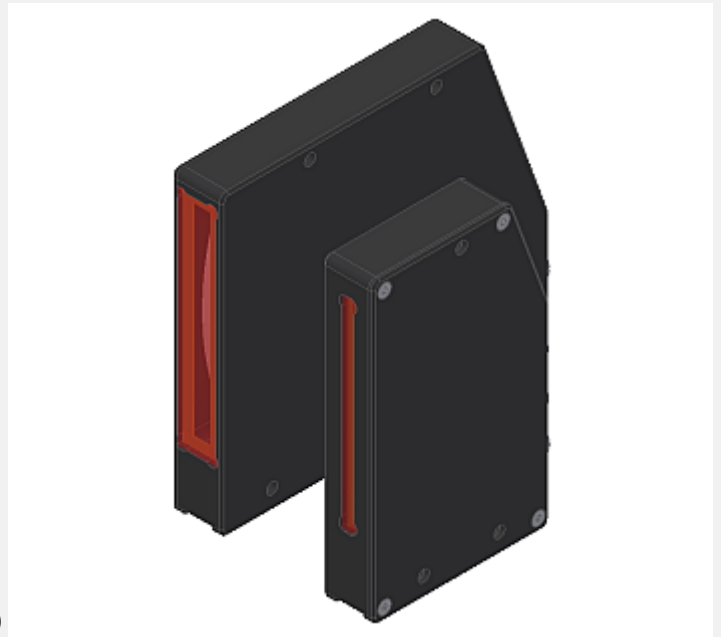


# L-LAS Series

## ▶ L-LAS-TB-75-T-CL L-LAS-TB-75-R-CL (-R-4/20-CL)

- Line laser <0.4 mW, wave length 670 nm, laser class 1
- Visible laser line, light curtain 75 mm
- Measuring range typ. 73 mm
- Resolution typ. 8 µm
- Working distance up to 2000 mm
- Integrated interference filter
- CCD line detector with 1180 pixel, 9440 subpixel (8-fold)
- RS232 interface (USB or Ethernet converter is available)
- 2 digital inputs, 2 digital outputs
- 1 analog output (0 ... +10V),  
with type 4/20: 2 analog outputs (0 ... +10V and 4 ... 20mA)
- Max. scan frequency selectable via software (600 Hz or 1.2 kHz)
- Switching state indication via 4 LEDs (2x red/grn, 2x yel/grn)



