

Motorized Pendulum Impact Testing System | MPX Series

The Instron® MPX Series of motorized pendulum impact testers are preferred for metals impact testing to Charpy and Izod standards. Available in capacities from 300 to 900 Joules, the MPX is efficient and easy to operate making it suitable for high-volume testing. The MPX includes an integrated guard and safety control system that meets the stringent requirements for the European CE mark and for ISO 13849.

Fracta™ Software comes standard with the MPX, allowing for simple data acquisition and reporting of absorbed energy. For advanced impact analysis and reporting, the MPX can be upgraded with Impulse™ Data Acquisition Software and instrumentation for direct measurement of impact force and striker velocity.

Features and Benefits

- Standard capacities include 300, 450, 600, 750, and 900 Joules
- Automatic test start at door closure for efficient testing and adherence to standards for non-ambient specimen testing
- Optional interchangeable hammer weights conveniently adjust the system capacity without removal of the hammer shaft
- Motorized hammer lift and automatic return to start test position for increased productivity and operator safety
- Hammer brake, clutch, and latch mechanisms respond quickly for faster operation
- Safety enclosure with interlocks protects the operator by preventing the hammer from releasing when doors are open
- Adjustable latch height adds configurability for testing at lower energies and velocities
- Standard base design meets ASTM and ISO recommendations
- Charpy anvil inserts and striker are selectable to meet a range of international test standards

Optional Accessories

- Interchangeable hammer weights
- Foundation preparation kit includes template and fasteners
- Instrumented Charpy tups and Impulse Data Acquisition Software
- Additional specimen tongs
- Izod striker and specimen vise
- Supports for testing sub-sized specimens
- Lateral expansion gauge
- NIST Charpy reference standards for ASTM E23



450MPX Impact System

Standards

The MPX is designed to meet the following standards:

- ASTM E23
- ISO 148
- EN 10045
- GOST 9454
- AS 1544
- JIS Z 2242
- JIS B 7722

MPX Specifications

Impact Energy	Joule lbf-ft	300 - 900 221.3 - 663.8
Release Angle (adjustable)	Degree	150
Pendulum Length	mm in	762 30
Maximum Hammer Speed	m/s ft/s	5.3 17.4
Encoder Resolution	Degree	0.009
System Dimensions (width × depth × height)	mm in	2200 × 1117 × 1990 86.6 × 44 × 78.3
Net Weight	kg lbs	1293 2850
Power		230 Vac, 1 Phase, 50/60 Hz, 15 Amp

Software

Designed specifically for testing metals to Charpy and Izod standards, Fracta™ Software provides an easy-to-use method for calculating and storing impact test results.

The package includes:

- Angular encoder
- USB communication box
- Mounting hardware and interconnect cables
- Network connectivity
- Available in the following languages: English, Spanish, Russian, Romanian, French, Czech, Simplified Chinese, and Turkish

Software Specifications

Calculations

- Energy absorbed
- Elasticity/Resilience

Data Collection Rate

- 1 kHz

Reporting Capability

- Stores results as .csv files that can be opened in applications such as Microsoft® Excel®
- Ability to define 10 user-designated input fields

Simple System Setup

- Hammer characteristics on single setup page
- Setup parameters stored to device

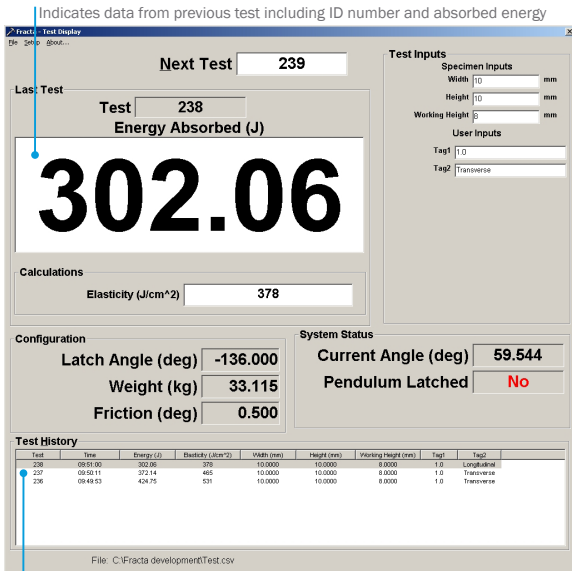
Display Features

- Status of system limits
- Hammer setup and verification
- Potential/impact energy, velocity, and test history
- Modulus of Elasticity

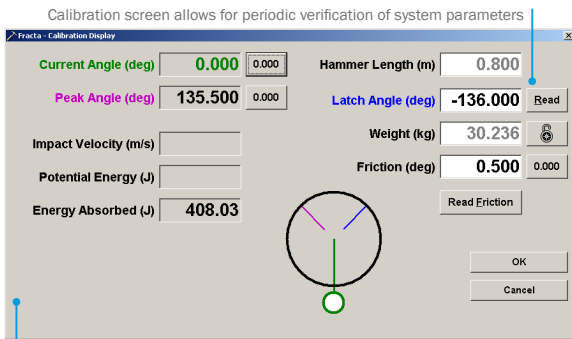
Notes

1. Minimum screen resolution requirement: 1220 x 1080
2. Windows® 7 (32-bit and 64-bit) and Windows 10 (64-bit only)

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Running log of results from previous tests



Graphical representation aids in understanding pendulum information

ASTM E23 Usable Range of Each Hammer Capacity

Initial Potential Energy (Joules)	Resolution at 15 Joules	Lower Limit Usable Range
300	0.016	0.4
450	0.023	0.6
600	0.029	0.8
750	0.036	0.9
900	0.044	1.1

Reference ASTM E23-12c Section A2.4.3



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