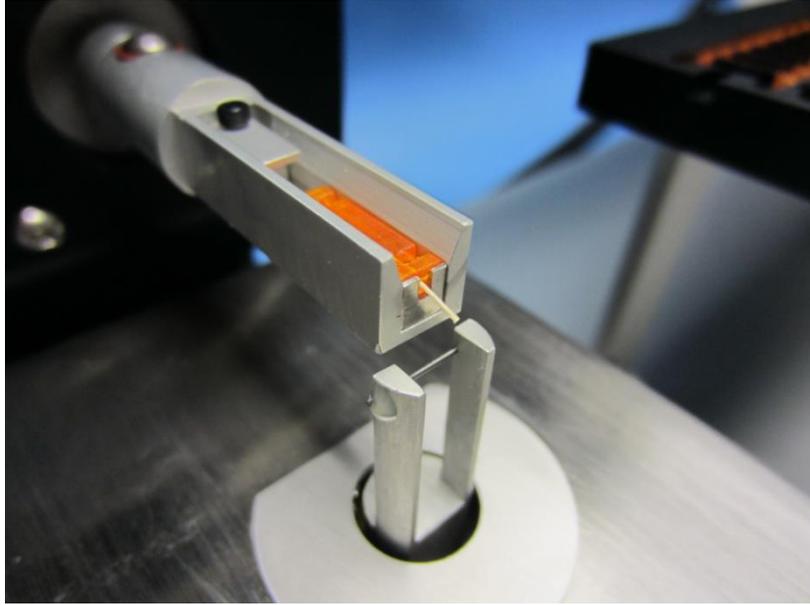




FBS900 Fibre Bending System



FBS900 Fibre Bending System: to measure the bending moment of single fibres.

General Information

Principal benefits

- Based on single cantilever bending principle
- Sample rotation to enable measurements to be taken over a range of angles
- Alternative mode of deformation to tensile testing
- Measurement accuracy to better than 1mg
- Automated operation & analysis: software controlled

Typical applications

Bending properties;

- Hair fibres
- Eye lashes
- Natural fibres

The FBS900 is a miniature fibre bending instrument suitable for both the study of natural and man made fibres. The measurement is based on the bending of a single cantilever against a stainless pin. The FBS900 is a stand-alone instrument with manual sample loading. However, sample throughput can be dramatically increased through the addition of the ALS1500 sample loading module. This automated module will also load samples to the FDAS765, so that both dimensional and bending moment can be measured in a single sequence. The standard sample cassette holds up to 50 mounted fibres, which can be measured automatically without user intervention.

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System Overview

The mechanical system comprises a sample support arm that is driven vertically downwards by a high resolution micro-drive (see specifications). In addition to the vertical movement, the samples may be rotated to enable the bend measurements to be taken at different orientations.

The samples are driven against a stainless steel pin of 0.5mm diameter, mounted on a force sensor. The force sensor is a micro-balance offering excellent resolution combined with a robust and reliable construction. Samples are prepared using a special two-part plastic mount. One half of the mount has alignment grooves to ensure the fibre is correctly positioned and that the exact length of the cantilever is known. The fibre is then clamped in place by a "snap-on" top mount.

The sample pocket is designed for accurate positioning of the fibres and to hold them in place during measurement, including rotation.

Specifications

FBS900

Max Bending Force	400mg
Load cell Resolution	0.01mg
Load cell Accuracy	1mg
Load cell Linearity	± 0.08%
Data Capture Rate	10Hz

Linear Fibre Movement

Movement speed	0.01-1.25mm/sec
Movement range	15mm
Movement repeatability	0.1µms
UvWin resolution	1µm

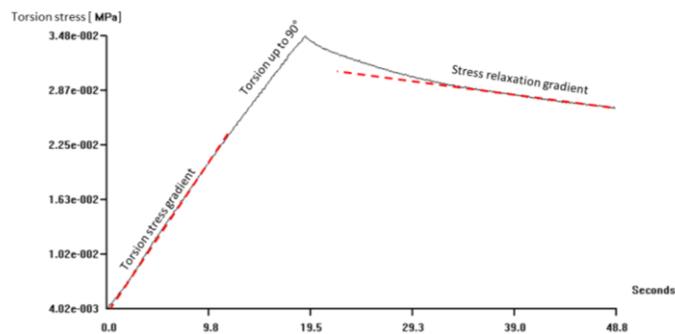
Fibre Rotation Movement

Rotation range	0-360 deg.
Rotational accuracy	± 2 deg.

Control & Analysis software

The FTT950 is supplied with Windows software to control the instrument, to display the acquired data and to run the data analysis. The following relevant parameters are calculated:

- σ : ?
- ϵ : ?
- $\dot{\sigma}$: ?
- $\dot{\epsilon}$: ?
- σ : ?



The user can view the graphical display and the numerical



Passionate about
Fibre Testing & Automation



Content	
FBS900 Module UV1000 PU1100 Power Supply UvWin Software (Windows compatible XP, Vista, 7, 8 & 10)	
System Requirements	
Power Supply	85-265vac 47-63Hz, 100W
Computer	<ul style="list-style-type: none">Windows OS (XP, Vista, 7, 8 & 10) x USB1 x USB

parameters are calculated automatically and displayed on the screen. The analysed parameters and raw data can be exported into tab delimited text files.

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