

# P-9710

<https://www.gigahertz-optik.com/en-us/product/p-9710/>

**Product tags: Dosimeter**



## Description

### P-9710-1 – Multi-functional light meter for high-quality photometric measurements

The P-9710-1 optometer is a high-quality device designed by Gigahertz-Optik for mobile use. Its signal amplifier provides a wide dynamic range for the detectors' signal currents ranging up to 2 mA. The noise-equivalent current signal is as low as 0.1 pA. The device has eight gain ranges that can be manually or automatically selected for adjustment to match the signal levels.

### Variable integration time

One of the characteristic properties of the P-9710-1 optometer is the short integration time of the input amplifier that only ranges around 100  $\mu$ s. This enables reduction of signal noises through multiple measurements with averaging. The 100  $\mu$ s integration time also makes it possible to perform many other measurement functions:

- Adjustable integration times in CW measurement mode
- CW measurement with noise proportion (peak-to-peak)
- Peak value measurement
- Pulse energy measurements of short light pulses
- Dose measurement
- Fast data logger for up to 12000 measurement values

### Photometer, radiometer, UV-meter, laser-intensity-meter

For use as optometer the P-9710-1 can be combined with all offered detector heads intended for photometric and radiometric measurements. The plugged detector head determines the photometric or radiometric measuring size as well as the spectral range of the measurement. Gigahertz-Optik offers a wide range of detector heads for various measuring tasks. The optometers' signal input amplifiers offer a very wide dynamic range, in order to adjust the devices to detectors with various sensitivities and optical radiation intensities. The calibration data of the detector heads are saved in the calibration data plug of the detector heads.

### Simple and safe detector exchange

Upon attachment of a detector head with a calibration data plug onto the P-9710-1 optometer, its calibration data as well as the device settings are automatically applied. This ensures that improper operation that might result from exchange of measurement heads is basically ruled out.

### Remote operation

The P-9710-1 optometer can be connected to a PC via its RS232 interface.



*The P-9710-4 offers a trigger input for a remotely controlled triggering of measurement*



*The optometers P-9710 provide connections for power supply, detector heads with calibration data plug and a RS232 interface (from left to right).*

---

## Light measurements and light analysis

The P-9710-1 optometer has eighteen different measurement modes that can easily be selected using a user-friendly menu hence enabling its multifunctional application.

### P-9710-2 – Optometer for dose measurement of short pulses using the pulse stretching method

Unlike the P-9710-1, the P-9710-2 optometer has a 20 ms standard time constant in all eight gain ranges. Thus light pulses shorter than 1 ns are stretched to 20 ms. The pulse energy of the stretched pulse can then be measured precisely with the 100  $\mu$ s sample rate of the optometer.

### P-9710-4 – multi-functional light meter for synchronized measurement of short light pulses

Similar to the optometer P-9710-2, the P-9710-4 also has a 20ms standard time constant in all eight gain levels. Besides the manual start of via keyboard, the dose measurement can also be started remotely via the trigger input.

## Specifications

### General







Measured Quantity	Ampere (absolutely calibrated), light measurement units depending on the used detector head. Ratio as a percentage, logarithmic and as a factor
P-9710-1	High-quality optometer for mobile use. Trans-impedance amplifier with alterable rise times in 8 gain levels. Mainly used in CW measurements.
P-9710-2	Equivalent to the optometer P-9710-1, but with a time constant of 20ms in all eight gain levels. Mainly used for measuring the pulse energy of single pulses.
P-9710-4	Equivalent to the optometer P-9710-2, with an additional trigger input for a synchronized triggering of the pulse energy measurement.










### Specification


Display	Alpha-numerical LCD display, 2 rows each with 16 characters, height of the characters 5 mm, LED backlight can be switched on and off.
Detector interface	9pin DSUB
Analog output	Output voltage corresponding to the input current of the signal amplifier. Connection plug: TRIAD01 5pin (Tyco)
Signal amplifier	Trans-impedance amplifier with voltage amplifier connected in series. A total of eight gain levels with both manual and automatic selection of the measurement range.
CW integration time	100 $\mu$ s – 5.9999 s

