**PERFORMANCE DATA SHEET**

**PY55 Series** Single Element DLATGS is our premium performance Pyroelectric Detector from 1Hz to greater than 4kHz. State of the art manufacturing techniques are used resulting in high detectivity, fast response and reduced sensitivity to microphonics. These sensors are permanently poled and available in a variety of sealed transistor packages with a JFET source follower and a choice of load resistors, windows and custom filters. Broad band spectral sensitivity from the U.V. to 1,000 microns is limited in practice by the window selection.

**Applications**
- Gas Analysis
- Radiometric measurements
- High Speed Spectroscopy (FTIR)
- Laser Modulation Studies
- Interferometry

**Features**
- High detectivity from 1Hz to >4kHz
- Wide spectral range: 0.1 - >1,000 μm
- Permanently poled

**Typical Model Specifications**
(Standard TO-5 Package with 1 x 10^6 Ohms Load Resistor @ 1,000K)

<table>
<thead>
<tr>
<th>Model</th>
<th>PY55  -</th>
<th>1.0SR</th>
<th>1.5SR</th>
<th>2.0SR</th>
<th>2.5SR</th>
<th>3.0SR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Element Dimensions</td>
<td>mm</td>
<td>1.0 x 1.0</td>
<td>1.5 x 1.5</td>
<td>2.0 x 2.0</td>
<td>2.5 x 2.5</td>
<td>3.0 x 3.0</td>
</tr>
<tr>
<td>Responsivity @ 10 Hz</td>
<td>VW⁻¹</td>
<td>7600</td>
<td>3380</td>
<td>1900</td>
<td>1215</td>
<td>845</td>
</tr>
<tr>
<td>D* (10, 1)</td>
<td>cmHz¹²/2W⁻¹</td>
<td>1.2 x 10⁹</td>
<td>1.2 x 10⁹</td>
<td>1.1 x 10⁹</td>
<td>1.1 x 10⁹</td>
<td>1.05 x 10⁹</td>
</tr>
<tr>
<td>NEP (10, 1)</td>
<td>W</td>
<td>8.3 x 10⁻¹¹</td>
<td>1.2 x 10⁻¹⁰</td>
<td>1.8 x 10⁻¹⁰</td>
<td>2.3 x 10⁻¹⁰</td>
<td>2.9 x 10⁻¹⁰</td>
</tr>
<tr>
<td>Output Impedance</td>
<td>Ohms</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electrical Break Frequency</td>
<td>Hz</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thermal Time Constant</td>
<td>ms</td>
<td>&lt;50</td>
<td>&lt;50</td>
<td>&lt;50</td>
<td>&lt;50</td>
<td>&lt;50</td>
</tr>
<tr>
<td>Recommended Operating Temperature</td>
<td>°C</td>
<td>-20 to 50</td>
<td>-20 to 50</td>
<td>-20 to 50</td>
<td>-20 to 50</td>
<td>-20 to 50</td>
</tr>
</tbody>
</table>

**Window Transmission - Useful Range**

- 0.15
- 0.2
- 0.5
- 1
- 10
- 100

- Sapphire (Al₂O₃)
- Calcium Fluoride (Polycrystalline) (CaF₂)
- Potassium Bromide (KBr)
- Thallium Bromide Iodide (KRS-5)
- Cadmium Iodide (CdI₂)

**OPTIONS**
- Element Shape - Circular, Square
- Window - See Range
- Package - TO-5, TO-37, TO-8
- Filter - Custom Available
- Resistor - 1 x 10⁶ to 1 x 10⁸
- Cooling - 1 Stage Available

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88 Long Hill Cross Roads, Shelton, CT 06484  Tel.: (203) 926-4322  (800) 357-1357  FAX: (203) 926-1778