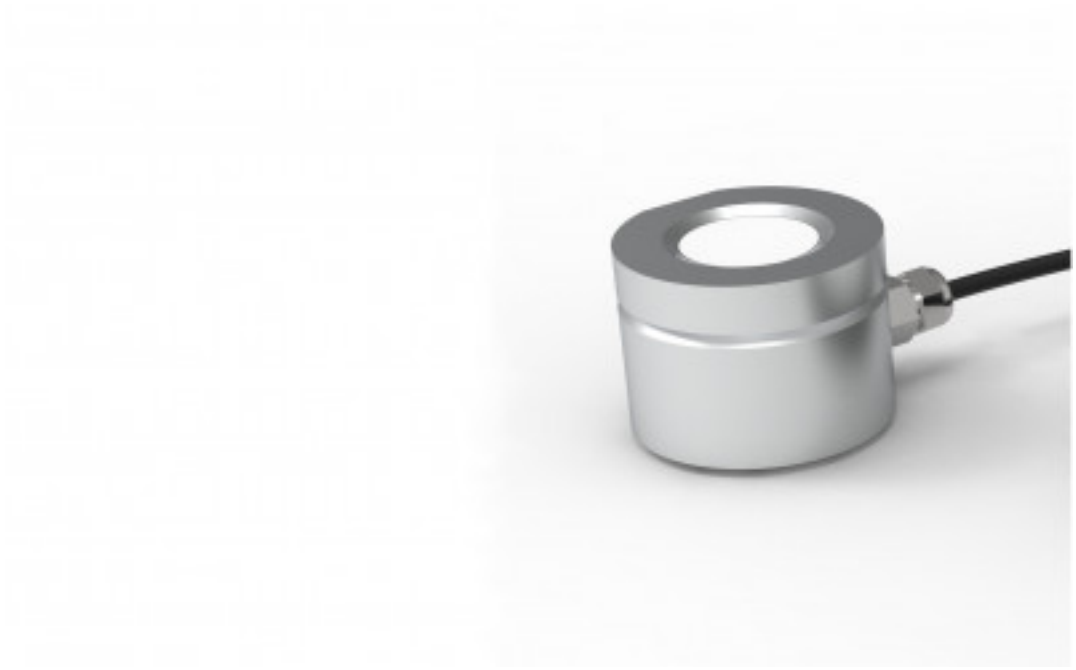
UV-3727

https://www.gigahertz-optik.com/en-us/product/uv-3727/

Product tags:



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 222 nm 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 222 nm, selectable calibration factors for common UV LED wavelengths and low-pressure Hg lamps are included.

Cosine Corrected Field-of-View and Pre-Aged for High-Stability

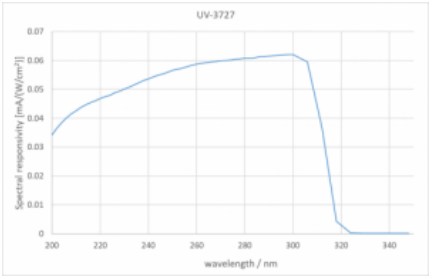
To measure the irradiance, the detector's entrance optic is a diffuser with a cosine field of view, which must be positioned in the desired plane of measurement. The diffuser and photodiode are pre-aged with UV radiation to significantly reduce the inevitable aging process that results from exposure 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.

