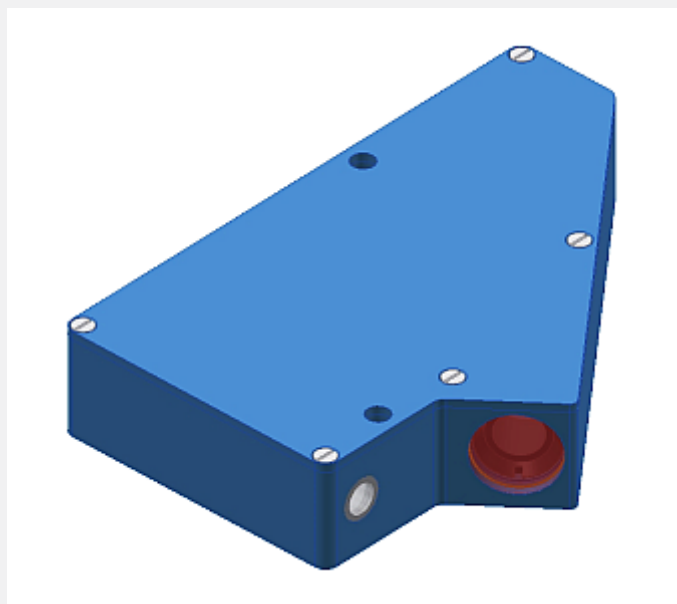


L-LAS Series

► L-LAS-LT-37-MA/SL L-LAS-LT-37-HS-MA/SL (High Speed)

- Line laser 1 mW, laser class 2
- Visible laser line (red light 670 nm), typ. 0.2 mm x 3 mm
- Reference distance typ. 37 mm
- Measuring range MA, SL: *each* typ. 35...39 mm (-HS: t.b.d.y.)
- Resolution MA, SL: *each* typ. 1 µm (-HS: t.b.d.y.)
- Integrated interference filter
- CCD line detector with 1024 pixel (4096 subpixel)
(-HS: 512 pixel, 2048 subpixel)
- External teach button and potentiometer for tolerance setting
- RS232 interface and Windows® user interface
- 2 digital inputs, 3 digital outputs
- 1 analog output (voltage 0...+10V, optional current 4...20mA)
- Switching state indication via 4 LEDs (1x grn, 2x red, 1x yel)



Design

Product name:

L-LAS-LT-37-MA (Master, analog output 0...+10V)

L-LAS-LT-37-MA-4/20 (Master, analog output 4...20mA)

L-LAS-LT-37-SL (Slave)

(incl. Windows® software L-LAS-LT-MS-Scope)

High-Speed Variante:

L-LAS-LT-37-HS-MA (Master, analog output 0...+10V)

L-LAS-LT-37-HS-MA-4/20 (Master, analog out 4...20mA)

L-LAS-LT-37-HS-SL (Slave)

