TECHLAB SYSTEMS

MELT FLOW INDEXER MFI-500/AUTO

"AUTOMATIC - including All in One PC 20" + MFI Software"

Advanced Extrusion Plastometer according to ASTM D 1238 and ISO 1133 Methods A (GRAVIMETRIC) and B (VOLUMETRIC) to determinate the Melt Flow Index

According to the standards: ASTM D1238 and ISO 1133 in both Procedures A (Gravimetric) and B (volumetric)...

MFI determination is essential for the characterization of thermoplastic materials and especially when great reliability, precision and repeatability is required. Also, these testers are very effective in testing quality control and research and development.

Model MFI-500/AUTO – Automatic with motorized weight loading system

Direct reading in the menu MFI Software testing of flow values GRAVIMETRIC Index, **VOLUMETRIC** and **DENSITY** of the melted plastic material (using volumetric method does not need to weigh in the balance Precision extruded material back to calculate the melt flow index).

Using the gravimetric method, weighing the extruded material must be done in an external Precision Balance (joined to system via RS-232)

Compatible with:

LYNX SYSTEM

All in One PC 20" + MFI Software included in the supply

Graphics stroke Pistón/Time

- **VOLUMETRIC** and **GRAVIMETRIC** Methods
- Computerized by Software of Melt Flow Index (All in One PC 20" is included in the delivery)
- Motorized Loading Testing System
- Low Cost – Robust Design of great Rigidity
- All in One PC 20" with MFI Software
- Automatic cutting System of samples
- Temperature Controller (maintain +/- 0,1ºC)
- Test equipment ready to work with corrosive materials such as **PVC**

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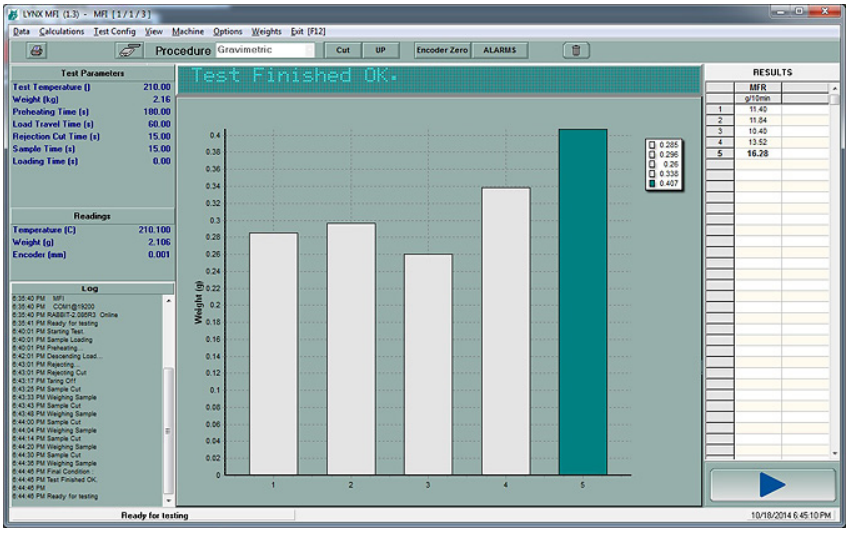
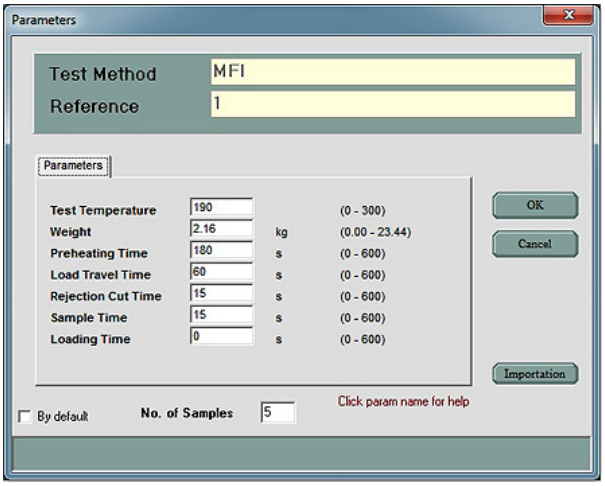
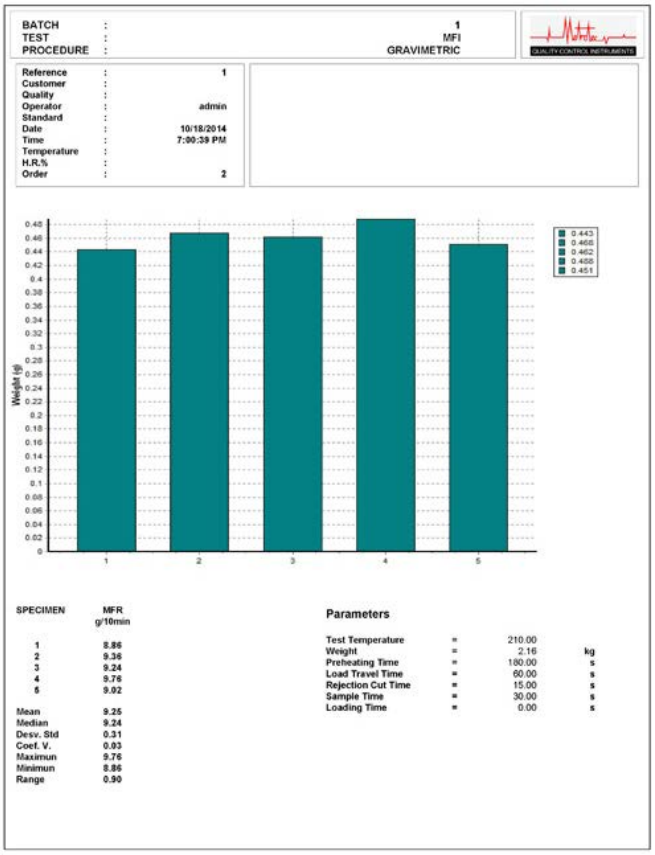
Main Characteristic of the output of dates:

- ✓ Total control of MFI from the Software, load calibration tests and temperature data logging
- ✓ Union of all machine functions by Software
- ✓ MFI Testing Software according to ASTM D 1238 & ISO 1133 in both Procedures A (Gravimetric) and B (volumetric)





TEST CONFIGURATION



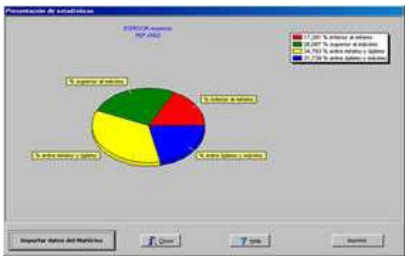
TEST REPORT

The standard equipment includes all the tools for maintenance, cleaning, piston and standard die.

- ❑ Temperature Range up to +325ºC with accuracy of 0,1ºC
- ❑ Piston stroke: Up to 25 mm with an accuracy of 0.1 mm
- ❑ Measurement of the piston stroke: By a rotating encoder
- ❑ The timer is incorporated into the Software
- ❑ Automatic samples cutting
- ❑ Load of testing weights: AUTOMATIC (motorized system)
- ❑ High resistance painting to corrosion
- ❑ The standard supply includes 7 Weights, chrome and polished: **1,2 Kg - 2,16 Kg - 3,8 Kg - 5 Kg - 5 Kg - 6,6 y 10 Kg**

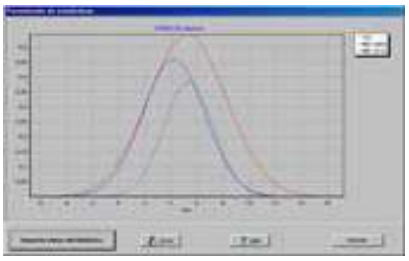
* The 21,6 kg weight is the combination of the 5 kg, 6,6 kg y 10 kg weights

