



Data Sheet – MTT680

MTT680 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 MTT680 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 MTT680 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 MTT680 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.

MTT680 Automated Test Module.

The MTT680 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.

The MTT680 is designed to be assembled on the automated sample loading system (ALS1500) with the MTT765 to provide both dimensional and tensile data from a single fully automated measurement operation. The data collected is integrated in the UVWin PC applications software.

SPECIFICATIONS (MTT680).

Standard sample size: 30mm (optional 10mm)
Extension range: 0-120mm (530mm option available)
Speed range: 1-2000mm/min
Sample resolution: up to 1micron
Force Range: up to 2000gmf (20N)
Force resolution: up to 0.0625gmf
Gauging: 0-2000gmf
Sampling: 1-100 samples per cassette

Further information

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