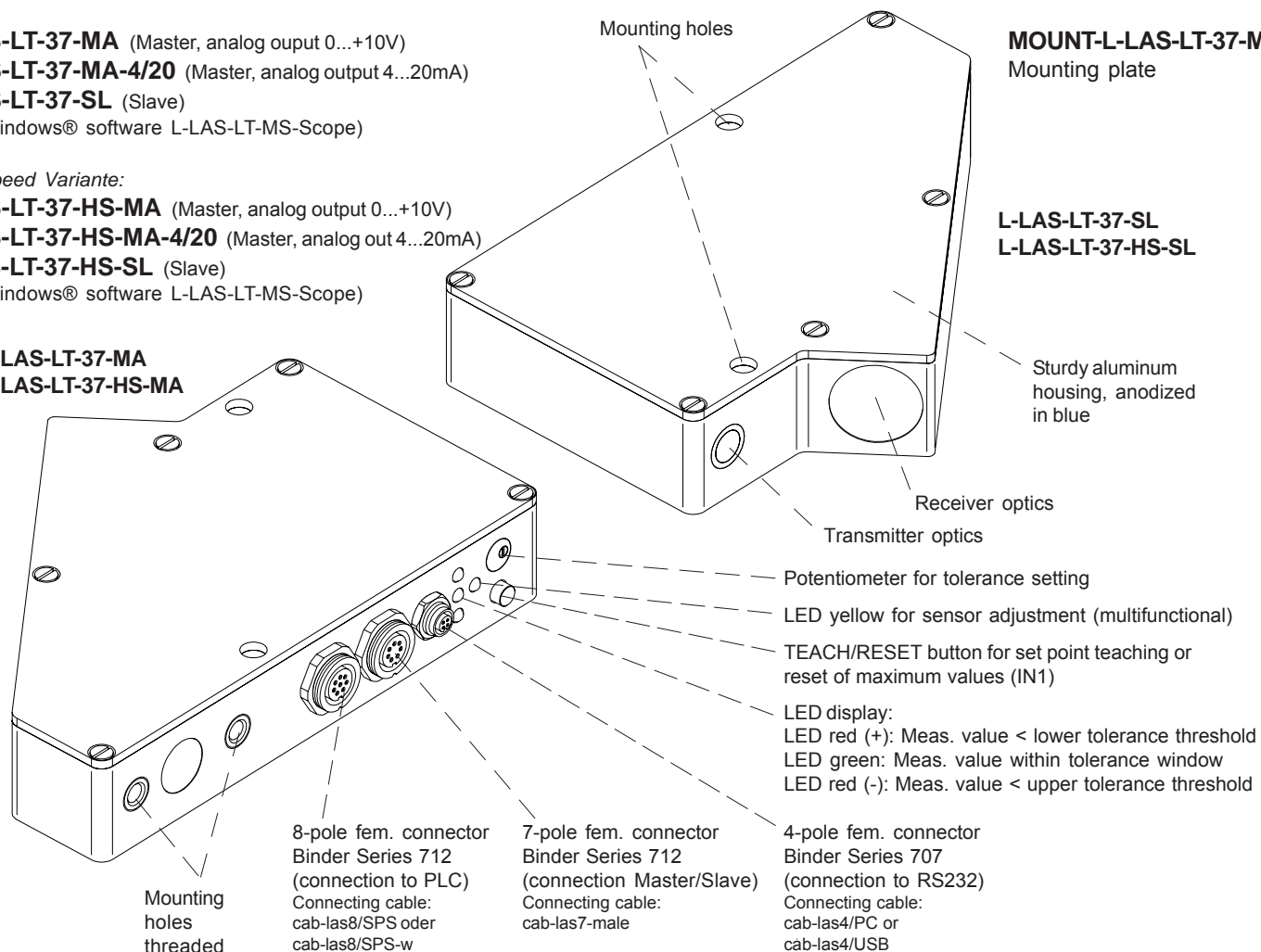
(incl. Windows® software L-LAS-LT-MS-Scope)

Accessories: (cf. page 8)

