

## 6800 SERIES

### Floor Model Universal Testing Machines

The 6800 series universal testing machines are designed to perform tensile, compression, flex, peel, puncture, friction, shear tests, and more. These 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 higher force applications, the 6800 floor model series provides capacities up to 300 kN and is available in multiple height and width options. Powered by Bluehill Universal, the 6800 series are designed to eliminate obstacles to testing speed, ease, and accuracy.

- **Built to Perform:** The frame has been fortified against shock and vibration which allows for continuous testing at the maximum rated frame capacity, and the maintenance-free brushless AC servomotors support continuous cyclic, creep, and relaxation testing for up to 10 days.
- **Built to Last:** Reduction in debris ingress has been achieved through gasketing and a patent-pending airflow design. Internal electrical and mechanical hardware is located safely away from the test area. The 12 mm metal work surface is treated with an abrasion-resistant coating for durability.
- **Ergonomic Design:** The tall base option provides an ergonomically comfortable testing station, and the contoured design allows the operator easy access to the testing space and the all-new ergonomic handset, which offers customizable soft keys, specimen protect, and a fine position adjustment wheel.
- **User Safety Enhancements:** Patent-pending Operator Protect architecture keeps operators safer by controlling system status and speeds throughout setup and testing via intelligent workflows. Safety Coaching visually alerts the operator to when the machine is in a safe setup mode and clearly identifies when the safety limits have been removed for testing.
- **Testing Repeatability:** Auto Positioning saves a predetermined fixture separation starting location which ensures all operators begin a specified testing method from an identical point, saving time and improving data repeatability.
- **Collision Mitigation:** Reduce damage to equipment and delicate specimens by stopping the crosshead if force is detected upon jog or return.
- **Unmatched Support:** We service and calibrate more than 30,000 Instron systems in active use worldwide every year.



SPECIFICATIONS

		68FM-100	68FM-300
Force Capacity	kN	100	300
	lbf	22480	67440
Crosshead Travel	mm	1407 (E1), 1906 (E2)	1359 (E1), 1858 (E2)
	in	55.3 (E1), 75 (E2)	53.5 (E1), 73.1 (E2)
Vertical Test Space (A)	mm	1494 (E1), 1993 (E2)	1446 (E1), 1945 (E2)
	in	58.81 (E1), 78.46 (E2)	56.9 (E1), 76.5 (E2)
Horizontal Test Space (B)	mm	575 (F1)	575 (F1), 934 (F2)
	in	22.6 (F1)	22.6 (F1), 36.8 (F2)
Maximum Speed	mm/min	1016 (1PH), 1080 (3PH)	560 (3PH)
	in/min	40 (1PH), 42 (3PH)	22 (3PH)
Minimum Speed	mm/min	0.00005	0.00005
	in/min	0.000002	0.000002
Maximum Return Speed (1 & 3 Phase)	mm/min	1016 (1PH), 1160 (3PH)	640 (3PH)
	in/min	40 (1PH), 45.6 (3PH)	25.1 (3PH)
Position Control Resolution	nm	2.215625	1.140395
	µin	0.087	0.044
Frame Axial Stiffness	kN/mm	300	350
	lb/in	1713044	1998552
Maximum Force at Full Speed	kN	50 (1PH), 75 (3PH)	150
	lbf	11240 (1PH), 16860 (3PH)	33720
Maximum Speed at Full Force	mm/min	508 (1PH), 762 (3PH)	280 (3PH)
	in/min	20 (1PH), 30 (3PH)	11 (3PH)
Footprint Dimensions (h × w × d)*	mm	2287 (B1), 2587 (B2) × 1140 (F1), 1499 (F2) × 786	
	in	90 (B1), 101.9 (B2) × 44.89 (F1), 59 (F2) × 30.9	
Weight**	kg	799.2 (E1), 860.9 (E2)	871.5 (E1), 947.6 (E2)
	lb	1762 (E1), 1898 (E2)	1921 (E1), 2089 (E2)
Maximum Power Requirements	VA	3000 (1PH), 4200 (3PH)	4200 (3PH)

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 (with Advanced Performance Option).

± 0.5% of reading down to 1/500th of load cell capacity with 2580 Series load cells.

± 0.5% of reading to 1/250th of load cell capacity with 2525 or 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 0.05% of displacement (whichever is greater).

Testing Speed Accuracy:

(Zero or constant load) ±0.1% of set speed.

Single Phase Voltage:

208 to 240 VAC -5% / +10%, 47 to 63 Hz  
Single phase has reduced load and speed ratings.

Three Phase Voltage:

208, 240, or 400 VAC +10%, 47 to 63 Hz  
Preferred Configuration for 68FM-100 and 68FM-300.

Operating Temperature:

+5 °C to +40 °C (+41 °F to +104 °F)

Storage Temperature:

-25 °C to +55 °C (-13 °F 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.

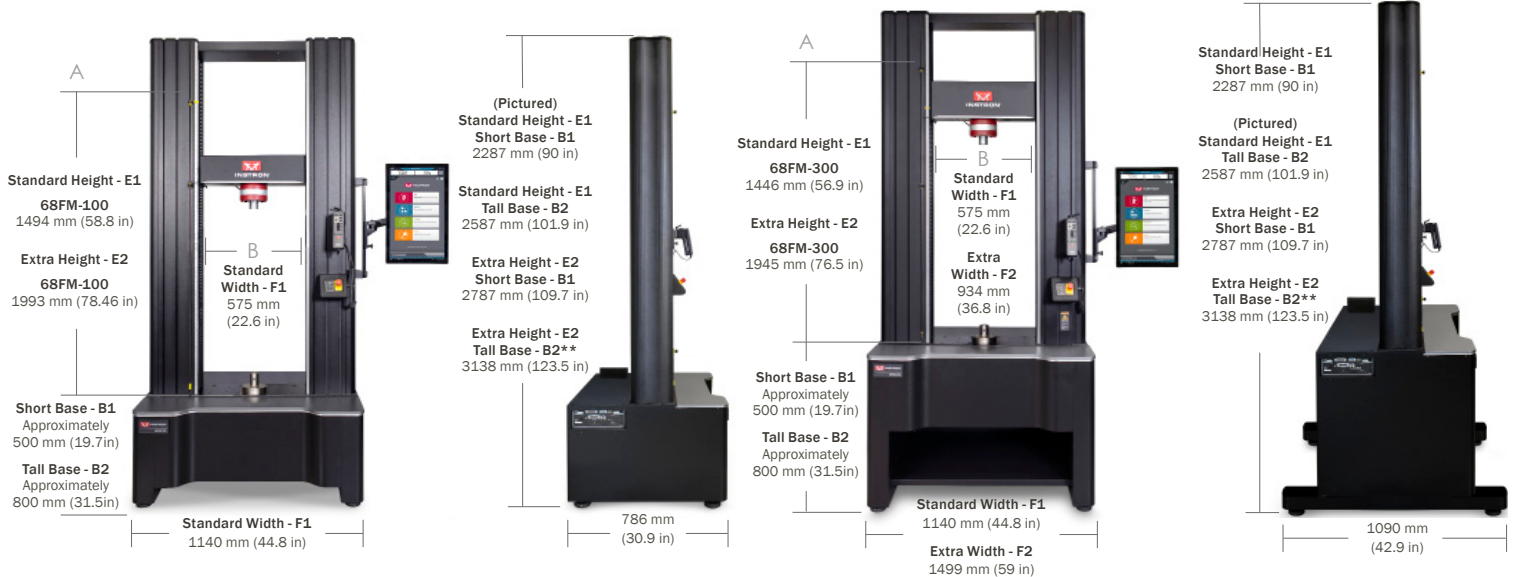
Humidity Range:

+10 to +90%, non-condensing at 20 °C

These specifications were developed in accordance with Instron's standard procedures and are subject to change without notice. All systems conform to all relevant European standards and carry a CE mark.

\* Standard height and short base dimensions only. The extra height (E2) option adds 499 mm to overall height, the tall base (B2) option adds 300 mm to overall height. The footprint width is for the system only. The Operator Dashboard monitor may add 500 mm to the overall width of the frame. Extra Height (E2) with Tall Base (B2) footprint also includes stabilizers, adding 91 kg (200 lb) to the weight.

\*\* Tall Base variants add 62 kg (136 lb) to the weight. Extra wide (F2) variants add 300 kg (661 lb) to the weight.



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