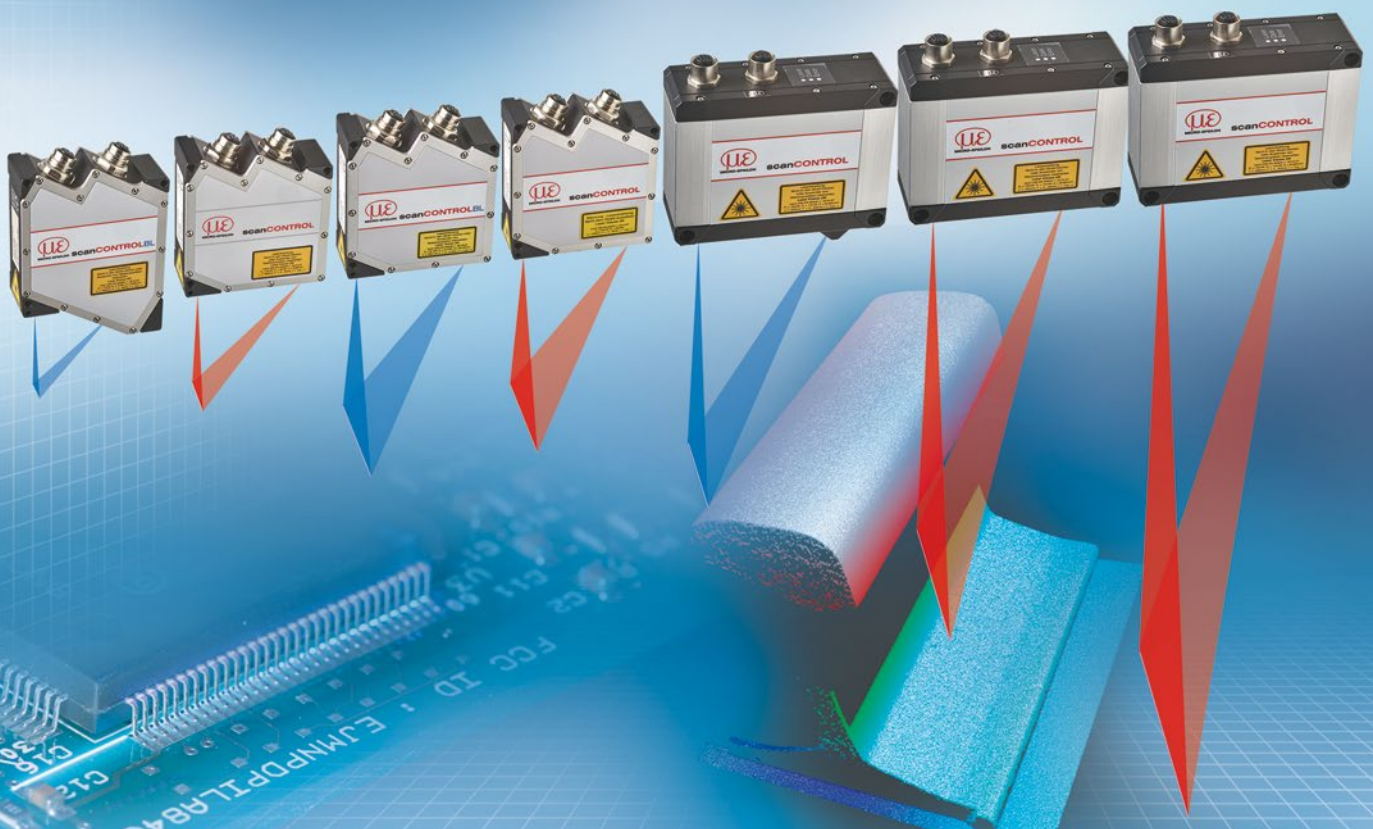




More Precision

scanCONTROL // 2D/3D Laser profile sensors





- Precise profile measurements for industrial measurement tasks
- Resolution (x-axis) 1,024 points
- Profile frequency 5,000 Hz
- For small and large measuring ranges
- Also available with patented Blue Laser Technology

Precise 2D/3D profile measurements

The new LLT30x2 laser profile scanners provide calibrated profile data with up to 5.12 million points per second. They allow profile frequencies up to 5 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 COMPACT and SMART versions

The scanCONTROL 30x2 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 30x2 series supports all SMART functions and programs that are set in the scanCONTROL Configuration Tools software and directly stored in the internal controller.

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.

