

▼ CHAPTERS

Power Meters

Detectors

Beam
Characterization

Polarimetry

Electronics
Accessories

▼ SECTIONS

Power Meters

Touch Screen Meter

Digital Meter

Analog Meter

Compact Sensor
Interface

Dual-Channel Meter

Photodiode Sensors

Thermal Sensors

Pyroelectric Sensors

Field Service

Dual-Channel Power and Energy Meter (Page 1 of 2)

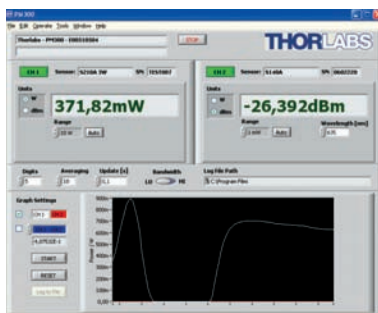


PM320E Benchtop Console
Sensors Sold Separately

Compatible Sensors

- S100C Series of Photodiode Sensors
- S300C Series of Thermal Sensors
- ES100C and ES200C Series of Pyroelectric Sensors
- Photodiodes (10 mA Max)
- Thermopiles (1 V Max)
- Pyroelectric Sensors (100 V Max)

Sample GUI Display



Thorlabs' dual-channel PM320E Power and Energy Meter offers many features not found in handheld devices. It is ideal for precise optical measurements, laser and photodiode characterization, lifecycle measurements, and many more applications in the lab and on the manufacturing floor. The dual-channel design enables differential and ratiometric measurements. It is easy to integrate into a variety of applications due to its intuitive manual control with large graphics display, compatibility with conventional photodiodes, and excellent remote operation capabilities.

The PM320E is compatible with all of Thorlabs' C-Series sensors, which include photodiode, thermal, and pyroelectric sensor types. The compatible sensors can be connected to either channel for full functionality. Each sensor is available separately. Many of our previous A- and B-Series sensors can be updated for a nominal fee by contacting Technical Support. Additionally, customers can wire their own photodiodes (anode or cathode ground), thermal elements, or pyroelectric sensors for use with the PM320E.

Both C-Series sensors connect via two DB9 connectors on the rear panel, which also provides two analog high-bandwidth outputs to allow monitoring of each channel. Additionally, a programmable analog output is on the rear panel. User-supplied photodiodes connect to the unit on the front panel using the BNC inputs. These inputs feature selectable polarity, switchable bandwidth, and a programmable bias voltage.

On the back of the PM320E is a BNC output, which is gain and function programmable. It provides an analog voltage proportional to the output of one of the channels or as the difference or ratio of the two power meter channels. The rear of the unit has an external trigger input (BNC) for trigger power and energy measurements. The PM320E can be controlled using the front panel, which features a large LCD, or remotely via USB2.0. Drivers and a graphical user interface (GUI) are included for remote operation and integration of custom software.

Features

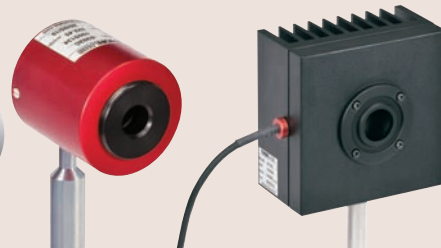
- Programmable Channels for Monitor, Difference, Ratio, Math Functions, Linear and Log Values, and Attenuation
- USB2.0 Interface
- Large 240 x 128 Pixel Graphics Display
- Programmable Responsivity for Connection of Photodiodes and Thermal Sensors
- Continuous and Single-Shot Energy Measurement of Pulsed Laser Sources
- Adjustable Trigger Threshold, Beam Diameter, and Wavelength
- Monitor and Programmable Analog Outputs
- Externally Triggered Power and Energy Measurements

Photodiode Sensors



See Pages 1560 - 1563

Thermal Sensors



See Pages 1564 - 1565

Pyroelectric Sensors



See Pages 1566 - 1567

Dual-Channel Power and Energy Meter (Page 2 of 2)