MOUNT-L-LAS-LT-37-MS
Mounting plate

L-LAS-LT-37-SL
L-LAS-LT-37-HS-SL

L-LAS-LT-37-MA
L-LAS-LT-37-HS-MA





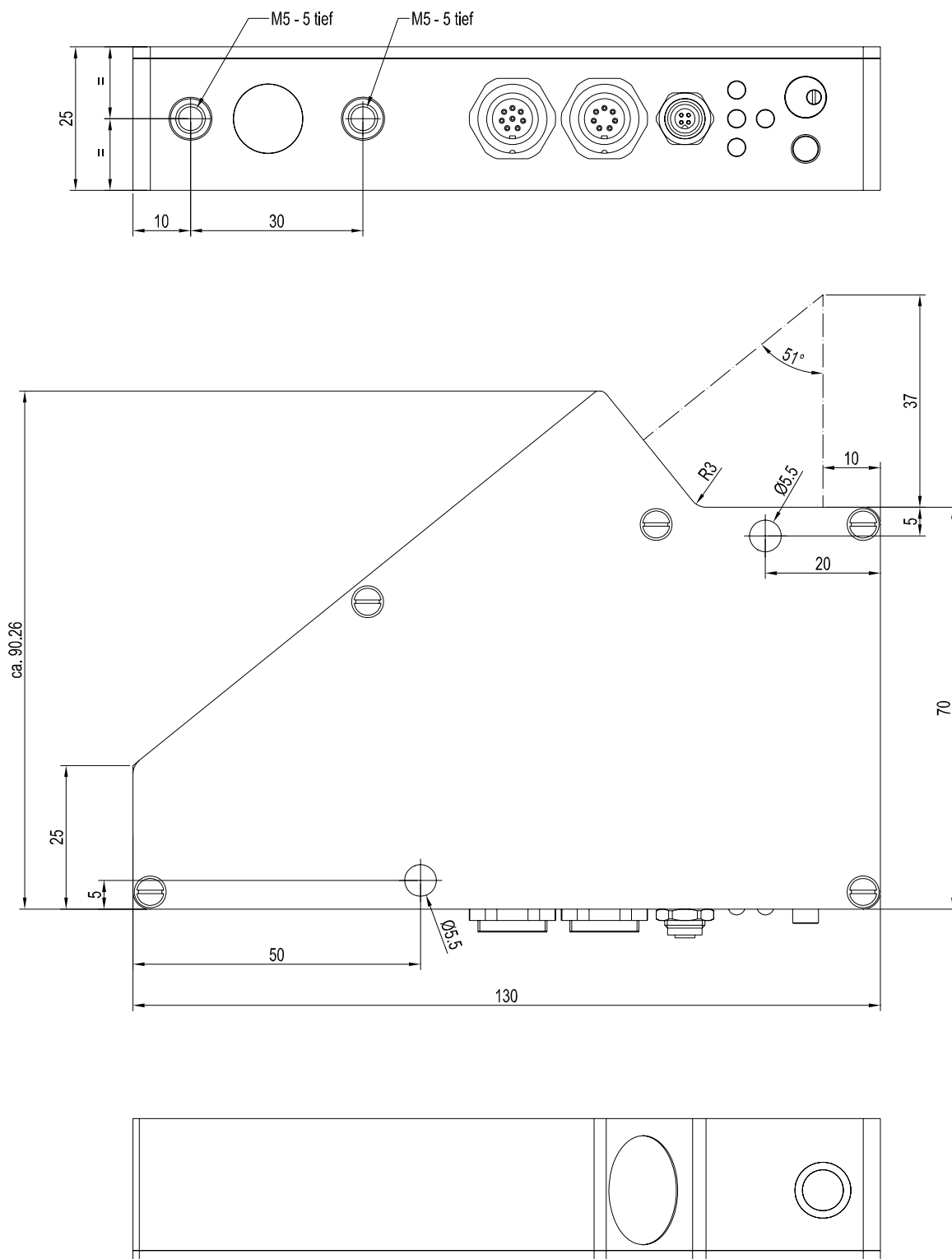
Technical Data

Model	L-LAS-LT-37-MA L-LAS-LT-37-SL	L-LAS-LT-37-HS-MA (High Speed) L-LAS-LT-37-HS-SL (High Speed)
Laser	Semi-conductor laser, 670 nm, DC operation, 1 mW max. opt. power, laser class 2 acc. to DIN EN 60825. The use of these laser transmitters therefore requires no additional protective measures.	
Reference distance	typ. 37 mm	
Measuring range	MA and SL: each typ. ± 2 mm (i.e. $2x \pm 2$ mm)	(to be defined yet)
Resolution	MA and SL: each typ. $1 \mu\text{m}$ (i.e. $2x \pm 1 \mu\text{m}$)	(to be defined yet)
Reproducibility	MA and SL: each typ. $\pm 1 \mu\text{m}$ (i.e. $2x \pm 1 \mu\text{m}$)	(to be defined yet)
Linearity	(to be completed)	
Laser line geometry	typ. $0.2 \text{ mm} \times 3 \text{ mm}$	
Optical filter	Interference filter	
Analog output	Voltage output (0 ... +10V), optional with type 4/20: Current output (4 ... 20mA)	
Digital outputs (OUT0, OUT1, OUT2)	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	+15VDC ... +30VDC	
Sensitivity setting	adjustable via potentiometer TOL or under Windows® via PC	
Paser power correction	adjustable Windows® via PC	
Current consumption	typ. 200 mA	
Enclosure rating	Electronics: IP54, optics: IP67	
Operating temperature range	-10°C ... $+50^{\circ}\text{C}$	
Storage temperature	-20°C ... $+85^{\circ}\text{C}$	
Housing material	Aluminium, anodized in blue	
Housing dimensions	L-LAS-LT-37-MA and L-LAS-LT-37-SL: LxWxH approx. $130 \text{ mm} \times 90,5 \text{ mm} \times 25 \text{ mm}$ (without flange connectors)	
Type of connector	L-LAS-LT-37-MA: 8-pole circular fem. connector type Binder 712 (PLC/Power) 4-pole circular fem. connector type Binder 707 (PC/RS232) 7-pole circular fem. connector type Binder 712 (connection Master/Slave) L-LAS-LT-37-SL: 8-pole circular fem. connector type Binder 712 (Power) 4-pole circular fem. connector type Binder 707 (inactive) 7-pole circular fem. connector type Binder 712 (connection Master/Slave)	
Connecting cables	1x cab-las4/PC or cab-las4/PC-w or cab-las4/USB (connection to PC) 2x cab-las8/SPS or cab-las8/SPS-w (connection to PLC/Power) 1x cab-las7-male (connection Master/Slave)	
Teach button	for set point teaching or for reset of maximum values via input IN1	
LED display	LED red (+) : Measuring value > upper tolerance threshold LED green : Measuring value within tolerance window LED red (-) : Measuring value < lower tolerance threshold LED yellow : for sensor adjustment (multifunctional)	
EMC test acc. to	DIN EN 60947-5-2	
Scan frequency	max. 200 Hz	(to be defined yet)
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-37-MA
L-LAS-LT-37-HS-MA
L-LAS-LT-37-SL
L-LAS-LT-37-HS-SL



