MICRO-EPSILON

More Precision

scanCONTROL // 2D/3D Laser profile sensors

Compact laser scanner with high precision
scanCONTROL 29x0

- Ideal for precise 2D/3D measurements
- Resolution (x-axis) 1,280 points
- High accuracy for the detection of finest details
- Profile frequency up to 2,000 Hz
- Also available with patented Blue Laser Technology
- Compatible with COGNEX® VisionPro

Compact design for precise measurements

scanCONTROL 29x0 laser scanners are designed for industrial measurement tasks where compact design and high accuracy are required. Thanks to their high resolution, versatility and excellent price-performance ratio, the scanners are particularly suitable for static and dynamic applications, e.g., on robots. They measure and evaluate, e.g., angles, steps, gaps, distances and extreme values.

Available as PROFILE and SMART versions

The scanCONTROL 29x0 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. SMART scanners operate autonomously and provide selected measurement values. The sensor parameters and the desired measuring programs are set in the scanCONTROL Configuration Tools software and directly stored in the internal controller.

Small measuring range with high resolution

With a laser line of just 10 mm, the scanCONTROL 29x0-10/BL models recognize the finest of details and structures. The high profile resolution combined with the blue laser line allow for maximum precision in versatile applications, e.g., monitoring in electronics production.

Article designation

LLT	29	00	-25	/SI

Options - see below

Measuring range
10 mm (only Blue Laser)
25 mm
50 mm
100 mm

Class
00=PROFILE
10=SMART
50=HIGHSPEED
60=HIGHSPEED SMART

Series
LLT29x0

Laser options*

/SI	Hardware switch-off of the laser line
/3B	Increased laser power (class 3B, ≤ 20 mW), e.g., for dark surfaces
/BL	Blue laser line (405 nm) for (semi-) transparent, red-hot glowing and organic materials

Cable outlet options*

/PT	Cable directly out of the sensor ("Pigtail") Length 0.3 m
/VT	Cable directly out of the sensor ("Variable Tail") Length 0.1 ... 1.0 m (freely selectable)

