Tinius Olsen

VEM Software

VSS and HORIZON

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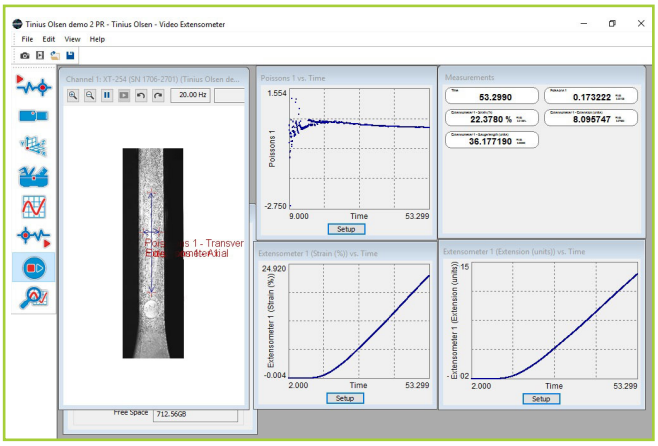
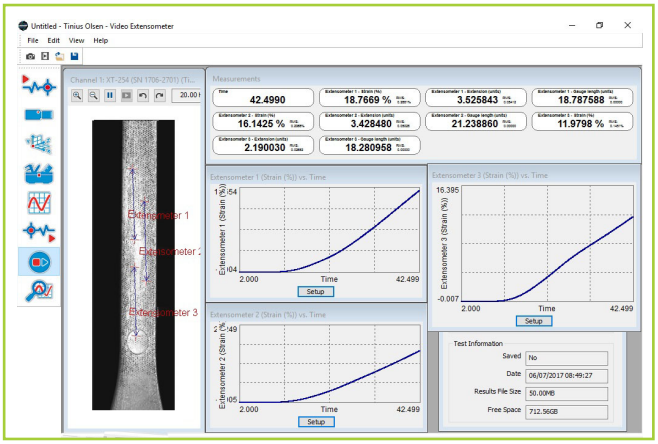
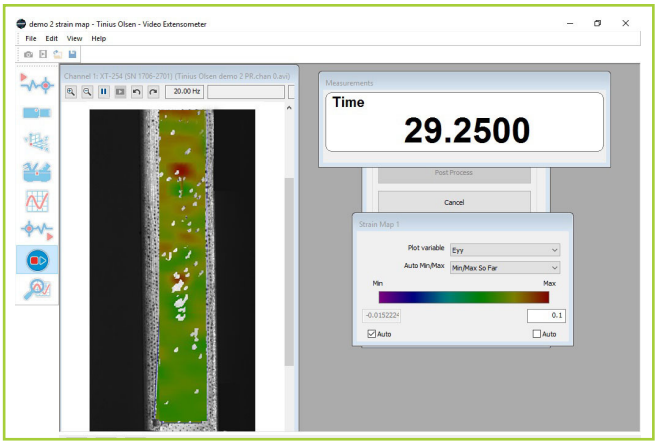
Tinius Olsen's VEM range of video extensometers are a combination of precision hardware; camera, lens technology – and software; data acquisition, signal processing and data interpretation. The VEM software is the user interface through which the power of the video extensometer system is fully realised. It can be used for standard routine and repetitive materials testing in tension, compression, shear or flexural modes with one or two gauge length references (L_0), or for more complex testing. This may require multiple gauge length references (L_0's) deriving multiple live strain readings and results in support of dual strain averaging, shear strain values, r&n, Poisson's ratio and live in-test specimen alignment monitoring.







The software can be configured to operate as required for the specific task as an integral part of Tinius Olsen's Horizon materials testing platform. It combines with a Tinius Olsen testing machine frame, capturing data and using that data in strain rate control of the testing machine. It can also be used with older Tinius Olsen and non-Tinius Olsen testing machine frames, where intimate digital integration is not always possible. Here, the strain data captured can be shared real time with the testing machine system. It can also bring the testing machine force data signal into the software to enable graphing and results to be calculated within the software alongside the legacy testing machine user interface.

The software is available in four levels; Horizon based, Basic, Standard and Advanced. Horizon based is the leanest in function – straight forward non-contacting extensometery, enabling real time graphs and results for strain measurement relative to basic gauge lengths.

Basic, Standard and Advanced all take advantage of the video capability, providing a post-test play back function. The recorded test, with embedded strain data, can be replayed, graphs and results reviewed. This can be a permanent record of the test stored as part of the test records alongside the traditional 2D X/Y graph and results.

Advanced is uniquely supplied with a full post-test analysis function. In addition to replaying a test for review, new measurements and gauge lengths can be applied. Original gauge lengths can be moved and replaced on the specimen – perhaps over an unexpected specimen break point. The test can then be rerun in the virtual environment and results and graphs recalculated. This is a powerful function for those engaged in research, who may find they need more results and data after the original test.

