



# More Precision

**scanCONTROL** // 2D/3D Laser profile sensors



# Powerful 2D/3D laser scanners

## scanCONTROL 30x2

Precise profile measurements for industrial measurement tasks

Resolution (x-axis) 1,024 points

Profile frequency up to 10,000 Hz

For small and large measuring ranges

Also available with patented Blue Laser Technology

Compatible with **COGNEX® VisionPro**



### Precise 2D/3D profile measurements

The new LLT30x2 laser profile scanners provide calibrated profile data with up to 7.9 million points per second. They allow profile frequencies up to 10 kHz and resolutions up to 1,024 points. Thanks to their high accuracy and versatility, the scanners are particularly suitable for static and dynamic applications as well as robotic applications. They measure and evaluate, e. g., angles, steps, gaps, distances, and circles.

### Available as PROFILE and SMART versions

The scanCONTROL 30x2 series is available as PROFILE and SMART versions. The PROFILE scanners provide calibrated profile data that can be further processed on a PC with software evaluation provided by the customer. The 3DInspect software allows for the scanCONTROL sensors to be used also for 3D evaluations. SMART scanners operate autonomously and provide selected measurement values. The scanCONTROL 30x2 series supports all SMART functions and programs that are set in the scanCONTROL Configuration Tools software and directly stored in the internal controller.

### Article designation

LLT	30	x2	-25	/SI
Options - see below				
<b>Measuring range</b>				
25 mm				
50 mm				
100 mm				
200 mm				
430 mm				
600 mm				
<b>Class</b>				
02 =PROFILE				
12 =SMART				
<b>Series</b>				
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 (Measuring ranges 25 - 100 mm)

### Cable outlet options\*

	/RT	Cable outlet on the rear side ("Rear Tail") for space-saving installation, cable length 0.3 m. Sockets at cable end (Measuring ranges 25 - 200 mm)
	/PT	Cable directly out of the sensor ("Pigtail") Available lengths: 0.3 / 0.6 / 1.00 m

\*Options can be combined

Accessories from page 42



### The easy way of machine integration

The design of the LLT30x2 series is compact and lightweight. The controller is integrated in the sensor itself, which simplifies mechanical integration. The measurement data can be output directly.

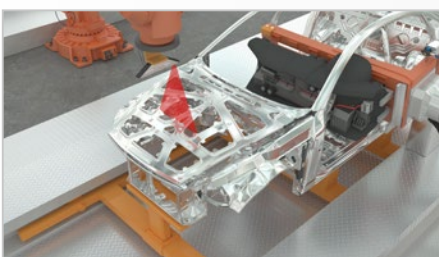
**NEW**

Large measurement area up to 600 x 600 mm

The scanCONTROL 30x2 laser scanners are now also available with a large measuring field up to 600 x 600 mm. This allows large measuring objects to be detected with high accuracy.



### Application examples



Assembly monitoring of car body shell construction



Detection of the road surface profile



Geometry inspection in metals processing

# Powerful 2D/3D laser scanners

## scanCONTROL 30x2

Model		LLT 30x2-25	LLT 30x2-50	LLT 30x2-100	LLT 30x2-200	
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 <sup>1) 2)</sup>		2 µm	4 µm	10 µm	30 µm	
		±0.013 %	±0.01 %	±0.007 %	±0.014 %	
x-axis	Measuring range	Start of measuring range	23.0 mm	43.3 mm	75.6 mm	130 mm
		Mid of measuring range	25.0 mm	50.0 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		1,024 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) <sup>3)</sup>	Output of measurement values Sensor control Trigger Synchronization				
Output of measurement values		Ethernet (UDP / Modbus TCP); RS422 (ASCII / Modbus RTU) analog <sup>4)</sup> ; switch signal <sup>4)</sup> PROFINET <sup>5)</sup> ; EtherCAT <sup>5)</sup> ; EtherNet/IP <sup>5)</sup>				
Control and display elements		3x color LEDs for laser, data and error				
Light source		≤ 10 mW			≤ 12 mW	
	Red Laser	Standard: laser class 2M, semiconductor laser 658 nm				
		≤ 30 mW		≤ 50 mW		
	Blue Laser	Option: laser class 3R, semiconductor laser 658 nm				
		≤ 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) <sup>1)</sup>		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)				

<sup>1)</sup> Based on the measuring range; measuring object: Micro-Epsilon standard object

<sup>2)</sup> According to a one-time averaging over the measuring field (1,024 points)

<sup>3)</sup> RS422 interface, programmable either as serial interface or as input for triggering/synchronization