*Options can be combined

Accessories from page 42

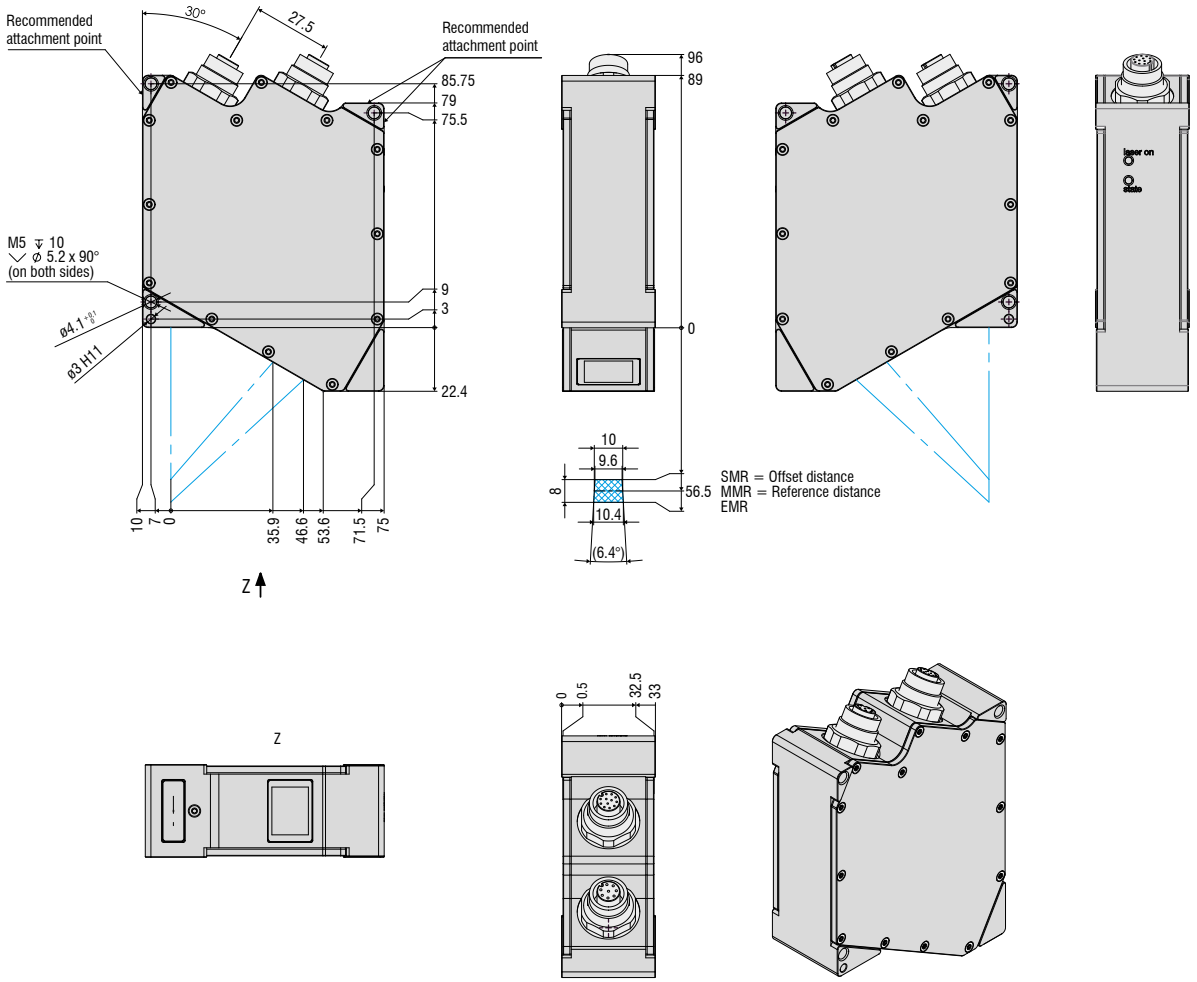
	Model		LLT29x0-10/BL	LLT 29xx-25	LLT 29xx-50	LLT 29xx-100
	Available laser type		Blue Laser	Red Laser Blue Laser	Red Laser Blue Laser	Red Laser Blue Laser
z-axis	Measuring range	Start of measuring range	52.5 mm	53.5 mm	70 mm	190 mm
		Mid of measuring range	56.5 mm	66 mm	95 mm	240 mm
		End of measuring range	60.5 mm	78.5 mm	120 mm	290 mm
		Height of measuring range	8 mm	25 mm	50 mm	100 mm
	Extended measuring range	Start of measuring range	-	53 mm	65 mm	125 mm
		End of measuring range	-	79 mm	125 mm	390 mm
	Line linearity [1) 2)]		1 µm	2 µm	4 µm	12 µm
			±0.0125 %	±0.008 %	±0.008 %	±0.012 %
x-axis	Measuring range	Start of measuring range	9.4 mm	23.4 mm	42 mm	83.1 mm
		Mid of measuring range	10 mm	25 mm	50 mm	100 mm
		End of measuring range	10.7 mm	29.1 mm	58 mm	120.8 mm
	Extended measuring range	Start of measuring range	-	23.2 mm	40 mm	58.5 mm
		End of measuring range	-	29.3 mm	60 mm	143.5 mm
	Resolution		1,280 points/profile			
	Profile frequency	Standard	up to 300 Hz			
		High speed	up to 2000 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	-	≤ 8 mW		
			-	Standard: laser class 2M, semiconductor laser 658 nm		
			-	≤ 20 mW		
			-	Option: laser class 3B, semiconductor laser 658 nm		
		Blue Laser	≤ 8 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		10°	20°	25°	25°
	Permissible ambient light	(fluorescent light) [1)]	10,000 lx			
	Protection class (DIN EN 60529)		IP65 (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		440 g (without cable)	380 g (without cable)		
	Supply voltage		11 … 30 VDC, nominal value 24 V, 500 mA, IEEE 802.3af class 2, Power over Ethernet (PoE)			

[1)] Based on the measuring range; measuring object: Micro-Epsilon standard object
[2)] According to a one-time averaging over the measuring field (640 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

