



# Quality Product begins with Quality Material

For over 25 years Dynisco Polymer Test has taken a leading role in working with the polymer processing industry to develop advanced polymer melt testing instrumentation for quality control and research applications. This extensive experience, combined with advances in electronics technology, has resulted in the new LMI 4000 melt flow indexers.

Four melt flow indexer models are offered in the advanced Dynisco Polymer Test LMI 4000 series, each with features designed to meet specific application requirements:

Dynisco is the leading supplier of components and peripheral process equipment for the plastics industries. Your partner in polymer processing for pressure and temperature measurements, as well as melt index and viscosity measurements for both lab and online. Dynisco specializes in optimizing the extrusion process with gear pumps, screen changers, sophisticated controls, pelletizers and cleaning ovens.

- Advanced microprocessor design
- Performance that meets international standards
- Self-diagnostics capability
- Comprehensive statistical capability
- Simple push-button RTD calibration
- Smart keys for easy programming
- Bright, 4-line by 20-character vacuum fluorescent display
- Windows™ software for test database and analysis

Customers benefit from the company's applications expertise with services such as custom designed tests and material evaluation for process troubleshooting. Dynisco Polymer Test offers a wide range of polymer test equipment and technologies in addition to melt index monitoring, including laboratory analysis, compositional analysis and online rheology.



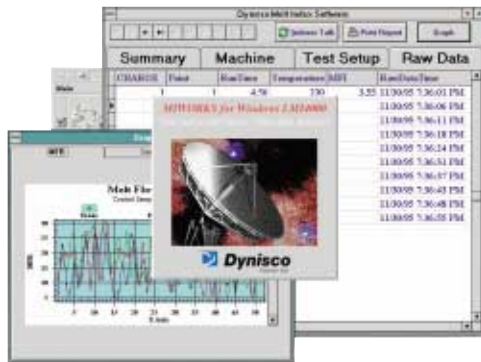


### Display and Programming made easy

- A 4-line by 20-character vacuum fluorescent display allows users to read detailed information about test conditions.
- For international use, the display operates in English, German, French, Spanish and Czech.
- Smart keys located directly under the display allow operators to quickly program the LMI 4000 by accessing menus of the most common test conditions.
- For special tests, custom programs can be entered using the membrane keypad, with models D4003 and D4004 able to recall up to 60 sets of test conditions from memory.

### Maximum Accuracy for Method “B” Tests

- The digital encoder option, D4059, is the most accurate method available to measure piston displacement and rate of descent during test method “B”.
  - › Accurate to within 0.025 mm over the full 25.4 mm test travel length.
  - › Allows up to fifteen discrete melt index values to be collected per test, with each discrete melt index value reported or the average melt index.
  - › Available on D4002, D4003 and D4004 models.
- In addition, the LMI 4000 with D4059 can monitor the piston’s rate of descent and automatically select the correct flag length for that test.



### Windows™ Software enhances Database

- Operating in the popular Windows™ environment on standard personal computers, Dynisco Polymer Test’s MIWORKS for Windows™ acts as a melt index test database.
- The software downloads test parameters directly to the melt indexer and enables control charts to be created and data exported to spreadsheets.
- Up to eight model D4004 units can be connected to a single personal computer when using the optional multiplexing system.
- MIWORKS for Windows™ software is provided with each model D4004 melt indexer.

### Comprehensive Reporting Capabilities

- By simply connecting model D4003 or D4004 to a standard printer, comprehensive reports about the melt index test are quickly generated by the instrument’s internal computer.
- Intrinsic Viscosity of PET correlation values are reported with Models D4003 and D4004. In addition to information about test conditions, values for melt index, shear stress, viscosity and apparent melt density are reported.
- The LMI 4000 calculates the average, standard deviation and coefficient of variance for both the melt index and viscosity values when performing multiple tests of the same material.



### Options for special Test Requirements

- Pneumatic or electric weight lowering and raising systems are offered for use with heavy loads or for more automatic operation of the melt index test.
- The lifts allow flow rate ratio and other multiple load tests to be conducted safely, and is available on all models except the basic D4001.
- An alloy barrel is available for testing PVC and other corrosive materials.
- For installations performing frequent melt index tests or where hard-to-clean engineering polymers are being tested, the optional high-speed barrel bore power cleaning kit is a must.
- An automatic cut-off device can improve precision of method “A” tests.
- Available on all models, the auto cutoff device can be programmed to make cuts at fixed intervals after “melt time” is completed.

### Series 4000 Specifications

Standards:	meets or exceeds ASTM D1238, D3364, ISO 1133, BS2782, DIN 53735, JIS K7210
Operating temperature:	ambient to 425 °C
Temperature control:	±0.1°C
Temperature sensor:	4-wire RTD
Timer accuracy:	0.001 second
Digital encoder displacement accuracy:	±0.025 mm over 25.4 mm
Weights:	stainless steel, ±0.5 %
Display:	4-line by 20-character vacuum fluorescent
Keypad:	membrane type
Parallel port:	Epson/IBM compatible
Serial port:	RS232
Overall dimensions:	300 mm W x 350 mm D x 570 mm H
Net weight:	15 kg
Shipping weight:	21 kg
Electrical:	120/60 Hz or 230 VAC/50 Hz ±10 %
Power consumption:	400 W max, 60 W typical at setpoint

### Ordering Information

To order, specify the required model and option numbers.

