

LEX810 High Resolution Tensile Tester

High-resolution extensometer for small fibres.

Integrated approach to materials testing, from sample mounting to data analysis.

Compatible with the Automated Sample Loading and Fibre Dimensional Systems.

Uses common Windows platform for Dia-Stron Tensile Testers and automation.

System Description.

General Information.

The LEX810 is a small bench top tensile tester suitable for measurement of fibres and was developed to fulfil the need for a unit to measure material failure at small strain values. The LEX810 is a component of the Dia-Stron modularised testing systems for small fibres and can be combined with other units to measure multiple parameters and for integration into the ALS1500 single axis, pick and place robotic system. The LEX810 is supplied as a complete system, comprising the UV1000 control unit, LEX810 mechanical test module and UvWin PC applications software.

Control Unit.

The universal control unit (UV1000) supports all fibre testing measurement modules including the Fibre Dimensional Analysis System, and the Automated Sample Loading modules. Commonality of the control units permits upward compatibility, allowing the user to upgrade testing capability in line with changing needs. . The control unit has no user interface and all method parameters are entered through the PC software.

LEX810 Mechanical Test Module.

A DC micrometer drive unit controls movement of the mechanical test module. This device offers exceptionally smooth travel, combined with high positional repeatability (0.1 microns). The micrometer drive has a full movement range of 50mm and the maximum percentage strain that can be achieved will depend on gauge size (see specifications). Force measurement is provided by a semi-conductor strain gauge load cell (Sensotec, USA) and is calibrated by standard weights according to BS EN 10002-2.

The mechanical test module has 2 options for clamping samples. One option is a user operated manual sample holder, which is suitable for use as a stand-alone unit. The second option has pneumatically operated sample holders and these are required if the instrument is to be used with the automated sample-loading module (ALS1500). Please note that if the automated option is specified, a Pneumatics Unit (PU1100) is also required for operation.

UvWin PC Applications Software.

The LEX810 is operated through UvWin PC application, a 32-bit software programme written for Windows™ NT, 2000 & XP. The instrument protocols are selected from user interactive dialogues and the software includes method options for specific applications, data display and storage, and a range of analysis tools designed for particular applications. Data export to other PC applications is through formatted text files suitable for import into Excel and other similar software.

UvWin supports the complete range of Dia-Stron fibre testing instruments, including the automated sample loading modules, and giving a familiar Windows platform over the range of applications.

Specifications.

Samples size:	3.2-40mm*
Extension Range:	50mm
Speed range:	0.01-60mm/min
Maximum force:	250gmf or 2000gmf
Force resolution:	0.005gmf or 0.05gmf
Load cell linearity:	± 0.08% full scale
Positional repeatability:	0.1 microns
Positional accuracy:	± 10 microns
Software:	Windows NT, 2000 & XP
Communications:	RS232, USB serial adapter
Power:	Universal supply 85-265vac, 47-63Hz, 100W

System Components:

- LEX810 Mechanical Testing Module.
- UV1000 Control Unit.
- UvWin PC Applications Software including manuals.
- Mains cord and serial cable.

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