

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

Touch Screen Power and Energy Meter (Page 1 of 4)



PM200

NEW
product

Features

- Brilliant 5.7" Color Touch Screen with VGA Resolution and Wide Viewing Angle
- Advanced Spectral Correction Support
- Power and Energy Measurements for CW and Pulsed Sources
- Optional Fiber Inspection Camera (See www.thorlabs.com for Details)
- Compact, Rubber-Protected Enclosure Measuring 170 mm x 125 mm x 38 mm (6.70" x 4.9" x 1.5")
- 90° Flip Screen and Swivel Kickstand for Landscape or Portrait Viewing
- Data Storage on USB Stick
- Compatible with All C-Series Sensors (See Pages 1560 - 1567)
- USB 2.0 Remote Operation

Thorlabs' PM200 Touch Screen Power and Energy Meter, the latest addition to our power and energy meter console offerings, is the high-end counterpart to our PM100D and PM100A Power Meter Consoles. It is equipped with a brilliant 5.7" color touch screen (118 mm x 88 mm) with VGA resolution that offers high contrast, a wide viewing angle, and a 90° flip screen that enables use in either a portrait or landscape orientation. The screen is encased in a compact, removable rubber housing that measures 170 mm x 125 mm x 38 mm.

The PM200 is compatible with all of our power and energy sensors (photodiode, thermal, and pyroelectric sensors) for use from the UV to the Mid-IR. It offers six current ranges for use with photodiode sensors outputting currents from 10 pA to 5 mA and four voltage ranges for use with thermal sensors with thermopile voltages from 100 nV to 1 V. In both cases, manual and auto ranging are possible. The console has four manual voltage ranges for use with pyroelectric sensors with voltages from 100 μ V to 100 V, and the auto-gain threshold can be adjusted from 0.1% - 99.9%. Customers can use their own custom built sensors and upload a response curve for spectral correction. Finally, a USB 2.0 port offers full remote control.

Unique Features and Flexibility

If you load the spectral response curve for your broadband light source, the PM200 is capable of adjusting the responsivity at each wavelength and calculating the resulting responsivity setting that enables it to display the correct power. Similarly, you also have the ability to load a response curve for a filter, the meter will calculate the adjusted power and display the corrected value. Other features



Intuitively Touch Screen Operation

that were implemented into the PM200 to extend its functionality and applicability include the following:

- Data recording is stored to a large internal memory (128 MB) or a USB drive for stand-alone operation
- The ability to determine relevant laser beam specifications (e.g., peak power, power density, energy density, etc.) and to suggest sensors based on inputted parameters (e.g., diameter, wavelength, power, energy, pulse length)
- Software update using an external USB drive
- Optional temperature and humidity module

An optional fiber inspection camera with power measurement capability will be available soon. Please visit thorlabs.com, and search on PM200 camera.



Swivel Kickstand Offers Landscape or Portrait View

Removable Rubber
Casing

Touch Screen Power and Energy Meter (Page 2 of 4)

The display screen of the PM200 Power and Energy Meter Console can be customized to show different measurements. For example, the user can display the minimum and maximum values within a certain time period or enable a visual or audible peak indicator as a tuning aid. Below are several examples of available screens:

Sample Screens of the PM200



Common Display Elements and Functionality

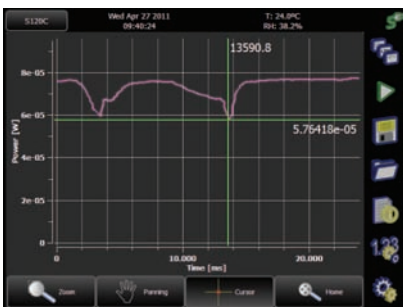
- Header Line with Info About the Sensor, Date/Time, and Battery State
- Vertical Navigation Bar on the Right
- 90° Screen Flip According to Device Orientation
- Configurable Widgets on Most Screens
- Selectable Color Scheme for All Screens

Numeric Display

The large power or energy readout is the main element of the numeric display. Supplementary display icons can be added to show various pieces of information. (e.g., a corresponding bar graph scale with integrated min-max indicators offers a quasi-analog view of the data). All display elements can be quickly configured.

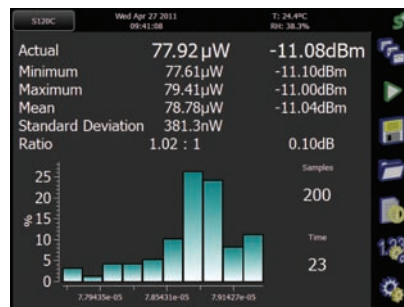
Needle Display

The needle display with its minimum and maximum indicators is very convenient for laser tuning. The large numeric display below the gauge provides an exact power readout. This screen offers the same convenient configuration features as the numeric display.