All dimensions in mm

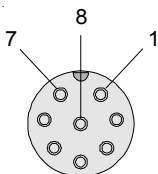


Connector Assignment

Connector assignment of L-LAS-LT-37-MA or L-LAS-LT-37-HS-MA (Master):

Connection to PLC/Power: 8-pole fem. connector Binder Series 712

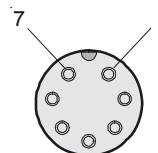
Pin:	Color:	Assignment:
1	white	GND (0V)
2	brown	+15 ... +30VDC (+Ub)
3	green	IN0 (EXT TRIGGER)
4	yellow	IN1 (TEACH / RESET)
5	grey	OUT0 (-)
6	pink	OUT1 (+)
7	blue	OUT2 (OK)
8	red	ANA (voltage 0 ... +10V) (optional: current 4 ... 20mA)



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

Connection Master/Slave (SPI): 7-pole fem. connector Binder Series 712

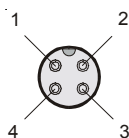
Pin:	Assignment:
1	GND (0V)
2	+3.3VDC
3	SS
4	MISO
5	MOSI
6	SCLK
7	+3.3VDC



Connecting cable:
cab-las7-male-(length)
(standard length 1 m)

Connection to PC: 4-pole fem. connector Binder Series 707

Pin:	Assignment:
1	+24VDC (+Ub, OUT)
2	GND (0V)
3	Rx0
4	Tx0



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

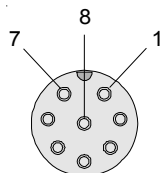
or:
cab-las4/USB-(length) incl. driver software
(standard length 2 m)



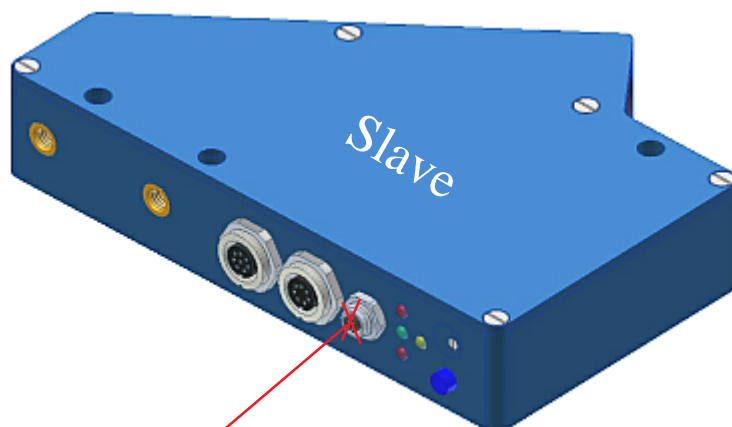
Connector assignment of L-LAS-LT-37-SL or L-LAS-LT-37-HS-SL (Slave):

Connection to Power: 8-pole fem. connector Binder Series 712

Pin:	Color:	Assignment:
1	white	GND (0V)
2	brown	+15VDC ... +30VDC
3	green	not used
4	yellow	not used
5	grey	not used
6	pink	not used
7	blue	not used
8	red	not used



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



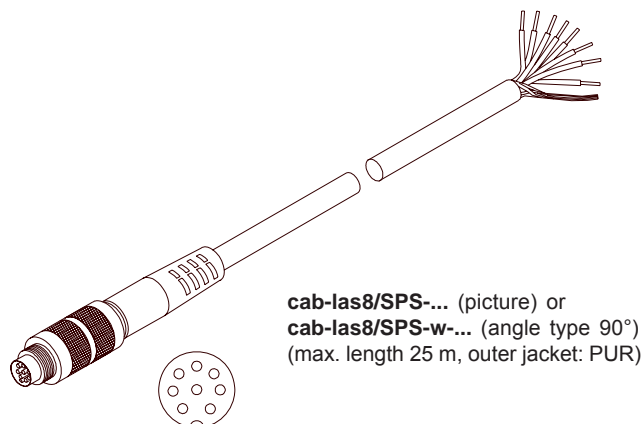
Attention:
This 4-pole connector at the Slave is inactive.
Please use the RS232 interface at the Master!



