

## Installation and Operating Instructions 0158

0093.012.00 c

### Lumistar Luminaire USL 06-Ex

 II 2G Ex de IIC T3/T4 Gb  
II 2D Ex tb IIIC T130/T195°C Db

**• Important, please note:**


Sight glass luminaires are specifically designed and solely intended for mounting with or onto flanged sight glass fittings. Under no circumstances should sight glass luminaires be used as a substitute for the cover flange or the complete sight/light port or as a lid or cover for vessel openings. Luminaires for use in potentially explosive environments must be mounted, installed and serviced by staff who have the relevant qualifications and have been properly trained for this type of work.

Please observe the data set out in the EC type-examination certificate!

**• General operating conditions:**

- Independent of pressure/vacuum in the vessel
- Approved for use in Ex environments:
- Gas: Zones 1 and 2
- Dust: Zones 21 and 22
- **Approved for use in ambient temperatures of between -20°C and +60°C or +40°C, depending on the lamp power (see type plate and temperature classification parameters).**

**• General operating conditions:**

- Voltage, power, temperature class and protection rating are shown on the type plate.
- Ex approval acc. to EC type-examination certificate: BVS 08 ATEX E 135
-  II 2G Ex de IIC T3/T4 Gb  
II 2D Ex tb IIIC T130/T195°C Db
- The variant with integrated transformer is PTC-protected; no fuse replacement necessary.
- Power supply: AC or DC, depending on lamp fitted.
- **Caution:** Only alternating current should be used on luminaires with integrated transformer or high-voltage timer.
- **Warning:** Over-voltage will cause premature lamp failure!
- 10% voltage tolerance is admissible.



Lumistar luminaire USL 06-Ex without terminal box



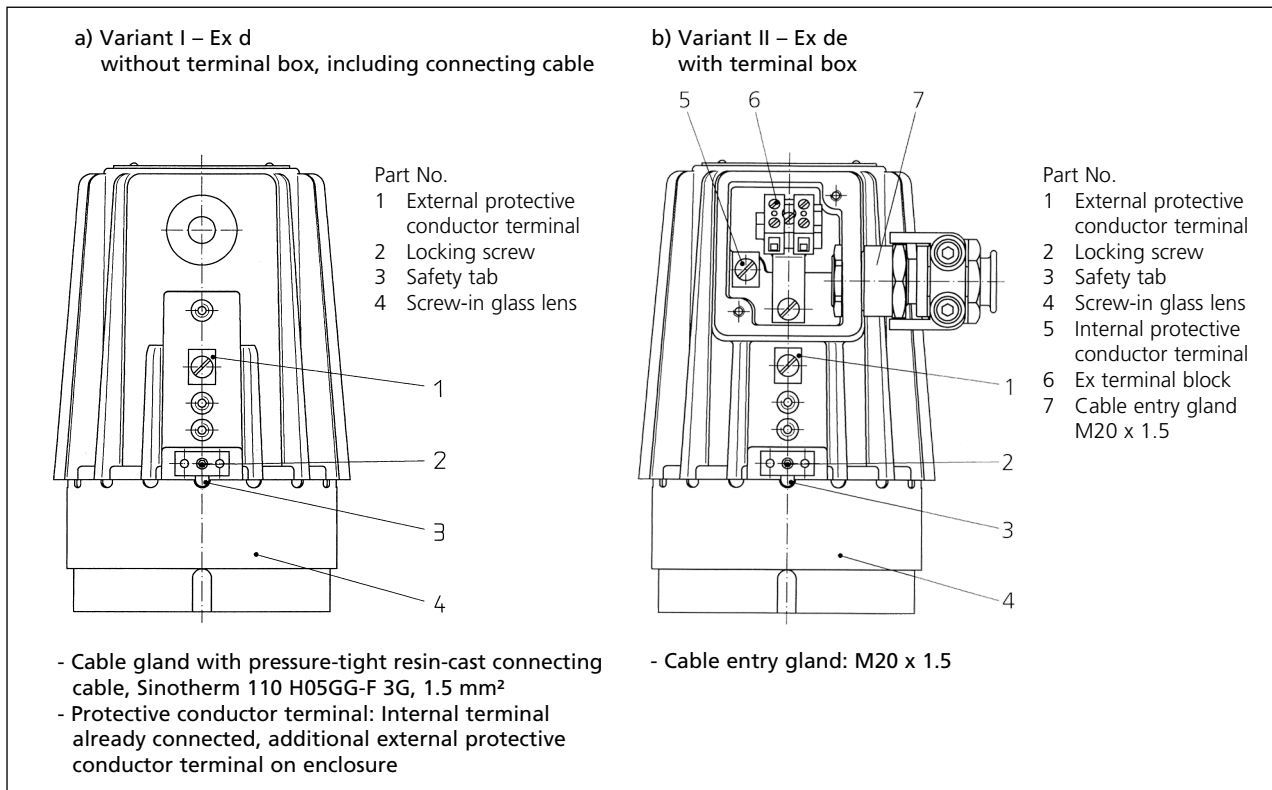
Lumistar luminaire USL 06-Ex with terminal box

