

ENERGY DETECTOR

Low energy measurement

Available with
integra

PE: PHOTODETECTORS



- Available in 3 sizes:
 - 3 mm Ø
 - 5 mm Ø
 - 10 mm Ø
- 3 choices of absorber for different wavelength ranges:
 - Silicon
 - Germanium
 - InGaAs
- Extremely low noise: as low as 8 fJ

■ LOWEST NOISE LEVEL OF ALL ENERGY DETECTORS

Available with
integra

QE-B: HIGH-SENSITIVITY PYROELECTRIC DETECTORS



Our pyroelectric energy detectors have very low noise levels combined with a large bandwidth. They have everything you need to accurately measure extremely low energy from the DUV to the FIR.

- 8 mm Ø aperture
- 2 choices of absorber:
 - MT: Fast response and high sensitivity
 - BL: Flat spectral response
- Broadband, from the DUV to the FIR
- Very low noise: as low as 50 nJ

■ MEASURE LOW ENERGY AT ANY WAVELENGTH

MACH 6: MEASURE ALL PULSES UP TO 200 KHZ



- High-speed digital joulemeter:
 - Measures EVERY PULSE at 200 kHz
- Capture and store up to 4 million pulses at the maximum repetition rate
- Track missing pulses and pulses below threshold
- Wide energy range: measure from pJ to mJ

■ 200 kHz ENERGY METER

ENERGY DETECTORS

General use energy detectors



Available with
integra

QE-MB

Pyroelectric energy meters cover a very wide range, going from nanojoules to several tens of joules per pulse. Our standard absorber offers high damage thresholds and a spectrally flat response, making this series of energy detectors a versatile solution that can cover most of your energy measurement needs.

- Broadband absorber with high damage thresholds

- Available in 7 sizes:

12 x 12 mm	95 mm Ø
25 x 25 mm	NEW 145 mm Ø
50 x 50 mm	NEW 195 mm Ø
65 x 65 mm	

- Available with 2 cooling modules:

Convection (S)
Heatsink (H)

■ THE WIDEST RANGE OF LASER ENERGY MEASUREMENT



Available with
integra

QE-MT: HIGH REPETITION RATES

Designed for pulsed lasers with high repetition rates, these energy detectors feature an improved temporal response to accurately measure pulse-to-pulse energy at high repetition rates up to 10 kHz.

- Fast response, broadband absorber

- Available in 3 sizes:

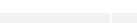
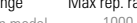
12 x 12 mm
25 x 25 mm
50 x 50 mm

- Available with 2 cooling modules:

Convection (S)
Heatsink (H)

■ UP TO 10 KHZ REPETITION RATE

COMPARISON TABLE - ENERGY MEASUREMENT

		Spectral range	Max rep. rate
PE		Depends on model	1000 Hz
M6		Depends on model	200 000 Hz
QE-B		0.19 - 20 µm	1000 Hz
QE12, QE25		0.19 - 20 µm*	10 000 Hz
QE50		0.19 - 20 µm*	4000 Hz
QE65, QE95		0.19 - 20 µm*	100 Hz
QE145, QE195		0.19 - 20 µm*	Contact us
IS50		Contact us	1000 Hz
PRONTO		0.19 - 20 µm	Single-shot
UP in SSE mode		0.19 - 20 µm	Single-shot
Calorimeters		Contact us	Single-shot

* QED models are represented by dashed area and have a limited spectral range: 0.3 - 2.1 µm

ENERGY DETECTORS

QED attenuators

The QED attenuators increase the maximum energy, energy density, average power and average power density that the QE series detectors can handle. They are engineered to typically transmit 30-50 % (at 1064 nm) of the incident radiation to the detector in a near Lambertian pattern (very wide diffusion pattern). Their slide-in casing make them easy to install and remove and they are held securely in place with the use of simple set screws. Since they become part of the detector, it is important to understand how they will affect the calibration.

CALIBRATION OPTIONS

Depending on how you plan to use a QE detector and QED attenuator, different purchasing and calibration options are available.

QE detector with QED attenuator included



Product name contains "-QED"

Ex: QE25LP-S-MB-**QED**-D0

This product is calibrated with the QED attenuator in place. You may remove the attenuator, but your measurements will not be calibrated with this configuration.

QE detector and QED attenuator purchased separately



OR



Product name does not contain "-QED"

Ex: QE25LP-S-MB-D0 and QED-25

Three calibration options are available when you purchase the QE detector and the QED attenuator separately.

	FULL CALIBRATION	PARTIAL CALIBRATION	NO EXTRA CALIBRATION
	The detector is fully calibrated both with and without attenuator. This configuration comes with a DB15 adaptor. · QED-CAL-3	The detector is fully calibrated without attenuator, and is calibrated at a single wavelength with the attenuator. · QED-CAL-1	The QE detector is fully calibrated without attenuator only. You may add the attenuator, but your measurements will not be calibrated with this configuration.
Detector alone	Fully calibrated	Fully calibrated	Fully calibrated
Detector with attenuator	Fully calibrated when using the DB15 adaptor	Calibrated at 1064 nm only	Not calibrated

SPECIFICATIONS

PHYSICAL CHARACTERISTICS	QED-12	QED-25	QED-50	QED-65	QED-95
Spectral range	266 - 2100 nm	266 - 2100 nm	266 - 2100 nm	266 - 2100 nm	266 - 2100 nm
Calibrated spectral range	532 - 2100 nm	308 - 2100 nm	308 - 2100 nm	308 - 2100 nm	308 - 2100 nm
Effective aperture	9 x 9 mm	22 x 22 mm	47 x 47 mm	62 x 62 mm	90 mm Ø
Dimensions	30.5H x 41W x 12.5D mm	44H x 55W x 12.5D mm	69H x 80W x 12.5D mm	85H x 97W x 12.5D mm	115H x 127W x 12.5D mm
For use with	QE12	QE25	QE50	QE65	QE95

ENERGY DETECTORS

High energy detectors



IS50: ENERGY METER FOR HIGH AVERAGE POWER

Custom-built to your specifications, contact us with your laser measurement needs

- Designed for high energy measurements at high repetition rates
- Can handle up to 1000 W average power
- Our proprietary coating offers damage thresholds that are orders of magnitude higher than any other "white" coating on the market.

■ IDEAL FOR IPL SOURCES: UP TO 350 J



THERMOPILES IN SINGLE-SHOT ENERGY MODE

MEASURE ENERGY WITH A POWER DETECTOR

The single-shot energy mode, available with all our thermal power detectors, allows you to measure the energy of single pulses or pulse trains.

■ SEE "ENERGY MODE" IN THE POWER DETECTOR SPECIFICATIONS



PRONTO-500-IPL

- Compact energy meter for up to 350 J
- 55 mm Ø aperture
- Color touchscreen display
- Rugged device: all-metal body and protective window

■ IDEAL FOR IPL SOURCES: UP TO 350 J



CUSTOM CALORIMETERS

We work with a wide range of materials from surface coatings to the most robust volume absorbers to provide the best solution for your specific application.

- Outstanding signal-to-noise ratios
- High sensitivity
- Vacuum compatibility
- Attention to detail and workmanship

With over 50 years of experience in thermal-based energy measurement, Gentec-EO is the ideal choice for all your high energy measurement needs.

* Maximum measurable energy depends on pulse width and wavelength.