

# X-2000

<https://www.gigahertz-optik.com/es-es/producto/x-2000/>

**Etiquetas del producto: UV , Dosímetro**



## Descripción

### Personal UV Irradiance Dosimeter

The X-2000 series meters are designed as personal UV monitoring dosimeters. As the instrument is typically worn by the subject under test the X-2000 is built in a very compact light tight housing weighing only 60g including battery.

### Low power consumption and large memory for long term datasampling

A large memory supports long term data logging with storage capacity for up to 129000 sample measurement values of the two photodiode and the internal temperature sensors. The low power consumption electronics feature a sleep mode and flash memory supported by power flash capacitor for long battery life. The measurement set-up for readout of long or short term samples and data storage is remote controlled via RS232 interface by the OS-X2000 software supplied (option).

### Various UV Sensors for use in different UV measurement campaigns

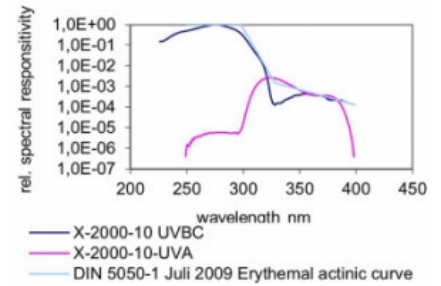
Up to two photodiodes can be implement into the X-2000 dosimeter. Their spectral responsivity is filter corrected to match different radiometric or photo biological actinic standard functions. Each photodiode is set-up with diffuse window for cosine corrected field of view.

### Five standard models are available for UV hazard assessment and UV biological studies:

- X-2000-5 UV-A (315-400nm) and UV-B (280-315nm) sensors for use with artificial light use
- X-2000-6 UV-C 254nm) sensor
- X-2000-10 Two cell Eyrthema meter with UV-Aeff and UV-BCEffsensors
- X-2000-11 Two cell ICNIRP meter with UV-Aeff and UV-BCEff sensors
- X-2000-14 UV-A (320-400nm) and UV-B (280-320nm) sensors for day light use

### Traceable calibration

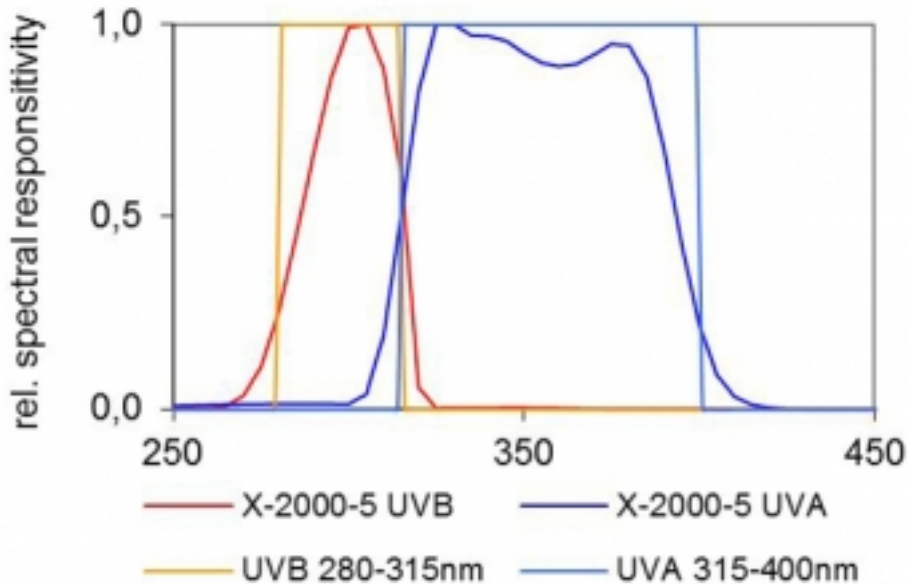
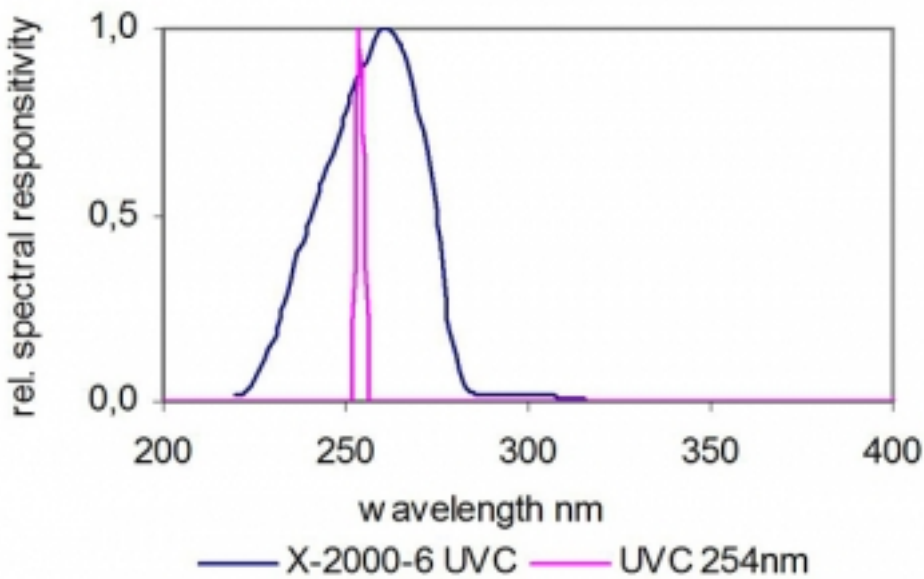
The detectors are calibrated for irradiance responsivity in  $W/m^2$  according to the spectral sensitivity range and spectral locus of the detectors. Calibration is performed by Gigahertz-Optik's calibration laboratory for optical radiation measurement units and include a calibration certificate describing the calibration procedure and its traceability.



