

X1-RM

<https://www.gigahertz-optik.de/en-us/product/X1-RM>

Product tags: Multi-Channel



Description

Rack-mount Meter

The X1-RM combines the same powerful electronic design as the hand held meters in a rack-mountable housing for integration into 19" 3HE racks.

Simple to Use

Operating the X1 is simple. The meter set-up is supported by an easy to use menu. The menu allows selection of the operating mode, the detector and measurement parameter. Once set-up all settings are stored and recalled on next power-up unless reinitialized. Measurement values are displayed in absolute quantities for the particular detector connected.



X1-RM

Four-channel Meter

The unique feature of all X1s is their capability to operate multi-cell detector heads with up to four photodiodes with all four signals displayed or read-out via the USB or RS232 interfaces.

Multipurpose Light Measurement Instrument

All X1s can be combined with most of the Gigahertz-Optik single cell or multi cell light detector heads for use in a wide application range of radiometric, photometric and colorimetric measurements.

Menu Guide

- Menu item**
- 1. Mode
 - 2. Setup
 - 4. Detector
 - 5. Offset
 - 6. Range

- Submenu item**
- CW
 - Dose
 - CIE Yxy & T
 - CIE Yuv & T
 - Zero Adjust
 - Integration
 - Meas. Mode
 - Dose Time



Specifications

General

Short description	Optometer for the integration in 19 Inch racks. Individual configuration as photometer, RGB-luminous color meter, radiometer, UV-radiometer, LASER-powermeter etc. with the detector heads supplied.
Main features	Robust and metal shielded Optometer for the use in 19 inch rack-mounts. Four measurement chanel in multiplex operation for use with single and multi-chanel detectors heads. Device RS485 Interface. I/O interfaces. Back illuminated display with four lines. USB or DC-voltage powered. USB-Interface. User Software and Software development kit available.
Measurement range	Wide dynamic current measurement range from 0.1 pA (noise equivalent signal) up to 200 µA. Seven gain ranges with manual or automatic selection. Measurement range in absolute units with given by the detector heads responivity and calibration.










typical applications	Measurement device for system integrations.
Calibration	Calibration and comparison of the current responsivity in each of the seven gain ranges. Memory for calibration data of several detector heads for measurement in the absolute unit of the selected detector head.
Product	
Power Supply	(7 - 20) VDC / 100 mA; plug 5,5 / 2,5 mm / 10 mm (+ at middle contact)
Display	LCD graphic display 97x32 pixel, display area 14.3 mm x 35.8 mm switchable LED-backlight, text display 4 rows each 14 characters
Detector interface	9pin MDSM9 socket, 4 inputs
Parameter adjustment	Remote control or front panel buttons (menu), adjusted values permanently stored in Eeprom
Front panel control	3 buttons, menu system
Interface	USB V1.1 (HID Device) RS485 or RS232 (factory set) / 19200 Baud (Slave Mode)
Analog input	4 voltage measurement channels; (0 - 20) VDC, input resistance 1 MOhm, 12 bit ADC
CW integration time	1 ms - 1 s
Miscellaneous	
temperature range	operation: 5 °C to 40 °C storage: -10 °C to 50 °C
Dimensions	65.5 mm x 105 mm x 80 mm 19", 3HE, 13TE
Weight	500 g









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	https://www.gigahertz-optik.de/en-us/product/VL-3701
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	https://www.gigahertz-optik.de/en-us/product/VL-3702





