

# P-9801

<https://www.gigahertz-optik.de/en-us/product/P-9801>

**Product tags: Dosimeter , Multi-Channel**



## Description

The P-9801 series optometers are one of the most powerful light measurement instruments available for multiple light detector head applications.

For use in those applications the P-9801 features:

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### Industries most powerful and fastest multichannel light meter

- simultaneous measurement of all eight detector channels
- wide linear detector signal dynamic range
- short rise time with variable sampling rate
- fast multi-channel data-logging
- manual and remote control operation
- RS232 and IEEE488 interface
- powerful 16 bit microprocessor with large memory
- external trigger input with pre-trigger function

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### True eight-channel operation

The P-9801 is a true eight-channel optometer designed with eight photocurrent-to-voltage amplifiers (no multiplexing) and eight 12 bit highly linear analogue-to-digital converters (ADC) enabling signal sampling of all channels simultaneously.

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### Ten magnitudes dynamic current measurement range

Each channel's wide 0.1 pA to 2 mA signal range covers the dynamic range of most current semiconductor photodiodes for nearly unrestricted use in any light measurement application. The dynamic range is supported by 8 gain ranges each calibrated for 0.2 % precision.

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### Adjustable integration time

The fast sampling rate of the P-9801 ADC enables an adjustable integration time of 1 ms up to 999 s formed by the average of multiple measurements with 100  $\mu$ s integration time. This averaging feature support fast data logger measurements used in peak-to-peak, short pulse energy measurements and other modes.

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### Metal housing for use in strong electromagnetic environments

The P-9801 features a high quality metal housing for best EMV shielding and rack mount option for protection in strong ambient electromagnetic environments, as in high power arc lamp measurement for example.

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*P-9801 Front*



*P-9801 Back*

## Three different versions for universal use in high speed applications

P-9801-V01 is set-up with a gain dependent slew rate of 2 ms to 10 ms for universal light measurement purposes.

P-9801-V02 amplifier offers a gain range independent rise time for the pulse energy measurement of short light flashes using a pulse stretching method.

P-9801-V03 offers a fast rise time of 1 ms for high speed data logger applications with external trigger and pre-trigger function.

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## Measurement Range Specifications with Light Detectors

The measurement range of optometer combined with light detector is calculated by the measurement range specification of the optometer and the responsivity of the detector head as follows:

- **Offset signal**  
= Maximum Resolution = meter current offset signal / detector sensitivity  
Sample:  $0.1 \text{ pA } (0.1E - 12 \text{ A}) / 3 \text{ nA/(mW/cm}^2) \text{ (irradiance detector)} = 0.33 \text{ nW/cm}^2$
- **Minimum measureable irradiation**  
= offset signal \* signal to noise ratio factor  
Sample:  $0.33 \text{ nW/cm}^2 * 50 = 17 \text{ nW/cm}^2$
- **Maximum measureable irradiation \***  
= max. signal current detector / detector sensitivity  
Sample:  $1 \text{ mA } (10E - 3 \text{ A}) / 3 \text{ nA/(mW/cm}^2) = 333333 \text{ W/cm}^2$
- **Display range**  
= Offset signal to maximum measureable signal  
Sample:  $0.33 \text{ nW/cm}^2 \text{ to } 333333 \text{ W/cm}^2$
- **Measurement range**  
= min measureable irradiation to maximum measureable irradiation  
Sample:  $17 \text{ nW/cm}^2 \text{ to } 333333 \text{ W/cm}^2$

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*\*) The maximum measureable irradiation value may also be limited by thermal radiation, intense UV radiation or other application dependent parameters which must be considered by the end-user.*

## Specifications

### General

Short description	Powerful and fast multichannel optometer for a multitude of applications thanks to the large selection of different detectors.
Main features	simultaneous measurement of all eight detector channels, large linear dynamic range, short rise time with variable sampling rate, fast multi-channel data logging, manual or interface operation, powerful 16 bit microprocessor, trigger input with pre-trigger function. Three different versions available (different time constant).
Measurement range	depending on the detector, dynamic of 8 ranges available: 2,000 mA to 0,1 pA manuell or autorange
typical applications	Due to the large variety of different measuring heads suitable for a variety of applications

