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.		
Field of application	**LOTOS LS, LOTOS LT**		**LOTOS LSi**
	Stand-Alone use or semi/fully automated production operation		Stand-Alone use or semi/fully automated production operation Optimized for integration into the production process for 100% inline inspection. Free loading space for portal or robot loading.
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 - Fit (minimum circumscribed, maximum inscribed) of all measured contours		

Measured quantity Optional	- Deviation from nominal contours/surfaces (compared to CAD data)
	- Free contours (free-form surfaces)
	- Weight of test objects
	- Interaction between different test objects
	  ○ Pairing selection for fits
	  ○ Gap dimensions before installation
	  ○ Volume changes
	  ○ 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	**LOTOS LS**	**LOTOS LT**	**LOTOS LSi**
	Any cross-sections 10…110 mm infinitely variable up to 295…395 mm	Any cross-sections 10…170 mm infinitely variable up to 235…395 mm	Any cross-sections 50…250 mm or customer-specific adapted measuring range
	Measuring object height max. 500 mm		
Measuring time	**LOTOS LS**	**LOTOS LT**	**LOTOS LSi**
	< 5 seconds per 60 mm object height with a speed of rotation of 360°/s Height resolution 0,05mm	< 10 seconds per 10 mm object height with a speed of rotation of 540 °/s Height resolution 1 mm, Resolution variably adjustable	< 5 seconds per 120 mm object height with a speed of rotation 360 °/s Height resolution 0,1 mm
Poka-yoke	Prevention of manipulation and operator errors		

KoCoS A FRIEND OF ENERGY

Repeating accuracy[1]	Radius	LOTOS LS/LT: 0,01 mm LOTOS LSI: 0,02 mm	Standard deviation < 0.003 mm
	Length (axial)	LOTOS LS/LT: 0,02 mm LOTOS LSI: 0,04 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 or integration into the production environment	
	Dimensions (W x H x D) mm	**LOTOS LS, LOTOS LT**	**LOTOS LSi**
		800 x 1100 x 800	430 x 1100 x 1250
	Weight	85 kg	90 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