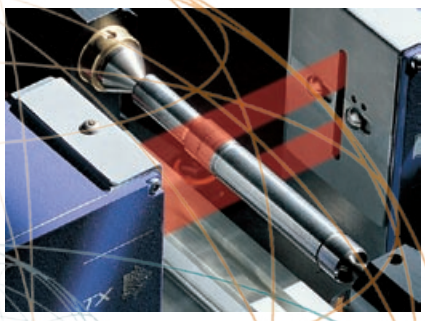
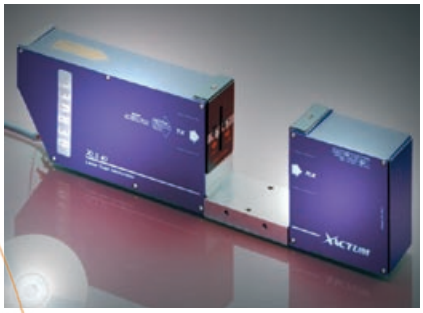
# XACTUM Laser Micrometer
# for very high accuracy diameter measurement

# XLS 40






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

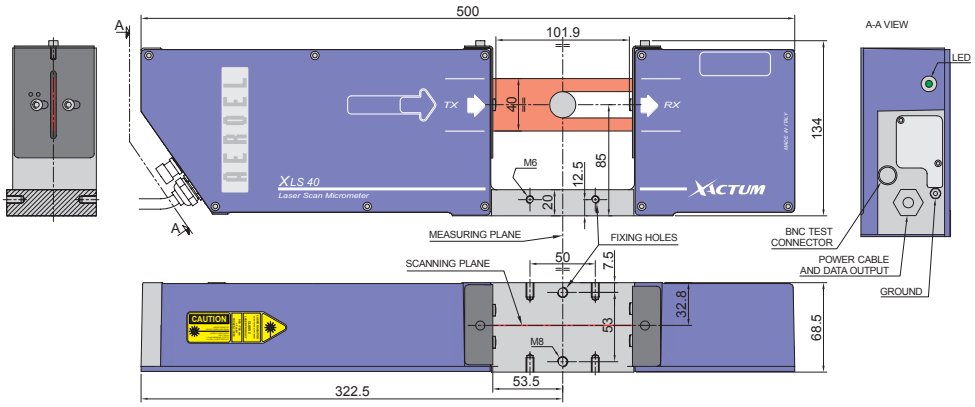
- 40 mm measuring range
- 0.1 µm repeatability
- 1200 Hz scanning frequency
- Outstanding single shot repeatability
- Excellent linearity
- Permanent self calibration
- Thermal drift self-compensation
- 3 years guarantee
- Fully re-programmable
- Direct connection to PC, PLC e NC

**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
- 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 | | XLS40/200/A | XLS40/200/B | XLS40/1200/A | XLS40/1200/B |
|---|---|---|---|---|---|
| **Measuring Field** | (mm) | 40 | | | |
| **Measurable Diameters** | (mm) | 0.1 ÷ 38 | 0.06 ÷ 38 | 0.1 ÷ 38 | 0.06 ÷ 38 |
| **Resolution (Selectable)** | (µm) | 10 / 1 / 0.1 / 0.01 | | | |
| **Linearity (Centred Product)** | (µm) | ± 0.5 (1) | | | |
| **Linearity (in the Measuring Plane)** (2) | (µm) | ± 0.5 | | | |
| **Side Linearity** (3) | (µm/mm) | ± 0.5 | | | |
| **Repeatability (T=1s, ±3σ)** | (µm) | ± 0.2 | | ± 0.1 | |
| **Single Shot Repeatability (±3σ)** | (µm) | ± 1.75 | | ± 2.5 | |
| **Beam Spot Size (s,l)** (4) | (mm) | 0.08 x 2 | 0.06 x 0.1 | 0.08 x 2 | 0.06 x 0.1 |
| **Side Dither of the Scanning Plane** | (mm) | ± 0.4 | | ± 0.1 | |
| **Scanning Frequency** | (Hz) | 200 | | 1200 | |
| **Scanning Speed** | (m/s) | 120 | | 180 | |
| **Gauge Thermal Coefficient** (5) | (µm/mm°C) | -0.0109 | | | |
| **Power Supply** | | 24 VDC; 0.3 A (1 A peak) | | | |
| **Laser Source** | | VLD (Visible Laser Diode); λ = 650 nm | | | |
| **Dimensions** | (mm) | 500 x 134 x 68.5 | | | |
| **Weight** | (kg) | 4.2 | | | |
| **Operating Temperature Range** | (°C) | 0 ÷ 50 | | | |
| **Storage Temperature** | (°C) | -20 ÷ +70 | | | |
| **Atmosferic 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 | | ALS40/200/A | ALS40/200/B | ALS40/400/A | ALS40/400/B |
|---|---|---|---|---|---|
| **Resolution (Selectable)** | (µm) | 10 / 1 / 0.1 | | | |
| **Repeatability (T=1s, ±3σ)** | (µm) | ± 0.6 | | ± 0.4 | |
| **Single Shot Repeatability (±3σ)** | (µm) | not specified | | | |
| **Scanning Frequency** | (Hz) | 200 | | 400 | |
| **Scanning Speed** | (m/s) | 120 | | | |

**Notes**

(1) For $\Phi \leq 25$ mm.
For $25 \leq \Phi \leq 38$ mm the linearity is ± 0.75 µm.

(2) Maximum error, when a master is moved in the measuring plane, checked with $\Phi = 8$ mm. The measuring plane is located halfway between transmitter and receiver.

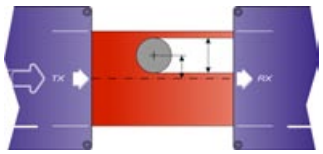
(3) Maximum error, for a side displacement of the master out of the measuring plane.

(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).

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 ≥ 1 programmable

**Extreme Values**: Average, Max, Min and Range = (Max-Min ) over k Instant Values, being k ≥ 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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ISO 9001:2000

D00087_E rev. 1,1 - 24.10.2005