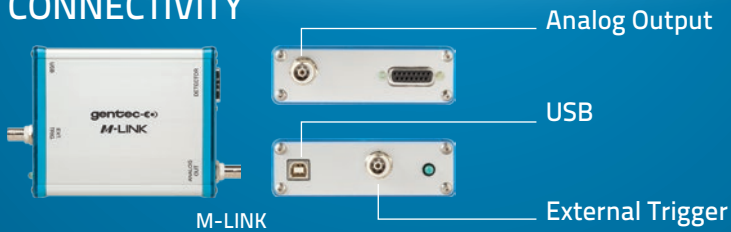


M-LINK

Single Channel, PC-Based Universal Power and Energy Monitor



CONNECTIVITY



KEY FEATURES

1 The Universal Meter

Reads ALL Heads:

- Power: Thermopiles, Photo Detectors and Pyroelectrics
- Energy: Thermopiles (in single shot mode), Photo Detectors and Pyroelectrics

2 Measure fJ Energy Levels

Thanks to a unique digital method for suppressing the noise on the lower ranges

3 External Trigger

Synchronize you M-LINK to your pulsed laser or digital chopper

4 Digital (USB) Output

Connect the M-LINK module directly to your PC

5 Powerful LabView Software

Features include:

- Complete instrument controls: Range, Trigger, Wavelength, etc.
- Live display in J and J/cm² or W and W/cm²
- Full Statistics: Min, Max, Mean, Standard Deviation, RMS Stability, Repetition Rate, etc.
- Graphic Displays: Strip Chart, Histogram, Tuning Needle and more
- Data File Collection and Analysis

ACCESSORIES



USB Cable

(Model Number: 100776)



Pelican Carrying Case

SEE ALSO

ENERGY DETECTORS	36
POWER DETECTORS	56
HIGH POWER DETECTORS	90
PHOTO DETECTORS	102
THZ DETECTORS	112
LIST OF ALL ACCESSORIES	186

WATCH THE DEMONSTRATION VIDEO AVAILABLE ON OUR WEBSITE AT www.gentec-eo.com

M-LINK

SPECIFICATIONS



*Also traceable to NRC-CNRC

MODEL	M-LINK
DETECTOR TYPES	ALL MODELS: Thermopiles, Pyroelectrics, Photo Detectors
DISPLAY	PC-Based

POWER METER SPECIFICATIONS

Power Range	4 pW to 30 kW
Resolution (Digital)	Current Scale/3000
Monitor Accuracy	$\pm 0.5\% \pm 2$ digits
Statistics	Current Value, Max, Min, Average, Std Dev., RMS & PTP Stability, Time

ENERGY METER SPECIFICATIONS

Energy Range	30 fJ to 30 kJ
Resolution (Digital)	Current Scale/3000
Monitor Accuracy	$1\% \pm 2$ digits (<1 kHz)
Software Trigger Level	0.1 to 99.9%, 0.1% resolution, default 2%
Repetition Rate ^a	1 000 Hz
Real Time Data Transfer	1 000 Hz with time stamp, no missing point
Statistics	Current Value, Max, Min, Average, Std Dev., RMS & PTP Stability, Pulse #, Repetition Rate, Average Power

DETECTOR COMPATIBILITY

Thermopile	Average Power & Single Shot Energy
Pyroelectric	Pulse Energy & Average Power
Photo Detectors	Average Power & Pulse Energy

GENERAL SPECIFICATIONS

Digital Display	Computer Screen
Data Display	Real Time, Scope, Averaging, Statistics and Digital Tuning Needle
Serial Commands and Data Transfer Via	USB
Real Time Data Transfer Rate	1 000 Hz with time stamp, no missing point (for pyroelectrics only)
Analog Output	0-2 Volts, Full Scale, $\pm 0.5\%$
Rising or Falling Edge External Trigger	4.5 to 10 V @ 20 mA, optically isolated
Dimensions	106W x 34H x 147D mm
Weight	0.424 kg
External Power Supply (Ethernet version only)	100/240 VAC 50-60 Hz to 9 VDC 1.66 A

ORDERING INFORMATION

Full Product Name	M-LINK
Product Number	201850

a. Maximum repetition rate may vary with PC and detector speeds.