Highly Linear Detector

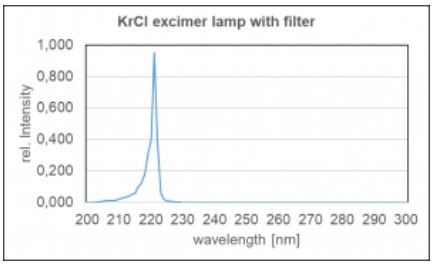
The photodiode of the UV-3727 detector offers a strictly linear relationship between the measurement signal and the irradiance in the range from a few pico amps (10^{-12} A) to several micro amps (10^{-6} A). When connected to the Gigahertz-Optik X1-1 meter (Figure 1) it provides a linear measurement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

Traceable 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

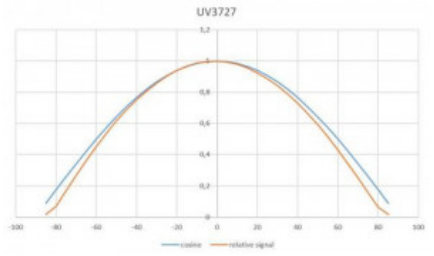


Typical spectral sensitivity of the UV-3727 detector shown.



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.



COS response

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

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 222 nm 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 Hgand 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 µW / cm² to 1000 mW / cm² 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 (220 - 300) nm in 5 nm steps.
Specification	
Typical responsivity	5.75E-05 A/(W/cm²) @ 254 nm
Housing	37 mm Ø, 27 mm height
Input optics	Cosine corrected, 19.2 mm Ø
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
Miscellaneous	

Mounting	lateral M6 threaded hole
Plug Types	coaxial cable 2m Long, with BNC (-1), calibration data (-2), ITT (-4) or ITT Calibration Data (-5) connector Information about the individual connectors can be found here under “More info”

Downloads

Type	Description	File-Type	Download
Drawing	UV-3727	pdf	https://www.gigahertz-optik.com/assets/Uploads/V127892-v2.pdf

Configurable with

Product Name	Product Image	Description	Go to product
LCR-20/LCR-21		Light-reflection hand-held meter series for flat samples, UV reflection measurements	https://www.gigahertz-optik.com/en-us/product/lcr-20/
P-21		Multi-Purpose Touchscreen Optometer for Measurement of CW-, Single Pulse and Modulated Radiation in any Photometric and Radiometric Application	https://www.gigahertz-optik.com/en-us/product/p-21/

Purchasing information

Article-Nr	Modell	Description
Product		
15312682	UV-3727-1	Detector with -1 type connector. Calibration with factory calibration certificate - UV LED (250 to 300) nm in 5 nm steps and 222 nm, 254 nm
15312346	UV-3727-2	Detector with -2 type connector. Calibration with factory calibration certificate - UV LED (250 to 300) nm in 5 nm steps and 222 nm, 254 nm
15312062	UV-3727-4	Detector with -4 type connector. Calibration with factory calibration certificate - UV LED (250 to 300) nm in 5 nm steps and 222 nm, 254 nm
15312064	UV-3727-5	Detector with -5 type connector. Calibration with factory calibration certificate - UV LED (250 to 300) nm in 5 nm steps and 222 nm, 254 nm
15316015	UV-3727-5-V04	Detector with -5 type connector. Calibration with factory calibration certificate - UV LED (220 to 300) nm in 5 nm steps and 222 nm, 254 nm

Article-Nr	Modell	Description
Calibration		
15315584	KK-UV3727-E-I-V01	Accredited calibration according to ISO 17025.
Re-calibration		
15312098	K-UV3727-E-S	Calibration of UV-3727 with factory certificate (absolute responsivity at 222nm, 254 nm and UV LED wavelengths (250 - 300) nm in 5 nm steps).
15316016	K-UV3727-E-S-V01	Calibration of UV-3727 with factory certificate (absolute responsivity at 222nm, 254 nm and UV LED wavelengths (220 - 300) nm in 5 nm steps).
15312949	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.
15312948	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.
15312947	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.
15312946	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.
Accessories		
15312791	UV-37xx-Z01	80° Field of View Adapter
15312782	UV-37xx-Z02	Bracket to mount UV-3727 detector head on M6 threads.

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

An der Kaelberweide 12
82299 Tuerkenfeld, Germany

Gigahertz-Optik, Inc. (US office)

Phone: +1-978-462-1818
info-us@gigahertz-optik.com

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