Connecting Cables

Available cable types for connection to PLC/Power:

cab-las8/SPS-2m
cab-las8/SPS-5m
cab-las8/SPS-w-2m
cab-las8/SPS-w-5m

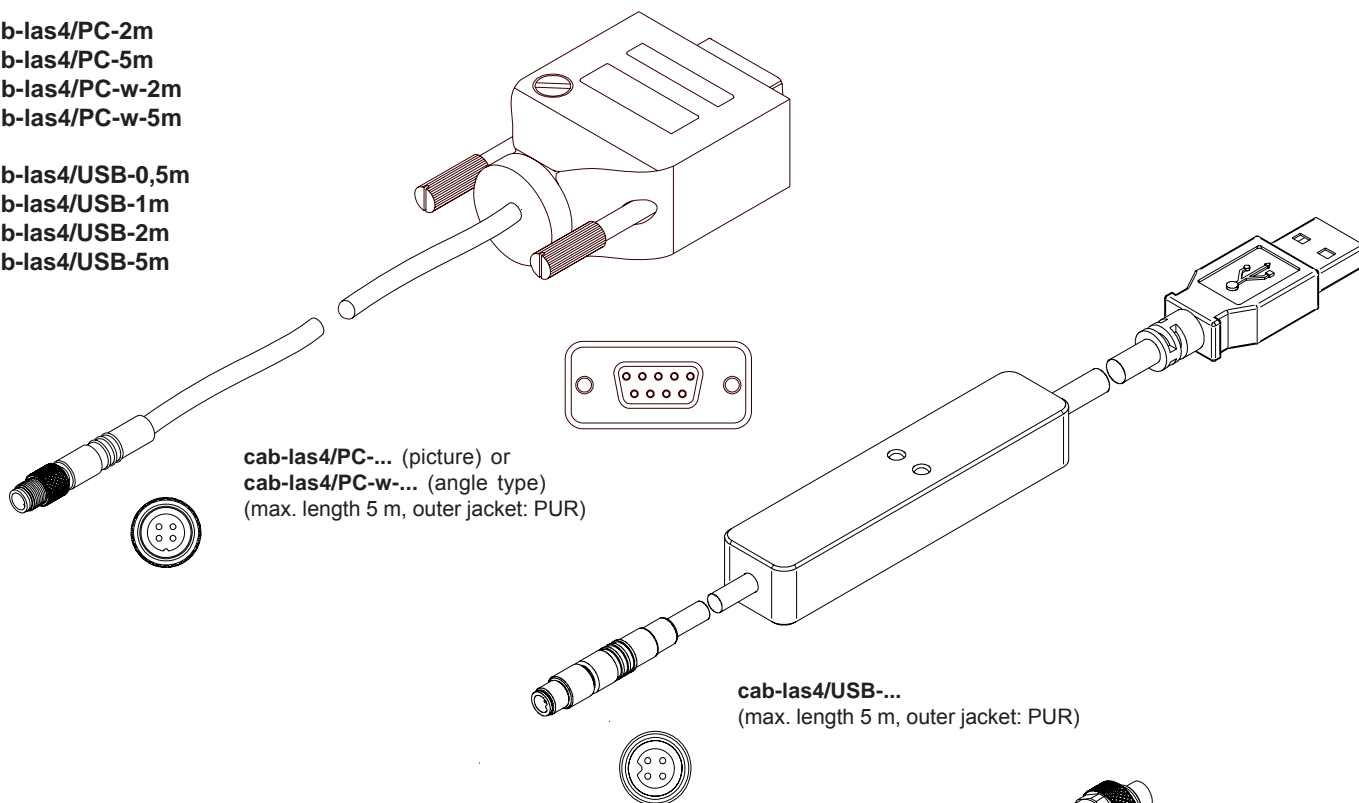


cab-las8/SPS-... (picture) or
cab-las8/SPS-w-... (angle type 90°)
 (max. length 25 m, outer jacket: PUR)

