



More Precision

scan**CONTROL** 29xx-10/BL // laser scanner with blue laser line





- z-axis measuring range up to 8mm
- x-axis measuring range up to 10.4mm
- Profile frequency up to 2,000Hz
- Measuring rate up to 2,560,000 points/sec
- z-axis reference resolution from 1µm
- Resolution x-axis up to 1,280 points

Short measuring range

The laser line of only 10mm enables to reliably detect smallest details. The high profile resolution combined with the blue laser line allows for maximum precision destined for versatile applications, e.g. in the electronics production.

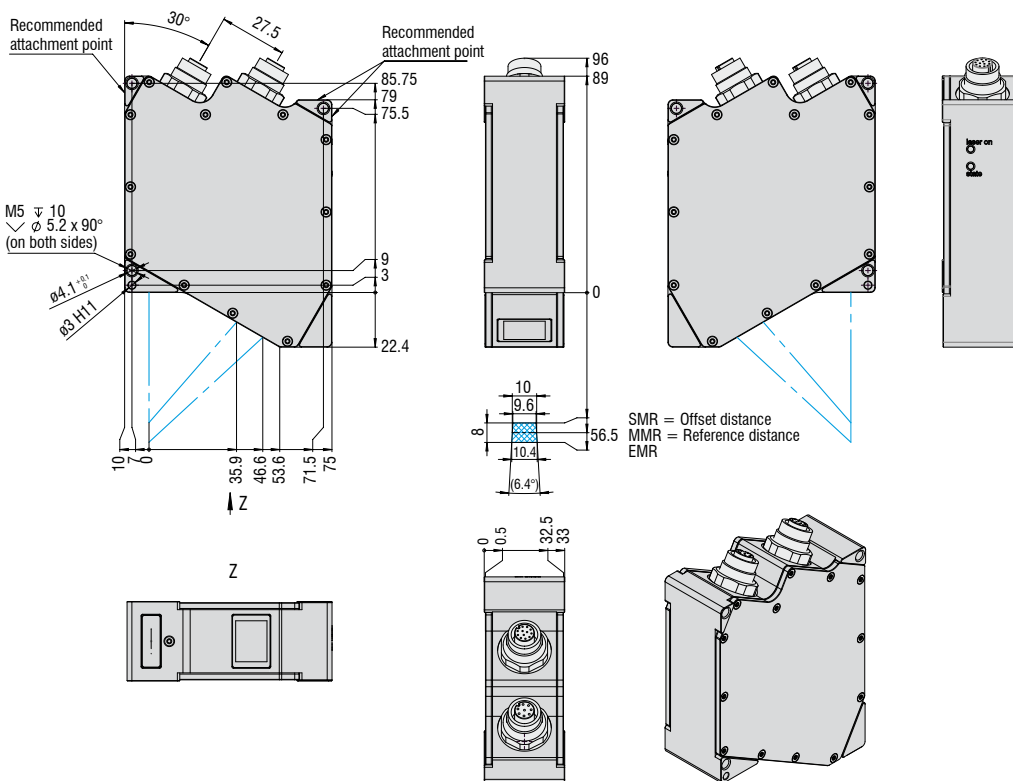
Different product series

The **COMPACT** series is used for providing calibrated profile data for external profile analysis, for example, on a PC. It is suitable for static and dynamic measurements.

The **HIGHSPEED** series is also used to transmit the calibrated profile data. With a profile frequency of up to 2,000Hz, these sensors offer everything for advanced high speed and 3D applications.

Models of the **SMART** series offer plug & play solutions for simple-to-complex measurement tasks, eliminating the need for any external controller or PC.

The **GAP** series offers a plug & play solution especially for gap measurements.



