

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
OHz	Profile frequency up to 10,000 Hz
	For small and large measurement areas
BL	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. PROFILE scanners provide calibrated profile data that can be further processed on a PC using software provided by the customer. With the 3DInspect software, the scanCONTROL sensors can also be used for 3D evaluations. SMART series scanners work independently 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

Т	30	x2	-25	/SI	
				Optior	ns - see below
			Measu 25 mr 50 mr 100 mr	n	ge
			200 mr 430 mr 600 mr	n n	
		Class 02 = P 12 = S	ROFILE MART		
	Serie				

Laser options*

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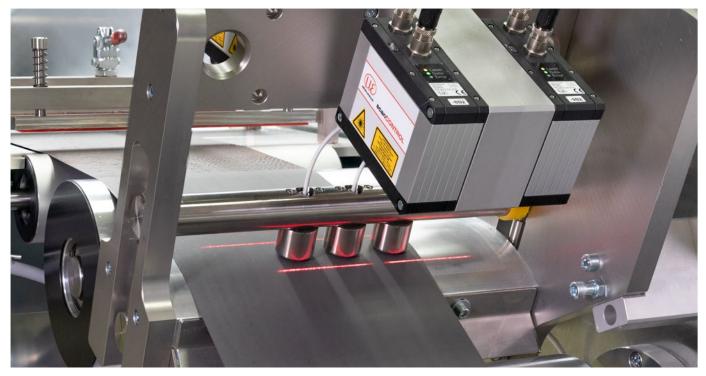
/SI	Hardware switch-off of the laser line
/3R	Increased laser power (class 3R) e.g., for dark surfaces
/BL	Blue laser line (405 nm) for (semi-) transparent, red-hot glowing and organic materials (Measuring ranges 25 - 100 mm)

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 39



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.

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 600×600 mm. This allows large objects to be detected with high accuracy.



Application examples



Assembly monitoring of car body shell construction



Detection of the road surface profile



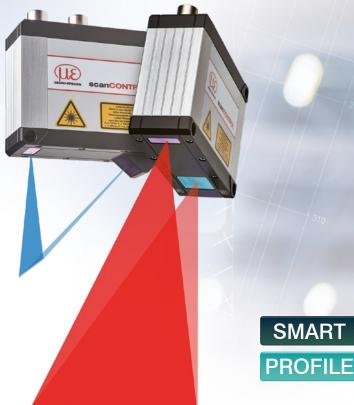
Geometry inspection in metals processing

