

# C-LAS Series

## ▶ C-LAS-LR-OP2-...

### Laser reflection light barriers

- Visible red laser light 670 nm, class 2 laser product
- Collimated laser beam (low beam divergency)
- Contrast detection (bright/dark detection)
- Object distance typ. up to 200 mm
- Potentiometer for adjustment of laser power
- Two switching outputs (PNP no/nc or NPN no/nc)
- High switching frequency (typ. 1 kHz)
- Scratch-resistant optics made of glass
- Short circuit protection, reversed polarity protection
- 4-pole M8-connector made of metal
- Yellow LED for switching state indication (in M8 connector)
- Sturdy plastic housing
- Mounting unit available



## Design

### Product name:

**C-LAS-LR-OP2-(switching output)**  
**C-LAS-LR-OP2-(switching output)-HAMP**

**Accessories:** (cf. page 5)

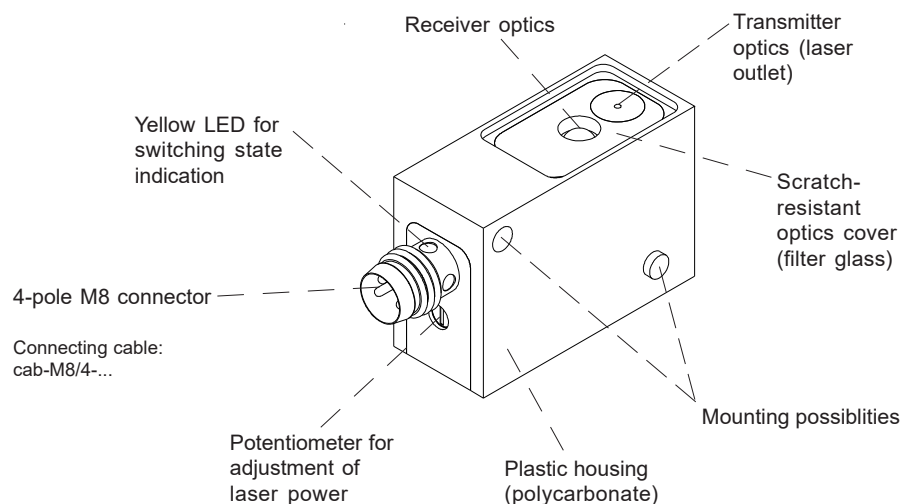
**MOUNT-23/34** Mounting device

### Switching output selectable:

**P** = 1x PNP dark-switching (PNP n.o.),  
 1x PNP bright-switching (PNP n.c.)


**N** = 1x NPN dark-switching (NPN n.o.),  
 1x NPN bright-switching (NPN n.c.)

**HAMP** = High Amplification





**Technical Data**

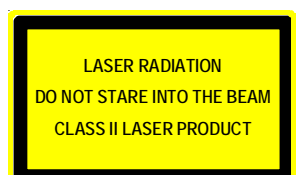
Model	C-LAS-LR-OP2-P C-LAS-LR-OP2-P-HAMP	C-LAS-LR-OP2-N C-LAS-LR-OP2-N-HAMP
Light source	Semiconductor laser: 670 nm, 1 mW max. opt. output, class 2 laser product acc. to DIN EN 60825.-1 The use of these laser transmitters therefore requires no additional protective measures.	
Working distance (object distance)	typ. 0 ... 120 mm (Kodak black) typ. 0 ... 200 mm (Kodak white)	
Laser beam focus	collimated, infinite, typ. 1mrad beam divergence	
Size of laser spot	typ. Ø 1.5 mm	
Min. detectable object	typ. 0.1 mm	
Optical filter	Red light filter RG645	
Voltage supply	+24VDC (± 10%), reversed-polarity protection, overcurrent protection	
AC operation	typ. 100 kHz	
Ambient light	up to 5000 Lux	
Enclosure rating	IP67	
Current consumption	approx. 50 mA	
EMC test acc. to	DIN EN 60947-5-2 	
Connector type	Connection to PLC: 4-pole M8 connector	
Connecting cable	cab-M8/4-...	
Working temperature range	-20°C ... +55°C	
Storage temperature range	-20°C ... +85°C	
Housing material	Polycarbonate, black	
Housing dimensions	LxWxH approx. 33 mm x 16 mm x 23 mm (without connector)	
Rise time / fall time	< 200 µs	
Max. switching current	100 mA, short-circuit protection	
Switching frequency	typ. 1 kHz (depends on the laser power adjusted)	
Outputs	1x pnp dark-switching (pnp normally open) 1x pnp bright-switching (pnp normally closed)	1x npn dark-switching (nnp normally closed) 1x npn bright-switching (pnp normally open)
Switching state indication	by means of a yellow LED (integrated in the M8 connector)	
Laser power adjustment	by means of a potentiometer (can be rotated 270°)	



