

## DSS-G020

### Germanium Solid State Detector

ELEMENTAL ANALYSIS
FLUORESCENCE
GRATINGS & OEM SPECTROMETERS
OPTICAL COMPONENTS
FORENSICS
PARTICLE CHARACTERIZATION
RAMAN
SPECTROSCOPIC ELLIPSOMETRY
SPR IMAGING

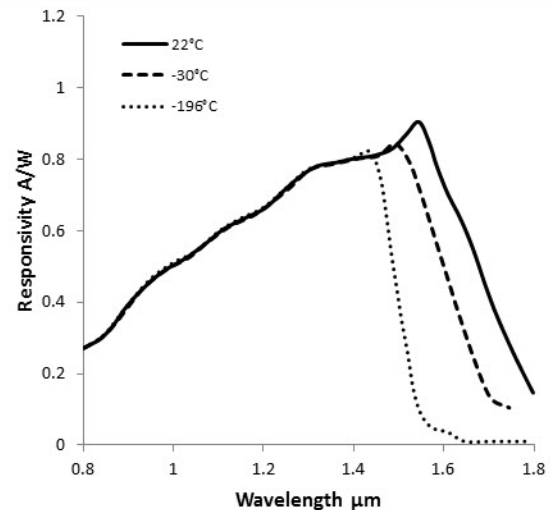
A germanium photodiode, available in three different cooling levels, provides good spectral response in the near-IR.

If you need a single point detector to measure signals in the NIR spectral region, the solid state Ge detector from HORIBA Scientific is an excellent choice. With high sensitivity ( $D^*$ ) and three options for ambient, thermoelectric, or liquid nitrogen cooling, responsivity extends from 800 nm to 1800 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 from OSD, 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 Building Blocks available from HORIBA, a user can easily go from individual components to a complete spectroscopy solution.

### Features and Benefits

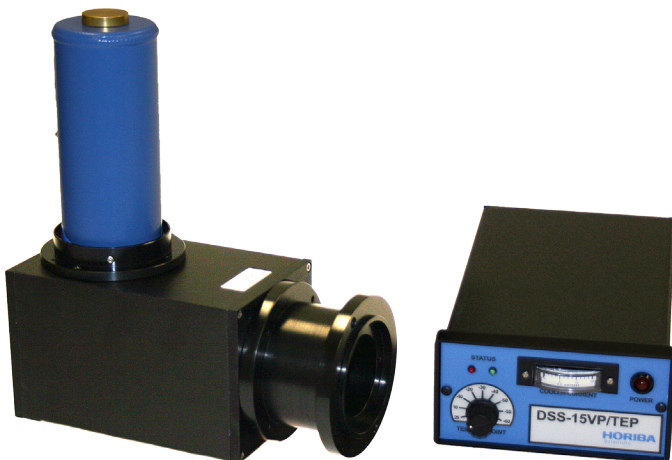
- Wide spectral responsivity from 800 nm to 1800 nm
- High sensitivity ( $D^* \sim 10^{14}$ )
- Compact ambient and TE detector housing
- Down-looking LN2 housing



### Accessories

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

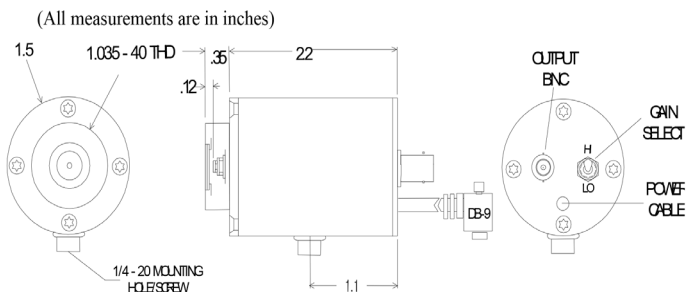
- Power supply for TE cooled detector, DSS-15V-TEP
- Power supply for ambient and LN2 detector, DSS-15VP
- Mirror-based housing, 1427C
- BNC cable, J30646
- SpectrAcq2 data acquisition module
- SMA fiber adapter, DSS-SMA
- Dual 1427C housing adapter, J23078370
- Dual detector housing, J23079050
- BNC switchbox for dual detectors, SWB-AB