Article designation

LLT	30	xx	-25	/SI	
Options - see below					
Measuring range					
25 mm					
50 mm					
100 mm					
200 mm					
Class					
02 = COMPACT					
12 = 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 output options*

	/PT	Cable directly out of the sensor ("Pigtail") Available lengths: 0.3 / 0.6 / 1 m
	/ST	1 cable directly out of the sensor ("Single Tail"), no multi-function port Available lengths: 0.3 / 0.6 / 1.00 m

*Options can be combined

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
	Max. deviation of a single point ¹⁾ (2 sigma)	Red Laser	±0.09 %	±0.09 %	±0.08 %	±0.12 %
		Blue Laser	±0.08 %	±0.08 %	±0.07 %	-
	Line linearity ¹⁾²⁾		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 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		1,024 points/profile			
Profile frequency		up to 5,000 Hz				
Interfaces	Ethernet GigE Vison	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		≤ 10 mW		≤ 12 mW		
	Red Laser	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 (1,024 points)

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

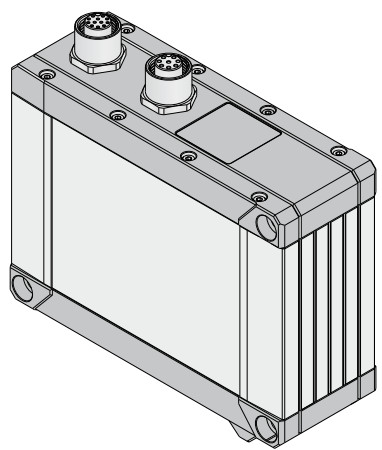
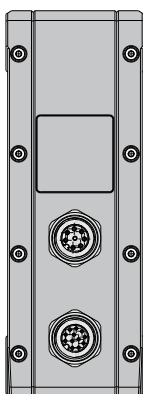
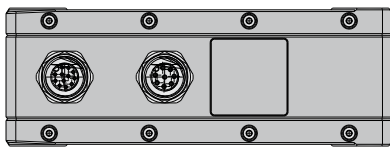
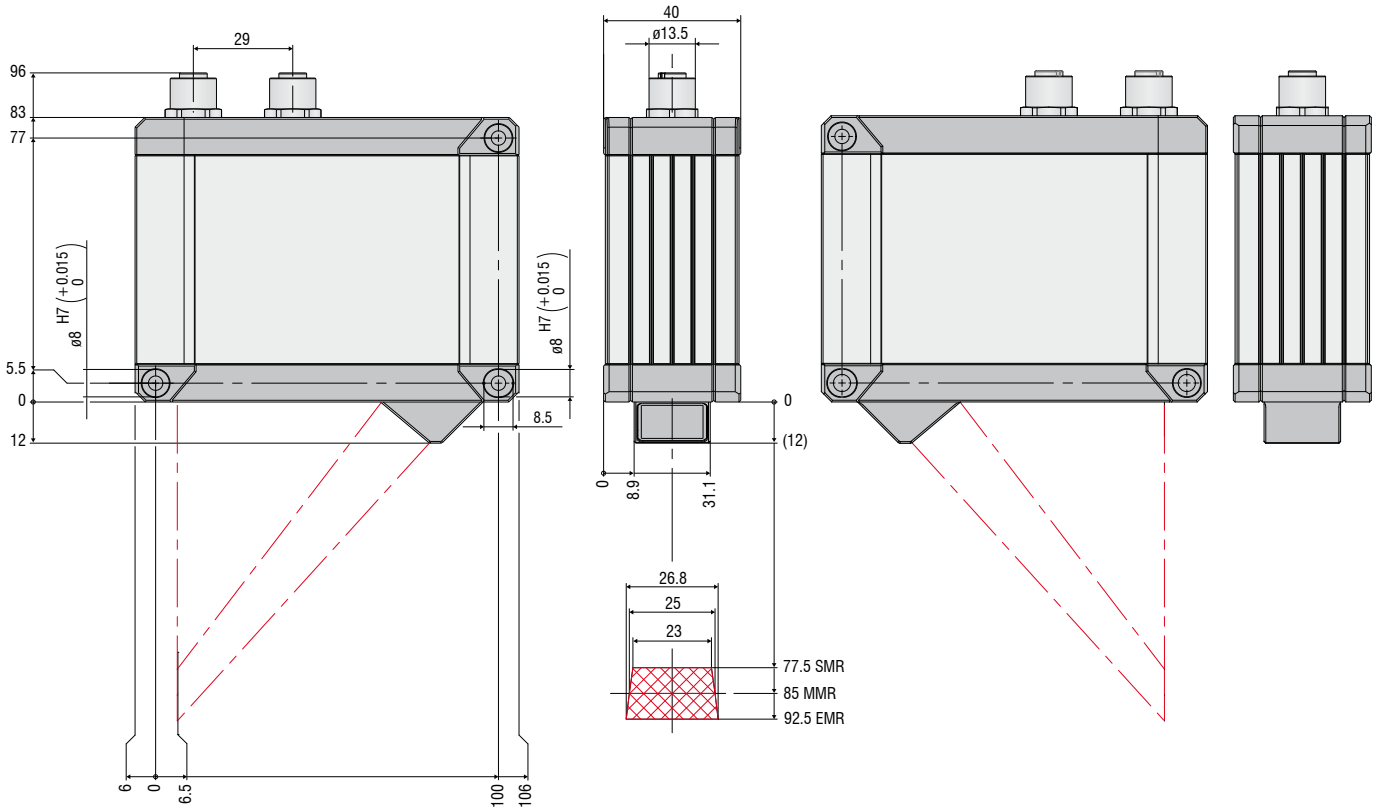
⁴⁾ Only with 2D/3D Output Unit