Graph Display

The graph display shows the power or energy reading as a function of time. While recording data, this screen can be toggled with the statistic display. Directly after recording or after loading stored data, you can zoom into the graph and set a cursor for data analysis.



Statistic Display

On the statistics screen, all important parameters are calculated and displayed in linear and logarithmic format. The numbers are supported by a histogram, which can be enlarged. All data is initially stored to a temporary file that can be saved.



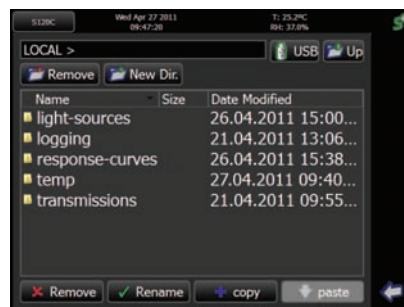
Settings Page

The settings page offers easy access to all measurement and system-related settings.



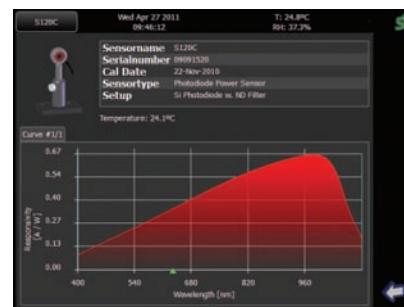
Measurement Settings

This screen provides overview and control over all settings of the connected sensor. Additionally, the logging stop criteria and logging interval are configured here.



File Manager

The file manager provides access to the local drive or to a user-supplied USB flash drive. Typically logging files, user calibration, or correction curves are stored here.



Sensor Information

The sensor information screen shows sensor-relevant data and the response curve with indicators for minimum, maximum, and set wavelength, which are stored in the sensor EEPROM.

For current pricing, please see our website.

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Touch Screen Power and Energy Meter (Page 3 of 4)

Power and Energy Measurement

The different measurement views can be easily selected after pressing the “Views” button. For most applications, the numeric and needle views will be the best choice for an excellent visible and quickly configurable power or energy readout. The interactive touch areas allow fast access to all settings.

Connectivity

The sensor's connector enables quick hot swapping of sensor heads and contains all the sensor information, including NIST-traceable responsivity curves, sensor types, and model number. These details can be shown on the sensor information display screen.

Diverse I/O ports enable quick integration into non-standard applications like an analog output, auxiliary input/output for external trigger, general-purpose programmable IO-ports, or ADC.

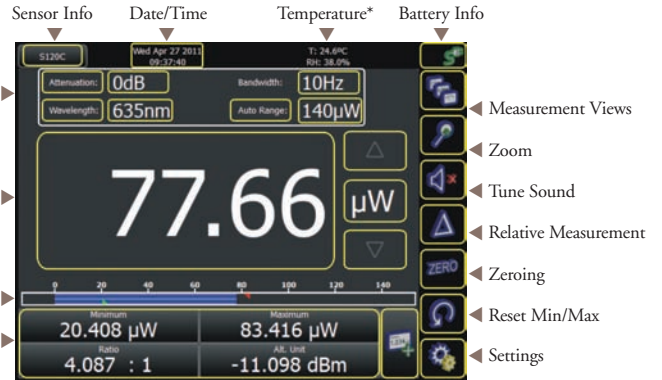
Sensor Mounting Options

Thorlabs offers a wide variety of mounting options for our standard, slim, integrating sphere, pyroelectric, and compact photodiode sensors. The compact design allows easy integration into existing setups. Typical mounting configurations – including post, cage, and lens tube options – are available. We also provide FC/PC, SMA, SC, LC, and ST fiber adapters for many of our sensor heads (see page 1096). For a complete list of mounting options, please visit our website.