<sup>4)</sup> Only with 2D/3D Output Unit

<sup>5)</sup> Only with 2D/3D Gateway

Model		LLT 30x2-430	LLT 30x2-600	
Available laser type		Red Laser	Red Laser	
z-axis	Measuring range	Start of measuring range	330 mm	530 mm
		Mid of measuring range	515 mm	770 mm
		End of measuring range	700 mm	1010 mm
	Extended measuring range	Height of measuring range	370 mm	480 mm
		Start of measuring range	330 mm	450 mm
		End of measuring range	720 mm	1050 mm
Line linearity <sup>1)2)</sup>		15 µm	22 µm	
		±0.0041 %	±0.0045 %	
x-axis	Measuring range	Start of measuring range	324 mm	456 mm
		Mid of measuring range	430 mm	600 mm
		End of measuring range	544 mm	762 mm
	Extended measuring range	Start of measuring range	324 mm	408 mm
		End of measuring range	560 mm	788 mm
Resolution		1,024 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) <sup>3)</sup>	Output of measurement values Sensor control Trigger Synchronization		
Output of measurement values		Ethernet (UDP / Modbus TCP); RS422 (ASCII / Modbus RTU) analog <sup>4)</sup> ; switch signal <sup>4)</sup> PROFINET <sup>5)</sup> ; EtherCAT <sup>5)</sup> ; EtherNet/IP <sup>5)</sup>		
Control and display elements		3x color LEDs for laser, data and error		
Light source	Red Laser		≤ 26 mW	
			Standard: laser class 2M, semiconductor laser 660 nm	
			≤ 100 mW	
	Laser switch-off		Option: laser class 3R, semiconductor laser 660 nm via software, hardware switch-off with /SI option	
Aperture angle of laser line		60 °		
Permissible ambient light (fluorescent light) <sup>1)</sup>		5,000 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		2620 g (without cable)		
Supply voltage		11 ... 30 VDC, nominal value 24 V, 500 mA, IEEE 802.3af class 2, Power over Ethernet (PoE)		
Connections		Sockets, cable outlets on top (/PT)		

<sup>1)</sup> Based on the measuring range; measuring object: Micro-Epsilon standard object

<sup>2)</sup> According to a one-time averaging over the measuring field (1,024 points)

<sup>3)</sup> RS422 interface, programmable either as serial interface or as input for triggering/synchronization

