The Synapse BIUV scientific CCD camera is the ideal camera for low light level and fine spectra applications such as Raman spectroscopy. This series of cameras offers three different chip array formats to choose from with a peak quantum efficiency of 75%.

**Features and Benefits**
- Best QE for UV spectroscopy
- Deep thermoelectric cooling
- Ideal for low light level detection without etaloning
- Excellent linearity
- Single channel detector port extends wavelength range
- E2V Scientific Grade 1 CCD
- Lifetime vacuum warranty
- USB 2.0 Interface
- HORIBA SynerJY acquisition and analysis software
- LabVIEW VI’s and SDK available

**Primary Applications**
Primarily chosen for Raman and fine spectrum analysis, it is also well suited for studying weak spectral emissions.

- Raman
- Photoluminescence
- Absorption
- Transmission
- Reflectance
**Specifications**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CCD format</strong></td>
<td>512 x 512, back-illuminated, UV-coated, Scientific Grade 1</td>
</tr>
<tr>
<td><strong>Pixel size</strong></td>
<td>24 µm x 24 µm</td>
</tr>
<tr>
<td><strong>Image area</strong></td>
<td>12.3 mm x 12.3 mm, 100% fill factor</td>
</tr>
<tr>
<td><strong>Cooling system</strong></td>
<td>Four-stage thermoelectric cooling. Typical operating temperature -80°C, guaranteed to -75°C. External cooling option available (-95°C typical.)</td>
</tr>
<tr>
<td><strong>Typical readout noise</strong></td>
<td>20 kHz: 3.5 e⁻ rms</td>
</tr>
<tr>
<td></td>
<td>1 MHz: 15 e⁻ rms</td>
</tr>
<tr>
<td><strong>Maximum readout noise</strong></td>
<td>20 kHz: 6 e⁻ rms</td>
</tr>
<tr>
<td></td>
<td>1 MHz: 20 e⁻ rms</td>
</tr>
<tr>
<td><strong>Minimum pixel well capacity</strong></td>
<td>300 ke⁻</td>
</tr>
<tr>
<td><strong>Typical pixel well capacity</strong></td>
<td>350 ke⁻</td>
</tr>
<tr>
<td><strong>Typical register well capacity</strong></td>
<td>1000 ke⁻</td>
</tr>
<tr>
<td><strong>Typical dark current</strong></td>
<td>0.004 e⁻ /pixel/s</td>
</tr>
<tr>
<td><strong>Nonlinearity</strong></td>
<td>20 kHz: &lt;0.4%</td>
</tr>
<tr>
<td></td>
<td>1 MHz: &lt;1%</td>
</tr>
<tr>
<td><strong>Scan rates</strong></td>
<td>20 kHz and 1 MHz, software-selectable</td>
</tr>
<tr>
<td><strong>Software-selectable gains</strong></td>
<td>3 software-selectable gains</td>
</tr>
<tr>
<td><strong>Dynamic range</strong></td>
<td>16 bits</td>
</tr>
<tr>
<td><strong>Vertical shift rates</strong></td>
<td>36 µs, 9 µs</td>
</tr>
<tr>
<td><strong>Maximum spectral rate</strong></td>
<td>20 kHz: 18 Hz</td>
</tr>
<tr>
<td></td>
<td>1 MHz: 49 Hz</td>
</tr>
<tr>
<td><strong>Physical dimensions (L x W x H)</strong></td>
<td>7 x 4.5 x 4.5 inches</td>
</tr>
<tr>
<td><strong>Physical weight</strong></td>
<td>5.8 lbs</td>
</tr>
</tbody>
</table>

**Mechanical Dimensions**

![Mechanical Dimensions Diagram](image)