**• Parameters/Temperature classification:**

Type USL 06-Ex Variant	Nom. Voltage	Ambient temperature range							
		-20°C ≤ T <sub>a</sub> ≤ +40°C				-20°C ≤ T <sub>a</sub> ≤ +60°C			
		Without terminal box*		With terminal box		Without terminal box*		With terminal box	
(12 V) 20 W	12 ≈	2G T4	2D T130°C	2G T4	2D T130°C	2G T4	2D T130°C	2G T4	2D T130°C
(24 V) 20 W	24 ≈	2G T4	2D T130°C	2G T4	2D T130°C	2G T4	2D T130°C	2G T4	2D T130°C
(120 V/12 V) 20 W	120 ~	2G T4	2D T130°C	2G T4	2D T130°C	2G T4	2D T130°C	2G T4	2D T130°C
(230 V/12 V) 20 W	230 ~	2G T4	2D T130°C	2G T4	2D T130°C	2G T4	2D T130°C	2G T4	2D T130°C
(240 V/12 V) 20 W	240 ~	2G T4	2D T130°C	2G T4	2D T130°C	2G T4	2D T130°C	2G T4	2D T130°C
(12 V) 35 W	12 ≈	2G T4	2D T130°C	2G T4	2D T130°C	2G T3	2D T195°C	-	-
(12 V) 50 W	12 ≈	2G T3	2D T195°C	2G T3	2D T195°C	-	-	-	-
(24 V) 50 W	24 ≈	2G T3	2D T195°C	2G T3	2D T195°C	-	-	-	-
(230 V) 50 W	230 ≈	2G T3	2D T195°C	2G T4	2D T130°C	-	-	-	-

\* incl. connecting cable

• **Electrical connection:**



**a) Variant I (without terminal box, incl. connecting cable)**

- The connecting cable has already been factory-installed to the luminaire and is ready for use.
- The external protective conductor terminal (1) should be connected to a separate operational earth.
- The connecting cable should be supported after max. 1 m from entry gland.
- Caution: If the cable is to be replaced (e. g. by one of a different length), the internal terminals have to be disconnected before unscrewing the cable entry gland.

**Special conditions:** Ex-type luminaires that do not have a terminal box are manufactured with a permanently connected cable. If connection is carried out in the potentially explosive environment, the free ends of the connecting cable must be installed in a category 2G/2D enclosure.

Prior to installation and when servicing the luminaire without a terminal box, the luminaire and the surrounding area should first be cleaned to remove any dust. During installation or servicing, the disassembled parts should be protected against dirt and dust. Before closing the lamp again, it is essential to take extra care and ensure that the inside of the luminaire is free of dust.