Pack of 3 Statistics included in the Software **"MFI-Test"**



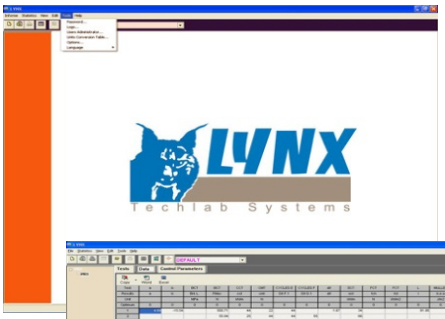
Tolerances comparative

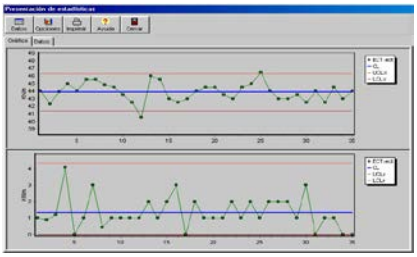
Bar graph

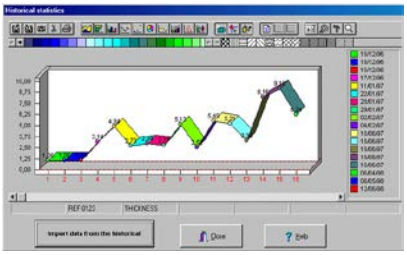


Gauss Bells

Compatible with:







The **melt flow index** is a basic rheological test done to a polymer to meet its fluidity. It is measured in g / 10 min. It is defined as the amount of material (measured in grams) flowing through the orifice of a die capillary in 10 minutes, maintaining constant pressure and standard temperature.

The melt flow index (MFI) is to take a quantity of polymer at a known temperature and a given weight through a standardized orifice for a specified time (according to the standard used, e.g. ASTM).

The fluency of the polymer is a function of:

- **Pressure used (weight of the piston)**
- **Diameter of Die**
- **Viscosity of the material**

This index is of vital importance to those who make injection molding, extrusion, rotational molding, or other manufacturing process involving a thermoplastic part.

Principle

The melt index measurement is performed by a meter Flow Index, which operates with a constant pressure exerted by a constant force due to a known weight into a capillary tube whose area remains constant. ASTM-D1238 is commonly used to perform this operation

The melt flow index (MFI) is a measure of the flowability of the resin under controlled conditions and can be easily measured with equipment called plastometer, using very low strain rates, a temperature of 230 ° C and weighing 2.16 kg according to ASTM D 1238 - ISO 1133. This variable is inversely related to the viscosity and molecular weight (MW), that is, with increasing the melt index of the resin, a decrease is obtained in viscosity and molecular weight.

Accessories included in the standard delivery: Tungsten Carbide die of 2,095 mm Ø, Piston, putty knife to take samples, Spanner, bar to introduce samples into the heating barrel, Material charger, funnel, cleaner of the heating barrel, scissors, cleaner of the die.

- **The standard supply** includes 7 Weights, chrome and polished:
  1,2 Kg - 2,16 Kg - 3,8 Kg - 5 Kg - 5 Kg - 6,6 y 10 Kg

* The 21,6 kg weight is the combination of the 5 kg, 6,6 kg y 10 kg weights Mounted on the automatic lifting / lowering system

Auto Cutting System
Included in standard supply

OPTIONAL: To work in closed loop, **we recommend using a precision scale**:
Capacity 210 g - Resolution 1 mg
* RS-232 Interface (compatible with the Software)
to connect to a PC and transfer the weight data automatically
extruded samples the MFI Software

CONECTION:

Power: 230 V, 50/60 Hz Single Phase

DELIVERY STANDAR:

> Melt Flow Indexer MFI-500-AUTO + All in One 20" PC+ MFI Software
> Tools for maintenance and cleaning
> Piston
> Standard Die of 2,095 mm Ø of Tungsten Carbide
> Kit of 7 weights (1,2 - 2,16 - 3,8 - 5 - 5 – 6,6 y 10 Kg)

DIMENSIONS & WEIGHTS:

Dimensions approx.:

Equipment:	580 x 350 x 1140 mm (Width x Depth x Height)
Transport Box 1	750 x 550 x 1260 mm (Width x Depth x Height)
Transport Box 2	480 x 460 x 380 mm (Width x Depth x Height) (weights and accessories)
Net/Gross weights:	125 kg / 165 Kg

* TECHLAB SYSTEMS, S.L. reserve the chance of modify the technical information without previous

Doc. : MFI-500-AUTO-1-CAT-I-R4

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