Calibration	Calibrate and adjust the current sensitivity in all eight gain levels. Memory for the calibration data of several measuring heads for the measurement in the absolute unit of the selected measuring head.						
<b>Product</b>							
Power Supply	(6.5 – 7.5) VDC / 1 A Plug: 5,5 / 2,5 mm / 10 mm						
Detector interface	8 BNC sockets  <i>Information: By color measurements four channels are needed for one detector, this is why two color channels are possible.</i>						
Trigger	CMOS level (0/5V) / BNC socket, internal pull-up 10 k to + 5 V						
Analog output	± 2.5 V (max. + - 5 V), Ri = 100 R, max. Current = 2 mA, BNC socket						
Inputs	Amperes, optical units corresponding to calibration data, factor, percent, log (depends on the measurement quantity)						
Measurement range	8 (2.000 mA to 0.1 pA) manual or autorange						
CW integration time	1 ms – 999.999 s						
Pulse trigger	Key run / stop  for all channels (channel 1 – channel 8)  rising edge or trailing edge						
Pulse integration time	1 ms – 999.999 s						
Pulse pre trigger time	0 ms – 400 ms						
Offset	Correction range transcending						
Parameter adjustment	Remote control or front panel keys (menu), adjusted values permanently stored (EEPROM)						
Calibration information	Stored in EEPROM max. 20 detectors (each 80 entries, e.g. wavelength, interpolation between the entries), manual calibration factor (keys) E (illuminance) and Ø (total flux) each with one calibration entry						
Logger memory	Max. 5957 entries each channel, stored in RAM						
Measurement range	<b>range (A/V)</b>	<b>range max.</b>	<b>slew rate (10–90)% P-9801-V0</b>	<b>slew rate (10–90)% P-9801-V02</b>	<b>slew rate (10–90)% P-9801-V03</b>	<b>gain error * ± offset error (at 20 °C)</b>	<b>gain (A/V) analogue output</b>
	1x10-3	± 2.500 mA	2 ms	20 ms	1 ms	0.2 % ± 0.001 mA	1x10-3
	1x10-4	± 250.0 µA	2 ms	20 ms	1 ms	0.2 % ± 0.1 µA	1x10-4
	1x10-5	± 25.00 µA	3 ms	20 ms	1 ms	0.2 % ± 0.01 µA	1x10-5
	1x10-6	± 2.500 µA	3 ms	20 ms	1 ms	0.2 % ± 0.001 µA	1x10-6
	1x10-7	± 250.0 nA	4 ms	20 ms	1 ms	0.2 % ± 0.1 nA	1x10-7
	1x10-8	± 25.00 nA	4 ms	20 ms	1 ms	0.2 % ± 0.01 nA	1x10-8
	1x10-9	± 2.500 nA	10 ms	20 ms	10 ms	0.5 % ± 2 pA	1x10-9
	1x10-10	± 250.0 pA	10 ms	20 ms	10 ms	0.5 % ± 2 pA	1x10-10
	* Current calibration of each range by use of a precise current source with DAkKS calibration						

Plug Types	DSUB 9pin female	Function
	2	TxD
	3	RxD
	5	GND
	1-4-6	connected
	7-8	connected






To connect the P-9801 to the RS232 interface of a PC a 1:1 cable has to be used (one side male connector, the other side female connector, no null modem cable!)








Measurement modes	Menu item	Submenu item	Function
	<b>Display Mode</b>	<b>Absolute</b>	displays the measurement respective of any offset and calibration factors programmed
		<b>Relative Percent</b>	displays the measurement as percentage of a reference value
		<b>Relative Factor</b>	displays the measurement referred to a reference value
		<b>Relative Logarithmic Dose</b>	displays the measurement in dB in relation to a reference value
		<b>No Display</b>	accumulates the single readings and displays the result as exposure for measured quantity
		<b>Range</b>	<b>No Display</b>
	<b>Detector</b>	<b>Ampere</b>	selects the range 1 to 8 or switches into the autorange mode (9)
		<b>Manual</b>	shows the reading in ampere units
		<b>Select Table Entry</b>	allows entering a calibration factor manually
		<b>Select Detector Recalibration</b>	selects calibration data table entry
	<b>Offset</b>		selects calibration data table entry
			performs recalibration of selected calibration table entry with a reference lamp
	<b>Reference</b>		performs an automatic offset adjustment
			sets a reference value, used in different display modes
	<b>Main Mode</b>	<b>CW</b>	measurement display of single channels
		<b>Color</b>	measurement display color mode
		<b>Pulse</b>	measurement of short and single light pulses
		<b>Pulse Color</b>	measurement of short and single light pulses, result displayed as color values
		<b>RS232 IEEE488</b>	remote control RS232
		<b>Setup</b>	<b>Measurement Time</b>
		<b>Analog Out</b>	sets the integration time
		<b>Dose Run Time</b>	selects the channel switched to analog output
		<b>Dose Maximum</b>	sets the maximum time duration for exposure measurement
		<b>Display Illumination</b>	sets the max. dose level for the exposure measurement mode
		<b>Display Digits</b>	display backlight on / off
		<b>Color Setup</b>	adjusts the number of displayed digits (4, 5, or automatic)
		<b>IEEE488 Address</b>	adjustments for color measurement
			selection of address for IEEE488 interface








