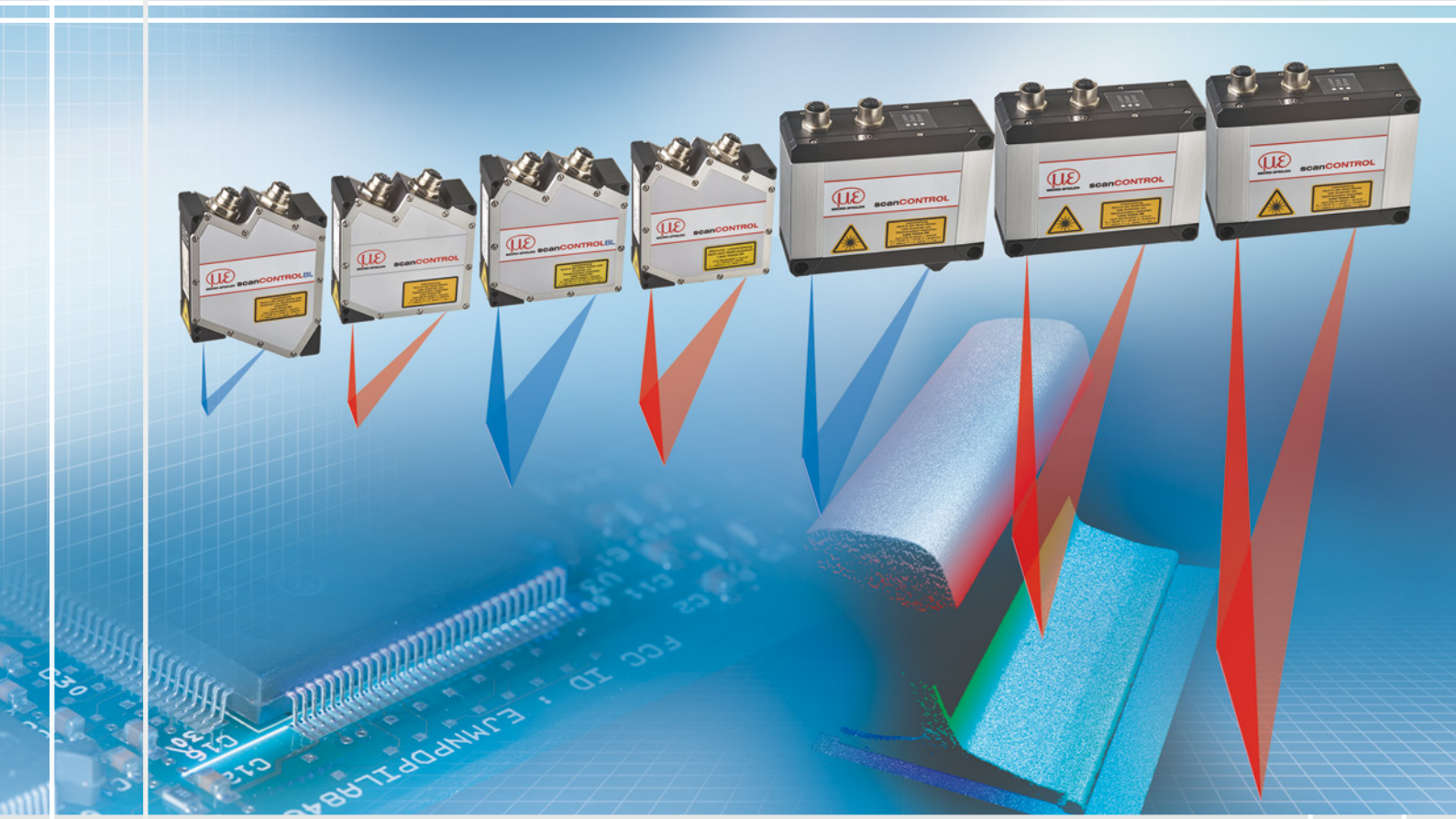
MICRO-EPSILON

More Precision

scanCONTROL // 2D/3D Laser profile sensors



- **High resolution in x- and z-axis for accurate profile measurement**
- **Profile frequency up to 10 kHz for monitoring of dynamic processes**
- **Innovative exposure control**
- **For small and large measuring ranges**
- **Also available with patented Blue Laser Technology**

