

# TP-4501

<https://www.gigahertz-optik.com/en-us/product/tp-4501/>

**Product tags:**



## Description

The TP-4501 is a unique detector head designed for use with the X1<sub>1</sub> or X1<sub>2</sub> hand-held optometer to measure on-site lighting conditions in greenhouses, plant growth studies, soil and seed science.



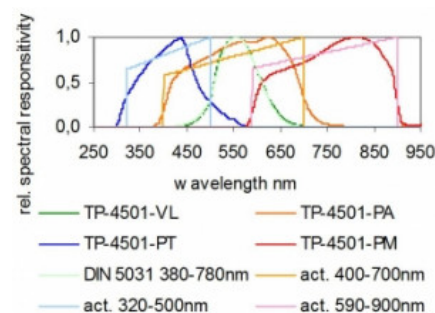
The compact detector houses four different detectors:

- Yellow: PAR measures the photonsynthetically effective radiation in the 400 to 700 nm wavelength range actinic for plant growth
- Blue: Measures the phototropism effective radiation within the 320 to 500 nm wavelength range actinic for directional plant growth
- Red: Measures the photomorphogenesis effective radiation within the 560 to 900 nm wavelength range actinic for plant growth formation
- Green: Photometric  $V(\lambda)$  measures the illuminance which specifies the ambient lighting condition

## Traceable Calibration

Calibration of the detector responsivity is performed by the Gigahertz-Optik GmbH calibration laboratory for optical radiation measurements quantities. As with all light detectors supplied by Gigahertz-Optik calibration of absolute detector responsivity as well as detector individual measured relative spectral responsivity data is included.

*Triple PAR Detector*



*TP-4501 Typical Spectral Responsivity*

## Specifications

### Specification

|                      |   |   |
|----------------------|---|---|
| TP-4501 (Sensor 1)   | Spectral Function<br>Typical Responsivity<br>I <sub>max</sub> | Photometric<br>40 pA/lx<br>1 mA   |
| TP-4501 (Sensor 2)   | Spectral Function<br>Typical Responsivity<br>I <sub>max</sub> | PAR eff <sub>400-700nm</sub><br>0.1 pA/μmol·m <sup>-2</sup> ·s <sup>-1</sup><br>1 mA        |
| TP-4501 (Sensor 3)   | Spectral Function<br>Typical Responsivity<br>I <sub>max</sub> | Phototropism eff <sub>320-500nm</sub><br>2 pA/μmol·m <sup>-2</sup> ·s <sup>-1</sup><br>1 mA |
| Input optics         | Cosine Diffuser 11 mm Ø                                       |   |
| <b>Miscellaneous</b> |   |   |
| Temperature range    | (5 - 40) °C   |   |
| Cable Length         | 2 m   |   |
| Plug Types           | -4  |   |

## Purchasing information

| <b>Article-Nr</b>     | <b>Modell</b>          | <b>Description</b>   |
|-----------------------|------------------------|--|
| <b>Product</b>        |                        |  |
| 15296072              | TP-4501 (-4 Connector) | Detector, Calibration Certificate                                    |
| <b>Re-calibration</b> |                        |  |
| 15300580              | K-Si-SR                | Calibration of relative spectral responsivity from 250 nm to 1100 nm |
| 15300465              | K-TP4501-I             | Recalibration with Calibration Certificate                           |

## Contact, Calibration, Service & Support

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- Calibrations & Re-Calibrations ([ISO/IEC 17025 Calibration Services](#), [factory calibration](#), [Calibration of Third-Party Products](#))
- Repairs & Updates
- OEM & Feasibility Consulting of Customized Solutions

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