**Miscellaneous**

Front panel control	16 keys, menu system
Interface	RS232: 600 – 57600 Baud, 8 Data Bit, 1 Stop Bit, No Parity, Connector DSUB 9pins, female IEEE488: AH1, SH1, L4, T4
temperature range	Operating: 5 °C to 40 °C Storage: -10 °C to 50 °C
Dimensions	280 mm x 250 mm x 70 mm
Warranty	12 months
<b>Accessories</b>	
Power Supply	230 VAC / 7 VDC / 1.2 A or 120 VAC / 7 VDC / 1.2 A

## Configurable with









Produktname	Product Image	Description	Show product
VL-3701		Detector head for the measurement of photopic illuminance in Lux [lx]. Features: $f1 \leq 3 \%$ , $f2 \leq 1.5 \%$ , 0.5 nA/lx, 20mm height, for the usage with Optometers and amplifiers, calibration certificate	<a href="https://www.gigahertz-optik.de/en-us/product/VL-3701">https://www.gigahertz-optik.de/en-us/product/VL-3701</a>
VL-3702		Detector head for the measurement of photopic illuminance in Lux [lx]. Features: $f1 \leq 6 \%$ , $f2 \leq 3 \%$ , 0.5 nA/lx, 20mm height, for the usage with Optometers and amplifiers, calibration certificate	<a href="https://www.gigahertz-optik.de/en-us/product/VL-3702">https://www.gigahertz-optik.de/en-us/product/VL-3702</a>
VL-3704		Detector head for the measurement of photopic illuminance in Lux [lx]. Features: $f1 \leq 5 \%$ , $f2 \leq 3 \%$ , 20pA/lx, 20mm height, for the usage with Optometers and amplifiers, calibration certificate	<a href="https://www.gigahertz-optik.de/en-us/product/VL-3704">https://www.gigahertz-optik.de/en-us/product/VL-3704</a>
VL-3705		Detector head for the measurement of scotopic illuminance in Lux [lx]. Features: $f1 \leq 5 \%$ , $f2 \leq 3 \%$ , 0.2nA/lx, 20mm height, for the usage with Optometers and amplifiers, calibration certificate	<a href="https://www.gigahertz-optik.de/en-us/product/VL-3705">https://www.gigahertz-optik.de/en-us/product/VL-3705</a>
PD-9310A		High sensitive detector head for the measurement of photopic illuminance in Lux [lx]. Features: $f1 \leq 3 \%$ , 2.8nA/lx, 20mm diffuser, for the usage with optometers and amplifiers, calibration certificate	<a href="https://www.gigahertz-optik.de/en-us/product/PD-9310A">https://www.gigahertz-optik.de/en-us/product/PD-9310A</a>









Produktname	Product Image	Description	Show product
PD-9310B		<p>High sensitive detector head for the measurement of photopic illuminance in Lux [lx].</p> <p>Features: <math>f1 \leq 6 \%</math>, <math>2.8nA/lx</math>, 20mm diffuser, for the usage with optometers and amplifiers, calibration</p>	<a href="https://www.gigahertz-optik.de/en-us/product/PD-9310B">https://www.gigahertz-optik.de/en-us/product/PD-9310B</a>
PD-9310B-N		<p>Very high sensitive detector head for the measurement of photopic illuminance in Lux [lx].</p> <p>Features: <math>f1 \leq 3 \%</math>, <math>28nA/lx</math>, no diffuser, for the usage with optometers and amplifiers, calibration</p>	<a href="https://www.gigahertz-optik.de/en-us/product/PD-9310B-N">https://www.gigahertz-optik.de/en-us/product/PD-9310B-N</a>
VL-1101 + UMPA-0.5-11-RD Detector head		<p>Module detector head for the measurement of photopic illuminance in Lux [lx].</p> <p>Features: UMPA adapter for usage with integrating spheres, for the usage with optometers and amplifiers, calibration certificate</p>	<a href="https://www.gigahertz-optik.de/en-us/product/VL-1101uUMPA-05-11-RD">https://www.gigahertz-optik.de/en-us/product/VL-1101uUMPA-05-11-RD</a>
VL-6001		<p>Very high sensitive illuminance detector head for spotlamps.</p> <p>Features: Large diameter lens zur Erhöhung der Empfindlichkeit, for the usage with optometers and amplifiers, calibration</p>	<a href="https://www.gigahertz-optik.de/en-us/product/VL-6001">https://www.gigahertz-optik.de/en-us/product/VL-6001</a>
LDM-9810		<p>Detector head to measure the photopic spot luminance in <math>cd/m^2</math>.</p> <p>Features: selectable <math>20'</math>, <math>1^\circ</math> and <math>6^\circ</math> viewing angles, view finder, focus able achromatic lens, for the usage with Optometers and amplifiers, calibration certificate.</p>	<a href="https://www.gigahertz-optik.de/en-us/product/LDM-9810">https://www.gigahertz-optik.de/en-us/product/LDM-9810</a>
LDM-9901		<p>Detector head to measure the photopic spot luminance in <math>cd/m^2</math>.</p> <p>Features: <math>1.1^\circ</math> viewing angle, simple to use, very low stray light, for the usage with Optometers and amplifiers, calibration certificate.</p>	<a href="https://www.gigahertz-optik.de/en-us/product/LDM-9901">https://www.gigahertz-optik.de/en-us/product/LDM-9901</a>
VL-3701 with SRT-M37-L		<p>Detector head to measure the photopic illuminance in lx and the luminance in <math>cd/m^2</math>.</p> <p>Features: front lenses with <math>1^\circ</math>, <math>2^\circ</math> or <math>5^\circ</math> viewing angle, for the usage with Optometers and amplifiers, calibration certificate</p>	<a href="https://www.gigahertz-optik.de/en-us/product/VL-3701-with-SRT-M37-L">https://www.gigahertz-optik.de/en-us/product/VL-3701-with-SRT-M37-L</a>
PD-9310 with SRT-M37-L		<p>High sensitive detector head to measure the photopic luminance in <math>cd/m^2</math>.</p> <p>Features: front lens for <math>1^\circ</math>, <math>2^\circ</math>, <math>5^\circ</math> or <math>10^\circ</math> viewing angle, for the usage with Optometers and amplifiers, calibration certificate</p>	<a href="https://www.gigahertz-optik.de/en-us/product/PD-9310-with-SRT-M37-L">https://www.gigahertz-optik.de/en-us/product/PD-9310-with-SRT-M37-L</a>