Fast and precise 2D/3D profile measurements

The new LLT30x0 laser profile scanners provide calibrated profile data with up to 7.37 million points per second. Thanks to their high accuracy, high profile frequency and versatility, these powerful scanners are suitable for demanding measurement tasks. They measure and evaluate, e.g., angles, steps, gaps, distances and circles with high precision. These sensors also offer predefined operating modes that enable optimal results for various applications.

Available as COMPACT and SMART versions

The scanCONTROL 30x0 series is available as COMPACT and SMART versions. The COMPACT scanners provide calibrated profile data that can be further processed on a PC with software evaluation provided by the customer. SMART scanners operate autonomously and provide selected measurement values. The scanCONTROL 30x0 series supports all SMART functions and programs that are set in the scanCONTROL Configuration Tools software and directly stored in the internal controller.

Innovative exposure control to master difficult surfaces

On inhomogeneous or dark surfaces, the HDR (High Dynamic Range) data acquisition mode and the improved auto exposure optimizes the measurement results. In HDR mode, the rows of the sensor matrix are exposed differently but at the same time which avoids time offsets between the recordings. This is how moving objects can be detected reliably. The areas for auto exposure can be selected individually.

Article designation

LLT	30	xx	-25	/SI

Options - see below

Measuring range
25 mm
50 mm
100 mm
200 mm

Class
00 = COMPACT
10 = SMART

Series
LLT30xx

Laser options*

	/SI	Hardware switch-off of the laser line
	/3R	Increased laser power (class 3R) e.g., for dark surfaces
	/BL	Blue laser line (405 nm) for (semi-) transparent, red-hot glowing and organic materials

Cable outlet options*

	/RT	Cable outlet on the rear side („Rear Tail“) for space-saving installation, cable length 0.3 m, sockets at the end of the cable
	/PT	Cable directly out of the sensor („Pigtail“) Available lengths: 0.3 / 0.6 / 1 m