*X-2000-10 Erythema Dosimeter  
Typical Spectral Responsivity*

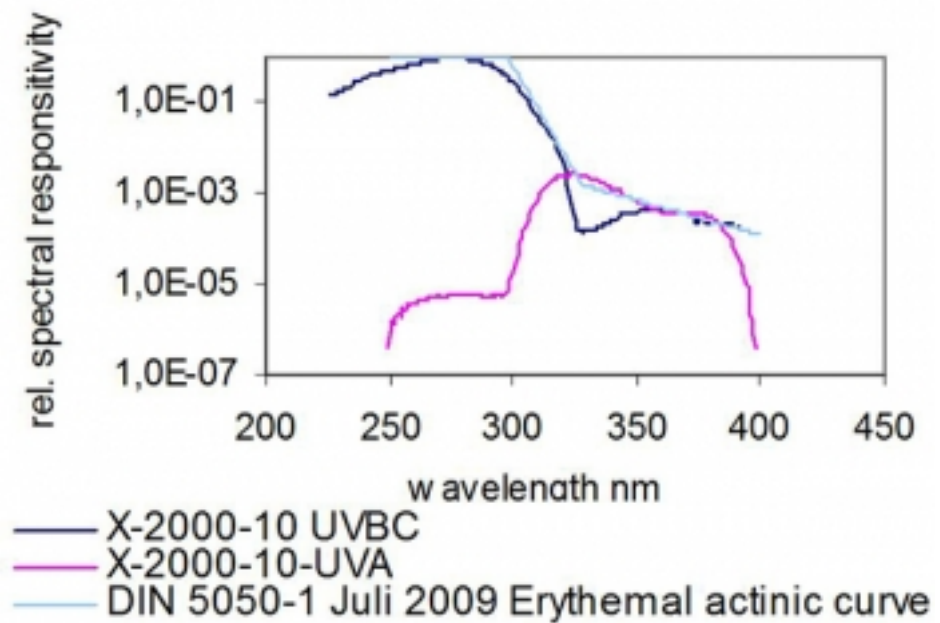
## Especificaciones

| Producto                       |                                                                                                                                       |                      |                                                              |               |
|--------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|----------------------|--------------------------------------------------------------|---------------|
| Sensor                         | max. two build in detectors                                                                                                           |                      |                                                              |               |
| Rango de medición              | 6 (20µA to 200.0pA) manual or autorange                                                                                               |                      |                                                              |               |
| Entrada de voltaje             | one Input (gain 100x)                                                                                                                 |                      |                                                              |               |
| Tiempo de integración CW       | 1 ms - 2s                                                                                                                             |                      |                                                              |               |
| Corrección del offset          | correction range transcending                                                                                                         |                      |                                                              |               |
| Ajuste de parámetros           | remote control, values permanently stored (eeprom)                                                                                    |                      |                                                              |               |
| Hora del reloj del registrador | without switch off: 5ms to 1.984s<br>with switch off: 1s to 127min.                                                                   |                      |                                                              |               |
| Interfaz                       | RS232, 8D, 1S, N, 57600 Baud                                                                                                          |                      |                                                              |               |
| Fuente de alimentación         | 1.0V to 1.6V (one battery type N)<br>current consumption: 5mA<br>with RS232: 16mA<br>switched off: 5µA                                |                      |                                                              |               |
| rango de temperatura           | -20°C to 50°C                                                                                                                         |                      |                                                              |               |
| Dimensiones                    | 85mm x 45mm x 20mm / 50g                                                                                                              |                      |                                                              |               |
|                                | compatible                                                                                                                            |                      |                                                              |               |
|                                | compatible                                                                                                                            |                      |                                                              |               |
| Garantía                       | 12 month                                                                                                                              |                      |                                                              |               |
|                                | NULL                                                                                                                                  |                      |                                                              |               |
