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Find the *Laser Probe / Laser Precision E-Pod* at our website: *Click HERE*

RjP-734
Pyroelectric Energy Probe



The RjP-734 is a large area, Cavity Pyroelectric Energy Probe that can measure single-shot to 40 Hz, μJ to Joules, over a broad wavelength range. This Probe has all the advantages associated with a cavity detector - higher total absorption, flatter spectral response, increased sensitivity - with the added benefit of accepting beams up to 25 mm in diameter.

Because of its wide spectral response this probe is the ideal measurement tool for high-energy flashlamps and other white light sources. Cover the full spectral range of Ti:Sapphire, Dye, OPO, and other tunable laser sources without having to worry about wavelength correction factors. The RjP-734 is equally adept at measuring Nd:YAG, Er:YAG, Nd:YLF, Nitrogen, CO_2, and other fixed-wavelength lasers.

The RjP-734 is particularly useful for measuring larger diameter beams, such as those produced by Excimer lasers. Accurate energy per pulse measurements can be made without having to use optics to squeeze the beam onto a smaller detector. This reduces the complexity of the beam path and eliminates any potential error associated with the focusing optics. Conversely, for high-energy sources, expanding the beam and using a larger area probe is an alternative to neutral density filters and beamsplitters for reducing the fluence to a measurable level. The large area is also convenient when working with highly divergent sources like laser diodes or bare optical fibers.

- **Large Area Cavity Detector**
- **μJ to Joules**
- **Single-Shot to 40 Hz**
- **Flat Wavelength Response**

LaserProbe inc.

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SPECIFICATIONS

Spectral response	0.18 - 20 μm
Maximum total energy	2.0 J
Maximum energy density	0.4 J/cm^2
Max. peak pulse power density *(30 ns pulse)*	1.0 MW/cm^2
Max. average power density	2.0 W/cm^2
Minimum detectable energy	10 μJ
Maximum pulse rep rate	40 Hz
Maximum pulse width	1.0 msec
Calibration accuracy	±5%
Linearity	±0.5%
Detector active area	25.0 mm (4.9 cm^2)
Full scale ranges	5; 200 (300) μJ - 2(3) J (readout dependent)
Head dimensions (dia x depth)	5.8 cm x 19.5 cm (2.3" x 7.7")
Probe weight	0.5 kg (1.0 lb)

The extended spectral response qualifies the RjP-734 for UV applications like photolithography, sterilization, and curing. Use it to repair and calibrate ophthalmic and surgical lasers, by looking at the defocused beam. Perform real-time analysis of LIDAR, rangefinder, and fire control systems. Or monitor the source laser in laser ablation, laser-induced fluorescence, and non-linear optics experiments.

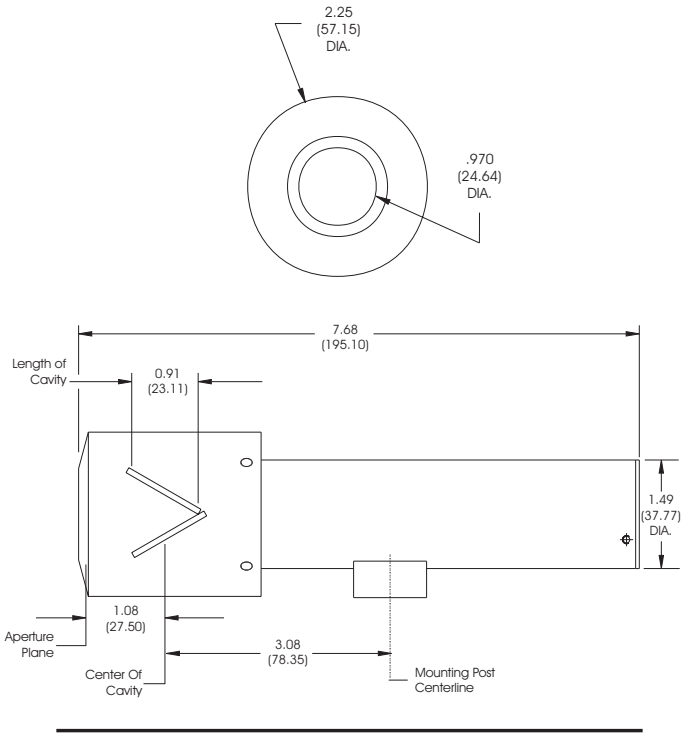
In a conventional flat detector photons incident on its surface have only one point of contact, at which they are either absorbed or reflected away. However, the geometry of the RjP-734 cavity detector insures that nearly all of the photons that are not absorbed at the initial contact point will be reflected deeper into the cavity, where they strike the detector surface again and again. This "light-trap" configuration produces almost total light absorption, resulting in an extremely broad, flat wavelength response.

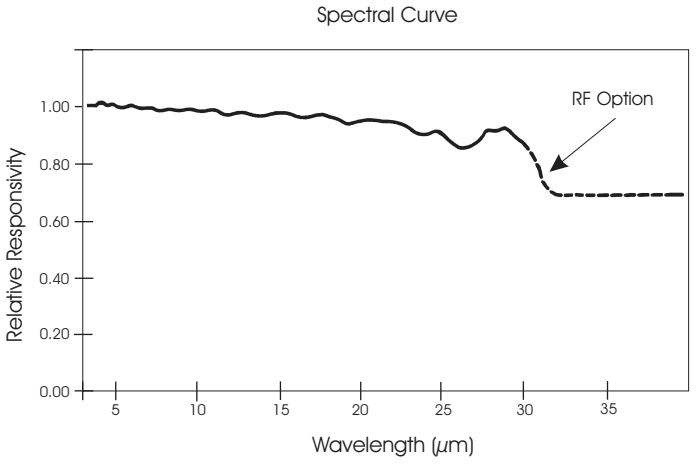
The RjP-700 Series probes have the detector assembly and preamplifier in a common housing. This minimizes the signal path between the detector and preamplifier and surrounds them with a continuous Faraday cage, giving optimal EMI/RFI immunity.

A mounting block with the standard ¼ - 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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