*Options can be combined

Accessories from page 38

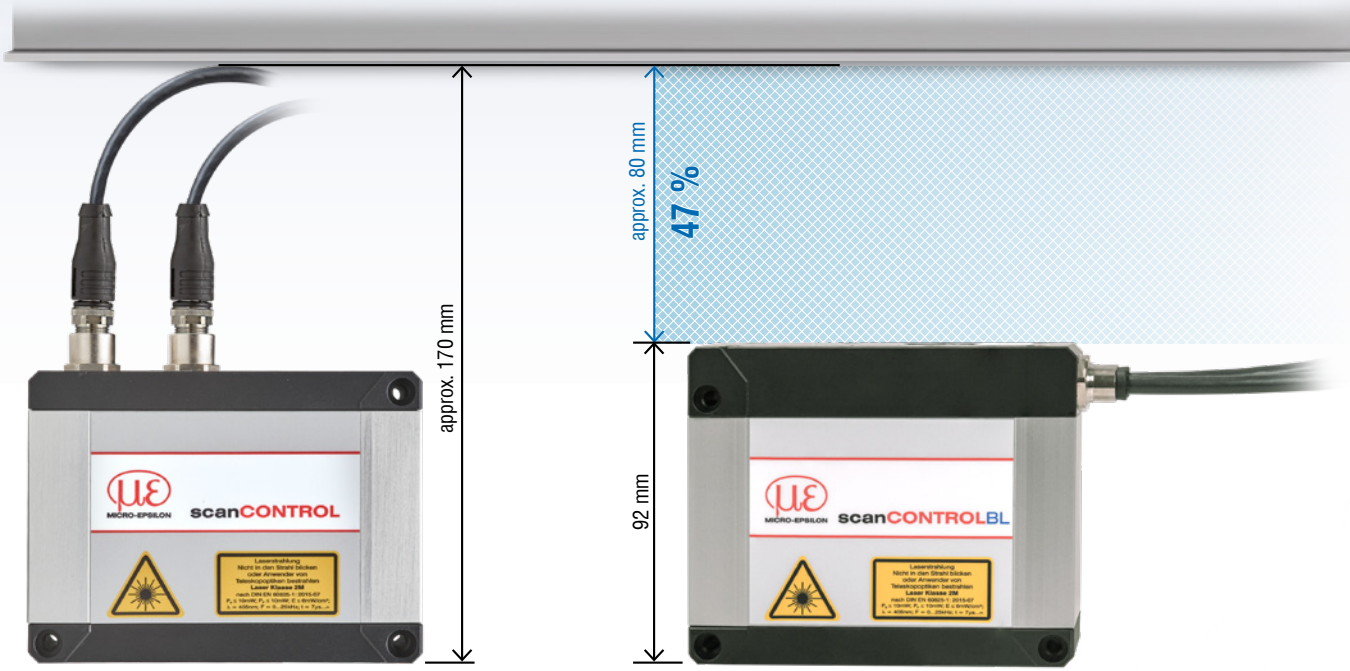
	Model		LLT 30x0-25	LLT 30x0-50	LLT 30x0-100	LLT 30x0-200
	Available laser type		Red Laser Blue Laser	Red Laser Blue Laser	Red Laser Blue Laser	Red Laser
z-axis	Measuring range	Start of measuring range	77.5 mm	105 mm	200 mm	200 mm
		Mid of measuring range	85 mm	125 mm	270 mm	310 mm
		End of measuring range	92.5 mm	145 mm	340 mm	420 mm
		Height of measuring range	15 mm	40 mm	140 mm	220 mm
	Extended measuring range	Start of measuring range	-	-	190 mm	160 mm
		End of measuring range	-	-	360 mm	460 mm
	Line linearity [1) 2)]		1.5 µm ±0.01 %	3 µm ±0.0075 %	9 µm ±0.006 %	26 µm ±0.012 %
x-axis	Measuring range	Start of measuring range	23 mm	43.3 mm	75.6 mm	130 mm
		Mid of measuring range	25 mm	50 mm	100 mm	200 mm
		End of measuring range	26.8 mm	56.5 mm	124.4 mm	270 mm
	Extended measuring range	Start of measuring range	-	-	72.1 mm	100 mm
		End of measuring range	-	-	131.1 mm	290 mm
	Resolution		2,048 points/profile			
	Profile frequency		up to 10,000 Hz			
	Interfaces	Ethernet GigE Vision	Output of measurement values Sensor control Profile data transmission			
		Digital inputs	Mode switching Encoder (counter) Trigger			
		RS422 (half-duplex) [3)]	Output of measurement values Sensor control Trigger Synchronization			
	Output of measurement values		Ethernet (UDP / Modbus TCP); RS422 (ASCII / Modbus RTU) analog [4)]; switch signal [4)] PROFINET [5)]; EtherCAT [5)]; EtherNet/IP [5)]			
	Control and display elements		3x color LEDs for laser, data and error			
	Light source	Red Laser	≤ 10 mW			≤ 12 mW
			Standard: laser class 2M, semiconductor laser 658 nm			
			≤ 30 mW		≤ 50 mW	
			Option: laser class 3R, semiconductor laser 658 nm			
		Blue Laser	≤ 10 mW			-
			Standard: laser class 2M, semiconductor laser 405 nm			-
		Laser switch-off	via software, hardware switch-off with /SI option			
	Aperture angle of laser line		23°	28°	30°	45°
	Permissible ambient light (fluorescent light) [1)]		10,000 lx			
	Protection class (DIN EN 60529)		IP67 (when connected)			
	Vibration (DIN EN 60068-2-27)		2 g / 20 … 500 Hz			
	Shock (DIN EN 60068-2-6)		15 g / 6 ms			
	Temperature range	Storage	-20 … +70 °C			
		Operation	0 … +45 °C			
	Weight		415 g (without cable)			
	Supply voltage		11 … 30 VDC, nominal value 24 V, 500 mA, IEEE 802.3af class 2, Power over Ethernet (PoE)			