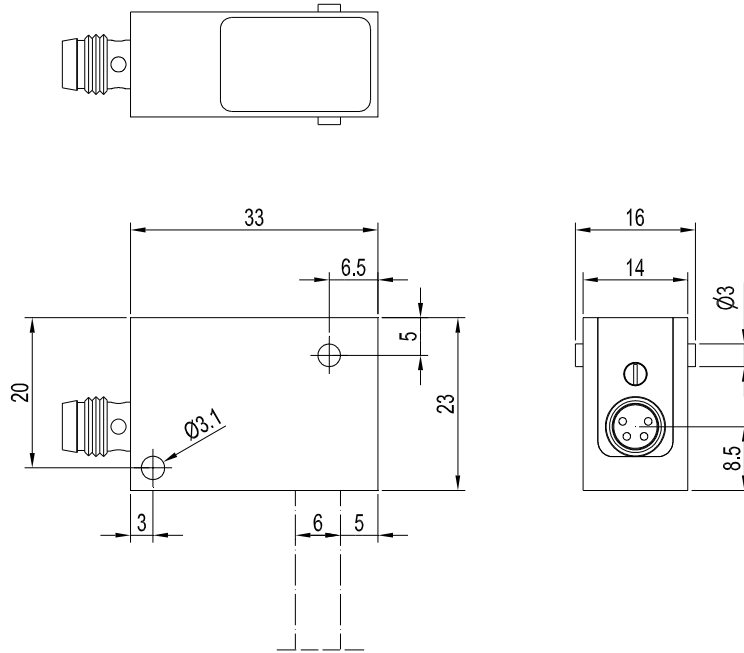
**Laser Warning**

The transmitters of the laser sensors of C-LAS Series comply with laser class 2 according to EN 60825-1. The use of these transmitter requires no additional protective measures.

The transmitters of C-LAS Series are supplied with a laser warning label.



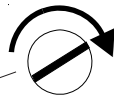
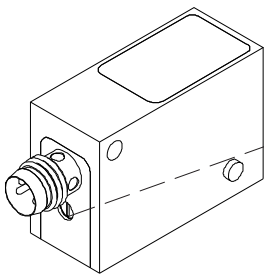
Dimensions



(Alle Abmessungen in mm)

Adjustment

**Potentiometer for adjustment of transmitting power (0 ... max.):**



270° potentiometer:  
Rotation clockwise = decrease of transmitting power

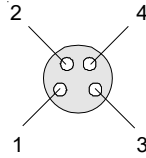


**Connector Assignment**

**Connection to PLC:**

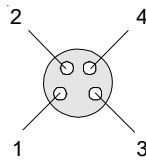
**Type C-LAS-LR-OP2-P (switching output P):  
4-pole M8 connector**

Pin No.:	Color:	Assignment:
1	brown	+24VDC (± 10%)
2	white	OUTPUT PNP dark-switching (PNP n.o.)
3	blue	GND (0V)
4	black	OUTPUT PNP bright-switching (PNP n.c.)



**Type C-LAS-LR-OP2-N (switching output N):  
4-pole M8 connector**

Pin No.:	Color:	Assignment:
1	brown	+24VDC (± 10%)
2	white	OUTPUT NPN dark-switching (NPN n.o.)
3	blue	GND (0V)
4	black	OUTPUT NPN bright-switching (NPN n.c.)