Pulse integration time	10 ms – 199.99 s																																																																						
Offset correction	Exceeding correction range																																																																						
Parameter adjustment	Via RS232 or using control panel on the front side. Settings are permanently saved (EEPROM). Ten different settings can be saved																																																																						
Calibration	Saved in the detector terminal (EEPROM). Tables for calibration values of the spectral responsivity with up to 250 values are supported. Interpolation between two wavelength points are also possible. Manual input of a calibration value via the key pad is also possible.																																																																						
Data logger	Max. 12288 entries, permanently saved in flash memory																																																																						
Key pad	10 buttons, menu-guided																																																																						
Measurement ranges	8 (2.000 mA to 0.1 pA) manual or autorange																																																																						
	<table border="1"> <thead> <tr> <th>range nr.</th> <th>range (A/V)</th> <th>range max.</th> <th>slew rate (10 - 90%)</th> <th>slew rate (10 - 90%)</th> <th>gain error / linearity error</th> <th>gain (A/V) analog output</th> </tr> <tr> <th></th> <th></th> <th></th> <th>variant -1</th> <th>variant -2 / -4</th> <th>(@ 20 °C)</th> <th></th> </tr> </thead> <tbody> <tr> <td>0</td> <td>1x10-3</td> <td>±2.000mA</td> <td>2 ms</td> <td>20 ms</td> <td>&lt;0.1 %</td> <td>1x10-3</td> </tr> <tr> <td>1</td> <td>1x10-4</td> <td>±200.0 µA</td> <td>2 ms</td> <td>20 ms</td> <td>&lt;0.1 %</td> <td>1x10-3</td> </tr> <tr> <td>2</td> <td>1x10-5</td> <td>±20.00 µA</td> <td>3 ms</td> <td>20 ms</td> <td>&lt;0.1 %</td> <td>1x10-5</td> </tr> <tr> <td>3</td> <td>1x10-6</td> <td>±2.000 µA</td> <td>3 ms</td> <td>20 ms</td> <td>&lt;0.1 %</td> <td>1x10-5</td> </tr> <tr> <td>4</td> <td>1x10-7</td> <td>±200.0 nA</td> <td>4 ms</td> <td>20 ms</td> <td>&lt;0.1 %</td> <td>1x10-7</td> </tr> <tr> <td>5</td> <td>1x10-8</td> <td>±20.00 nA</td> <td>4 ms</td> <td>20 ms</td> <td>&lt;0.1 %</td> <td>1x10-7</td> </tr> <tr> <td>6</td> <td>1x10-9</td> <td>±2.000 nA</td> <td>10 ms</td> <td>20 ms</td> <td>&lt;0.12 %</td> <td>1x10-9</td> </tr> <tr> <td>7</td> <td>1x10-10</td> <td>±200.0 pA</td> <td>10 ms</td> <td>20 ms</td> <td>&lt;0.52 % (for currents larger 10 pA)</td> <td>1x10-9</td> </tr> </tbody> </table>	range nr.	range (A/V)	range max.	slew rate (10 - 90%)	slew rate (10 - 90%)	gain error / linearity error	gain (A/V) analog output				variant -1	variant -2 / -4	(@ 20 °C)		0	1x10-3	±2.000mA	2 ms	20 ms	<0.1 %	1x10-3	1	1x10-4	±200.0 µA	2 ms	20 ms	<0.1 %	1x10-3	2	1x10-5	±20.00 µA	3 ms	20 ms	<0.1 %	1x10-5	3	1x10-6	±2.000 µA	3 ms	20 ms	<0.1 %	1x10-5	4	1x10-7	±200.0 nA	4 ms	20 ms	<0.1 %	1x10-7	5	1x10-8	±20.00 nA	4 ms	20 ms	<0.1 %	1x10-7	6	1x10-9	±2.000 nA	10 ms	20 ms	<0.12 %	1x10-9	7	1x10-10	±200.0 pA	10 ms	20 ms	<0.52 % (for currents larger 10 pA)	1x10-9
range nr.	range (A/V)	range max.	slew rate (10 - 90%)	slew rate (10 - 90%)	gain error / linearity error	gain (A/V) analog output																																																																	
			variant -1	variant -2 / -4	(@ 20 °C)																																																																		
0	1x10-3	±2.000mA	2 ms	20 ms	<0.1 %	1x10-3																																																																	
1	1x10-4	±200.0 µA	2 ms	20 ms	<0.1 %	1x10-3																																																																	
2	1x10-5	±20.00 µA	3 ms	20 ms	<0.1 %	1x10-5																																																																	
3	1x10-6	±2.000 µA	3 ms	20 ms	<0.1 %	1x10-5																																																																	
4	1x10-7	±200.0 nA	4 ms	20 ms	<0.1 %	1x10-7																																																																	
5	1x10-8	±20.00 nA	4 ms	20 ms	<0.1 %	1x10-7																																																																	
6	1x10-9	±2.000 nA	10 ms	20 ms	<0.12 %	1x10-9																																																																	
7	1x10-10	±200.0 pA	10 ms	20 ms	<0.52 % (for currents larger 10 pA)	1x10-9																																																																	
<b>Miscellaneous</b>																																																																							
Power Supply	Rechargeable battery, battery capacity: 3,7 V, 1400 mAh Rechargeable battery, battery capacity: 6 V, 500 mAh (Version before 2017)  Operation time: 5 hours with display backlight switched on, 12 hours with display backlight switched off 5.5 mm / 2.5 mm / 9.5 mm socket for plug-in power supply unit																																																																						
Interface	RS232 (9600 baud, 8 data bits, 1 stop bit, no parity) Plug: TRIAD01 (Tyco)																																																																						
Temperature range	Operating: (5 to 40) °C Storage: (-10 to 50) °C																																																																						
Humidity	<80%, non-condensing																																																																						
Dimensions	195 mm x 100 mm x 40 mm / 500 g																																																																						
Info	Regular recalibration of the current calibration is recommended. Especially when very small measurement currents have to be measured. In the case of very high humidity, fault currents of the radiometer are possible at low measuring currents and should be taken into account.																																																																						
<b>Accessories</b>																																																																							
Power Supply	D, USA or GB																																																																						











