

Model 500LC

Laser Extensometer



The model 500LC non-contacting extensometer is designed to measure the extension of medium to high elongation materials, typically elastomers.



Model 500LC

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.

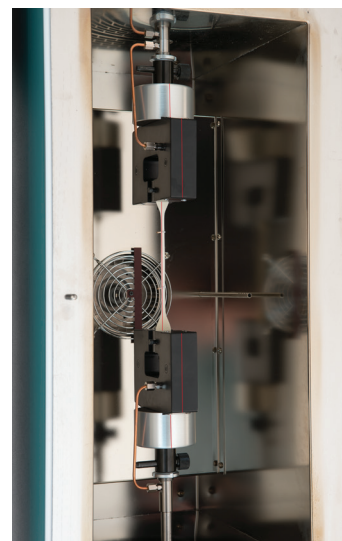
The model 500LC uses a low power helium neon laser with precision optical components and a dedicated 16 bit processor.

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 .

Marking the test specimen with gauge marks is easy using two pieces of self-adhesive reflective tape (supplied) no less than 2mm in width. Any gauge length size maybe defined, minimum 10mm, this is accurately measured and automatically recorded by the extensometer at the start of the test. Once the test starts the instantaneous strain is automatically captured using the scanning laser at a scan rate of 320 times per second (320 Hz). If the scanning beam is interrupted for any reason, strain measurements are automatically corrected and continued when the laser beam is clear and picks up the gauge mark targets.



Model 500LC scanning laser extensometer.



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

Specifications

| 500LC specifications | | |
|------------------------|--|-------------------------|
| Item # | 99-999-1070 | |
| 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 25mm gauge length, BS 5214 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 | 9.15 |
| | lbs | 20.17 |

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