Produktname	Product Image	Description	Show product
VL-1101		<p>Photometric detector head with VL-11 mount.</p> <p>Features: modular detector for use with integrating spheres, front lenses etc. For use with optometers and signal amplifiers</p>	<a href="https://www.gigahertz-optik.de/en-us/product/VL-1101">https://www.gigahertz-optik.de/en-us/product/VL-1101</a>
ISD-5-VL		<p>Integrating sphere detector for luminous flux (lm) of 2π spot sources.</p> <p>Features: 50mm dia, BaSO4 coating, 12.5mm dia port, for the usage with optometers and signal amplifiers, Calibration certificate</p>	<a href="https://www.gigahertz-optik.de/en-us/product/ISD-5-VL">https://www.gigahertz-optik.de/en-us/product/ISD-5-VL</a>
ISD-10-VL		<p>Integrating sphere detector for luminous flux (lm) of 2π spot sources.</p> <p>Features: 100 mm dia, BaSO4 coating, 15 mm dia port, for the usage with optometers and signal amplifiers, Calibration certificate</p>	<a href="https://www.gigahertz-optik.de/en-us/product/ISD-10-VL">https://www.gigahertz-optik.de/en-us/product/ISD-10-VL</a>
ISD-15-VL		<p>Integrating sphere detector for luminous flux (lm) of 2π sources.</p> <p>Features: 150mm dia, BaSO4 coating, 38.1mm dia port, for the usage with optometers and signal amplifiers, Calibration certificate</p>	<a href="https://www.gigahertz-optik.de/en-us/product/ISD-15-VL">https://www.gigahertz-optik.de/en-us/product/ISD-15-VL</a>
ISD-30-VL		<p>Integrating sphere detector for luminous flux (lm) of 2π sources.</p> <p>Features: 300mm dia, BaSO4 coating, 101,6mm dia port, for the usage with optometers and signal amplifiers, Calibration certificate</p>	<a href="https://www.gigahertz-optik.de/en-us/product/ISD-30-VL">https://www.gigahertz-optik.de/en-us/product/ISD-30-VL</a>
ISD-50HF-VL		<p>Integrating sphere detector for luminous flux (lm) of 2π and 4π sources.</p> <p>Features: 500mm dia, BaSO4 coating, sphere to open, auxiliary lamp, for the usage with optometers and signal amplifiers, Calibration certificate</p>	<a href="https://www.gigahertz-optik.de/en-us/product/ISD-50HF-VL">https://www.gigahertz-optik.de/en-us/product/ISD-50HF-VL</a>
TD-11VL01		<p>Photometric, temperature stabilized detector with DP-11 mount.</p> <p>Features: for use with integrating spheres, Operation temperature 50 °C, for use with optometers and signal amplifiers</p>	<a href="https://www.gigahertz-optik.de/en-us/product/TD-11VL01">https://www.gigahertz-optik.de/en-us/product/TD-11VL01</a>















