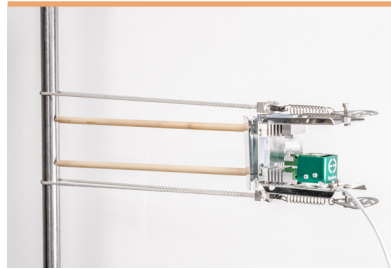


Designed as a low-cost option for tensile testing with furnaces, these extensometers use Epsilon's self-supporting design and do not require cooling or mounting brackets.



The Model 3448 is self-supporting using reusable ceramic cords

Epsilon developed this low-cost high temperature extensometer for tensile testing of metals, composites, and ceramics in furnaces at temperatures up to 1200 °C. The units are held on the specimen by light, flexible ceramic fiber cords. These make the extensometer self-supporting on the specimen; extensometer mounting brackets are not required. The side load on the test sample is minimized because of the self-supporting design and light weight of the sensor.

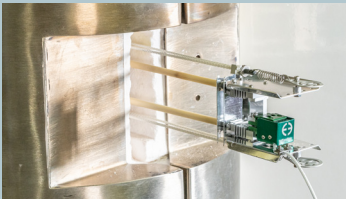
The combination of radiant heat shields and convection cooling fins allow this model to be used at specimen temperatures up to 1200 °C (2200 °F) without any cooling. High purity alumina ceramic rods are used. These are available in any length that is required to fit your furnace. A spare set is included with every extensometer. Specify chisel, vee chisel or conical contact points as desired.

Static tension or compression tests that are not in strain control can be performed with a single unit. For labs performing numerous high-temperature tensile tests in a row, as well as labs performing high-temperature tensile tests or cyclic fatigue tests in strain control, models 3549 or 7650A are recommended instead of model 3448.

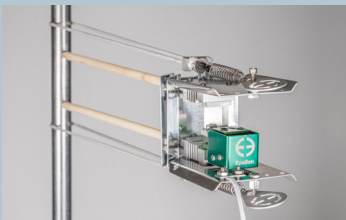
Most materials testing furnaces with a port for an extensometer will readily accept a Model 3448. For induction heating systems, model 3448 may be used if the induction coils do not interfere with the 3448's arms and cords. Epsilon generally recommends models 3549 or 7650A for induction heating applications due to their higher performance and simplified compatibility with induction coils. For vacuum furnace applications, use model 3549.

Model 3448 extensometers are strain gaged devices, making them compatible with any electronics designed for strain gaged transducers. Most often they are connected to a test machine controller with electronics for a strain channel, and Epsilon will equip the extensometer with a compatible connector that is wired to plug directly into the controller. For systems lacking the required electronics, Epsilon can provide a variety of signal conditioning solutions that enable connecting to data acquisition systems or other equipment.

See the electronics section of this catalog for available signal conditioners and strain meters.



Self-supporting Model 3448 with clamshell-type materials testing furnace



Closeup of Model 3448



Model 3448 with an electromechanical UTM

 [See the Model 3448 extensometer setup video](#)

Features

- **May be left on through specimen failure.**
- Full bridge, 350 ohm strain gaged design for compatibility with nearly any test system.
- Mechanical overtravel stops in both directions.
- All units come with high purity alumina ceramic rods.
- Mounts with flexible ceramic fiber cords. Very simple to install, this design eliminates the need for external support brackets. Cords that have worn out are easily replaced by cutting a length of new cord from the included spare supply.
- Use without cooling to 1200 °C (2200 °F).
- May be used on nearly any furnace with a side entry port for extensometers.
- Includes the Epsilon Shunt Calibration System for on-site electrical calibration.
- Rugged, dual flexure design for strength and improved performance.
- Includes high quality foam lined case, a spare set of ceramic rods, and 7.3m of spare ceramic fiber cord

SPECIFICATIONS

- Excitation:* 5 to 10 VDC recommended, 12 VDC or VAC max.
Output: 2 to 4 mV/V, nominal, depending on model
Accuracy: Standard configurations meet ASTM E83 class B-1 and ISO 9513 class 0,5 requirements for accuracy. A test certificate is included. Rod lengths >250 mm (10") can affect the final class rating.
Linearity: ≤0.15% of full scale measuring range, depending on model
Temperature Range: Ambient to 1200 °C (2200 °F)
Cable: Integral, ultra-flexible cable, 2.5 m (8 ft) standard
Contact Force: Adjustable, approximately 200 g depending on configuration
Operating Force: 10 to 20 g typical

OPTIONS

- Gauge length adapter kits
 Spare ceramic fiber cord (sold in 7.3m lengths)
 Connectors to interface to nearly any brand of test equipment
 Rod tips can be straight chisels, conical tips or vee chisels; specify when ordering



ORDERING INFORMATION

Model 3448 Available Versions: ANY combination of gauge length and measuring range listed below is available, except as noted. *Ceramic rod lengths are made to fit furnaces as required. Please provide furnace dimensions at the time of order. Other configurations may be available with special order; please contact Epsilon to discuss your requirements.*

Gauge Length		Measuring Range	
METRIC		DESIGNATION	% STRAIN
-010M	10.0 mm	-005 ¹	±5%
-025M	25.0 mm	-010	±10%
-050M	50.0 mm	-020	+20%/-10%
U.S.A.		-050	+50%/-10%
-0050	0.500"	-100 ²	+100%/-10%
-0100	1.000"		
-0200	2.000"		

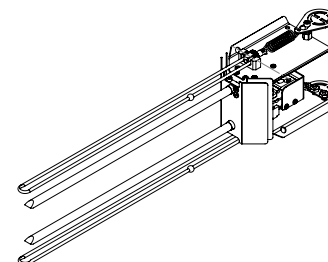
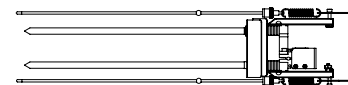
Model Number 3448- _____ - _____

¹ For 10 mm and 0.5 inch gauge lengths, the 5% strain range is only available with short ceramic rods.

² Not available in 50 mm or 2.0 inch gauge lengths.

Example: 3448-0100-020: 1.000 inch gauge length, +20%/-10% measuring range, temperature range of ambient to 2200 °F

Visit our website at www.epsilontech.com
 Contact us for your special testing requirements.



MODEL 3448 EXAMPLES