### Design

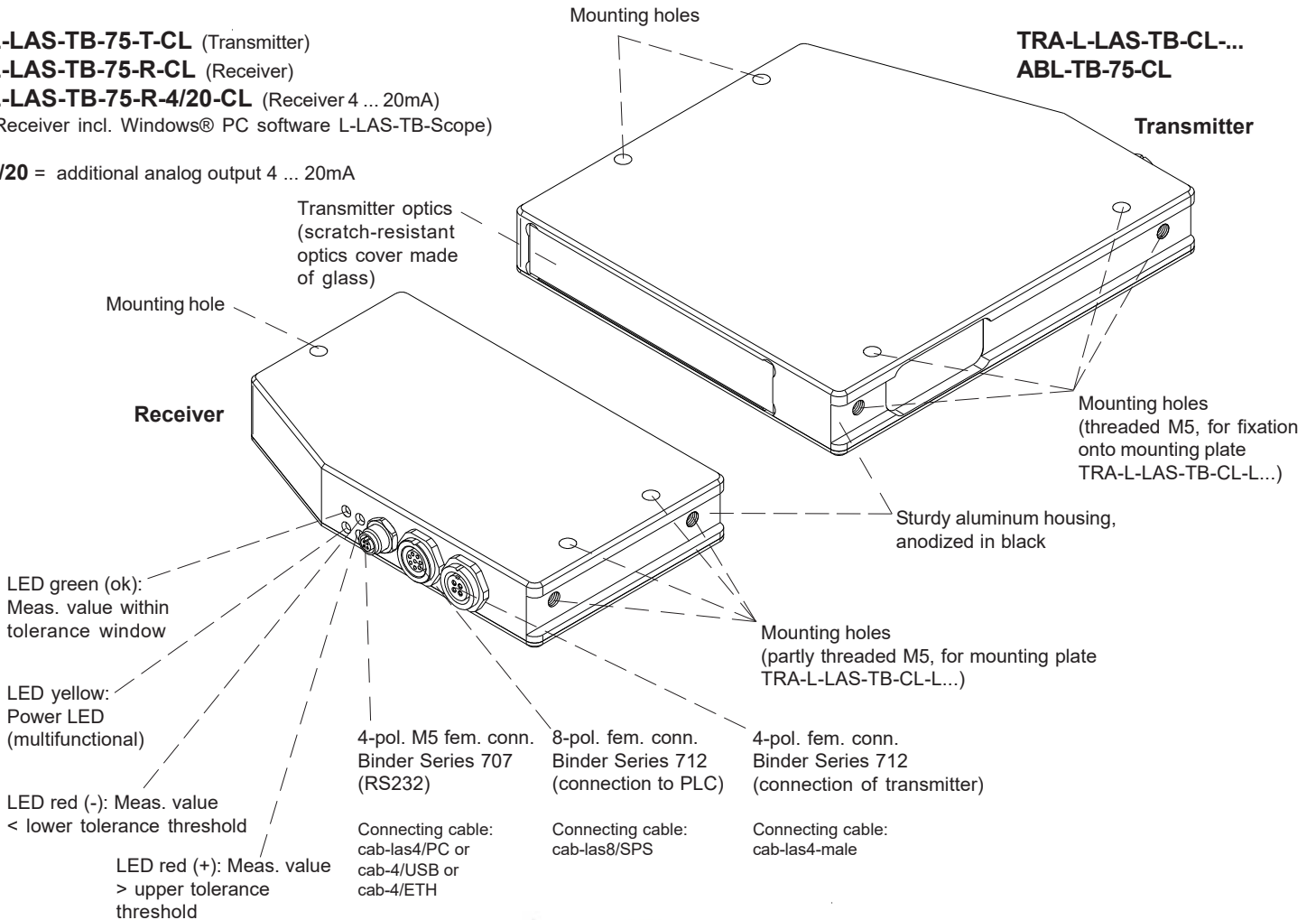
**Product name:**

- L-LAS-TB-75-T-CL (Transmitter)
- L-LAS-TB-75-R-CL (Receiver)
- L-LAS-TB-75-R-4/20-CL (Receiver 4 ... 20mA)  
(Receiver incl. Windows® PC software L-LAS-TB-Scope)