Dimensions and measuring ranges
scanCONTROL

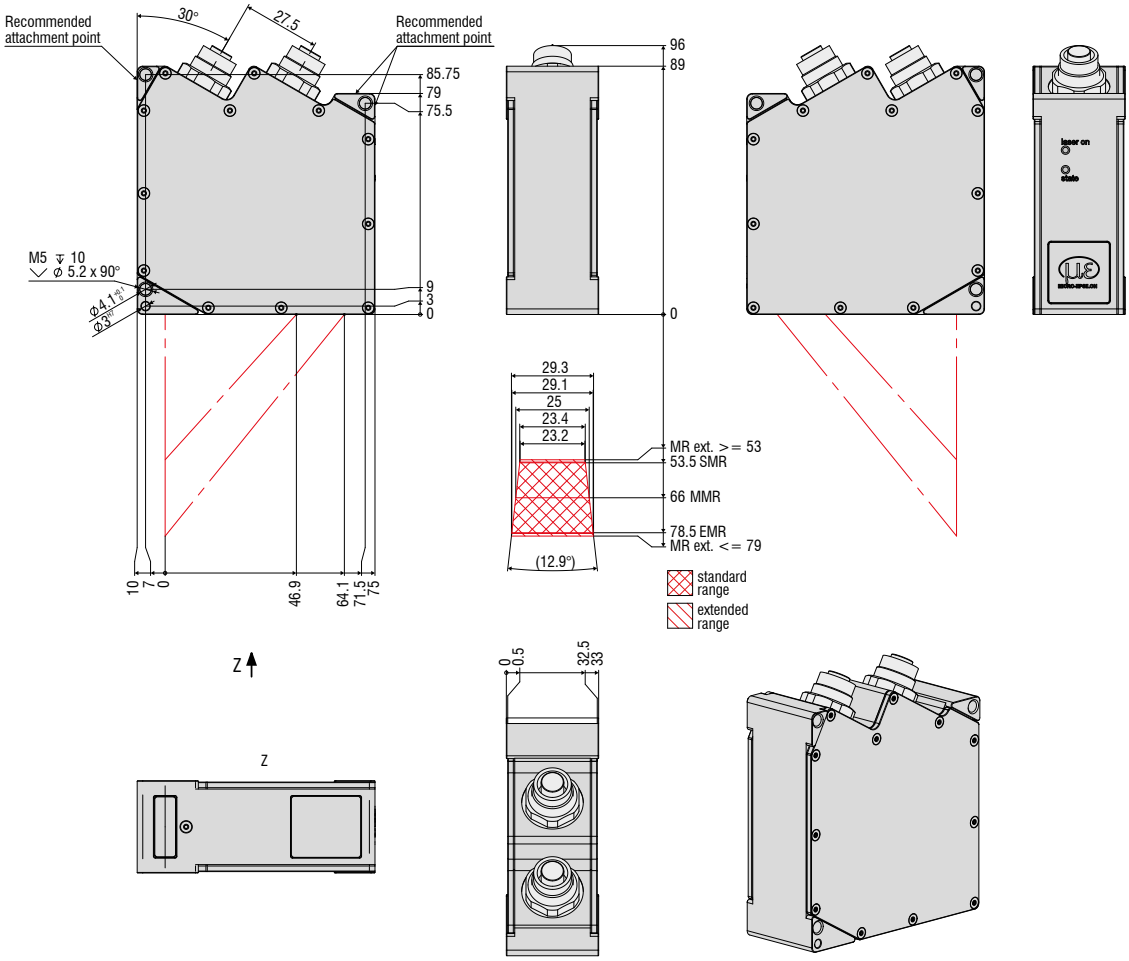
LLT29x0-10/BL

Blue Laser



LLT25x0-25 / LLT29x0-25

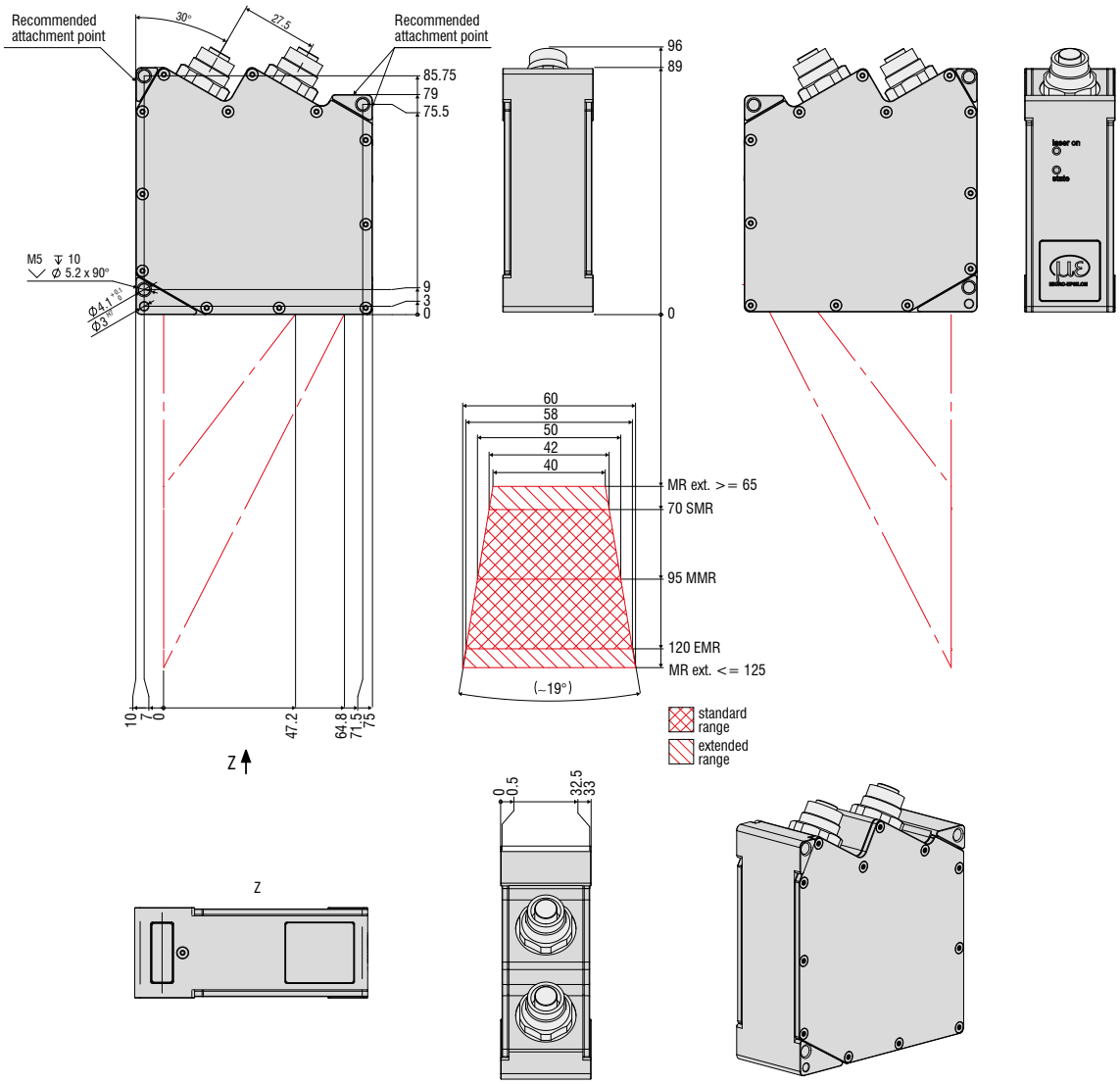
Red Laser | Blue Laser



Dimensions and measuring ranges
scanCONTROL