⁵⁾ Only with 2D/3D Gateway

LLT30x2-25 / LLT30x0-25

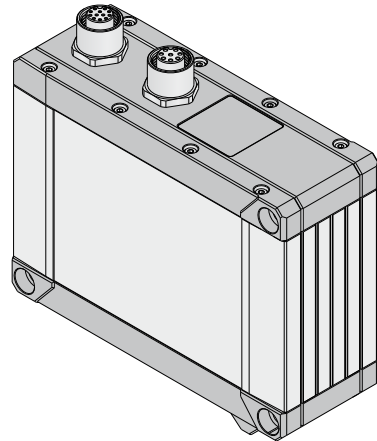
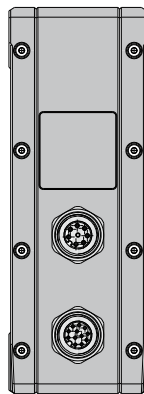
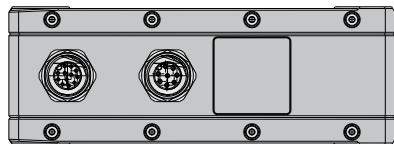
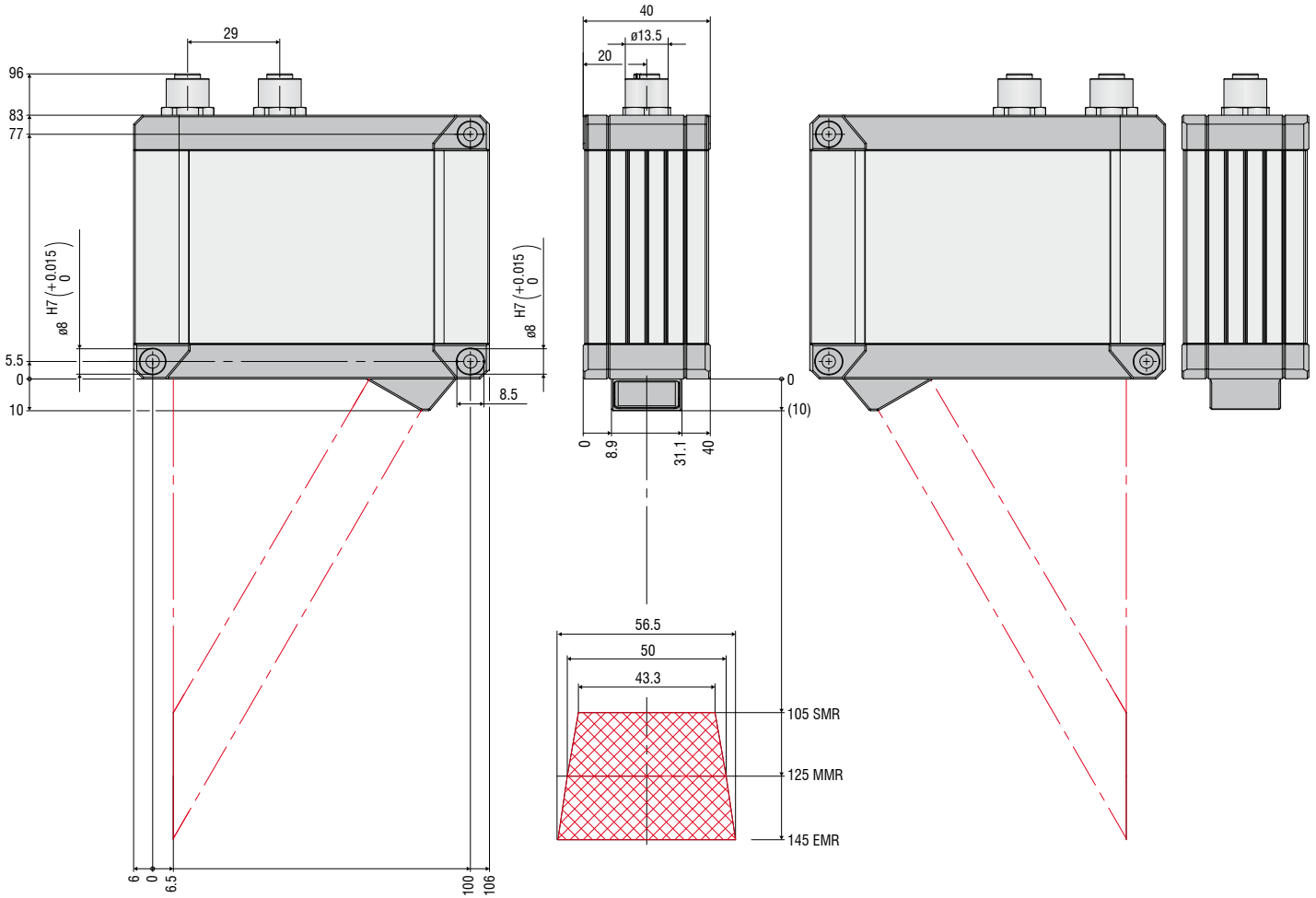
Red Laser