4/20 = additional analog output 4 ... 20mA

**Accessories:** (cf. pages 8/9)

- TRA-L-LAS-TB-CL-...
- ABL-TB-75-CL





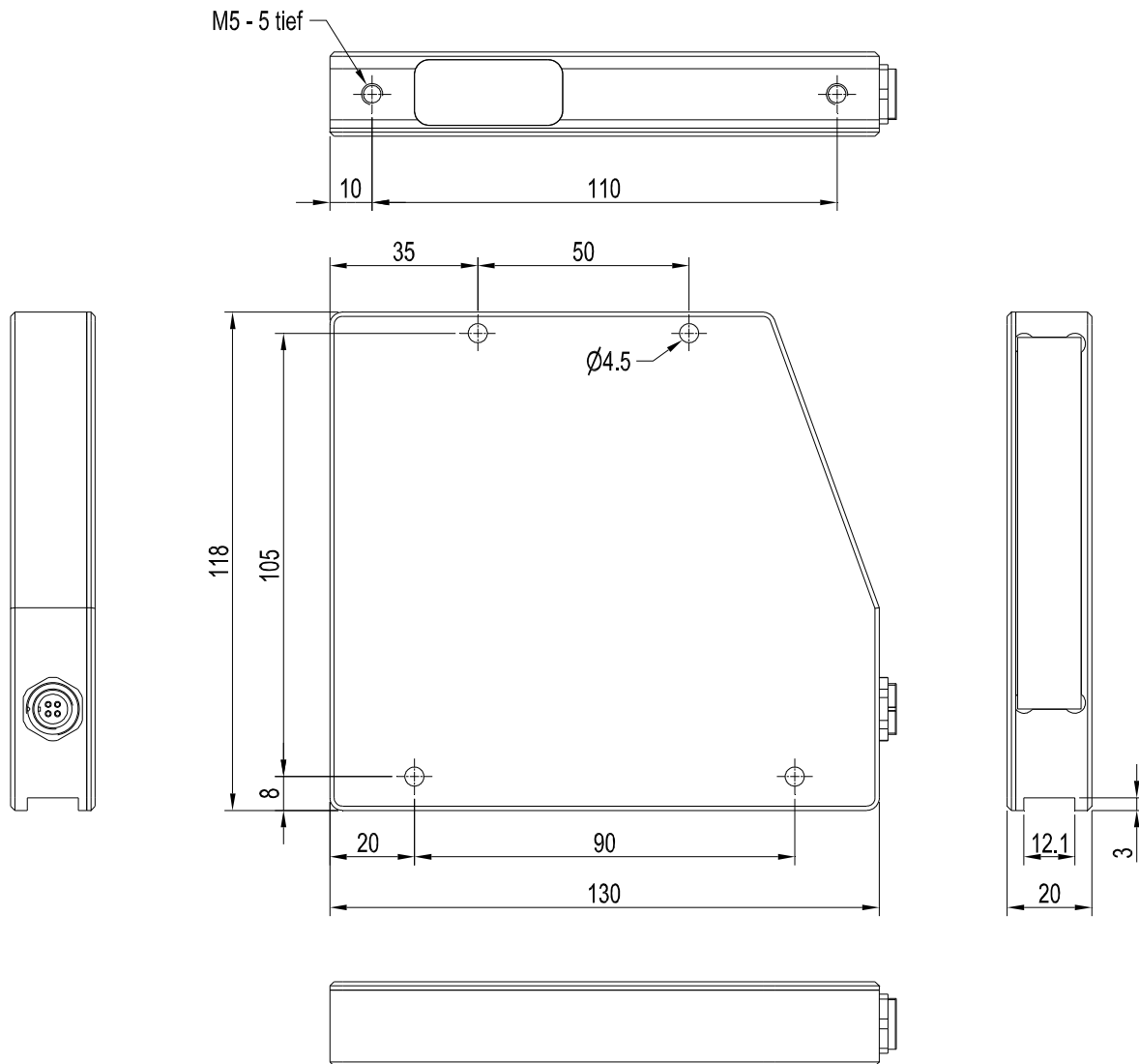
**Technical Data**

| Model                                | L-LAS-TB-75-T-CL<br>L-LAS-TB-75-R-CL  | L-LAS-TB-75-T-CL<br>L-LAS-TB-75-R-4/20-CL                        |
|--------------------------------------|---|--|
| Laser                                | Semiconductor laser, 670 nm, DC operation, < 0.4 mW max. opt. power, laser class 1 acc. to DIN EN 60825-1. The use of these laser sensors therefore requires no additional protective measures.   |  |
| Working distance                     | distance transmitter/receiver: up to 2000 mm  |  |
| Measuring range                      | typ. 73 mm  |  |
| Resolution                           | typ. 8 µm   |  |
| Reproducibility                      | typ. ± 8 µm   |  |
| Linearity                            | typ. 0,15% FSR (full scale range)   |  |
| Optical filter                       | Interference filter   |  |
| Analog output (1x or 2x)             | 1x voltage output (0 ... +10V)  | 1x current output (4 ... 20mA)<br>1x voltage output (0 ... +10V) |
| Digital outputs (2x)<br>(OUT0, OUT1) | OUT0: (-) Measuring value < lower tolerance threshold<br>OUT1: (+) Measuring value > upper tolerance threshold<br>pnp bright-switching/npn dark-switching or pnp dark-switching/npn bright-switching,<br>adjustable under Windows®, 100 mA, short-circuit proof |  |
| Digital inputs (2x)<br>(IN0, IN1)    | IN0: Extern trigger, IN1: Teach/Reset (double function)<br>input voltage +Ub/0V, with protective circuit  |  |
| Voltage supply                       | +24VDC (± 10%)  |  |
| Sensitivity setting                  | under Windows® via PC   |  |
| Laser power correction               | adjustable under Windows® via PC  |  |
| Current consumption                  | typ. 200 mA   |  |
| Enclosure rating                     | electronics: IP54, optics: IP67   |  |
| Operating temperature range          | -10°C ... +50°C   |  |
| Storage temperature range            | -20°C ... +85°C   |  |
| Housing material                     | aluminum, anodized in black   |  |
| Housing dimensions                   | transmitter: LxWxH approx. 130 mm x 118 mm x 20 mm (without flange connectors)<br>receiver: LxWxH approx. 70 mm x 118 mm x 20 mm (without flange connectors)  |  |
| Connectors receiver                  | 8-pole circular female connector type Binder 712 (PLC/Power)<br>4-pole M5 circular female connector type Binder 707 (RS232/PC)<br>4-pole circular female connector type Binder 712 (connection to transmitter)  |  |
| Connector transmitter                | 4-pole circular female connector type Binder 712 (connection to receiver)   |  |
| LED display                          | LED red (+): measuring value > upper tolerance threshold<br>LED green (ok): measuring value within tolerance window<br>LED red (-): measuring value < lower tolerance threshold<br>LED yellow: multifunctional  |  |
| EMC test acc. to                     | DIN EN 60947-5-2  |  |
| Scan frequency                       | Normal Speed mode (high resolution): max. 600 Hz<br>Double Speed mode (half resolution): max. 1.2 kHz<br>can be switched under Windows®   |  |
| Max. switching current               | 100 mA, short-circuit proof   |  |
| Interface                            | RS232, parameterisable under Windows®   |  |
| Connecting cables                    | Connection to PC: cab-las4/PC or cab-4/USB or cab-4/ETH<br>Connection to PLC: cab-las8/SPS or cab-las8/SPS-w<br>Connecting cable transmitter/receiver: cab-las4-male  |  |
| Output polarity                      | bright/dark switching, can be switched under Windows®   |  |



Dimensions

L-LAS-TB-75-T-CL  
(Transmitter)

