

TXL-IPL-007 / 27 October 2026 · One-year manufacturer warranty

Crimp Stability / Shrinkage Tester

An automatic instrument for measuring textured-yarn crimp and hot-air shrinkage parameters. Loads are applied automatically; the system is used with a dry-air heating chamber.



Model technical data

1	Pre-tension: 2.5 cN per position.
2	Speed range: max. 8,000 mm/min.
3	Applicable load: 2.5–2500 cN (automatic).
4	Measurement resolution: 1 µm.
5	Heating chamber temperature range: ambient – 300 °C.
6	Heating system: dry air.

Physical specifications and utilities

Electrical supply	Approx. 220–240 V AC, 50/60 Hz, single phase; build-dependent.
Power / connected load	Approx. 500–1500 W connected load for preliminary planning.
Overall instrument dimensions	Approx. 700 × 500 × 800 mm (W × D × H).
Instrument weight	Approx. 25–60 kg net.
Gross / shipping weight	Approx. 52.5–100 kg gross; estimated packing allowance.
Lab requirements	Heat-resistant bench and ventilation; clearance for hot surfaces.

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	Crimp, shrinkage or length change (%)
Parameters selected for the method	Pretension, heat treatment and reference length
Verification points	Length, pretension and temperature where applicable

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.
- The calculation and endpoint are defined by the selected method edition; instrument signals and operator assessments are kept distinct.
- 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.
- The ISO 5688 recipe records A/B method, holder/reel identity and verified geometry separately. Unavailable loads, temperature/time and formulas are not copied automatically from legacy DIN or ASTM recipes. Select the DIN 53866 part explicitly: Part 12 measures shrinkage force on short specimens; an applied constant load or length reading does not verify a shrinkage-force measurement channel.

Related test methods

ASTM D2259 · ASTM D4031 · DIN 53840 · DIN 53866 · EN 14621 · ISO 5688

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

Historical method references: DIN 53840

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.

ASTM D2259-96 / 6.1-6.2, 15

1	For shrinkage evaluation keep reeling tension below 1 cN/tex; a length-scale accuracy of 1/1000 is recommended. Shrinkage is $100 \times (\text{initial length} - \text{final length}) / \text{initial length}$; dry heat, boiling water and steam are separate treatment options.
EN 14621:2005 / 4.1	
1	Textured-yarn crimp method: length resolution 0.05 mm or better; the relevant hot-air treatment requires 120 ± 4 °C near specimens and usable chamber height at least 600 mm. Keep temperatures and loads of different shrinkage/crimp submethods separate.
ASTM D4031-95a / 6.1–6.5	
1	For textured-yarn skeins, reel perimeter is $1.0 \text{ m} \pm 2\%$; another perimeter requires agreement. The vertical measuring stand has a millimetre scale; loading masses are accurate to $\pm 0.1 \text{ g}$. Record loading option, skein size and wet/dry heat development separately.

ISO 5688:2024 / 1, 5.1, 6.1–6.2; printed pp.1–2 only

1	ISO 5688:2024 clause 6.1 — preparation reel: circumference 1000 ± 2.5 mm; selected winding tension maintained within $\pm 10\%$. Requires traversing to prevent overlap, turn counting and a reducible circumference for skein removal. These are method acceptance requirements, not verified instrument tolerances.
2	Clause 6.2 — vertical specimen frame higher than 600 mm, with specimens spaced apart. Upper hooks/clamps fixed; lower hooks move freely along guides to prevent twisting. Upper clamps and U-shaped loops may avoid knot slippage in coarse yarns. The 600 mm requirement is not overall instrument height; verify the specific holder geometry separately.
3	ISO 5688 distinguishes Method A hot air from Method B hot water. For B, clause 5.1 specifies distilled or ISO 3696 grade 3 water with 0.1 g/L non-ionic surfactant; another concentration requires agreement. This model has a documented dry-air heater; a B water bath is not assumed included. The preview ends at 6.2: test loads, temperature/time recipes and subsequent calculations remain unreviewed.