## Configurable with

Product Name	Product Image	Description	Go to product
LP-9901		Detector head to measure Laser radiant power in W and Laser irradiance in W/m <sup>2</sup>	<a href="https://www.gigahertz-optik.com/en-us/product/lp-9901/">https://www.gigahertz-optik.com/en-us/product/lp-9901/</a>
VL-3701		Detector head for the measurement of photopic illuminance in Lux [lx]	<a href="https://www.gigahertz-optik.com/en-us/product/vl-3701/">https://www.gigahertz-optik.com/en-us/product/vl-3701/</a>
VL-3702		Detector head for the measurement of photopic illuminance in Lux [lx]. Class B, f1 ≤ 6 %	<a href="https://www.gigahertz-optik.com/en-us/product/vl-3702/">https://www.gigahertz-optik.com/en-us/product/vl-3702/</a>
VL-3704		Detector head for the measurement of photopic illuminance in Lux [lx]	<a href="https://www.gigahertz-optik.com/en-us/product/vl-3704/">https://www.gigahertz-optik.com/en-us/product/vl-3704/</a>
VL-3705		Detector head for the measurement of scotopic illuminance in Lux [lx]	<a href="https://www.gigahertz-optik.com/en-us/product/vl-3705/">https://www.gigahertz-optik.com/en-us/product/vl-3705/</a>
PD-9310A		High sensitive detector head for the measurement of photopic illuminance in Lux [lx]. Features: f1 ≤ 3 %, 2.8nA/lx, 20mm diffuser, for the usage with optometers and amplifiers, calibration certificate	<a href="https://www.gigahertz-optik.com/en-us/product/pd-9310a/">https://www.gigahertz-optik.com/en-us/product/pd-9310a/</a>
PD-9310B		High sensitive detector head for the measurement of photopic illuminance in Lux [lx]. Features: f1 ≤ 6 %, 2.8nA/lx, 20mm diffuser, for the usage with optometers and amplifiers, calibration	<a href="https://www.gigahertz-optik.com/en-us/product/pd-9310b/">https://www.gigahertz-optik.com/en-us/product/pd-9310b/</a>
PD-9310B-N		Very high sensitive detector head for the measurement of photopic illuminance in Lux [lx]. Features: f1 ≤ 3 %, 28nA/lx, no diffuser, for the usage with optometers and amplifiers, calibration	<a href="https://www.gigahertz-optik.com/en-us/product/pd-9310b-n/">https://www.gigahertz-optik.com/en-us/product/pd-9310b-n/</a>
VL-3701 with SRT-M37-L		Detector head to measure the photopic illuminance in lx and the luminance in cd/m <sup>2</sup>	<a href="https://www.gigahertz-optik.com/en-us/product/vl-3701-with-srt-m37-l/">https://www.gigahertz-optik.com/en-us/product/vl-3701-with-srt-m37-l/</a>
PD-9310 with SRT-M37-L		High sensitive detector head to measure the photopic luminance in cd/m <sup>2</sup> . Features: front lens for 1°, 2°, 5° or 10° viewing angle, for the usage with Optometers and amplifiers, calibration certificate	<a href="https://www.gigahertz-optik.com/en-us/product/pd-9310-with-srt-m37-l/">https://www.gigahertz-optik.com/en-us/product/pd-9310-with-srt-m37-l/</a>











Product Name	Product Image	Description	Go to product
LDM-9810		Detector head to measure the photopic spot luminance in cd/m <sup>2</sup> . Features: selectable 20', 1° and 6° viewing angles, view finder, focus able achromatic lens, for the usage with Optometers and amplifiers, calibration certificate.	<a href="https://www.gigahertz-optik.com/en-us/product/lm-9810/">https://www.gigahertz-optik.com/en-us/product/lm-9810/</a>
VL-1101		Photometric detector head with VL-11 mount. Features: modular detector for use with integrating spheres, front lenses etc. For use with optometers and signal amplifiers	<a href="https://www.gigahertz-optik.com/en-us/product/vl-1101/">https://www.gigahertz-optik.com/en-us/product/vl-1101/</a>
LDM-9901		Detector head to measure the photopic spot luminance in cd/m <sup>2</sup>	<a href="https://www.gigahertz-optik.com/en-us/product/lm-9901/">https://www.gigahertz-optik.com/en-us/product/lm-9901/</a>
S-SDK-P9710		Software Development Kit for the P9710 variants.	<a href="https://www.gigahertz-optik.com/en-us/product/s-sdk-p9710/">https://www.gigahertz-optik.com/en-us/product/s-sdk-p9710/</a>
S-P9710		Application software for P9710 variants.	<a href="https://www.gigahertz-optik.com/en-us/product/s-p9710/">https://www.gigahertz-optik.com/en-us/product/s-p9710/</a>
VL-1101 + UMPA-0.5-11-RD Detector head		Module detector head for the measurement of photopic illuminance in Lux [lx]. Features: UMPA adapter for usage with integrating spheres, for the usage with optometers and amplifiers, calibration certificate	<a href="https://www.gigahertz-optik.com/en-us/product/vl-1101uempa-05-11-rd/">https://www.gigahertz-optik.com/en-us/product/vl-1101uempa-05-11-rd/</a>
ISD-5-VL		Integrating sphere detector for luminous flux (lm) of 2π spot sources	<a href="https://www.gigahertz-optik.com/en-us/product/isd-5-vl/">https://www.gigahertz-optik.com/en-us/product/isd-5-vl/</a>
ISD-10-VL		Integrating sphere detector for luminous flux (lm) of 2π spot sources	<a href="https://www.gigahertz-optik.com/en-us/product/isd-10-vl/">https://www.gigahertz-optik.com/en-us/product/isd-10-vl/</a>
ISD-15P-VL		Integrating sphere detector for luminous flux (lm) of 2π sources	<a href="https://www.gigahertz-optik.com/en-us/product/isd-15p-vl/">https://www.gigahertz-optik.com/en-us/product/isd-15p-vl/</a>