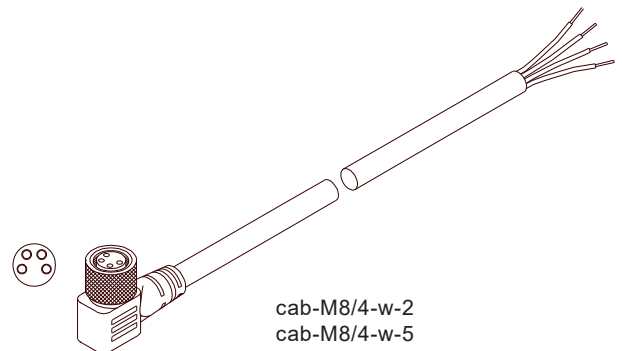
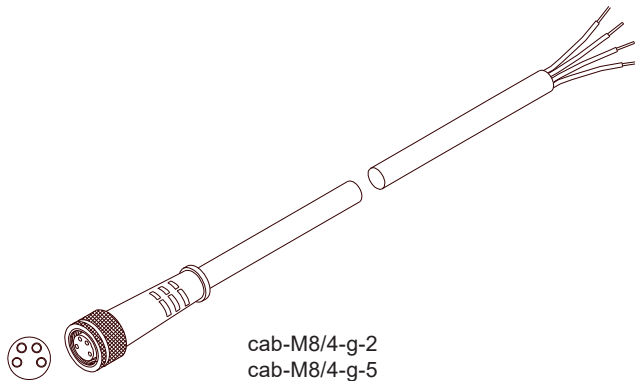
Connecting cable for each type:  
 cab-M8/4-g-(length) or  
 cab-M8/4-w-(length) (angle type 90°)  
 (standard length 2m)



**Connecting Cables**

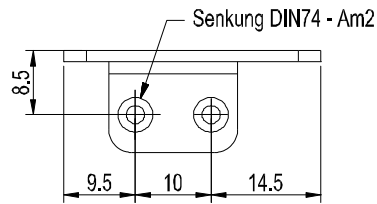
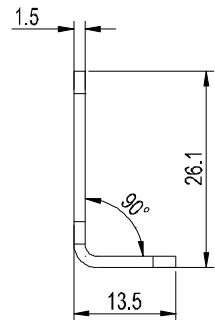
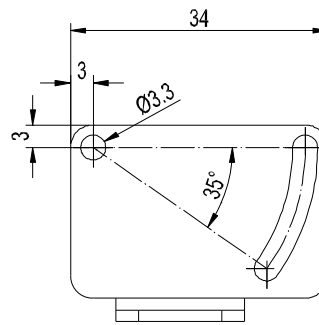
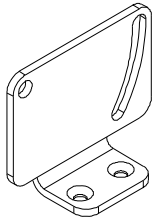
**Available connecting cables:**

cab-M8/4-g-2	Length: 2 m	Sheath: PUR
cab-M8/4-g-5	Length: 5 m	Sheath: PUR
cab-M8/4-w-2	Length: 2 m	Sheath: PUR - angle type 90°
cab-M8/4-w-5	Length: 5 m	Sheath: PUR - angle type 90°



**Mounting**

**Mounting device: MOUNT-23/34**  
(please order separately)

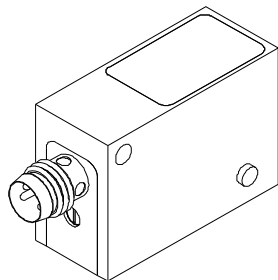


(All dimensions in mm)

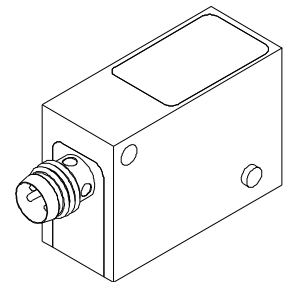
**Product Line**

**Overview of Compact Laser Sensors:**

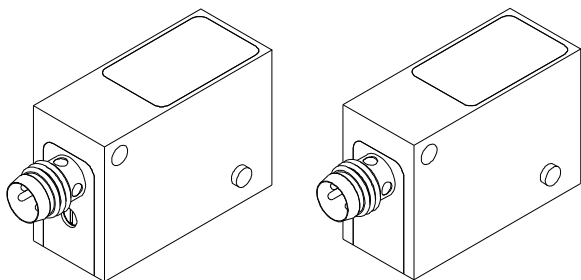
**C-LAS-LT-35-...**  
**C-LAS-LT-65-...**  
Laser displacement sensor  
with background suppression



**C-LAS-LT-35-ANA**  
**C-LAS-LT-65-ANA**  
Laser displacement sensor  
with analog output



**C-LAS-14-T/-R (split version: transmitter and receiver)**  
Laser oneway light barrier



**C-LAS-LR-OP2-...**  
Laser reflection light barrier  
with polarisation filter  
(object serves as a reflector)

**C-LAS-LR-RP2-...**  
Laser reflection light barrier  
with polarisation filter  
(reflector or reflector foil)