Available cable types for connection to PC:

cab-las4/PC-2m
cab-las4/PC-5m
cab-las4/PC-w-2m
cab-las4/PC-w-5m

cab-las4/USB-0,5m
cab-las4/USB-1m
cab-las4/USB-2m
cab-las4/USB-5m

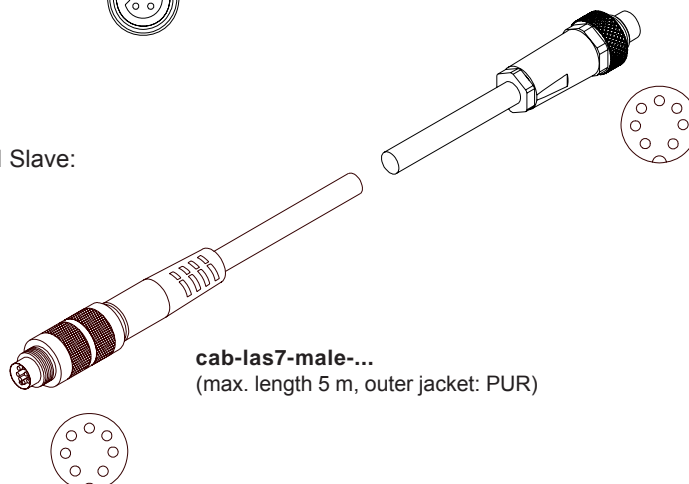


cab-las4/PC-... (picture) or
cab-las4/PC-w-... (angle type)
 (max. length 5 m, outer jacket: PUR)

cab-las4/USB-...
 (max. length 5 m, outer jacket: PUR)

Available cable types for connection of Master and Slave:

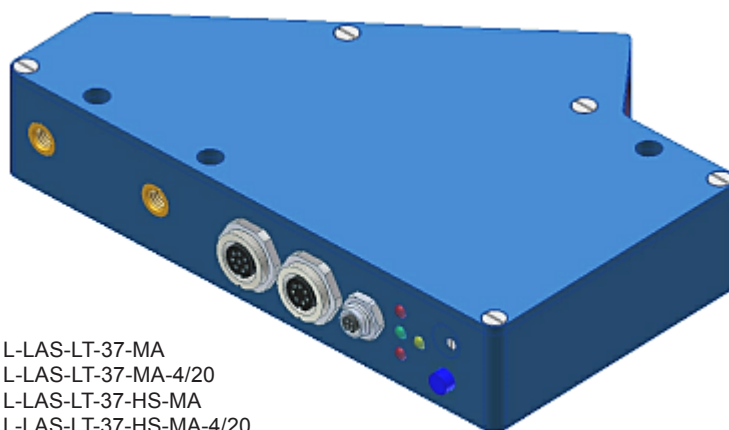
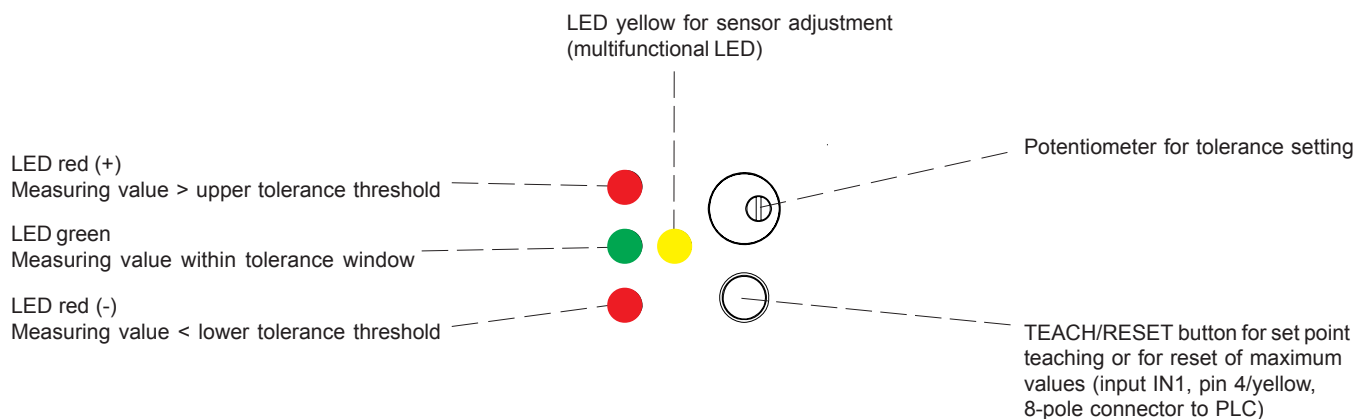
cab-las7-male-1m
cab-las7-male-2m
cab-las7-male-3m
cab-las7-male-5m



cab-las7-male-...
 (max. length 5 m, outer jacket: PUR)



LED Display



Laser Warning

The laser line sensors of L-LAS Series comply with laser class 2 according to EN 60825. The use of these laser transmitters therefore requires no additional protective measures.

