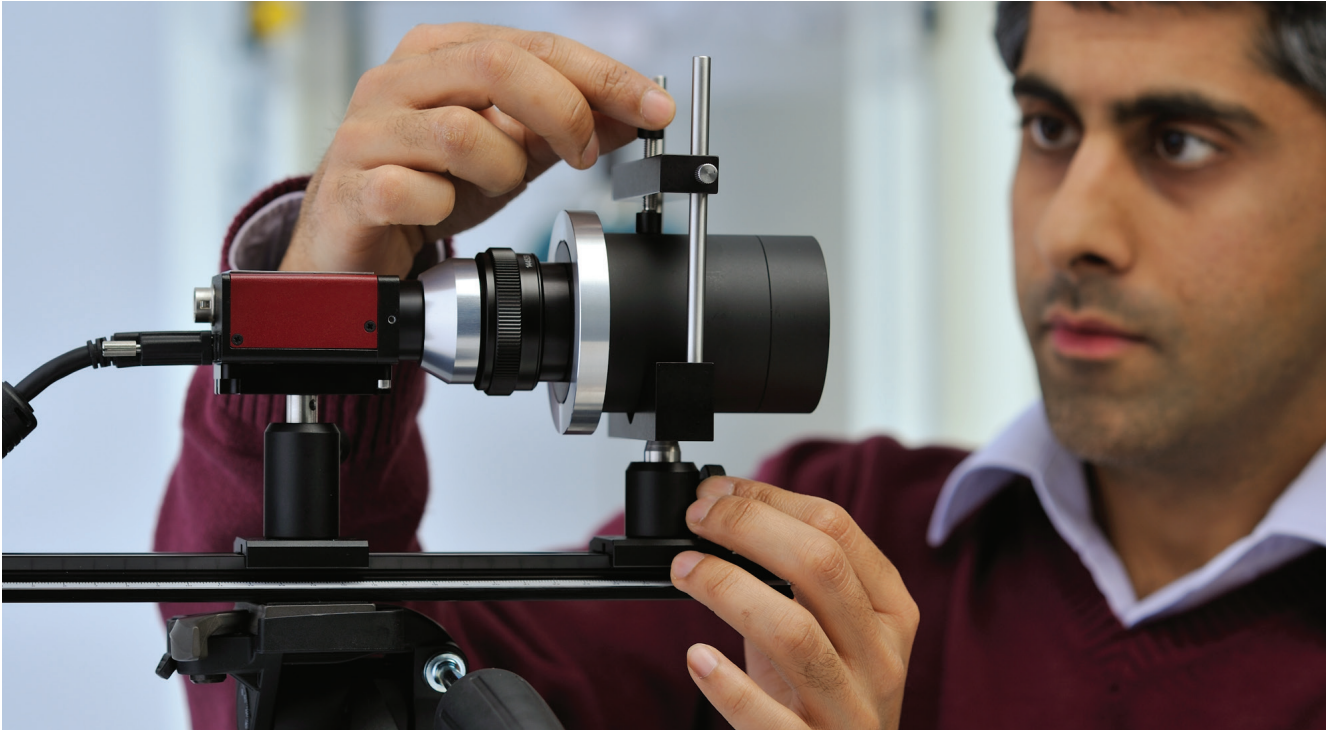




VEM 300 Series
FLEXIBLE PLATFORM
Video Extensometer Range

VEM 300 Series **FLEXIBLE PLATFORM**



Adjusting the camera assembly

Key Features

- Non contacting video extensometer solution
- System supports up to four synchronised cameras capturing data real time and simultaneously
- Measures in tension, compression, flexural, shear modes
- No need for bonded strain gauges or 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/T 12160 class 0.5 proportional low strain

Tinius Olsen's VEM 300 series Video extensometer is designed as a flexible platform allowing users to define their own extensometer performance using standard technology building blocks these being to measure low or high strain in tensile, compression, shear and flexural modes. The building blocks consist of camera and lens, lighting, machine frame mounting options and data exchange options.

The VEM 300 series is directly compatible with all Tinius Olsen testing machine frames, single, twin and four column machines, camera staging options are available including a unit that allows for fine X, Y and Z camera positioning and adjustment for optimum measuring performance. The 300 series can be mounted at the front or rear of most testing machines or free standing on a tripod.

There are over 70 lens types to choose from in pursuit of a specific camera lens performance, be it data capture speed, field of view in which the event will occur, resolution and accuracy.

This versatile extensometer platform delivers zero gauge length error every time, quick application of gauge marks including for the measurement of rotation to track specimen alignment during the test. Calibration is digitally and can be verified at any time using a standard traceable gauge block supplied.

Tinius Olsen's VEM Video extensometer is the future of extensometry simply because it's straight forward to use be it in a research application or as an educational tool. Test reporting is strengthened by the strain embedded video record which along with the strain mapping option gives depth to material analysis and reports.



