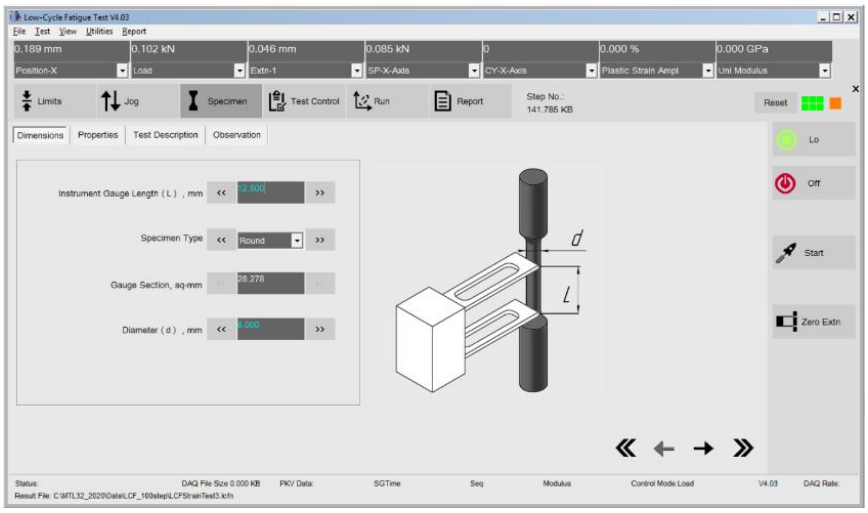
Low Cycle Fatigue (LCF) Software

AC-08-0003



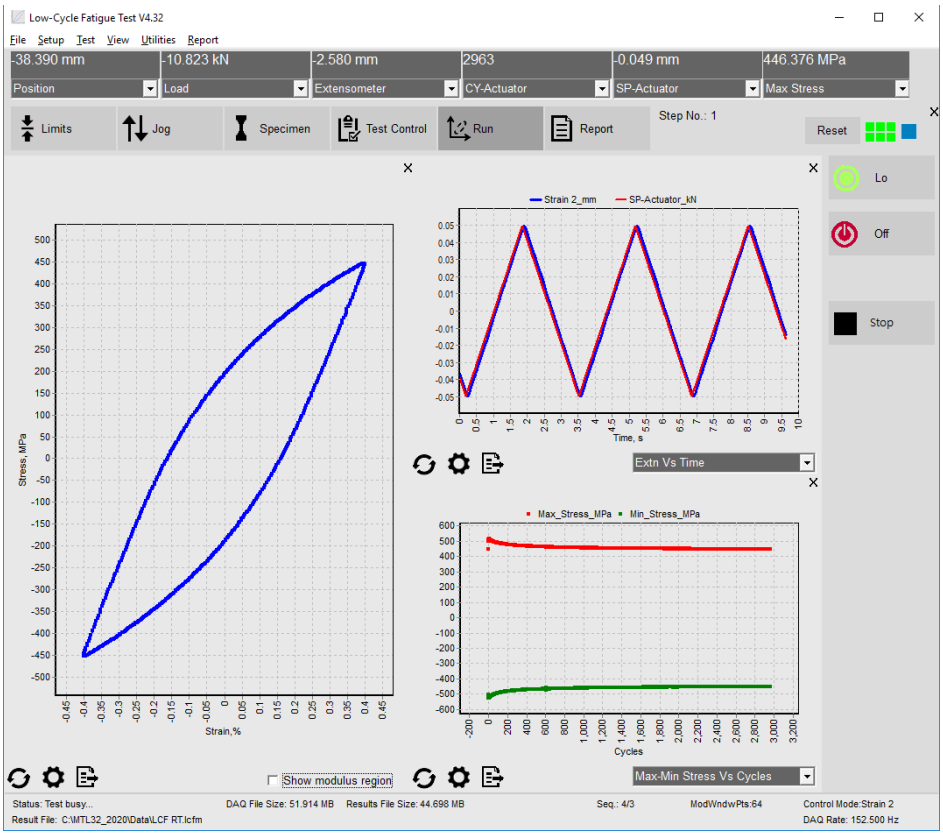
This application software is intended to perform Low Cycle Fatigue & Creep-Fatigue Integration tests as per ASTM E606 & ASTM E 2714 respectively under MTL-32 environment with 2370 controller.

