

## FMD Series

### Force Measurement Test Frames - Dual Column

The FMD Series are dual column, bench-top testing systems that operate with our L2 Force Measure software; S2 Spring Test software; and L2 Plus Force Analysis software. L2 and S2 systems operate using a tablet computer and are ideal for high-volume, repetitive testing applications. L2 Plus systems operate using an all-in-one computer. The FMD test frames are available in three load capacities: 10kN, 30kN and 50kN. They can be used for tensile, compressive, cyclic, flexural, shear, creep and other common force measurement methods. FMD testers feature a granite base with all-metal columns and pre-loaded ball screws making them inherently stiff. Deflection compensation is included in our software so that extension control and measurements are precise, accurate and repeatable. Magnetic travel limits are adjustable to prevent over travel situations. Communication between the test frame and user interfaces is USB. Frames feature optional digital I/O. Data sampling is selectable between 5-1000Hz. FMD test frames may use ULC, MLC or FLC load cell sensors. Sensors are IEEE 1451.4 compliant. Frames may be fitted with optional splinter shield.

### Features & Specifications

- Ideal for tension, compression, flexural, cyclic and shear testing applications
- Use with Starrett L2 Force Measure software or S2 Spring Measurement software on our Windows®-based tablet PC
- Use with Starrett L2 Plus Force Analysis software on our Windows®-based all-in-one computer
- Excellent load, displacement, speed and position accuracies
- Superior frame stiffness and position control
- ULC, MLC and FLC load cell sensors are IEEE 1451.4 compliant and supplied with a factory Certificate of Calibration
- Optional digital I/O
- Data sampling from 1 to 2000 Hz
- USB Communications
- Wide selection of test fixtures and accessories



**FMD-50K Test Frame**  
*Shown with optional test fixture and load cell sensor*

## Specifications

### FMD Series Force Measurement Frames

Model Number		FMD-10K	FMD-30K	FMD-50K
Load Capacity	kN	10	30	50
	kgf	1000	3000	5000
	lbf	2250	6750	11,250
Minimum Speed	mm/min	0.05	0.05	0.05
	in/min	0.002	0.002	0.002
Maximum Speed	mm/min	1525	1525	752
	in/min	60	60	30
Position Control Resolution	µm	0.05	0.025	0.025
	µin	1.9	0.9	0.9
Frame Axial Stiffness	kN/mm	72	150	161
	lb/in	412,844	855,513	918,367
Vertical Test Space <sup>1</sup>	mm	1270	1245	1220
	in	50	49	48
Column Space	mm	424	424	424
	in	16.7	16.7	16.7
Total Crosshead Travel	mm	1162	1137	1111
	in	45.75	44.75	43.75
Accuracy Load Measurement		Load Cell Sensor Dependent (See Notes)		
Accuracy Position Measurement <sup>2</sup>		±0.001 inch (±20 µm)		
Accuracy Crosshead Speed		+/-0.1% of set speed		
Data Sampling	Hz	5 to 2000		
Digital I/O (optional)		12 total channels Channel 1 & 2 for Power (5-24V) Channels 3 thru 10 for either digital inputs or outputs Channels 11 & 12 for Ground		
Analog Inputs (optional)		1 channel @ +/- 10V		
Analog Outputs (optional)		2 channels @ 0-10V		
Electrical Phase		1	1	1
Power Requirements		100, 120, 220, 230, 240Vac 10%	Single Phase Voltage (Vac) ±10% 220-240V	Single Phase Voltage (Vac) ±10% 220-240V
Maximum Power (VA)	Watts	900	1250	1250
Frequency	Hz	50/60		
Operating Temperature	°C	+10° to +38°C		
	°F	+50° to 100°F		
Storage Temperature	°C	-40° to +66°C		
	°F	-40° to 150°F		
Humidity		+10% to +90%, non-condensing		
Total Height	mm	1626	1626	1626
	in	64	64	64
Total Width	mm	787	787	787
	in	31	31	31
Total Depth	mm	736	736	736
	in	29	29	29
Weight	kg	136	192	225
	lb	300	425	500

### Notes:

#### Load Measurement Accuracy

+/-0.1% of full scale supplied with factory Certificate of Calibration. May be calibrated on-site to +/-0.5% of reading down to 1/100 of load cell capacity per ASTM E4, ISO 7500/1 and EN 10002-2.

#### Compliance

Starrett test systems conform to all relevant European standards and carry the CE mark.

Specifications are subject to change without notice.

### Notes

- Total vertical space is the distance from the top surface of the base plate to the bottom surface of the crosshead, excluding load cell sensor, test fixtures, and clevis adapter.
- Assumes Linear Error Correction and Deflection Compensation has been performed on test frame.

