

LP-9901

<https://www.gigahertz-optik.com/en-us/product/LP-9901>

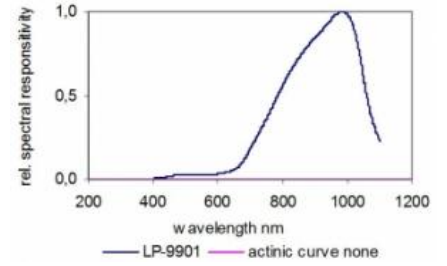
Product tags: VIS , NIR



Description

Laser Radiation Detector

Laser radiation is measured in the same radiometric measurement units as polychromatic light sources. But Laser detectors are generally listed separately since they are designed specifically for laser measurement and calibrated accordingly. A typical Laser detector consists of a photodiode with or without attenuating filter calibrated at the Laser wavelength(s).



Measurement of Laser Power in W

To measure Laser power the detector area must be larger than the LASER spot size on the detector surface so that the total beam power is measured. Flat surface Laser detectors offer active areas of up to 1cm². Bare photodiodes can measure very low Laser power levels in the picowatt range but are limited to about one milliwatt before saturation of the photodiode. The upper range limit can be extended using neutral density filters. When using bare photodiodes or attenuating filters back reflected Laser radiation must be considered for both hazard and application implications.

Typical Spectral Responsivity

Measurement of Laser Power Density in W/m²

Measuring Laser power density is identical to the measurement of irradiance. Flat surface Laser detectors can be used to measure the Laser power density if the Laser radiation overfills the detectors active area. For Laser hazard measurements a Laser power density detector with a 7mm diameter active area representing the maximum opening of human eyes pupil is recommended.

Flat Surface Laser Detector

The LP-9901 flat surface Laser detectors feature a 7mm Diameter active area. The neutral density filter extend the measurement range up to 50 mW in the spectral range from 400 nm to 1100 nm.

Traceable Calibrations





Calibration of radiant power in W is performed at Gigahertz-Optik's Calibration Laboratory for Optical Radiation Quantities.








Specifications

Specification	
spectral responsivity	400 nm - 1100 nm Si & ND Filter

Active Area	7 mm Ø
typical responsivity	1.3 mA/W @ 633 nm 20 mA/W @ 900 nm
max. radiant power	100 mW @ 633 nm @ 1 mA 50 mW @ 900 nm @ 1 mA
Cable Length	2 m with BNC (-1), calibration data (-2) or ITT (-4) connector
Max. signal current	1 mA
temperature range	(0 - 40) °C
Calibration	Calibration of radiant power responsivity in A/W and calculated spectral irradiance sensitivity in A/(W/m ²) in steps of 10 nm from 400 nm to 1100 nm

Configurable with

Produktname	Product Image	Description	Show product
P-9710		High-quality device for measurement of CW-, single pulse and modulated radiation. Features: Optometer for all detector heads with calibration data plug. Measurement modes: CW, pulse energy, dose, peak-to-peak, effective luminous intensity (Blondel-Rey), data logger, battery, main power, RS232	https://www.gigahertz-optik.com/en-us/product/P-9710
X1		Four-channel USB optometer designed for mobile use. Features: Compact device for use with all photometric, radiometric, colorimetric, plant-physiologic and photo-biologic measurement heads from Gigahertz-Optik. USB interface. Battery operation or power supply USB.	https://www.gigahertz-optik.com/en-us/product/X1
X1-RM		Optometer in 3HE housing for use in 19" racks. Features: Its USB and RS232 remote interface and two additional RS232 device interfaces make the device highly flexible when it comes to system integration. Its four signal inputs enable use with all photometric, radiometric, colorimetric, plant-physiologic and photo-biologic measurement heads from Gigahertz-Optik.	https://www.gigahertz-optik.com/en-us/product/X1-RM
X1-PCB		Optometer module. Feature: The X1 optometer is available as a printed circuit board either with or without a housing and is suited for applications that do not require a keyboard or display. Four signal inputs enable connection with all measuring heads from Gigahertz-Optik.	https://www.gigahertz-optik.com/en-us/product/X1-PCB
X9-3		Broadband radiometer for LASER power. Features: Mobile light meter. Flat Profile 7mm dia aperture detector or compact integrating sphere detector. 400 to 1100nm spectral range.	https://www.gigahertz-optik.com/en-us/product/X9-3

Produktname	Product Image	Description	Show product
P-2000		Two-channel optometer. Features: For use with most photometric and radiometric detectors supplied by Gigahertz-Optik. Modes: CW, pulse energy from both single and multiple flashes, effective luminous intensity (Blondel-Rey), data logger and others.	https://www.gigahertz-optik.com/en-us/product/P-2000
P-9801		Eight-channel optometer. Features: State-of-the-art 8 channel laboratory optometer with a signal amplifier and sample & hold ADC per channel for clocked recording of the measurement signals. RS232 and IEEE488 interface. Trigger input and output.	https://www.gigahertz-optik.com/en-us/product/P-9801
P-9802		Light meter for laboratory use with up to 36 measurement heads. Features: For use with up to 36 photometric and/or radiometric measurement heads. RS232 interface.	https://www.gigahertz-optik.com/en-us/product/P-9802
TR-9600		High-speed 1µs or 100ns rise time data logger optometer. Features: Laboratory device for recording of clocked intensity progress readings in single light flashes, flash sequence or modulated light. Calculation of pulse data e.g. peak intensity, pulse length, pulse half width, pulse energy and pulse repeat rate, etc.	https://www.gigahertz-optik.com/en-us/product/TR-9600
P-9202-4		Fast response time trans-impedance signal amplifier. Features: High quality analogue amplifier with current-voltage conversion. Minimal diode offset voltage for short circuit operations. Bandwidths of up to 330kHz. 1µs rise time. Large I-U amplification range from 10pA/V to 1mA/V.	https://www.gigahertz-optik.com/en-us/product/P-9202-4
P-9202-5		Universal trans-impedance signal amplifier. Features: High quality analogue amplifier with current-voltage conversion. Minimal diode offset voltage (1mV) for short circuit photodiode operations. 5µs to 20ms rise time depending on the amplification. Large I-U amplification range – 1×10 ⁻¹⁰ A/V to 1×10 ⁻³ A/V.	https://www.gigahertz-optik.com/en-us/product/P-9202-5
P-9202-6		Highly sensitive trans-impedance signal amplifier. Features: High quality analogue amplifier with current-voltage conversion with minimal diode offset voltage (0.5mV) for short circuit photodiode operation of . 2.5s to 25s rise time depending on the amplification. Large I-U amplification range – 1×10 ⁻¹¹ A/V to 1×10 ⁻⁴ mA/V.	https://www.gigahertz-optik.com/en-us/product/P-9202-6

Purchasing information

Article-Nr	Modell	Description
Product		
100107	LP-9901-1	Detector head, cable with BNC connector, protection cap, calibration certificate
100208	LP-9901-2	Detector head, cable with calibration data connector, protection cap, calibration certificate

Article-Nr	Modell	Description
100480	LP-9901-4	Detector head, cable with ITT connector, protection cap, calibration certificate
Re-calibration		
15300583	K-LP9901-SD	Re-calibration, calibration certificate