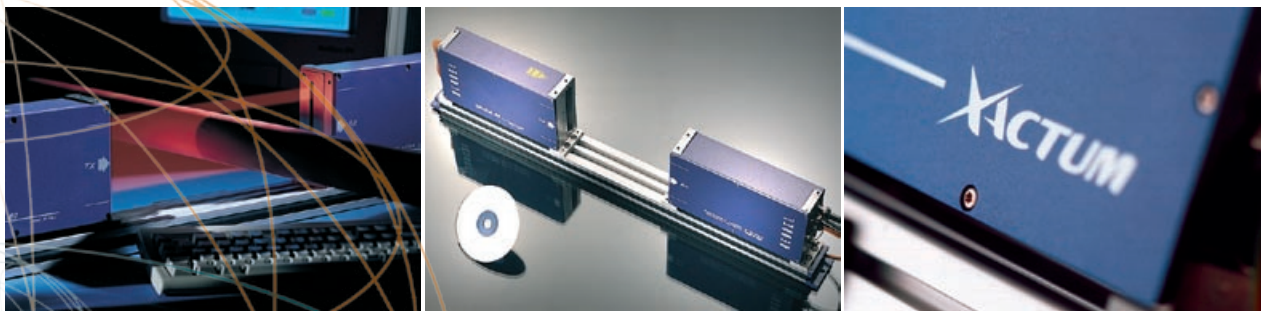


ACTUM Laser Micrometer for very high accuracy diameter measurement

XLS 80



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

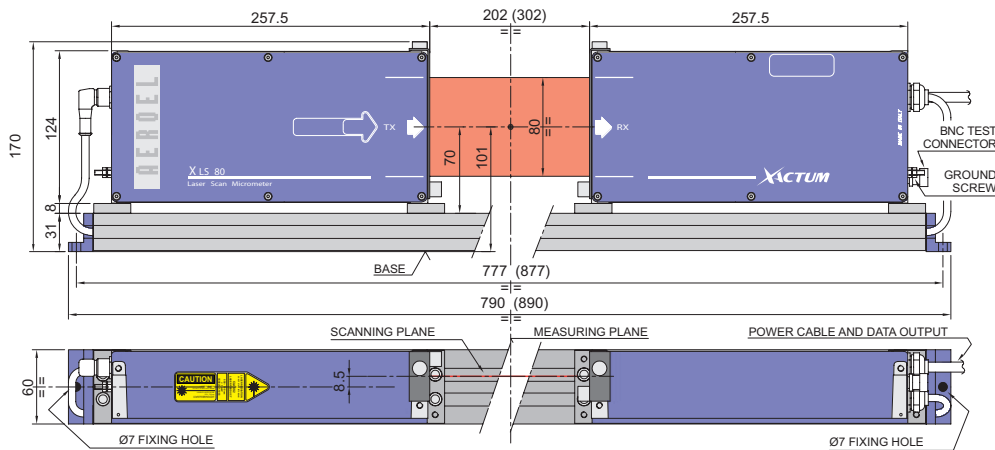
- 80 mm measuring range
- 0.3 μm repeatability
- 1200 Hz scanning frequency
- Excellent linearity
- Permanent self calibration
- Separable transmitter and receiver
- 3 years guarantee
- Fully re-programmable
- Direct connection to PC, PLC e NC

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

- Ground or turned parts
- Metal tubes and bars
- Plastic extruded tubes
- Electric cables and conductors
- Hot rolled products
- Glass tubes and rods

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	XLS80/200/A	XLS80/200/B	XLS80/1200/A	XLS80/1200/B
Measuring Field (mm)	80			
Measurable Diameters (mm)	0.75 ÷ 78			
Resolution (Selectable) (µm)	10 / 1 / 0.1 / 0.01			
Linearity (Centred Product) (µm)	± 1 ⁽¹⁾			
Linearity (in the Measuring Plane) ⁽²⁾ (µm)	± 2			
Side Linearity ⁽³⁾ (µm/mm)	± 0.7		± 0.05	
Repeatability (T=1s, ±3σ) (µm)	± 0.5		± 0.3	
Single Shot Repeatability (±3σ) (µm)	± 3.5		± 5	
Beam Spot Size (s,l) ⁽⁴⁾ (mm)	0.4 x 3.5	0.4 x 0.2	0.4 x 3.5	0.4 x 0.2
Side Dither of the Scanning Plane (mm)	± 0.8		± 0.2	
Scanning Frequency (Hz)	200		1200	
Scanning Speed (m/s)	235		353	
Gauge Thermal Coefficient ⁽⁵⁾ (µm/mm°C)	-0.0062			
Power Supply	24 VDC; 0.3 A (1 A peak)			
Laser Source	VLD (Visible Laser Diode); λ = 650 nm			
Dimensions ⁽⁶⁾ (mm)	787 (887) x 170 x 60			
Weight ⁽⁶⁾ (kg)	7 (7.2)			
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)			
SPECIFICATIONS IN ALS MODE, CONNECTED TO A CE-10 OR IBU-10 EXTERNAL UNIT				
Type of ALS compatible gauge	ALS80/200/A	ALS80/200/B	ALS80/400/A	ALS80/400/B
Resolution (Selectable) (µm)	10 / 1 / 0.1			
Repeatability (T=1s, ±3σ) (µm)	± 1		± 0.75	
Single Shot Repeatability (±3σ) (µm)	not specified			
Scanning Frequency (Hz)	200		400	
Scanning Speed (m/s)	235			

Notes

Two standard models are available: the first with head separation 202 mm and the second with head separation 302 mm.

⁽¹⁾ For $\Phi \leq 40$ mm. For $40 \leq \Phi \leq 78$ mm the linearity is ± 1.5 µm.

⁽²⁾ Maximum error, when a master is moved in the measuring plane, checked with $\Phi = 20$ mm. The measuring plane is located halfway between transmitter and receiver.

⁽³⁾ Maximum error, for a side displacement of the master out of the measuring plane.

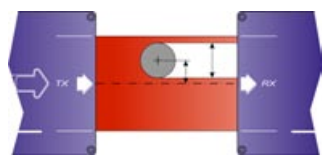
⁽⁴⁾ Elliptical spot: the smallest dimension is the thickness.

⁽⁵⁾ Typical value. It states the measurement drift due to the room temperature change, when measuring a master with null coefficient of expansion (INVAR).

⁽⁶⁾ The figures between brackets are related to the model with head separation 302 mm.

Specifications subject to change without notice

Types of measures, with standard software



Only 1 part in the measuring field, opaque or transparent
Measured dimensions: diameter and 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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