

UV-3727

<https://www.gigahertz-optik.de/en-us/product/UV-3727>

Product tags:



Description

Product description

UV-3727 Irradiance Detector for 222nm excimer lamps, UVC LEDs and low-pressure Hg lamps

The UV-37 series detectors are specially designed for radiometric measurements in the UV spectral region and have been proven in industrial and scientific use over many years. The UV-3727 model provides the particular capability of measuring 222nm excimer lamps (Kr-Cl) typically used for germicidal applications. Additionally, it enables the measurement of other UVC germicidal source types including low pressure Hg lamps and UV LEDs.

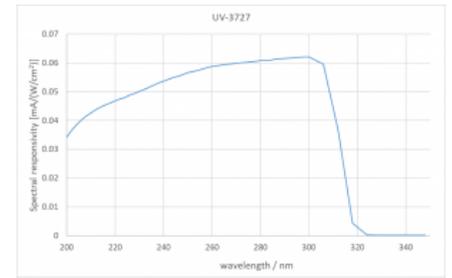
The UV-3727 detector incorporates a photodiode that has extended deep-UV responsivity. Only radiation in the required spectral sensitivity range is measured (Figure 2). In addition to its calibration at 222nm, selectable calibration factors for common UV LED wavelengths and low-pressure Hg lamps are included.

To measure the irradiance, the detector's entrance optic is a diffuser with a cosine field of view, which must be positioned in the desired plane of measurement. The diffuser and photodiode are pre-aged with UV radiation to significantly reduce the inevitable aging process that results from exposure to UV radiation. The UV-3727 detector shows very little aging effects even in intensive use. Any changes are recorded and corrected as part of the recommended annual recalibration.

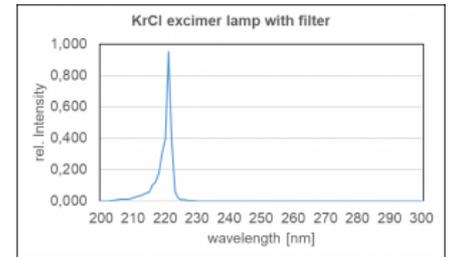
The photodiode of the UV-3727 detector offers a strictly linear relationship between the measurement signal and the irradiance in the range from a few pico amps (10^{-12} A) to several micro amps (10^{-6} A). When connected to the Gigahertz-Optik X1-1 meter (Figure 1) it provides a linear measurement range up to at least 1000 mW / cm² with a resolution of 0.002µW / cm² (@222 nm).

Calibration

Reliable measurements in absolute units require the calibration of the measuring device with traceability to national metrological institute (NMI) standards. Since 1993, the Gigahertz-Optik measuring laboratory has been accredited as a calibration laboratory by the PTB (Physikalisch-Technische Bundesanstalt) and the DAkkS (German Accreditation Body) for the measurement of spectral responsivity and spectral irradiance (D-K-15047-01-00). Since then, all factory calibrations have been closely based on the calibration standards and quality management of the accredited calibration laboratory. Therefore, the factory calibrations of Gigahertz-



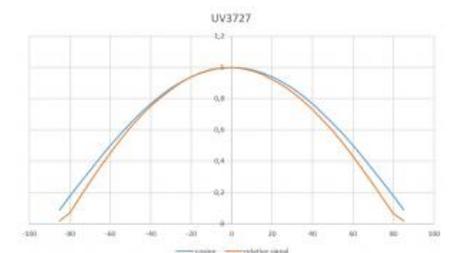
Typical spectral sensitivity of the UV-3727 detector shown.



Typical spectral power distribution of Kr-Cl excimer lamp with filter used for germicidal applications.



Mobile UV radiometer with separate measuring device and detector for measuring irradiance and dose of 222nm excimer lamps as well as Hg lamps and UVC LEDs.



Optik offer the highest possible level of traceability and are accepted worldwide.

Typical field of view with good cosine correction

In accordance with the requirements of individual industrial sectors, part of the calibration laboratory is accredited as a DIN EN ISO / IEC 17025 test laboratory by the DAkkS (D-PL-15047-01-00). As a result, Gigahertz-Optik can optionally offer a DIN EN ISO / IEC 17025 test certificate for the calibration of the X1-1-UV-3727 in addition to the factory certificate.