VEM-300 Series Extensometer Camera and General Purpose lens combinations

HIGH STRAIN

| Camera | VEM Ext. model | Maximum axial tensile strain range (%) at specified gauge length (mm) ¹ | | | | | Maximum axial compressive strain range (%) at specified gauge length (mm) ¹ | | | | | Maximum transverse gauge length (mm) ² | Typical extension resolution (μm) ³ | Minimum specimen width for measurements (mm) | | Max. Test Speed (mm / min) ² |
|------------------------|----------------|--|------|-----|-----|-----|--|----|----|-----|-----|---|--|--|------------|---|
| | | 10 | 25 | 50 | 100 | 200 | 10 | 25 | 50 | 100 | 200 | | | Axial | Transverse | |
| VEM 005-0003 (15-50Hz) | VEM-010-0005 | 430 | 130 | 30 | - | - | 40 | 40 | 40 | - | - | 60 | 0.2 | 1.3 | 6.1 | 300 |
| | VEM-010-0003 | 700 | 240 | 90 | - | - | 40 | 40 | 40 | 30 | - | 90 | 0.3 | 2.1 | 9.5 | 450 |
| | VEM-010-0009 | - | 380 | 150 | 40 | - | - | 40 | 40 | 40 | - | 130 | 0.4 | 3.0 | 14 | 700 |
| | VEM-010-0002 | - | 570 | 250 | 90 | - | - | 40 | 40 | 40 | 40 | 190 | 0.5 | 4.3 | 20 | 1000 |
| | VEM-010-0001 | - | 1000 | 440 | 180 | 60 | - | 40 | 40 | 40 | 40 | 300 | 0.9 | 6.8 | 31 | 1600 |
| | VEM-010-0008 | - | 1000 | 580 | 250 | 90 | - | - | 40 | 40 | 40 | 390 | 1.1 | 8.7 | 28 | 2000 |
| | VEM-010-0000 | - | - | 950 | 440 | 180 | - | - | 40 | 40 | 40 | 600 | 1.7 | 13.7 | 63 | 3200 |
| VEM 005-0002 (15-50Hz) | VEM-010-0004 | 550 | 180 | 50 | - | - | 40 | 40 | 40 | - | - | 60 | 0.3 | 2.1 | 9.7 | 2500 |
| | VEM-010-0003 | - | 310 | 120 | 30 | - | - | 40 | 40 | 40 | - | 90 | 0.4 | 3.3 | 15 | 3000 |
| | VEM-010-0009 | - | 490 | 210 | 70 | - | - | 40 | 40 | 40 | - | 130 | 0.6 | 4.8 | 22 | 5700 |
| | VEM-010-0002 | - | 720 | 330 | 130 | 30 | - | 40 | 40 | 40 | 40 | 190 | 0.9 | 6.8 | 31 | 8100 |
| | VEM-010-0001 | - | - | 560 | 240 | 90 | - | - | 40 | 40 | 40 | 300 | 1.4 | 10.8 | 50 | 12500 |
| | VEM-010-0008 | - | - | 730 | 330 | 130 | - | - | 40 | 40 | 40 | 390 | 1.8 | 13.9 | 64 | 16500 |
| | VEM-010-0000 | - | - | - | 560 | 250 | - | - | - | 40 | 40 | 600 | 2.8 | 21.8 | 100 | 26000 |

VEM-300 Series Extensometer Camera model and Materials Testing lens combinations

LOW STRAIN

| Camera | VEM Ext. model | Maximum axial tensile strain range (%) at specified gauge length (mm) ¹ | | | Maximum axial compressive strain range (%) at specified gauge length (mm) ¹ | | | Maximum transverse gauge length (mm) ² | Typical extension resolution (μm) ³ | Minimum specimen width for measurements (mm) | | Max. Test Speed (mm / min) ² | Working Distance (mm) | Max. Field of View (mm) |
|---------------------------|----------------|--|-----|----|--|----|----|---|--|--|------------|---|-----------------------|-------------------------|
| | | 10 | 25 | 50 | 10 | 25 | 50 | | | Axial | Transverse | | | |
| VEM 005-0003 (15-50Hz) | VEM-011-0053 | 75 | - | - | 40 | - | - | 19 | 0.07 | 0.4 | 1.7 | 50 | 300 | 23 |
| | VEM-010-0052 | 190 | 35 | - | 40 | 40 | - | 31 | 0.12 | 0.7 | 3.2 | 150 | 300 | 42 |
| | VEM-010-0051 | 310 | 80 | 10 | 40 | 40 | 25 | 45 | 0.18 | 1.0 | 4.6 | 200 | 300 | 61 |
| | VEM-010-0022 | 460 | 145 | 40 | 40 | 40 | 40 | 63 | 0.25 | 1.4 | 6.4 | 300 | 284 | 86 |
| VEM 005-0002 (15-50Hz) | VEM-010-0053 | 100 | 5 | - | 40 | 10 | - | 6 | 0.08 | 0.6 | 2.8 | 700 | 300 | 29 |
| | VEM-010-0052 | 250 | 60 | - | 40 | 40 | - | 10 | 0.14 | 1.1 | 5.0 | 1300 | 300 | 53 |
| | VEM-010-0051 | 390 | 120 | 25 | 40 | 40 | 40 | 15 | 0.20 | 1.6 | 7.3 | 1900 | 300 | 77 |
| | VEM-010-0022 | 580 | 190 | 65 | 40 | 40 | 40 | 21 | 0.28 | 2.2 | 10.3 | 2600 | 284 | 108 |
| VEM 005-0000 (100-1000Hz) | VEM-010-0053 | 50 | - | - | 40 | - | - | 11 | 0.10 | 0.8 | 3.7 | 1100 | 300 | 21 |
| | VEM-010-0052 | 150 | 20 | - | 40 | 40 | - | 21 | 0.19 | 1.5 | 6.8 | 2000 | 300 | 38 |
| | VEM-010-0051 | 250 | 60 | - | 40 | 40 | - | 31 | 0.27 | 2.1 | 9.8 | 3000 | 300 | 55 |
| | VEM-010-0022 | - | 110 | 23 | - | 40 | 40 | 43 | 0.38 | 3.0 | 13.8 | 4000 | 284 | 77 |



The first name in materials testing

VEM 300 Series

FLEXIBLE

Video Extensometer Range

www.tiniusolsen.com

info@tiniusolsen.com

Horsham, PA, USA • Redhill, Surrey, UK
• Noida, UP, India • Shanghai, PR China

Tinius Olsen