[1)] According to measuring range; Measuring object: Micro-Epsilon standard object
[2)] According to a one-time averaging over the width of the measuring field (2,048 points)
[3)] RS422 interface, programmable either as serial interface or as input for triggering/synchronization
[4)] Only with 2D/3D Output Unit
[5)] Only with 2D/3D Gateway

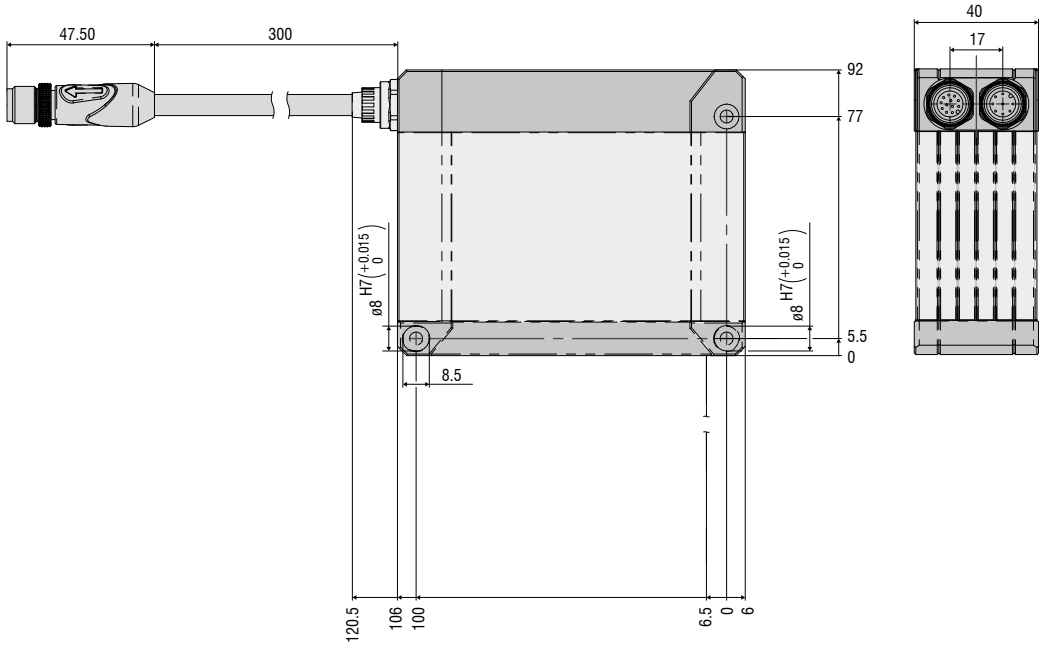
Option /RT = "Rear Tail"

Cable outlet on the rear side ("Rear Tail") for space-saving installation

- Available for all measuring ranges
- 30 cm pigtail
- Reduces the installation height by 47%