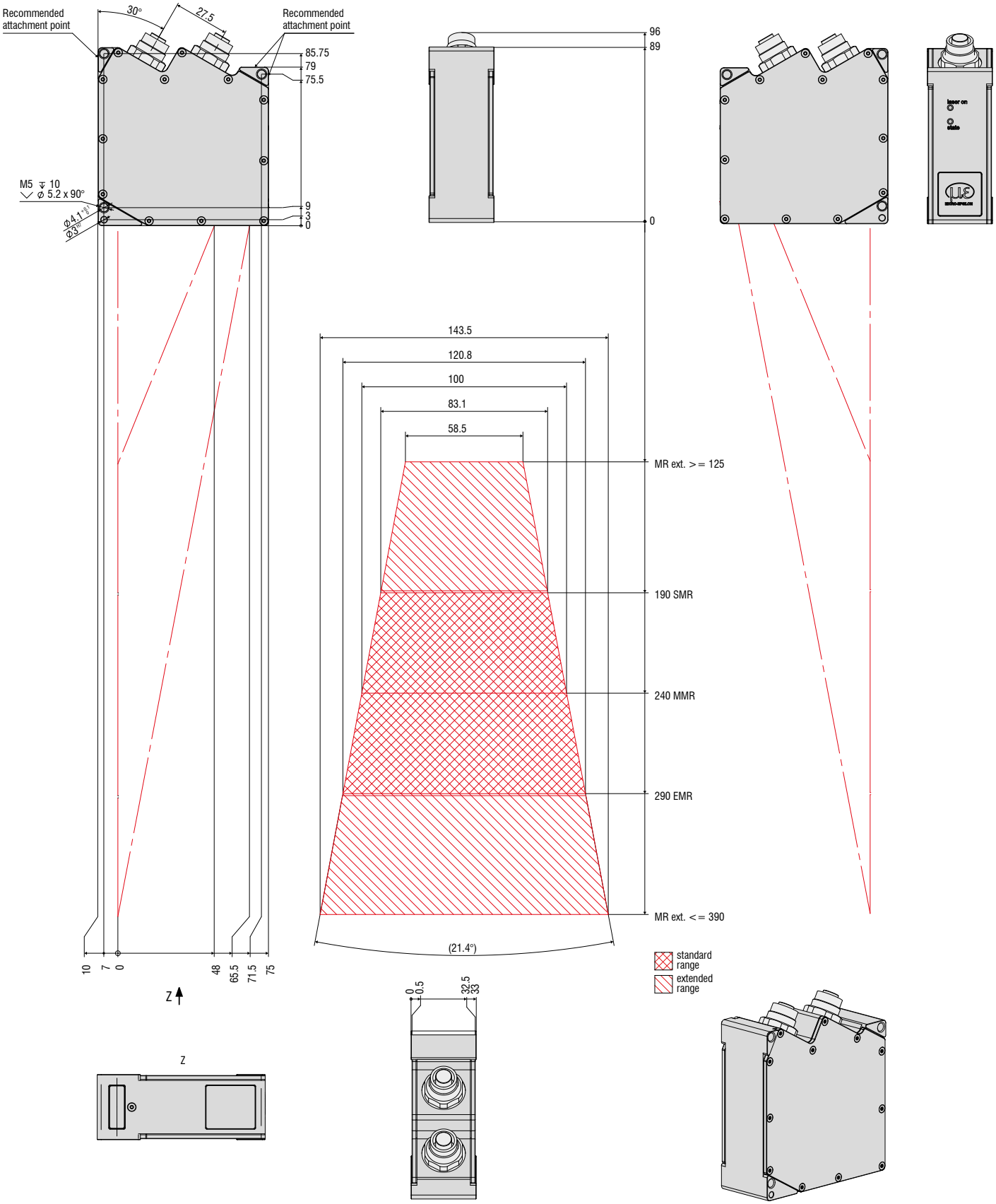
LLT25x0-50 / LLT29x0-50

Red Laser | Blue Laser



LLT25x0 / LLT29x0-100

Red Laser Blue Laser

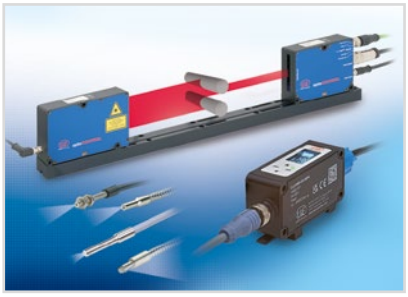


Sensors and Systems from Micro-Epsilon

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

Modifications reserved / Y9761353-G092044GKE

MICRO-EPSILON

MICRO-EPSILON Headquarters
Koenigbacher Str. 15 · 94496 Ortenburg / Germany
Tel. +49 (0) 8542 / 168-0 · Fax +49 (0) 8542 / 168-90
info@micro-epsilon.com · **www.micro-epsilon.com**

Download catalog: