

# RjP-465 Silicon Energy Probe



Measurement of low-energy, high rep rate sources is no longer limited to average power - with the RjP-465 you can directly measure the integrated energy of each pulse in real time. This UV-Enhanced Silicon energy probe is designed specifically for measuring low energy, pulsed sources from the near-UV to the near-IR. Picojoule sensitivity, 500 Hz speed, and a 1 cm<sup>2</sup> active area guarantee unmatched versatility and ease of use.

Nd:YAG, Nd:YLF, Ti:Sapphire, Nitrogen, Excimer, Dye - these are just some of the lasers that can be measured with the RjP-465. The probe works equally well with other sources, such as flashlamps, LEDs, and laser diodes.

The range of applications for the RjP-465 is enormous. Raman spectroscopy, bioluminescence, laser induced fluorescence, and non-linear optics, to name a few. Mate the appropriate filter to the probe and make photopic measurements, or isolate the UV-A / UV-B range for germicidal studies. Use the RjP-465 with the battery powered Rm-3700 Universal Radiometer for field testing weapons simulation systems, LIDAR, and target rangefinder/designator systems. Couple it with the Rm-6600 Dual-Channel Universal Radiometer and a pyroelectric energy probe to ratiometrically measure the transmission of laser goggles, filters, and attenuators over 6 decades of dynamic range.

The compact size and modular design make the RjP-465 ideal for OEM applications as well. Incorporate the detector and preamplifier directly into lasers, detector calibration fixtures, or fire-control systems for real-time diagnostics, output stabilization, and process control.

- **UV-Enhanced Response from 180 nm to 1.1  $\mu$ m**
- **pJ Sensitivity; fJ Resolution**
- **Large, 1.0 cm<sup>2</sup> Active Area**
- **Measure Energy per Pulse up to 500 Hz**

*Laser* **Probe** inc.



**SPECIFICATIONS**

Spectral response (see curve)	180 - 1100 nm
Maximum total energy	250 nJ
Maximum energy density	1.25 $\mu\text{J}/\text{cm}^2$
Max. peak pulse power density (30 ns pulse)	100 $\text{mW}/\text{cm}^2$
Max. average power density	5.0 $\text{mW}/\text{cm}^2$
Minimum detectable energy	500 fJ
Maximum pulse rep rate	500 Hz (2 kHz available)
Maximum pulse width	50 $\mu\text{sec}$
Calibration accuracy	$\pm 5\%$
Linearity	$\pm 0.5\%$
Detector active area dimensions	10 x 10 mm (1.0 $\text{cm}^2$ )
Full scale ranges	6; 3 pJ - 300 nJ
Head dimensions (dia x depth)	6.0 cm x 4.6 cm (2.4" x 1.8")
Preamp dimensions (l x w x h)	11.5 cm x 7.7 cm x 5.1 cm (4.5" x 3.0" x 2.0")
Probe weight (head and preamp)	0.5 kg (1.0 lb)

designed gain stages insure excellent linearity and S/N ratio over 6 decades of dynamic range.

There are many options and accessories available for the RjP-400 Series probes, including a precision aperture, light baffle, and the kTA-141 support stand. The options and accessories are detailed in a separate data sheet.

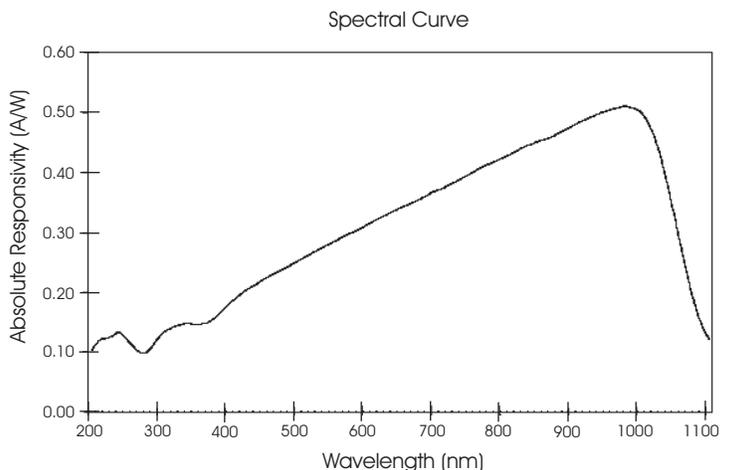
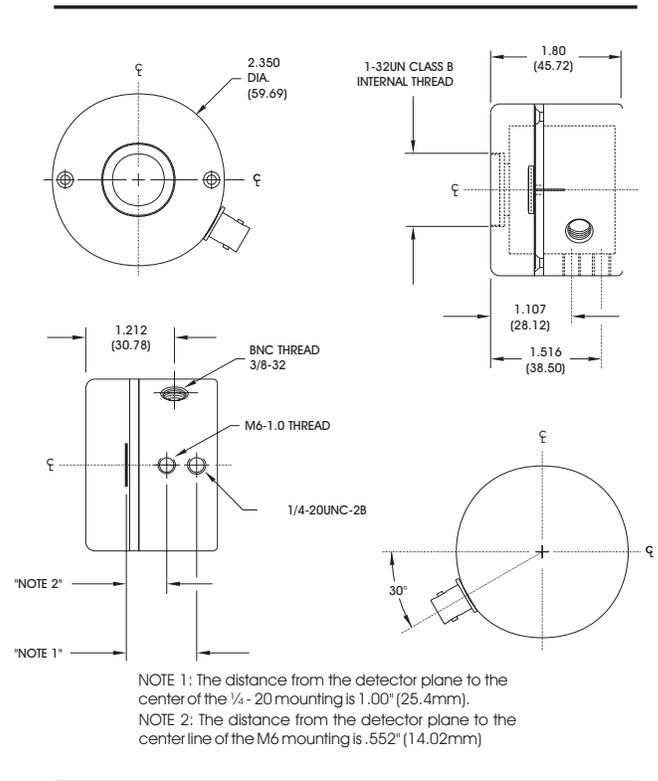
All 400 Series Probes are provided with a certificate of calibration showing traceability to the National Institute of Standards and Technology (NIST) and compliance with MIL-45662 and ANSI-Z540 Sections 7-18.

The RjP-465 is calibrated for absolute energy measurement at 950 nm (the wavelength of peak spectral response). The typical wavelength response curve, normalized to 100% relative responsivity at 950 nm, is stored in the preamplifier. When a wavelength other than 950 nm is entered via the "Wavelength Select" function of the Universal Radiometers the appropriate wavelength correction factor is automatically applied, and the true energy displayed. Two absolute wavelength calibrations are available, VIS-IR (350 - 1100 nm) and UV (200 - 350 nm).

As a member of the 400 Series Probe family, the RjP-465 uses the same detector housing and preamplifier enclosure as all other 400 Series probes. In addition, most 400 Series probes are designed so the detector plane is the same distance from the mounting post plane, allowing for easy interchange of probes in an experiment.

The compact 400 Series detector housing measures 2.35" in diameter by 1.8" deep. The side-mounted BNC connector requires no additional clearance in the beam path. Standard metric and English mounting holes and a 1" (25 mm) filter holder facilitate use, while the black anodized finish reduces unwanted back-reflection.

A separate enclosure houses the preamplifier. Probe parameters, including wavelength correction factors and calibration date, are stored in memory for access by Laser Probe's Universal Radiometers. Carefully



As a result of our ongoing commitment to product improvement specifications are subject to change without notice. REV019801js