TXL-GEN-018 / 28 October 2026 · One-year manufacturer warranty

Coefficient of Friction Tester (TL-COF-01)

Measures the static and kinetic coefficient of friction of plastic film, flexible packaging, paper, board, textiles and similar flat materials by the horizontal sled method. One specimen is fixed to the test table and the other under a 200 g sled; a load cell measures friction force continuously. Static COF is taken from the first force peak, kinetic COF from the mean over the sliding interval. Separate recipes for ASTM D1894 and ISO 8295.



Model technical data

1	Method: horizontal plane sled method; static and kinetic COF.
2	Force range: 0–5 N (5 N load cell, 0–10 V transmitter).
3	Standard sled: 200 ±1 g · 63.5 × 63.5 mm.
4	Stroke: max. 150 mm; 70 mm and 150 mm recipes.
5	Standard speeds: 100 / 150 mm/min (selected by recipe).
6	Test table: ≈ 300 × 150 mm, replaceable 304 stainless plate.
7	Housing: ≈ 430 × 320 × 190 mm (W × D × H).
8	Controller: 4.3-inch touchscreen PLC/HMI, recipe-based test control.
9	Drive: NEMA 23 closed-loop stepper motor and SFU1605 ball screw.
10	Safety: emergency stop, limits, drive and overforce alarms.

Physical specifications and utilities

Electrical supply	Manufacturer publication: 230 V AC, 50 Hz; internal 24/48 V DC. Internal DC rails are not a second external mains supply; verify phase and total power from the nameplate.
Power / connected load	Approx. 30–100 W connected load for preliminary planning.
Overall instrument dimensions	Housing: ≈ 430 × 320 × 190 mm (W × D × H).
Instrument weight	Approx. 15–30 kg net.
Gross / shipping weight	Approx. 26.5–47.5 kg gross; estimated packing allowance.
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	Static and kinetic coefficients of friction of flat surfaces
Parameters selected for the method	Contacting surface pair, total wrapped sled and specimen mass, pulling speed and evaluation interval
Verification points	Load cell, total sled mass, pulling speed and static-peak capture

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.

• Static COF = initial-motion peak force / normal force; kinetic COF = mean uniform-sliding force / normal force. Force and normal load use the same unit system.

• 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 D1894 · ISO 8295

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.

ASTM D1894-24 / 5.1.1, 5.1.9, 5.1.11, 6.5, 9-11

1	Sled face 63.5 × 63.5 mm; total wrapped sled and specimen mass 200 ± 5 g. Pulling speed 150 ± 30 mm/min; force measurement within ±5% of its value. Results are not directly comparable with ISO 8295.
2	Static coefficient is the initial-motion peak force divided by normal force; kinetic coefficient uses mean sliding force. At least five specimens; report means to three and standard deviations to two significant figures.

ISO 8295:1995 / 5, 7-11

1	Film friction: 200 ± 2 g, 40 cm² sled; normal speed 100 ± 10 mm/min. Calculate static peak and dynamic mean separately; verify ±2% force measurement and 15 s specimen contact time.