Product Name	Product Image	Description	Go to product
TD-11VL01		Photometric, temperature stabilized detector with DP-11 mount	<a href="https://www.gigahertz-optik.com/en-us/product/td-11vl01/">https://www.gigahertz-optik.com/en-us/product/td-11vl01/</a>
RW-3701		Detector head for the measurement of irradiance in W/m <sup>2</sup>	<a href="https://www.gigahertz-optik.com/en-us/product/rw-3701/">https://www.gigahertz-optik.com/en-us/product/rw-3701/</a>
RW-3702		Detector head for the measurement of irradiance in W/m <sup>2</sup>	<a href="https://www.gigahertz-optik.com/en-us/product/rw-3702/">https://www.gigahertz-optik.com/en-us/product/rw-3702/</a>
RW-3703		Detector head for the measurement of irradiance in W/m <sup>2</sup>	<a href="https://www.gigahertz-optik.com/en-us/product/rw-3703/">https://www.gigahertz-optik.com/en-us/product/rw-3703/</a>
RW-3704		Detector head for the measurement of irradiance in W/m <sup>2</sup>	<a href="https://www.gigahertz-optik.com/en-us/product/rw-3704/">https://www.gigahertz-optik.com/en-us/product/rw-3704/</a>
RW-3705		Detector head for the measurement of irradiance in W/m <sup>2</sup>	<a href="https://www.gigahertz-optik.com/en-us/product/rw-3705/">https://www.gigahertz-optik.com/en-us/product/rw-3705/</a>
RW-3708		Detector head for the measurement of irradiance in W/m <sup>2</sup>	<a href="https://www.gigahertz-optik.com/en-us/product/rw-3708/">https://www.gigahertz-optik.com/en-us/product/rw-3708/</a>
UV-3701		Detector head for the measurement of irradiance of UV radiation in W/m <sup>2</sup> . Features: spectral responsivity from 315-400 nm (UV-A), cosine field-of-view, for the usage with optometers and amplifiers, calibration certificate.	<a href="https://www.gigahertz-optik.com/en-us/product/uv-3701/">https://www.gigahertz-optik.com/en-us/product/uv-3701/</a>
UV-3702		Detector head for the measurement of irradiance of UV radiation in W/m <sup>2</sup> . Features: spectral responsivity from 280-315 nm (UV-B), cosine field-of-view, for the usage with optometers and amplifiers, calibration certificate.	<a href="https://www.gigahertz-optik.com/en-us/product/uv-3702/">https://www.gigahertz-optik.com/en-us/product/uv-3702/</a>
UV-3703		Detector head for the measurement of irradiance of UV radiation in W/m <sup>2</sup> . Features: spectral responsivity from 200/250-280 nm (UV-C), cosine field-of-view, for the usage with optometers and amplifiers, calibration certificate.	<a href="https://www.gigahertz-optik.com/en-us/product/uv-3703/">https://www.gigahertz-optik.com/en-us/product/uv-3703/</a>
UV-3710		Detector head for the measurement of irradiance of UV radiation in W/m <sup>2</sup> . Features: spectral responsivity from 320-400 nm (UV-A), cosine field-of-view, for the usage with optometers and amplifiers, calibration certificate.	<a href="https://www.gigahertz-optik.com/en-us/product/uv-3710/">https://www.gigahertz-optik.com/en-us/product/uv-3710/</a>














Product Name	Product Image	Description	Go to product
UV-3711		Detector head for the measurement of irradiance of UV radiation in W/m <sup>2</sup> . Features: spectral responsivity from 280-320 nm (UV-B), cosine field-of-view, for the usage with optometers and amplifiers, calibration certificate.	<a href="https://www.gigahertz-optik.com/en-us/product/uv-3711/">https://www.gigahertz-optik.com/en-us/product/uv-3711/</a>
UV-3716		Detector head for the measurement of irradiance of UV radiation in W/m <sup>2</sup> . Features: spectral responsivity from 305-400nm (UV-A), cosine field-of-view, for the usage with optometers and amplifiers, calibration certificate.	<a href="https://www.gigahertz-optik.com/en-us/product/uv-3716/">https://www.gigahertz-optik.com/en-us/product/uv-3716/</a>
UV-3717		Detector head for the measurement of irradiance of UV radiation in W/m <sup>2</sup>	<a href="https://www.gigahertz-optik.com/en-us/product/uv-3717/">https://www.gigahertz-optik.com/en-us/product/uv-3717/</a>
UV-3719		Detector head for the measurement of irradiance of UV radiation in W/m <sup>2</sup> . Features: spectral responsivity from 250-400 nm (UV), cosine field-of-view, for the usage with optometers and amplifiers, calibration certificate.	<a href="https://www.gigahertz-optik.com/en-us/product/uv-3719/">https://www.gigahertz-optik.com/en-us/product/uv-3719/</a>
UV-3720		Detector head for the measurement of irradiance of UV radiation in W/m <sup>2</sup> . Features: spectral responsivity from 240-320nm (UV), cosine field-of-view, for the usage with optometers and amplifiers, calibration certificate.	<a href="https://www.gigahertz-optik.com/en-us/product/uv-3720/">https://www.gigahertz-optik.com/en-us/product/uv-3720/</a>
UV-3721		Detector head for the measurement of irradiance of UV radiation in W/m <sup>2</sup> . Features: spectral responsivity from 350-400nm (UV-A), cosine field-of-view, for the usage with optometers and amplifiers, calibration certificate.	<a href="https://www.gigahertz-optik.com/en-us/product/uv-3721/">https://www.gigahertz-optik.com/en-us/product/uv-3721/</a>
UV-3718		Detector head for the measurement of high irradiance of UV-C 254 nm radiation in W/m <sup>2</sup>	<a href="https://www.gigahertz-optik.com/en-us/product/uv-3718/">https://www.gigahertz-optik.com/en-us/product/uv-3718/</a>
ISD-5-VISNIR		Integrating sphere detector for radiant power in W of 2π sources	<a href="https://www.gigahertz-optik.com/en-us/product/isd-5-visnir/">https://www.gigahertz-optik.com/en-us/product/isd-5-visnir/</a>
ISD-3P-Si		Integrating sphere detector for Laser power in W	<a href="https://www.gigahertz-optik.com/en-us/product/isd-3p-si/">https://www.gigahertz-optik.com/en-us/product/isd-3p-si/</a>
UV-3706		Detector head to measure irradiance W/m <sup>2</sup> in Bilirubin phototherapy. Features: Bilirubin actinic responsivity, cosine field-of-view, for use with optometers, calibration certificate.	<a href="https://www.gigahertz-optik.com/en-us/product/uv-3706/">https://www.gigahertz-optik.com/en-us/product/uv-3706/</a>


















