### Features

- Large area (> 50 cm²) and small area (< 30 cm²) CIC sizes available
- Panel assembly material and processing qualified to low earth orbit (LEO) 66,060 cycles and geostationary (GEO) 15,550 cycles
- ESD survivability tested to ISO standard
- In-house thermal cycle chamber available for testing
- Laydown capability for both rigid and flexible substrates

### Power

<table>
<thead>
<tr>
<th></th>
<th>Improved Triple Junction (ITJ): GaInP₂/GaAs/Ge</th>
<th>Ultra Triple Junction (UTJ): GaInP₂/GaAs/Ge</th>
<th>NeXt Triple Junction (XTJ): GaInP₂/GaAs/Ge</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Power</strong> (28°C, Beginning Of Life)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Panel Area &gt; 2.5 m²</td>
<td>330 W/m²</td>
<td>350 W/m²</td>
<td>366 W/m²</td>
</tr>
<tr>
<td>Panel Area &lt; 2.5 m²</td>
<td>316 W/m²</td>
<td>330 W/m²</td>
<td>345 W/m²</td>
</tr>
<tr>
<td><strong>Mass (add-on to substrate)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 mil Ceria Doped Coverslide</td>
<td>1.76 kg/m² (5.5 mil thick cell)</td>
<td>1.76 kg/m² (5.5 mil thick cell)</td>
<td>1.76 kg/m² (5.5 mil thick cell)</td>
</tr>
<tr>
<td>6 mil Ceria Doped Coverslide</td>
<td>2.06 kg/m² (5.5 mil thick cell)</td>
<td>2.06 kg/m² (5.5 mil thick cell)</td>
<td>2.06 kg/m² (5.5 mil thick cell)</td>
</tr>
<tr>
<td><strong>Thermal Control</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Front: Ceria Doped Coverslide*</td>
<td>Absorptance &lt; 0.92 Emittance &gt; 0.84</td>
<td>Absorptance &lt; 0.92 Emittance &gt; 0.84</td>
<td>Absorptance &lt; 0.90 Emittance &gt; 0.84</td>
</tr>
<tr>
<td>Rear</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Magnetic Dipole Moment</strong></td>
<td>&lt; 0.01 Am²</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Reliability</strong></td>
<td>Demonstrated 0.999 for 20kW Array</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Spectrolab has demonstrated full scale environmental testing capability: vibroacoustic, thermal vacuum, thermal cycling.

* Lower absorptance values can be obtained using special coatings

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Specifications Subject to Change Without Notice

Revised 5/20/10
Space Solar Panels

Flight Hardware Heritage

| Panel Manufacturing Assembly: | Processes qualified, more than 1,500 Multi-Junction Solar Panels delivered for LEO, GEO and interplanetary missions |
| Mission Environments: | Low Earth Orbit: 15 Years  
Mid Earth Orbit: 10 Years  
Geosynchronous Orbit: 20 Years  
Planetary: Mars, Jupiter, Asteroid |
| Circuit Configuration: (As qualified on Aluminum and Composite Substrate Face-Sheets) | Series Connections, Wire Terminations:  
• Soldered (Standard, High Temperature)  
• Welded |
| Component Integration: | Interconnects:  
• Fatigue Resistant  
• Magnetic or Non-Magnetic  
Wiring:  
• Radiation Tolerant  
• Low Magnetic Moment  
Connectors:  
• Crimped  
• Flex Print  
• Subminiature Shell |
| Thermal Control: | Paint  
Second Surface Mirrors |
| Electrostatic Discharge: | Differential Voltage, Grouting, Conductively Coated Coverglass and Wiring, Equipotential Cell Laydown |
| Atomic Oxygen Protection: | Fully Grouted |

Intellectual Property

This product is protected by Spectrolab’s portfolio of patents including the following:

- 6,150,603  
- 6,255,580  
- 6,380,601  
- 7,119,271  
- 7,126,052