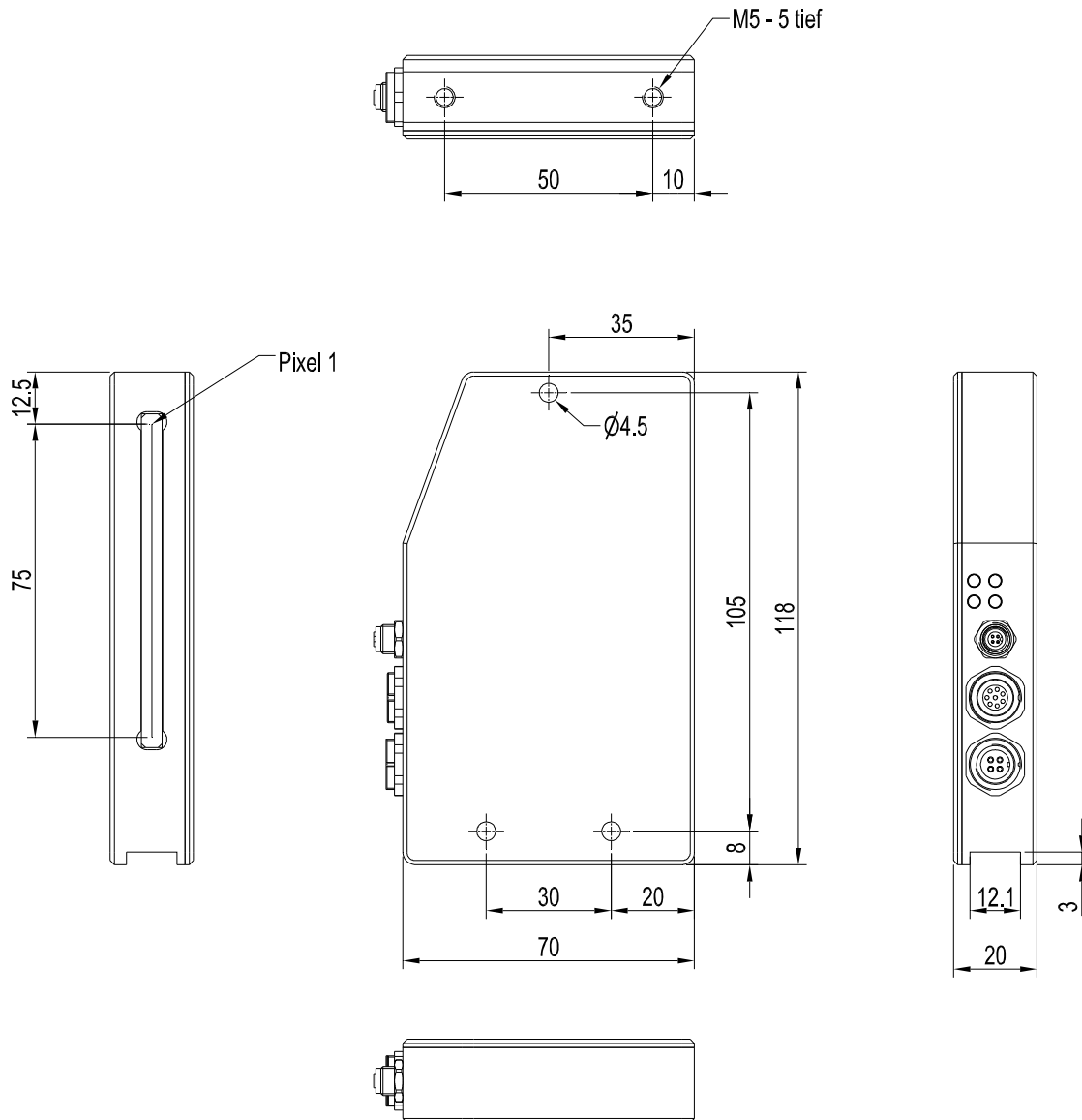


All dimensions in mm



Dimensions

L-LAS-TB-75-R-CL or  
L-LAS-TB-75-R-4/20-CL  
(Receiver)



All dimensions in mm



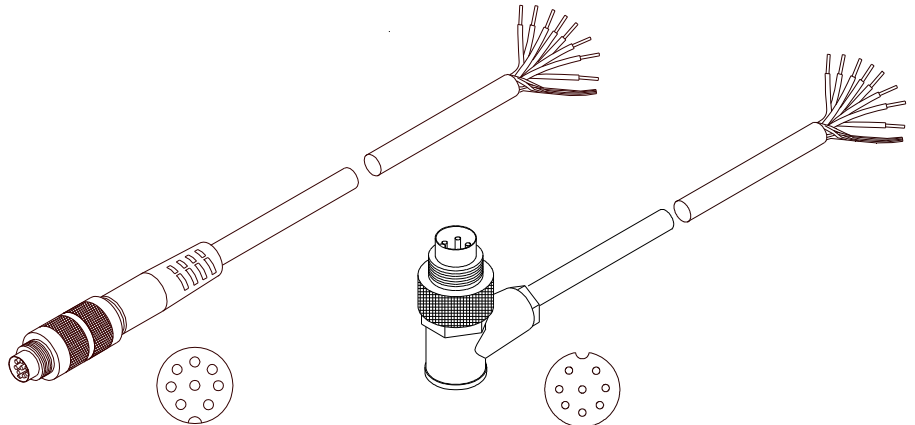
**Connector Assignment**

**Connection to PLC:**

**8-pole fem. connector Binder Series 712**

| Pin:                            | Color: | Assignment:              |
|---------------------------------|--------|--------------------------|
| 1                               | white  | GND (0V)                 |
| 2                               | brown  | +24VDC (± 10%)           |
| 3                               | green  | IN0 (EXT TRIGGER)        |
| 4                               | yellow | IN1 (TEACH/RESET)        |
| 5                               | grey   | OUT0 (-)                 |
| 6                               | pink   | OUT1 (+)                 |
| 7                               | blue   | GND (0V)                 |
| <b>or with type -4/20:</b>      |        |                          |
| <b>ANA (current 4 ... 20mA)</b> |        |                          |
| 8                               | red    | ANA (voltage 0 ... +10V) |

Connecting cable:  
 cab-las8/SPS-(length) or  
 cab-las8/SPS-w-(length) (angle type 90°)  
 (standard length 2m)



cab-las8/SPS-...  
 (max. length 25m, outer jacket: PUR)

cab-las8/SPS-w-...  
 (max. length 25m, outer jacket: PUR)

**Connection to PC:**

**4-pole fem. connector Binder Series 707**

| Pin: | Assignment:       |
|------|-------------------|
| 1    | +24VDC (+Ub, OUT) |
| 2    | GND (0V)          |
| 3    | RxD               |
| 4    | TxD               |

**Connection via RS232 interface at the PC:**

Connecting cable:  
 cab-las4/PC-(length)  
 cab-las4/PC-w-(length) (angle type 90°)  
 (standard length 2m)

