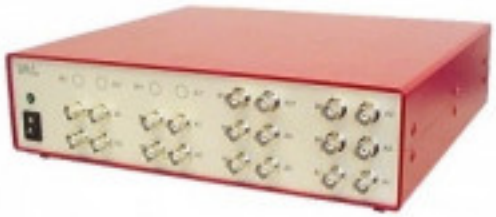
P-9802

https://www.gigahertz-optik.com/en-us/product/p-9802/

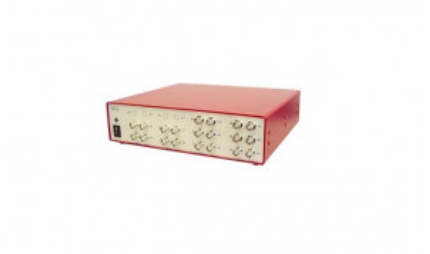
Product tags: Multi-Channel ,



Description

Multi Channel Lightmeter for Long Term Burn-in

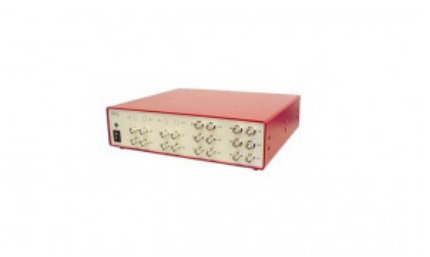
Typical applications for the P-9802 are burn-in and life time measurements but also light distribution measurement applications.



Multi-channel Optometer

Metal housing for use in strong ambient electromagnetic environments

For integration of the P-9802 in applications in strong ambient electromagnetic environments, e.g. high power arc lamp measurement, the P-9802s offer a high quality metal housing for best EMV shielding and rack mount option.



P-9802

Extendable Electronic Design from two to twenty four Channels

The P-9802 electronics design is based on a master board with an external RS232 interface and an internal I2C bus to control up to 14 amplifier modules P-9802Z-1.The number of modules is order specific allowing the meter to be configured to individual needs. The basic version of the P-9802 has one amplifier module with two signal inputs. Additional amplifier modules allow the optometer to be expanded up to a maximum of 14 amplifier modules. Each module implements a signal amplifier with two switchable signal inputs. Since two channels are in each amplifier always the number of amplifier modules gives the number of channels which can measure simultaneous.

Wide selection of Light Detector for Photometric and Radiometric Measurements

The flexibility to combine the P-9802 with most Gigahertz-Optik detector heads enables it’s use in a wide application range of radiometric and photometric measurements. The detector heads are connected via BNC sockets located on the front and back panels of the instrument.

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: 0.1pA (0.1E-12 A) / 3 nA/(mW/cm²) (irradiance detector) = 0.33 nW/cm²

Minimum measureable irradiation = offset signal * signal to noise ratio factor
Sample: 0.33 nW/cm² * 50 = 17 nW/cm²

Maximum measureable irradiation*: max. signal current detector / detector sensitivity
Sample: 200 µA (200E-6 A) / 3 nA/(mW/cm²) = 66667 W/cm²

Display range = Offset signal to maximum measureable signal
Sample: 0.33 nW/cm² to 66667 W/cm²

Measurement range: = min measureable irradiation to maximum measureable irradiation
Sample: 17 nW/cm² to 66667 W/cm²

**) 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

Product	
Detector interface	BNC type connector
Measurement range	7, fixed selection or automatically (for specification see table below)
CW integration time	20 ms to 4 s (set by RS232 command)
Measurement modes	CW, Peak, Dose, Relative (%), channel A / channel B (%)
dose measurement	Integration of the measured values at 1s/100ms intervals
Offset	offset compensation in all ranges
Calibration	storage from up to 255 data sets
Interface	only via RS232
Interface	RS232 (9600 baud, 8 digit, 1 stop bit, no parity)

Measurement range	7 (0.200 mA to 0.1 pA) manual or autorange

Range Nr.	Range (A/V)	Range max.	Slew-Rate (10% - 90%)	Uncertainty*) (with offset compensation) 1 year, 23 °C ± 5 °C ± (% of reading + % of range)
0	1x10-4	200.0 µA	30 ms	0.2 % + 0.05 %
1	1x10-5	20.00 µA	30 ms	0.2 % + 0.05 %
2	1x10-6	2.000 µA	30 ms	0.2 % + 0.05 %
3	1x10-7	200.0 nA	30 ms	0.2 % + 0.05 %
4	1x10-8	20.00 nA	30 ms	0.2 % + 0.05 %
5	1x10-9	2.000 nA	30 ms	0.2 % + 0.05 %
6	1x10-10	200.0 pA	30 ms	0.2 % + 0.05 %

**) Current calibration of each range by use of a precise current source with DAkks calibration*

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

The parameters of the RS232 interface are fixed and can not be modified.