Product Name	Product Image	Description	Go to product
UV-3711-308		Detector head for the measurement of irradiance of 308 nm Eximer Lasers in W/m <sup>2</sup> . Features: flat spectral responsivity beside 308 nm. cosine field-of-view, dose measurement in conjunction with P-9710 optometer, calibration certificate	<a href="https://www.gigahertz-optik.com/en-us/product/uv-3711-2/">https://www.gigahertz-optik.com/en-us/product/uv-3711-2/</a>
UV-3709		Detector for Blue-light hazard measurements. Features: Single-cell detector, BLH actinic irradiance, for the use with optometer, calibration certificate	<a href="https://www.gigahertz-optik.com/en-us/product/uv-3709/">https://www.gigahertz-optik.com/en-us/product/uv-3709/</a>
UV-3725		Detector for the measurement of UV-C 254 nm irradiance in air disinfection applications	<a href="https://www.gigahertz-optik.com/en-us/product/uv-3725/">https://www.gigahertz-optik.com/en-us/product/uv-3725/</a>
ISD-3P-IGA		Integrating sphere detector with InGaAs photodiode and 30 mm sphere for Laser power in W.	<a href="https://www.gigahertz-optik.com/en-us/product/isd-3p-iga-2/">https://www.gigahertz-optik.com/en-us/product/isd-3p-iga-2/</a>
ISD-5-Si		Integrating sphere detector for Laser power in W	<a href="https://www.gigahertz-optik.com/en-us/product/isd-5-si/">https://www.gigahertz-optik.com/en-us/product/isd-5-si/</a>
RCH-116		Detector head with rigid fiber for high intensity UV and BLUE LED sources.	<a href="https://www.gigahertz-optik.com/en-us/product/rch-2/">https://www.gigahertz-optik.com/en-us/product/rch-2/</a>
RCH-102		Detector head for high intensity irradiation in UVA and blue light curing processes with rigid fiber	<a href="https://www.gigahertz-optik.com/en-us/product/rch-1/">https://www.gigahertz-optik.com/en-us/product/rch-1/</a>
MD-37-SU100-VL		Photometric detector head with M30x1 mount	<a href="https://www.gigahertz-optik.com/en-us/product/md-37-su100-vl/">https://www.gigahertz-optik.com/en-us/product/md-37-su100-vl/</a>
MD-37-SU100-VLS		Scotopic detector head with M30x1 mount	<a href="https://www.gigahertz-optik.com/en-us/product/md-37-su100-vls/">https://www.gigahertz-optik.com/en-us/product/md-37-su100-vls/</a>
PD-9304		Universal detector head for LASER power, illuminance and 400-1100 nm irradiance. Features: Si-photodiode with 1 cm <sup>2</sup> , exchange able filters and cosine diffuor, for the usage with optometers and signal amplifiers	<a href="https://www.gigahertz-optik.com/en-us/product/pd-9304/">https://www.gigahertz-optik.com/en-us/product/pd-9304/</a>