Specifications are subject to change without notice

* For details, contact your Gentec-EO representative

M-LINK



PC-BASED UNIVERSAL POWER/ENERGY MONITOR

This PC-Based monitor is compatible with ALL types of detectors - including thermopiles, pyroelectrics and photo detectors - for both power and energy measurements. The device is available as a single channel unit that directly interfaces with a computer using a USB2.0 connection. The LabView software is included and comes with all the necessary features. The M-LINK also presents a unique digital technique of suppressing the noise, thereby extending the measurement range all the way down to the fJ level.

VERSATILE SOFTWARE FOR THE UNIVERSAL M-LINK

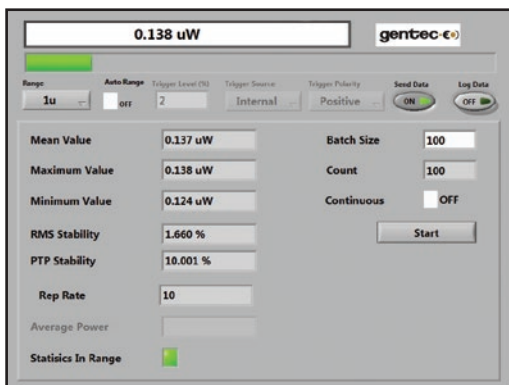
What makes the M-LINK so universal is its compatibility with every detector type and model we make, and our smart software that recognizes the type of detector attached, and configures itself accordingly. Some of the basic software features include:

- Live Digital Reading
- Full Statistics
- Strip Chart
- Histogram
- Analog Tuning
- Data Logging



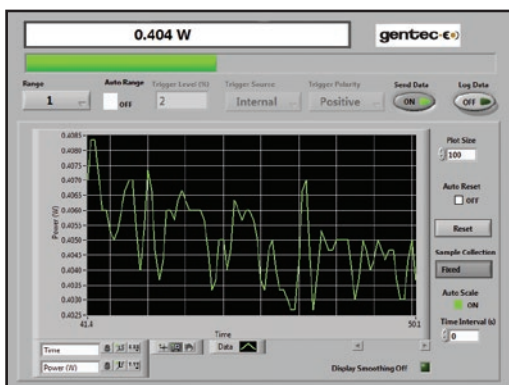
MEASURE POWER WITH A PHOTO DETECTOR

If you need to measure low power levels, from pW to mW, then we recommend one of our PH or PH-B detectors. In the software screen shown on the left, we have taken a data set working in the 'STATS' display mode. We have set the batch size to 100 data points in the manual reset mode. You can see the live power (138 nW) and full complement of statistics: mean, max, min, RMS and PTP stability. In the bottom left hand corner you will note that a wavelength of 300 nm is displayed. This is where you will enter the wavelength of your laser and engage the wavelength correction factor.



MEASURE POWER WITH A THERMOPILE DETECTOR

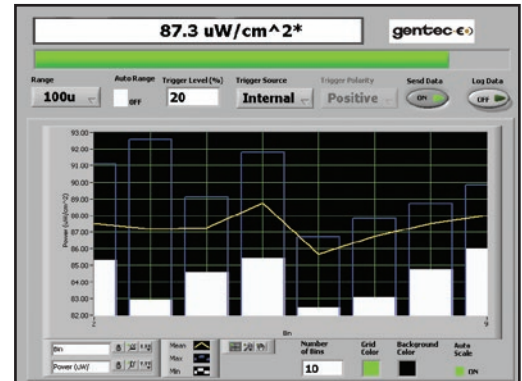
You can select any of our Thermal Detectors to measure your laser power from a few μ W up to 30 kW. We used one of our most sensitive thermopile detectors, model XLP12-3S-H2, to generate the software screen shown on the left. We have selected the 'SCOPE' mode, where you can view the live power reading (0.404 W), a bar graph and a strip chart while monitoring the power. This high level screen also provides access to range, trigger, auto scale, and many other monitor functions.



