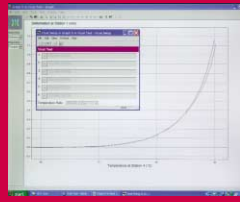
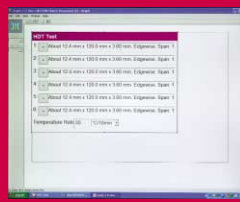




LLOYD
INSTRUMENTS

An AMETEK Company



DAVENPORT

A trademark of AMETEK, Inc.

Plastics & Polymer
Testing Instruments

Plastics & Polymer Testing Instruments

Lloyd Instruments offers the complete solution for polymer testing applications, from raw material to finished product.

Our established range of Davenport™ polymer test instruments, specified in many international testing standards, allow critical polymer parameters to be

determined, including melt flow index, melt flow rate, melt volume rate, intrinsic viscosity and melt viscosity of PET, impact strength of plastic film, density measurement, HDT and VICAT. In addition, Lloyd Instruments manufactures a wide range of materials testing machines for evaluating the mechanical properties of polymers, plastics and other materials.

Manual and Automatic Melt Flow Indexers

Specifically designed for determining melt flow index (MFI), melt flow rate (MFR), melt volume rate (MVR) and melt density/viscosity of polymers to ISO 1133 and ASTM D-1238 Methods A & B.



The MFI Series consists of two precision-engineered models, the manual Model 9 (MFI-9) and automatic Model 10 (MFI-10).

Both have excellent temperature control and provide outstanding accuracy and repeatability of results.

Ideally suited to the production environment, R&D applications and product quality control testing to ensure batch-to-batch consistency.

A wide range of accessories are

available to automate your testing, including our powerful NEXYGEN™ data analysis software (MFI-10 only).

Manual Melt Flow Indexer MFI-9

- Meets ISO 1133 and ASTM D-1238 Method A
- Allows manual calculation of MFI and MFR
- Simple set up, operation and maintenance
- Ideal for low volume tests in quality control and production
- Audible prompts guide user through tests
- 5 user definable test methods

Automatic Melt Flow Indexer MFI-10

- Meets ISO 1133 and ASTM D-1238 Methods A & B
- Automatically calculates MFI, MFR, MVR and Melt Density/Viscosity using optional auto flow rate timer
- Simple set up, operation and maintenance
- Ideal for quality control, production and R&D
- Up to 10 standard tests saved and recalled
- 10 user definable test methods
- Optional auto flow rate timer, auto weight loader, auto cut off device
- Optional corrosion resistant models
- Optional **NEXYGEN software** for powerful data analysis and other benefits including:
 - Ability to run two MFI tests simultaneously on one PC or one MFI test and one test using a materials testing machine
 - Loads test parameters automatically
 - Clear instructions and guidance
 - Provides graphical, analytical and report writing features
 - Highly repeatable results achieved by the unique 'Bubble Eliminator' feature

Melt Viscometers

The unique Davenport melt viscometer (MV) is a ground-breaking alternative to the costly and environmentally unfriendly solvent method for testing PET. The MV has become the popular choice of resin producers and processors worldwide to monitor intrinsic viscosity (IV) and melt viscosity (MV) from incoming resin to finished product. With quick repeatable results available in less than 20 minutes, minimal training required and low ongoing running costs, the MV is the ideal choice for PET testing. Now powered by NEXYGEN software for detailed data analysis and SPC.

- Quick, simple test for IV and MV testing of PET
- Safe - avoids handling and disposal of toxic solvents
- Low ongoing running costs compared to expensive solvents
- Ideal for quality control and R&D
- Direct product testing throughout entire process
- Crystalline, insoluble and hygroscopic polymers easily tested

- NEXYGEN software supplied as standard, providing graphical display, data analysis and basic SPC
- Optional accessories for controlled collection and sample preparation



HDT/VICAT Instruments

The Davenport HDT/VICAT *Plus* instrument is designed to determine the temperature deflection of thermoplastic samples to national and international standards.