Detector interface	up to 24 channels (half of the channels can measure simultaneous, second half simultaneous)afterwards)
Miscellaneous	
Power Supply	with supplied external mains supply
Temperature range	(5 - 40) °C
Humidity	<80%, non-condensing
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.

Configurable with

Product Name	Product Image	Description	Go to product
VL-3701		Detector head for the measurement of photopic illuminance in Lux [lx]	https://www.gigahertz-optik.com/en-us/product/vl-3701/
VL-3702		Detector head for the measurement of photopic illuminance in Lux [lx]. Class B, f1' ≤ 6 %	https://www.gigahertz-optik.com/en-us/product/vl-3702/
VL-3704		Detector head for the measurement of photopic illuminance in Lux [lx]	https://www.gigahertz-optik.com/en-us/product/vl-3704/

Product Name	Product Image	Description	Go to product
VL-3705		Detector head for the measurement of scotopic illuminance in Lux [lx]	https://www.gigahertz-optik.com/en-us/product/vl-3705/
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	https://www.gigahertz-optik.com/en-us/product/pd-9310a/
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	https://www.gigahertz-optik.com/en-us/product/pd-9310b/
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	https://www.gigahertz-optik.com/en-us/product/pd-9310b-n/
LP-9901		Detector head to measure Laser radiant power in W and Laser irradiance in W/m²	https://www.gigahertz-optik.com/en-us/product/lp-9901/
VL-3701 with SRT-M37-L		Detector head to measure the photopic illuminance in lx and the luminance in cd/m²	https://www.gigahertz-optik.com/en-us/product/vl-3701 with srt-m37-l/
PD-9310 with SRT-M37-L		High sensitive detector head to measure the photopic luminance in cd/m². Features: front lense for 1°, 2°, 5° or 10° viewing angle, for the usage with Optometers and amplifiers, calibration certificate	https://www.gigahertz-optik.com/en-us/product/pd-9310 with srt-m37-l/
LDM-9810		Detector head to measure the photopic spot luminance in cd/m². Features: selectable 20', 1° and 6° viewing angles, view finder, focus able achromatic lens, for the usage with Optometers and amplifiers, calibration certificate.	https://www.gigahertz-optik.com/en-us/product/ldm-9810/
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	https://www.gigahertz-optik.com/en-us/product/vl-1101/

Product Name	Product Image	Description	Go to product
LDM-9901		Detector head to measure the photopic spot luminance in cd/m²	https://www.gigahertz-optik.com/en-us/product/ldm-9901/
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	https://www.gigahertz-optik.com/en-us/product/vl-1101uumpa-05-11-rd/
ISD-5-VL		Integrating sphere detector for luminous flux (lm) of 2π spot sources	https://www.gigahertz-optik.com/en-us/product/isd-5-vl/
ISD-10-VL		Integrating sphere detector for luminous flux (lm) of 2π spot sources	https://www.gigahertz-optik.com/en-us/product/isd-10-vl/
ISD-15P-VL		Integrating sphere detector for luminous flux (lm) of 2π sources	https://www.gigahertz-optik.com/en-us/product/isd-15p-vl/
TD-11VL01		Photometric, temperature stabilized detector with DP-11 mount	https://www.gigahertz-optik.com/en-us/product/td-11vl01/
RW-3701		Detector head for the measurement of irradiance in W/m² in the spectral range 400 nm - 500 nm (BLUE).	https://www.gigahertz-optik.com/en-us/product/rw-3701/
RW-3702		Detector head for the measurement of irradiance in W/m² in the spectral range 700 nm - 800 nm (RED).	https://www.gigahertz-optik.com/en-us/product/rw-3702/
RW-3703		Detector head for the measurement of irradiance in W/m² in the spectral range 400 nm - 800 nm (VIS).	https://www.gigahertz-optik.com/en-us/product/rw-3703/
RW-3704		Detector head for the measurement of irradiance in W/m² in the spectral range 800 nm - 1000nm (NIR).	https://www.gigahertz-optik.com/en-us/product/rw-3704/

