A lead selenide photodiode, available in two different cooling levels, provides good spectral response in the near to mid-IR.

If you need a single point detector to measure signals in the near to mid-IR spectral region, the solid state PbSe detector from HORIBA Scientific is an excellent choice. With high sensitivity (D*) and two options for ambient and thermoelectric cooling, responsivity extends from 1000 nm to 4500 nm. This is one of a number of single point detectors available from HORIBA Scientific. Contact us for further information.

Used in conjunction with optically optimized housings, these detectors integrate seamlessly with HORIBA’s extensive selection of monochromators. In addition, the SpectrAcq2 acquisition module allows for software integration with LabSpec, SynerJY, or LabVIEW. With all of the additional optical adapters available from HORIBA, a user can easily go from individual components to a complete spectroscopy solution.

Features and Benefits

- Wide spectral responsivity from 1000 nm to 4500 nm
- High sensitivity (D*~10^{-11})
- Compact ambient and TE detector housing

Accessories

Various accessories are available for powering the detectors, optically coupling detectors to HORIBA monochromators, and data acquisition.

- Power supply for TE cooled detector, DSS-15V-TEP
- Power supply for ambient, DSS-15VP
- Mirror-based housing, 1427C
- BNC cable, J30646
- SpectrAcq2 data acquisition module
- SMA fiber adapter, DSS-SMA
- Dual 1427C housing adapter, J23078370
- Dual detector housing, J23079050
- BNC switchbox for dual detectors, SWB-AB
Specifications

<table>
<thead>
<tr>
<th>Part number</th>
<th>DSS-PSE020A</th>
<th>DSS-PSE020T</th>
</tr>
</thead>
<tbody>
<tr>
<td>Detector type</td>
<td>2.0 mm x 2.0 mm lead selenide photodiode</td>
<td></td>
</tr>
<tr>
<td>Operating temperature (°C)</td>
<td>22°C ambient</td>
<td>-30°C TE cooled</td>
</tr>
<tr>
<td>Operating wavelength (µm)</td>
<td>1.0 – 4.5 µm</td>
<td>1.0 – 4.5 µm</td>
</tr>
<tr>
<td>Responsivity (V/W @ peak)</td>
<td>$10^6 / 10^5$</td>
<td>$2 \times 10^6 / 2 \times 10^5$</td>
</tr>
<tr>
<td>Noise (V/Hz$^{1/2}$)</td>
<td>$10^4 / 10^5$</td>
<td>$4 \times 10^5 / 4 \times 10^6$</td>
</tr>
<tr>
<td>NEP pk, (W/Hz$^{1/2}$)</td>
<td>$1.0 \times 10^{-10}$</td>
<td>$2 \times 10^{-11}$</td>
</tr>
<tr>
<td>Detectivity (D*)</td>
<td>$4 \times 10^{10}$</td>
<td>$1 \times 10^{11}$</td>
</tr>
<tr>
<td>Bandwidth (-3dB – Hz, typical)</td>
<td>5 – 10 kHz</td>
<td>5 – 10 kHz</td>
</tr>
</tbody>
</table>

Power requirements: ± 9 VDC to ± 15 VDC

Connections: BNC signal output. Shielded power cable terminated with a DB-9 connector directly couples the unit with the PS/TC-1 Low Noise Power Supply / Controller.

Mechanical Dimensions, Ambient and TE Housing

(Electrical Diagrams, Ambient and TE Cooled)

DB-9 Pin Out Diagrams, TE Cooled [Ambient]

1. Cooler (+) [No connect]  6. +V
2. Cooler (-) [No connect]  7. -V
3. Thermistor [No connect]  8. GND
5. No connect

info.sci@horiba.com  www.horiba.com/opticalbuildingblocks

HORIBA Scientific

Explore the future  Automotive Test Systems | Process & Environmental | Medical | Semiconductor | Scientific

USA: +1 732 494 8660  France: +33 (0)1 69 74 72 00  Germany: +49 (0)89 4623 17-0
UK: +44 (0)20 8204 8142  Italy: +39 2 5760 3050  Japan: +81 (0)3 6206 4721
China: +86 (0)21 6289 6060  Brazil: +55 (0)11 5545 1500  Other: +1 732 494 8660