

L-LAS Series

▶ L-LAS-LT-80-ML

- Line laser, **Laser class 1** (<0.39 mW, wavelength 670 nm)
- Visible red laser spot, typ. Ø 0.3 mm
- Reference distance 80 mm
- Measuring range typ. 100 mm
- Start of measuring range at typ. 40 mm
- Resolution typ. 30 µm
- Interference filter and red light filter integrated
- CMOS line detector with 512 pixel, 4096 subpixel
- RS232 interface (USB or Ethernet converter available)
- Windows® user interface
- 2 digital inputs, 1 digital output
- 2 analog outputs (voltage 0...+10V and current 4...20mA)
- Scan frequency max. 2 kHz (3.3 kHz)
- Switching state indication via 2 three-color LEDs (red/grn/blu)
- Optics cover made of scratch-resistant glass

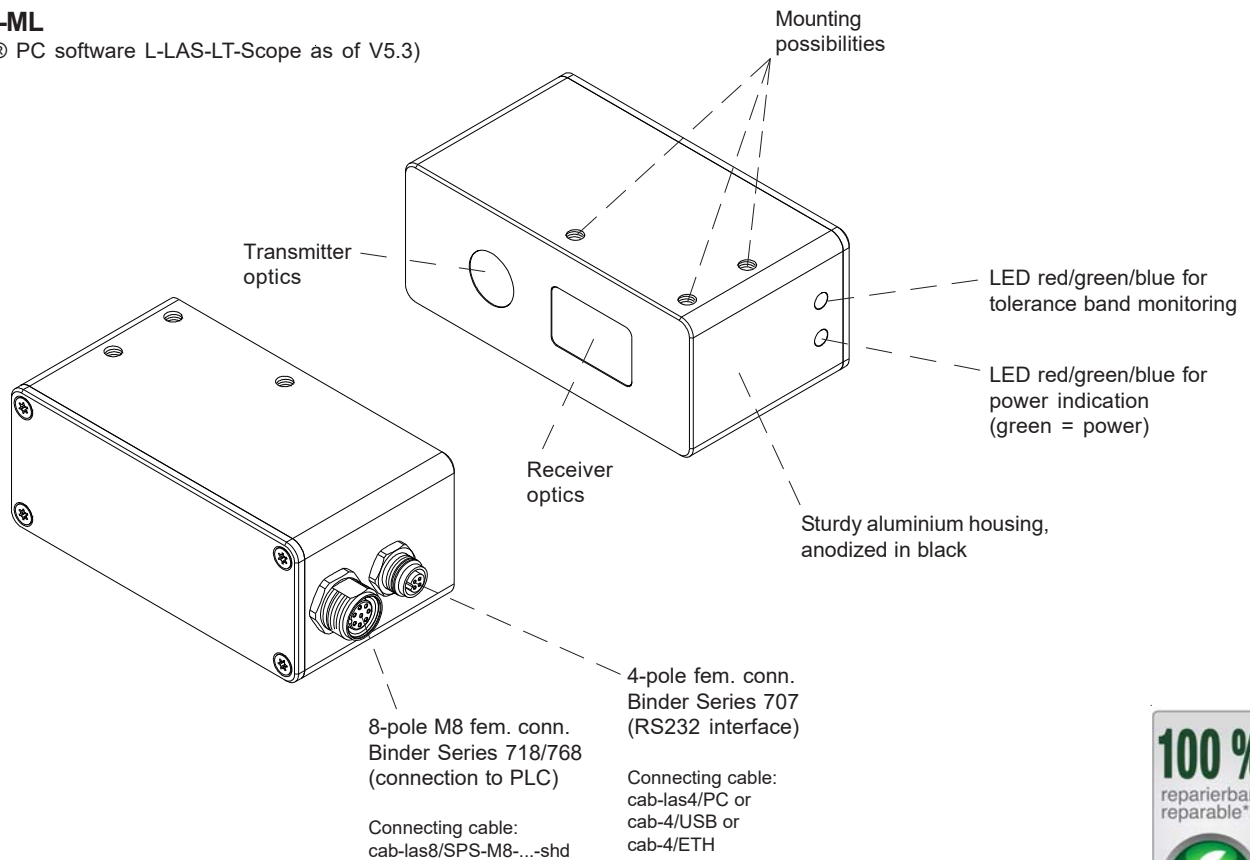


Design

Product name:

L-LAS-LT-80-ML

(incl. Windows® PC software L-LAS-LT-Scope as of V5.3)