The laser line sensors of L-LAS Series are supplied with a laser warning label.



LASER RADIATION
DO NOT STARE INTO THE BEAM
CLASS II LASER PRODUCT

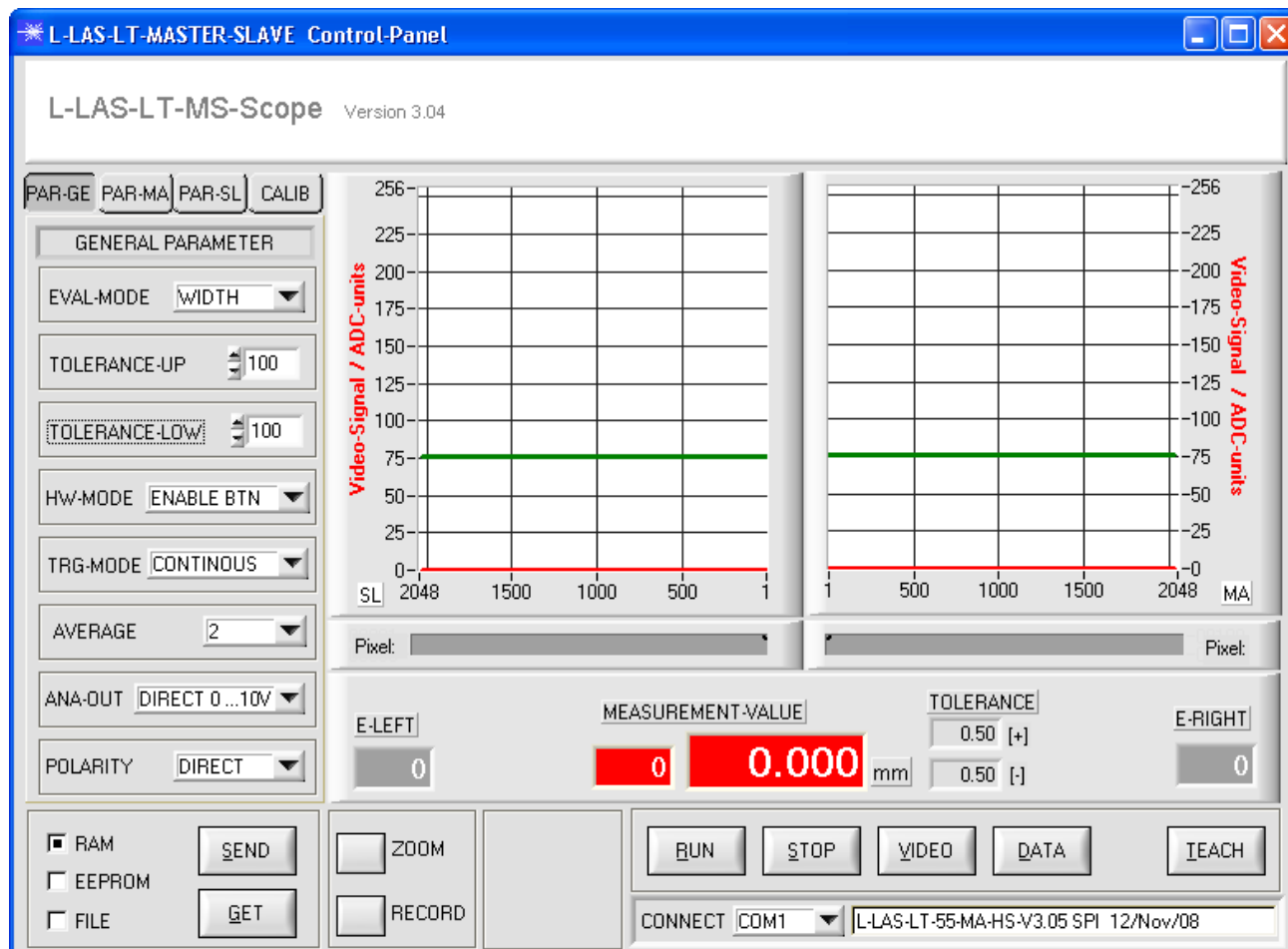


Parameterisation

Windows® software L-LAS-LT-MS-Scope:

The L-LAS-LT-...-MS 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. When parameterisation is finished, the PC can be disconnected again.

Windows® user interface:



In the case of line sensors with 512, 256, or 128 pixels the parameters related to the pixels will be adapted correspondingly!

