60529/DIN VDE 0470 Part 1.

• Operating conditions:

- Independent of the internal pressure/vacuum in the vessel.
- Maximum admissible ambient temperature 80°C when used in non-hazardous environments.
- When installed in Ex-rated areas, the maximum ambient temperature is between -5°C and +60°C

• Certification

EC Type-Examination Certificate DMT 02 ATEX E 234 X



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• Technical data Ex protection:

- These luminaires meet the essential safety and health regulations by complying with the directives:
- EN 60079-0: 2012 + A11: 2013 General Requirements
- EN 60079-11: 2012 Intrinsic Safety 'i'
- Explosion group: IIC (includes IIA and IIB)
- Temperature classes: up to T6 (depending on power)



Lumistar luminaire REL 01, attached to the cover flange of a rectangular sight glass unit, side view

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• Electrical data and components:

- Voltage: AC or DC
- Operating voltage: 24 V
- Power consumption: max. 2 W
- The Lumiglas linaire REL 01 is supplied complete with 3 m connecting cable, 3 x 0.75 mm²; heat-resistant between -10°C and +90°C.

• Electrical data for installation in potentially explosive environments:

The Lumistar luminaire REL01-Ex can be operated by appropriate series connected control gear (e. g. safety barriers, binary outputs, current supplies) in auxiliary circuits (see adjacent drawing).

• Power circuit:

Voltage	U _i	AC/DC 30 V
Current	I _i	250 mA
Power	P _i	see "Temperature class" chart

Internal effective capacitance C_i negligible

Internal effective inductance L_i negligible

• Temperature class in relation to ambient temperature:

Temperature class	Max. permissible ambient temperature T _a	Power consumption P _i
T1 to T4	60°C	2.0 W
T5	60°C	1.5 W
T6	40°C	1.0 W

• Special requirements/conditions to ensure safe operation:

The light emitting diode module REL 01-Ex is suitable for use in ambient temperatures ranging from -5°C to +60°C.

The sight glass luminaire should be fitted into or onto a housing that provides protection to at least IP20 as set out in EN 60529 for light emitting diode lines.

Internal wiring inside this enclosure shall comply with requirements specified in clauses 6.3.12 and 7.6e of EN 60079-11.

When installing the sight glass luminaire type REL 01 it must be ensured that there is an air gap of at least 3 mm between the intrinsically safe circuit and any metal housing elements, and a gap of at least 50 mm between connecting components or bare parts of non-intrinsically safe circuits in other components (power supplies), or that they are isolated from the same by a separating wall conforming to 6.3.2 of EN 60079-11.

Safe area

Potentially explosive environment

Ex i isolator modules, e.g.
Ex i safety barriers,
Ex i binary outputs,
Ex i power supply
(to be works-fitted, can be included in scope of supply)

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Lumistar luminaire REL 01-Ex
Papenmeier scope of supply



Front view of rectangular sight glass unit, length 250 mm, with side-mounted Lumistar luminaire REL 01 in stainless steel

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- **Components and materials:**

- Luminaire housing and fastening parts: stainless steel 1.4301
- Resin compound: siliconerubber
- Ordering details:
Lumistar luminaire REL 01 or REL 01-Ex
part no.: 3544.130.00

- **Important, please note:**

If this luminaire is to be used in explosion hazardous environments, it is essential that it is connected to an intrinsically safe power supply circuit. We will be pleased to quote you for the relevant components.

- **Simple installation thanks to special integrated carrier plate:**

Caution: Do not look into light – Danger of impaired eyesight!

The Lumistar luminaire REL 01 is provided with an integrated carrier plate with a 60 mm oblong hole at either end.

The luminaire is attached to the cover flange of the rectangular sight glass fitting by means of the two M4 screws included with the unit. Two M4 blind holes have to be drilled and tapped in the appropriate positions to correspond with the rectangular sight glass unit, thus ensuring that the luminaire can be optimally matched up and screwed in place.

The flat and spring washers provide for a secure fastening.

To maximise the lighting effect and avoid dazzle, a reflector plate is supplied with the REL 01. This can be fitted onto the opposite side of the cover flange if necessary.

After mechanical installation, the luminaire is ready for electrical connection.