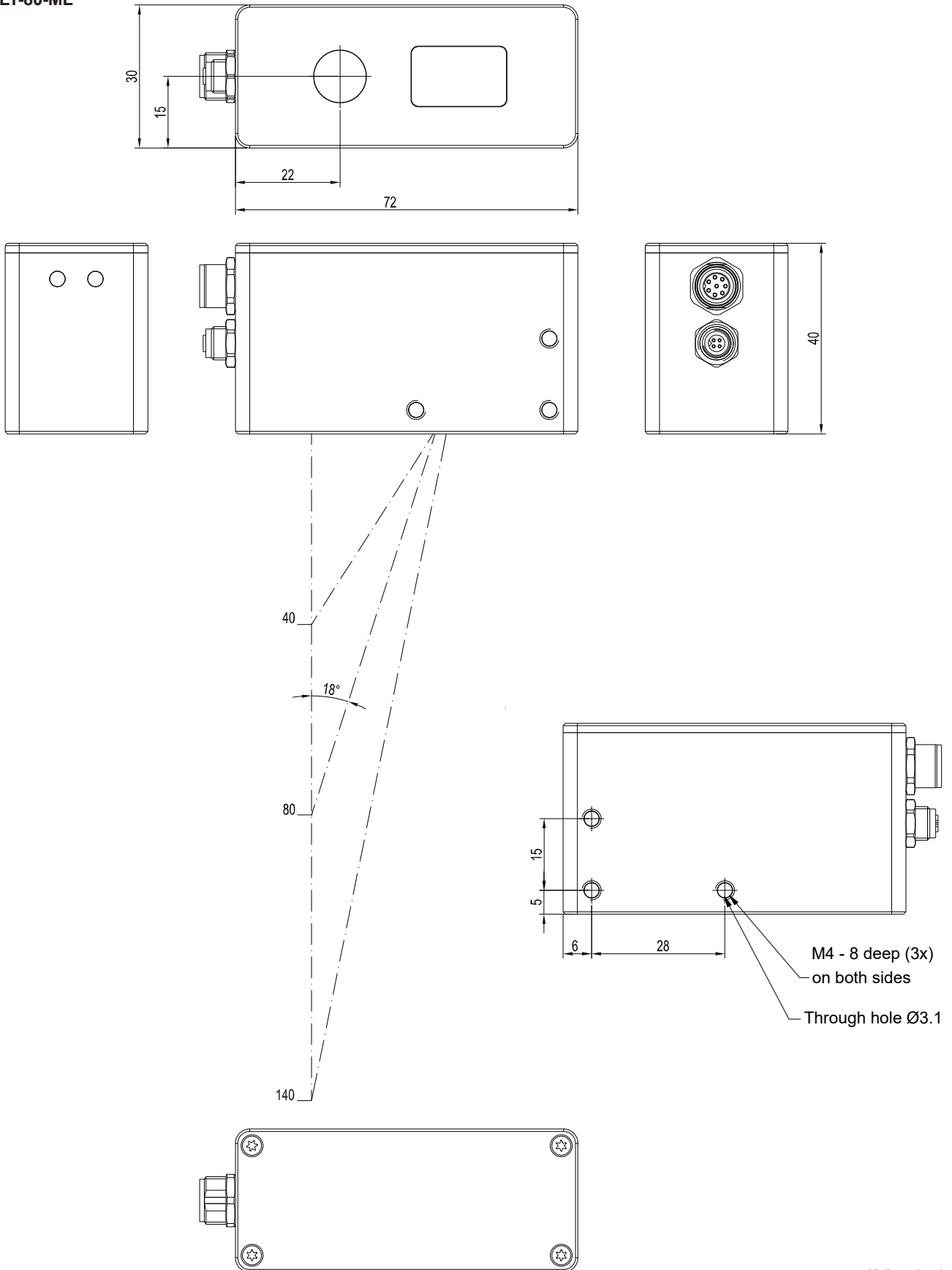


Technical Data

Model	L-LAS-LT-80-ML
Light source	Semiconductor laser, 670 nm, DC-operation, 0.39 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.
Reference distance	80 mm
Measuring range	typ. 100 mm
Start of measuring range	typ. 40 mm (measured from housing edge, cf. picture beam path)
End of measuring range	typ. 140 mm (measured from housing edge, cf. picture beam path)
Resolution	typ. 30 µm
Reproducibility	typ. ± 30 µm
Linearity	<= typ. 0.2% of full scale output (FSO)
Laser line geometry	typ. Ø 0.3 mm
Optical filter	Interference filter, red light filter RG630
Analog outputs (I-OUT, ANA)	1x current output: I-OUT (4 ... 20mA) 1x voltage output: ANA (0 ... +10V)
Digital outputs (OUT0)	pnp bright-switching/npn dark-switching or pnp dark-switching/npn bright-switching, adjustable under Windows®, 100 mA, short-circuit proof
Digital inputs (IN0, IN1)	IN0: External trigger, IN1: Teach/Reset (double function) Input voltage +Ub/0V, with protective circuit
Voltage supply	+24VDC (± 10%)
Sensitivity setting	adjustable under Windows® via PC
Laser power correction	adjustable under Windows® via PC
Current consumption	typ. 200 mA
Enclosure rating	IP67