(c-add)End of measuring range720 mm1 650 mmLine linearity (c-add) ^{11 / 11} 0.004 %0.004 5 %Massuing range (c-add)Mid of measuring range634 mm456 mmMassuing range (c-add)Mid of measuring range634 mm660 mmExtended measuring rangeStart of measuring range341 mm600 mmExtended measuring rangeStart of measuring range341 mm752 mmExtended measuring rangeStart of measuring range344 mm400 mmExtended measuring rangeStart of measuring range341 mm752 mmResolution (c-adi)To of measuring range341 mm760 mmResolution (c-adi)To of measuring range341 mm762 mmProfile frequencyUp to 10.000 HzTo of measurement valuesInterfacesDigital inputsColupt of measurement valuesStart of measurement valuesStart of measurement valuesTo of measurement valuesStart of measurement valuesStart of measurement valuesTo of measurement valuesColupt of measurement valuesStart of measurement valuesTo of the of measurement valuesLipht sourceStart of measurement valuesTo of the of measurement valuesLipht sourceStart of the of t	Model		LLT30x2-430	LLT30x2-600	
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Educated measuring range (r.465) Start of measuring rang	measuring range (z-axis)	End of measuring range	700 mm	1 010 mm	
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $		Height of measuring range	370 mm	480 mm	
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Line line shift (2 casis) ***********************************	(z-axis)	End of measuring range	720 mm	1 050 mm	
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Start of measuring range (xoxis) Start of measuring range End of measuring range 324 mm 408 mm Resolution (x-axis) 1,024 points/profile 786 mm Profile frequency 1,024 points/profile 1,024 points/profile Profile frequency Up to 10,000 Hz 1,024 points/profile Interfaces Digital inputs Sensor control Brooder (counter) Sensor control Brooder (counter) Digital inputs Digital inputs Brooder (counter) Brooder (counter) RS422 (half-duplex) ^m Cutput of measurement values Sensor control Trigger Sensor control Trigger Output of measurement values RS422 (half-duplex) ^m Sensor control Trigger Sensor control Trigger Output of measurement values RS422 (half-duplex) ^m Sensor control Sensor control Trigger Trigger Output of measurement values RS422 (half-duplex) ^m Sensor control Trigger Sensor control Sensor control Upt to source Sensor control Sensor control Sensor control Light source Standard: laser class 2M, semiconductor laser 660 nm Sensor Light source Standard: laser class 3B, semiconductor laser 660 nm Sensor <	Measuring range (x-axis)	Mid of measuring range	430 mm	600 mm	
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Interfaces Ethernet GigE Vision Output of measurement values Sensor control Profile data transmission Digital inputs Mode switching Encoder (counter) Trigger RS422 (nail-duplex) ^{III} Output of measurement values Sensor control Trigger Output of measurement values RS422 (nail-duplex) ^{III} Output of measurement values Sensor control Trigger Output of measurement values Sensor control Trigger Output of measurement values Sensor control Trigger Control and indicator element Sensor control Trigger Light source Sensor control Trigger Light source Standard: laser class 2k metriconductor laser 660 nm Light source Standard: laser class 2k, semiconductor laser 660 nm Liser switch-off Via software, hardware velich-off with /Sl option Liser switch-off Via software, hardware velich-off with /Sl option Protection class (DIN EN 60068-2-17) Sensor Control To go / Source Vibration (DIN EN 60068-2-17) Storage Storage Operation Storage Operation Storage Operation Storage Operation Storage Operation Weight Storage Control Storage Control	Resolution (x-axis)		1,024 points/profile		
Ethemet GigE Vision Bismer control Profile data transmission Digital inputs Mode switching Encoder (counter) Trigger BS422 (half-duplex) ^{IP} Output of measurement values Sensor control Trigger Output of measurement values BS422 (half-duplex) ^{IP} Chapter of measurement values Sensor control Trigger Control and indicator elements Ethemet (UDP/ Modus TCP); RS422 (ASCII / Moduss RTU) Annalog: switch is ginal PROFINET; EthercAT; EtherNet/IP Control and indicator elements Standard: laser class 2M, semiconductor laser 660 nm Light source Standard: laser class 3M, semiconductor laser 660 nm Laser switch-off Via software, hardware switch-off with /SI option Laser switch-off via software, hardware switch-off with /SI option Protection class (DIN EN 60052-7) GOPtion: laser class 3B, semiconductor laser 660 nm Protection class (DIN EN 60052-7) Standard: laser class 3B, semiconductor laser 660 nm Protection class (DIN EN 60052-7) GOPtion: laser class 3B, semiconductor laser 660 nm Protection class (DIN EN 60052-7) GOPtion: laser class 3B, semiconductor laser 660 nm Storage GOPtion: laser class 3B, semiconductor laser 660 nm Protection class (DIN EN 60052-7) GOPtion: laser class 3B, semiconductor laser 660	Profile frequency		up to 10,000 Hz		
