A distance detecting device should provide you with accurate and consistent readings under a variety of conditions and wavelengths. Whether you are dealing with low signals or high, warm weather or cold, distances near or far, your decision making depends on the speed and precision of the information you receive.

CMC’s new InGaAs Avalanche Photodiode (APD) Preamplifier Module supports designs that detect farther distances more accurately than other device of its kind. Plus, it is safe and practical, operating quietly and efficiently in multiple scenarios.

**Fast, accurate and practical all rolled into one receiver**
- High-density microcircuit combined with advanced optoelectronics
- No need for APD temperature compensation design work
- Nanosecond recovery from laser bursts without damage
- Ability to detect signal power in low nW
- Low NEP at high temperatures
- Compact design minimizing parasitic noise

**CMC is committed to:**
- Work closely with your engineering team throughout the project
- Develop a solution that is tailored to your design needs
- Take the time required to deliver a quality product

**FEATURES**
- **One receiver, two wavelengths**
  This eye-safe receiver works at both 1064 nm and 1570 nm
- **Sensitive enough to read low signals**
  Detects longer distances more quickly, accurately, and consistently
- **Fast overload recovery**
  Minimizes receiver damage and usage interruption from high laser bursts
- **Built-in thermoelectric cooler**
  Delivers reliable performance over a wide range of temperatures

**KEY APPLICATIONS**
- **Eye-safe laser range finding**
- **Airborne Lidar**
- **High-speed low-light level detection**
Dual Wavelength InGaAs Avalanche Photodiode Preamplifier Module

Take advantage of multiple capabilities as well as superior performance

How it works – Device block diagram

Electro-Optical Characteristics at $T_A = 25^\circ$C

<table>
<thead>
<tr>
<th>Parameter/Condition</th>
<th>Min.</th>
<th>Typ.</th>
<th>Max.</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Responsivity (R) $1570 \text{ nm}, M=10$</td>
<td>–</td>
<td>580</td>
<td>–</td>
<td>kV/W</td>
</tr>
<tr>
<td>Noise Equivalent Power (NEP) $1570 \text{ nm}, \text{Cooler OFF (Tcase = 25^\circ)}$</td>
<td>–</td>
<td>110</td>
<td>135</td>
<td>fW/\sqrt{Hz}</td>
</tr>
<tr>
<td>1570 nm, Cooler OFF (Tcase = 85\circ)</td>
<td>–</td>
<td>255</td>
<td>525</td>
<td>fW/\sqrt{Hz}</td>
</tr>
<tr>
<td>1570 nm, Cooler ON (Tcase = 85\circ)</td>
<td>–</td>
<td>155</td>
<td>280</td>
<td>fW/\sqrt{Hz}</td>
</tr>
<tr>
<td>Bandwidth, $f_{3dB}$</td>
<td>60</td>
<td>85</td>
<td>100</td>
<td>MHz</td>
</tr>
<tr>
<td>Storage Range, $T_{stag}$</td>
<td>-55</td>
<td>+125</td>
<td></td>
<td>^\circ C</td>
</tr>
<tr>
<td>Operating Range, $T_A$</td>
<td>-40</td>
<td>+85</td>
<td></td>
<td>^\circ C</td>
</tr>
</tbody>
</table>

Mechanical Specifications – Package Dimensions and Pinout

For more information, visit www.cmcelectronics.ca
or email us at opto@cmcelectronics.ca

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