Temperature stability	(to be defined yet)
Temperature ranges	operating temperature range: -10°C ... +50°C storage temperature range: -20°C ... +85°C
Housing material	Aluminum, anodized in black
Housing dimensions	LxWxH approx. 72 mm x 30 mm x 40 mm (without connectors)
Type of connector	8-pole circular connector type Binder 718/768 (PLC/Power) 4-pole circular fem. connector type Binder 707 (PC/RS232)
Connecting cable	to PLC: cab-las8/SPS-M8-...-shd to PC/RS232 interface: cab-las4/PC or cab-las4/PC-w to PC/USB interface: cab-4/USB or cab-4/USB-w to PC/Ethernet interface: cab-4/ETH
LED indication (2x three-color LED)	1x three-color LED red/green/blue for tolerance band monitoring: red = Measuring value out of tolerance window green (ok) = Measuring value within tolerance window blue = Measuring value out of measuring range 1x three-color LED red/green/blue for power indication: green = Power
Teach/reset button	for norm value teaching or for reset of maximum values via input IN1
EMC test acc. to	DIN EN 60947-5-2
Measuring frequency	max. 2 kHz (3.3 kHz)
Max. switching current	100 mA, short-circuit proof
Interface	RS232, parameterisable under Windows®
Output polarity	Bright-/dark-switching, can be switched under Windows®