Product Name	Product Image	Description	Go to product
RW-3705		Detector head for the measurement of irradiance in W/m² in the spectral range 400 nm - 1000 nm (VISNIR).	https://www.gigahertz-optik.com/en-us/product/rw-3705/
RW-3708		Detector head for the measurement of irradiance in W/m² in the spectral range 1000 nm - 1700 nm (NIR).	https://www.gigahertz-optik.com/en-us/product/rw-3708/
UV-3701		Detector head for the measurement of irradiance of UV radiation in W/m² from 315 nm - 400 nm (UV-A).	https://www.gigahertz-optik.com/en-us/product/uv-3701/
UV-3702		Detector head for the measurement of irradiance of UV radiation in W/m² from 280 nm - 315 nm (UV-B).	https://www.gigahertz-optik.com/en-us/product/uv-3702/
UV-3703		Detector head for the measurement of irradiance of UV radiation in W/m² from 250 nm - 280 nm (UV-C).	https://www.gigahertz-optik.com/en-us/product/uv-3703/
UV-3710		Detector head for the measurement of irradiance of UV radiation in W/m² in the range from 320 nm to 400 nm (UV-A).	https://www.gigahertz-optik.com/en-us/product/uv-3710/
UV-3711		Detector head for the measurement of irradiance of UV radiation in W/m² in the spectral range 280 nm - 320 nm (UV-B).	https://www.gigahertz-optik.com/en-us/product/uv-3711/
UV-3716		Detector head for the measurement of irradiance of UV radiation in W/m² in the range from 305 nm to 400 nm (UV-A).	https://www.gigahertz-optik.com/en-us/product/uv-3716/
UV-3717		Detector head for the measurement of irradiance of UV radiation in W/m² in the spectral range from 315 nm to 400 nm with low crosstalk from radiation above 400 nm (UV-A).	https://www.gigahertz-optik.com/en-us/product/uv-3717/
UV-3719		Detector head for the measurement of irradiance of UV radiation in W/m² in the spectral range 250 nm to 400 nm	https://www.gigahertz-optik.com/en-us/product/uv-3719/
UV-3720		Detector head for the measurement of irradiance of UV radiation in W/m². Features: spectral responsivity from 240-320nm (UV), cosine field-of-view, for the usage with optometers and amplifiers, calibration certificate.	https://www.gigahertz-optik.com/en-us/product/uv-3720/

Product Name	Product Image	Description	Go to product
UV-3721		Detector head for the measurement of irradiance of UV radiation in W/m². Features: spectral responsivity from 350-400nm (UV-A), cosine field-of-view, for the usage with optometers and amplifiers, calibration certificate.	https://www.gigahertz-optik.com/en-us/product/uv-3721/
UV-3718		Detector head for the measurement of high irradiance of UV-C 254 nm radiation in W/m²	https://www.gigahertz-optik.com/en-us/product/uv-3718/
ISD-5-VISNIR		Integrating sphere detector for radiant power in W of 2π sources	https://www.gigahertz-optik.com/en-us/product/isd-5-visnir/
ISD-3P-Si		Integrating sphere detector for Laser power in W	https://www.gigahertz-optik.com/en-us/product/isd-3p-si/
UV-3706		Detector head to measure irradiance W/m² in Bilirubin phototherapy. Features: Bilirubin actinic responsivity, cosine field-of-view, for usewith optometers, calibration certificate.	https://www.gigahertz-optik.com/en-us/product/uv-3706/
UV-3711-308		Detector head for the measurement of irradiance of 308 nm Excimer Lasers in W/m².	https://www.gigahertz-optik.com/en-us/product/uv-3711-2/
UV-3709		Detector for Blue-light hazard irradiance measurements.	https://www.gigahertz-optik.com/en-us/product/uv-3709/
ISD-3P-IGA		Integrating sphere detector with InGaAs photodiode and 30 mm sphere for Laser power in W.	https://www.gigahertz-optik.com/en-us/product/isd-3p-iga-2/
ISD-5-Si		Integrating sphere detector for Laser power in W	https://www.gigahertz-optik.com/en-us/product/isd-5-si/
RCH-116		Detector head with rigid fiber for high intensity UV and BLUE LED sources.	https://www.gigahertz-optik.com/en-us/product/rch-2/