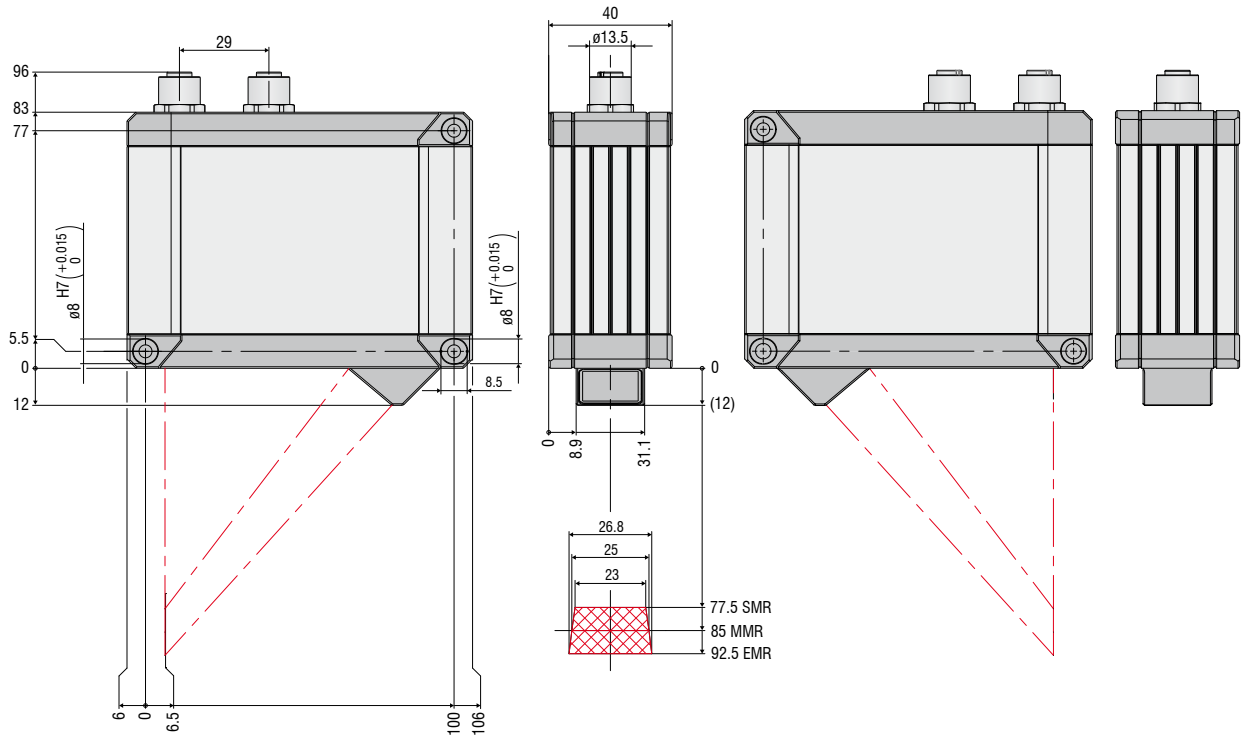


Standard Option /RT



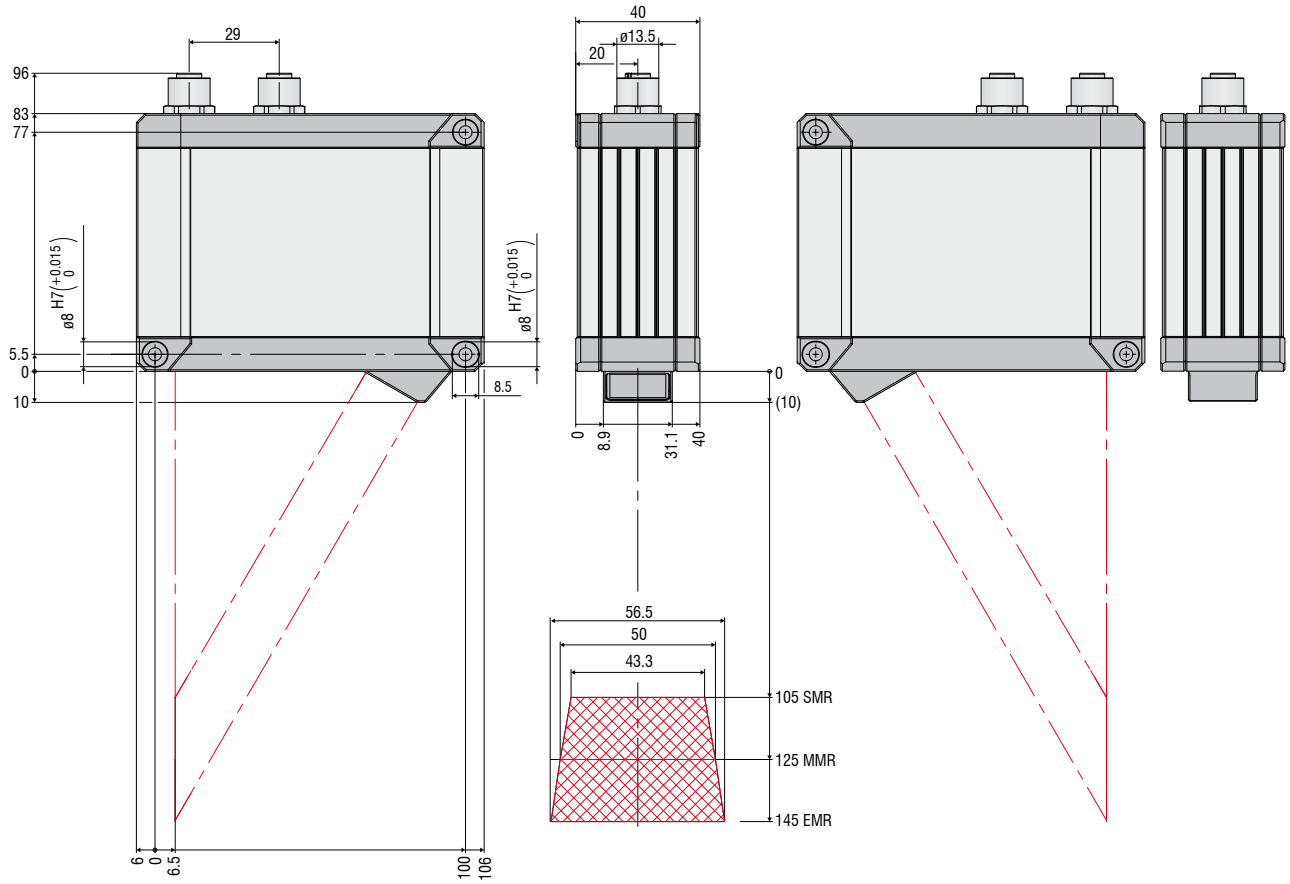
LLT30x2-25 / LLT30x0-25

Red Laser Blue Laser



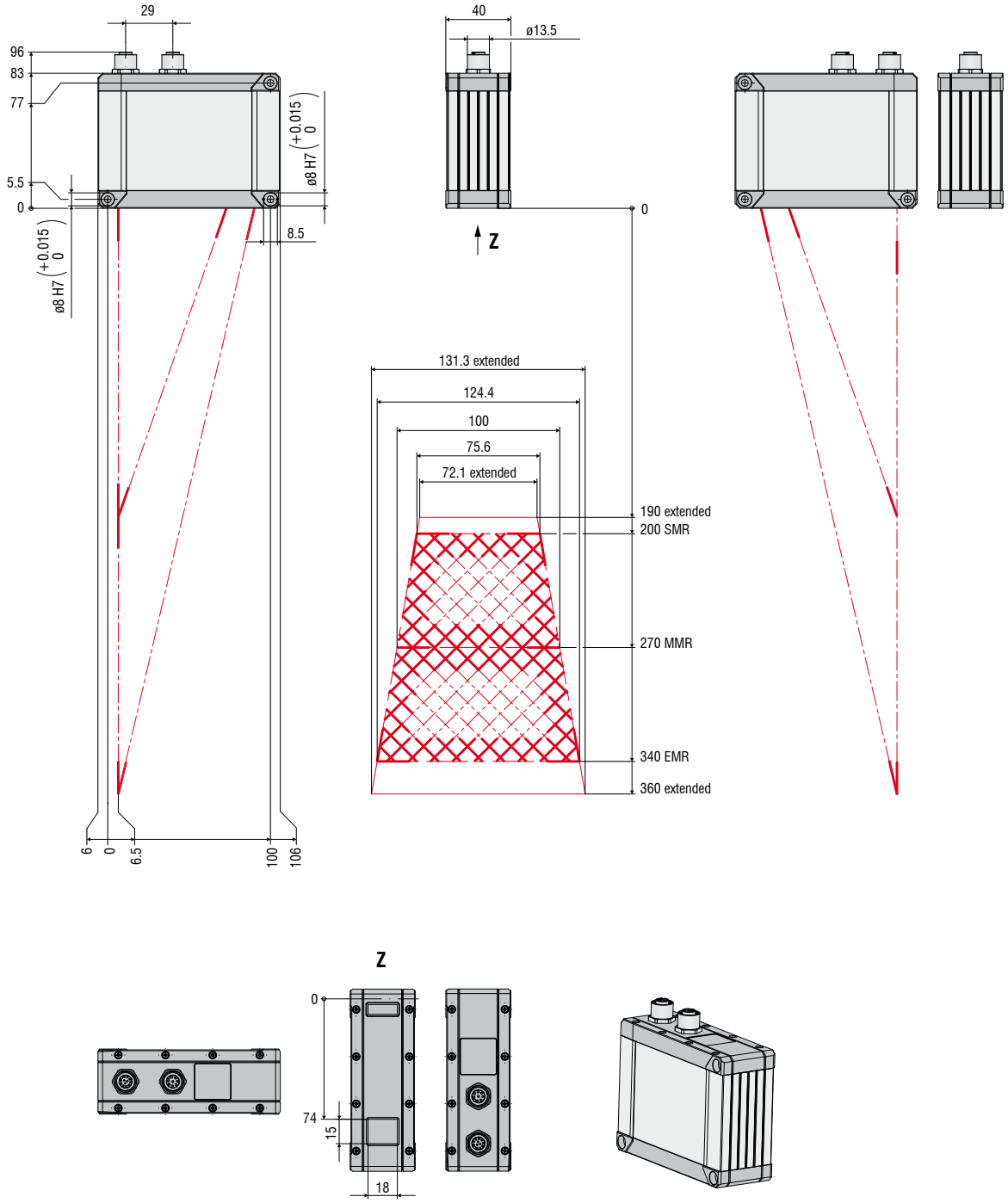
LLT30x2-50 / LLT30x0-50

Red Laser Blue Laser



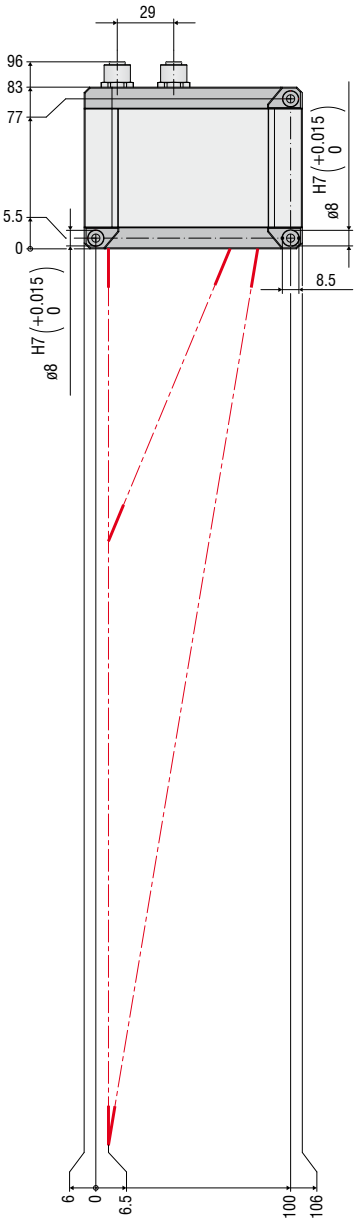