**alternative:**

**Connection via USB interface at the PC:**

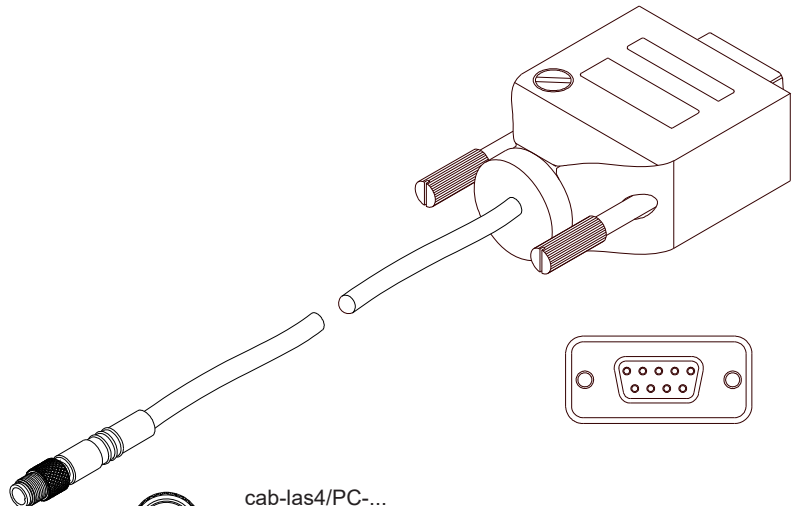
USB converter (incl. driver software):  
 cab-4/USB-(length)  
 cab-4/USB-w-(length) (angle type 90°)  
 (standard length 2m)

**alternative:**

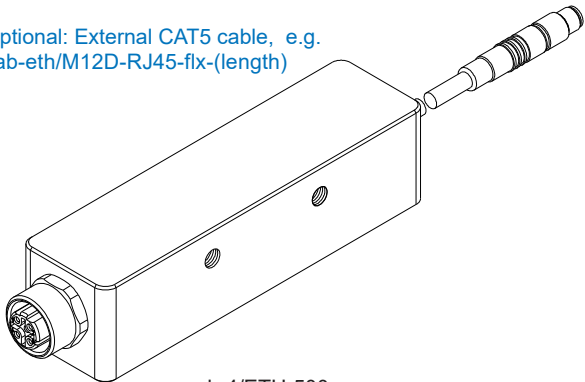
**Connection to local network via Ethernet bus:**

Ethernet converter (incl. software „SensorFinder“):  
 cab-4/ETH-500  
 (standard length 0.5m)

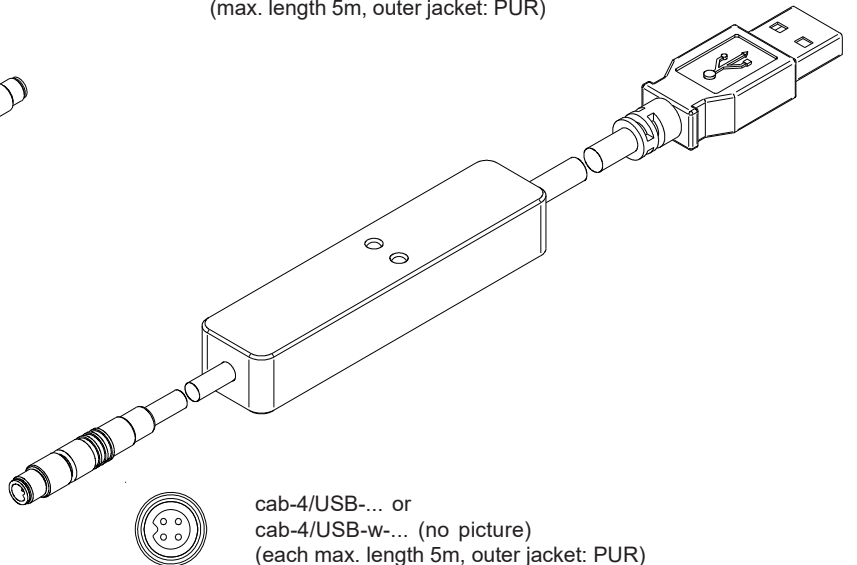
Optional: External CAT5 cable, e.g.  
 cab-eth/M12D-RJ45-flx-(length)



cab-las4/PC-...  
 (max. length 10m, outer jacket: PUR) or  
 cab-las4/PC-w-... (no picture)  
 (max. length 5m, outer jacket: PUR)



cab-4/ETH-500  
 (length 0.5m, outer jacket: PUR)  
 4-pole M12 fem. conn. (D-coded)  
 for connection of an external  
 CAT5 cable, e.g.  
 cab-eth/M12D-RJ45-flx-(length)



cab-4/USB-... or  
 cab-4/USB-w-... (no picture)  
 (each max. length 5m, outer jacket: PUR)