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RS422 (half-duplex) PSensor control Tigger SynchronizationOutput of measurement values in the summer of	Interfaces	Digital inputs	Encoder (counter)		
Output of measurement values I+I IB Characterization Control and indicator elements 3x color LEDs for laser, data and error Light source Standard: laser class 2M, semiconductor laser 660 nm Light source Feed Laser Red Laser Standard: laser class 3B, semiconductor laser 660 nm Laser switch-off <100 mW		RS422 (half-duplex) [3]	Sensor Trig	control ger	
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Light source Red Laser Standard: laser class 2M, semiconductor laser 660 nm Light source ≤ 100 mW Option: laser class 3B, semiconductor laser 660 nm Laser switch-off Via software, hardware switch-off with /SI option Aperture angle of laser line 60° Permissible ambient light (fluorescent light) ¹¹¹ 5,000 k Protection class (DIN EN 60068-2:27) IP67 (when connected) Vibration (DIN EN 60068-2:67) Temperature ange Storage Querty and the storage Wight	Control and indicator elements	3	3x color LEDs for la	iser, data and error	
Light source Red Laser Light source ≤ 100 mW Option: laser class 3B, semiconductor laser 660 nm Laser switch-off Via software, hardware switch-off with /Sl option Aperture angle of laser line 60° Permissible ambient light (fluorescent light) ¹¹ Protection class (DIN EN 60052-27) G Vibration (DIN EN 60068-2-6) 15g / 6 ms Temperature ange Storage Operation 0+45 °C Wight 2620 g (without cable)			≤ 26	mW	
$ \frac{100 \text{ mW}}{100 \text{ mW}} $			Standard: laser class 2M, semiconductor laser 660 nm		
Laser switch-off vita software, hardware switch-off with /SI option Aperture angle of laser line Permissible ambient light (fluorescent light) ⁽¹⁾ Protection class (DIN EN 60529) Vibration (DIN EN 60068-2-27) Shock (DIN EN 60068-2-6) Temperature range Operation Vight Vibration Class (Class (Cl	Light source	Red Laser	\leq 100 mW		
Aperture angle of laser line 60° Permissible ambient light (fluorescent light) ¹¹ Protection class (DIN EN 605227) IP67 (when connected) Vibration (DIN EN 60068-2-67) 2g/20500 Hz Shock (DIN EN 60068-2-67) 15g/6 ms Temperature range Storage Operation 0+45°C Weight 2620 g (without cable)			Option: laser class 3B, semiconductor laser 660 nm		
Permissible ambient light (fluorescent light) ¹¹ 5,000 kx Protection class (DIN EN 605227) IP67 (when connected) Vibration (DIN EN 60068-2-27) 2g / 20 500 Hz Shock (DIN EN 60068-2-6) 15g / 6 ms Temperature range Storage Operation 0 +45 °C Weight 2620 g (without cable)	Laser switch-off		via software, hardware switch-off with /SI option		
Protection class (DIN EN 60529) IP67 (when connected) Vibration (DIN EN 60068-2-27) 2g / 20 500 Hz Shock (DIN EN 60068-2-6) 15g / 6 ms Temperature range Storage Operation 0 + 70 °C Weight 2620 g (without cable)	Aperture angle of laser line		60 °		
Vibration (DIN EN 60068-2-27) 2g / 20 500 Hz Shock (DIN EN 60068-2-6) 15g / 6 ms Temperature range Storage Operation 0 +45 °C Weight 2620 g (without cable)	Permissible ambient light	(fluorescent light) [1]	5,00	0 lx	
Shock (DIN EN 60068-2-6) 15g / 6 ms Temperature range Storage Operation 0 + 70 °C Weight 2620 g (without cable)	Protection class (DIN EN 6052	9)	IP67 (when	connected)	
Storage -20 + 70 °C Deperation 0 + 45 °C Weight 2620 g (without cable)	Vibration (DIN EN 60068-2-27)		2g / 20	. 500 Hz	
Temperature range Operation 0 +45 °C Weight 2620 g (without cable)	Shock (DIN EN 60068-2-6)		15g /	6 ms	
Operation 0 +45 °C Weight 2620 g (without cable)	—	Storage	-20	+70 °C	
	iemperature range	Operation	0+	45 ℃	
Supply voltage 11 30 VDC, nominal value 24 V, 500 mA, IEEE 802.3af class 2, Power over Ethernet (PoE)	Weight		2620 g (with	nout cable)	
	Supply voltage		11 30 VDC, nominal value 24 V, 500 mA, IE	EE 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 across the measuring field (1,024 points)
 ^[3] RS422 interface, programmable either as serial interface or as input for triggering/synchronization
 ^[4] Analog | switching signal: Only in conjunction with 2D/3D output unit
 ^[5] PROFINET | EtherCAT | EtherNet/IP: Only in conjunction with 2D/3D gateway