LLT30x2-100 / LLT30x0-100

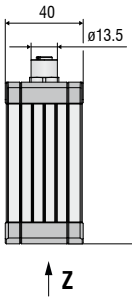
Red Laser Blue Laser

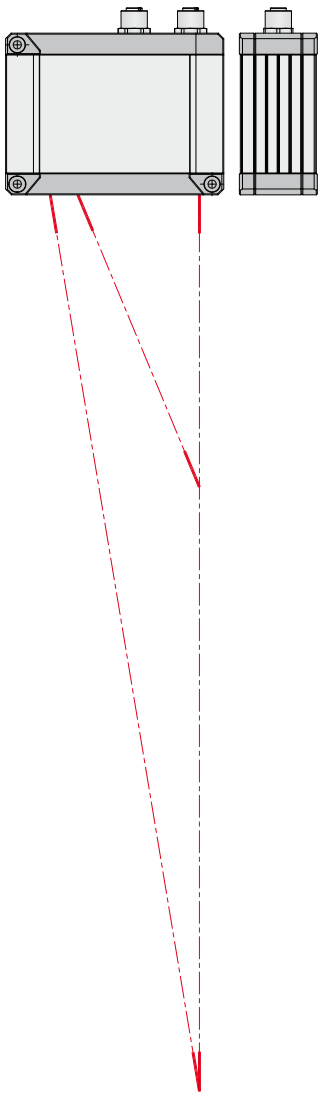


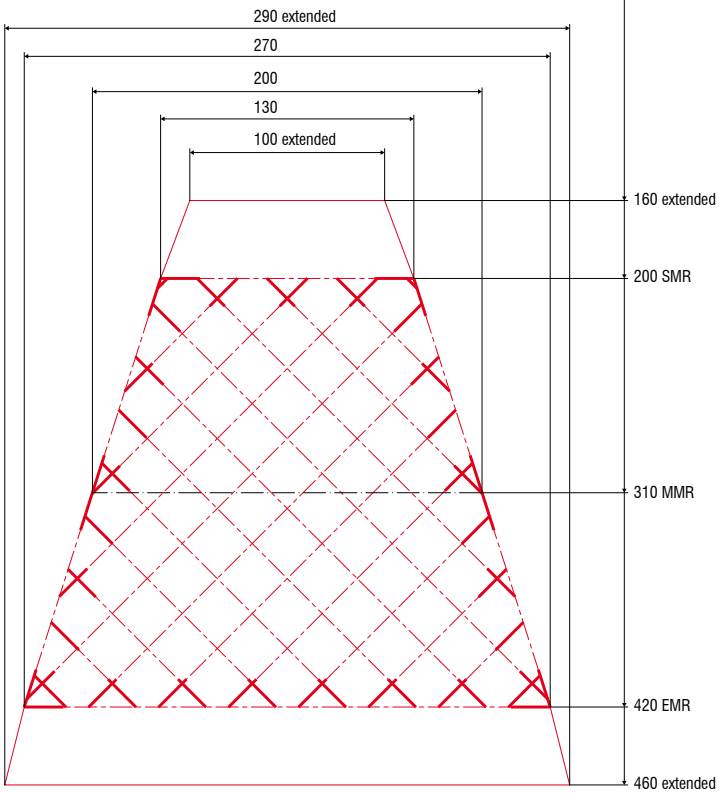
LLT30x2-200 / LLT30x0-200

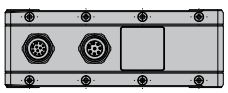
Red Laser

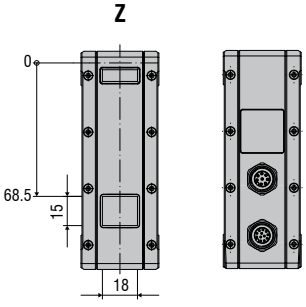


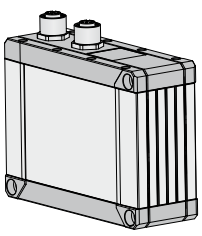










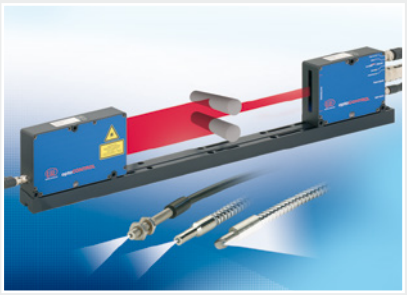


Sensors and Systems from Micro-Epsilon

Sensors and systems for displacement, position and dimension

Sensors and measurement devices for non-contact temperature measurement

Measuring and inspection systems for quality assurance



Optical micrometers, fiber optics, measuring and test amplifiers

Color recognition sensors, LED Analyzers and inline color spectrometers

3D measurement technology for dimensional testing and surface inspection

MICRO-EPSILON

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