INSTRON®

The difference is measurable®

6800 SERIES

Table Model Universal Testing Machines

The 6800 Series universal testing machines are designed to perform tensile, compression, flex, peel, puncture, friction, shear tests, and more. The systems are compatible with hundreds of grips and fixtures found in Instron's expansive accessories catalog, with specific configurations designed to perform many of the most popular ASTM and ISO tests.



FEATURES AND BENEFITS

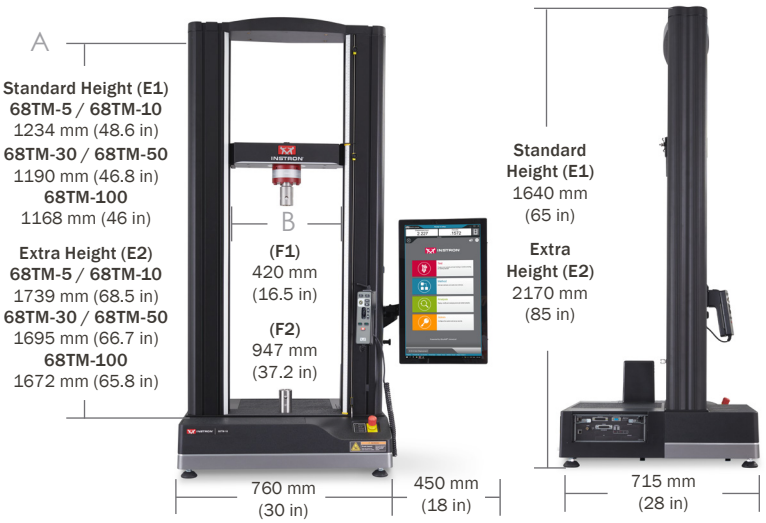
For both low and high force applications, the 6800 table model series provides up to 100 kN capacity available in standard and extra height options. Powered by Bluehill® Universal software, the 6800 Series systems are simple, smarter, and safer than ever before, featuring:

- **Auto Positioning:** Saves the correct fixture separation starting location for each test method. This ensures all operators run each test exactly the same way across all shifts every day.
- **Operator Protect:** Instron's patented Operator Protect architecture. An intelligent workflow keeps equipment and operators safer by controlling system status from setup to test completion.
- **Safety Coaching:** Clear visual feedback regarding system status at all times. Users will easily understand when the system is in a safe setup mode, and clearly reminded to exit the test space once these safety limits are removed.
- **Smart-Close Air Kit** (optional): Finger pinch hazards from pneumatic grips are reduced through lower grip-closing pressure and restricted speed during the setup phase of your test.
- **Collision Mitigation:** Reduce damage to equipment and specimens by stopping the crosshead if force is detected upon return or during a jog.
- An **all-new ergonomic handset** mounted directly into the base of frame with customizable Soft Keys, Specimen Protection, and Fine Position adjustment wheel
- Pre-loaded bearings, precision ball screws, an extra thick crosshead and base beam, and low-stretch drive belts to ensure **superior performance and longevity**
- Maintenance-free **brushless AC servomotors** enabling cyclic, creep, and relaxation testing for up to 10 days (up to 1Hz at 25°C)

INSTRON
10
TEN YEAR
MECHANICAL SYSTEMS
WARRANTY

Every purchase of a new 6800 Series system now includes a **10-YEAR MECHANICAL SYSTEMS WARRANTY** — the first of its kind in the materials testing industry.

SPECIFICATIONS



Data Acquisition Rate at the PC:
Up to 5 kHz simultaneous on force, displacement, and strain channels.

Load Measurement Accuracy:
± 0.5% of reading down to 1/1000th of load cell capacity with 2580 Series load cells

± 0.5% of reading down to 1/250th of load cell capacity with 2530 Series load cells

± 1.0% of reading down to 1/500th of load cell capacity with 2530 Series load cells

Strain Measurement Accuracy:
Meets or exceeds ASTM E83, BS 3846, ISO 9513, and EN 10002-4 standards.

Displacement Measurement Accuracy:
±0.01 mm or better

Testing Speed Accuracy:
(Zero or constant load) ±0.1% of set speed.

Single Phase Voltage:
100, 120, 220, or 240 VAC ±10%, 47 to 63 Hz.