Produktname	Product Image	Description	Show product
PD-9304		<p>Universal detector head for LASER power, illuminance and 400-1100 nm irradiance.</p> <p>Features: Si-photodiode with 1 cm<sup>2</sup>, exchange able filters and cosine diffuser, for the usage with optometers and signal amplifiers</p>	<a href="https://www.gigahertz-optik.de/en-us/product/PD-9304">https://www.gigahertz-optik.de/en-us/product/PD-9304</a>
PD-9310A		<p>PD-9310A measurement head with GB-GD-360 photogoniometer for measurement of the luminous intensity distribution of 2π spot lamps and LEDs. Goniometer bench with adjustable measurement distance of up to 2000 mm. PD-9310A photometric detector corresponding to the DIN 5032 quality class A. Calibration certificate conforming to the ISO 17025 specifications. For use with all optometers and signal amplifiers from Gigahertz-Optik GmbH.</p>	<a href="https://www.gigahertz-optik.de/en-us/product/PD-9310A-2">https://www.gigahertz-optik.de/en-us/product/PD-9310A-2</a>
RW-3701		<p>Detector head for the measurement of irradiance in W/m<sup>2</sup>.</p> <p>Features: spectral responsivity from 400-500nm (BLUE), cosine field-of-view, for the usage with optometers and amplifiers, calibration certificate.</p>	<a href="https://www.gigahertz-optik.de/en-us/product/RW-3701">https://www.gigahertz-optik.de/en-us/product/RW-3701</a>
RW-3702		<p>Detector head for the measurement of irradiance in W/m<sup>2</sup>.</p> <p>Features: spectral responsivity from 700-800nm (RED), cosine field-of-view, for the usage with optometers and amplifiers, calibration certificate.</p>	<a href="https://www.gigahertz-optik.de/en-us/product/RW-3702">https://www.gigahertz-optik.de/en-us/product/RW-3702</a>
RW-3703		<p>Detector head for the measurement of irradiance in W/m<sup>2</sup>.</p> <p>Features: spectral responsivity from 400-800nm (VIS), cosine field-of-view, for the usage with optometers and amplifiers, calibration certificate.</p>	<a href="https://www.gigahertz-optik.de/en-us/product/RW-3703">https://www.gigahertz-optik.de/en-us/product/RW-3703</a>
RW-3704		<p>Detector head for the measurement of irradiance in W/m<sup>2</sup>.</p> <p>Features: spectral responsivity from 800-1000nm (NIR), cosine field-of-view, for the usage with optometers and amplifiers, calibration certificate.</p>	<a href="https://www.gigahertz-optik.de/en-us/product/RW-3704">https://www.gigahertz-optik.de/en-us/product/RW-3704</a>
RW-3705		<p>Detector head for the measurement of irradiance in W/m<sup>2</sup>.</p> <p>Features: spectral responsivity from 400-1000nm (VISNIR), cosine field-of-view, for the usage with optometers and amplifiers, calibration certificate.</p>	<a href="https://www.gigahertz-optik.de/en-us/product/RW-3705">https://www.gigahertz-optik.de/en-us/product/RW-3705</a>
RW-3708		<p>Detector head for the measurement of irradiance in W/m<sup>2</sup>.</p> <p>Features: spectral responsivity from 950-1700nm (NIR), cosine field-of-view, for the usage with optometers and amplifiers, calibration certificate.</p>	<a href="https://www.gigahertz-optik.de/en-us/product/RW-3708">https://www.gigahertz-optik.de/en-us/product/RW-3708</a>