Blue Laser



LLT30x2-50 / LLT30x0-50

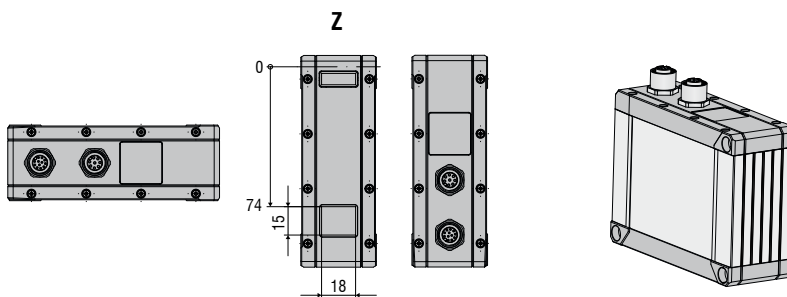
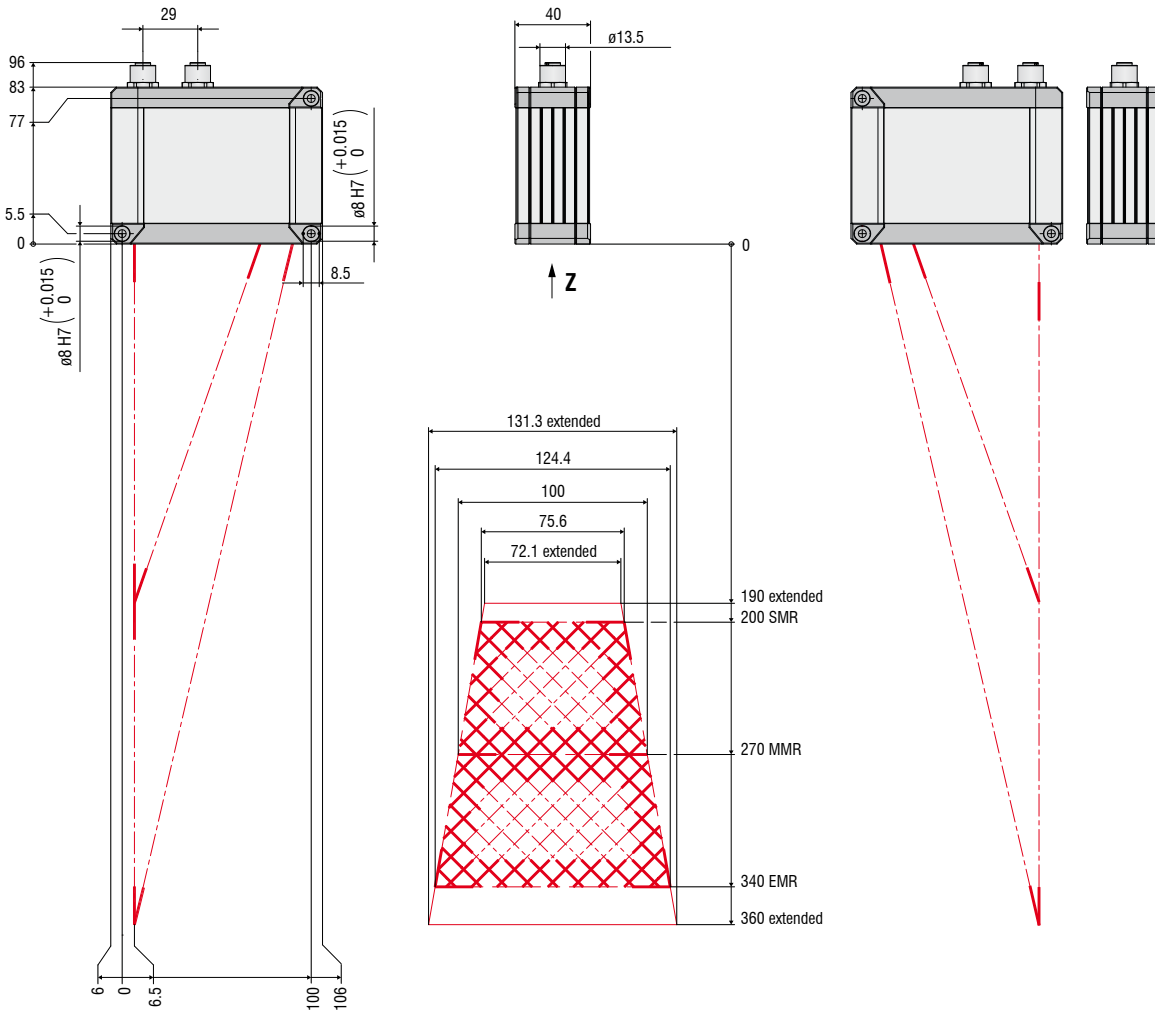
Red Laser Blue Laser