Product Name	Product Image	Description	Go to product
ISD-5P-Si		Integrating sphere detector for Laser power in W	<a href="https://www.gigahertz-optik.com/en-us/product/isd-5p-si/">https://www.gigahertz-optik.com/en-us/product/isd-5p-si/</a>
ISD-10-Si		Integrating sphere detector for Laser power in W	<a href="https://www.gigahertz-optik.com/en-us/product/isd-10-si/">https://www.gigahertz-optik.com/en-us/product/isd-10-si/</a>
ISD-15-Si		Integrating sphere detector for Laser power in W	<a href="https://www.gigahertz-optik.com/en-us/product/isd-15-si/">https://www.gigahertz-optik.com/en-us/product/isd-15-si/</a>
RCH-006		Detector head for high intensity irradiation in UV wide range curing processes	<a href="https://www.gigahertz-optik.com/en-us/product/rch-006/">https://www.gigahertz-optik.com/en-us/product/rch-006/</a>
ISD-30		Integrating sphere detector for Laser power in W	<a href="https://www.gigahertz-optik.com/en-us/product/isd-30-si/">https://www.gigahertz-optik.com/en-us/product/isd-30-si/</a>
RCH-008		Detector Head for High-Intensity Irradiation in UV-A Curing Processes	<a href="https://www.gigahertz-optik.com/en-us/product/rch-008/">https://www.gigahertz-optik.com/en-us/product/rch-008/</a>
RCH-009		Detector Head for High-Intensity Irradiation in Blue Light Curing Processes	<a href="https://www.gigahertz-optik.com/en-us/product/rch-3/">https://www.gigahertz-optik.com/en-us/product/rch-3/</a>
RCH-010		Detector head for high intensity irradiation in UV H-type light curing processes.	<a href="https://www.gigahertz-optik.com/en-us/product/rch-4/">https://www.gigahertz-optik.com/en-us/product/rch-4/</a>
RCH-011		Detector head for high intensity irradiation in UVA peak light curing processes.	<a href="https://www.gigahertz-optik.com/en-us/product/rch-5/">https://www.gigahertz-optik.com/en-us/product/rch-5/</a>
RCH-012		Detector head for high intensity irradiation in blue light curing processes.	<a href="https://www.gigahertz-optik.com/en-us/product/rch-6/">https://www.gigahertz-optik.com/en-us/product/rch-6/</a>
RCH-013		Irradiance Detector for UV or Blue light curing processes	<a href="https://www.gigahertz-optik.com/en-us/product/rch-7/">https://www.gigahertz-optik.com/en-us/product/rch-7/</a>

Product Name	Product Image	Description	Go to product
RCH-014		Detector head for high intensity irradiation in UV or blue light curing processes. Features: Separate light integrator and detector with flexible fiber coupling, 400nm+436nm BLUE responsivity, wide viewing angle, for the usage with optometers and amplifiers, calibration certificate.	<a href="https://www.gigahertz-optik.com/en-us/product/rch-8/">https://www.gigahertz-optik.com/en-us/product/rch-8/</a>
RCH-015		Detector head for high intensity irradiation in UV or blue light curing processes. Features: Separate light integrator and detector with flexible fiber coupling, light, 436nm BLUE-Peak responsivity, wide viewing angle, for the usage with optometers and amplifiers, calibration certificate.	<a href="https://www.gigahertz-optik.com/en-us/product/rch-9/">https://www.gigahertz-optik.com/en-us/product/rch-9/</a>
RCH-106		Detector head for high intensity irradiation in UV wide range curing processes	<a href="https://www.gigahertz-optik.com/en-us/product/rch-10/">https://www.gigahertz-optik.com/en-us/product/rch-10/</a>
PD-11 Series		Detector head with DP-11 mount	<a href="https://www.gigahertz-optik.com/en-us/product/pd-11-serie/">https://www.gigahertz-optik.com/en-us/product/pd-11-serie/</a>
RCH-108		Detector head for high intensity irradiation in UVA Peak light curing processes	<a href="https://www.gigahertz-optik.com/en-us/product/rch-11/">https://www.gigahertz-optik.com/en-us/product/rch-11/</a>
RCH-109		Detector head for high intensity irradiation in blue-peak light curing processes	<a href="https://www.gigahertz-optik.com/en-us/product/rch-12/">https://www.gigahertz-optik.com/en-us/product/rch-12/</a>
RCH-110		Detector head for high intensity irradiation in H-Type light curing processes	<a href="https://www.gigahertz-optik.com/en-us/product/rch-13/">https://www.gigahertz-optik.com/en-us/product/rch-13/</a>
RCH-111		Detector head for high intensity irradiation in UVA light curing processes	<a href="https://www.gigahertz-optik.com/en-us/product/rch-14/">https://www.gigahertz-optik.com/en-us/product/rch-14/</a>
RCH-112		Detector head for high intensity irradiation blue light curing processes.	<a href="https://www.gigahertz-optik.com/en-us/product/rch-15/">https://www.gigahertz-optik.com/en-us/product/rch-15/</a>
RCH-113		Detector head for high intensity irradiation in UV or blue light curing processes	<a href="https://www.gigahertz-optik.com/en-us/product/rch-16/">https://www.gigahertz-optik.com/en-us/product/rch-16/</a>
RCH-114		Detector head for high intensity irradiation in UV or blue light curing processes. Features: Separate light integrator and detector with rigid fiber coupling, 400nm+436nm BLUE responsivity, wide viewing angle, for the usage with optometers and amplifiers, calibration certificate.	<a href="https://www.gigahertz-optik.com/en-us/product/rch-17/">https://www.gigahertz-optik.com/en-us/product/rch-17/</a>

