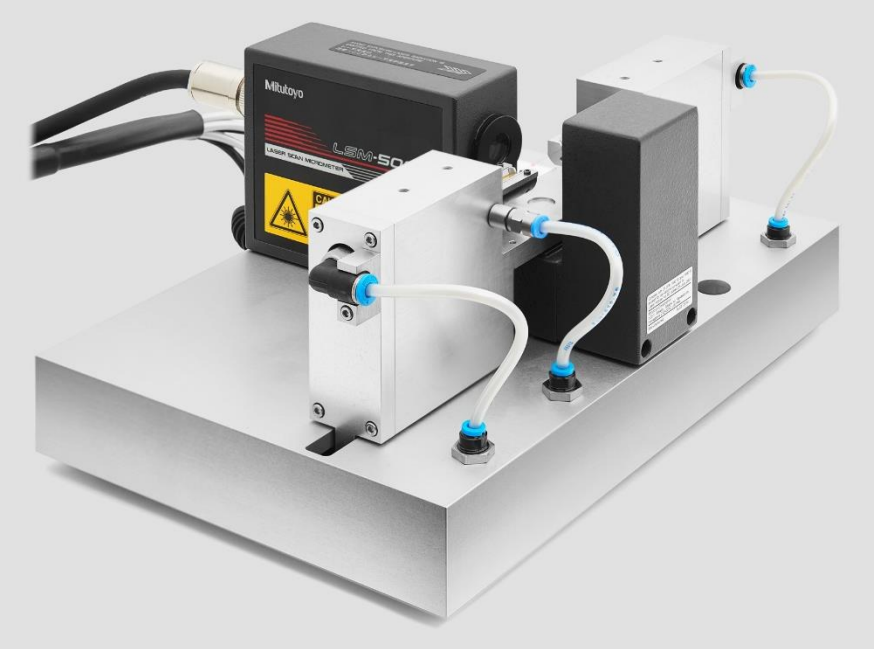
FDAS770 – Fibre Dimensional Analysis System



The Dia-Stron FDAS770 is designed for rapid measurement of fibre dimensional properties.

General Information

Principal benefits

- Direct diameter measurement
- Sample rotation and translation for cross-sectional area evaluation along the fibre
- Small footprint & low weight
- Easy to set-up & use
- Low maintenance & robust
- Can be integrated in automation platform

Application examples

- Measurement of fibre cross-sectional dimensions prior to mechanical testing
- Evaluation of cross-sectional shape

System Description

The FDAS770 instrument was developed to measure fibre cross-sectional dimensions prior to mechanical testing. The system is based on a laser scanning micrometer which allows non-contact, rapid and accurate fibre diameter measurements. The FDAS770 instrument is supplied as a complete system comprising mechanical unit, control & pneumatic units, and software for Windows OS. The FDAS770 module is often integrated with another mechanical testing module on one automation platform for higher testing productivity.

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Specifications

FDAS770

Diameter range	10 to 2,000µm
Resolution	0.01µm
Repeatability	±0.03µm
Translation resolution	40µm
Rotation resolution	0.2°
Scan Rate	3200scans/sec
Specimen gauge lengths	4, 12, 20 or 30mm

Programmable Features

- Full revolution or angled steps
- Up to 100 linear slices
- Fibre straightening option

Content

UV1000 Control unit
PU1100 Pneumatic Unit
FDAS Module
USB and Power cords
UvWin software for Windows OS

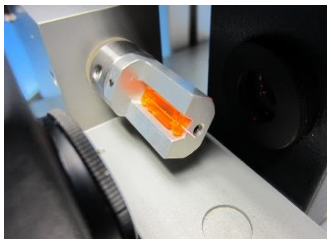
Requirements

Power Supply	85-265vac 47-63Hz, 50W
Compressed Air	Dry, clean compressed air 4.5bar min, 20l/min
Computer	• Windows OS: 7, 8, 10 • 2 x USB port

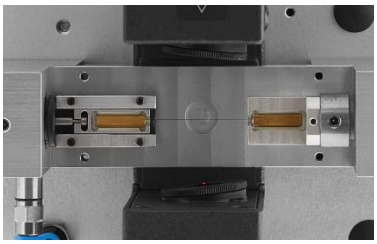
FDAS770

The FDAS770 is designed to measure the cross-sectional area of fibres, so mechanical force can be converted to stress values whether the deformation is extension, flexion or torsion. The FDAS770 is based on a laser scanning micrometer (LSM500S) by Mitutoyo. The dimensional measurement is non-contact, non-destructive, rapid and accurate.

The sample is located centrally in the laser beam and rotated, obtaining the minimum and maximum diameters to calculate a cross sectional area. The sample can be measured at a single point, or scanned along its length in discrete 'slices'. The FDAS770 is compatible with single or double ended fibre sample.



Single ended sample



Double ended sample

Dedicated software – UvWin

UvWin 3 software controls the system, ensuring cross-sectional dimensions are recorded and can be combined with mechanical data for stress calculation. The FDAS770 module is often integrated with another mechanical testing module on one automation platform for higher testing productivity. The optional DSM770 module can also be added to the FDAS770 instrument to measure dynamic swelling in liquid.

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