| Memoria del registrador        | 1042944 bytes memory needs:<br><br>status: 1 byte<br>channel 1: 3 byte<br>channel 2: 3 byte<br>temperature: 2 byte<br>voltage: 2 byte |                      |                                                              |               |
| Información de calibración     | 4 entrances each channel                                                                                                              |                      |                                                              |               |
| Rango de medición              | range(A/V)range max.                                                                                                                  | rise time (10 - 90%) | gain error *) ± offset errorpermitted detector<br>(at 20 °C) | capacitance   |
|                                | 1x10-5                                                                                                                                | ±20,00µA             | 3ms                                                          | 0.2% ±0.01µA  |
|                                | 1x10-6                                                                                                                                | ±2,000µA             | 3ms                                                          | 0.2% ±0.001µA |
|                                | 1x10-7                                                                                                                                | ±200,0nA             | 3ms                                                          | 0.2% ±0.01nA  |
|                                | 1x10-8                                                                                                                                | ±20,00nA             | 3ms                                                          | 0.2% ±0.01nA  |
|                                | 1x10-9                                                                                                                                | ±2,000nA             | 30ms                                                         | 0.5% ±2pA     |

|                     |                                                                                                                                                                                                                      |
|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| X-2000-5            | UV-A & UV-B Irradiance Detector for artificial light use                                                                                                                                                             |
| Sensor UV-A         | Spectral responsivity range 315nm to 400nm<br>Responsivity 9.5nA/(W/m <sup>2</sup> )<br>Diffuser window with 7mm diameter<br>Measurement range 0.01W/m <sup>2</sup> to 2000W/m <sup>2</sup>                          |
| Sensor UV-B         | Spectral responsivity range 280nm to 315nm<br>Responsivity 2.3nA/(W/m <sup>2</sup> )<br>Diffuser window with 7mm diameter<br>Measurement range 0.04W/m <sup>2</sup> to 8000W/m <sup>2</sup>                          |
| Nota                | The maximum measureable irradiance value may be limited by heat radiated by the source under test                                                                                                                    |
| respuesta espectral |  <p>rel. spectral responsivity</p> <p>250 350 450</p> <p>— X-2000-5 UVB — X-2000-5 UVA</p> <p>— UVB 280-315nm — UVA 315-400nm</p> |
| X-2000-6            | UV-C <sub>254nm</sub> Irradiance Detector                                                                                                                                                                            |
| Sensor UV-C         | Spectral responsivity range 220 to 260nm, peak at 260nm<br>Responsivity 3nA/(W/m <sup>2</sup> )<br>Diffuser window with 7mm diameter<br>Measurement range 0.04W/m <sup>2</sup> to 5000W/m <sup>2</sup>               |
| Nota                | The maximum measureable irradiance value may be limited by heat radiated by the source under test                                                                                                                    |
| respuesta espectral |  <p>rel. spectral responsivity</p> <p>200 250 300 350 400</p> <p>wavelength nm</p> <p>— X-2000-6 UVC — UVC 254nm</p>             |
| X-2000-10           | Two Cell Erythema Irradiance Detector                                                                                                                                                                                |

