

LOTOS.

SPECIFICATIONS



General description

Optical measuring and form testing systems for the three-dimensional measurement of test objects and the fully automatic determination and evaluation of geometrical parameters. The geometrical parameters of the test object are determined without contact for the purposes of quality assurance and control of the manufacturing process. The evaluation is carried out automatically using the saved nominal contour and tolerances.

Measured quantity

Standard: **Geometrical measurements**

- Volume
- Diameter
- Radius
- Circumference
- Length
- Angle

Shape and position testing:

- Straightness
- Circularity
- Cylindricity
- Perpendicularity
- Parallelism
- Coaxiality
- Circular run-out
- Total run-out
- Profile shape/surface shape
- Deviation from nominal contours/surfaces (compared to CAD data)
- Fit (minimum circumscribed, maximum inscribed) of all measured contours

- Optional:
- Free contours (free-form surfaces)
 - Weight of test objects
 - Interaction between different test objects
 - o Pairing selection for fits
 - o Gap dimensions before installation
 - o Volume changes
 - o Density examination etc.

Calculation of average, minimum, maximum and standard deviation per defined section, per defined section level and over the entire test object for all measured quantities.

Measuring range

Diameter Any cross-sections
10...110 mm infinitely variable up to 295...395 mm

Measurement object height Max. 500 mm

Power

Measuring times < 5 seconds per 60 mm object height with a speed of rotation of 360°/s

Poka-yoke Prevention of manipulation and operator errors

Accuracy¹	Radius	0.01 mm	Standard deviation < 0.003 mm	
	Length (axial)	0.02 mm	Standard deviation < 0.006 mm	
	Weight	0.2 g	Standard deviation < 0.05 g	
	SPC measurement	Duration	< 7 seconds	
		Recommended frequency	1 x per shift	
Sensor calibration	Duration	< 4 minutes		
	Recommended frequency	After 90 days or 90,000 measurements / On changes of temperature > 3° (Optional: fully automatic temperature monitoring and compensation)		
Measurement sensor	Laser class	Class II (FDA (CDRH) part 1040.10), class 2 (IEC 60825-1)		
Positioning systems	Maintenance-free stages with high-precision encoder Rotary stage with a maximum load rating of 200 kg Optional: -Test-object-specific support adapter for centric positioning -High-precision quick-fix clamping device for holding the test specimen with many adapter options			
Operation	Integrated touch screen for display of measurement results and for easy operation of the device. Robust function buttons for ergonomically optimised operation of the measurement functions in production.			
	Software	LOTOS		
	Control	Function buttons made of aluminium located on the front panel and touch screen		
	Display	15" 10-finger multi-touch panel (1920 x 1200 pixels) with backlighting, IP65 front with silicone protection, reinforced front glass, non-reflective surface treatment (chemically etched)		
Interfaces	USB	5 x (1 x freely accessible; 4 x locked)		
	Ethernet (RJ 45)	13 x (1 x for network connection; 12 x for peripherals, locked)		
Housing	Version	Table-top device		
	Dimensions (W x H x D) mm	800 x 1100 x 800		
	Weight	85 kg		
Quality system	Developed and manufactured to DIN ISO 9001:2000			
Voltage supply	Rated voltage	88...264 VAC, 47...63 Hz		
Environment	Operating temperature range	5...40°C		
	Relative humidity	5...85%, non-condensing		

¹ All parameters refer to an ambient temperature of 20°C