Produktname	Product Image	Description	Show product
VL-3704		<p>Detector head for the measurement of photopic illuminance in Lux [lx].</p> <p>Features: $f1 \leq 5 \%$, $f2 \leq 3 \%$, 20pA/lx, 20mm height, for the usage with Optometers and amplifiers, calibration certificate</p>	https://www.gigahertz-optik.de/en-us/product/VL-3704
VL-3705		<p>Detector head for the measurement of scotopic illuminance in Lux [lx].</p> <p>Features: $f1 \leq 5 \%$, $f2 \leq 3 \%$, 0.2nA/lx, 20mm height, for the usage with Optometers and amplifiers, calibration certificate</p>	https://www.gigahertz-optik.de/en-us/product/VL-3705
PD-9310A		<p>High sensitive detector head for the measurement of photopic illuminance in Lux [lx].</p> <p>Features: $f1 \leq 3 \%$, 2.8nA/lx, 20mm diffuser, for the usage with optometers and amplifiers, calibration certificate</p>	https://www.gigahertz-optik.de/en-us/product/PD-9310A
PD-9310B		<p>High sensitive detector head for the measurement of photopic illuminance in Lux [lx].</p> <p>Features: $f1 \leq 6 \%$, 2.8nA/lx, 20mm diffuser, for the usage with optometers and amplifiers, calibration</p>	https://www.gigahertz-optik.de/en-us/product/PD-9310B
PD-9310B-N		<p>Very high sensitive detector head for the measurement of photopic illuminance in Lux [lx].</p> <p>Features: $f1 \leq 3 \%$, 28nA/lx, no diffuser, for the usage with optometers and amplifiers, calibration</p>	https://www.gigahertz-optik.de/en-us/product/PD-9310B-N
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>	https://www.gigahertz-optik.de/en-us/product/VL-1101+UMPA-05-11-RD
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>	https://www.gigahertz-optik.de/en-us/product/VL-6001
VL-3701 with SRT-M37-L		<p>Detector head to measure the photopic illuminance in lx and the luminance in cd/m².</p> <p>Features: front lenses with 1°, 2° or 5° viewing angle, for the usage with Optometers and amplifiers, calibration certificate</p>	https://www.gigahertz-optik.de/en-us/product/VL-3701-with-SRT-M37-L

Produktname	Product Image	Description	Show product
PD-9310 with SRT-M37-L		<p>High sensitive detector head to measure the photopic luminance in cd/m^2.</p> <p>Features: front lens for 1°, 2°, 5° or 10° viewing angle, for the usage with Optometers and amplifiers, calibration certificate</p>	https://www.gigahertz-optik.de/en-us/product/PD-9310-with-SRT-M37-L
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>	https://www.gigahertz-optik.de/en-us/product/VL-1101
VL-1101 module light detectors with photometric $V(\lambda)$ responsivity		<p>Photometric detector head with DP-11 mount.</p> <p>Features: modular detector for use with integrating spheres, front lenses etc. For use with optometers and signal amplifiers</p>	https://www.gigahertz-optik.de/en-us/product/VL-1101-2
PD-9304		<p>Universal detector head for LASER power, illuminance and 400-1100 nm irradiance.</p> <p>Features: Si-photodiode with 1 cm^2, exchange able filters and cosine diffuor, for the usage with optometers and signal amplifiers</p>	https://www.gigahertz-optik.de/en-us/product/PD-9304
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 conformng to the ISO 17025 specifications. For use with all optometers and signal amplifiers from Gigahertz-Optik GmbH.</p>	https://www.gigahertz-optik.de/en-us/product/PD-9310A-2
RW-3701		<p>Detector head for the measurement of irradiance in W/m^2.</p> <p>Features: spectral responsivity from 400-500nm (BLUE), cosine field-of-view, for the usage with optometers and amplifiers, calibration certificate.</p>	https://www.gigahertz-optik.de/en-us/product/RW-3701
RW-3702		<p>Detector head for the measurement of irradiance in W/m^2.</p> <p>Features: spectral responsivity from 700-800nm (RED), cosine field-of-view, for the usage with optometers and amplifiers, calibration certificate.</p>	https://www.gigahertz-optik.de/en-us/product/RW-3702
RW-3703		<p>Detector head for the measurement of irradiance in W/m^2.</p> <p>Features: spectral responsivity from 400-800nm (VIS), cosine field-of-view, for the usage with optometers and amplifiers, calibration certificate.</p>	https://www.gigahertz-optik.de/en-us/product/RW-3703