<sup>4)</sup> Only with 2D/3D Output Unit

<sup>5)</sup> Only with 2D/3D Gateway



# Options

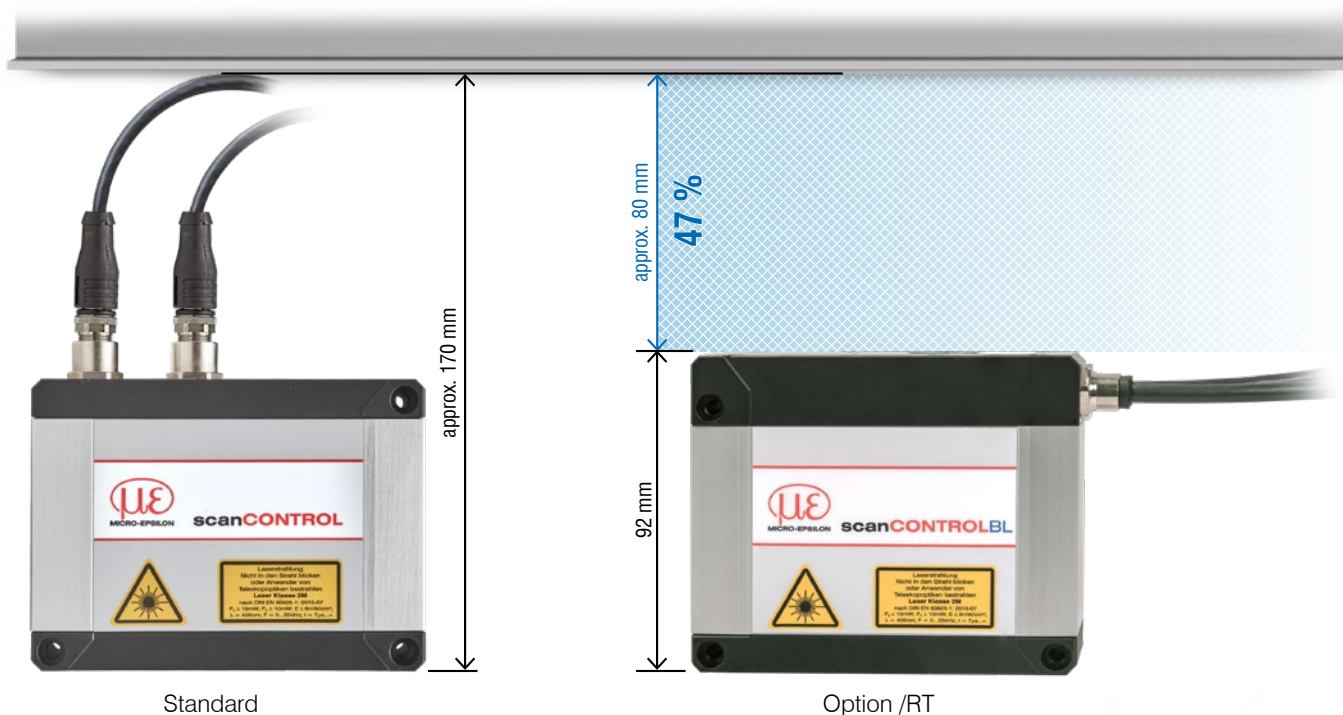
## scanCONTROL 30xx

**NEW**

### Option /RT = "Rear Tail"

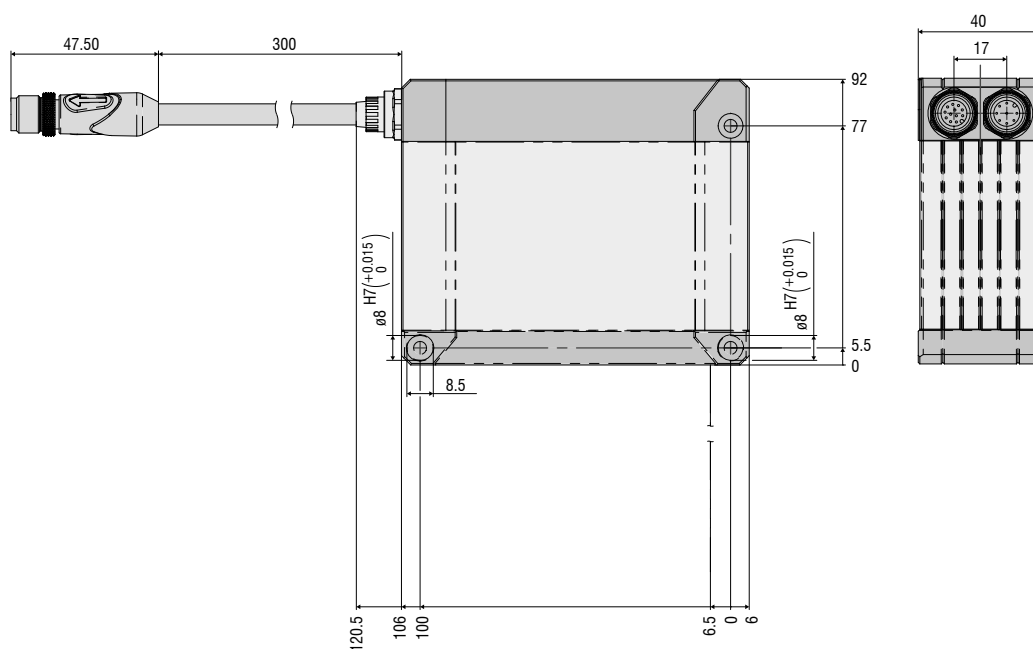
Cable outlet on the rear side ("Rear Tail") for space-saving installation

- Available for the measuring ranges from 25 to 200 mm
- 30 cm pigtail
- Reduces the installation height by 47%