LLT30x2-100 / LLT30x0-100

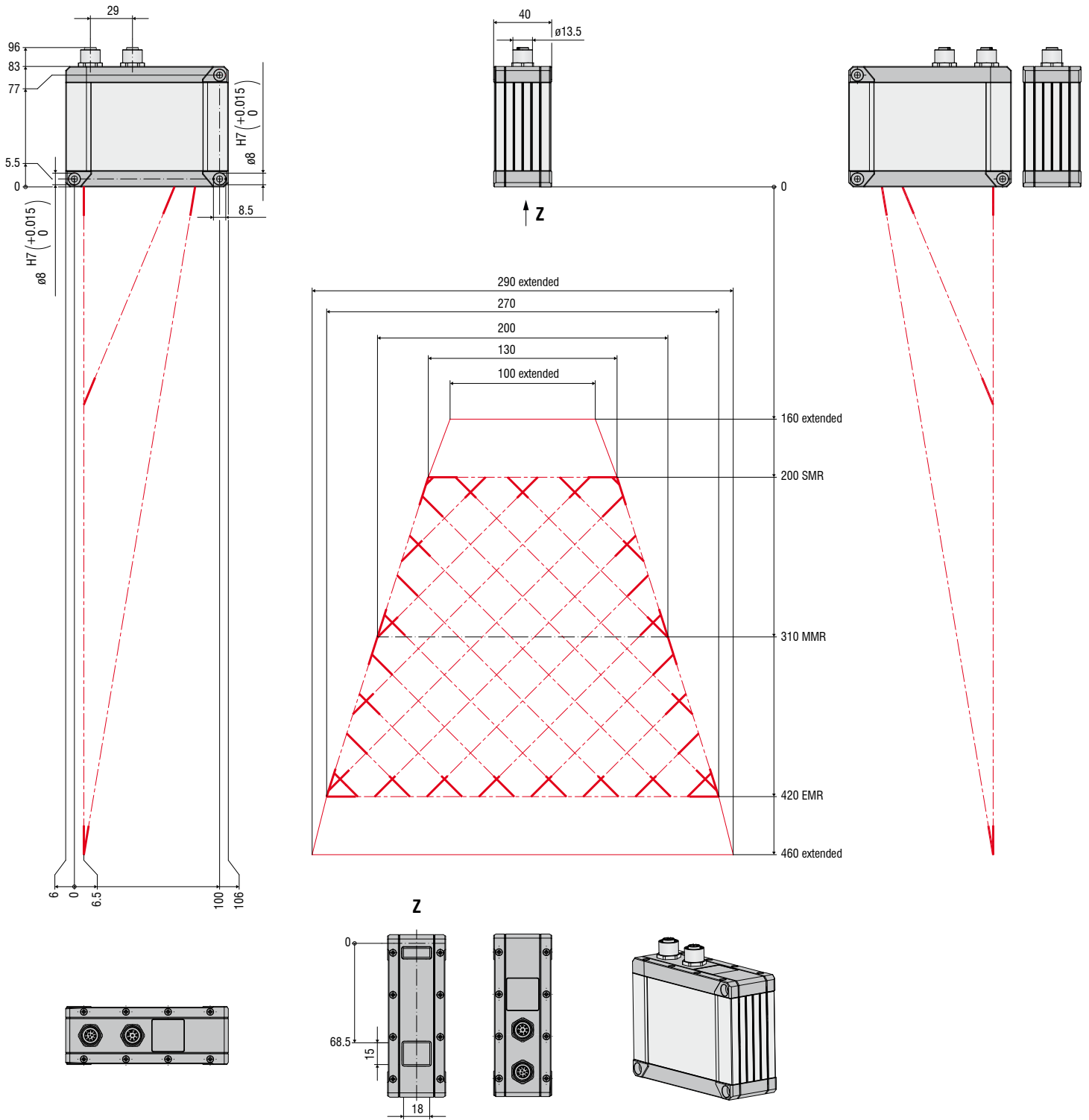
Red Laser

Blue Laser



LLT30x2-200 / LLT30x0-200

Red Laser



2D/3D Gateway

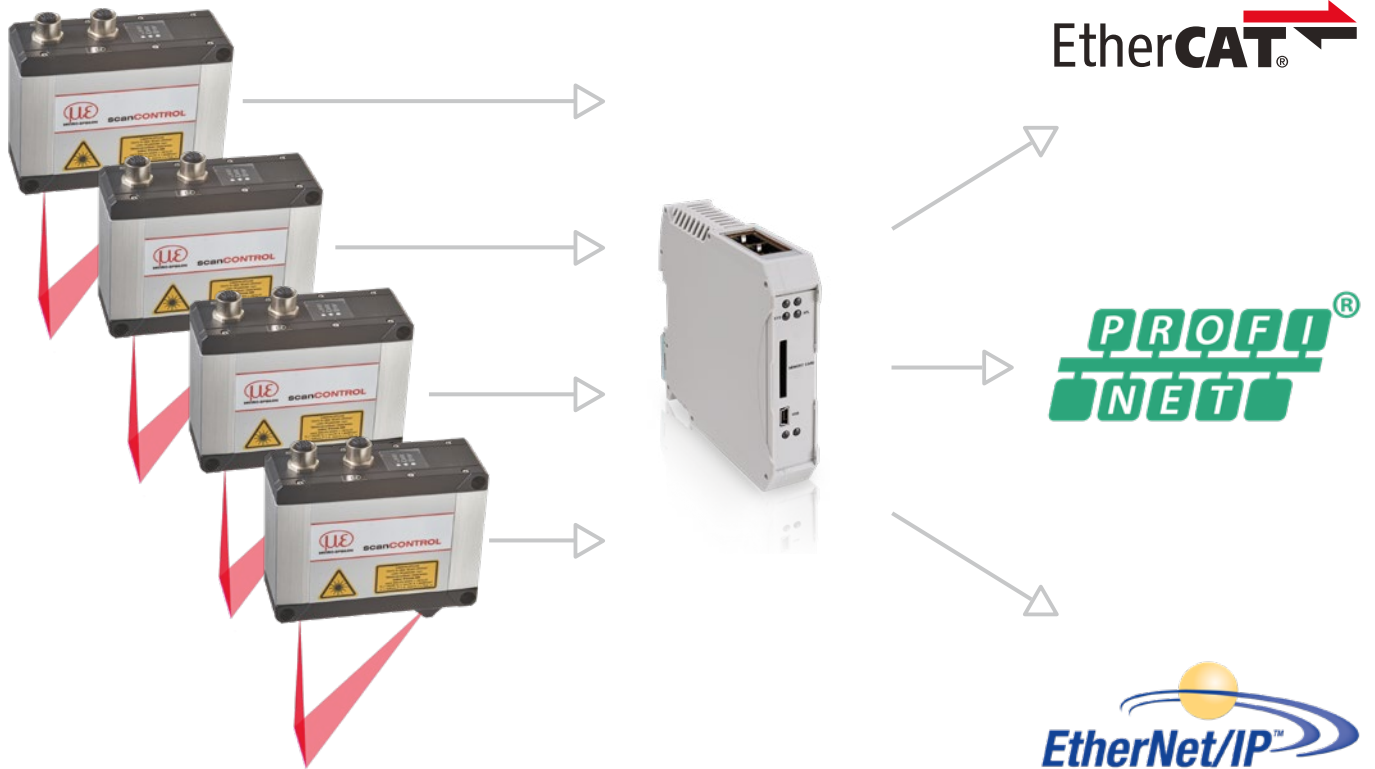
PROFINET / EtherCAT / EtherNet/IP for all SMART scanners

One 2D/3D Gateway is connectable with up to 4 sensors. Operation of more than one sensor requires a switch. The 2D/3D Gateway communicates with the scanCONTROL SMART sensor via Ethernet Modbus. The resultant values are then converted to PROFINET, EtherCAT or EtherNet/IP. The customer carries out the parameter setup with a detailed instruction manual. The gateway can also be parameterized in advance at the factory.

