WAVEMATRIX™3

The Difference is Measurable

WaveMatrix is the industry's market leading software suite for dynamic and fatigue testing that is trusted by scientists, engineers and quality managers worldwide.

The latest version of the software builds upon the potential of its predecessors and introduces new features such as Test Review, Specimen & Test Inputs and Security.

Developed to work seamlessly alongside the latest PC software and firmware, WaveMatrix3 will save time, enhance productivity, improve confidence in the results being produced and help to futureproof facilities needing to adapt to new technologies.

Designed for customers, with the support of customers, WaveMatrix3 guarantees that when advancing the boundaries of material testing; the difference is measurable.

TEST REVIEW

Reducing the time taken to accurately perform tests has been a continuous focus for product development and with WaveMatrix3, this concept was central to development. Designed using expert customer feedback, the following features have been developed to accelerate the process of reviewing a test.

- Intuitive User Interface
- Retrospective Test Review

SPECIMEN & TEST INPUTS

Improving productivity can occupy a significant part of any organization's continuous improvement efforts and is a key component of sustainable growth and unlocking employee potential. WaveMatrix3 has been designed to improve throughput and minimize the inefficiency of routine testing.

- Customizable Specimen & Test Details
- Integrated Virtual Test Information

SECURITY

Resources required for test validation are necessary and critical to ensuring the quality of test data. WaveMatrix3 features help to simplify the conformity process so that laboratories are more effective, the potential for human error is reduced and confidence in the result is improved.

- PIN-Coded Accessibility
- User Defined Access Rights

IT COMPATIBILITY

As the world advances into the 4th industrial revolution, the world of personal computers, operating systems and the internet are being subjected to the demand for increased automation and data exchange; meaning that established technologies must innovate, adapt and be fit for the future.

- Microsoft Windows 11 Compatibility
- WaveMatrix Backwards Compatibility

INSTRON®

The difference is measurable®

SPECIFICATIONS

Feature	Description
Device Support	8800 (Servohydraulic and Electric Actuator) or ElectroPuls with the following version of firmware (or higher): 8800MT - V12.15.2677 or 8800T - V8.07.00
	1 or 2 Eurotherm (MODBUS) 2400, 2700, 3200, 3500 and K1S temperature controllers or 2400, 3200 and 3500 series temperature monitors[1]
	Instron Furnace Controller*[2]
	Instron Advanced Video Extensometer 2 (AVE2)*
	Instron XY-Stage*
	National Instruments DAQmx devices for additional Temperature and Voltage monitoring*
Security	PIN-Code Accessibility with 3-stage user defined access rights and unlimited user profiles
Control	Sine, triangle and square waves, trapezoids, holds, absolute/relative ramps, turning point and sample data playback
	Waveform Start and stop enveloping
	Amplitude control to correct for peak errors in a cyclic waveform
	Mixed mode control on cyclic waveforms
	Single and nested looping of steps
	Trend monitoring - control test flow based on relative or absolute changes in peaks or calculated per-cycle characteristics
	User defined events to control test progress
	Ability to pause and resume a test, either immediately or at some point in the future
	Control of digital and analogue outputs
	Capable of 1ms inter-block transfer time from one step in the sequence to the next
Data	Configurable data acquisition rate and re-sampling filter frequency (up to 10kHz)
	Advanced data reduction; using time, change in channel value, or simple points-per-cycle
	Data logging at independently configurable intervals for per cycle data (peak and trend) and full hysteresis data
	User-specified test and specimen inputs for dimensions and text, saved with the test record
	Test data output in ASCII text CSV format
	Automatic balance of extensometers and derived position channels at any stage of the test
	C# interface (advanced users only) for user-defined calculations during test
Live Test Space	Graphs and displays updated in real time while test is running
	Graphs for waveforms and hysteresis from raw and derived channels (X-Y, double-Y, multi-channel and chart recorder)
	Trend graphs for waveform peaks and calculated per-cycle characteristics throughout a step
	Configurable numeric displays for tracking data (transducer and derived channels), and cyclic peak and trend channels
	Customizable layout and content of test inputs, displays and graphs
Language	English, French, German, Chinese and Japanese

* Optional | [1] Each controller requires its own RS232 port | [2] Compatible with WaveMatrix V1.9.411 or later

ADDITIONAL MODULES

Calculations

Use live calculations and process data in real-time to gather more insightful data quicker whilst reducing post-test processing time. Choose from an extensive library of 20+ built-in algorithms (such as cyclic energy, or dynamic modulus) or create your own.

Advanced Control

Use an increased range of control modes and waveform types which automatically adjust the applied loading. Combine with live calculations to create sophisticated adaptive tests.

Specimen Self-Heating Control

Specimen Self-Heating Control helps to accelerate test programmes for polymer composites where specimens generate heat internally under cyclic loading. Adaptively controlling frequency in response to specimen temperature reduces time for long life tests and improves consistency between stress levels.

CATALOGUE NUMBERS

New Orders	2495-945	Core Software
	2495-945D1	Calculations Module
	2495-945E1	Advanced Control Module
	2495-945F1	Specimen Self-Heating Control
Upgrade	2495-975B1	Core Software for Users without existing WaveMatrix Software
	2495-975B2	WaveMatrix3 Upgrade for existing WaveMatrix1 Users
	2495-975B3	WaveMatrix3 Upgrade for existing WaveMatrix2 Users
	2495-975D1	Calculations Module
	2495-975E1	Advanced Control Module
	2495-975F1	Specimen Self-Heating Control

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