Operating Temperature:
+5 to +40°C (+41 to +104°F)

Storage Temperature:
-20 to +55°C (-13 to +131°F)

Ingress Protection (IP) Rating:
IP 2X. Protective measures may be required if excessive dust, corrosive fumes, electromagnetic fields, or hazardous conditions are encountered.

Humidity Range:
+10 to +90%, non-condensing at 20°C

UL Certified and CE Compliant:
All standard 68TM frames are UL Certified*, comply with all applicable European standards, and are CE marked.

* Applies to 68TM frames shipped on or after October 26, 2026.

		68TM-5	68TM-10	68TM-30	68TM-50	68TM-100
Force Capacity	kN	5	10	30	50	100
	lbf	1125	2250	6750	11250	22480
Crosshead Travel	mm	1163 (E1), 1648 (E2)	1163 (E1), 1648 (E2)	1119 (E1), 1605 (E2)	1119 (E1), 1605 (E2)	1097 (E1), 1582 (E2)
	in	45.8 (E1), 64.9 (E2)	45.8 (E1), 64.9 (E2))	44.1 (E1), 63.1 (E2)	44.1 (E1), 63.1 (E2)	43.2 (E1), 62.3 (E2)
Vertical Test Space (A)*	mm	1234 (E1), 1739 (E2)	1234 (E1), 1739 (E2)	1190 (E1), 1695 (E2)	1190 (E1), 1695 (E2)	1168 (E1), 1672 (E2)
	in	48.6 (E1), 68.5 (E2)	48.6 (E1), 68.5 (E2)	46.8 (E1), 66.7 (E2)	46.8 (E1), 66.7 (E2)	46 (E1), 65.8 (E2)
Horizontal Test Space (B)	mm	420	420	420 (F1), 947 (F2)	420	420
	in	16.5	16.5	16.5 (F1), 37.2 (F2)	16.5	16.5
Maximum Speed	mm/min	3048	2032	1016	762	508
	in/min	120	80	40	30	20
Minimum Speed	mm/min	0.001	0.001	0.001	0.001	0.001
	in/min	0.00004	0.00004	0.00004	0.00004	0.00004
Maximum Return Speed	mm/min	3500	2100	1100	800	508
	in/min	138	83	43	31	20
Footprint Dimensions (h × w × d)**	mm	1640 × 760 × 715	1640 × 760 × 715	1640 × 760 × 715	1640 × 760 × 715	1640 × 760 × 715
	in	65 × 30 × 28	65 × 30 × 28	65 × 30 × 28	65 × 30 × 28	65 × 30 × 28
Position Control Resolution	nm	9.9	4.9	2.6 (F1), 2.8 (F2)	1.8	2.69
	µin	0.39	0.19	0.10 (F1), 0.11 (F2)	0.07	0.08
Frame Axial Stiffness	kN/mm	45	50	140 (F1), 88 (F2)	180	180
	lb/in	256,950	285,500	799,000 (F1), 502,000 (F2)	1,027,000	1,027,000
Maximum Force at Full Speed	kN	2.5	5	15	25	50
	lbf	563	1125	3372	5620	11250
Maximum Speed at Full Force	mm/min	1524	1016	508	381	254
	in/min	60	40	20	15	10
Weight	kg	139 (E1), 154 (E2)	139 (E1), 154 (E2)	196 (E1+F1), 215 (E2+F1) 453 (E1+F2), 471 (E2+F2)	255 (E1), 278 (E2)	266 (E1), 295 (E2)
	lb	307 (E1), 340 (E2)	307 (E1), 340 (E2)	433 (E1), 473 (E2) 998 (E1+F2), 1038 (E2+F2)	561 (E1), 612 (E2)	586 (E1), 651 (E2)
Maximum Power Requirements	VA	1400	1400	1400 (F1) 1500 (F2)	1400	1200

* The F2 option for 68TM-30 reduces test space by 53 mm (2 in).
** The footprint width is for the system only. The Operator Dashboard monitor may add 450 mm (18 in) to the overall width of the frame. The extra height (E2) option adds 530 mm (21 in) to the overall height of the frame.

www.instron.com

INSTRON®

Worldwide Headquarters
825 University Ave, Norwood, MA 02062-2643, USA
Tel: +1 800 564 8378 or +1 781 575 5000

European Headquarters
Coronation Road, High Wycombe, Buckinghamshire HP12 3SY, UK
Tel: +44 1494 464646

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