Product Name	Product Image	Description	Go to product
RCH-115		Detector head for high intensity irradiation in UV or blue light curing processes. Features: Separate light integrator and detector with rigid fiber coupling, light, 436nm BLUE-Peak responsivity, wide viewing angle, for the usage with optometers and amplifiers, calibration certificate.	<a href="https://www.gigahertz-optik.com/en-us/product/rch-18/">https://www.gigahertz-optik.com/en-us/product/rch-18/</a>
MD-37 series		Detector head with M30x1 mount. Features: modular detector for use MD-37, SRT and other accessories, Si, SiLP, InGaAs, SiC, GaP photodiodes, for use with optometers and signal amplifiers	<a href="https://www.gigahertz-optik.com/en-us/product/md-37-serie/">https://www.gigahertz-optik.com/en-us/product/md-37-serie/</a>
PS-3701		Detector head for plant growth	<a href="https://www.gigahertz-optik.com/en-us/product/ps-3701/">https://www.gigahertz-optik.com/en-us/product/ps-3701/</a>
PS-3702		Detector head for plant growth	<a href="https://www.gigahertz-optik.com/en-us/product/ps-3702/">https://www.gigahertz-optik.com/en-us/product/ps-3702/</a>
PS-3703		Detector head for plant growth	<a href="https://www.gigahertz-optik.com/en-us/product/ps-3703/">https://www.gigahertz-optik.com/en-us/product/ps-3703/</a>
RW-37 with SRT-M37-L		Detector heads to measure the irradiance in W/m <sup>2</sup> and the radiance in W/(m <sup>2</sup> sr)	<a href="https://www.gigahertz-optik.com/en-us/product/rw-37usrt-m37-l/">https://www.gigahertz-optik.com/en-us/product/rw-37usrt-m37-l/</a>
LDM-9811		Detector for Blue-light and retinal thermal hazard of expanded light sources. Features: 1.7mrad, 11mrad and 100mrad field-of-view. view finder, focusable, for the usage with Optometers, calibration certificate.	<a href="https://www.gigahertz-optik.com/en-us/product/ldm-9811/">https://www.gigahertz-optik.com/en-us/product/ldm-9811/</a>
RCH-002		Detector Head for High-Intensity Irradiation in UVA or Blue Light Curing Processes	<a href="https://www.gigahertz-optik.com/en-us/product/rch-002/">https://www.gigahertz-optik.com/en-us/product/rch-002/</a>
RCH-005		Detector head for high intensity irradiation in UV or blue light curing processes. 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.	<a href="https://www.gigahertz-optik.com/en-us/product/rch-005/">https://www.gigahertz-optik.com/en-us/product/rch-005/</a>
K-xx-C		Calibration of the signal current sensitivity of optometers. Features: calibration of all gain stages, traceable calibrated current source, calibration certificate	<a href="https://www.gigahertz-optik.com/en-us/product/k-xx-c/">https://www.gigahertz-optik.com/en-us/product/k-xx-c/</a>
ISD-5P-SiUV		Integrating sphere detector with UV-enhanced Si photodiode and 50 mm sphere for Laser power in W	<a href="https://www.gigahertz-optik.com/en-us/product/isd-5p-siuv-2/">https://www.gigahertz-optik.com/en-us/product/isd-5p-siuv-2/</a>

Product Name	Product Image	Description	Go to product
ISD-0.8-SiLP		Integrating sphere detector with short rise time for Laser power in W	<a href="https://www.gigahertz-optik.com/en-us/product/isd-0.8-silp/">https://www.gigahertz-optik.com/en-us/product/isd-0.8-silp/</a>
ISD-1.6-Si		Integrating sphere detector for Laser power in W	<a href="https://www.gigahertz-optik.com/en-us/product/isd-1.6-si/">https://www.gigahertz-optik.com/en-us/product/isd-1.6-si/</a>
ISD-21-VL		Integrating sphere detector for luminous flux (lm) of 2π sources. Features: 215mm dia, BaSO4 coating, 63.5mm dia port, for the usage with optometers and signal amplifiers, Calibration certificate	<a href="https://www.gigahertz-optik.com/en-us/product/isd-21-vl/">https://www.gigahertz-optik.com/en-us/product/isd-21-vl/</a>
ISD-30-VL		Integrating sphere detector for luminous flux (lm) of 2π sources. Features: 300mm dia, BaSO4 coating, 101,6mm dia port, for the usage with optometers and signal amplifiers, Calibration certificate	<a href="https://www.gigahertz-optik.com/en-us/product/isd-30-vl/">https://www.gigahertz-optik.com/en-us/product/isd-30-vl/</a>
ISD-50HF-VL		Integrating sphere detector for luminous flux (lm) of 2π and 4π sources. Features: 500mm dia, BaSO4 coating, sphere to open, auxiliary lamp, for the usage with optometers and signal amplifiers, Calibration certificate	<a href="https://www.gigahertz-optik.com/en-us/product/isd-50hf-vl/">https://www.gigahertz-optik.com/en-us/product/isd-50hf-vl/</a>
ISD-100HF-VL		Integrating sphere detector for luminous flux (lm) of 2π and 4π sources. Features: 1000mm dia, BaSO4 coating, sphere to open, auxiliary lamp, for the usage with optometers and signal amplifiers, Calibration certificate	<a href="https://www.gigahertz-optik.com/en-us/product/isd-100hf-vl/">https://www.gigahertz-optik.com/en-us/product/isd-100hf-vl/</a>
ISS-5P-SR-FS		Integrating Sphere Source for use as Transfer Standard for Spectral Radiance in Fluorescence Spectroscopy	<a href="https://www.gigahertz-optik.com/en-us/product/iss-5p-sr-fs/">https://www.gigahertz-optik.com/en-us/product/iss-5p-sr-fs/</a>

