More Precision

thicknessGAUGE 3D // Sensor system for inline thickness and profile measurements

Sensor system for precise inline thickness and profile measurements
thicknessGAUGE 3D

- Compact complete solution with 24V-supply
- For many types of surfaces / materials
- Traverses via linear axis
- Fully automatic calibration
- Integrated software
- Laser class 2M, no special safety precautions required

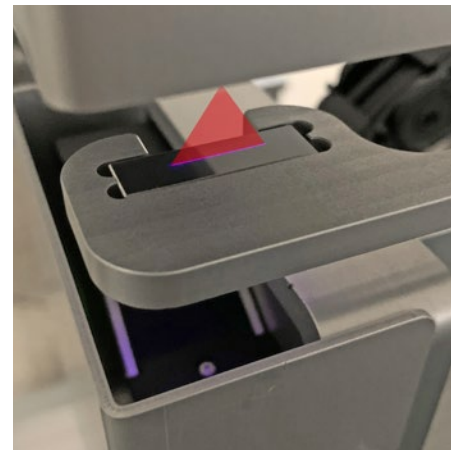**Inline thickness and profile measurements**
The thicknessGAUGE 3D is a precise sensor system for two-sided profile and thickness measurements of sheets and extrusion materials. Two opposing laser profile scanners detect synchronized profile data along a linear movement, which is merged into a 3D point cloud. The thicknessCONTROL 3D uses this point cloud to calculate freely programmable target values in order to solve complex 2D or 3D measurement tasks.

The specific evaluation is parameterized using the 3DInspect software, where the measurement programs and parameters are transferred to the thicknessCONTROL software and processed automatically.

Ultimately, only the desired result is output. A linear axis moves the sensor system from the parking position to the measuring position. A measurement standard for fully automatic calibration is in the parking position.
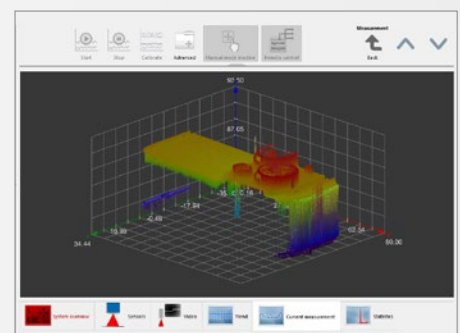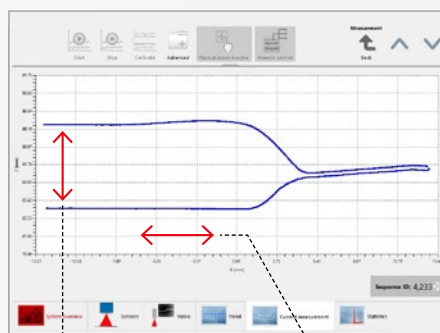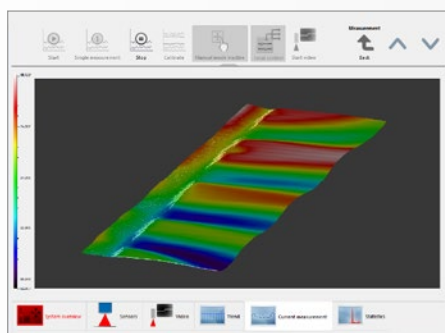
Automatic calibration and temperature compensation
thicknessGAUGE systems are equipped with in-situ calibration in order to compensate, e.g., for the effects of fluctuating temperatures. A linear axis moves the thicknessGAUGE to the parking position. The calibration cycles are individually adjustable. In addition to temperature compensation, in-situ calibration enables proper functioning of the system to be verified cyclically and at any time.

Fully automatic calibration enables reliable measurements

Example of measured data:

