

# RjP-765a Silicon Energy Probe



- **UV - Enhanced Response from 180 nm to 1.1  $\mu\text{m}$**
- **pJ Sensitivity**
- **Large, 1.0  $\text{cm}^2$  Active Area**
- **Wide Range of Applications**

Measurement of low energy, pulsed sources is no longer limited to average power - the RjP-765a can directly measure the integrated energy of each pulse in real time. This UV-Enhanced Silicon Energy probe is designed specifically for measuring lower repetition rate, longer pulse duration (up to 1 msec) sources, from the near-UV to the near-IR. Picojoule sensitivity, single-shot to 40 Hz rep rates, psec to msec pulse widths, and a 1  $\text{cm}^2$  active area insure tremendous versatility and ease of use.

A number of sources fall within the RjP-765's measurement range. Lasers include Nd:YAG (fundamental and harmonics), Nd:YLF, Nitrogen, Excimer, and Dye. Non-laser sources like flashlamps, LEDs, and laser diodes are also accommodated.

Because it can measure pulses up to 1 msec long, continuous wave sources that are chopped with a small duty cycle blade at 30 - 40 Hz can be measured with the RjP-765a. This technique is useful for monitoring the power fluctuations of a cw source that are occurring too rapidly for a traditional power meter to resolve. It can also be used to transfer absolute calibration between power meters and energy meters.

The scope of application for the RjP-765a is enormous. Raman spectroscopy, bioluminescence, laser-induced fluorescence, and non-linear optics are just a few examples. With the appropriate filter it can be used for photopic measurements, or to isolate the UV-A/UV-B range for germicidal studies. Use the RjP-765a with the

**LaserProbe** inc.

# SPECIFICATIONS

Spectral response	180 - 1100 nm
Maximum total energy	2.0 $\mu$ J
Maximum energy density	2.0 $\mu$ J/cm <sup>2</sup>
Max. peak pulse power density (30 ns pulse)	100 mW/cm <sup>2</sup>
Max. average power density	5.0 mW/cm <sup>2</sup>
Minimum detectable energy	1.0 pJ
Maximum pulse rep rate	40 Hz
Maximum pulse width	1.0 msec
Calibration accuracy	$\pm$ 5%
Linearity	$\pm$ 0.5%
Detector active area	1.0 cm <sup>2</sup>
Full scale ranges	6; 20 (30) pJ - 2 (3) $\mu$ J (readout dependent)
Head dimensions (dia x depth)	3.2 cm 17.6 cm (1.5" x 6.9")
Probe weight	0.4 kg (0.8 lb)

battery powered Rm-3700 Universal Radiometer for field testing weapons simulation systems, LIDAR, and target rangefinder/designator systems. Or couple it with the Rm-6600 Dual-Channel Universal Radiometer and a pyroelectric energy probe to radiometrically measure the transmission of laser goggles, filters, and attenuators over 6 decades of dynamic range.

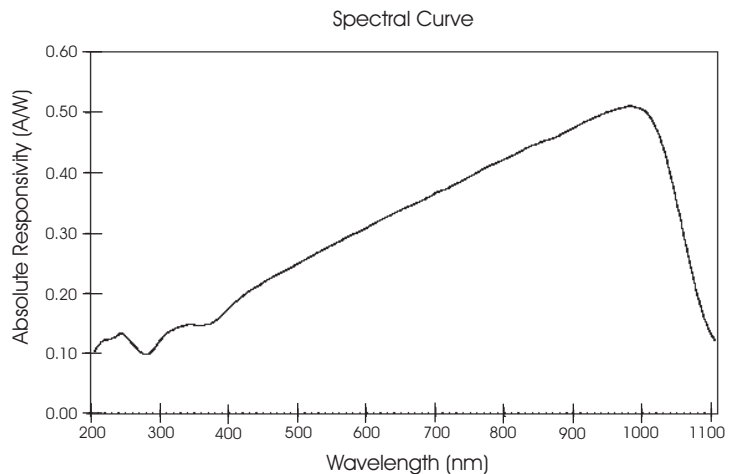
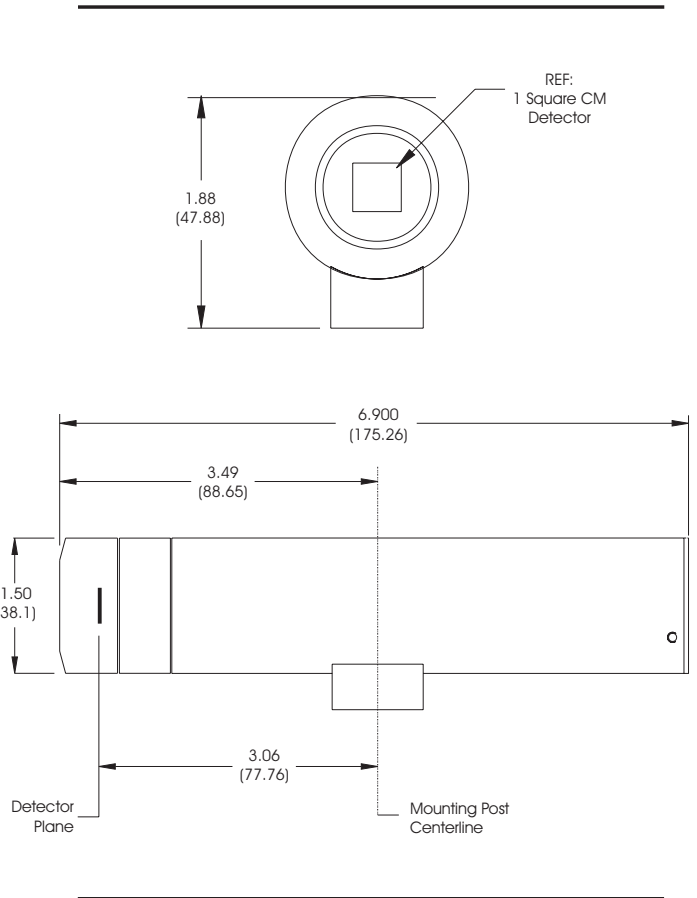
The RjP-765a is calibrated for absolute energy measurement at 950 nm (the wavelength of peak spectral response). The typical wavelength response curve, normalized to 100% relative responsivity at 950 nm, is provided for working at wavelengths other than the peak. Two absolute wavelength calibration options are available, UV (200 - 350 nm) and VIS-IR (350 - 1100 nm).

The RjP-700 Series probes have the detector assembly and preamplifier in a common housing. This minimizes the signal path between the detector and preamplifier and surrounds them with a continuous Faraday cage, giving optimal EMI/RFI immunity.

A mounting block with the standard 1/4-20 mounting hole is attached to the probe housing. It can be removed for inserting the probe in a cylindrical fixture. A matte black finish reduces unwanted back-reflection. There are many options and accessories available for the RjP-700 Series probes, including the kTA-141 support stand, probe extension cables, and various

filters and windows. The options and accessories are detailed in a separate data sheet.

All RjP-700 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.



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

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