

TXL-KMS-031 / 27 October 2026 · One-year manufacturer warranty

Light Fastness Tester (Xenon Arc)

Determination of colour fastness under artificial daylight (D65) using a filtered xenon arc lamp. Used for textiles as well as plastics, paper, leather and coatings; it simulates UV and visible solar radiation more closely than any other artificial light source. Accelerated weathering includes a simulated rain cycle that introduces thermal shock to the specimen. Touch screen panel, chamber viewing window and USB interface are supplied as standard.



Model technical data

1	Lamp: 2000 W air-cooled xenon.
2	Irradiance (300-400 nm): 40-50 W/m².
3	Sample: 6 position / 18 sample holder.
4	Average lamp life time: 2000 h.
5	Test chamber humidity range: ambient - 55% RH.
6	Test chamber temperature range: ambient - 40 °C.
7	Black standard temperature range: ambient - 70 °C.
8	Water reservoir capacity: 40 L.
9	Touch screen panel: supplied as standard.
10	Chamber viewing window: supplied as standard.
11	Working mode: turning and non-turning.
12	Dimensions (approx.): 750 (W) x 780 (D) x 1650 (H) mm.
13	Weight (approx.): 180 kg.
14	Electrical supply: single phase 230 V ±15% (3.5 kW) 50/60 Hz.
15	Water: pure (ISO 3696 Grade 3).
16	Recommended ambient temperature range: 16-24 °C.
17	Recommended ambient humidity range: 30-65% RH (non-condensing).
18	Interface: USB.

Physical specifications and utilities

Electrical supply	Electrical supply: single phase 230 V $\pm$ 15% (3.5 kW) 50/60 Hz.
Power / connected load	Electrical supply: single phase 230 V $\pm$ 15% (3.5 kW) 50/60 Hz.
Overall instrument dimensions	Dimensions (approx.): 750 (W) x 780 (D) x 1650 (H) mm.
Instrument weight	Weight (approx.): 180 kg.
Gross / shipping weight	Approx. 223–250 kg gross; estimated packing allowance.
Water requirements	Water: pure (ISO 3696 Grade 3).
Interfaces	Interface: USB.
Lab requirements	Ventilation; suitable purified water and drain for condensation / spray options.

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	Colour fastness after xenon exposure
Parameters selected for the method	Filters, irradiance, panel temperature, humidity and blue wool
Verification points	Irradiance, temperature, humidity and blue-wool reference

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.
- Irradiance, temperature and moisture stages are time-aligned; spectral band and integration interval are stated when calculating dose.
- 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 C9/C9A record holds edition, instrument/appendix choice, filter/sensor identity, humidity-control fabric result and operator Blue Wool/grey-scale assessment. C9A adds dry/wet masses, 200–250% pickup, film and invalidation due to drying. Different irradiance bands and BPT/BST sensors are not made equivalent by unit conversion.

Related test methods

ISO 105-B02 · ISO 105-B04 · ISO 105-B07 · ISO 4892-1 · ASTM D6695 · ASTM G151 · ASTM G155 · EN 15187 · AATCC 16 · AATCC 169 · M&S C9 · M&S C9A · NF G07-012-2

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

Historical method references: NF G07-012-2

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 G155-04a / 6.3, 6.6.1.1

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| 1 | For xenon exposure periodically calibrate time, temperature, humidity and irradiance channels. Spray-water requirement: conductivity below 5 $\mu\text{S}/\text{cm}$ and solids below 1 ppm; report pH. Select exposure cycle with the material specification. |
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ISO 105-B07:2009 / TS EN ISO 105-B07:2010 / 7.2-7.3

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| 1 | For light fastness of perspiration-wetted textiles, soak specimens for 30 ± 2 min; target wet pickup $100 \pm 5\%$. Link perspiration solution, wet pickup, light exposure and colour assessment in the record. |
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AATCC 16-2004 / 1, 3.4, 12

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| 1 | Record the light source and test option of the 2004 edition. Black standard and black panel thermometers do not measure the same temperature and are not interchangeable; link the selected sensor and reference-fabric operational check to the report. |
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AATCC 169-2009 / 6.1, 7.2

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| 1 | Unless otherwise specified, this edition selects $0.35 \pm 0.01 \text{ W}/(\text{m}^2 \cdot \text{nm})$ at 340 nm or $40 \pm 1.5 \text{ W}/\text{m}^2$ over 300–400 nm. Keep bands and units distinct; record cycle, humidity, chamber and black panel/standard temperatures separately. |
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ASTM G151-06 / 5.1.7, 5.3.6

