

# Laboratory Melt Indexer LMI 4000

Series  
LMI 4000

## Precise Measurement

The laboratory melt indexers LMI 4000 are highly precise melt testing instruments for the measurement of melt flow rate (MFR) or melt volume rate (MVR) in quality control and research applications. The LMI 4000 is the first melt flow indexer to utilize a powerful 32 bit microprocessor to provide test parameter control, self-diagnostics and digital calibration. The on board computer controls and displays temperature to  $\pm 0.1^{\circ}\text{C}$  using a unique PID control algorithm.

## Four Models

The LMI 4000 is available in four models designed to meet a variety of test requirements. The basic model, D4001, performs only the Method "A" test. Model D4002 performs Methods "A", "A/B", and "B" plus it offers a 20 program memory and direct output to a mini-printer. The D4003 offers the above testing capabilities, a 60 pro-



gram memory, an advanced statistical analysis package, a program that correlates MFR with IV (Intrinsic viscosity) and output to a standard

printer. The D4004 offers all of the features plus PC communications, multiplexing capability, and the MIWORKS for Windows™ data acquisition software. All LMI 4000 models include a complete tool kit.

## User friendly operator panel

A four line by twenty character vacuum fluorescent display allows the user to easily read detailed information about the test conditions and results. For international use the display may be shown in English, German, French, and Spanish. 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. The 4003 and 4004 models are capable of storing and recalling up to 60 sets of test conditions.

## Features for Ease of Use and Precision

- Advanced microprocessor controlled design
- Performance to international standards
- Self-diagnostics capability
- Comprehensive statistical analysis package
- 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
- Up to 60 program memory

## Option for special requirements

**The Digital Encoder Option** is the most accurate method available for the measurement of piston displacement and rate of descent required in the method "B" test. This allows up to 15 discrete melt flow rate values to be collected with one charge of the barrel. In addition the LMI 4000 can be programmed to report all values or to average them.

**The Pneumatic or Electric Weight**

**Lowering and Raising System** is offered for use with heavy loads or for more automatic operation of the melt flow rate test. The pneumatic lift, which allows safe operation of the flow rate ratio and other multiple load tests, is available on all models except the basic D4001. The electric lift operates the same as the pneumatic lift, while eliminating the compressed air requirement.

**The Corrosion resistant alloy barrel** is designed for testing corrosive materials such as PVC.

**The High Speed Barrel Bore Power Cleaning Kit**, designed for rapid and thorough cleaning of the instrument, is a must for installations performing frequent MFR tests or where, hard to clean, engineering polymers are being tested.

An **automatic Cut-Off** device is offered for easier Method A testing.

## Series 4000 Specifications

Standards	meets DIN ISO 1133, ASTM D1238, D3364, BS 2782, JIS K7210	Display	4 line by 20 character vacuum fluorescent
Test temp. range	from 40 °C to 425 °C	Keypad	membrane type
Temperature control	Adaptive PID-temperature-control-algorithm with .01 °C resolution	Parallel port	Epson/IBM compatible
Temperature sensor	Platinum RTD	Serial port	RS232
Timer accuracy	0.001 s	Overall dimensions	300 mm (B) ´ 350 mm (T) ´ 570 mm (H)
Digital encoder displacement accuracy	± 0.4% over test range	Net weight	15 kg (33 lbs)
Weights	stainless steel, ± 0.5 %	Shipping weight	21 kg (46.2 lbs)
		Electrical	115/230 VAC, 50/60 Hz
		Power consumption	400 W max, 60 W typical at setpoint

## Model and Options

Model	Description
D4001	Method A only with 5 program memory
D4002	Method A and B with 20 program memory and mini printer output
D4003	Method A and B with 60 program memory, standard printer output and IV correlation
D4004	Method A and B with 60 program memory, standard printer output, serial output for directional PC communications, IV correlation and MIWorks™ software
Option	Description
D4056	Pneumatic weight raise and lowering system
D4156	Electric weight raise and lowering system
D4057	Alloy barrel and piston tip for testing corrosive materials
D4160	Automatic Cut-Off device
D4058	Mini lift system for easy flow materials
D4059	Digital encoder (not available on model number D4001)
4050P	Mini printer for model number D4002
0051-83	High flow plug
8052-97K	Barrel bore power cleaning kit
GRAN	High speed mini granulator
BTP1000A	Probe for barrel temperature calibration