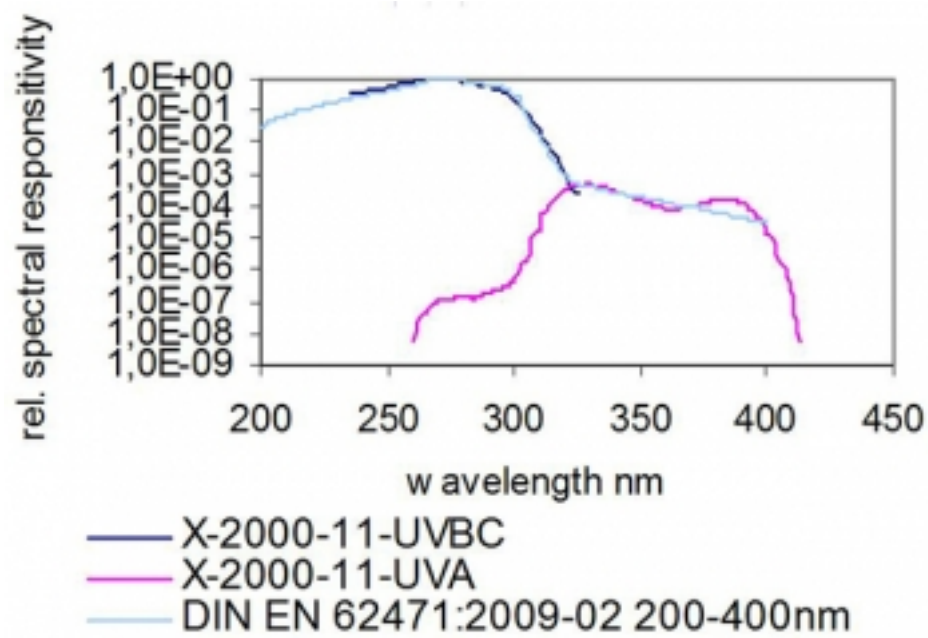
|                  |                                                                                                                                                                                               |
|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Sensor UV-A eff  | Spectral responsivity range 320nm to 400nm<br>Responsivity 0.6 $\mu$ A/(W/m <sup>2</sup> )<br>Diffuser window with 7mm diameter<br>Measurement range 2mW/m <sup>2</sup> to 30W/m <sup>2</sup> |
| Sensor UV-BC eff | Spectral responsivity range 250nm to 320nm<br>Responsivity 3nA/(W/m <sup>2</sup> )<br>Diffuser window with 7mm diameter<br>Measurement range 0.03W/m <sup>2</sup> to 5500W/m <sup>2</sup>     |
| Nota             | The maximum measureable irradiance value may be limited by heat radiated by the source under test                                                                                             |