With the help of the L-LAS-LT-MS-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

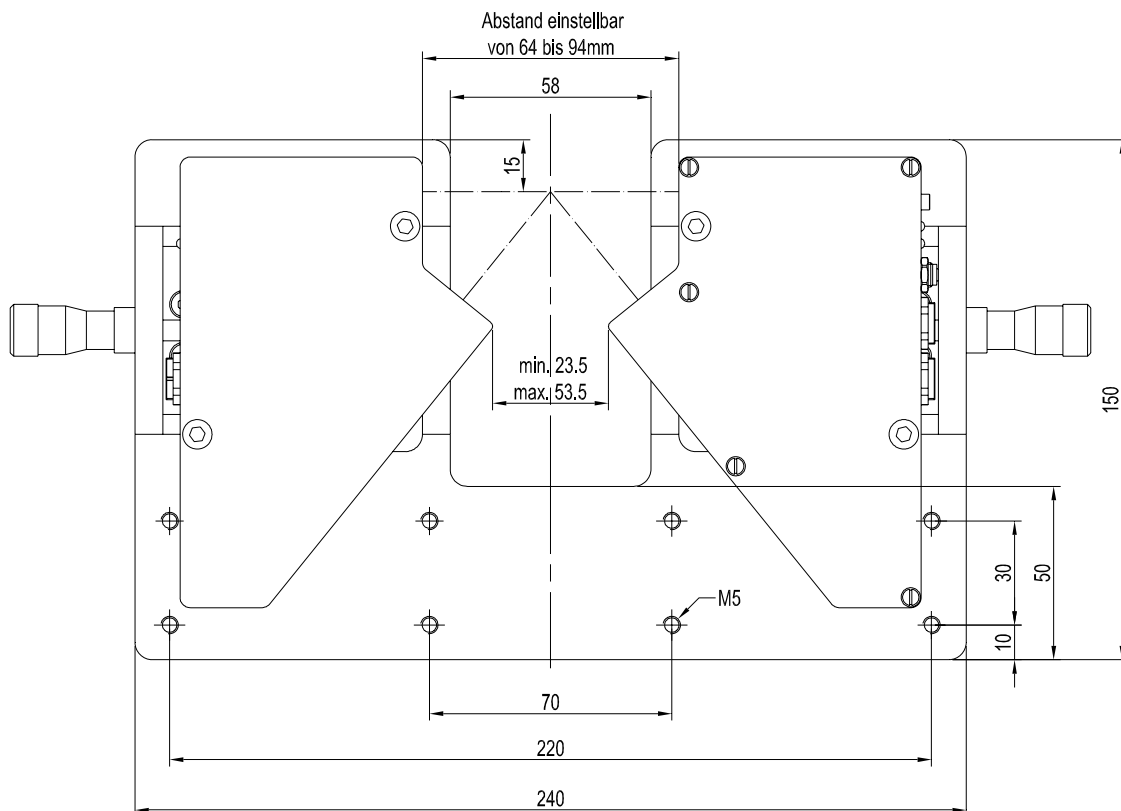
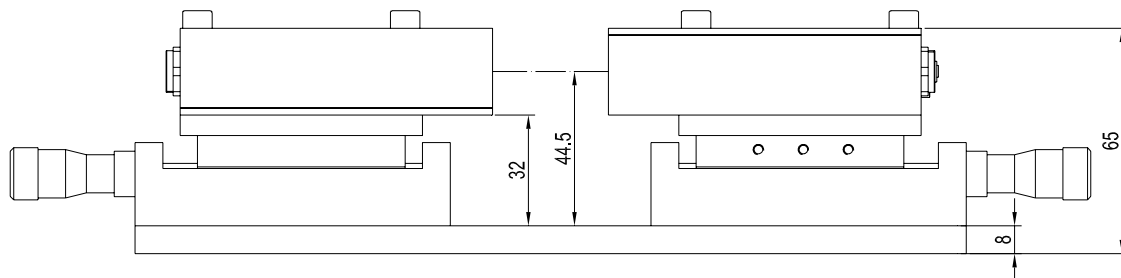
Furthermore, various numerical and graphical measured quantities can be visualized with the L-LAS-LT-MS-Scope software. For example, the raw data of the CCD line sensor can be displayed graphically and numerically.



Mounting

Mounting plate MOUNT-L-LAS-LT-37-MS (please order separately)

for optimal fixation of a Master/Slave laser line sensor
type L-LAS-LT-37-MA and L-LAS-LT-37-SL



All dimensions in mm