**b) Variant II (with terminal box)**

- Select a connecting cable to match the cable entry gland M20 x 1.5. If the ambient temperature is greater than 40°C, heat resistant cable, e.g. Sinotherm 110 H05GG-F3G 1.5 mm<sup>2</sup> should be used. The minimum heat resistance of the connecting cable is shown on the type plate, if applicable.
- Open the cover of the terminal box.
- Loosen strain relief screws with anti-twist tabs on the cable gland assembly.
- Insert cable, seal, tighten screws again.

- Wire to Ex terminal block (6); max. cross-section 2.5 mm<sup>2</sup>; protective conductor to terminal (5, internal). The external protective terminal (1) must be connected to a separate operational earth.
- Check that gasket is in the correct position in the cover; adjust if necessary!
- Close lid of terminal box, making sure the gasket is in place.

• **Replacing lamp:**

- Switch off power
- Allow sufficient time to cool down, see type plate.
- Undo locking screw (2) which releases the safety tab (3) for the screw-type glass lens (4).
- Unscrew glass lens (4) using only the special claw spanner.
- The defective lamp is pulled out (2-pin type), or removed with a press-and-twist movement (GZ10 bayonet type).
- Hold the new lamp bulb (original products only, please) using a protective cloth – taking care not to touch it with your bare fingers. Carefully insert the replacement lamp: push the 2-pin bulb into its socket, push-and-twist bayonet type lamps. Make sure the lamp is securely in position!
- Before closing the luminaire, relubricate the thread of the screw lens (e. g. with AEMA-SOL 6 B, from A.E. Matthes).
- Refit the glass lens (4) by screwing it into place until it is tight again (pressure on O-ring).
- The glass lens (4) is locked into position once the safety locking tab (3) engages in one of the notches.
- Retighten the locking screw (2).
- Switch on power again.

• **Warning:**

When replacing lamp bulbs, make sure that the light beam is evenly distributed over the glass lens as prescribed by the design. On no account should a "hot spot" be allowed to occur outside the luminaire (caused e.g. by the incorrect position or condition of the lamp).

• **Mechanical installation:**

With the circular sight glass fitting or visual flow indicator the luminaire is attached to the cover flange using the hinged bracket. With the screw-type sight glass fitting, the luminaire is attached to the slotted cover nut; alternatively, it can be mounted using a hinged bracket or a flanged adapter collar.

- **The Lumistar luminaire USL 06-Ex is suitable for sight glasses in the following nominal sizes, using the appropriate mounting:**

Type of fitting	from DN	Hinged bracket	Flanged adapter collar
Circular sight glass fitting			
DIN 28120	50 ...	+	-
DIN 28121	50 ...	+	-
Visual flow indicator	50 ...	+	-
Screw-type sight glass fitting			
	65	-	+
	80	+	+
similar to DIN 11851			
	100	+	+
	125	+	-

• **Mounting with hinged bracket:**

The hinged bracket serves to secure the luminaire to the cover flange of a circular sight glass unit (or flow indicator) or to the slotted cover nut of screw-type sight glass fittings to DIN 11851.

The hinged bracket is fixed in place by turning the supplied M8 bolt into a blind hole which has previously been tapped in the pitch circle of the cover flange face. An additional option is to weld on the bracket.

• **Mounting with flanged adapter collar:**

The flanged adapter collar is bolted or welded to the slotted cover nut (DIN 11851).

- **Please note:** Fastening and mounting elements, claw spanner, etc. should be ordered separately if not available.