Produktname	Product Image	Description	Show product
RW-3704		<p>Detector head for the measurement of irradiance in W/m².</p> <p>Features: spectral responsivity from 800-1000nm (NIR), cosine field-of-view, for the usage with optometers and amplifiers, calibration certificate.</p>	https://www.gigahertz-optik.de/en-us/product/RW-3704
RW-3705		<p>Detector head for the measurement of irradiance in W/m².</p> <p>Features: spectral responsivity from 400-1000nm (VISNIR), cosine field-of-view, for the usage with optometers and amplifiers, calibration certificate.</p>	https://www.gigahertz-optik.de/en-us/product/RW-3705
RW-3708		<p>Detector head for the measurement of irradiance in W/m².</p> <p>Features: spectral responsivity from 950-1700nm (NIR), cosine field-of-view, for the usage with optometers and amplifiers, calibration certificate.</p>	https://www.gigahertz-optik.de/en-us/product/RW-3708
UV-3701		<p>Detector head for the measurement of irradiance of UV radiation in W/m².</p> <p>Features: spectral responsivity from 315-400nm (UV-A), cosine field-of-view, for the usage with optometers and amplifiers, calibration certificate.</p>	https://www.gigahertz-optik.de/en-us/product/UV-3701
UV-3702		<p>Detector head for the measurement of irradiance of UV radiation in W/m².</p> <p>Features: spectral responsivity from 280-315nm (UV-B), cosine field-of-view, for the usage with optometers and amplifiers, calibration certificate.</p>	https://www.gigahertz-optik.de/en-us/product/UV-3702
UV-3703		<p>Detector head for the measurement of irradiance of UV radiation in W/m².</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>	https://www.gigahertz-optik.de/en-us/product/UV-3703
UV-3710		<p>Detector head for the measurement of irradiance of UV radiation in W/m².</p> <p>Features: spectral responsivity from 320-400nm (UV-A), cosine field-of-view, for the usage with optometers and amplifiers, calibration certificate.</p>	https://www.gigahertz-optik.de/en-us/product/UV-3710
UV-3711		<p>Detector head for the measurement of irradiance of UV radiation in W/m².</p> <p>Features: spectral responsivity from 280-320nm (UV-B), cosine field-of-view, for the usage with optometers and amplifiers, calibration certificate.</p>	https://www.gigahertz-optik.de/en-us/product/UV-3711
UV-3716		<p>Detector head for the measurement of irradiance of UV radiation in W/m².</p> <p>Features: spectral responsivity from 305-400nm (UV-A), cosine field-of-view, for the usage with optometers and amplifiers, calibration certificate.</p>	https://www.gigahertz-optik.de/en-us/product/UV-3716

Produktname	Product Image	Description	Show product
UV-3717		<p>Detector head for the measurement of irradiance of UV radiation in W/m².</p> <p>Features: spectral responsivity from 315-400nm (UV-A), low cross talk from radiation > 400 nm, cosine field-of-view, for the usage with optometers and amplifiers, calibration certificate.</p>	https://www.gigahertz-optik.de/en-us/product/UV-3717
UV-3719		<p>Detector head for the measurement of irradiance of UV radiation in W/m².</p> <p>Features: spectral responsivity from 250-400nm (UV), cosine field-of-view, for the usage with optometers and amplifiers, calibration certificate.</p>	https://www.gigahertz-optik.de/en-us/product/UV-3719
UV-3720		<p>Detector head for the measurement of irradiance of UV radiation in W/m².</p> <p>Features: spectral responsivity from 240-320nm (UV), cosine field-of-view, for the usage with optometers and amplifiers, calibration certificate.</p>	https://www.gigahertz-optik.de/en-us/product/UV-3720
UV-3721		<p>Detector head for the measurement of irradiance of UV radiation in W/m².</p> <p>Features: spectral responsivity from 350-400nm (UV-A), cosine field-of-view, for the usage with optometers and amplifiers, calibration certificate.</p>	https://www.gigahertz-optik.de/en-us/product/UV-3721
UV-3711-308		<p>Detector head for the measurement of irradiance of 308nm Eximer Lasers in W/m².</p> <p>Features: flat spectral responsivity beside 308nm. cosine field-of-view, dose measurement in conjunction with P-9710-2 optometer, calibration certificate</p>	https://www.gigahertz-optik.de/en-us/product/UV-3711-308
UV-3718		<p>Detector head for the measurement of high irradiance of UV-C 254nm radiation in W/m².</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>	https://www.gigahertz-optik.de/en-us/product/UV-3718
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>	https://www.gigahertz-optik.de/en-us/product/UV-3725-1
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>	https://www.gigahertz-optik.de/en-us/product/RCH-0