Standard

Option /RT



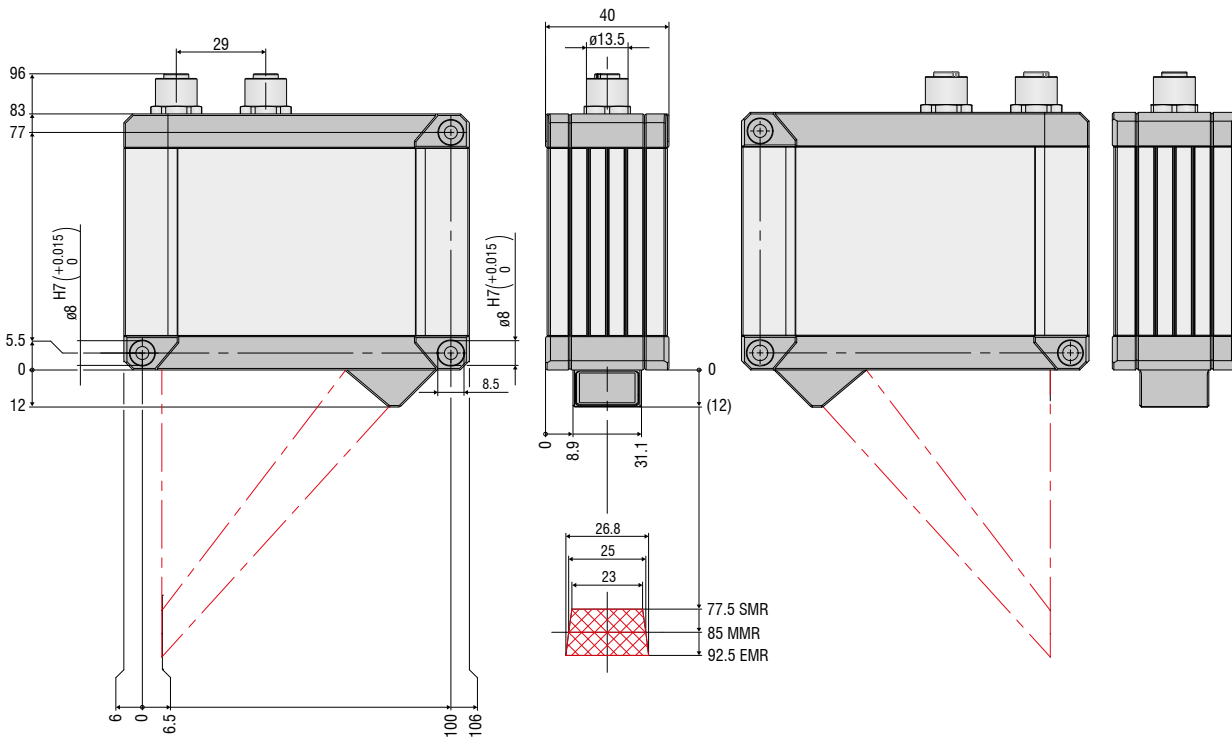
# Dimensions and measuring ranges

## scanCONTROL 30xx

LLT30x2-25 / LLT30x0-25

Red Laser

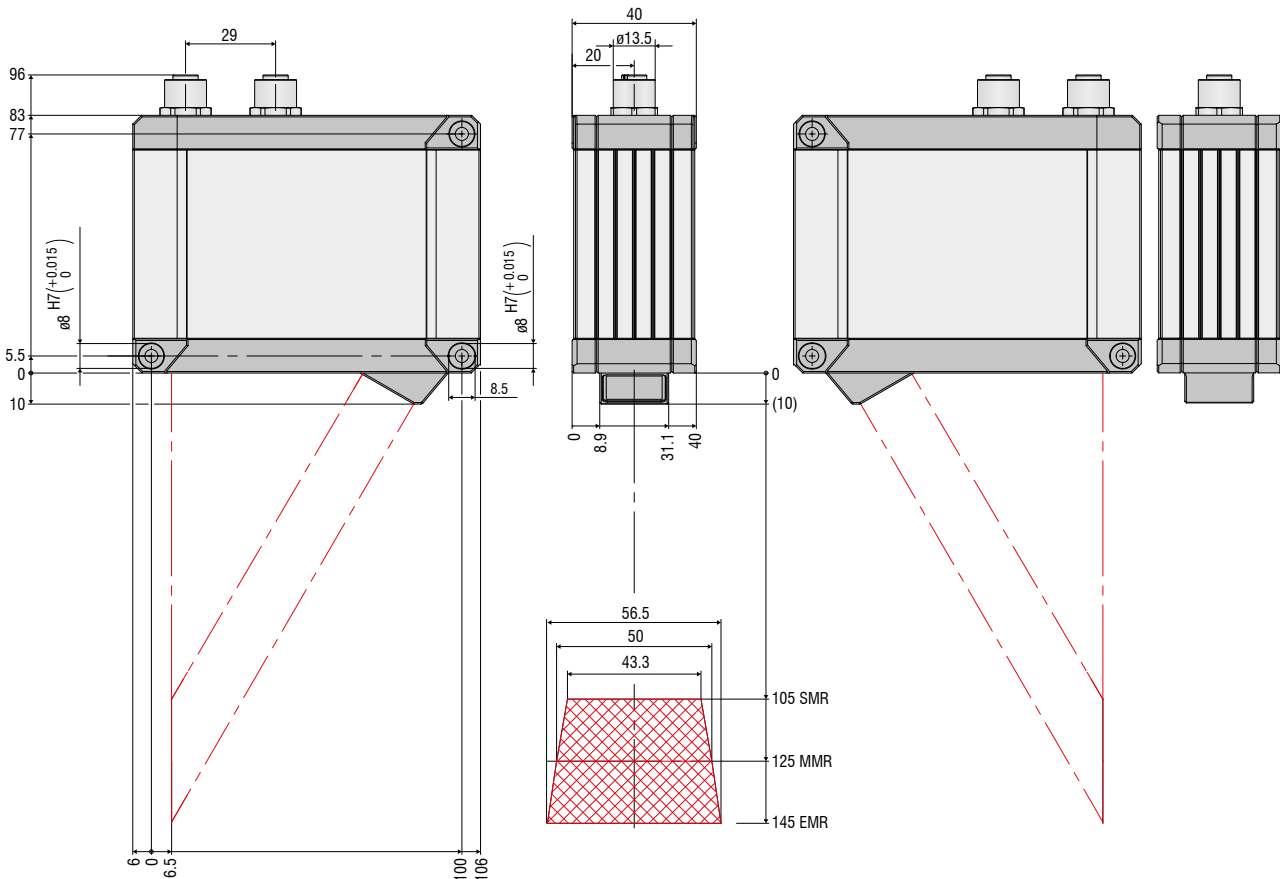