Powerful 2D/3D laser scanners with highest precision scanCONTROL 30x0

	High resolution in x- and z-axis for accurate profile measurement
OHz	Profile frequency up to 10 kHz for monitoring of dynamic processes
	Innovative exposure control
	For small and large measurement areas
BL	Also available with patented Blue Laser Technology
	Compatible with COGNEX® VisionPro



Fast and precise 2D/3D profile measurements

The new LLT30x0 laser profile scanners provide calibrated profile data with up to 9.6 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 PROFILE and SMART versions

The scanCONTROL 30x0 series is available as PROFILE and SMART versions. PROFILE scanners provide calibrated profile data that can be further processed on a PC using software provided by the customer. With the 3DInspect software, the scanCONTROL sensors can also be used for 3D evaluations. SMART series scanners work independently 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.

Article designation

		Optior	ns - see below
	Measu	ring ran	ge
	25 r		
	50 r 100 r		
	200 r		
	430 r		
	600 r	nm	
Class			
	ROFILE		
10=SN	ЛART		

Laser options*

a 2-a	/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 39



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 also be selected individually.



High resolution High dynamic range High speed

Fast measurement results with operation modes

Choose from three predefined operating modes for your specific measurement task: "High-Resolution" for maximum precision, "High Dynamic Range" for optimal profile detection on difficult surfaces and "High Speed" for ultra-fast measurements.

Large measurement area up to 600 x 600 mm

The scanCONTROL 30x0 laser scanners are now also available with a large measuring field up to 600×600 mm. This allows measuring objects to be detected with high accuracy.



