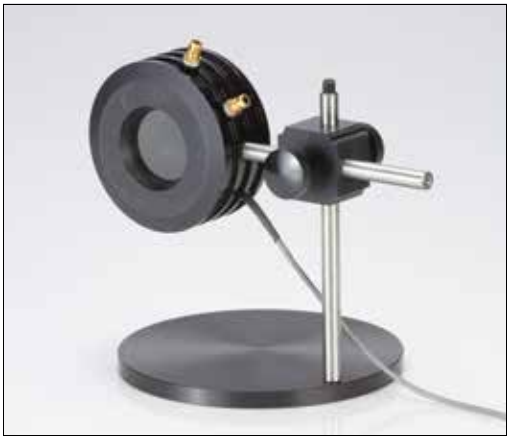
Water-Cooled Thermopile Sensors

100W to 5 kW



Model PM1K

Features

- **Water-cooled**
- **Spectrally flat from 0.19 µm to 11 µm**
- **1W resolution**
- **50 mm apertures**

These water-cooled sensors are used to measure lasers over 300W average power output. They are excellent choices for measuring CO_2 and Nd:YAG lasers. Larger-area versions are available on the next page.

Tap or distilled cooling water is recommended with these sensors – DI water can not be used. Flow rates are power dependent and range from 0.5 to 4 gallons per minute; pressure depends upon flow rate and ranges from 3 to 40 PSI (visit product pages at www.Coherent.com/LMC for more technical details). Water fittings are included.

Device Specifications

ISO/IEC 17025:2005

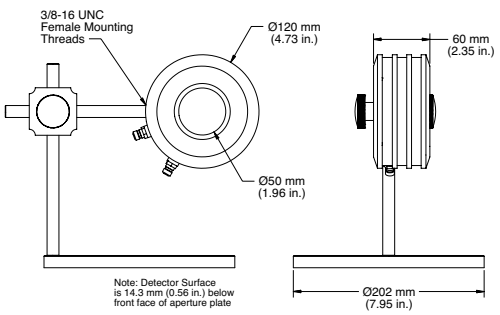
Model	PM1K	PM3K	PM5K
Wavelength Range (µm)		0.25 to 11	
Power Range (W)	100 to 1000	100 to 3000	100 to 5000
Max. Intermittent Power (<5 min.)(W)[1]	3000	5000	10000
Resolution (W)		1	
Max. Power Density[2]		1 to 2.5 kW/cm²	
Max. Energy Density		0.6 J/cm², 1064 nm, 10 ns	
Response Time (sec.)		30	
Detector Coating		Broadband	
Active Area Diameter (mm)		50	
Calibration Uncertainty (%)(k=2)		±3	
Calibration Wavelength (nm)		1064	
Cooling Method		Water-cooled	
Cable Type		PM DB-25	
Cable Length (m)		2	
Part Number	1098392**	1098462**	1098454

[1] Intermittent power levels may be sustainable for longer than 5 minutes when used with lasers with large diameter, non-Gaussian beam profiles. Monitor closely for coating damage if used longer than five minutes at higher powers.

[2] The damage resistance of the coating is dependent upon the beam size and profile, the average power level, and the water flow rate. Contact Coherent or your local representative for details related to your application.

** C24 Quick Ship program: eligible for next business day shipment.

PM1K/PM3K/PM5K



FieldMaxII Meters

Laser Power and Energy Meters

FieldMaxII-TOP Power and Energy Meter

FieldMaxII-TO Power Meter

Features

- Measure energy of pulsed lasers up to 300 pps
- Large, backlight LCD display
- Compatible with thermopile, optical, and pyroelectric sensors
- Simulated analog-like movement for laser tuning
- USB interface with FieldMaxII PC applications software, LabVIEW instrument driver and ActiveX control
- XP/Vista (32-bit)/Windows 7 (32-bit and 64-bit) compatible
- Area function for density measurements (J/cm² or W/cm²)

Models

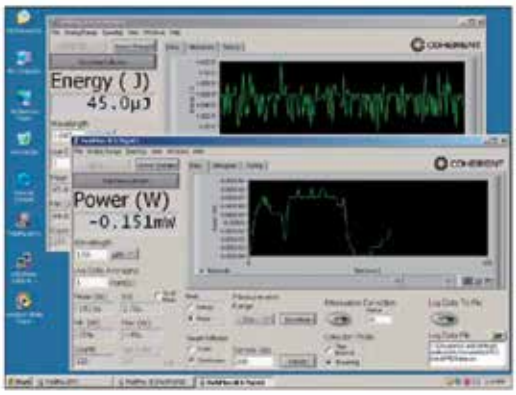
- FieldMaxII-TOP is compatible with thermopile, optical and pyroelectric sensors (power & energy)
- FieldMaxII-TO is compatible with thermopile and optical (power only)
- FieldMaxII-P is compatible with pyroelectric (energy only)

FieldMaxII is an affordable, versatile, easy-to-use digital power and energy meter platform designed for a variety of applications ranging from field service to production test applications.