Models

6414142	2D/3D Gateway	Fieldbus coupler, configurable for PROFINET, EtherNet/IP and EtherCAT
6414142.001	2D/3D Gateway, pre-parameterized	Pre-parameterized to customer log and IP addresses
6411168	scanCONTROL SPU Switch, 5 ports	Industrial Ethernet Switch (unmanaged) for DIN rail, 10/100/1000 Mbit/s, 5 ports
6411167	scanCONTROL SPU Switch, 8 ports	Industrial Ethernet Switch (unmanaged) for DIN rail, 10/100/1000 Mbit/s, 8 ports

Number of sensors on the gateway	Maximum measurement frequency
1	500 Hz
2	500 Hz
3	330 Hz
4	250 Hz



2D/3D Output Unit

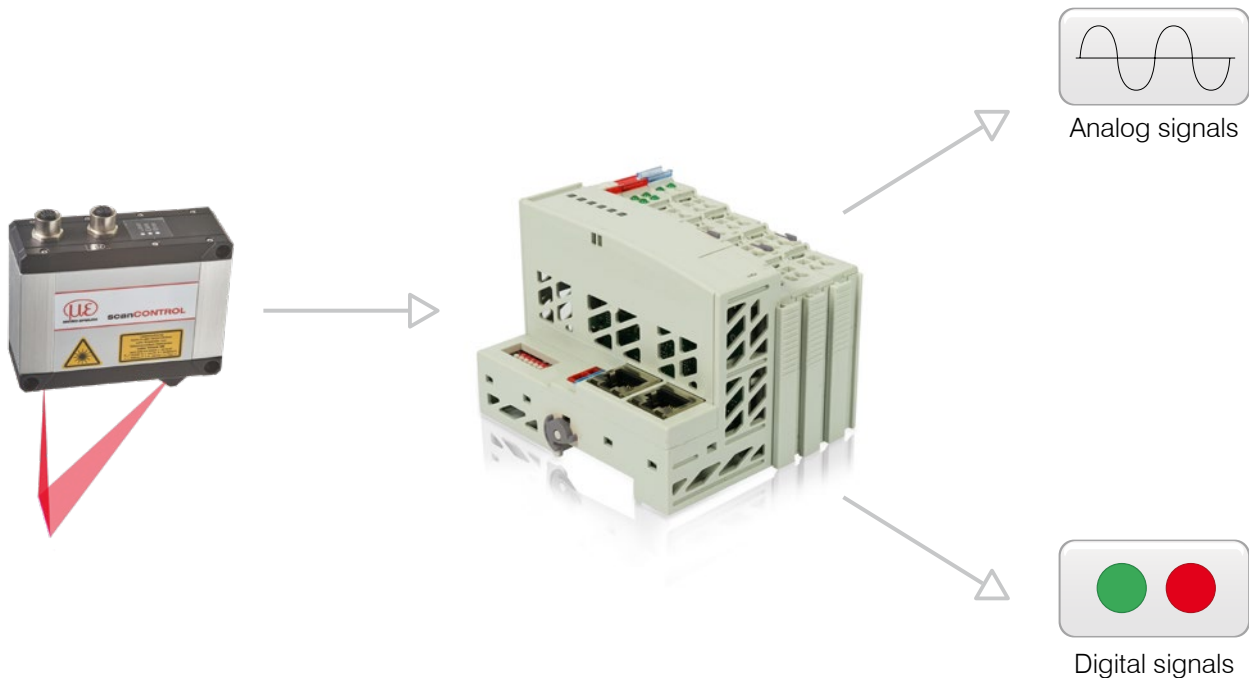
Analog signals / digital switch signals for all **SMART** scanners

