



Data Sheet – MTT675

MTT675 AUTOMATED TENSILE TESTER

Cassette based automated miniature tensile tester for single fibres.
Automatically tests up to 100 individual fibres without user intervention.
Integrates with Fibre Dimensional Systems and Automated Sample Loading Module.
Uses common Windows™ software platform with other Dia-Stron fibre testing systems.

System Description.

General Information.

The MTT675 was developed to overcome the low productivity associated with the manual testing of mechanical properties of single fibres. The system is based on a circular sample cassette, which allows the automatic measurement up to 100 pre-mounted fibres. The MTT675 is supplied as a complete system comprising mechanical unit, control unit, pneumatics unit, PC applications software and sample mounting accessories.

Control Unit.

A single universal control unit (UV1000) supports all MTT variants and other measurement modules including the Fibre Dimensional Analysis System, and the automated sample loading modules. The MTT675 uses compressed air for operation of the sample holding mechanism and requires a pneumatics control unit (PU1100). 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 methods are entered through the PC software.

MTT675 Automated Test Module.

The MTT675 is the automated tensile tester based on a circular sample cassette. Before testing the fibres are mounted using the crimp system (hair) or the tab/adhesive mounts and placed in the 100 fibre sample cassette (see [sample mounting](#) for more information on sample preparation). One end of the fibre is held in the cassette whilst the outer mount overhangs the cassette edge. The module is configured so that the load cell is driven in and out on the moving bridge of the tensile tester. Assembled on the load cell is the pneumatically operated sample clamp and when in position this is closed and the outer sample mount picked up ready for testing. Following the end of the measurement the mount is released and the cassette rotated to bring the next sample into alignment. The moving bridge is driven by an enclosed lead screw and along a linear rail with recycling ball bearing assembly. This gives a high degree of stiffness with low mechanical noise to the system. Construction of the mechanical unit is of anodised aluminium with stainless steel fittings, providing a low maintenance and easy to clean instrument. Samples may be immersed in liquids placed in the cassette and tested in contact with the liquid.

UvWin PC Applications Software.

The MTT675 is operated through UvWin PC application, a 32Bit 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.

Following initial start up, UvWin permits users to run up to 100 fibres without further operator intervention. Data is saved automatically in case of power failure during operation.

UvWin supports the complete range of Dia-Stron fibre testing instruments, including the Fibre Dimensional System (FDAS) and the automated sample loading module (ALS1500). For more information on UvWin [click](#) here.

Specifications.

Standard sample size:	30mm (3.2, 5,10, 20mm options available)
Extension range:	0-300mm (500mm option available)
Speed range:	1-2000mm/min
Sample resolution:	up to 10micron
Force Range:	up to 2000gmf (20N)
Force resolution:	0.05gmf
Gauging:	0-2000gmf
Sampling:	1-100 samples per cassette
Methods:	extension, compression, relaxation, creep, cycling.
Software:	Windows 2000, NT, XP
Communication:	Serial RS232, USB serial adapter
Data Output:	Printer & ASCII file
Power:	100W
Voltage	Universal supply 85-265vac,
Frequency:	47-63Hz
Compressed Air Supply:	4 – 8Bar (oil free)

System Parts:

MTT675 Mechanical Testing Module.

UV1000 Control Unit.

PU1100 Pneumatics Unit.

100 Fibre Sample Cassette.

UvWin PC Applications Software including manuals (supplied on CD).

Mains cord and serial cable.

Crimping Set and 5000 crimps (hair applications)

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