Major Settings with Active Labels and Drop-Down Menus

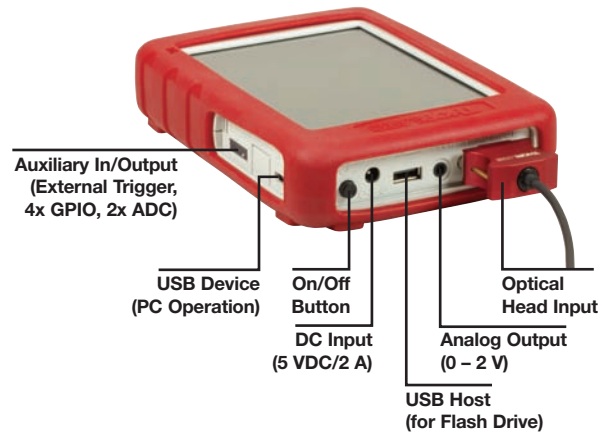
Main Readout with Fast Configurable Precision and Measurement Units Arrows for Ranging

Bar Graph with Min and Max Indicators
Supplementary Displays with Drag and Drop Configuration



*Shown with Relative Humidity

PM200 Connection Devices



Included

- Console
- Storage Case
- External Power Supply and Power Cord
- USB Memory Stick with Drivers, User Application, and Operation Manual
- Calibration Certificate
- USB Cable (Type “A” to “Mini-B”)
- Cable with Flying Leads for Analog Output
- Quick-Start Manual



Compatible Sensors

- S100C Series of Photodiode Sensors
- S300C Series of Thermal Sensors
- ES100C and ES200C Series of Pyroelectric Sensors
- Photodiodes (5 mA Max)
- Thermopiles (1 V Max)
- Pyroelectric Sensors (100 V Max)

For current pricing,
please see our website.

Touch Screen Power and Energy Meter (Page 4 of 4)



PHOTODIODE SENSOR INPUT (CURRENT)	
Measurement Ranges*	6 Decades; 50 nA – 5 mA
Units	W, dBm, W/cm ² , A
Accuracy	±0.2% of Full Scale (5 µA – 5 mA), ±0.5% of Full Scale (50 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 , V
Accuracy	±0.5% of Full Scale (10 mV – 1 V), ±1% of Full Scale (1 mV)
Bandwidth	DC to 10 Hz, Dependent on Sensor and Settings
Time Constant Correction	1 – 30 s
ANALOG OUTPUT	
Connector	Audio 3.5 mm, Left Side
Voltage Range	0 – 2 V
Bandwidth	Up to 100 kHz, Dependent on Sensor and Settings
Accuracy	±3%
SENSOR TEMPERATURE MEASUREMENT	
Supported Temperature Sensor	Thermistor
Temperature Measurement Range	-10 to 80 °C
GENERAL	
Sensor Input	Female DB9 for C-Series Connectors
Display	5.7" TFT, 640 x 480 Pixels, 18 Bit Color
Viewing Area	118 mm x 88 mm (4.65" x 3.46")
Backlight Display	LED, Adjustable
Display Update Rate	15 Hz (Max)
Display Screens	Numerical, Bar Graph, Trend Graph, Statistics, Simulated Analog Needle
Internal Memory	128 MB RAM
External Memory	2 GB USB Flash Drive (Included, 8 GB Max)
A/D Converter	16 Bit
Computer Connectivity	USB2.0 Type A (Device), Mini USB (Host)
Battery	Li-Polymer 3.7 V 2600 mAh
Dimensions	170 mm x 125 mm x 38 mm (6.7" x 4.9" x 1.5")
Operating Temp/Storage Temp	0 to 40 °C/-40 to 70 °C
Features	Rotatable Two-Position Kickstand, Removable Rubber Casing, Touch-Pen, Fixture for Optional Fiber Inspection Camera

*Ranges Selectable in W, Sensor Dependent

Photodiode Sensors

See Pages
1560 – 1563



Thermal Sensors

See Pages
1564 – 1565



Pyroelectric Sensors

See Pages
1566 – 1567



Do you need a...



Laser Viewing
Card or Disk

See page 1516

THORLABS
Detector Card

■ VISIBLE: 400 - 640nm
■ INFRARED: 800 - 1700nm

Always take appropriate safety
precautions when working with lasers

ITEM #	\$	£	€	RMB	DESCRIPTION
PM200	\$ 1,545.00	£ 1,112.40	€ 1,344,15	¥ 12,313.65	Touch Screen Power and Energy Meter Console, 5.7" Color LCD
CAL-PM	\$ 75.00	£ 54.00	€ 65,25	¥ 597.75	Recalibration Service

Have you seen our...

Confocal Microscopy Systems

- ◆ Compact, Modular Design Adaptable for Upright, Inverted, and Thorlabs T-Scope Microscopes
- ◆ Two- and Four-Channel Options
- ◆ Systems Optimized for UV, Visible Fluorescence, or Reflectance Modes
- ◆ High-Speed Scanning: 30 Frames per Second (at 512 x 512 Pixel Resolution)

For more details, see pages 1680 – 1683

CLS-FS shown
mounted on a
TSCOPE
Microscope with a
MLS203-1 Stage