The 2D/3D Output Unit is addressed via Ethernet and outputs analog and digital signals. Different output terminals can be connected to the fieldbus coupler.

Models

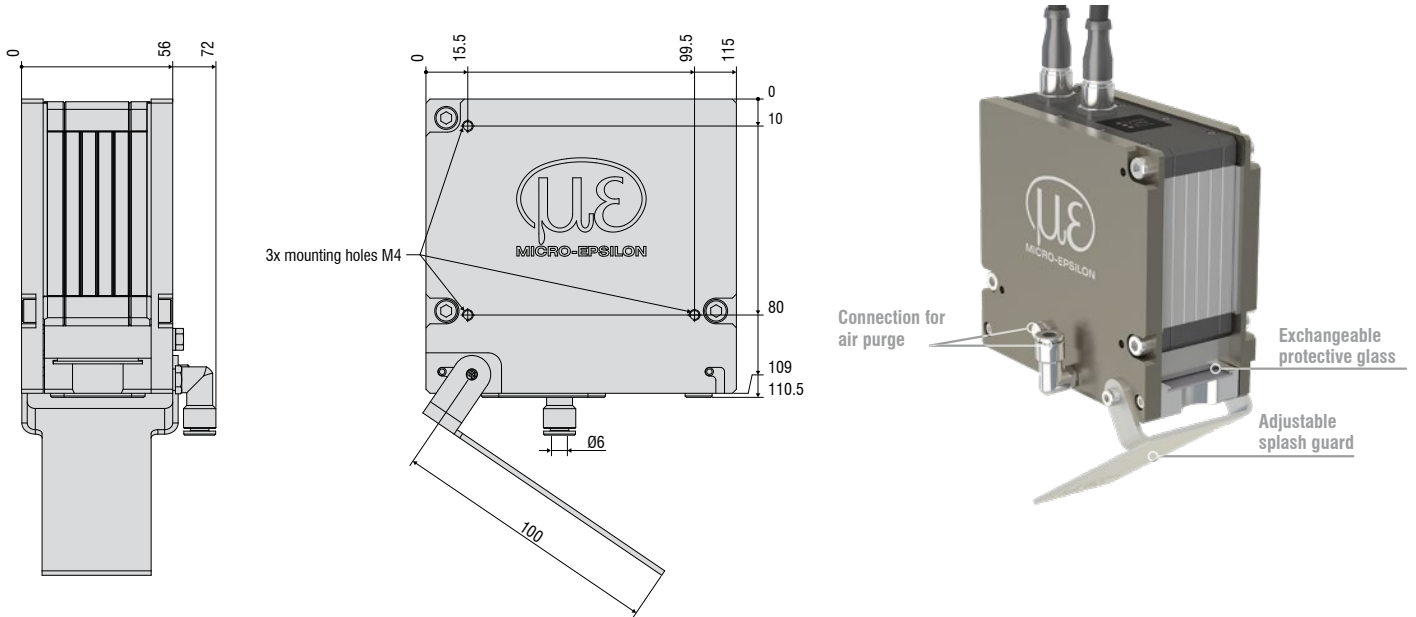
6414073	2D/3D Output Unit Basic/ET	Fieldbus coupler with filter module and bus end terminal
0325131	OU-DigitalOut/8-channel/DC24V/0.5A/negative	8-channel digital output terminal; DC 24 V; 0.5 A; negative switching
0325115	OU-DigitalOut/8-channel/DC24V/0.5A/positive	8-channel digital output terminal; DC 24 V; 0.5 A; positive switching
0325116	OU-AnalogOut/4-channel/ ± 10 V	4-channel analog output terminal; ± 10 V
0325135	OU-AnalogOut/4-channel/0-10V	4-channel analog output terminal; 0-10V
0325132	OU-AnalogOut/4-channel/0-20mA	4-channel analog output terminal; 0-20 mA
0325133	OU-AnalogOut/4-channel/4-20mA	4-channel analog output terminal; 4-20 mA

Other terminals available on request.