Application examples



Planarity of coated battery film



Assembly monitoring of battery packs



Inline 3D inspection of tire geometry

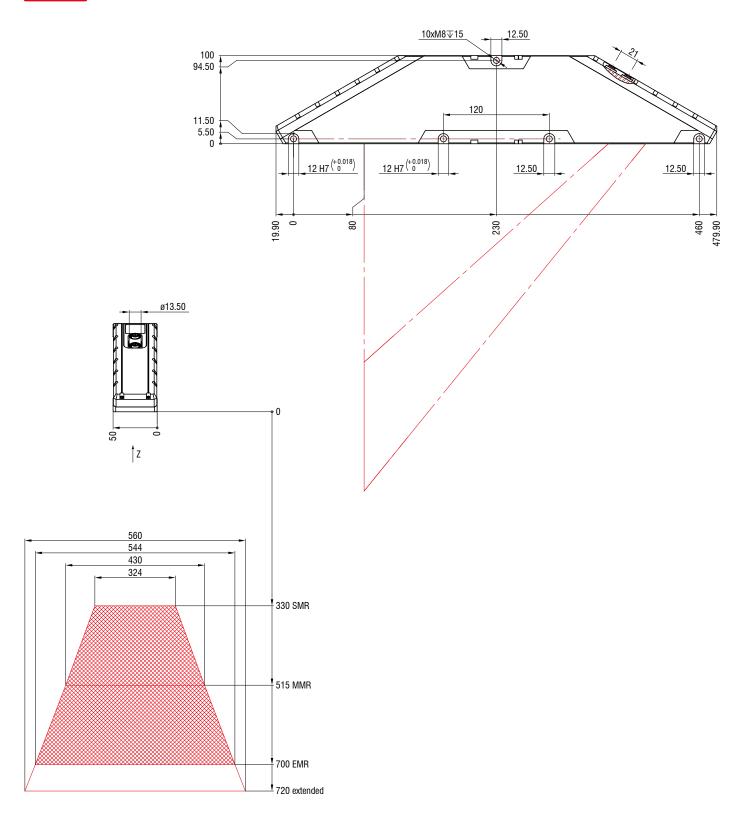
Measuring range (z-axis) Extended measuring range (z-axis) Line linearity (z-axis) I and the suring range (x-axis) Extended measuring range (x-axis) Resolution (x-axis) Profile frequency I and the suring range I and the su	Start of measuring range Mid of measuring range End of measuring range Height of measuring range Start of measuring range End of measuring range Mid of measuring range End of measuring range Start of measuring range End of measuring range	330 mm 515 mm 700 mm 370 mm 330 mm 720 mm 12 μm ± 0.0032 % 324 mm 430 mm 544 mm 324 mm	530 mm 770 mm 1 010 mm 480 mm 450 mm 1 050 mm 15 μ m ± 0.0031 % 456 mm 600 mm 762 mm 408 mm	
Extended measuring range (z-axis) ^{[1] [2]} Line linearity (z-axis) ^{[1] [2]} Measuring range (x-axis) Extended measuring range (x-axis) Resolution (x-axis)	End of measuring range Height of measuring range Start of measuring range End of measuring range Start of measuring range Mid of measuring range End of measuring range Start of measuring range	700 mm 370 mm 330 mm 720 mm 12 μm ± 0.0032 % 324 mm 430 mm 544 mm 324 mm	$1 010 \text{ mm}$ 480 mm 450 mm $1 050 \text{ mm}$ $15 \mu \text{m}$ $\pm 0.0031 \%$ 456 mm 600 mm 762 mm	
Extended measuring range (z-axis) ^{[1] [2]} Line linearity (z-axis) ^{[1] [2]} Measuring range (x-axis) Extended measuring range (x-axis) Resolution (x-axis)	Height of measuring range Start of measuring range End of measuring range Start of measuring range Mid of measuring range End of measuring range Start of measuring range	370 mm 330 mm 720 mm 12 μm ± 0.0032 % 324 mm 430 mm 544 mm 324 mm	480 mm 450 mm $1 050 \text{ mm}$ $15 \mu \text{m}$ $\pm 0.0031 \%$ 456 mm 600 mm 762 mm	
Extended measuring range (z-axis) ^{[1] [2]} Line linearity (z-axis) ^{[1] [2]} Measuring range (x-axis) Extended measuring range (x-axis) Resolution (x-axis)	Start of measuring range End of measuring range Start of measuring range Mid of measuring range End of measuring range Start of measuring range	330 mm 720 mm 12 μm ± 0.0032 % 324 mm 430 mm 544 mm 324 mm	450 mm 1 050 mm 15 μm ± 0.0031 % 456 mm 600 mm 762 mm	
(z-axis) Line linearity (z-axis) ^[1] ^[2] Measuring range (x-axis) Extended measuring range (x-axis) Resolution (x-axis)	End of measuring range Start of measuring range Mid of measuring range End of measuring range Start of measuring range	720 mm 12 μm ± 0.0032 % 324 mm 430 mm 544 mm 324 mm	1 050 mm 15 μm ± 0.0031 % 456 mm 600 mm 762 mm	
Line linearity (z-axis) ^{[1] [2]} Measuring range (x-axis) Extended measuring range (x-axis) Resolution (x-axis)	Start of measuring range Mid of measuring range End of measuring range Start of measuring range	12 μm ± 0.0032 % 324 mm 430 mm 544 mm 324 mm	15 μm ± 0.0031 % 456 mm 600 mm 762 mm	
Measuring range (x-axis) Extended measuring range (x-axis) Resolution (x-axis)	Mid of measuring range End of measuring range Start of measuring range	± 0.0032 % 324 mm 430 mm 544 mm 324 mm	± 0.0031 % 456 mm 600 mm 762 mm	
Measuring range (x-axis) Extended measuring range (x-axis) Resolution (x-axis)	Mid of measuring range End of measuring range Start of measuring range	324 mm 430 mm 544 mm 324 mm	456 mm 600 mm 762 mm	
Extended measuring range (x-axis) Resolution (x-axis)	Mid of measuring range End of measuring range Start of measuring range	430 mm 544 mm 324 mm	600 mm 762 mm	
Extended measuring range (x-axis) Resolution (x-axis)	End of measuring range Start of measuring range	544 mm 324 mm	762 mm	
(x-axis) Resolution (x-axis)	Start of measuring range	324 mm		
(x-axis) Resolution (x-axis)			408 mm	
Resolution (x-axis)	End of measuring range	560 mm		
			788 mm	
Profile frequency		2,048 points/profile		
		up to 10,000 Hz		
Ethernet GigE Vision		Output of measurement values Sensor control Profile data transmission		
Interfaces	Digital inputs	Mode switching Encoder (counter) Trigger		
	RS422 (half-duplex) [3]	Output of measurement values Sensor control Trigger Synchronization		
Output of measurement values [4]	[5]	Ethernet (UDP / Modbus TCP); Analog; swi PROFINET; Ether(tch signal	
Control and indicator elements		3x color LEDs for las	ser, data and error	
		≤ 26	Wm	
	5.44	Standard: laser class 2M, semiconductor laser 660 nm		
Light source	Red Laser	≤ 100 mW		
		Option: laser class 3B, semiconductor laser 660 nm		
Laser switch-off		via software, hardware switch-off with /SI option		
Aperture angle of laser line		60 °		
Permissible ambient light	(fluorescent light) [1]	5,000	xl C	
Protection class (DIN EN 60529)		IP67 (when c	connected)	
Vibration (DIN EN 60068-2-27)		2g / 20 500 Hz		
Shock (DIN EN 60068-2-6)		15g / 6	3 ms	
T	Storage	-20 +70 °C		
Temperature range	Operation	0 +4	45 °C	
Weight		2630 g (with		
Supply voltage			out cable)	