The unit consists of a temperature controlled oil bath, with six selectable testing stations, which may be configured for either HDT or VICAT test methods.

The weight loading mechanism and test fixture mountings are designed as a single unit, which safeguards the operator by preventing contact with the heating medium.



- Performs tests to national and international standards:
VICAT: EN ISO 306, ASTM D1525-98 1/10, BS 2782 Part 1: Method 120C 1990
HDT: EN ISO 75-1 and 75-2, ASTM D648-98C
- Determines the temperature of deflection of thermoplastic samples
- Simple set up, operation and maintenance
- Ideal for industrial and laboratory environments
- Six working stations with individual temperature and deflection sensors
- Integral interface allows test programming and indicates results on LCD
- Unrivalled safety features including nitrogen safety blanket connection supplied as standard, over-temperature cut out, tank safety – will not open until cooled
- Full PC integration and control using optional NEXYGEN data analysis software

Density Measuring Columns

The Davenport two column density measuring instrument is ideal for high accuracy determination of the density of solid materials, notably plastics, by the technique described in ASTM D 1505-68, ISO 1183 and BS 2782 Part 6: Method 620D.

- Meets ASTM D 1505-68, ISO 1183 and BS 2782 Part 6: Method 620D
- Designed to measure the density of solid materials
- Simple set up, operation and maintenance
- UKAS accredited and certified floats
- Nine floats per column supplied as standard
- Re-calibration service (UKAS) with certificate
- Accuracy of readings to 0.0001 g/ml with density column ranges within 0.05 g/ml
- Back lighting of column aids float and sample visibility
- Column solution filling apparatus supplied for ease of use



Falling Dart Impact Testers

Used by major film manufacturers and converters, the falling dart impact tester provides a quick and simple method for determining the impact resistance of thin flexible materials such as plastic films, plasticised papers and composite sheets.

The tester establishes the energy required to tear film samples under specified conditions of impact of the free falling dart.

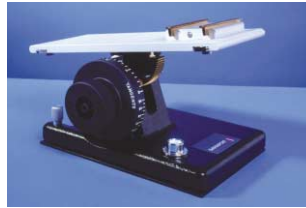
Three models A, B and C are available.

- Meets EN ISO 7765-1:2004 and ASTM D1709 Methods A & B (depending on model used)
- Determines the impact resistance of thin flexible materials
- Simple set up, operation and maintenance
- Floor mounted
- Dual height option with extra weights for stronger samples



Inclined Planes

The Davenport Inclined Plane is ideal for accurate, simple and quick checks on coefficients of friction. The method involves increasing the angle (up to 60°) of inclination of a plane surface covered with the test material.



A free sled, also covered in the material will start to slide at the point at which gravitational force overcomes the static friction between the two.

- Designed for determining the coefficient of friction
- Inclination is marked off in tangents for direction readings of static and kinetic coefficient of friction
- Simple set up, operation and maintenance free
- 'Slip' readings
- Ease and speed of use. No further calculations required.
- Accurate control

MATERIALS TESTING SYSTEMS

Lloyd Instruments materials testing machines (1kN-300kN, 225 lbf-67443 lbf) are designed to determine the physical and mechanical properties of raw materials, components and finished products.

Used to test polymers and plastics as well as a wide range of other materials including packaging and paper, our machines are ideal for testing the tensile and compression strength of materials as well as flexure or bend, friction, tear, peel, adhesion, shear, ductility, insertion, shear strength, delamination and many other parameters.



Our powerful NEXYGEN^{Plus} material test and data analysis software is ideally suited for routine QC testing, R&D and complex multi-stage testing with added extensive automation features to provide error-free, rapid and repeatable tests.

Choose from an extensive library of tests to international standards or customise the software to your own internal test methods. In-built security and audit trails ensure test data security.



CERTIFICATE No GB98/11777



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