M-LINK

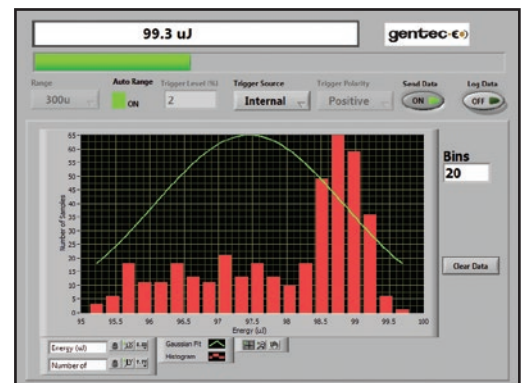
MEASURE POWER WITH A PYROELECTRIC DETECTOR

Need to measure the Radiant Flux (Watts) or Irradiance (W/cm^2) of a broadband source like the sun, a lamp, a temperature controlled black body and/or a mid or far-IR laser? Our broadband pyroelectric detectors of the UM-B Series would be a great choice. To make the measurement that is displayed at the right, we set up our UM9B-BL detector with M-LINK, an SDC-500 Chopper running 10 Hz and our 725 °C Black Body Source. The M-LINK recognizes the UM9B-BL detector, sets the wavelength to 633 nm where it is calibrated and prepares it to measure the voltage square wave it generates. We have engaged the area correction as the 9 mm detector is over filled with radiation. We are therefore measuring Irradiance in W/cm^2 .



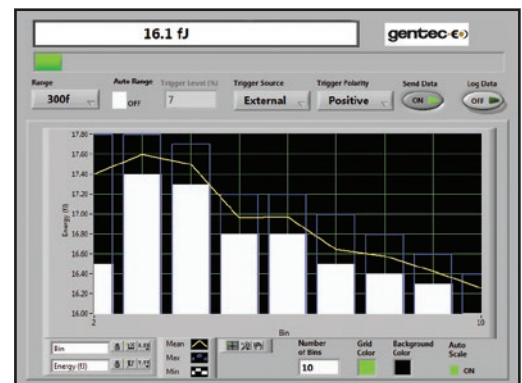
MEASURE ENERGY WITH A PYROELECTRIC DETECTOR

You can select one of our many large area Pyroelectric Detectors of the QE Series for energy measurements ranging from 50 nJ to 250 J and from DUV to Far IR. To demonstrate this capability, we have selected our QE8SP-B-BL and the M-LINK. We are looking at the 'HISTOGRAM' screen, where you can continue to view the live measurement and a histogram that shows the energy distribution of your data set, along with a best-fit Gaussian curve. Note that you still have access to the instrument controls, like range, trigger, wavelength, etc.



MEASURE AT THE fJ LEVEL WITH A PE-B DETECTOR

For measurements in the fJ to μJ range, and from UV to Near-IR we suggest our PE3B-Si detector. It represents the state-of-the-art in low-end energy detector technology. Take advantage of our proprietary pulse averaging, noise reduction techniques available with M-LINK. In the example shown at the right, we have captured a data set while running in the 'AVERAGING' mode. The bars represent minimum (white) and maximum (blue) energy values. The strip chart is based on the average energy value. You get to select the number of 'BINS' represented here. 'Pulse Averaging' is available in the Statistics screen.



MEASURE A HIGH ENERGY PULSE WITH A UP DETECTOR

If you are trying to measure a relatively high energy (Joules) single pulse (up to 300 msec long), you will select one of our Thermopile Power detectors (like the UP50N-W9), have it calibrated in single shot mode and use the M-LINK to make the measurement. In the screen at the right, we have captured a long pulse that had a duration of a few hundred milliseconds and are displaying the energy in the 'SCOPE' screen. Using a variety of our thermopile detectors, you can measure from 12 μJ to 500 J in a single pulse.