Dimensions

L-LAS-LT-80-ML

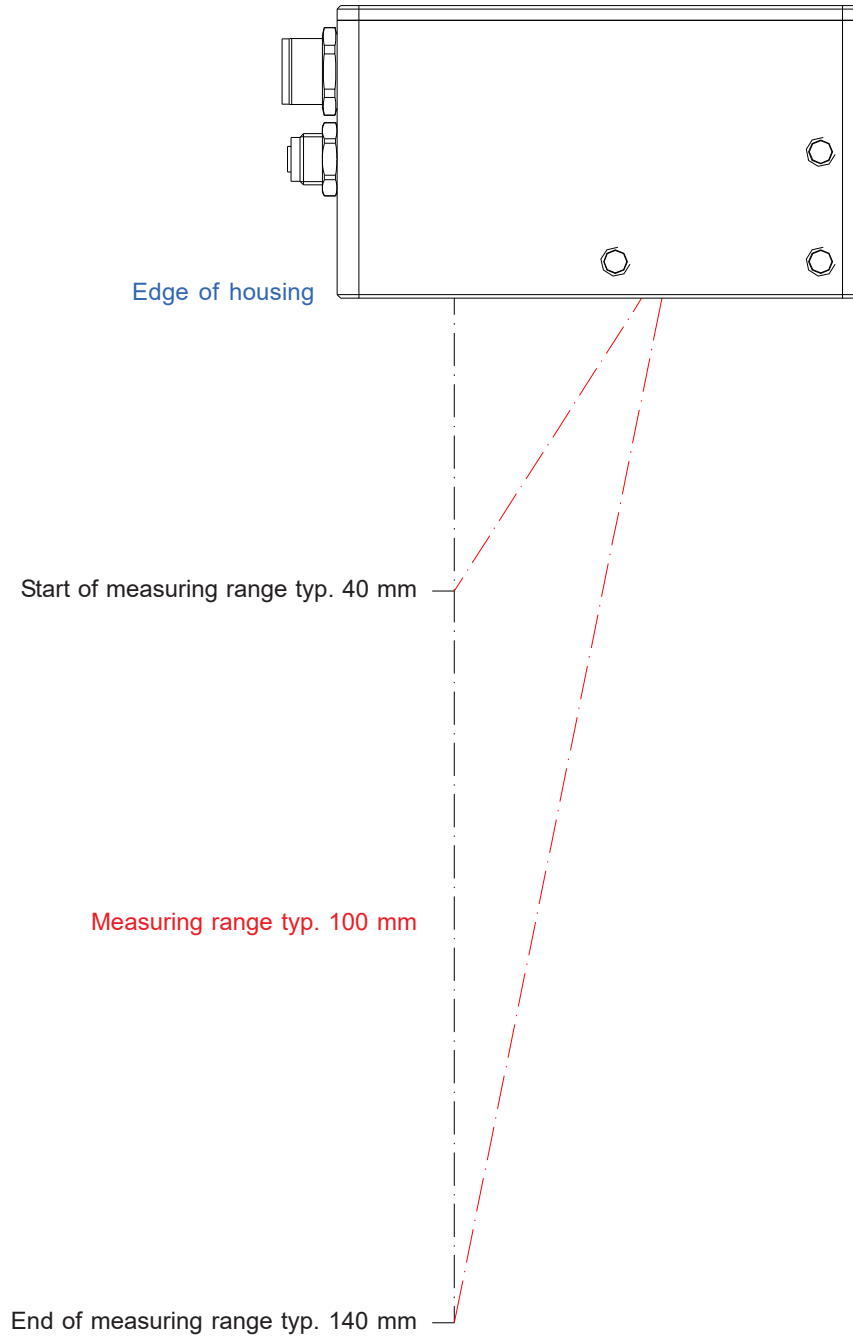


All dimensions in mm



Beam Path

L-LAS-LT-80-ML





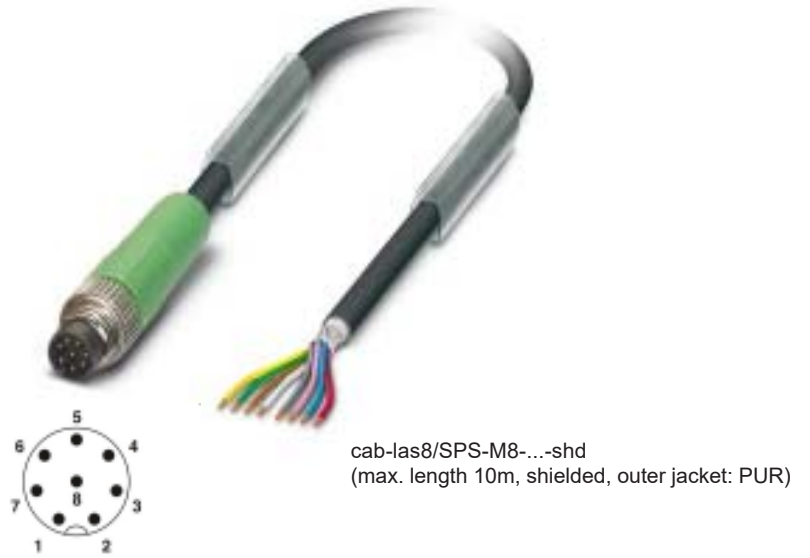
Connector Assignment

Connection to PLC:

8-pol. M8 Buchse Binder Serie 718/768

Pin:	Color:	Assignment:
1	white	GND (0V)
2	brown	+24VDC ($\pm 10\%$)
3	green	IN0 (EXT TRIGGER)
4	yellow	IN1 (TEACH / RESET)
5	grey	OUT0
6	pink	GND (0V)
7	blue	I-OUT (4...20mA)
8	red	ANA (0...+10V)

Connecting cable:
 cab-las8/SPS-M8-...-shd (shielded)
 (standard length 1.5m, also available: 3m, 5m, 10m)



cab-las8/SPS-M8-...-shd
 (max. length 10m, shielded, 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)