Produktname	Product Image	Description	Show product
UV-3701		<p>Detector head for the measurement of irradiance of UV radiation in W/m<sup>2</sup>.</p> <p>Features: spectral responsivity from 315-400nm (UV-A), cosine field-of-view, for the usage with optometers and amplifiers, calibration certificate.</p>	<a href="https://www.gigahertz-optik.de/en-us/product/UV-3701">https://www.gigahertz-optik.de/en-us/product/UV-3701</a>
UV-3702		<p>Detector head for the measurement of irradiance of UV radiation in W/m<sup>2</sup>.</p> <p>Features: spectral responsivity from 280-315nm (UV-B), cosine field-of-view, for the usage with optometers and amplifiers, calibration certificate.</p>	<a href="https://www.gigahertz-optik.de/en-us/product/UV-3702">https://www.gigahertz-optik.de/en-us/product/UV-3702</a>
UV-3703		<p>Detector head for the measurement of irradiance of UV radiation in W/m<sup>2</sup>.</p> <p>Features: spectral responsivity from 200/250-280nm (UV-C), cosine field-of-view, for the usage with optometers and amplifiers, calibration certificate.</p>	<a href="https://www.gigahertz-optik.de/en-us/product/UV-3703">https://www.gigahertz-optik.de/en-us/product/UV-3703</a>
UV-3710		<p>Detector head for the measurement of irradiance of UV radiation in W/m<sup>2</sup>.</p> <p>Features: spectral responsivity from 320-400nm (UV-A), cosine field-of-view, for the usage with optometers and amplifiers, calibration certificate.</p>	<a href="https://www.gigahertz-optik.de/en-us/product/UV-3710">https://www.gigahertz-optik.de/en-us/product/UV-3710</a>
UV-3711		<p>Detector head for the measurement of irradiance of UV radiation in W/m<sup>2</sup>.</p> <p>Features: spectral responsivity from 280-320nm (UV-B), cosine field-of-view, for the usage with optometers and amplifiers, calibration certificate.</p>	<a href="https://www.gigahertz-optik.de/en-us/product/UV-3711">https://www.gigahertz-optik.de/en-us/product/UV-3711</a>
UV-3716		<p>Detector head for the measurement of irradiance of UV radiation in W/m<sup>2</sup>.</p> <p>Features: spectral responsivity from 305-400nm (UV-A), cosine field-of-view, for the usage with optometers and amplifiers, calibration certificate.</p>	<a href="https://www.gigahertz-optik.de/en-us/product/UV-3716">https://www.gigahertz-optik.de/en-us/product/UV-3716</a>
UV-3717		<p>Detector head for the measurement of irradiance of UV radiation in W/m<sup>2</sup>.</p> <p>Features: spectral responsivity from 315-400nm (UV-A), low cross talk from radiation &gt; 400 nm, cosine field-of-view, for the usage with optometers and amplifiers, calibration certificate.</p>	<a href="https://www.gigahertz-optik.de/en-us/product/UV-3717">https://www.gigahertz-optik.de/en-us/product/UV-3717</a>
UV-3719		<p>Detector head for the measurement of irradiance of UV radiation in W/m<sup>2</sup>.</p> <p>Features: spectral responsivity from 250-400nm (UV), cosine field-of-view, for the usage with optometers and amplifiers, calibration certificate.</p>	<a href="https://www.gigahertz-optik.de/en-us/product/UV-3719">https://www.gigahertz-optik.de/en-us/product/UV-3719</a>

Produktname	Product Image	Description	Show product
UV-3720		<p>Detector head for the measurement of irradiance of UV radiation in W/m<sup>2</sup>.</p> <p>Features: spectral responsivity from 240-320nm (UV), cosine field-of-view, for the usage with optometers and amplifiers, calibration certificate.</p>	<a href="https://www.gigahertz-optik.de/en-us/product/UV-3720">https://www.gigahertz-optik.de/en-us/product/UV-3720</a>
UV-3721		<p>Detector head for the measurement of irradiance of UV radiation in W/m<sup>2</sup>.</p> <p>Features: spectral responsivity from 350-400nm (UV-A), cosine field-of-view, for the usage with optometers and amplifiers, calibration certificate.</p>	<a href="https://www.gigahertz-optik.de/en-us/product/UV-3721">https://www.gigahertz-optik.de/en-us/product/UV-3721</a>
UV-3711-308		<p>Detector head for the measurement of irradiance of 308nm Eximer Lasers in W/m<sup>2</sup>.</p> <p>Features: flat spectral responsivity beside 308nm. cosine field-of-view, dose measurement in conjunction with P-9710-2 optometer, calibration certificate</p>	<a href="https://www.gigahertz-optik.de/en-us/product/UV-3711-308">https://www.gigahertz-optik.de/en-us/product/UV-3711-308</a>
UV-3718		<p>Detector head for the measurement of high irradiance of UV-C 254nm radiation in W/m<sup>2</sup>.</p> <p>Features: pre-aging for long time stability, cosine field-of-view, metal shielded cable, for the usage with optometers and amplifiers, calibration certificate.</p>	<a href="https://www.gigahertz-optik.de/en-us/product/UV-3718">https://www.gigahertz-optik.de/en-us/product/UV-3718</a>
UV-3725 not active		<p>Detector for the measurement of UV-C 254 nm irradiance in air disinfection applications.</p> <p>Features: wide dynamic range for UV hazard and effective irradiance, wide angle cosine F.O.V. for straylight measurements, for the usage with optometers, calibration certificate.</p>	<a href="https://www.gigahertz-optik.de/en-us/product/UV-3725-1">https://www.gigahertz-optik.de/en-us/product/UV-3725-1</a>
RCH-0		<p>Detector head for high intensity irradiation as in UV or blue light curing processes.</p> <p>Features: Separate light integrator and detector with flexible fiber coupling, light, 320-460nm UVABLUe responsivity, wide viewing angle, for the usage with optometers and amplifiers, calibration certificate.</p>	<a href="https://www.gigahertz-optik.de/en-us/product/RCH-0">https://www.gigahertz-optik.de/en-us/product/RCH-0</a>
RCH-102		<p>Detector head for high intensity irradiation in UV or blue light curing processes.</p> <p>Features: Separate light integrator and detector with rigid fiber coupling, (320-460)nm UVABLUe responsivity, wide viewing angle, for the usage with optometers and amplifiers, calibration certificate.</p>	<a href="https://www.gigahertz-optik.de/en-us/product/RCH-1">https://www.gigahertz-optik.de/en-us/product/RCH-1</a>
PD-9304		<p>Detector head to measure low intensity LASER radiant power in W.</p> <p>Features: 11.28mm dia (1cm<sup>2</sup>) active area, 400 to 1100nm, for the usage with optometers and signal amplifiers, calibration certificate.</p>	<a href="https://www.gigahertz-optik.de/en-us/product/PD-2">https://www.gigahertz-optik.de/en-us/product/PD-2</a>

