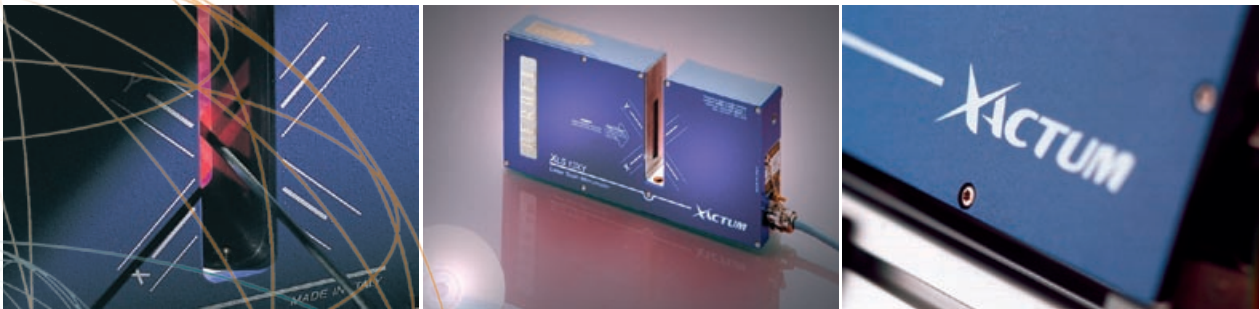


ACTUM Laser Micrometer for very high accuracy diameter measurement

XLS 13XY



Ultra accurate, high speed, dual axis Laser Gauge for contact-less diameter measurement, featuring built-in electronics and Ethernet/Rs232/Rs485 interfaces

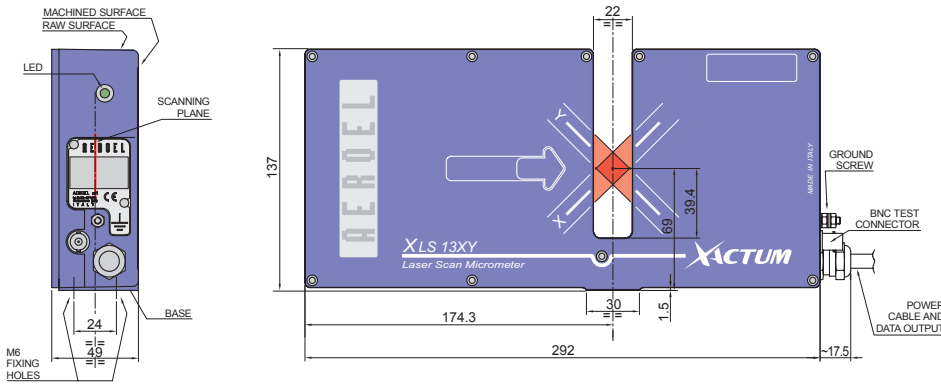
- Dual axis gauge
- 13 x 13 mm measuring range
- 0.03 μm repeatability
- 1200 Hz scanning frequency
- Outstanding single shot repeatability
- Excellent linearity
- Permanent self calibration
- Compact size
- 3 years guarantee
- Fully re-programmable
- Direct connection to PC, PLC e NC

It's an ideal Intelligent Diameter Sensor for the on-line control of products like:

- Extruded tubes and profiles
- Drawn metal wires
- Medical tubes
- Electric cables and conductors
- Optical fibres

AEROEL

PRECISION LASER SYSTEMS



This product conforms to the following standards:
21 CFR 1040.10 (USA) • CEI EN-60825-1; 2003-4-1 (EU)

