

**LPM 250 Series  
Photodiode Laser Energy Monitors from Litron**



LPM250



# State of the Art Energy Monitoring Devices for Laser Users.

## FEATURES

- **Pulse energies from 10µJ to 65J**
- **400nm - 1650nm (typically depending on the choice of the detection diode)**
- **Accurate temperature stabilised photodiode**
- **Pulse repetition rates of up to 1000Hz**
- \* **Exceptional linearity**
- **Repeatability errors of less than 0.2%**
- **High damage threshold - greater than 3J/cm<sup>2</sup> Q-switched**
- **Rugged design with integrated 4 digit energy display**
- **Traceable calibrations available at 1535nm, 1064nm, 694nm and 532nm**
- **Comprehensive software suite with datalogging capability for use with Microsoft® Windows®**
- **RS232 interface**
- **Large 50mm input aperture**



The Litron LTM 530 In-line Energy Monitor Series

The LPM250 series of energy monitors are photodiode based instruments. They have been designed to facilitate the easy, accurate measurement of pulsed laser output energy, and to allow detailed performance monitoring of laser systems. The detection electronics gives exceptional linearity over the entire dynamic range of the device, and repeatability errors of less than 0.2% may be achieved.

The type of detection diode that is chosen allows for different spectral ranges to be covered accurately. The maximum measurable pulse length is user selectable up to 50ms via the included software suite. An oscilloscope output is

an option that allows the temporal profile of the laser pulse to be observed. This can be configured either as a 50Ω output or as an integrated output with a time constant of 500µs.

The head contains a 4 digit LED display, allowing the unit to be used as a 'stand-alone' device. The inclusion of a serial interface is standard on all models and allows full data logging and statistical analysis of the laser output with the software package included. Fully automatic re-calibration can be performed in conjunction with our in-line transfer standard meter.



Our proprietary, patent pending, optical configuration gives a high uniformity in the reading over the whole of the 50mm input aperture, as well as giving the device a low angular sensitivity, minimising the effects of small misalignments.

We are happy to discuss your custom requirements should one of our standard range detailed overleaf not be suitable for your application.



# LPM 250 Series Photodiode Laser Energy Monitors

## SPECIFICATIONS

Model	Photodiode Type	Wavelength Range (nm)	Energy Range <sup>7</sup>	Fan Append	Oscilloscope Output	Maximum Pulse Input Frequency	Maximum Input Pulse Length	Calibration Available at (nm)
<b>LPM250-1</b> <b>LPM250-2</b> <b>LPM250-3</b> <b>LPM250-4-F</b>	Silicon	400-1100	0.01-60 mJ 0.1-600 mJ 1-6000 mJ 10 mJ - 65 J	Optional -F Optional -F Optional -F Standard	See Note 2	See Note 3	See Note 3	1064, 532, 694
<b>LPM251-1</b> <b>LPM251-2</b> <b>LPM251-3</b> <b>LPM251-4-F</b>	InGaAs	900-1650	0.01-60 mJ 0.1-600 mJ 1-6000 mJ 10 mJ - 65 J	Optional -F Optional -F Optional -F Standard	See Note 2	See Note 3	See Note 3	1535, 1064

### ALL MODELS

Input Aperture Diameter	50mm
Damage Threshold	>50J/cm <sup>2</sup> (normal mode pulses) 3J/0cm <sup>2</sup> (Q-switched pulses)
Absolute accuracy at calibrated wavelength <sup>4</sup>	±3% or 1 digit whichever is greater
Error in repeatability <sup>6</sup>	Better than ±0.2%
Positional accuracy across input aperture <sup>5</sup>	±5% from centre to edge
Display type	4 digit green LED
Dimensions (mm)	195 L x 96 W x 82 H (no fan) 195 L x 100 W x 82 H (with fan)
Weight (kg)	1.9
Outputs	RS232, optional 50Ω or integrated oscilloscope output
Power requirements	6V DC, 1A (Adaptor supplied)

### NOTES

- The maximum power loading in free air is 20W. The addition of a fan allows power loadings of up to 50W continuously.
- An oscilloscope output is available on all models. For an output that is integrated with a time constant of about 500µs append -A to the model number and for a 50Ω output capable of resolving 200ps pulses append -B to the model number.
- The maximum pulse width is user settable up to 50ms. The device works by integrating the incident energy over the set period. The maximum input frequency is therefore a function of the maximum pulse width. For a 50ms maximum pulse width, the maximum repetition rate is 18Hz and for a 500µs pulse width the maximum repetition rate is 1kHz.
- Input beam incident upon centre of aperture and normal to surface. Energy >10% of full scale reading.
- 4mm diameter input beam across the central 42mm of the input aperture. Larger input beams may give rise to a less uniform response.
- For integration time <2ms and energies >10% of full scale reading.
- Full scale energy may vary for different wavelengths with a given device due to the spectral response of the detector and optics.



Our policy is to improve the design and specification of our products. The details given in this document are not to be regarded as binding.

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