Thickness calculation possible   Profile evaluation possible

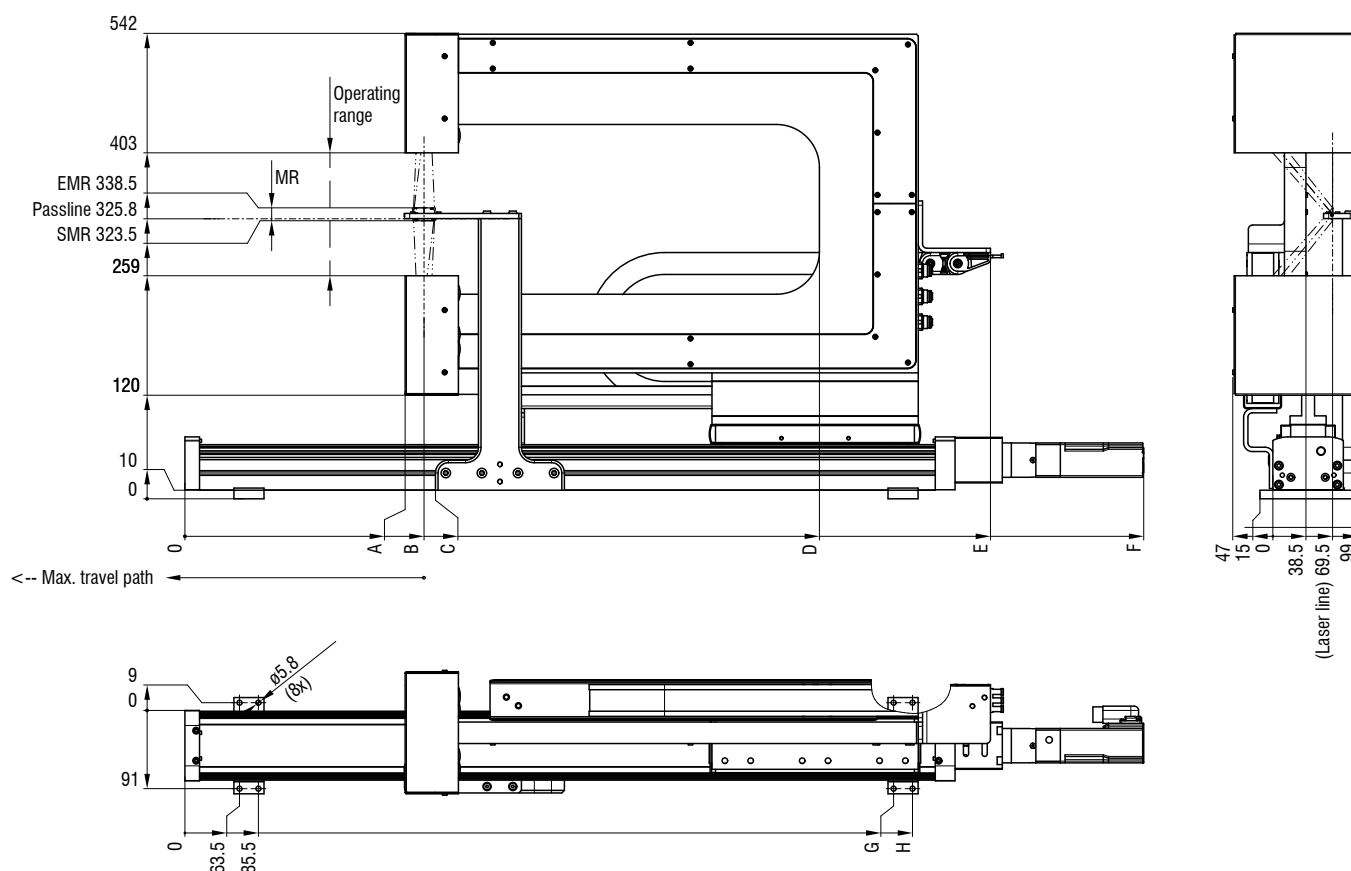| Modell		C.LP-3D-15/200	C.LP-3D-15/400	C.LP-3D-15/600
Article number		4350127.730	4350127.731	4350127.732
Measuring width		200 mm	400 mm	600 mm
Operating range		144 mm		
Measuring range [1]	Z-axis (thickness)	15 mm		
	X-axis (3D measurement)	max. 26.8 mm		
Max. travel path [2]		380 mm	580 mm	780 mm
System accuracy [3]		±1.2 μm		
Resolution	Z-axis (thickness)	0.2 μm		
	X-axis (3D measurement) [4]	1,024 points/profile		
Measuring rate [1] [5]		500 Hz		
Calibration		Automatic		
Weight	Axis, motor and C-frame	17.6 kg	22.3 kg	26.8 kg
	Bus terminal box and panel IPC	14.1 kg		
Supply voltage		24 V		
Humidity		5 % RH ... 95 % RH (non-condensing)		
Protection class (DIN EN 60529)		IP40 (bus terminal box IP54)		
Temperature range	Storage	-20 ... 65 °C		
	Operation	5 ...45 °C		
Control and indicator elements		Panel IPC with software included in the scope of supply		
Special features		Compact bus terminal box measuring just 300 x 300 x 210 mm		

[1] Depending on the measurement task
[2] Other lengths on request
[3] 2 Sigma; data valid for diffusely reflecting, metallic measuring standard (DAkkS certified)
[4] 1,024 points/profile (standard); 2,048 points/profile on request
[5] 500 Hz (standard); up to 2000 Hz on request

Model	A	B	C	D	E	F	G	H
C.LP-3D-15/200	271	293.2	307	563	737	916	624.5	646.5
C.LP-3D-15/400	256	278	292	738	937	1115	824.5	846.5
C.LP-3D-15/600	224	245.5	259	916	1140	1316	1024.5	1046.5

MR = Measuring range
SMR = Start of measuring range
EMR = End of measuring range
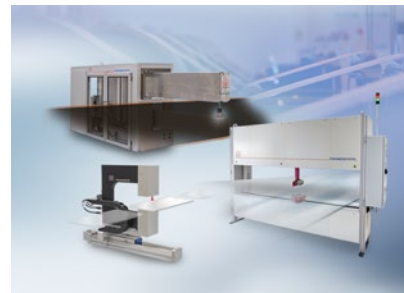Dimensions in mm, not to scale.

Sensors and Systems from Micro-Epsilon

Sensors and systems for displacement, distance and position
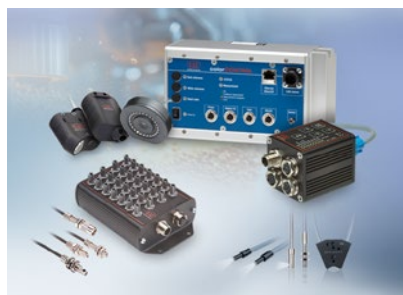

Sensors and measurement devices for non-contact temperature measurement

Measuring and inspection systems for metal strips, plastics and rubber

Optical micrometers and fiber optics, measuring and test amplifiers

Color recognition sensors, LED analyzers and inline color spectrometers

3D measurement technology for dimensional testing and surface inspection

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