^[1] Based on the measuring range; measuring object: Micro-Epsilon standard object
 ^[2] According to a one-time averaging across the measuring field (2,048 points)
 ^[3] RS422 interface, programmable either as serial interface or as input for triggering/synchronization
 ^[4] Analog | switching signal: Only in conjunction with 2D/3D output unit
 ^[5] PROFINET | EtherCAT | EtherNet/IP: Only in conjunction with 2D/3D gateway

Dimensions and measuring ranges scanCONTROL 30xx

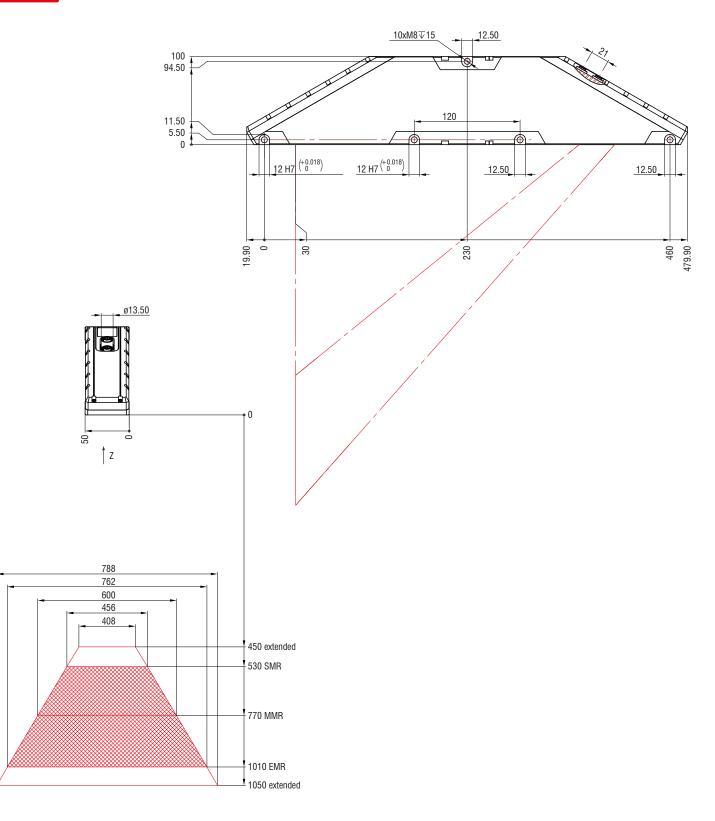
LLT30x2-430 / LLT30x0-430

Red Laser



LLT30x2-600 / LLT30x0-600

Red Laser



Software and integration scanCONTROL



micro-epsilon.com/ scanner/download

Software for scanCONTROL SMART sensors



scanCONTROL Configuration Tools

Solution of complex 2D measurement tasks

- Can be used with all SMART sensors
- Sensor alignment and adjustment
- I6 measuring programs x 8 evaluations per parameter set
- 15 independent parameter packages can be stored in the sensor
- Data processing
- Logical operations for digital outputs
- Configuration of the measurement value transfer and the outputs

scanCONTROL Result Monitor

Visualization of measurement sequences

- For up to 4 scanCONTROL SMART sensors
- Display of profile and measured value history during operation
- Adjustable layout (different views, e.g. for workers)
- Parallel transmission of the measured values to the control unit is possible and recommended
- Logging and saving of profiles

scanCONTROL UDP Tool

Testing the UDP output of measured values

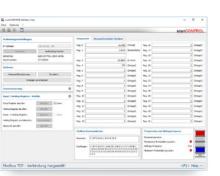
- For all scanCONTROL SMART sensors
- Logging possible up to 1,000 Hz
- Source code available



scanCONTROL Modbus Tool

Testing the Modbus communication

- For all scanCONTROL SMART sensors
- Transfer of measured data
- Sensor control via Modbus TCP (load user modes, laser on/off, change exposure time, ...)





Integration of scanCONTROL sensors



Integration into customer software

- LLT.DLL and SDK for fast integration in /C++ or C# (NET) applications
- LabVIEW device driver
- Various example VIs (profile transmission, container mode, ...)
- Comprehensive documentation
- Linux integration
- Based on GigE Vision/GenICam API
- Fast integration via additional C++ library
- Various sample programs
- Comprehensive documentation
- Cognex VisionPro
- AIK adapter for fast integration via Cognex AIK server
- Cognex Range Images can be generated and processed based on the scanCONTROL measuring points
- Others on request



scanCONTROL Developer Tool

Complete integration example (demo tool)

- Source code available (QML / C++, usable for Windows and Linux)
- Serves as support for the development of own software with scanCONTROL sensors
- MouseOver over the sensor parameters directly displays the corresponding function in the LLT.DLL
- All data transmission options can be set and tested



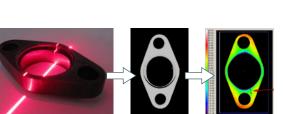
Easy integration due to GenICam/GigE Vision standard

- Direct connection to compatible 3D and image processing software possible
- Sensor is recognized by the standard and parameters are read out directly
- scanCONTROL 25/29xx: output in 2.5D
- scanCONTROL 30xx: output in Valid3D (corresponds to coord3D data formats)

Easy integration due to GigE Vision standard

- 3D comparisons and measurement
- Integration into various software solutions via GigE Vision possible
- Detection of fine surface defects
- OCR/text recognition independent of contrast
- Completeness, position detection, planarity, ... and much more!