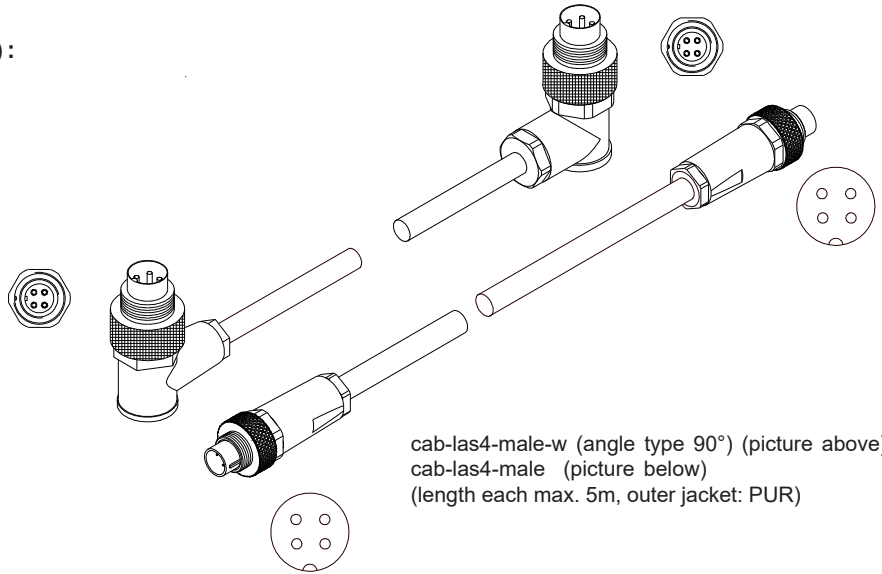
**Connector Assignment**

Connection L-LAS-TB-...-T-CL with  
L-LAS-TB-...-R-CL (or L-LAS-TB-...-R-4/20-CL) :  
4-pole female connector Binder Series 712

Pin: Assignment:

- 1 +5VDC
- 2 0V (GND)
- 3 I-CONTROL (0V ... +5V)
- 4 not connected

Connecting cable:  
cab-las4-male-(length)  
cab-las4-male-w-(length) (angle type 90°)  
(standard length 2m)



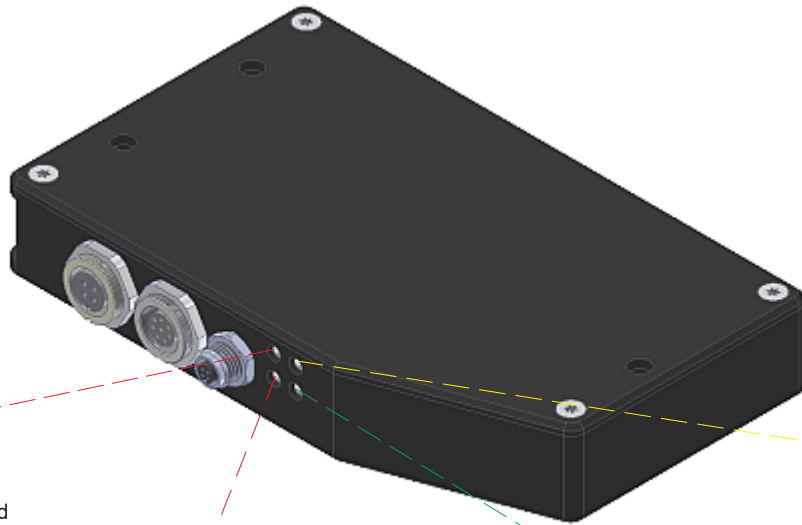
cab-las4-male-w (angle type 90°) (picture above) or  
cab-las4-male (picture below)  
(length each max. 5m, outer jacket: PUR)

**LED Display**

L-LAS-TB-75-R-CL:  
(Receiver)

LED display:

- (+) ● Power
- (-) ● (ok)



LED red (+): ●  
Measuring value  
> upper tolerance threshold  
(OUT1)

LED red (-): ●  
Measuring value  
< lower tolerance threshold  
(OUT0)

LED green (ok): ●  
Measuring value within  
tolerance window

LED yellow: ●  
Power LED  
(multifunctional)

**Laser Warning**

The laser transmitter of L-LAS-TB Series comply with laser class 1 according to EN 60825-1. The accessible laser radiation is harmless under reasonably foreseeable conditions. The reasonably foreseeable conditions are kept during correct operation. The use of these laser transmitters therefore requires no additional protective measures.

The laser line sensors of L-LAS-TB Series are supplied with a laser warning label type „CLASS 1 LASER PRODUCT“.





**Parameterization**
**Windows® user interface:**

(The current software version is available for download on our website.)

The L-LAS-TB sensor can be easily parameterised with the Windows® user interface.

For this purpose the sensor is connected to the PC with the serial interface cable cab-las4/PC (or cab-4/USB or cab-4/ETH).

When parameterisation is finished, the PC can be disconnected again.



With the help of the L-LAS-TB-Scope software the following settings can be made at the sensor:

- Setting of laser power and type of automatic power correction
- Polarity of digital outputs
- Different evaluation modes
- Start of the teach process by software button
- Setting of tolerance ranges for monitoring the measured value

Furthermore, various numerical and graphical measured quantities can be visualized with the L-LAS-TB-Scope software. For example, the raw data of the CCD line sensor can be displayed graphically and numerically.