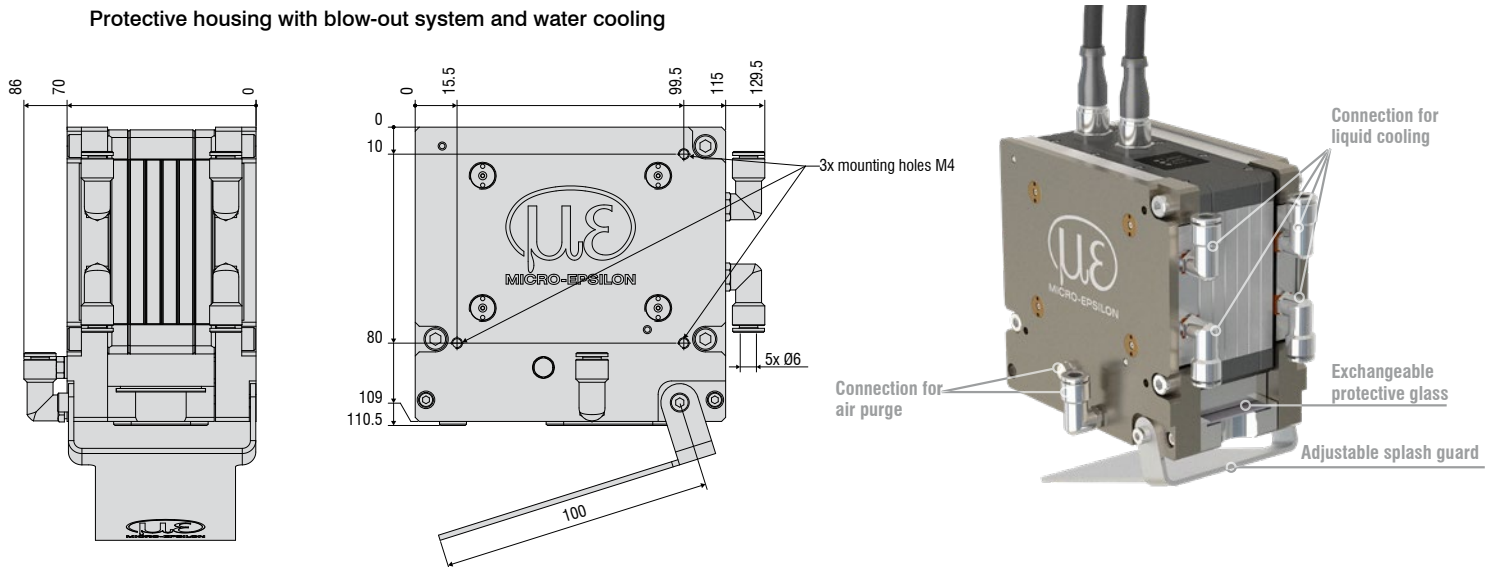


Protection and cooling housing for LLT30xx

Protective housing with blow-out system



Protective housing with blow-out system and water cooling



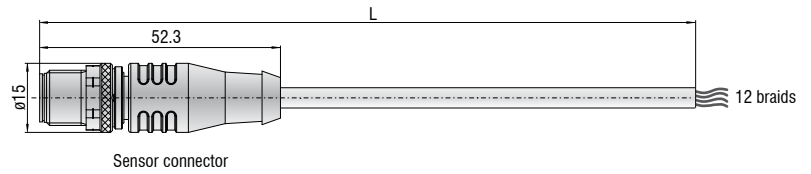
Art. no.	Model
2105076	Protective housing for LLT30 series
2105077	Protective cooling housing for LLT30 series
0755083	Exchangeable glass for protective housing LLT30

Description
Adaptive protective housing for LLT30xx
Adaptive protective and cooling housing for scanCONTROL 30xx
Exchangeable glass for protection/cooling concept LLT30, packaging unit 30 pcs.

Connection cables

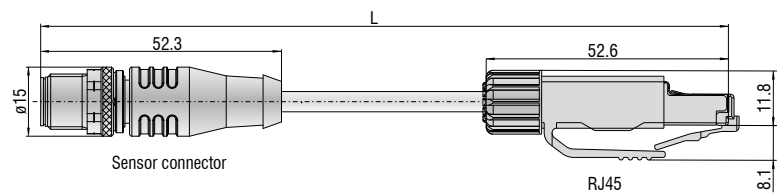
PCR3000-x Multi-function cable

Cable for power supply, digital inputs;
suitable for drag chains and robots
(TTL or HTL), RS422 (half-duplex)
Cable length (m): 2 / 5 / 10 / 15 / 20 / 25 / 35



SCR3000A-x Ethernet connection cable

Cable for parameter setting, value and profile transmission;
suitable for drag chains and robots
Cable length (m): 0.5 / 2 / 5 / 10 / 15 / 20 / 25 / 35



Other accessories

Art. no.	Model	Description
0323478	Connector/12-pin/Multifunction for LLT25/26/29/30 series	Plug for multifunction port
0323479	Connector/8-pin/Ethernet for LLT25/26/29/30 series	Plug for Ethernet socket
2420067	PS25/29/30	Power supply unit for scanCONTROL
0254111	Case for LLT25/26/29/30 series	Transport case for scanCONTROL sensors incl. measuring stand
2960097	Measuring stand for LLT25/26/29/30	Measuring stand with sensor adapter board, flexible rod and clamp base