Product Name	Product Image	Description	Go to product
RCH-102		Detector head for high intensity irradiation in UVA and blue light curing processes with rigid fiber	https://www.gigahertz-optik.com/en-us/product/rch-1/
MD-37-SU100-VL		Photometric detector head with M30x1 mount	https://www.gigahertz-optik.com/en-us/product/md-37-su100-vl/
MD-37-SU100-VLS		Scotopic detector head with M30x1 mount	https://www.gigahertz-optik.com/en-us/product/md-37-su100-vls/
PD-9304		Universal detector head for LASER power, illuminance and 400-1100 nm iiradiance. Features: Si-photodiode with 1 cm², exchange able filters and cosine diffuor, for the usage with optometers and signal amplifiers	https://www.gigahertz-optik.com/en-us/product/pd-9304/
ISD-5P-Si		Integrating sphere detector for Laser power in W	https://www.gigahertz-optik.com/en-us/product/isd-5p-si/
RCH-006		Detector head for high intensity irradiation in UV wide range curing processes	https://www.gigahertz-optik.com/en-us/product/rch-006/
RCH-008		Detector Head for High-Intensity Irradiation in UV-A Curing Processes	https://www.gigahertz-optik.com/en-us/product/rch-008/
RCH-009		Detector Head for High-Intensity Irradiation in Blue Light Curing Processes	https://www.gigahertz-optik.com/en-us/product/rch-3/
RCH-010		Detector head for high intensity irradiation in UV H-type light curing processes.	https://www.gigahertz-optik.com/en-us/product/rch-4/
RCH-011		Detector head for high intensity irradiation in UVA peak light curing processes.	https://www.gigahertz-optik.com/en-us/product/rch-5/
RCH-012		Detector head for high intensity irradiation in blue light curing processes.	https://www.gigahertz-optik.com/en-us/product/rch-6/

Product Name	Product Image	Description	Go to product
RCH-013		Irradiance Detector for UV or Blue light curing processes	https://www.gigahertz-optik.com/en-us/product/rch-7/
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.	https://www.gigahertz-optik.com/en-us/product/rch-8/
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.	https://www.gigahertz-optik.com/en-us/product/rch-9/
RCH-106		Detector head for high intensity irradiation in UV wide range curing processes	https://www.gigahertz-optik.com/en-us/product/rch-10/
RCH-108		Detector head for high intensity irradiation in UVA Peak light curing processes	https://www.gigahertz-optik.com/en-us/product/rch-11/
RCH-109		Detector head for high intensity irradiation in blue-peak light curing processes	https://www.gigahertz-optik.com/en-us/product/rch-12/
RCH-110		Detector head for high intensity irradiation in H-Type light curing processes	https://www.gigahertz-optik.com/en-us/product/rch-13/
RCH-111		Detector head for high intensity irradiation in UVA light curing processes	https://www.gigahertz-optik.com/en-us/product/rch-14/
RCH-112		Detector head for high intensity irradiation blue light curing processes.	https://www.gigahertz-optik.com/en-us/product/rch-15/
RCH-113		Detector head for high intensity irradiation in UV or blue light curing processes	https://www.gigahertz-optik.com/en-us/product/rch-16/
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.	https://www.gigahertz-optik.com/en-us/product/rch-17/
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.	https://www.gigahertz-optik.com/en-us/product/rch-18/

Product Name	Product Image	Description	Go to product
RCH-002		Detector Head for High-Intensity Irradiation in UVA or Blue Light Curing Processes	https://www.gigahertz-optik.com/en-us/product/rch-002/
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.	https://www.gigahertz-optik.com/en-us/product/rch-005/
K-xx-C		Calibration of the signal current sensitivity of optometers. Features: calibration of all gain stages, traceable calibrated current source, calibration certificate	https://www.gigahertz-optik.com/en-us/product/k-xx-c/
ISD-5P-SiUV		Integrating sphere detector with UV-enhanced Si photodiode and 50 mm sphere for Laser power in W	https://www.gigahertz-optik.com/en-us/product/isd-5p-siuv-2/
UV-37 with SRT-M37-L-UV		Detector heads to measure the UV irradiance in W/m² and the UV-radiance in W/(m²sr)	https://www.gigahertz-optik.com/en-us/product/uv-37usrt-m37-l-uv/
UV-3726		Detector head for the measurement of irradiance in W/m² for UV-C LEDs and low pressure mercury lamps in germicidal applications.	https://www.gigahertz-optik.com/en-us/product/uv-3726/
RCH-xxx Series		UV Detectors for measuring the UV Curing Irradiance	https://www.gigahertz-optik.com/en-us/product/rch-xxx-series/
UV-3727		Detector for Excimer lamps at 222 nm, UV LEDs from 250 nm to 300 nm and low pressure Hg lamps at 254 nm in germicidal applications.	https://www.gigahertz-optik.com/en-us/product/uv-3727/

Purchasing information

Article-Nr	Modell	Description
Product		
15295274	P-9802	Meter, with power supply and manual
Accessories		
15295276	P-9802Z-1	Amplifier board

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