Produktname	Product Image	Description	Show product
ISD-5-Si		<p>Integrating sphere detector for Laser power in W.</p> <p>Features: 50 mm dia, 12.5 mm dia port, BaSO4 coating, 400 nm - 1100 nm responsivity, for the usage with optometers and signal amplifiers, Calibration certificate</p>	<a href="https://www.gigahertz-optik.de/en-us/product/ISD-5-Si">https://www.gigahertz-optik.de/en-us/product/ISD-5-Si</a>
ISD-5P-Si		<p>Integrating sphere detector for Laser power in W.</p> <p>Features: 50 mm dia, 10 mm dia port, synthetic ODM98 coating, 400 nm - 1100 nm responsivity, for the usage with optometers and signal amplifiers, Calibration certificate</p>	<a href="https://www.gigahertz-optik.de/en-us/product/ISD-5P-Si">https://www.gigahertz-optik.de/en-us/product/ISD-5P-Si</a>
ISD-10-Si		<p>Integrating sphere detector for Laser power in W.</p> <p>Features: 100mm dia, 15mm dia port, BaSO4 coating, 400-1100nm responsivity, for the usage with optometers and signal amplifiers, Calibration certificate</p>	<a href="https://www.gigahertz-optik.de/en-us/product/ISD-10-Si">https://www.gigahertz-optik.de/en-us/product/ISD-10-Si</a>
ISD-15-Si		<p>Integrating sphere detector for Laser power in W.</p> <p>Features: 150mm dia, 38.1mm dia port, BaSO4 coating, 400-1100nm responsivity, for the usage with optometers and signal amplifiers, Calibration certificate</p>	<a href="https://www.gigahertz-optik.de/en-us/product/ISD-15-Si">https://www.gigahertz-optik.de/en-us/product/ISD-15-Si</a>
ISD-30		<p>Integrating sphere detector for Laser power in W.</p> <p>Features: 300mm dia, 101.6mm dia port, BaSO4 coating, 400-1100nm responsivity, for the usage with optometers and signal amplifiers, Calibration certificate</p>	<a href="https://www.gigahertz-optik.de/en-us/product/ISD-30-Si">https://www.gigahertz-optik.de/en-us/product/ISD-30-Si</a>
PD-11 series		<p>Detector head with DP-11 mount.</p> <p>Features: modular detector for use with integrating spheres, front lenses etc, Si, SiLP, InGaAs, SiC, GaP photodiodes, for use with optometers and signal amplifiers</p>	<a href="https://www.gigahertz-optik.de/en-us/product/PD-11-Serie">https://www.gigahertz-optik.de/en-us/product/PD-11-Serie</a>
UV-3706		<p>Detector head to measure irradiance W/m2 in Bilirubin phototherapy.</p> <p>Features: Bilirubin actinic responsivity, cosine field-of-view, for use with optometers, calibration certificate.</p>	<a href="https://www.gigahertz-optik.de/en-us/product/UV-3706">https://www.gigahertz-optik.de/en-us/product/UV-3706</a>

