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

RjP-735
Pyroelectric Energy Probe



- **Unique Cavity Detector Design**
- **μJ Sensitivity**
- **±1% Wavelength Response**
- **Energy Transfer Standard**

The RjP-735 Cavity Pyroelectric Energy Probe measures μJ to Joules, single-shot to 40 Hz, from the UV to Far-IR - making it suitable for a wide variety of applications. The unique cavity detector assembly is a nearly perfect absorber, producing a flatter spectral response and greater sensitivity than a conventional pyroelectric detector of comparable size.

Because of its wide spectral response this probe is the ideal measurement tool for broadband sources like flashlamps and blackbody emitters. Cover the full spectral range of Ti:Sapphire, Dye, OPOs, and other tunable laser sources without having to worry about wavelength correction factors. The RjP-735 is equally adept at measuring Nd:YAG, Er:YAG, Nd:YLF, Excimer, Nitrogen, Copper Vapor, and CO_2 lasers.

Besides being a versatile research instrument the RjP-735 is an excellent energy transfer standard. It can be used with calibrated neutral density filters to extend its dynamic range to match both low-energy semiconductor probes and high-energy thermopile probes. A removable aperture plate (RkR-700) defines the detector active area to be 1 cm^2, so overfilling the aperture automatically results in fluence (J/cm^2) measurements.

The extended UV response is well suited for photolithography, sterilization, and curing applications. Use it to calibrate ophthalmic and surgical lasers. 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.

LaserProbe inc.

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SPECIFICATIONS

Spectral response	0.18 - 20 μm
Maximum total energy	1.0 J
Maximum energy density	1.0 J/cm^2
Max. peak pulse power density *(30 ns pulse)*	1.0 MW/cm^2
Max. average power density	5.0 W/cm^2
Minimum detectable energy	100 nJ
Maximum pulse rep rate	40 Hz
Maximum pulse width	1.0 msec
Calibration accuracy	±5%
Linearity	±0.5%
Detector active area	1.0 cm^2
Full scale ranges	6; 20 (30) μJ - 1J (readout dependent)
Head dimensions (dia x depth)	3.2 cm x 17.6 cm (1.5" x 6.9")
Probe weight	0.4 kg (0.8 lb)

The RjP-735/RF uses a different electrode material to extend the IR response to 1,000 μm or more. Absolute calibration in this wavelength range is not available, but collaboration with customers indicates that the wavelength response from approximately 100 - 1,000 μm is relatively flat.

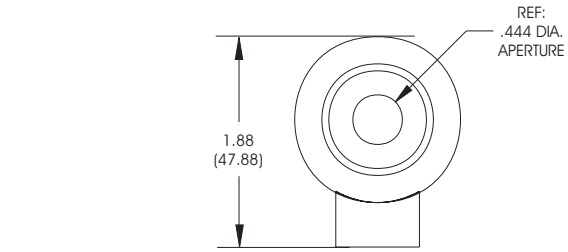
In a conventional flat detector photons incident on its surface have only one point of contact, at which they are either absorbed or reflected away. However, the geometry of the RjP-735 cavity detector insures that nearly all of the photons that are not absorbed at the initial contact point will be reflected 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.

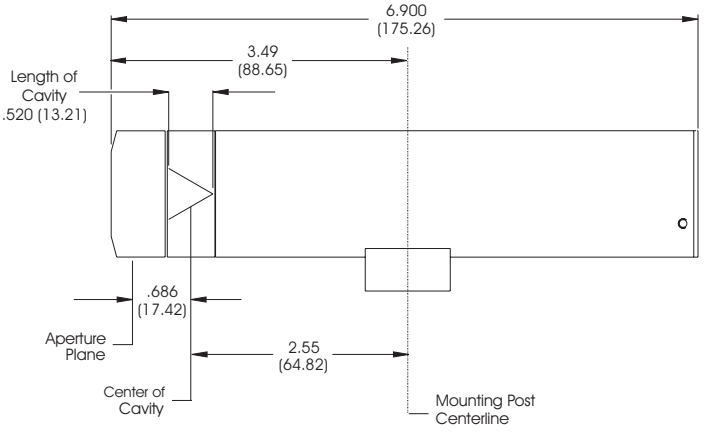
The RjP-700 Series probes have the detector assembly and preamplifier in a common housing. This minimizes the signal path between the detector and preamplifier and surrounds them with a continuous Faraday cage, giving optimal EMI/RFI immunity.

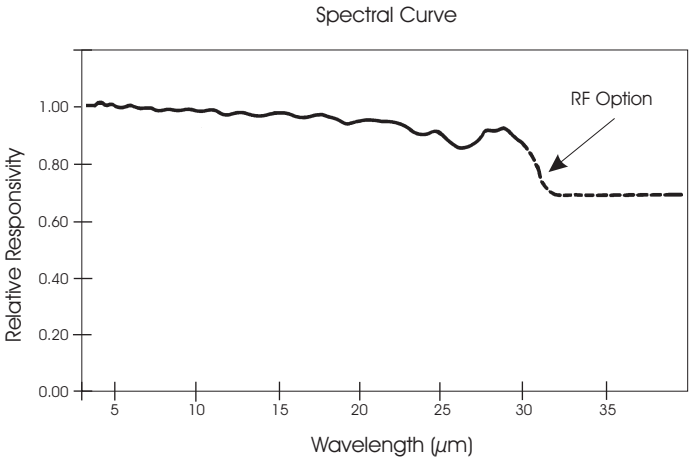
A mounting block with the standard ¼ - 20 mounting hole is attached to the probe housing. It can be removed for inserting the probe in a cylindrical fixture. A matte black finish reduces unwanted back-reflection.

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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