Produktname	Product Image	Description	Show product
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>	https://www.gigahertz-optik.de/en-us/product/RCH-1
PD-9304		<p>Detector head to measure low intensity LASER radiant power in W.</p> <p>Features: 11.28mm dia (1cm²) active area, 400 to 1100nm, for the usage with optometers and signal amplifiers, calibration certificate.</p>	https://www.gigahertz-optik.de/en-us/product/PD-2
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>	https://www.gigahertz-optik.de/en-us/product/PD-11-Series
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>	https://www.gigahertz-optik.de/en-us/product/UV-3706
UV-3711-308		<p>Detector head for the measurement of irradiance of 308nm Eximer Lasers in W/m².</p> <p>Features: flat spectral responsivity beside 308nm. cosine field-of-view, dose measurement in conjunction with P-9710-2 optometer, calibration certificate</p>	https://www.gigahertz-optik.de/en-us/product/UV-3711-2
UV-3724		<p>Detector head for the measurement of UV-B irradiance of TL1 sources in W/m².</p> <p>Features: calibrated with TL1 source, cosine field-of-view, for the usage with optometers and amplifiers, calibration certificate.</p>	https://www.gigahertz-optik.de/en-us/product/UV-3724
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>	https://www.gigahertz-optik.de/en-us/product/UV-3709
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>	https://www.gigahertz-optik.de/en-us/product/UV-3725

Produktname	Product Image	Description	Show product
RW-37 with SRT-M37-L		Detector heads to measure the irradiance in W/m ² and the radiance in W/(m ² *sr). Features: front lenses with 1°, 2° or 5° viewing angle, for the usage with Optometers and amplifiers, calibration certificate	https://www.gigahertz-optik.de/en-us/product/RW-37uSRT-M37-L
S-SDK-X20		Software Development Kit for X20 variants (X1 and HCT99).	https://www.gigahertz-optik.de/en-us/product/S-SDK-X20
S-X1		Application software for X1 variants.	https://www.gigahertz-optik.de/en-us/product/S-X1
BTH-19		Bench-top and rack housing for 3HE rack modules. Features: The bench-top housings are available in half, third or full 19" widths. Power supply modules for (110-230) V, 50/60 Hz with low DC voltages for both external devices and those within the housing.	https://www.gigahertz-optik.de/en-us/product/BTH-19

Purchasing information

Article-Nr	Modell	Description
Product		
15296732	X1-RM	Meter and manual
Options		
	Light Detectors	Please check the light detector datasheets for specification and purchasing information
Software		
15298071	S-SDK-X20	For software implementation of the X20 optometer board or X1 device into custome made software. Supply of .dll's and LabView VI's for device communication.
15298167	S-X1	User software for the X1
Accessories		
15296381	X1-Z02	Adapter cable (2m) to connect light detectors with -1 BNC connector to the -4
15296387	X1-Z03	Adapter to connect up to four detectors with BNC connector to X1
15297973	X1-Z04	Adapter cable 12inch with ITT (-4) connector for X1. Al box with -4 socket
15298036	X1-Z05	Adapter cable to connect light detectors with -2 calibration data connector to the ITT (-4) socket of the optometer X1 1. Cable length 0.2 m.
15295292	BHO-04	Hard case for meter and accessories

Article-Nr	Modell	Description
15295239	BHO-05	Hard case for meter and accessories
15295680	BHO-06	Hard case for meter and accessories
15297539	BHO-11	Hard case for meter and accessories
15298236	BHO-15	Hard case for meter and accessories