Profile acquisition

Grayscale image Image processing software

Software 3DInspect

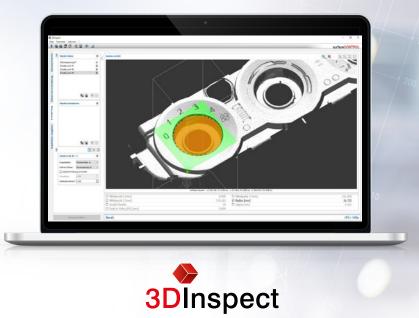
Intuitive user interface

Real 3D evaluation, not just 2.5D

Object extraction in 3D

Direct feedback with algorithms

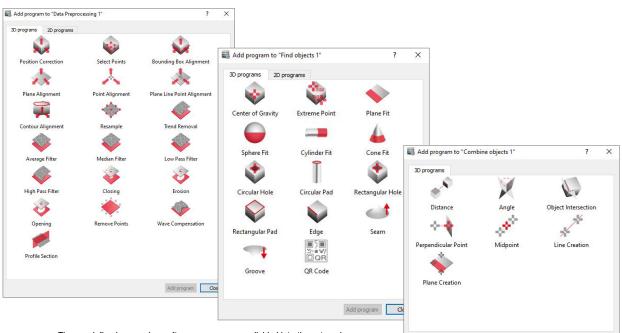
Compatible with all 3D sensors from Micro-Epsilon



Add program Close

3DInspect software for 3D measurement and inspection tasks

The 3DInspect software is a powerful tool for sensor parameter set up and industrial measurement tasks. This software transmits the measurement data from the sensor via Ethernet and provides the data in three-dimensional form. The 3D data is then further processed on the PC using 3DInspect measurement programs, evaluated, assessed and, if necessary, logged and transmitted to a control unit via Ethernet. The 3D data can also be saved with the software. In addition to the scanCONTROL 30xx models, the 3DInspect software is also supported by the 3D Profile Unit and the surfaceCONTROL and reflectCONTROL sensors.

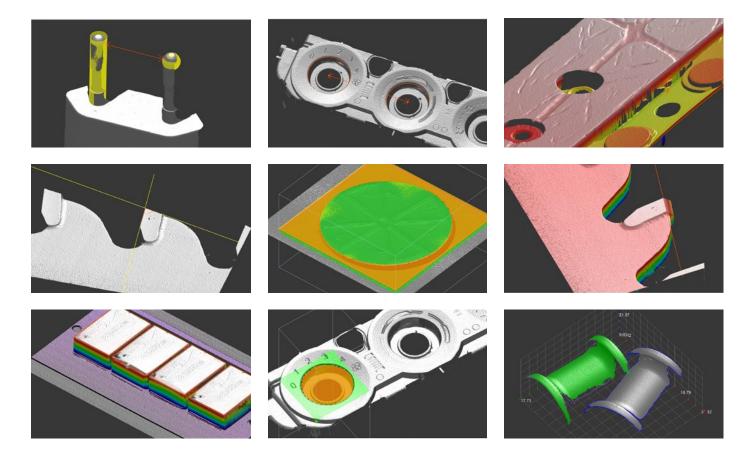


The pre-defined measuring software programs are divided into the categories "Data preprocessing", "Find objects" as well as in "Combine objects".



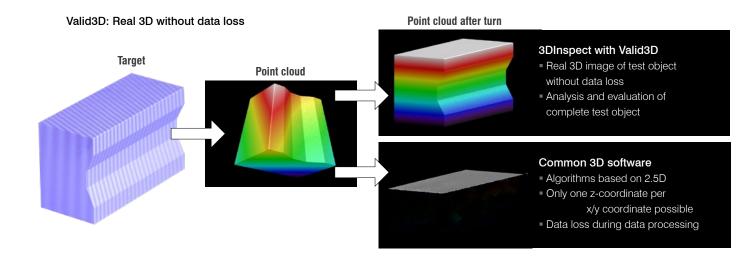
Industrial Performance Unit: Industrial PC with GigE Vision Sensors

The Industrial Performance Unit is a powerful computing platform for 3D applications. The scanner can be parameterized directly via the 3DInspect software, allowing measurements to be started immediately. Results can be output via the integrated interfaces RPOFINET, EtherCAT and EtherNet/IP.



Valid3D technology from Micro-Epsilon vs. conventional 2.5D systems

The unique Valid3D technology enables lossless display and processing of the point clouds. This is how scanned 3D objects can be moved arbitrarily in the coordinate system.



