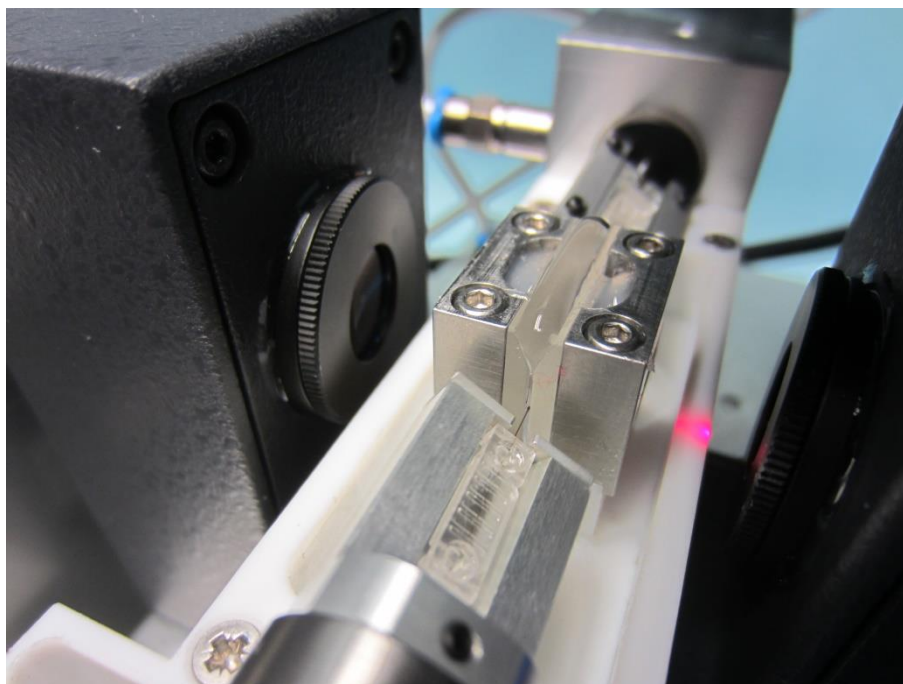


DSM770 – Dynamic Swelling Module



The Dia-Stron DSM770 measures the dynamic swelling of single fibres in water, creating a swelling profile.

General Information

Principal benefits

- Direct diameter measurement
- Fibre can be measured in rotation
- Minimal amount of liquid per sample
- Short optical path in liquid
- Small footprint & low weight
- Can be integrated in automation platform

Application examples

- Damage related claims
- Technology development e.g. colorants & relaxers
- Scientific understanding

System Description

The DSM770 instrument was developed as an upgrade to the FDAS770 Fibre Dimensional Analysis System, to measure fibre cross-sectional dimensions when immersed in water. The system is based on a laser scanning micrometer which allows non-contact, rapid and accurate fibre diameter measurements. The DSM770 upgrade is supplied as a complete system including mechanical pump unit, control/pneumatic units and UvWin software. The DSM770 module is often integrated with another mechanical testing module for higher testing productivity.

Specifications

e: sales@diastron.com

w: www.diastron.com

UK office 9 Focus Way | Andover | Hampshire | SP10 5NY | UK
t: +44 (0)1264 334700 | f: +44 (0)1264 334686

888 Sussex Boulevard | Broomall | PA19008 | USA
t: (610) 328-9038 | f: (610) 328-7157

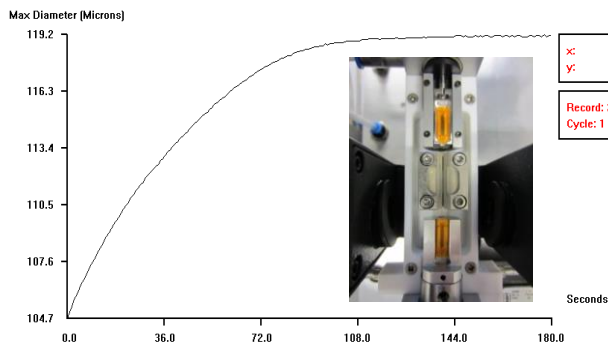
US office

The company reserves the right to alter specifications and prices without giving prior notice.

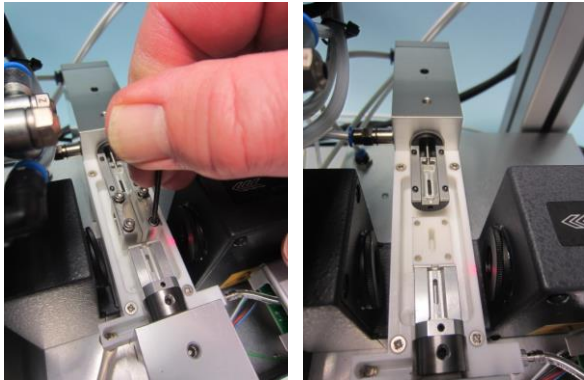
© Dia-Stron Limited



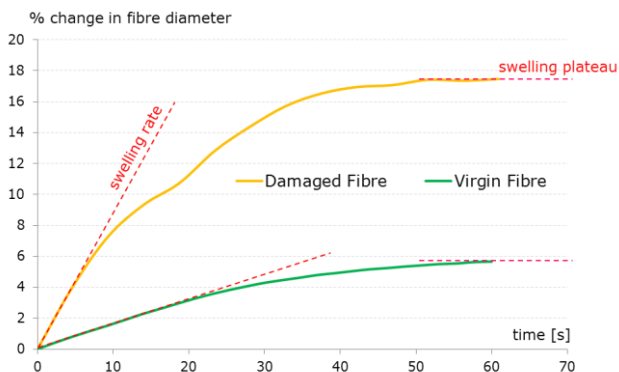
Description: Slot 21 : DSM770 Swelling:



Above: Swelling profile of a human hair



Above: Removal of wet cell takes a minute



Above: Dynamic swelling measurement data

DSM770

Features an automated operation for filling, measuring and draining. An adjustable pressure for filling and draining allows for greater experiment control. The high acquisition rate is suited for absorption kinetic studies whilst the rotation mode allows for cross-sectional measurements to be taken. The purpose built analysis tool is combined within the software to analyse the different swelling phases.

The DSM770 is a flexible upgrade that can be added to the FDAS765/770 models, giving greater application uses to current systems. This flexibility allows the DSM770 to continue current dry dimensional measurements but also be configured for wet dimensional measurements.

Data

Dynamic swelling measurement data can be displayed as:

- Absolute min, max & mean diameter
- % change over time

Analysis include:

- Swelling rate: absorption kinetic of water into hair fibre
- Swelling plateau: maximum swelling at equilibrium, time to reach plateau
- Differential swelling: diameter average, minimum & maximum diameters as a function of time.
- Ellipticity ratio and cross-section are can also be looked at.