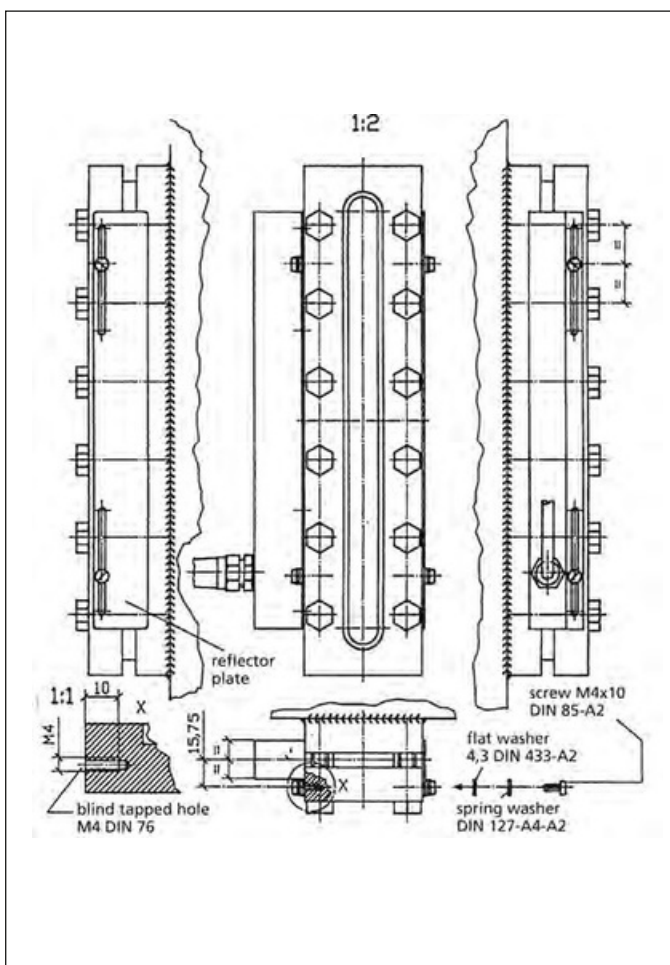
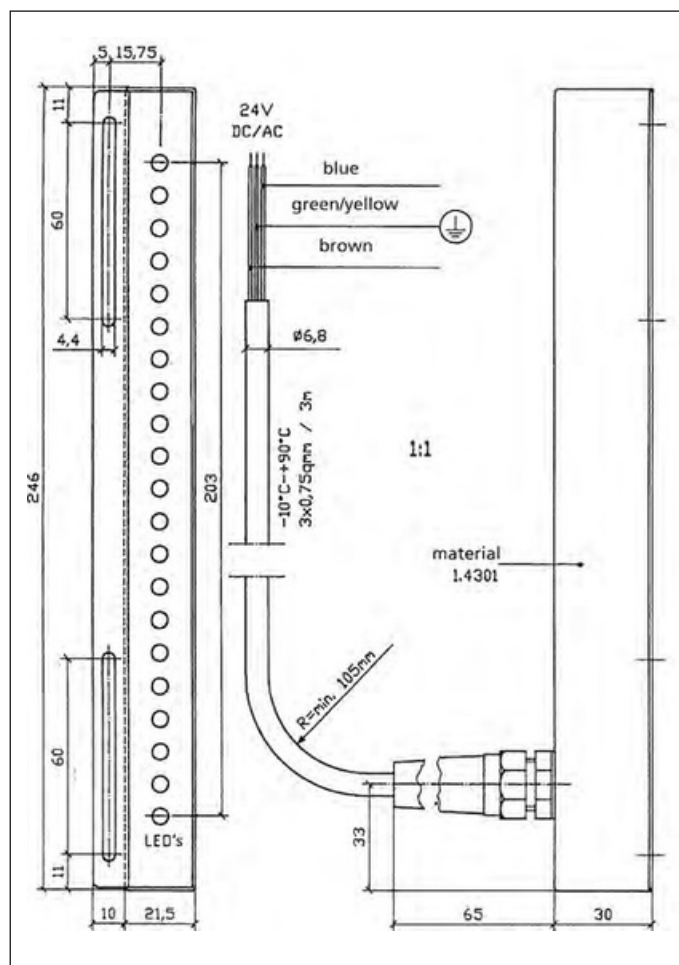
The luminaire is optimally designed for use with a 250 mm long rectangular sight glass unit.

Additional Lumistar luminaires REL 01 can be installed if the fittings are longer.



Lumistar luminaire REL 01, luminary side

- **Dimensions and electrical data for Lumistar luminaires REL 01 and REL 01-Ex:**



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