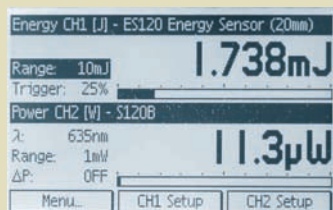
PHOTODIODE SENSOR INPUT (CURRENT)	
Measurement Ranges	6 Decades; 100 nA – 10 mA
Units	W, dBm, W/cm ²
Accuracy	±0.2% of Full Screen (1 µA – 10 mA) ±0.5% of Full Screen (100 nA)
Bandwidth	DC to 100 kHz, Dependent on Sensor and Settings
THERMOPILE SENSOR INPUT (VOLTAGE)	
Measurement Ranges	4 Decades; 1 mV – 1 V
Units	W, dBm, W/cm ²
Accuracy	±0.5% of Full Screen
Bandwidth	DC to 10 Hz, Dependent on Sensor and Settings
Time Constant Correction	1 – 30 s
PYROELECTRIC SENSOR INPUT (VOLTAGE)	
Measurement Ranges	4 Decades; 100 mV – 100 V
Units	J, J/cm ² , W
Accuracy	±0.5% Full Screen
Repetition Rate	3 kHz
ANALOG OUTPUTS	
Connector	BNC (2), Rear
Voltage Range	0 to ±10 V
Bandwidth	Up to 100 kHz, Dependent on Sensor and Settings
Accuracy	±3%

PROGRAMMABLE ANALOG OUTPUT	
Connector	BNC, Rear
Signal	Selectable: CH1, CH2, CH1-CH2, CH1/CH2
Voltage Range	0 to ±10 V, Programmable Gain Offset
Bandwidth	Up to 500 Hz, Dependent on Sensor and Settings
SENSOR TEMPERATURE MEASUREMENT	
Supported Temperature Sensor	N/A
Temperature Measurement Range	N/A
GENERAL	
Input	Female DB9 for C-Series Connectors
Display	Graphical LCD, 240 x 128 pixels
Display Update Rate	20 Hz
Display Screens	Numerical, Bar Graph, Trend Graph
Memory Card	N/A
A/D Converter	16 Bit
Computer Connectivity	USB2.0, Type B
Battery	N/A
Dimensions	8.7" x 4.8" x 12.8" (220 mm x 122 mm x 325 mm)
Operating Temperature	0 to 40 °C
Storage Temperature	-40 to 70 °C
Power Supply	
Line Voltage	100 V, 115 V, 230 V, (±10%)
Line Frequency	50 to 60 Hz

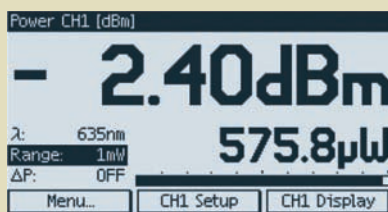
PM320E Includes

- PM320E Console
- Manual
- Calibration Certificate
- USB Cable

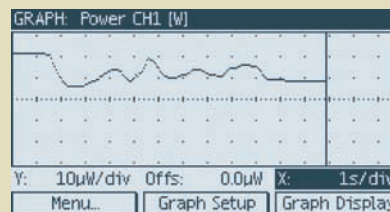
Sample Display Screens Dual-Channel Measurements



Single-Channel Measurement



Trend Graph



ITEM #	\$	£	€	RMB	DESCRIPTION
PM320E	\$ 2,200.00	£ 1,584.00	€ 1,914.00	¥ 17,534.00	Dual-Channel Benchtop Power and Energy Meter
CAL-PM300	\$ 200.00	£ 144.00	€ 174.00	¥ 1,594.00	Calibration Service for PM300



- ◆ Heat-Treated Stainless Steel Minimizes Temperature-Dependent Hysteresis to Less than 2 µrad Deviation after Temperature Cycling
- ◆ Actuators Matched to Bushing/Body to Reduce Drift and Backlash
- ◆ Sapphire Seats Ensure Long-Term Durability



POLARIS-K1



POLARIS-K05



POLARIS-K1-H

Mechanical and Temperature Test Data
at www.thorlabs.com

For more details, see pages 244 – 246