

TXL-ELY-001 / 27 October 2026 · One-year manufacturer warranty

Single Fiber Tensile Tester

Precise measurement of single fiber breaking strength. Strengthens quality control processes by measuring the structural properties of fibers in detail at the micro level. Offers rapid calibration capabilities.



Model technical data

1	Its maximum load capacity is 500 gr and sample movement length is 250 mm.
2	It has lengthening measurement features with a precision of 0.1 mm.
3	The sample holder jaws are with pneumatic controls.
4	Rs232 computer output is standard for the device and the computer software, computer and printer are offered optionally.

Physical specifications and utilities

Electrical supply	Approx. 220–240 V AC, 50/60 Hz, single phase; build-dependent.
Power / connected load	Approx. 100–300 W connected load for preliminary planning.
Overall instrument dimensions	Approx. 450 × 450 × 1400 mm (W × D × H).
Instrument weight	Approx. 45–80 kg net.
Gross / shipping weight	Approx. 74.5–125 kg gross; estimated packing allowance.
Interfaces	Rs232 computer output is standard for the device and the computer software, computer and printer are offered optionally.
Lab requirements	Level, stable working surface; specimen conditioning follows the selected method.

Dimension order and approximate values are stated in each row. Packaging data are separate from instrument dimensions and net mass. Approx. rows are preliminary engineering estimates based on comparable equipment and function/capacity; they are not verified manufacturing measurements or standard requirements. Installation and shipment are finalised against the approved drawing and nameplate. Estimate scope: base product / one unit; external computer, bench and auxiliary plant excluded.

Specifications, dimensions, and power requirements are approximate and subject to change without prior notice for continuous design improvements.

Product technical specifications and images may vary according to manufacturing conditions and applicable standards.

Test and configuration

Measured output / function	Single-fibre breaking force, elongation and tenacity
Parameters selected for the method	Fibre type, linear density, gauge length and pretension
Verification points	Low-force range and jaw slip

Control and recording specification

Method-specific software and recording requirements follow. Delivered software modules are defined by the order scope.

- Method code and edition, specimen ID, operator and selected test parameters are linked to the record.
- Breaking force and elongation; linear density and its unit are recorded when calculating tenacity.
- Raw measurements, units, valid/invalid test flags and the reported result remain traceable.
- Calculations are checked against known inputs and an independent calculation; sensor channels are checked against calibration values.

Related test methods

ASTM D3822 · ISO 5079

Listed methods are application references. Suitability is established by assessing hardware, method edition and calibration together.

Test parameters for the reviewed method

The values below were reviewed in selected clauses of the stated source edition. They are not a declaration of equivalence to a later edition or independent instrument verification.

ISO 5079:1995 / 5.1.1 / 8.3.2

1	Required adjustable CRE rates: at least 5-20 mm/min.
2	Maximum errors: force $\pm 1\%$; elongation ± 0.1 mm; initial length ± 0.2 mm.
3	Basic initial length: 20 mm; 10 mm for short fibres under method conditions.

ASTM D3822-96 / 6.1–6.2

1	Use a CRE single-fibre tester with break force at 20–90% of full scale, preferably 50–90%. Flat jaws minimize slippage. Wet-immersed testing requires a suitable liquid tank, specified separately from dry testing.
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