

EPM1000

Single-Channel Laser Energy/Power Meter

- Large, easy-to-read 4-digit liquid crystal display with EL panel backlight
- Fast, mirrored-scale analog meter with backlight
- Auto range
- RS-232 port (standard)
- IEEE-488 port (optional)
- Analog output
- NIST traceable

JOULEMETER FEATURES:

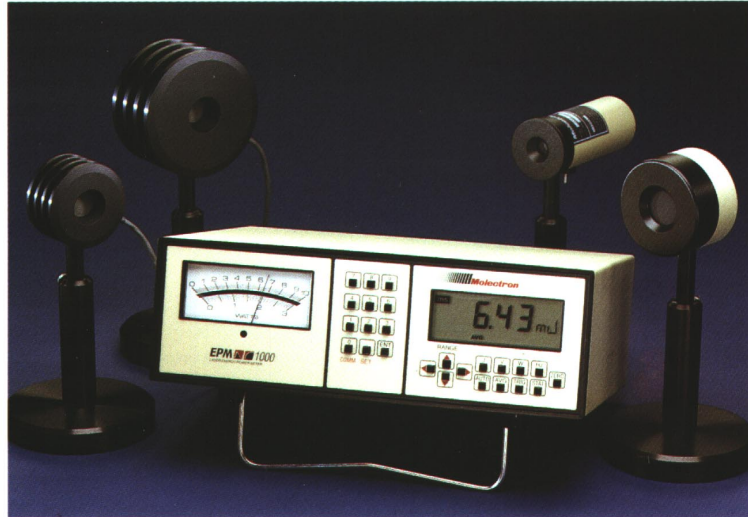
- Measure Energy, Average Power, or Frequency
- Wide dynamic range: 1 pJ to 10 J, 0.1 to 1000 Hz
- Fast pulse capture: 1000 pps
- Sensitive: 100 fJ
- Pulse widths: fsec to msec
- Full statistics functions: average, standard deviation, minimum, or maximum for 2 to 9999 pulses

POWER METER FEATURES:

- Measure Power or Energy
- Wide dynamic range: 1 mW to 10 kW power or 10 mJ to 3kJ energy
- Sensitive: 100 μ W
- Mates with all PowerMax[®] probes
- Precise wavelength correction
- Probe temperature compensation

Applications

- Pulsed Laser Energy
- Continuous Laser Power
- Pulse-to-Pulse Stability
- Laser Production Test
- Laser R & D
- Laser Process Control
- Flashlamp Pulse Energy
- Medical Laser System Performance



Two meters in one: Energy Meter with our Pyroelectric and Silicon Joulemeter Probes. Power Meter with our PowerMax[®] Thermopile Probes!

Description

The new **EPM1000** is an incredibly versatile Laser Energy and Power Meter designed to meet your most demanding laser research and/or production test requirements. This single-channel instrument is compatible with all of Molelectron's pyroelectric/silicon joulemeter and PowerMax[®] thermopile probes. It measures pulse energy from picojoules to joules, power from microwatts to kilowatts, and frequency from sub-hertz to the max rep rate. It does it all in real time and displays the measurement on both a fast 3 1/2-inch mirrored analog meter and large 4-digit custom LCD. Each measurement can be displayed in absolute terms or a statistical format including Average, Standard Deviation, Minimum, or Maximum.

Advanced microprocessor design and standard RS-232 digital interface make remote operation and data collection at very high rep

rates easy! Our state-of-the-art analog board features a fast channel that accurately detects peak voltage output from our joulemeter probe and corrects for baseline changes. The precision thermopile channel measures the DC output of the probe and monitors probe temperature for increased accuracy during repetitive or long-term measurements. The EPM1000 electronics are housed in a custom metal RFI-shielded enclosure.

As a stand-alone laboratory instrument, the EPM1000 can't be matched. Its logical, pushbutton control panel makes operation a breeze. You can put it to use in seconds without opening our manual!

Your valuable inputs combined with Molelectron's 20-plus years of laser detector and instrument design help make the EPM1000 the optimum Laser Energy and Power Meter.

EPM1000 Single-Channel Laser Energy/Power Meter

Controls and Connectors



The EPM1000 mates with the full line of Molectron Detector pyroelectric and silicon joulemeter probes.



The EPM1000 is a power meter, too. It mates with every Molectron Detector PowerMax[®] probe.

- J:**
Energy mode in Joules
- V:**
Absolute AC/DC Volts
- W:**
Power mode in Watts
- Hz:**
Pulse frequency mode (for pyroelectric/silicon probes only)
- AUTO:**
Selects auto range
- AVG:**
Sets up average mode for energy or power
- STAT:**
Push to enter statistics mode, select Average, Standard Deviation, Minimum, or Maximum
- TRIG:**
Select internal or external trigger
- ZERO:**
Auto zero for thermopile channel
- RANGE ARROWS:**
UP/DOWN arrows select range
- SET ARROWS:**
LEFT/RIGHT arrows used for setup functions
- COMM:**
Enter computer communication setup
- SET:**
Instrument setup for audio indicator, backlight, restore default setup, etc.
- NUMERIC KEYPAD:**
Used to enter calibration factors, statistics batch size, RS-232/IEEE-488 setup, etc.

General Specifications

- Display:**
4-digit numeric LCD with 0.7"-high digits
2-character alphanumeric units display
Annunciators for auto range, statistics, trigger, and communications
3½-inch mirrored-scale analog meter
Backlight switchable on/off
- Ranges:**
- | | | | |
|-----------|---|-----------|--------|
| Energy | 1 pJ to 3kJ (valid ranges depend on probe capability) | Frequency | 0.1 Hz |
| Power | 1 mW to 10 kW (valid ranges depend on probe capability) | Volts | 10 μV |
| Frequency | 0.1 to 1000 Hz | | |
| Volts | 10 μV to 20 V for thermopile probes
1 mV to 20 V for joulemeter probes | | |
- Maximum Rep Rate:**
1000 pps
- Maximum Pulse Width:**
Pyroelectric 10 msec
Thermopile unlimited
- Trigger:**
Adjustable 2% to 20% of full scale
- RS-232 Baud rates:**
38400, 19200, 9600, 4800, 2400, and 1200
- Analog output:**
2 V full scale
100 Ω output impedance
- Audio indicator:**
Audio indicator of error or overrange (switchable on/off)
- Power:**
120V/240 VAC, 50/60 Hz
- Electronic accuracy:**
Analog Meter: ± 2% of full scale
Analog Output: ± 1% of full scale
Digital Display: ± 1% of full scale
- System accuracy:**
Pyroelectric probe: ± 5% of full scale
Thermopile probe: ± 3% of full scale (with wavelength correction)
- Resolution:**
- | | | | | | |
|--------|------------------------------|--------------|---------------|----------------|---------|
| Energy | 10 fJ (silicon), 10nJ (pyro) | Size: | 12" × 9" × 4" | Weight: | < 4 lbs |
| Power | 10 μW | | | | |

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