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| 1 | Place the radiometer to receive the same irradiance as the specimen surface. When controlling humidity, shield the sensor from direct radiation and spray; this edition keeps measured RH within $\pm 5\%$ of its setpoint. Record sensor position and calibration. |
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ISO 105-B02:2014 / 5.2.1

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| 1 | Xenon light fastness: $42 \pm 2 \text{ W}/\text{m}^2$ over 300–400 nm or $1.10 \pm 0.02 \text{ W}/(\text{m}^2 \cdot \text{nm})$ at 420 nm. Black-panel and black-standard settings are not interchangeable; record selected humidity condition and blue-wool reference with the recipe. |
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ISO 105-B04:1994 / TS EN 2000 / 4.3

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| 1 | Artificial-weathering fastness cycle: 1 min spray and 29 min drying. During the dry phase, chamber at most 40°C ; black panel at most 20°C above chamber. Protect blue wools from direct spray; use deionized water. |
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TS EN ISO 4892-1:2006 / EN 2000 / 5.1.2

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| 1 | For laboratory light exposure, minimum irradiance in the specimen plane must be at least 70% of maximum. At least 90% uniformity may remove the need for periodic repositioning. This general clause does not define a complete xenon or UV cycle. |
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ASTM D6695-08 / Table 1, cycle 1 only

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| 1 | 2008 Table 1 cycle 1: continuous light, 102 min dry / 18 min light plus water spray; dry phase $50 \pm 5\%$ RH. Uninsulated black panel $63 \pm 2^\circ\text{C}$; $0.35 \pm 0.02 \text{ W}/(\text{m}^2 \cdot \text{nm})$ at 340 nm. Other cycles are separate recipes; current-edition equivalence unverified. |
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EN 15187:2006 / SIST EN 15187:2007 / 1, 4.2, 5.1–5.3 / Tables 1–2

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| 1 | 2006 method, rigid furniture surfaces: humidity-controlled air-cooled xenon $50 \text{ W}/\text{m}^2$ (300–400 nm), BST $55 \pm 2^\circ\text{C}$, RH $50 \pm 10\%$. Without humidity control: $550 \text{ W}/\text{m}^2$ (300–800 nm), BST $55 \pm 2^\circ\text{C}$. These edition-specific values do not verify the revised 2024 tables. |
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EN 15187:2024 / 1, 4.2, 5.1 introduction; Tables 1/2 not obtained

1	2024 scope/5.1: rigid furniture surfaces; excludes finishes on leather and fabrics. Xenon requires window-glass filters, Method B in EN ISO 4892-2:2013. Humidity control is the reference when humidity effects cannot be excluded. Verify the numerical conditions of 2024 Tables 1/2 separately.
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M&S C9 — October 2004 / Apparatus/specimen; exposure/report; Appendix I(a–g), II and example; pp.1–11

1	M&S C9 October 2004: fabric specimen at least 45 × 20 mm; British Blue Wool pieces 45 × 15 mm. Requires suitable masks and white card without optical brightener. The endpoint is grey-scale 4 change of the selected Blue Wool reference; a fixed time/dose programme alone does not provide the same assessment.
2	Appendix I verifies 40% specimen effective humidity using red humidity-control fabric; this is not a 40% chamber-RH setpoint. Distinguish black-panel readings of 40–45 °C from black-standard readings of 45–50 °C. Measure with all holders fitted. These conditions are not measured instrument tolerances.
3	Appendix II Ci3000+ setup: 42 W/m ² over 300–400 nm, black panel 45 °C, CIRA inner/Soda Lime outer filter. Example values of 45% RH and 30 °C chamber temperature are not universal settings. Select Appendix I rotation/light-dark operation separately from Appendix II continuous light; these settings do not establish verified Texlab hardware or current M&S approval.

M&S C9A — 10.12.2009 / Apparatus/preparation; assessment1–6; report; Appendices I–III; pp.1–11

1	M&S C9A 10.12.2009: specimen at least 45 × 20 mm; wet pickup 200–250% of dry mass, checked by weighing to ±0.01 g. Completely enclose in 25 µm BHT-free low-density polythene, with one layer on the exposed face. Blue Wool 1 and 2 remain dry and are not covered in film.
2	Remove the specimen at grey-scale 4 change of Blue Wool 1 and dry at room temperature in subdued light. A specimen that dries during exposure gives a void result and requires a fresh test. Grade downward to a half-grade and record machine model, solution and tone change separately. Wet pickup is not chamber humidity.
3	C9A Appendices I–III use specific instrument/filter/sensor setups. Do not copy Ci3000+ band-integrated irradiance into another instrument's 420 nm sensor recipe; verify bandwidth, units, filter and black-panel/black-standard sensor. Adjust effective humidity using red control fabric. This 2009 copy is not current M&S approval or proof of supplied hardware suitability.