**Accessories**

**Mounting plate for L-LAS-TB-75-T-CL and L-LAS-TB-75-R-CL (respectively L-LAS-TB-75-R-4/20-CL):**

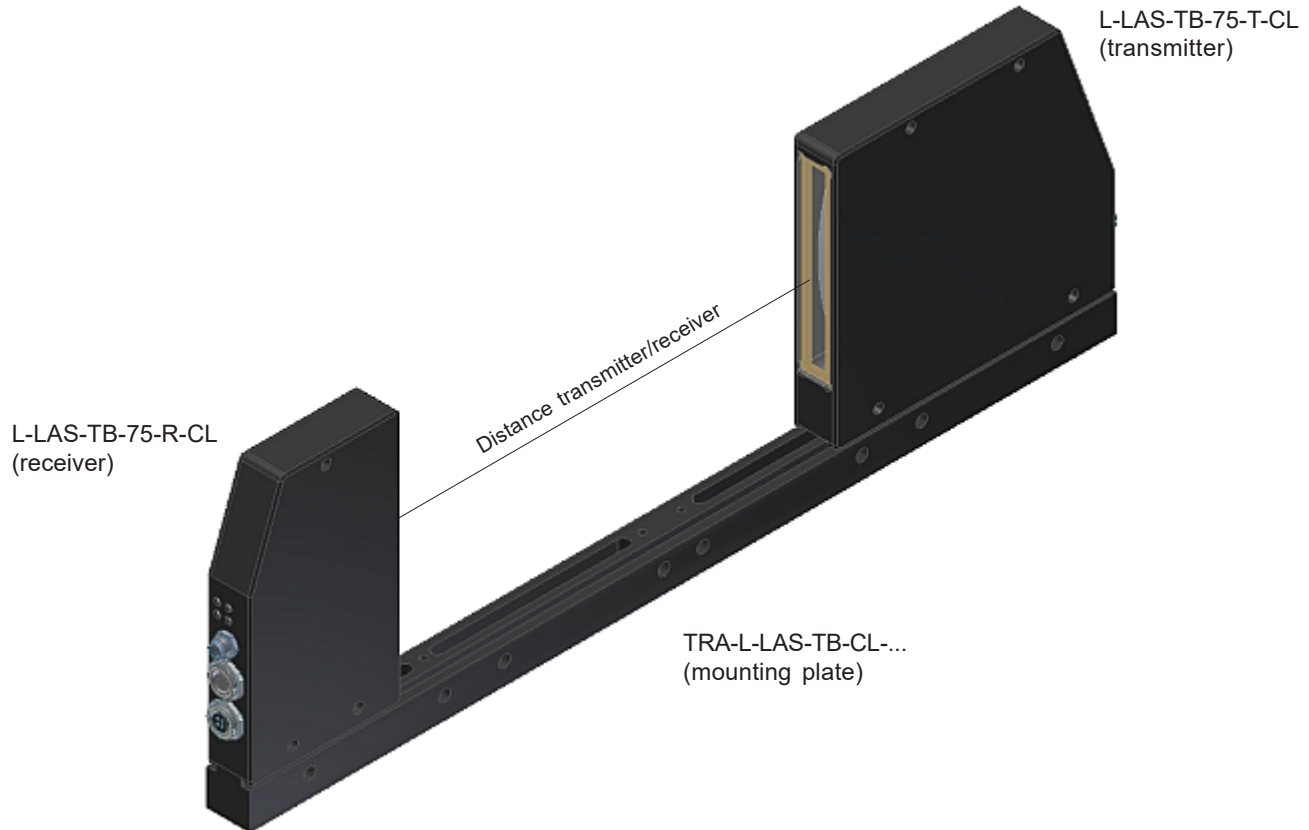
(please order separately)

**TRA-L-LAS-TB-CL-L400** (total length 400 mm, max. transmitter/receiver distance cf. chart below)

**TRA-L-LAS-TB-CL-L600** (total length 600 mm, max. transmitter/receiver distance cf. chart below)

**TRA-L-LAS-TB-CL-L800** (total length 800 mm, max. transmitter/receiver distance cf. chart below)

(Aluminium housing, anodized in black, also available in other lengths)



| Max. distance T/R in case of use of mounting plate:    | TRA-L-LAS-TB-CL-L200        | TRA-L-LAS-TB-CL-L400         | TRA-L-LAS-TB-CL-L600         | TRA-L-LAS-TB-CL-L800         |
|--|-----------------------------|------------------------------|------------------------------|------------------------------|
| <b>L-LAS-TB-6-T-CL</b><br><b>L-LAS-TB-6-R-CL</b>       | max. distance T/R:<br>95 mm | max. distance T/R:<br>295 mm | max. distance T/R:<br>495 mm | max. distance T/R:<br>695 mm |
| <b>L-LAS-TB-(16)-T-CL</b><br><b>L-LAS-TB-(16)-R-CL</b> | max. distance T/R:<br>60 mm | max. distance T/R:<br>260 mm | max. distance T/R:<br>460 mm | max. distance T/R:<br>660 mm |
| <b>L-LAS-TB-28-T-CL</b><br><b>L-LAS-TB-28-R-CL</b>     | ----                        | max. distance T/R:<br>222 mm | max. distance T/R:<br>422 mm | max. distance T/R:<br>622 mm |
| <b>L-LAS-TB-50-T-CL</b><br><b>L-LAS-TB-50-R-CL</b>     | ----                        | max. distance T/R:<br>205 mm | max. distance T/R:<br>405 mm | max. distance T/R:<br>605 mm |
| <b>L-LAS-TB-75-T-CL</b><br><b>L-LAS-TB-75-R-CL</b>     | ----                        | max. distance T/R:<br>200 mm | max. distance T/R:<br>400 mm | max. distance T/R:<br>600 mm |
| <b>L-LAS-TB-100-T-CL</b><br><b>L-LAS-TB-100-R-CL</b>   | ----                        | max. distance T/R:<br>160 mm | max. distance T/R:<br>360 mm | max. distance T/R:<br>560 mm |