The user interface includes specimen description, loading parameters, pump controls, test run/stop, graph display, numeric readouts of several relevant test parameters. Test descriptions and test settings are available as panels accessed by clicking on relevant tabs or pull-down menu.

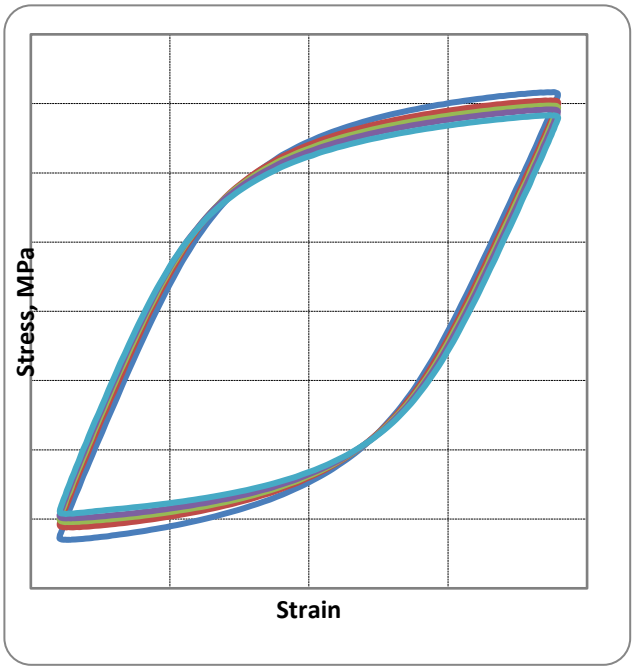
Technical features

- Designed according to ASTM E 606-12 and E2714 fully compatible for Windows 10
- Frequency capability from 0.001 to 5Hz
- Tests can be done in total strain, stress, plastic strain and incremental strain control
- Online display of loading modulus, unloading modulus, K', n', yield stress, total strain, plastic strain, max-min stress and strain,
- Capability to test with / without hold time at +ve or –ve peak
- Automatic calculation of Modulus within user specified limit
- Strain amplitude range -5% to +5%
- Real time display of all data channels
- Limit settings on stroke, load and strain channels
- Test termination options: % drop in stress / modulus, ratio of modulus, % strain increase, number of cycles, sample break
- Auto or user triggered data acquisition settings
- Ability to run Sine, Triangular and trapezoidal waveforms with user defined dwell time
- 3-Online graphs of stress vs strain, transients and time history (X-Y, double Y, trend, chart recorder)
- Continuous synchronous data collection on all channels
- Data logging with linear and peak interval is present. This data can be post processed onto the log scale
- Complete Stress-strain cycle data with peak & valley is available
- Option to save the test profiles
- Option to remove residual strain
- The gauge length is set at room temperature. During HT tests, gauge length correction is done after achieving High temperature automatically
- Test can be paused and resumed at any given stage with modulus checking, if required
- Option available to control digital and analogue outputs
- Offline post processing program to analyze the results and raw data in MS Excel

India Headquarters
No. 497E, 14th Cross, 4th Phase, Peenya Industrial Area, Bangalore – 560 058, India
Phone: +91 (80) 28360184, Fax: +91 (80) 28360047
www.instron.in



LCF test Report: Stress-Strain Plot



LCF Report Table

		Initial	Half life	Final	
Stress Amp		657.616	598.145	539.585	MPa
Strain Amp		0.897	0.896	0.896	%
Pl. Strain		0.726	0.742	0.756	%
Stress Mean		-17.765	-7.37	-23.471	MPa
Strain Mean		-0.001	0	0	%
Un. Modulus		183.004	183.575	181.756	GPa
E-Unl/Ld		0.914	0.898	0.857	
0.2% YS		587.77	533.901	452.684	MPa
0.02% YS		427.148	392.245	300.879	MPa
Strain Hard. Coeff.		1391.96	1227.289	1074.3	MPa
Strain Hard. Exp.		0.139	0.134	0.128	
Energy		16.214	15.11	12.892	MPa.e/e

Note: Specifications are subject to change without prior notice

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