respuesta espectral



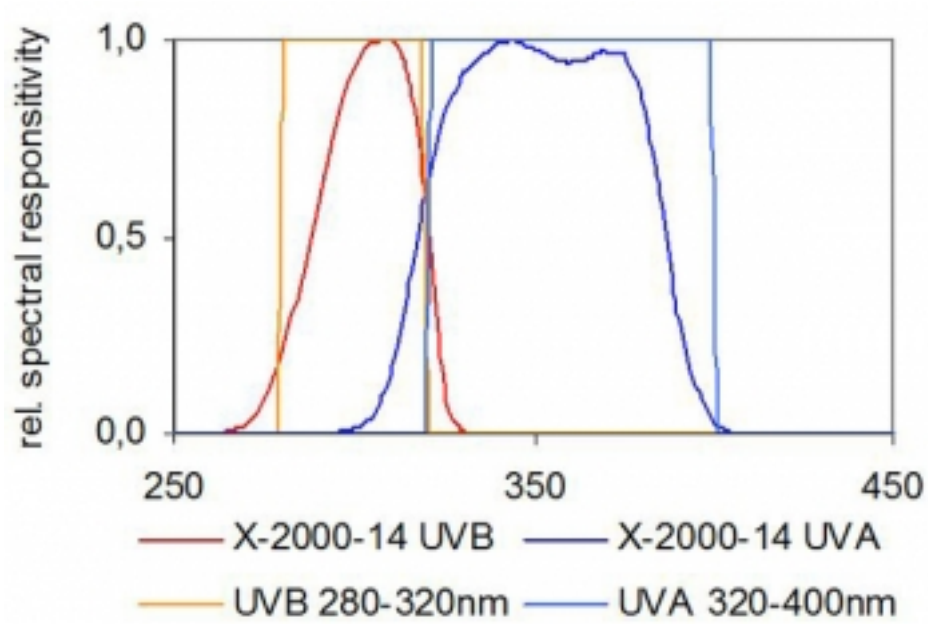
|                  |                                                                                                                                                                                               |
|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| X-2000-11        | Two-Sensor ICNIRP/ACGIH Irradiance Detector                                                                                                                                                   |
| Sensor UV-A eff  | Spectral responsivity range 320nm to 400nm<br>Responsivity 1.3 $\mu$ A/(W/m <sup>2</sup> )<br>Diffuser window with 7mm diameter<br>Measurement range 1mW/m <sup>2</sup> to 14W/m <sup>2</sup> |
| Sensor UV-BC eff | Spectral responsivity range 280nm to 320nm<br>Responsivity 3.8nA/(W/m <sup>2</sup> )<br>Diffuser window with 7mm diameter<br>Measurement range 0.03W/m <sup>2</sup> to 5000W/m <sup>2</sup>   |
| Nota             | The maximum measureable irradiance value may be limited by heat radiated by the source under test                                                                                             |