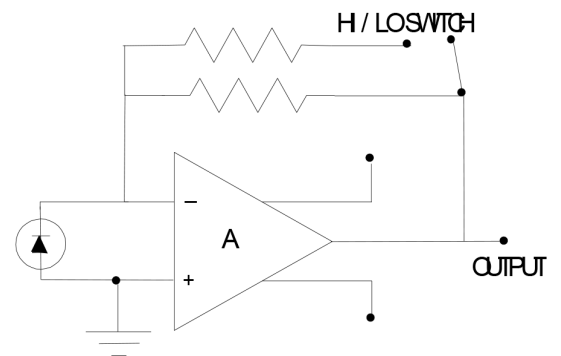
## Specifications

Part number	DSS-G020A	DSS-G020T	DSS-G020L
Detector type	2 mm diameter indium gallium arsenide photodiode		
Operating temperature (°C)	22°C ambient	-30°C TE cooled	-196°C LN2 cooled
Operating wavelength (µm)	0.8 – 1.8 µm	0.8 – 1.8 µm	0.8 – 1.5 µm
Responsivity (V/W @ peak)	0.9 x 10 <sup>7</sup> / 0.9 x 10 <sup>6</sup>	0.8 x 10 <sup>7</sup> / 0.8 x 10 <sup>6</sup>	0.8 A/W min, 0.9 A/W typ
Noise (V/Hz <sup>1/2</sup> )	3.5 x 10 <sup>-6</sup> / 0.3 x 10 <sup>-6</sup>	4.0 x 10 <sup>-7</sup> / 4 x 10 <sup>-8</sup>	
NEP, pk (W/Hz <sup>1/2</sup> )	< 4.5 x 10 <sup>-13</sup>	5.0 x 10 <sup>-14</sup>	< 2.5 x 10 <sup>-15</sup>
Detectivity (D*)	3.94 x 10 <sup>12</sup>	3.54 x 10 <sup>13</sup>	7.09 x 10 <sup>14</sup>
Bandwidth (-3dB – Hz, typical)	DC – 2 kHz	DC – 2 kHz	DC – 500 / 2000 Hz
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.		

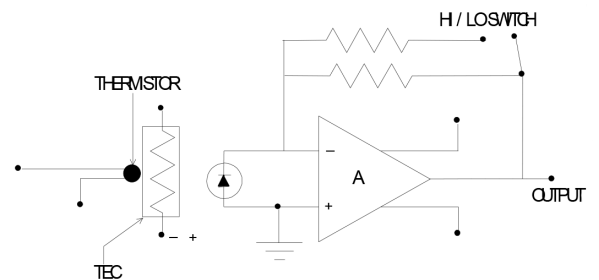
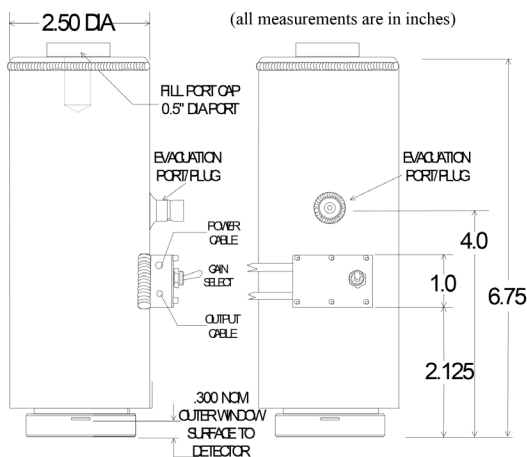
## Mechanical Dimensions, Ambient and TE Housing



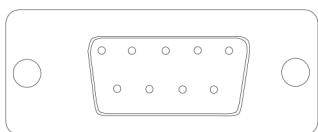
## Electrical Diagrams, Ambient/LN2 and TE Cooled



## Electrical Diagrams, LN2 Housing



## DB-9 Pin Out Diagrams, TE Cooled [Ambient/LN2]



- |                            |             |
|----------------------------|-------------|
| 1. Cooler (+) [No connect] | 6. +V       |
| 2. Cooler (-) [No connect] | 7. -V       |
| 3. Thermistor [No connect] | 8. GND      |
| 4. Thermistor [No connect] | 9. Case GND |
| 5. No connect              |             |



OPTICAL BUILDING BLOCKS



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