Key Features

- Non-contacting video extensometer solution
- One extensometer measures in tension, compression, flexural, shear modes
- No need for bonded strain gauges, multiple clip on extensometers for r&n
- Supports axial, transverse, orthogonal and rotational measurements
- Provides a permanent record for recall of the test in video format with full resolution embedded strain data
- Meets the requirements of ISO 9513 class 0.5, ASTM E83 class B1 and GB

Platform

* VSS = Video Support Software	Horizon Based	Horizon & VSS or VSS stand alone	Horizon & VSS or VSS stand alone	Horizon & VSS or VSS stand alone
Optional functional levels	None	Basic	Standard	Advanced

General Features

Live - Video and results	✓	✓	✓	✓
Record Archive - Save result and video	x	✓	✓	✓
Review Mode - Recall and replay test(s) see all GL, GL movement, digital meters/live results, including inputs	x	✓	✓	✓
Post-Process - Re-run test, re-analyse, re-calculate results, add and calculate new results	x	x	x	✓
Video Channels	1	2	2	4
Analog & Digital In /Out	x	✓	✓	✓

Measurement counts/results (max. no. [✓= no limit])

Time	1	1	1	1
UTC Time	✓	✓	✓	✓
Displacement - Two measurement points, the displacement measured is the distance a point moves from its original point position. Example: could use on a flex test to put two points on the specimen	2	2	2	2
Extensometer - 2 extensometers means 2*GL, 2* strain data streams relative to those GL(s) and 2* movement data streams relative to the GL(s) no units, both in any direction Tension/Compression	8	2	2	Up to 100 gauge lengths
Strain - Is effectively another extensometer single data stream % strain relative to GL in any direction	8	x	1	✓
Dual Average Strain - Extensometer single data stream % strain dual averaging function	8	x	1	✓
Poissons - Extensometer single data stream % strain with Poissons function	1	x	1	✓
Standard Mat Test - Enables user to enter specimen dimensions and calculate; Stress, Strain, E Modulus, Proof Stress (at user specified offset) Ultimate Stress and Ultimate Failure Strength assuming a force measurement is passed from the testing machine *Note use for standalone mode*	N/A	x	x	✓
Rotation - Continuous data stream from a point moving relative to a pivot point in degrees angle movement. Can be used as an indication of specimen alignment throughout the test	1	x	1	✓
Shear Strain - Extensometer single data stream % strain with shear function, e.g. ASTM D 7078	1	x	2	✓
Crack Length - Extensometer single data stream % strain with Peel test function, e.g. ASTM D5528,D3433, ISO 25217	x	option	option	option
2D DIC - Strain mapping	x	option	option	option
2D From Mat Test Lens	x	x	2	✓
Calibration Support Tools	✓	Pre-calibrated	Pre-calibrated	Pre-calibrated

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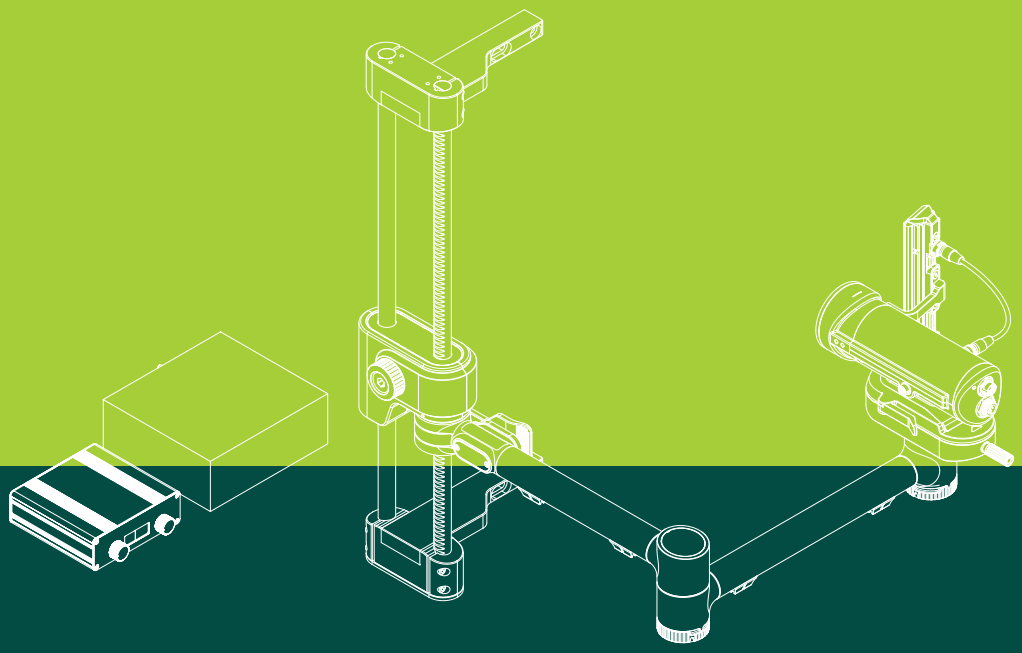
The first name in materials testing



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VSS and Horizon

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