MODEL 500 LASER
Extensometer

The Tinius Olsen model 500LC non-contacting extensometer is designed to measure the extension of medium to high elongation materials, typically elastomers. Since there is no contact of this extensometer with the sample, the 500LC is ideal for also measuring the elongation of fragile samples where such contact could induce a premature sample break.

The model 500LC uses a low power helium neon laser with precision optical components and a dedicated 16 bit processor. The laser projects a visible red scanning beam that is directed at two reflective targets attached to the specimen.

An additional benefit of using laser technology is its ability to scan the test specimen through the glass viewing window of an environmental test chamber. Elongation characteristics can then be evaluated from –70° C to 300° C.

Preparation of the test specimen is quick and easy. A punch is supplied to cut narrow strips of adhesive reflective tape. The gauge length is defined by attaching these two reflective strips to the sample. Any gauge length can be used and this is accurately measured by the laser at the start of the test. When force is applied to the sample, the laser scanning beam will measure the separation of the reflective gauge marks at a scan rate of 320 scans per second. Unlike other non-contacting extensometers, if the scanning beam is interrupted for any reason, elongation measurements will automatically be corrected when normal operation is resumed.

Model 500LC scanning laser extensometer.

MODEL 500L SPECIFICATIONS		
Range Of Measurement	mm	up to 600
	in	up to 23.6
Gauge Lengths	mm	10 to full scan
	in	0.39 to full scan
Accuracy		1% on 25 mm gauge length, BS5214 grade D
Resolution	mm	0.012 with filtering
	in	0.000472 with filtering
Optical Scan	scans per second	320
	degrees	90
Dimensions (H x W x D)	mm	320 x 111 x 180
	in	32 x 4.4 x 7.9
Weight	kg	7
	lb	15.5

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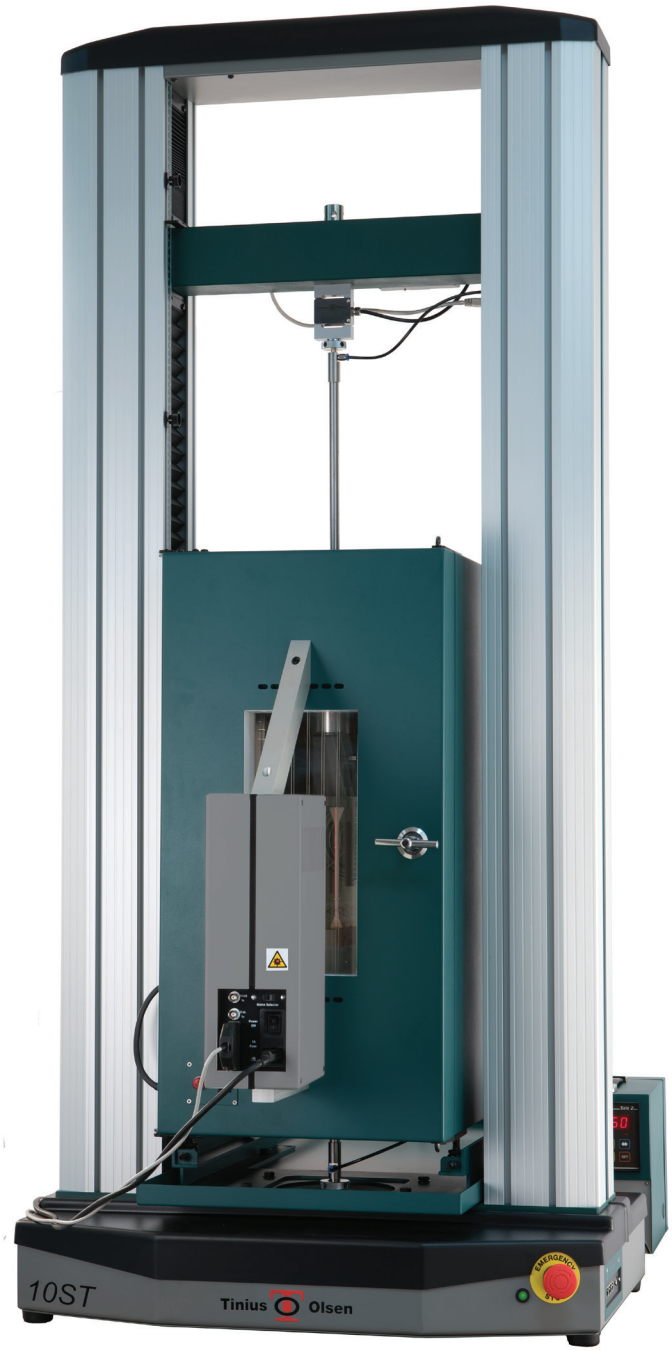
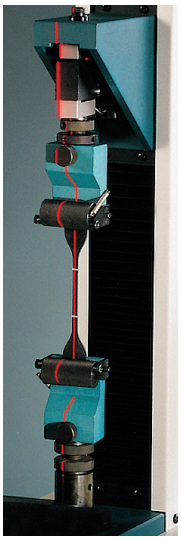
Model 500 Laser



Model 500LC extensometer mounted on an environmental chamber in a dual column testing machine.



The scanning laser is ideal for measuring strain of specimens inside an envornmental chamber. Here you can see the laser line scanning up the specimen which is placed in pneumatic grips in side inside an environmental chamber

Tinius Olsen
The first name in materials testing

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