FieldMaxII features a large, easy-to-read backlit LCD and an intuitive user interface offering button-driven control for simple operation. The meter supports onboard analysis of mean, min., max., and standard deviation statistics. It can measure power from nW to kW, and pulse energy from nJ to J at up to 300 pps. In addition, long-pulse Joules energy measurements can be made on the FieldMaxII-TOP model when using thermopiles.

The meter includes a USB PC interface as well as an analog output. The FieldMaxII PC applications software supports trend charting, tuning, statistics, and logging data to a file. A LabVIEW instrument driver with ActiveX control is provided to support custom software developments.

FieldMaxII PC Application



Features

- USB PC Interface
- FieldMaxII PC is completely open-source so that you can use it to help develop your own customized applications
- Multiple meters can be run on a single PC – useful for final test and burn-in applications
- Meters can be operated remotely via host interface and included drivers
- Software features:
  - Measure, Tune, Trend displays
  - Statistics
- LabVIEW instrument driver and ActiveX DLL server included

FieldMaxII Meters

Laser Power and Energy Meters

Device Specifications

ISO/IEC 17025:2005

Model	FieldMaxII-TOP	FieldMaxII-TO	FieldMaxII-P
Function	Power and energy	Power	Energy
Measurement Resolution	0.1% of full-scale		
Measurement Range	Sensor dependent - reference sensor specifications		
Accuracy			
System	Meter accuracy + sensor accuracy		
Analog Output (%)	±1.0		
Calibration Uncertainty (%)(k=2)	±1.0		
Power Sampling Rate (Hz)	10	10	–
Maximum Pulse Rep. Rate (Hz)	300	–	300
Display	58 x 73 mm , fixed-segment LCD with backlight		
Digital Tuning Indicator	100 msec time constant		
Statistics	Mean, max., min., standard deviation		
PC Interface	USB 1.1		
Analog Output	0 to 1, 2, or 5 VDC (selectable)		
Internal Trigger	2 to 20% of full-scale, selectable	–	2% to 20% of full-scale, selectable
Temperature			
Operating Range	5 to 40°C (41 to 104°F)		
Storage Range	-20 to 70°C (-68 to 158°F)		
Instrument Power	100 to 240 VAC, 50/60 Hz		
Instrument Batteries	Rechargeable NiMH battery pack		
Compliance	CE, RoHS, WEEE, ISO 17025		
Dimensions (H x W x D)	200 x 100 x 40 mm, (7.87 x 3.94 x 1.57 in.)		
Weight	1.0 kg (2.2 lbs.)		
Front Panel			
PWR	Toggle power switch and backlight		
HZ	Display rep. rate	–	Display rep. rate
J/W	Select Joules or Watts mode	–	–
ZERO	Reset ambient offset for thermal and optical sensors		Zero stats
AUTO	Engage auto-ranging with power sensors		–
STAT	Display statistics: mean, max., min., standard deviation		
AVG	Engage display averaging		
λ	Enter wavelength and engage wavelength compensation		
ATTEN	Enter attenuation factor and engage attenuation		
AREA	J/cm² (fluence) W/cm² (power density)	W/cm² (power density)	J/cm² (fluence)
HOLD	–	Holds displayed values on screen	–
TRIG	Select trigger level with energy sensors	–	Select trigger level with energy sensors
SETUP / LOCAL	Set and enter button/Takes local control of meter back from PC		
ARROW KEYS	Manually control range; Select Stats parameter; Select and change numerical values		
Left Side Panels	Power jack USB PC interface port Analog output		
Right Side Panels	DB-25 sensor port		
Part Number*	1098580**	1098579**	1098581

* Meter supplied with NiMH rechargeable battery pack, power cord, AC adapter, USB cable (1.8m), RCA-to-BNC analog output adapter, installation CD with FieldMaxII PC and drivers, soft carrying case, and certificate of calibration.

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