



CALORIMETERS

ENERGY DETECTORS

High Energy Calorimeters



- **Highest Energy (5 kJ so far)**
- **Largest Beams**
- **Custom Designed**
- **Vacuum Compatibility**

Calorimeters

A Gentec-EO calorimeter may be the only solution available for the largest and highest energy laser beams. Through cooperation with several leading research facilities around the world, Gentec-EO has become the expert in manufacturing, calibrating and servicing calorimeters for use in high energy inertial confinement fusion calorimetric measurement. We custom build calorimeters for both small and large lasers.

Custom Build

We have designed calorimeters for 18 KJ beams. We have built them for beams as large as 17 inches in diameter, to withstand pulse energies of 5000J with energy densities as high as 3J/cm². We have also provided highly sensitive calorimeters for beam energies as low as 50mJ for the most delicate applications. Our calorimeters span the band from 190 nm to 20 microns. Moreover, we are happy to push these limits even further. 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, gained over 30 years of experience in thermal-based energy measurement make Gentec-EO the ideal choice for your high energy measurement needs.

Off-the-Shelf

For many applications, operating a Gentec-EO power meter in energy mode will provide the right off-the-shelf solution for your pulse energy measurement application. A stock selection of devices with apertures from 17mm to 50mm diameter is available. Using the PSV series provides the same high damage threshold as our custom models as well as superb accuracy. That is to within 1% of NIST traceable standards! All off-the-shelf Gentec-EO calorimeters may be used with the DUO, SOLO, or P-LINK monitors.

CUSTOM CALORIMETERS

TYPICAL LASERS

- Pulsed glass
- Nd: glass
- Nd: YAG

COMMON APPLICATIONS

- Fusion experiments
- On-line energy monitor
- Isotope separation

SAMPLE OF GENTEC-EO CUSTOM CALORIMETERS

Aperture	Spectral Range	Minimum Energy (J)	Maximum Energy (J)
420 x 427 mm dia.	0.4 – 1.1 μm	200	5000
310 mm dia.	0.351 μm	20	500
310 mm dia.	0.351 – 1.064 μm	200	1500
100 x 100 mm	0.351 μm	1	50
100 x 100 mm	0.4 – 1.1 μm	2	100
60 x 60 mm	0.19 – 20 μm	.05	1.5
150 mm dia.	0.3 – 1.1 μm	1	500
50 mm dia.	0.19 – 10 μm	0.015 (NEE) ^a	200
19 mm dia.	0.19 - 25 μm	0.001 (NEE) ^a	2.3
17 mm dia.	0.19 – 10 μm	0.001 (NEE) ^a	23

OFF THE SHELF CALORIMETERS

The following Gentec-EO power detectors can be used in energy mode for single shot pulse energy measurement with a DUO, SOLO, or P-LINK monitor:

TYPICAL LASERS

- High energy low rep. rate
- Pulsed solid state
- Q-Switched YAG
- Nd-glass
- Pulsed CO₂
- Excimer single shot

COMMON APPLICATIONS

- Medical systems
- Tattoo removal
- Marking
- Photochemistry
- Single shot laser diagnostics

POWER DETECTORS AVAILABLE WITH ENERGY MODE OPTION

Detector	Aperture (mm)	Spectral Range	Noise Equivalent Energy (J)	Maximum Energy (J)
UP12E-H5	12	0.19 - 11 μm	0.02	5
UP19K-H5	19	0.19 - 11 μm	0.02	15
UP19K-W5	17	0.19 - 10 μm	0.02	200
UP19K-H9	19	0.19 - 11 μm	0.06	25
UP19K-VM	18	0.19 - 2.5 μm	0.03	28
UP19K-VH	18	0.19 - 1.44 μm	0.05	35
UP25N-H9	25	0.19 - 11 μm	0.2	40
UP25Z-H9	25	0.19 - 11 μm	0.2	40
UP50N-W9	50	0.19 - 10 μm	0.25	500
UP55N-H9	55	0.19 - 11 μm	0.25	200
UP60N-H9	60	0.19 - 11 μm	0.25	200

a. NEE: Noise Equivalent Energy.

Specifications subject to change without notice.



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