System for multi-scanner applications **3D Profile Unit**

Profile stitching for up to 2 sensors

3D Profile Unit Controller

Powerful industrial computer

- Communication with any GigE Vision clients
- Direct integration into image processing software
- Transfer of profile data or 3D point clouds
- Data evaluation and system parameterization is implemented in the 3DInspect software
- Optionally available with Industrial Ethernet:Integrated evaluation
- Transfer of measured values to PLC
- Industrial Ethernet interface for control and transfer of measured values



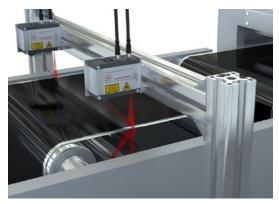




micro-epsilon.com/3DPU



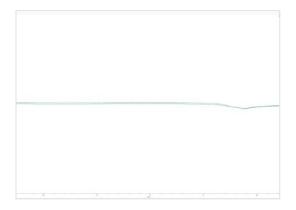
Application examples:

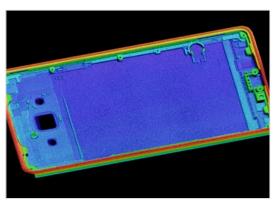


Width, thickness and Heavy Edge of battery film



Thickness of smartphone carrier plates





Stitched 3D point cloud of the smartphone carrier plate in 3DInspect

Accessories scanCONTROL

Connection cables

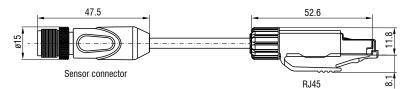
PCR3000-x Multi-function cable

Cable for power supply, digital inputs (TTL or HTL), RS422 (half-duplex); suitable for drag chains and robots 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

0323478 Connector/12-pin/Multifunction for LLT25/29/30 series
0323479 Connector/8-pin/Ethernet for LLT25/29/30 series
2420067 PS25/29/30
0254111 Case for LLT25/29/30 (up to MR 200)

0254153 Case for LLT30 series, MR 430/600

- 2960097 Measuring stand for LLT25/26/29/30 series
- 2960115 Measuring stand for LLT30 series, MR 430/600

Description

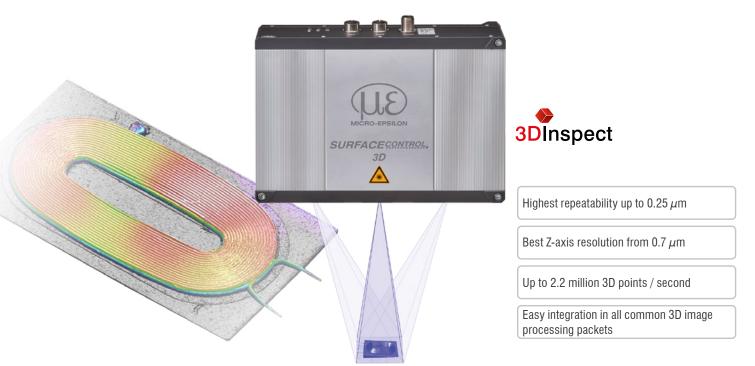
Plug for multifunction port Plug for Ethernet socket

Power supply unit for scanCONTROL

Transport case for scanCONTROL sensors incl. measuring stand Transport case for scanCONTROL sensors incl. measuring stand Measuring stand with sensor adapter board, flexible rod and clamp base Measuring stand with sensor adapter board, flexible rod and clamp base

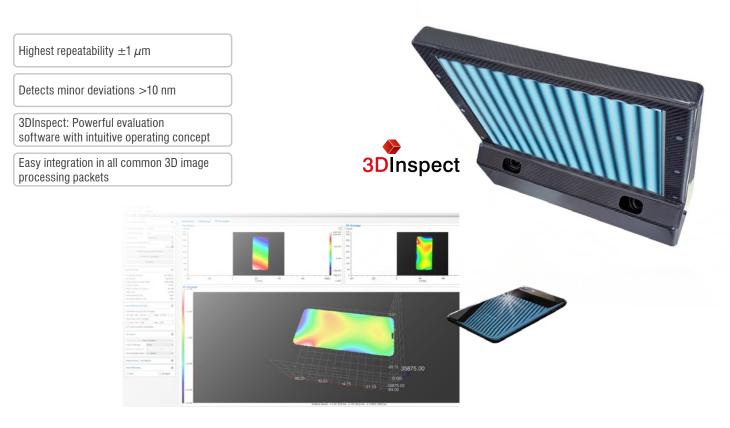
surfaceCONTROL 3D 3500

Innovative 3D snapshot sensor for inline inspection of geometry, shapes and surfaces



reflectCONTROL

3D inline inspection of shiny surfaces: flat glass, mirrors and wafers



Sensors and Systems from Micro-Epsilon



Sensors and systems for displacement, position and dimension



Optical micrometers, fiber optics, measuring and test amplifiers



Sensors and measurement devices for non-contact temperature measurement



Color recognition sensors, LED Analyzers and inline color spectrometers



Measuring and inspection systems for quality assurance



3D measurement technology for dimensional testing and surface inspection

Modifications reserved / Y9761353-H022094GKE



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