Example: D4003-D4056, D4059

Option No.	Description
D4056:	Pneumatic weight raising and lowering system
D4156:	Electric weight raising and lowering system
D4059:	Digital encoder (not available on model number D4001)
D4057:	Alloy barrel and piston tip for testing corrosive materials
4050P:	Mini-printer for model number D4002
D4058:	Mini-lift system
D4160:	Automatic cut-off option
8052-97K:	Barrel bore power cleaning kit
0051-83:	High Flow plug

### Series LMI 4000



#### Model D4001

- Method “A”
- 5-program memory
- Digital display of flow rate

#### Model D4002

- Methods “A” and “B”
- 20-program memory
- Mini-printer output (optional)

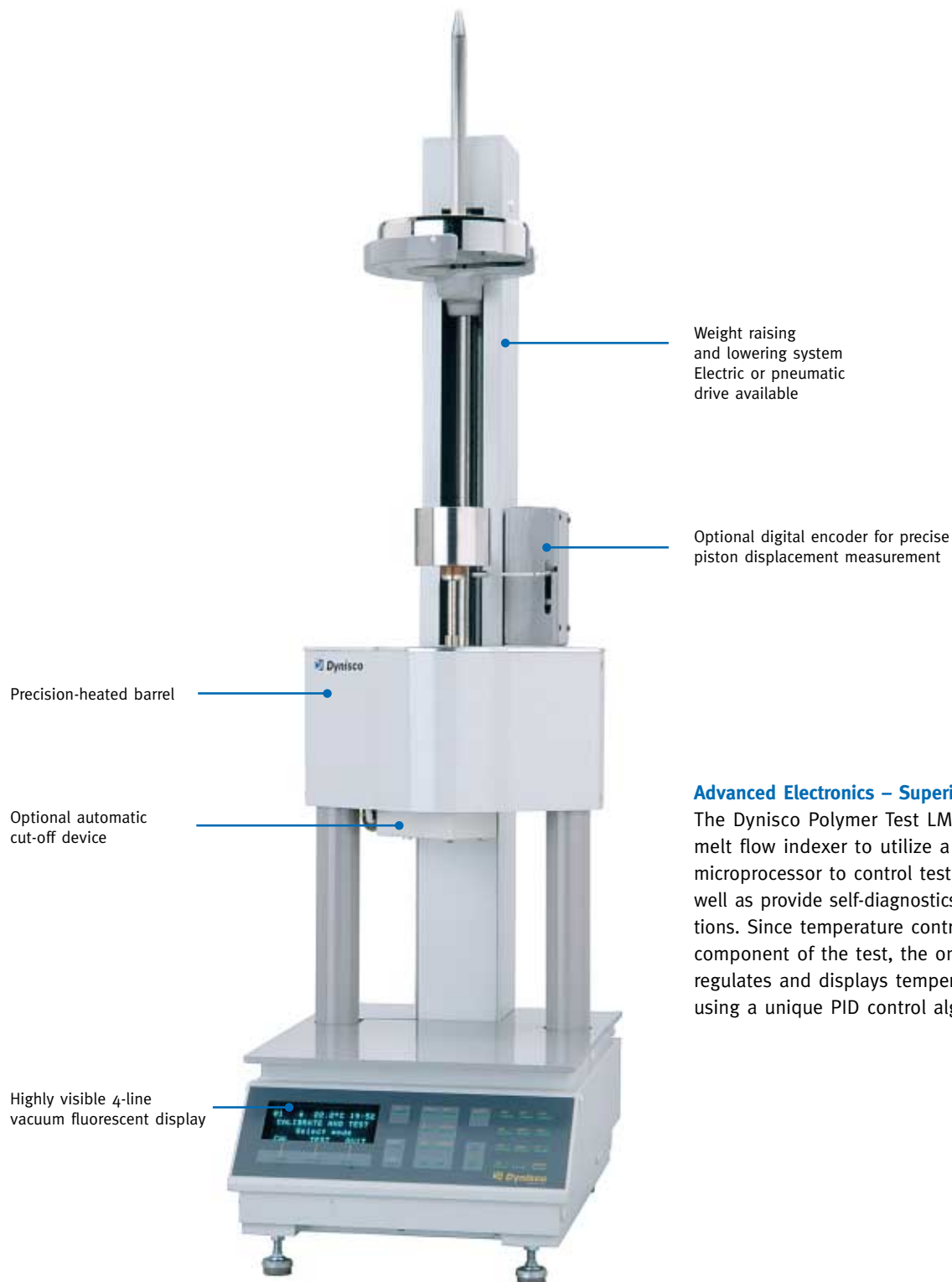
#### Model D4003

- Methods “A” and “B”
- 60-program memory
- Advanced statistical analysis
- IV correlation of PET
- Standard printer output

#### Model D4004

- All features of model D4003
- PC communications capability
- MIWORKS software for Windows™

All LMI 4000 models include complete tool kits for cleaning and operating



Weight raising  
and lowering system  
Electric or pneumatic  
drive available

Optional digital encoder for precise  
piston displacement measurement

Precision-heated barrel

Optional automatic  
cut-off device

Highly visible 4-line  
vacuum fluorescent display

### Advanced Electronics – Superior Analysis

The Dynisco Polymer Test LMI 4000 is the first melt flow indexer to utilize a powerful 32-bit microprocessor to control test parameters as well as provide self-diagnostics and digital calibrations. Since temperature control is such a critical component of the test, the on-board computer regulates and displays temperatures to 0.1°C using a unique PID control algorithm.