Product Name	Product Image	Description	Go to product
UV-37 with SRT-M37-L-UV		Detector heads to measure the UV irradiance in W/m <sup>2</sup> and the UV-radiance in W/(m <sup>2</sup> sr)	<a href="https://www.gigahertz-optik.com/en-us/product/uv-37usr-m37-l-uv/">https://www.gigahertz-optik.com/en-us/product/uv-37usr-m37-l-uv/</a>
UV-3726		UV detector for UV-C LEDs and low-pressure Hg germicidal lamps	<a href="https://www.gigahertz-optik.com/en-us/product/uv-3726/">https://www.gigahertz-optik.com/en-us/product/uv-3726/</a>
RCH-xxx Series		UV Detectors for measuring the UV Curing Irradiance	<a href="https://www.gigahertz-optik.com/en-us/product/rch-xxx-series/">https://www.gigahertz-optik.com/en-us/product/rch-xxx-series/</a>
UV-3727		UV detector for germicidal lamps	<a href="https://www.gigahertz-optik.com/en-us/product/uv-3727/">https://www.gigahertz-optik.com/en-us/product/uv-3727/</a>
ISD-5P-IGA		Integrating sphere detector with InGaAs photodiode and 50 mm sphere for Laser power in W	<a href="https://www.gigahertz-optik.com/en-us/product/isd-5p-iga-2/">https://www.gigahertz-optik.com/en-us/product/isd-5p-iga-2/</a>
ISD-1.6-SP-Vxx		Detector for fast, time-resolved (ns) radiant power measurement of pulsed laser diodes and LEDs	<a href="https://www.gigahertz-optik.com/en-us/product/isd-1-6-sp-vxx/">https://www.gigahertz-optik.com/en-us/product/isd-1-6-sp-vxx/</a>
ISD-5P-SP		Optical Power Meter Detector for fast, time-resolved (ns) radiant power measurement of pulsed laser diodes and LEDs	<a href="https://www.gigahertz-optik.com/en-us/product/isd-5p-sp-2/">https://www.gigahertz-optik.com/en-us/product/isd-5p-sp-2/</a>
ISD-10P-SP		Detector for fast, time-resolved (ns) radiant power measurement of pulsed laser diodes and LEDs	<a href="https://www.gigahertz-optik.com/en-us/product/isd-10p-sp/">https://www.gigahertz-optik.com/en-us/product/isd-10p-sp/</a>
VL-3707		Photometric detector for measuring very low illuminance in conjunction with the optional P-2110 Optometer.	<a href="https://www.gigahertz-optik.com/en-us/product/vl-3707/">https://www.gigahertz-optik.com/en-us/product/vl-3707/</a>
Silux-37xx Series		Silux detector with 37 mm housing and silux calibration for night vision and low light level illumination rating	<a href="https://www.gigahertz-optik.com/en-us/product/silux-37xx-series/">https://www.gigahertz-optik.com/en-us/product/silux-37xx-series/</a>

## Purchasing information

Article-Nr	Modell	Description
Product		

<b>Article-Nr</b>	<b>Modell</b>	<b>Description</b>
15295217	P-9710-1	Measurement device, power adapter (D, USA or GB), handbook
15295575	P-9710-2	Meter, power supply (D, USA or GB), manual
15295576	P-9710-4	Meter, power supply (D, USA or GB), manual
<b>Options</b>		
	Light detectors	See " <a href="#">Configurable with</a> " for all detector heads suitable with the P-9710. More information about each detector head are given at it's product page.
<b>Software</b>		
15298278	S-P9710	User software for P9710 and variants.
15298231	S-SDK-P9710	Software Development Kit for the implementation of the P9710 or variants into custom made software
<b>Accessories</b>		
15295219	P-9710Z-01	RS232 adapter cable
15295605	P-9710Z-02	Relay card with RS232 interface
15296098	P-9710Z-04	Connection plugs kit for combined RS232 and analog output socket
15295619	P-9710Z-1S/2B	Adapter cable for detectors with BNC (type 1) plugs
15295228	BHO-01	Hard-top casing for the measurement device and accessories
15295220	BHO-02	Hard-top casing for the measurement device and accessories



## Contact, Calibration, Service & Support

We are known worldwide for excellent technical consulting and after sales support. Contact us to find together the best solution for you. Our services:

- Technical Consulting & Sales
- After-Sales Support
- Calibrations & Re-Calibrations ([ISO/IEC 17025 Calibration Services](#), [factory calibration](#), [Calibration of Third-Party Products](#))
- Repairs & Updates
- OEM & Feasibility Consulting of Customized Solutions

[Send us your inquiry](#) or contact us by phone or e-mail. We would welcome your feedback too or review us on [Google](#).

### Gigahertz Optik GmbH (Headquarter)

Tel.: +49 (0)8193-93700-0  
Fax: +49 (0)8193-93700-50  
[info@gigahertz-optik.de](mailto:info@gigahertz-optik.de)

An der Kaelberweide 12  
82299 Tuerkenfeld, Germany

### Gigahertz-Optik, Inc. (US office)

Phone: +1-978-462-1818  
[info-us@gigahertz-optik.com](mailto:info-us@gigahertz-optik.com)

Boston North Technology Park  
Bldg B - Ste 205  
Amesbury, MA 01913 USA