Type of gauge		XLS13XY/200/A	XLS13XY/200/B	XLS13XY/1200/A	XLS13XY/1200/B
Measuring Field	(mm)	13 x 13 ⁽¹⁾	4 x 4 ⁽²⁾	13 x 13 ⁽¹⁾	4 x 4 ⁽³⁾
Measurable Diameters	(mm)	0.1 ÷ 10	0.03 ÷ 3	0.1 ÷ 10	0.05 ÷ 3
Resolution (Selectable)	(µm)	10 / 1 / 0.1 / 0.01			
Linearity (Centred Product) ⁽⁴⁾	(µm)	± 0.5 ⁽⁵⁾			
Linearity (Full Range) ⁽⁶⁾	(µm)	± 1.5	± 0.8	± 1.5	± 0.8
Linearity (Reduced Field) ⁽⁷⁾	(µm)	± 1	± 0.5	± 1	± 0.5
Repeatability (T=1s, ±3σ) ⁽⁸⁾	(µm)	± 0.15	± 0.08	± 0.05	± 0.03
Single Shot Repeatability (±3σ)	(µm)	± 0.75			
Beam Spot Size (s,l) ⁽⁹⁾	(mm)	0.1 x 4	0.04 x 0.1	0.05 x 4	0.05 x 0.1
Scanning Frequency	(Hz)	200 (X) + 200 (Y)		1200 (X) + 1200 (Y)	
Scanning Speed	(m/s)	65		98	
Gauge Thermal Coefficient ⁽⁹⁾	(µm/mm°C)	-0.0180			
Power Supply		24 VDC; 0.3 A (1 A peak)			
Laser Source		VLD (Visible Laser Diode); λ = 650 nm			
Dimensions	(mm)	292 x 137 x 49			
Weight	(kg)	2.5			
Operating Temperature Range	(°C)	0 ÷ 50			
Storage Temperature	(°C)	-20 ÷ +70			
Atmospheric Humidity		Max 85% (non-condensing)			
Altitude	(m)	0 ÷ 3000 over sea level			
Protection		IP65 (optical windows not included)			

Notes

- (1) For $\Phi \geq 0,3$ mm; for smaller diameters the field is proportionally reduced up to 4x4 mm for $\Phi = 0,1$ mm.
- (2) For $\Phi \geq 0,1$ mm; for smaller diameters the field is proportionally reduced up to 1x1 mm for $\Phi = 0,03$ mm.
- (3) For $\Phi \geq 0,1$ mm; for smaller diameters the field is proportionally reduced up to 1x1 mm for $\Phi = 0,05$ mm.
- (4) Related to the average diameter $(X+Y)/2$.
- (5) For $\Phi \leq 1$ mm. For $\Phi > 1$ mm the linearity is ± 1 µm
- (6) Maximum measurable shift of the average diameter $(X+Y)/2$, when a master is moved along the two X and Y axes crossing the centre of the field, checked with $\Phi = 3$ mm (/A) or $\Phi = 1$ mm (/B).
- (7) The field is 5x5 mm for /A gauges and 2x2 mm for /B gauges.
- (8) The smaller dimension is the spot thickness or diameter.
- (9) Typical value. It states the measurement drift due to the room temperature change, when measuring a master with null coefficient of expansion (INVAR).

SPECIFICATIONS IN ALS MODE, CONNECTED TO A CE-10 OR IBU-10 EXTERNAL UNIT				
Type of ALS compatible gauge		ALS13XY/100/A	ALS13XY/100/B	
Resolution (Selectable)	(µm)	10 / 1 / 0.1		
Linearity (Full Range) ⁽⁶⁾	(µm)	± 2	± 1	
Repeatability (T=1s, ±3σ)	(µm)	± 0.3	± 0.2	
Single Shot Repeatability (±3σ)	(µm)	not specified		
Scanning Frequency	(Hz)	100 (X) + 100 (Y)		
Scanning Speed	(m/s)	65		

Specifications subject to change without notice

Types of measures, with standard software



Only 1 part in the measuring field, opaque or transparent

Measured dimensions: X / Y diameter and X / Y centre position

Note: other types of measures are possible by loading dedicated software

Measurement processing

Instant Values: simple average over n scans, being $n \geq 1$ programmable

Extreme Values: Average, Max, Min and Range = (Max-Min) over k Instant Values, being $k \geq 1$ programmable

Input / Output

2 digital inputs / Rs232 and Rs485, max 115.2 kbaud / Ethernet 10 Base-T / ALS Binary Video

Measurement mode

Free-Running: it processes continuously groups of k Instant Values to compute the related Extreme Values.

On-Command, Single-Shot: after an external command, it processes only 1 group of k Instant Values to compute the related Extreme Values. The external command is a rising edge on a digital input or a command message via Ethernet.

On-Command, Continuous: during a time interval set by an external command, it processes all the measured Instant Values, to compute their Extreme Values. The measuring time is set by a logic high level on a digital input and/or by Start/Stop messages via Ethernet.

Auto-Sync: like On-Command, Single-Shot, but the measurement is automatically triggered by a valid measurement condition (1 part in the measuring field), after a programmable delay.

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