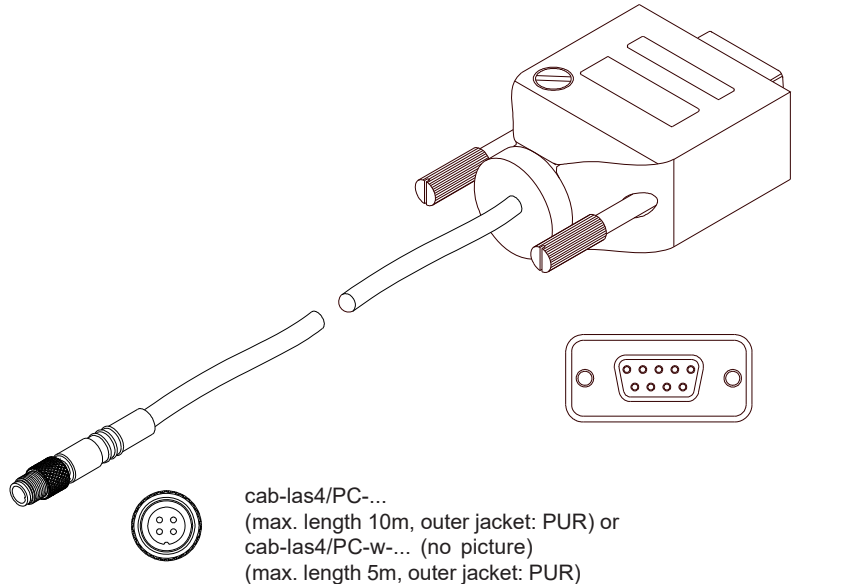
alternative:

Connection to local network via Ethernet bus:

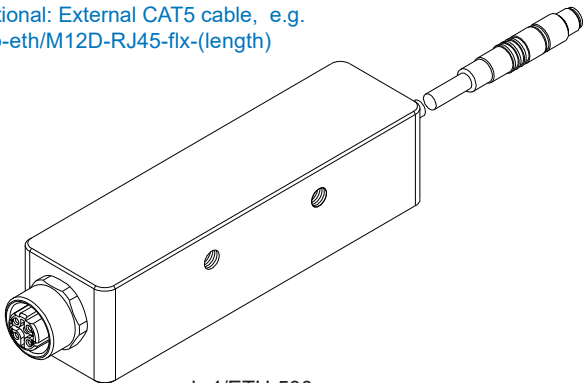
Ethernet converter (incl. software „SensorFinder“):
 cab-4/ETH-500
 (standard length 0.5m)

Optional: External CAT5 cable, e.g.

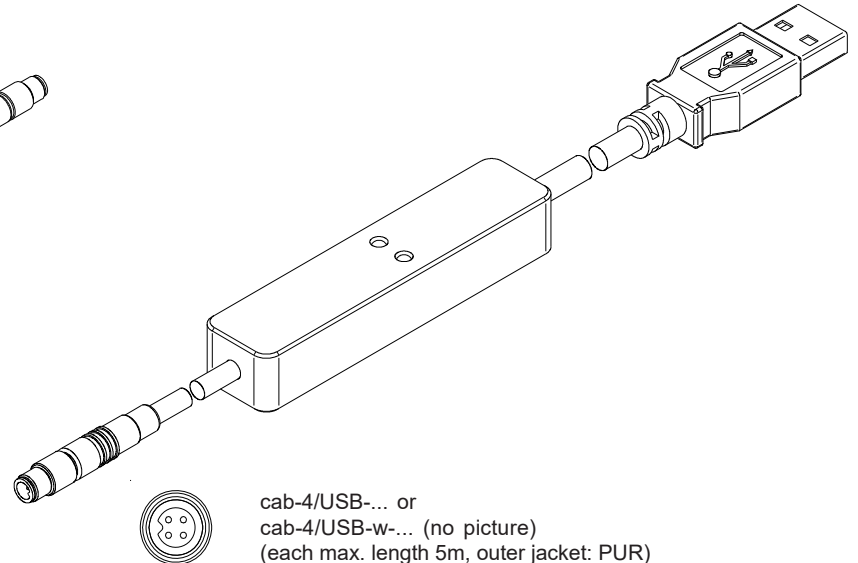
cab-eth/M12D-RJ45-flx-(length)



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)





LED Display

LED display:

- (tolerance band monitoring)
- (Power)



LED red/grn/blu: ● ● ●
 red = measuring value out of tolerance window
 green = measuring value within tolerance window
 blue = measuring value out of measuring range

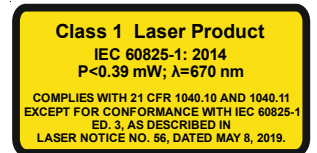
LED red/grn/blu: ●
 green = power



Laser Information

The laser transmitters of L-LAS-LT-80-ML sensors comply with laser class 1 according to EN 60825-1. Under reasonably foreseeable conditions a class 1 laser is safe. The reasonably foreseeable conditions are kept during specified normal operation. The use of these laser transmitters therefore requires no additional protective measures.