Blue Laser



LLT30x2-50 / LLT30x0-50

Red Laser

Blue Laser



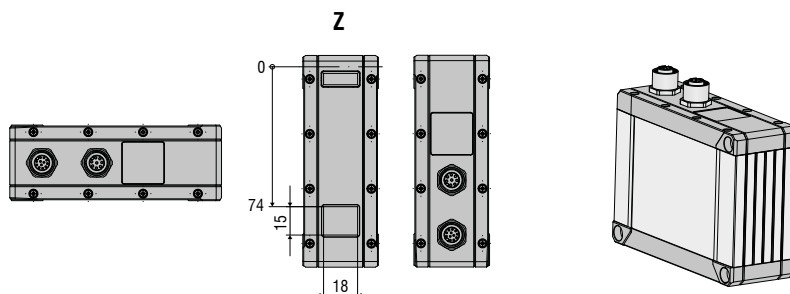
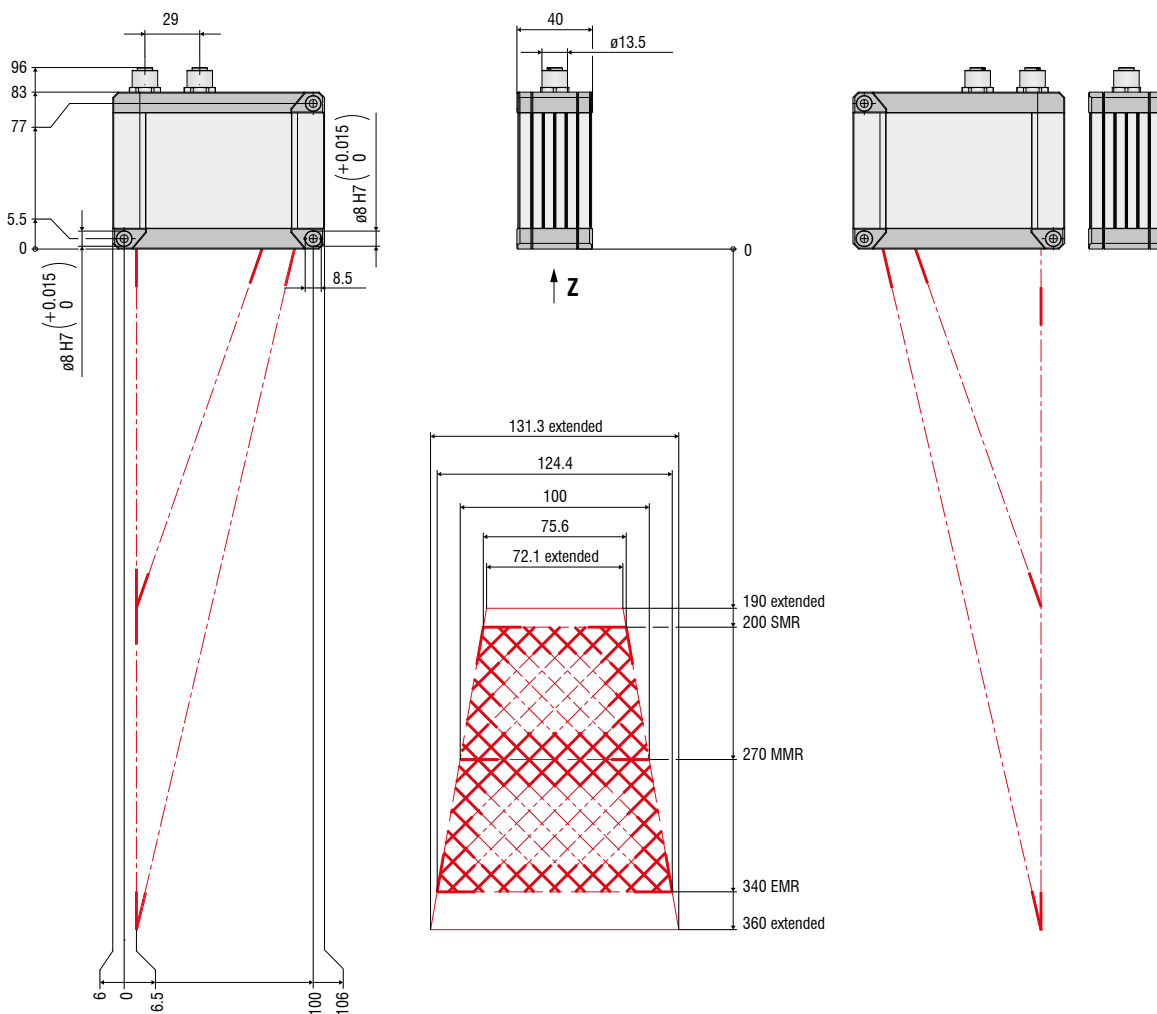
# Dimensions and measuring ranges