The UV-3727 detector is calibrated for its spectral responsivity. When performing a measurement, either the 222nm excimer wavelength or the nominal wavelength of the UV-LED or Hg lamp can be selected on the X1-1 meter.

Specifications

General	
Short description	UV detector for UV-C germicidal sources including excimer, low-pressure Hg and UV LEDs
Main features	Broadband UV detector 200 nm to 310 nm with absolute calibrations at 222 nm, 254 nm and at UVC LED wavelengths
Measurement ranges	Measuring range from typically 0.002 $\mu\text{W} / \text{cm}^2$ to 1000 mW / cm^2 at 222nm
typical applications	Germicidal irradiance and dose of UVC sources including excimer lamps at 222nm
Calibration	Calibration of the absolute responsivity at 222nm, 254 nm and UV LED wavelengths 250-300nm in 5nm steps.
Specification	
typical responsivity	5.75E-05 A/(W/cm ²) @ 254 nm
Housing	37 mm \varnothing , 27 mm height
Input optics	Cosine corrected, 19.2 mm \varnothing
Mounting	lateral M6 threaded hole
temperature range	(5 - 40) °C temperature coefficient: -0.168 %/°C (*determined with 254 nm lamp)
min. signal current	depends on Optometer
spectral responsivity	UV 200 nm - 310 nm
Rise time	typ. 880 ns

Downloads

Type	Description	File-Type	Download
Drawing	UV-3727	pdf	https://www.gigahertz-optik.de/assets/Uploads/V127892.pdf

Configurable with

Produktname	Product Image	Description	Show product
P-9710		<p>High-quality device for measurement of CW-, single pulse and modulated radiation.</p> <p>Features: Optometer for all detector heads with calibration data plug. Measurement modes: CW, pulse energy, dose, peak-to-peak, effective luminous intensity (Blondel-Rey), data logger, battery, main power, RS232</p>	https://www.gigahertz-optik.de/en-us/product/P-9710
X1		<p>Four-channel USB optometer designed for mobile use.</p> <p>Features: Compact device for use with all photometric, radiometric, colorimetric, plant-physiologic and photo-biologic measurement heads from Gigahertz-Optik. USB interface. Battery operation or power supply USB.</p>	https://www.gigahertz-optik.de/en-us/product/X1
X1-RM		<p>Optometer in 3HE housing for use in 19" racks.</p> <p>Features: Its USB and RS232 remote interface and two additional RS232 device interfaces make the device highly flexible when it comes to system integration. Its four signal inputs enable use with all photometric, radiometric, colorimetric, plant-physiologic and photo-biologic measurement heads from Gigahertz-Optik.</p>	https://www.gigahertz-optik.de/en-us/product/X1-RM
P-9802		<p>Light meter for laboratory use with up to 36 measurement heads.</p> <p>Features: For use with up to 36 photometric and/or radiometric measurement heads. RS232 interface.</p>	https://www.gigahertz-optik.de/en-us/product/P-9802

Purchasing information

Article-Nr	Modell	Description
Product		
	UV-3727-1	Detector with -1 type connector. Calibration with factory calibration certificate.
	UV-3727-2	Detector with -2 type connector. Calibration with factory calibration certificate.
15312062	UV-3727-4	Detector with -4 type connector. Calibration with factory calibration certificate.
15312064	UV-3727-5	Detector with -5 type connector. Calibration with factory calibration certificate.
Calibration		

Article-Nr	Modell	Description
	KP-UV3727X1-E-I	Option: DIN EN ISO/IEC 17025 Test Certificate (DAkkS) for 254 nm Hg lamps. Contact sales team for other wavelength options. In combination with X1 optometer.
	KP-UV3727P9710-E-I	Option: DIN EN ISO/IEC 17025 Test Certificate (DAkkS) for 254 nm Hg lamps. Contact sales team for other wavelength options. In combination with P9710 optometer.
Re-calibration		
15312098	K-UV3727-E-S	Calibration of UV-3727 with factory certificate
	KKP-UV3727X1-E-I	DIN EN ISO/IEC 17025 Test Certificate (DAkkS) for 254 nm Hg lamps. Contact sales team for other wavelength options. Includes factory calibration. In combination with X1 optometer.
	KKP-UV3727P9710-E-I	DIN EN ISO/IEC 17025 Test Certificate (DAkkS) for 254 nm Hg lamps. Contact sales team for other wavelength options. Includes factory calibration. In combination with P9710 optometer.