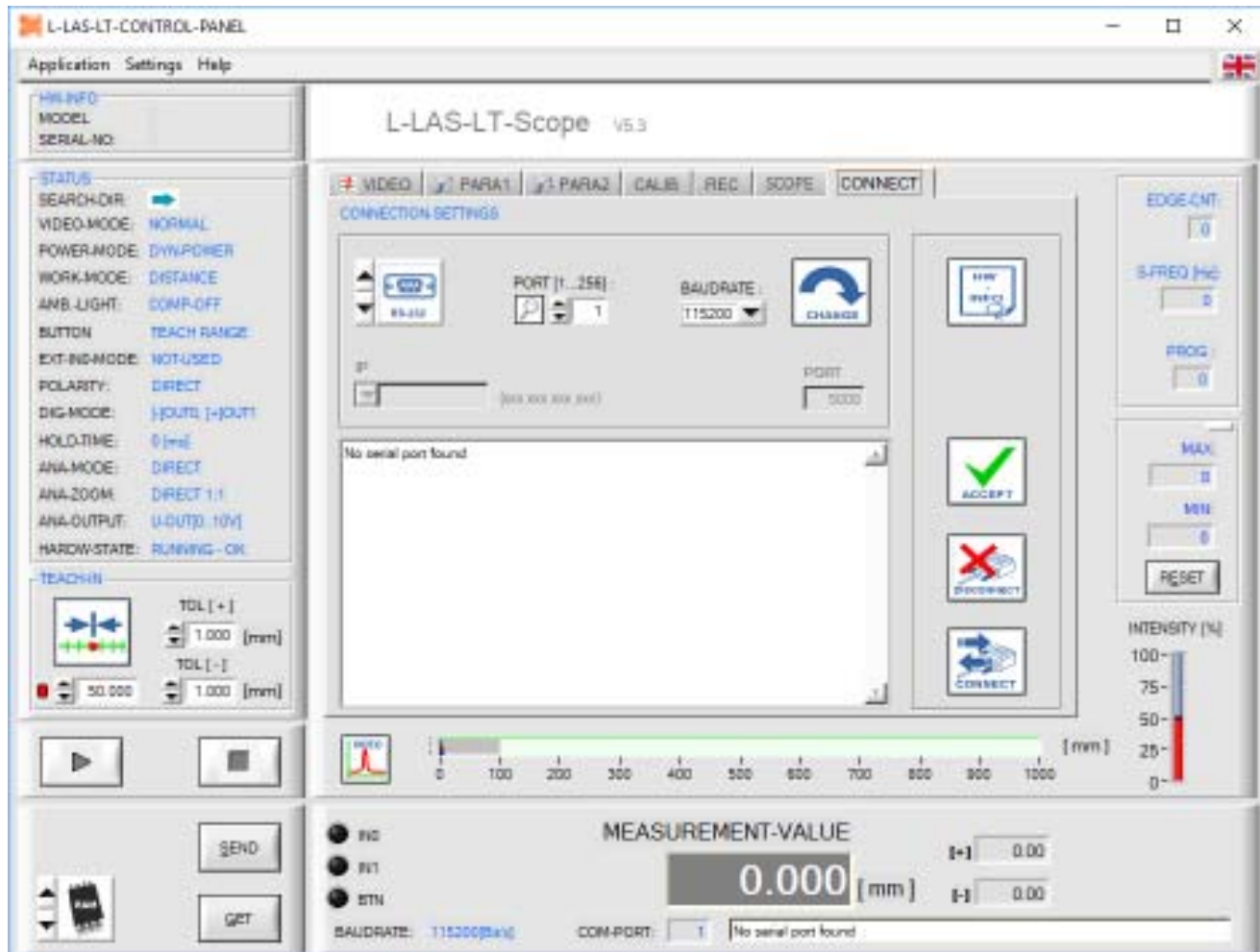
The laser transmitters of L-LAS-LT-80-ML sensors are supplied with a laser information label „CLASS 1 Laser Product“.




Parameterization
Windows® software L-LAS-LT-Scope:

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

The L-LAS-LT sensor can easily be parameterised with the Windows® user interface. For this purpose the sensor is connected to the PC with the serial interface cable cab-las4/PC respectively by means of USB converter cab-4/USB or Ethernet converter cab-4/ETH. When parameterisation is finished, the PC can be disconnected again.

Windows® user interface:

With the help of the L-LAS-LT-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-LT-Scope software. For example, the raw data of the CCD line sensor can be displayed graphically and numerically.