## scanCONTROL 30xx

LLT30x2-100 / LLT30x0-100

Red Laser

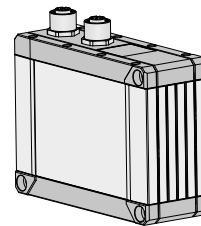
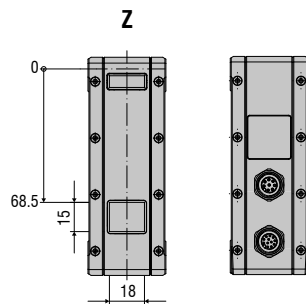
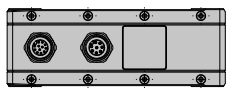
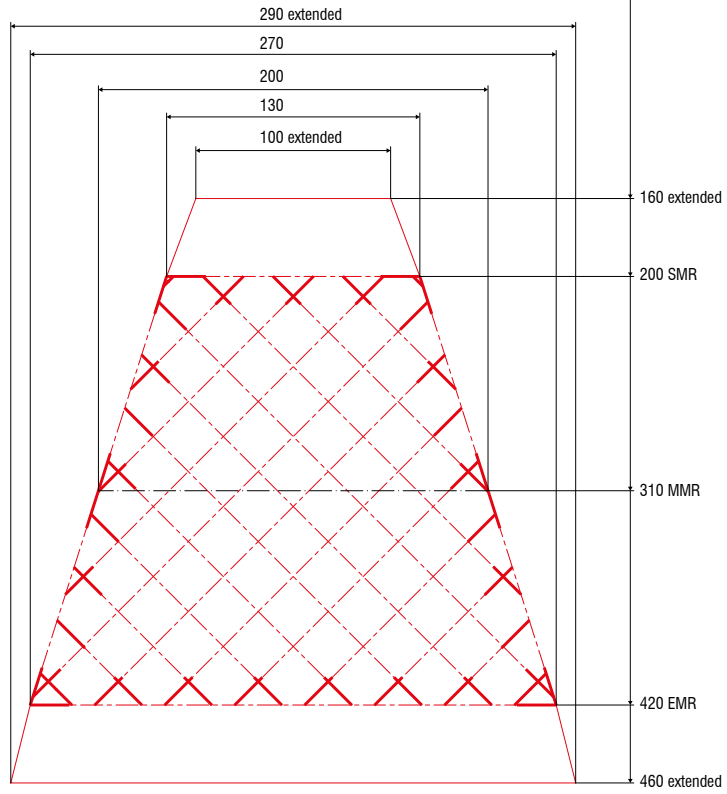
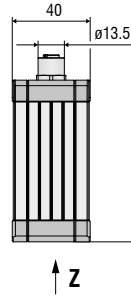
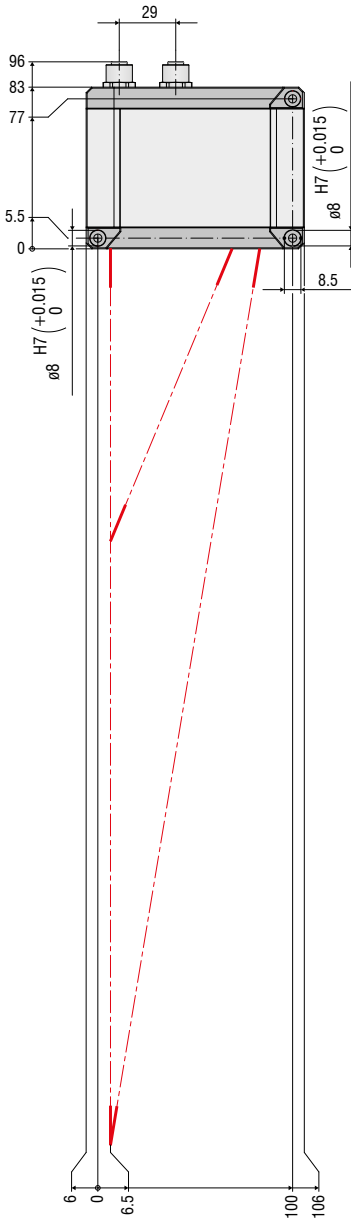
Blue Laser