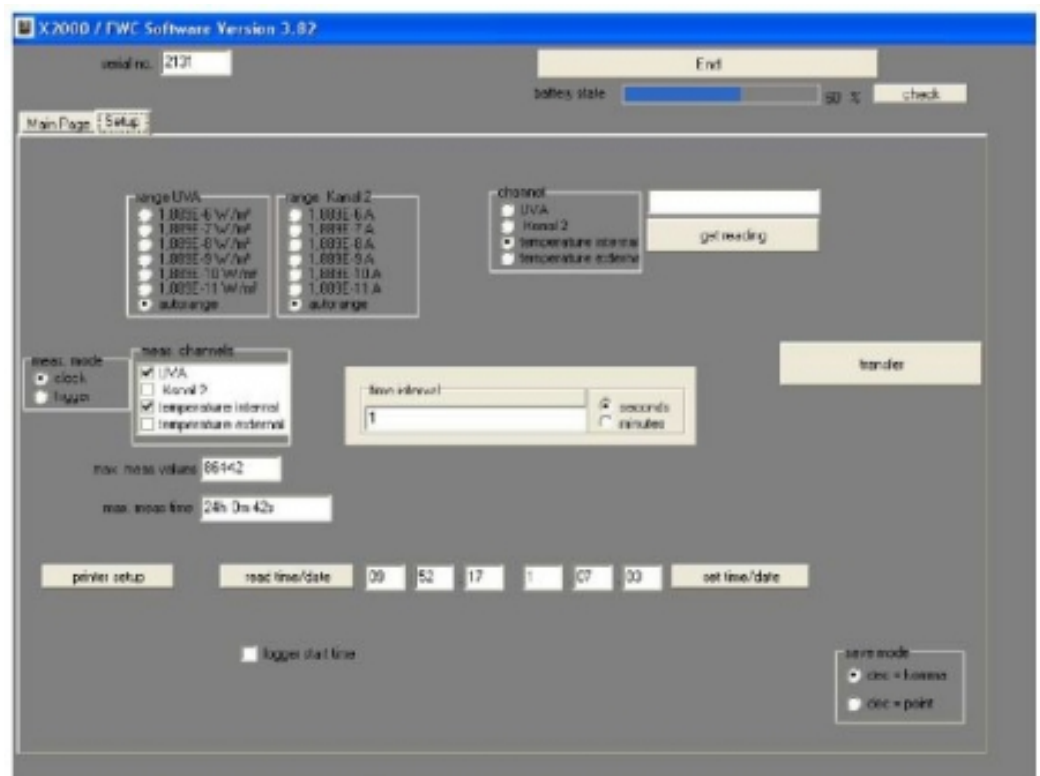
respuesta espectral



|             |                                                                                                                                                      |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| X-2000-14   | UV-A & UV-B Irradiance Detector for day light use                                                                                                    |
| Sensor UV-A | Spectral responsivity range 320nm to 400nm<br>Responsivity 5nA/(W/m²)<br>Diffuser window with 7mm diameter<br>Measurement range 0.02W/m² to 3000W/m² |
| Sensor UV-B | Spectral responsivity range 280nm to 320nm<br>Responsivity 7nA/(W/m²)<br>Diffuser window with 7mm diameter<br>Measurement range 0.02W/m² to 2500W/m² |
| Nota        | The maximum measureable irradiance value may be limited by heat radiated by the source under test                                                    |

respuesta espectral





OS-X2000 Device Initialization GUI



OS-X2000 Graphical GUI

Configurable con

| Nombre del producto | Imagen del producto                                                               | Descripción                                                                                                                                                            | Ir al producto                                                                                                              |
|---------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| K-xx-C              |  | Calibration of the signal current sensitivity of optometers.<br>Features: calibration of all gain stages, traceable calibrated current source, calibration certificate | <a href="https://www.gigahertz-optik.com/es-es/producto/k-xx-c/">https://www.gigahertz-optik.com/es-es/producto/k-xx-c/</a> |

## Información de compra

| Número de artículo   | Modelo       | Descripción                                                                                                                                    |
|----------------------|--------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Producto</b>      |              |                                                                                                                                                |
| 100435               | X-2000-5     | Meter, battery, RS232 adapter cable, BHO-06 hard case, technical manual, calibration certificate                                               |
| 100902               | X-2000-6     | Meter, battery, RS232 adapter cable, BHO-06 hard case, technical manual, calibration certificate                                               |
| 101523               | X-2000-10    | Meter, battery, RS232 adapter cable, BHO-06 hard case, technical manual, calibration certificate                                               |
| 101524               | X-2000-11    | Meter, battery, RS232 adapter cable, BHO-06 hard case, technical manual, calibration certificate                                               |
| 15297774             | X-2000-14    | Meter, battery, RS232 adapter cable, BHO-06 hard case, technical manual, calibration certificate                                               |
| 100221               | OS-X2000     | Software for the operation of one or more X-2000                                                                                               |
| <b>Recalibración</b> |              |                                                                                                                                                |
| 15300165             | K-X2000-5-I  | Calibration of the integral irradiance responsivities in of the X-2000-5 sensors. Calibration certificate.                                     |
| 15300486             | K-X2000-6-I  | Calibration of the integral irradiance responsivity of the X-2000-6 sensor. Calibration certificate.                                           |
| 15300745             | K-X2000-10-I | Calibration of the integral irradiance responsivities of the X-2000-10 sensors. Calibration certificate.                                       |
| 15300744             | K-X2000-11-I | Calibration of the integral irradiance responsivities of the X-2000-11 sensors. Calibration certificate.                                       |
| 15300487             | K-X2000-14-I | Calibration of the integral irradiance responsivities of the X-2000-14 sensors. Calibration certificate.                                       |
| 15300571             | K-UV-SR      | Optional calibration of relative spectral responsivity of X-2000 cell. Wavelength range 250 to 550 nm in 10 nm steps. Calibration certificate. |

## Contacto, calibración, servicio y asistencia

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- Soporte posventa
- Calibraciones y recalibraciones (servicios de calibración ISO/IEC 17025, calibración en fábrica, calibración de productos de terceros)
- Reparaciones y actualizaciones
- Consultoría OEM y de viabilidad de soluciones personalizadas

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