Model		LLT	29xx-10/BL
z-axis (height)	Standard measuring range	Start of measuring range	52.5mm
		Midrange	56.5mm
		End of measuring range	60.5mm
		Height of measuring range	8mm
	Linearity ¹⁾	(2sigma)	±0.17% FSO
Reference resolution ^{2) 3)}			1µm
x-axis (width)	Standard measuring range	Start of measuring range	9.4mm
		Midrange	10mm
		End of measuring range	10.7mm
	Resolution x-axis		1,280 points/profile
Profile frequency	COMPACT / SMART / GAP		up to 300Hz
	HIGHSPEED		up to 2,000Hz
Interfaces	Multi function port	Ethernet GigE Vision	Output of measurement values; Sensor control; Profile data transmission
		Digital inputs	Mode switching; Encoder; Trigger
		RS422 (half-duplex)	Output of measurement values; Sensor control; Trigger; Synchronisation
Output of measurement values			Ethernet (UDP / Modbus TCP); RS422 (ASCII / Modbus RTU) ⁴⁾ Analogue ⁵⁾ ; Switch signal ⁵⁾
Display (LED)			1x laser ON/OFF; 1x power/error/status
Light source			Semiconductor laser 405nm (blue)
Aperture angle laser line			10°
Laser power			7mW (2M laser class)
Integrated laser switch-off		optional	Safety interlock, hardware switch-off
Permissible ambient light (fluorescent light) ²⁾			10,000lx
Protection class (sensor)			IP 65
EMC			acc. EN 61326-1: 2006-10; DIN EN 55011: 2007-11 (group 1, B class); EN 61000-6-2: 2006-03
Vibration			2g / 20 ... 500 Hz
Shock			15 g / 6 ms
Operating temperature			0°C to 45°C
Storage temperature			-20°C to 70°C
Dimensions			96 x 118.5 x 33mm
Weight sensor (without cable)			440g
Supply			11-30VDC, 24V, 500mA, IEEE 802.3af class 2, Power over Ethernet

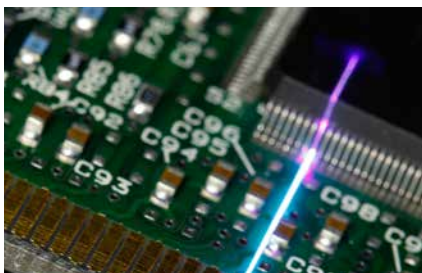
¹⁾ Standard measuring range; ²⁾ Measuring object: Micro-Epsilon standard object (metallic, diffusely reflecting material)

³⁾ According to a one-time averaging across the measuring field (640 points)

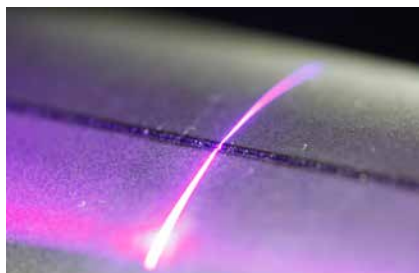
⁴⁾ RS422 interface, programmable as serial interface or input for triggering / synchronisation

⁵⁾ Only with Output Unit; FSO = Full scale output

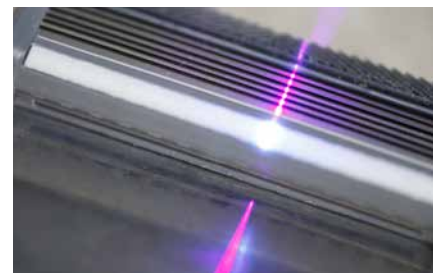
Application examples



Position of electronic components



Completeness of laser welding seams



Blade angle of razors

High performance sensors made by Micro-Epsilon



Sensors and systems for displacement and position



Sensors and measurement devices for non-contact temperature measurement



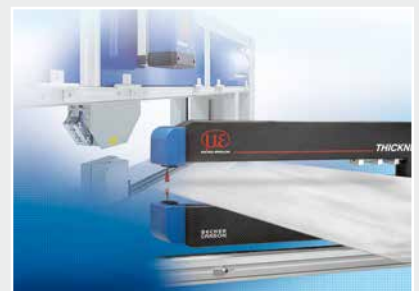
2D/3D profile sensors (laser scanner)



Optical micrometers, fibre optic sensors and fibre optics



Colour recognition sensors, LED analyzers and colour online spectrometer



Measurement and inspection systems



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