• **Replacement parts:**

Screw-type lens (light aperture)	Part No. 1774.033.00
Screw-type lens (light aperture) with reflector	1774.034.00
Reflector, spot	5904.047.00
Reflector, flood	5904.048.00
O-ring seal (Viton)	0862.039.00

Lamp socket G 4 (2-pin)	1202.011.00
Lamp socket GY 6.35 (2-pin)	1202.012.00
Lamp socket GZ 10	1202.024.00
Lamp socket G5.3	1202.025.00

Flat gasket, terminal box cover	0854.038.00
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Cable entry:

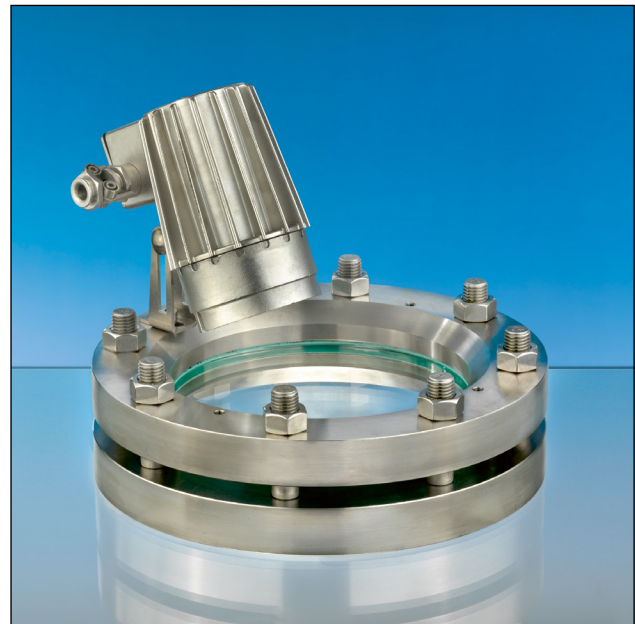
Complete with 2 m connecting cable	1084.013.00
Complete with 5 m connecting cable	1084.015.00
Complete with 20 m connecting cable	1084.017.00

Flared cable entry gland (M20 x 1.5)	9108.008.00
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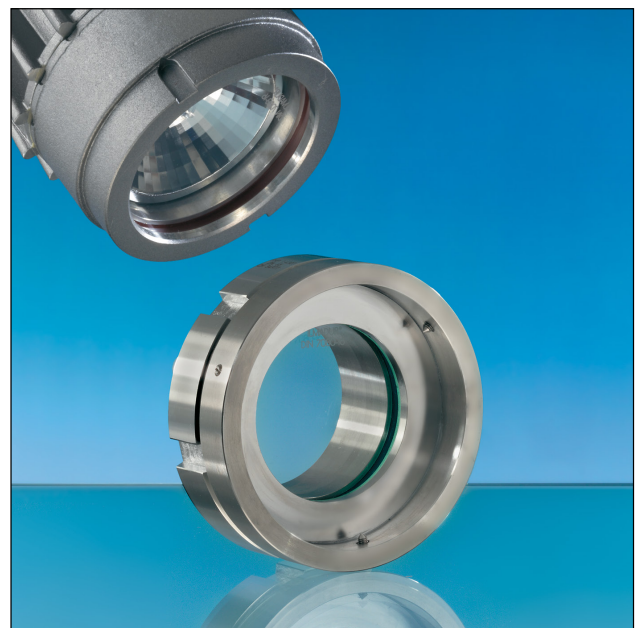
(Halogen) lamps:

12 V/20 W – GY6.35	3232.240.00
12 V/20 W – GU5.3	3232.277.00
24 V/20 W – G4	3232.206.00
12 V/35 W – GY6.35	3232.232.00
12 V/50 W – GY6.35	3232.238.00
24 V/50 W – GY6.35	3232.242.00
230 V/50 W – GZ10	3232.261.00

- **Accessories:** Claw spanner 6805.001.00



Application as combined sight and light port on a sight glass fitting acc. to DIN 28120, mounting by way of hinged bracket



Application as a light glass on a screw-type sight glass fitting; mounted using a flanged adapter collar

• **Servicing:**

- Keep luminaire clean and free of dust.
- Keep note of average lamp life.
- Use only original replacement parts.