Produktname	Product Image	Description	Show product
UV-3711-308		<p>Detector head for the measurement of irradiance of 308nm Eximer Lasers in W/m<sup>2</sup>.</p> <p>Features: flat spectral responsivity beside 308nm. cosine field-of-view, dose measurement in conjunction with P-9710-2 optometer, calibration certificate</p>	<a href="https://www.gigahertz-optik.de/en-us/product/UV-3711-2">https://www.gigahertz-optik.de/en-us/product/UV-3711-2</a>
UV-3724		<p>Detector head for the measurement of UV-B irradiance of TL1 sources in W/m<sup>2</sup>.</p> <p>Features: calibrated with TL1 source, cosine field-of-view, for the usage with optometers and amplifiers, calibration certificate.</p>	<a href="https://www.gigahertz-optik.de/en-us/product/UV-3724">https://www.gigahertz-optik.de/en-us/product/UV-3724</a>
UV-3709		<p>Detector for Blue-light hazard measurements.</p> <p>Features: Single-cell detector, BLH actinic irradiance, for the use with optometer, calibration certificate</p>	<a href="https://www.gigahertz-optik.de/en-us/product/UV-3709">https://www.gigahertz-optik.de/en-us/product/UV-3709</a>
UV-3725		<p>Detector for the measurement of UV-C 254 nm irradiance in air disinfection applications.</p> <p>Features: wide dynamic range for UV hazard and effective irradiance, wide angle cosine F.O.V. for straylight measurements, for the usage with optometers, calibration certificate.</p>	<a href="https://www.gigahertz-optik.de/en-us/product/UV-3725">https://www.gigahertz-optik.de/en-us/product/UV-3725</a>
PS-3701		<p>Detector head for plant growth.</p> <p>Features: 400-700nm PAR actinic irradiance, cosine field-of-view, for use with optometers, calibration certificate.</p>	<a href="https://www.gigahertz-optik.de/en-us/product/PS-3701">https://www.gigahertz-optik.de/en-us/product/PS-3701</a>
PS-3702		<p>Detector head for plant growth.</p> <p>Features: 320-500nm phototropism actinic irradiance, for use with optometers, calibration certificate.</p>	<a href="https://www.gigahertz-optik.de/en-us/product/PS-3702">https://www.gigahertz-optik.de/en-us/product/PS-3702</a>
PS-3703		<p>Detector head for plant growth.</p> <p>Features: 590-900nm photomorphogenesis actinic irradiance, for use with optometers, calibration certificate.</p>	<a href="https://www.gigahertz-optik.de/en-us/product/PS-3703">https://www.gigahertz-optik.de/en-us/product/PS-3703</a>
RW-37 with SRT-M37-L		<p>Detector heads to measure the irradiance in W/m<sup>2</sup> and the radiance in W/(m<sup>2</sup>*sr).</p> <p>Features: front lenses with 1°, 2° or 5° viewing angle, for the usage with Optometers and amplifiers, calibration certificate</p>	<a href="https://www.gigahertz-optik.de/en-us/product/RW-37uSRT-M37-L">https://www.gigahertz-optik.de/en-us/product/RW-37uSRT-M37-L</a>

Produktname	Product Image	Description	Show product
PRW-0505		Integrating sphere detector for radiant power in W of $2\pi$ spot sources.  Features: 400 - 1100 nm radiometric responsivity, 50 mm dia integrating sphere, 12.5 mm dia measurement port, for the usage with optometers and signal amplifiers, Calibration certificate	<a href="https://www.gigahertz-optik.de/en-us/product/prw-0505">https://www.gigahertz-optik.de/en-us/product/prw-0505</a>
ISD-5P-SiUV		Integrating sphere detector with UV-enhanced Si photodiode and 50 mm sphere for Laser power in W  Features: 250 nm - 1100 nm spectral responsivity, 10 mm dia measurement port, synthetic ODM98 coating, optional SMA Adapter, for the usage with Optometer and signal amplifiers, calibration certificate	<a href="https://www.gigahertz-optik.de/en-us/product/ISD-5P-SiUV-2">https://www.gigahertz-optik.de/en-us/product/ISD-5P-SiUV-2</a>
ISD-5P-IGA		Integrating sphere detector with InGaAs photodiode and 50 mm sphere for Laser power in W.  Features: 800 nm - 1800 nm spectral responsivity, 10 mm dia measurement port, synthetic ODM98 coating, optional SMA Adapter, for the usage with Optometer and signal amplifiers, calibration certificate	<a href="https://www.gigahertz-optik.de/en-us/product/ISD-5P-IGA-2">https://www.gigahertz-optik.de/en-us/product/ISD-5P-IGA-2</a>
S-SDK-P9801		Software Development Kit for P9801 variants.	<a href="https://www.gigahertz-optik.de/en-us/product/S-SDK-P9801">https://www.gigahertz-optik.de/en-us/product/S-SDK-P9801</a>
S-P9801		Application software for P9801 variants.	<a href="https://www.gigahertz-optik.de/en-us/product/S-P9801">https://www.gigahertz-optik.de/en-us/product/S-P9801</a>

## Purchasing information

Article-Nr	Modell	Description
<b>Product</b>		
15295256	P-9801-V01	Meter, with power supply and manual
15295254	P-9801-V02	Meter, with power supply and manual
15295255	P-9801-V03	Meter, with power supply and manual

Article-Nr	Modell	Description
<b>Calibration</b>		
15300323	K-P9801-C	Current calibration and adjustment of all eight gain ranges in one channel of P-9801. Calibration certificate.
15300685	K-P9801n-C	Calibration of additional channel(s) together with K-P9801-C.
<b>Options</b>		
15295279	P-98Z-01	Rack mount option to mount model P-9801 into 19in standard racks
	Light Detectors	Please check the light detector datasheets for specification and purchasing information
<b>Software</b>		
15298142	S-P9801	User software for P9801 and variants.
15298842	S-SDK-P9801	Software Development Kit for the implementation of the P9801 or variants into custom made software
<b>Accessories</b>		
15295220	BHO-02	Hard case to carry and store P-9801 with light detector and accessories. Separate document partition.