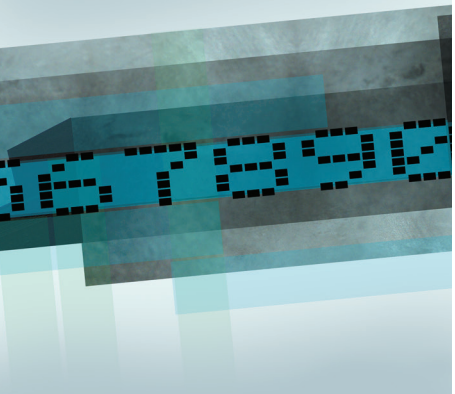
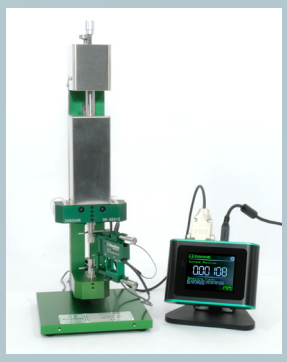


Epsilon's very high resolution calibrator features 20 nanometers (0.8 microinches) resolution and has 50 mm (2 inches) of measuring range. The 3590VHR calibrator meets the accuracy and resolution requirements for ASTM E83 Class B-1 for extensometers with gauge lengths ≥6 mm, and meets ISO 9513 Class 0,5, both over the full measuring range of the calibrator. The 3590VHR includes a Touch Display digital readout and PC software.



Model 3590VHR calibrator with Touch Display digital readout

Model 3590VHR calibrator with included Touch Display digital readout and software (computer not included

The 3590VHR calibrator has the high resolution and accuracy required to calibrate and verify extensometers to ASTM E83 Class B-1 and to ISO 9513 Class 0,5. The 3590VHR's resolution is 20 nanometers.

Like all of Epsilon's extensometer calibrators, the 3590VHR is itself calibrated using a laser interferometer at our ISO 17025 accredited facility. The 3590VHR is provided with a calibration that is traceable to NPL in the UK, which has equivalency to NIST and many other national standards organizations. A calibration certificate is included.

These calibrators are fast and easy to use due to the simple controls and large digital readouts. The 3590VHR has coarse positioning adjustment for large displacements and fine adjustment that allows positioning to approximately 0.02 µm (0.8 µin). They have enough measuring range to calibrate nearly all extensometers and the resolution necessary to calibrate extensometers with low measuring ranges.

A Touch Display digital readout and software for a PC are included. The calibrator can be used with either, or both. The Touch Display and software both provide readouts in millimeters, inches or % strain and have tap-to-zero or click-to-zero functions. The digital displays can reduce operator errors compared to calibrators with mechanical vernier scales.

A wide range of adapters are available to allow use with axial, transverse, shear, and many other specialized extensometers. The calibrator comes with round adapters (9.52 mm [0.375 inches] diameter) that work with many typical axial extensometers. Specialized adapters are available. For very long gauge length extensometers, optional extension posts are available.

Coarse and fine adjustment knobs for fast and accurate positioning

Model 3590VHR calibrator storage case

See the Model 3590VHR extensometer videos

Supplied with ISO 17025 accredited calibration

Model 3590 Adapters
Enables use with a wide variety of extensometer models.

Features

- Scale calibration traceable to NIST.
- System fully calibrated traceable to NPL (UK standards organization).
- Touch Display with digital readout is included.
- Software for Windows-based PC is included.
- Wide range of extensometer adapters available.
- Provided with a foam lined case for storage.

SPECIFICATIONS

Measuring Range:	50 mm (2 inch) maximum displacement
Max. Clearance:	125 mm (0-5 inch) (maximum extensometer gauge length + calibration displacement)*
Accuracy Class:	Better than ISO 9513 class 0,5 requirements for verification apparatus for all extensometer gauge lengths, and ASTM E83 class B-1 requirements for verification apparatus for extensometers with gauge lengths ≥6 mm; both classes apply over the full measuring range of the calibrator
Accuracy:	Better than: ±0.2 µm [0-0.12 mm], ±0.167% [0.12-0.60 mm], ±1.0 µm [0.6-5.0 mm], ±0.02% of value [5.0-25mm], ±5µm max [>25mm]
Resolution:	20 nm (0.8 µin)
Temperature Range:	18 °C to 28 °C (64 °F to 82 °F) operation**, -10 °C to 60 °C (14 °F to 140 °F) storage
Relative Humidity:	<90% (non-condensing)
Connectivity:	USB 2.0+ interface; includes USB cable; requires 5W min. power via USB-A connector from a computer or power adapter (not included)
Weight:	3.6 kg (8 lbs.) (standard configuration)
Adapters:	Ø9.52 mm (0.375 inch) adapter set included*
EMC Compliance:	BS EN 61326-1: 2006

* A range of extension columns and extensometer adapters are available - contact Epsilon

**Recommended range

CE CERTIFIED

OPTIONS

Optional extensometer adapter sets, extension posts, and horizontal configuration kit (partial list below, see website for complete list):

3590-01	Smooth, round 6.35 mm (0.25 inch) diameter adapters
3590-02	Flat adapters
3590-3549	Adapters for Model 3549
3590-3648	Adapters for Model 3648
3590-03	Adapters for clip-on fracture mechanics gages
3590-04	Transverse extensometer adapters (Model 3560-BIA)
3590-11	Transverse extensometer adapters (Models 3575, 3475, 7675, 3565, 3544, 3911 and 3975)
3590-11-KIT	Horizontal conversion kit for transverse extensometers – consists of legs for horizontal configuration, additional springs, and 3590-11 adapters; enables verification of transverse extensometers in the orientation that will be used for testing, as required by some calibration and verification standards
3590-06	Adapters for large averaging extensometers (Models 3542RA and 3442RA1)
3590-4013	Shear adapters for Model 4013
3590-3421	Shear adapters for Model 3421
3590-07	100 mm (4 inch) extension post for long gauge length extensometers
3590-55-10	250 mm (10 inch) extension post for long gauge length extensometers
3590-55-24	600 mm (24 inch) extension post for long gauge length extensometers

Custom – contact Epsilon for adapters to fit Models 7650A, 7650, 7651, and 3567

Note: Model 3590VHR and 3590 calibrators include 9.52 mm (0.375 inch) diameter smooth round adapters

Optional temperature and humidity sensor for the Touch Display

WITH EPSILON'S IN-HOUSE LASER INTERFEROMETER SYSTEM, THE FULL CALIBRATOR SYSTEM CAN BE CALIBRATED TRACEABLE TO NPL. NO LONGER DO CUSTOMERS HAVE TO RELY ON MICROMETER HEAD ONLY OR POTENTIALLY ERROR-PRONE GAUGE BLOCK CALIBRATIONS FOR FULL SYSTEM CALIBRATIONS.

Epsilon is one of the only companies in the world with the capability to perform full system calibrations on high resolution extensometer calibrators.

With Epsilon high resolution systems, you are assured compliance. When looking for a calibrator to meet ASTM and ISO specifications, the accuracy of the device is key for compliance, which is why full system calibration is essential to meet ISO 9513 and ASTM E83 requirements.

Standards Labs in most countries have signed a Mutual Recognition Arrangement, "CIPM MRA", www.bipm.org/en/cipm-mra, making the Standards Labs effectively equivalent and traceable to each other. This includes NIST in the USA, the NPL in the UK and many others. Services of the NPL are equivalent to those offered by NIST and are recognized by NIST through this agreement of reciprocity.

See more about extensometer calibration at www.epsilontech.com
Contact us for your special testing requirements.