THZ12D-3S-VP-D0
THz detector for power measurements up to 3 W.

**KEY FEATURES**

RELATIVE MEASUREMENTS FROM 0.1 TO 30 THZ
Broadband, room temperature operation, easier to use and less expensive than a Golay cell.

FLAT SPECTRAL RESPONSE
Get the best precision across the entire wavelength range.

MEASURE HIGHER POWERS
Up to 3 W of continuous power with the THZ12D model, the highest in our THz range of products.

LARGE APERTURE
Models range from 9 to 12 mm Ø aperture.

CALIBRATED AT 10.6 MM
THZ-D detectors are calibrated at a single wavelength (10.6 µm) and include wavelength correction data from 10.6 to 440 µm. They are used for relative measurements outside that range.

**COMPATIBLE STAND**
STAND-S-233

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**SPECIFICATIONS**

### MEASUREMENT CAPABILITIES

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum average power</td>
<td>3 W</td>
</tr>
<tr>
<td>Noise equivalent power(^1)</td>
<td>0.5 µW</td>
</tr>
<tr>
<td>Spectral range(^2)</td>
<td>10 - 3000 µm</td>
</tr>
<tr>
<td>Frequency</td>
<td>0.1 - 30 THz</td>
</tr>
<tr>
<td>Typical rise time(^3)</td>
<td>3 sec</td>
</tr>
<tr>
<td>Typical power sensitivity(^4)</td>
<td>200 mV/W</td>
</tr>
<tr>
<td>Power calibration uncertainty(^5)</td>
<td>±8.0 %</td>
</tr>
<tr>
<td>Repeatability</td>
<td>±0.5 %</td>
</tr>
<tr>
<td>Thermal drift</td>
<td>12 µW/°C</td>
</tr>
<tr>
<td>Minimum measurable power(^6)</td>
<td>50 - 100 µW</td>
</tr>
<tr>
<td>Minimum repetition rate(^7)</td>
<td>7 Hz</td>
</tr>
</tbody>
</table>

1. Nominal value. Actual value depends on electrical noise in the measurement system.
2. From 10 to 440 µm, spectrometer measurement with multiple laser references validation. From 440 to 600 µm, spectrometer measurement only. From 600 to 3000 µm, relative measurement only. This spectral range is subject to change.
3. With anticipation.
4. Into 100 kΩ load. Maximum output voltage = sensitivity x maximum power.
5. Including linearity with power.
6. Actual value depends on ambient conditions and the measurement system.
7. Minimum repetition rate for stable average power measurements.

### DAMAGE THRESHOLDS

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum average power density(^1)</td>
<td>30 W/cm²</td>
</tr>
<tr>
<td>Maximum energy density</td>
<td>1 J/cm²</td>
</tr>
</tbody>
</table>

1. At 1064 nm, 1 W CW.

### PHYSICAL CHARACTERISTICS

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aperture diameter</td>
<td>12 mm</td>
</tr>
<tr>
<td>Absorber</td>
<td>VP</td>
</tr>
<tr>
<td>Dimensions</td>
<td>73H x 73W x 28D mm</td>
</tr>
<tr>
<td>Weight</td>
<td>0.32 kg</td>
</tr>
</tbody>
</table>

---
THZ detector for power measurements up to 3 W.

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- **RELATIVE MEASUREMENTS FROM 0.1 TO 30 THZ**
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  - Get the best precision across the entire wavelength range.
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- **LARGE APERTURE**
  - Models range from 9 to 12 mm Ø aperture.
- **THZ-D detectors are calibrated at a single wavelength (10.6 µm)** and include wavelength correction data from 10.6 to 440 µm. They are used for relative measurements outside that range.

**SPECIFICATIONS**

- **MEASUREMENT CAPABILITIES**
  - Maximum average power: 3 W
  - Noise equivalent power: 1 µW
  - Spectral range: 2 - 3000 μm
  - Frequency: 0.1 - 30 THz
  - Typical rise time: 3 sec
  - Typical power sensitivity: 200 mV/W
  - Power calibration uncertainty: ±8.0%
  - Repeatability: ±0.5%
  - Thermal drift: 12 μW/°C
  - Minimum measurable power: 50 - 100 µW
  - Minimum repetition rate: 7 Hz

  1. Nominal value. Actual value depends on electrical noise in the measurement system.
  2. From 10 to 440 μm, spectrometer measurement with multiple laser references validation. From 440 to 600 μm, spectrometer measurement only. From 600 to 3000 μm, relative measurement only. This spectral range is subject to change.
  3. With anticipation.
  4. Into 100 kΩ load. Maximum output voltage = sensitivity x maximum power.
  5. Including linearity with power.
  6. Actual value depends on ambient conditions and the measurement system.
  7. Minimum repetition rate for stable average power measurements.

- **MAXIMUM AVERAGE POWER DENSITY**: 30 W/cm²
- **MAXIMUM ENERGY DENSITY**: 1 J/cm²

1. At 1064 nm, 1 W CW.

- **Aperture diameter**: 12 mm
- **Absorber**: VP
- **Dimensions**: 73H x 73W x 28D mm (80D mm with tube)
- **Weight**: 0.32 kg

**INTERESTED IN THIS PRODUCT?**

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