LLT30x2-200 / LLT30x0-200

Red Laser

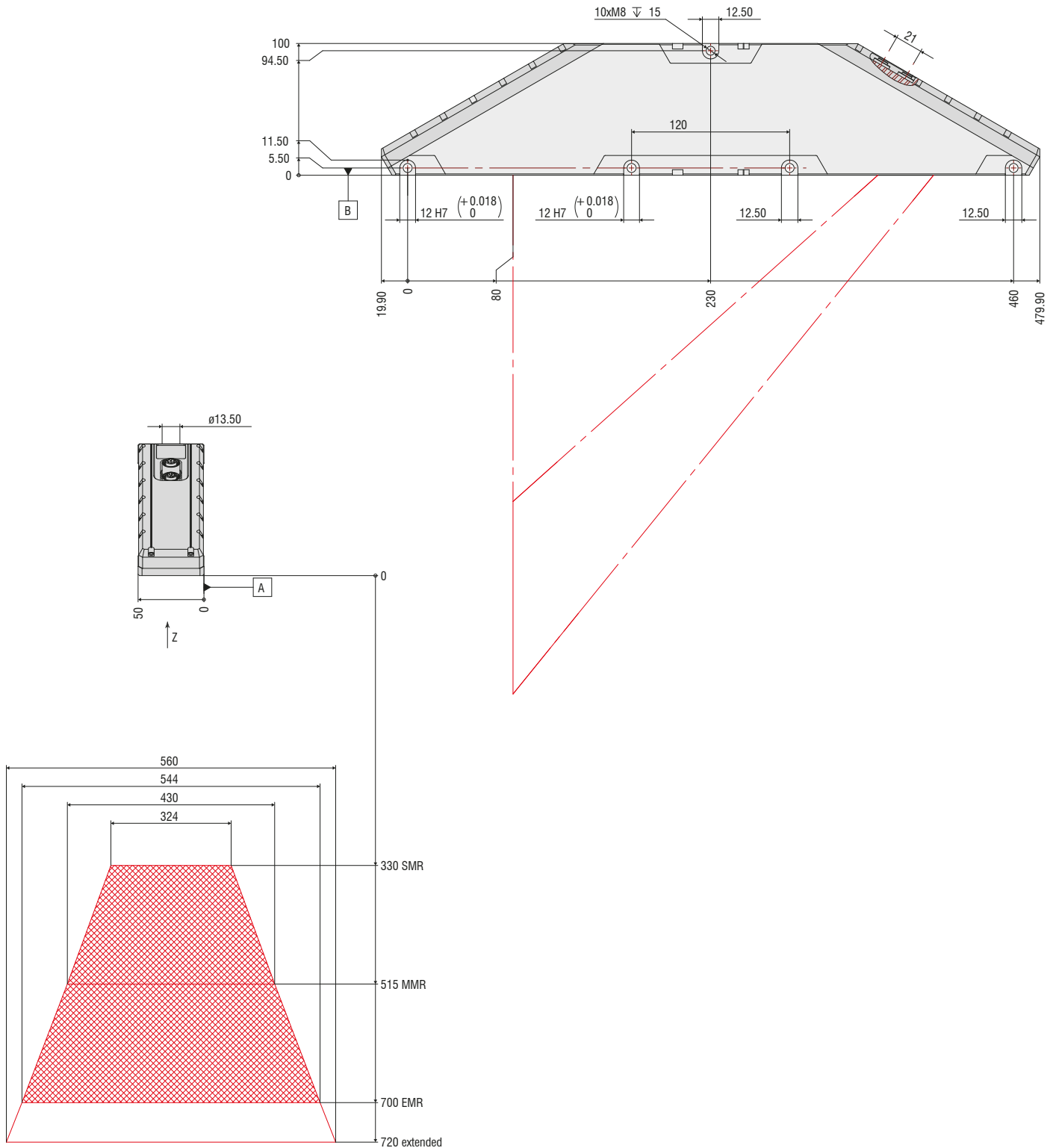


# Dimensions and measuring ranges

## scanCONTROL 30xx

LLT30x2-430 / LLT30x0-430

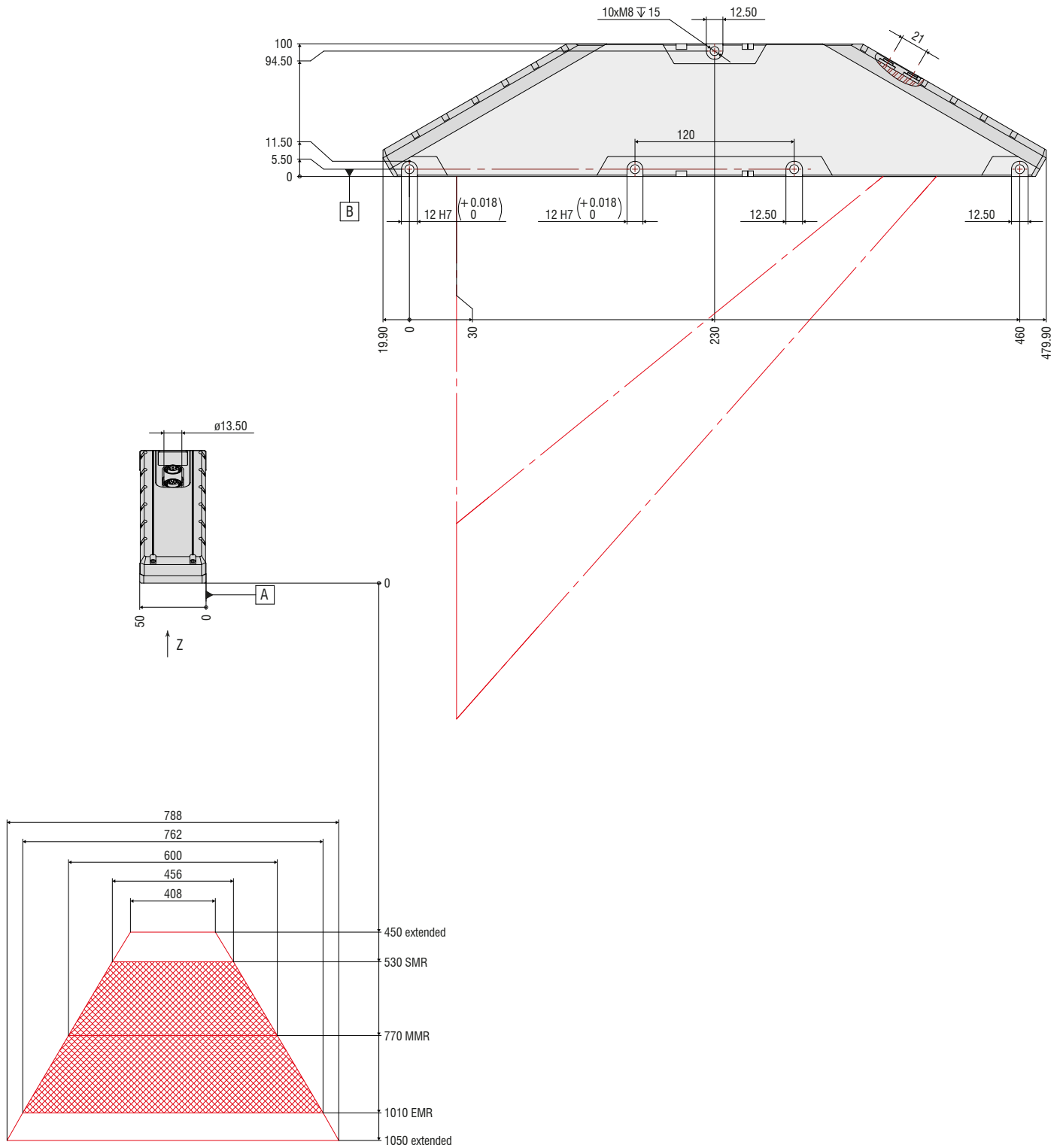
Red Laser



(dimensions in mm, not to scale)

LLT30x2-600 / LLT30x0-600

Red Laser



(dimensions in mm, not to scale)

## 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