Accessories

**Blast air top part:**

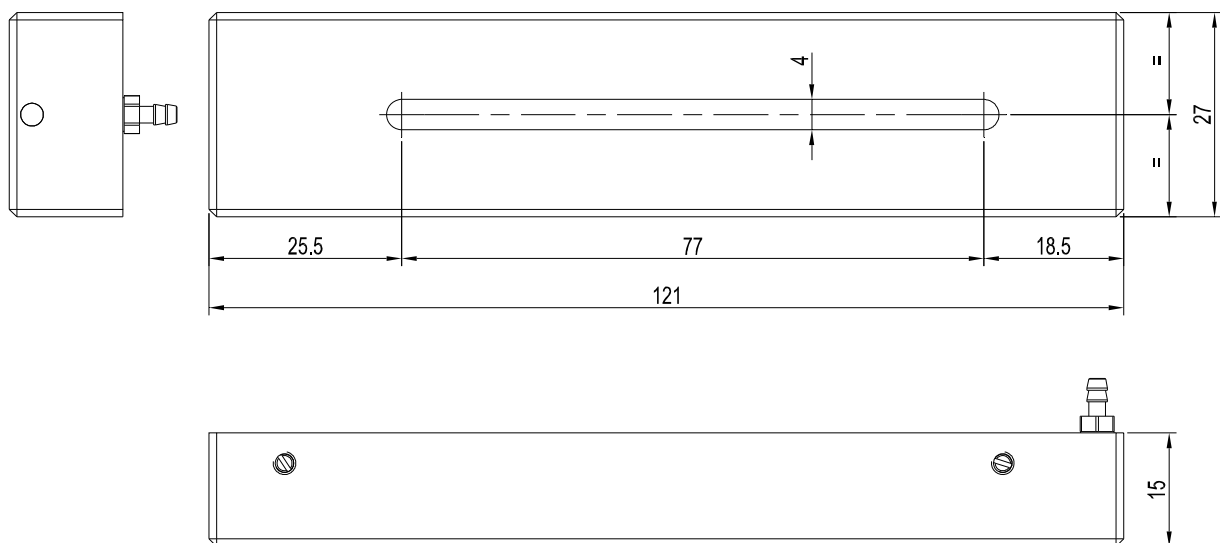
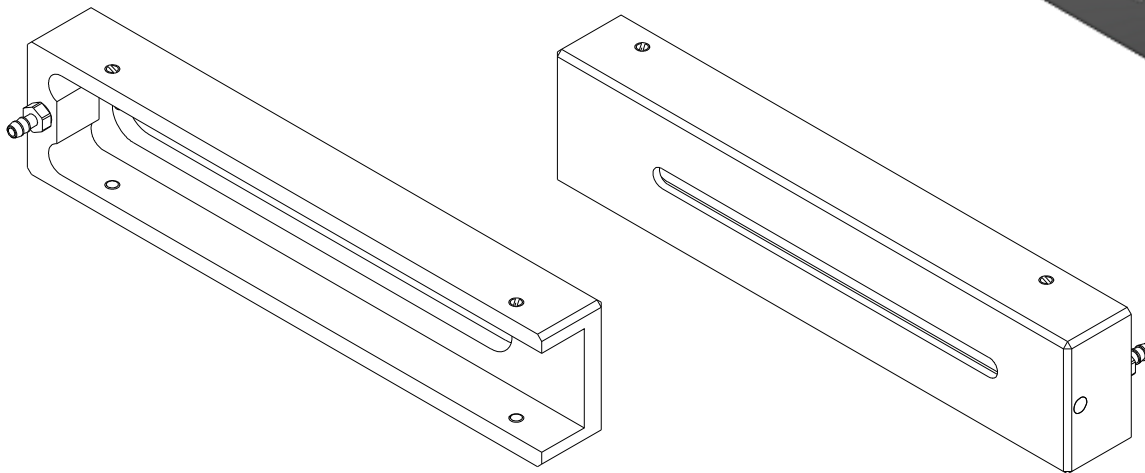
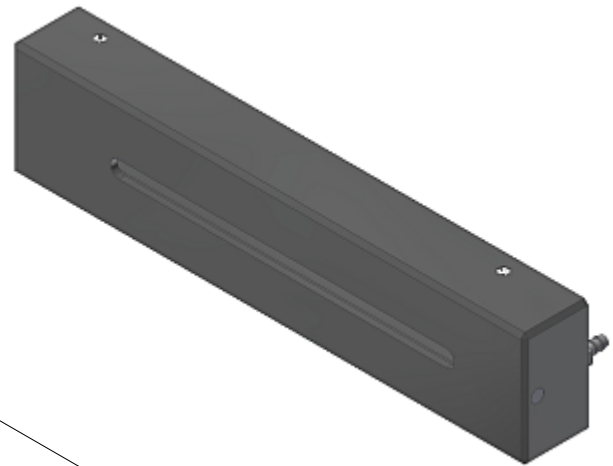
**ABL-TB-75-CL**

(Plastic housing, black, please order separately for each transmitter and receiver)

suitable for:

L-LAS-TB-75-T-CL and

L-LAS-TB-75-R-CL (or L-LAS-TB-75-R-4/20-CL)



All dimensions in mm