The Synapse FIVS scientific CCD camera is the ideal camera for a variety of spectroscopy applications. This series of cameras offers three different chip array formats to choose from with a peak quantum efficiency of 56%.

**Primary Applications**
Primarily chosen for broad spectrum analysis such as photoluminescence, it is also well suited for studying fine spectral features on a broad spectral background.

- Fluorescence
- Photoluminescence
- Absorption
- Transmission
- Reflectance
- Raman

**Features and Benefits**
- 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

**QE Curve, Synapse FIVS CCD**

Front illuminated visible sensor, -80°C
Three chip formats to choose from: 512x512, 2048x512, 1024x256
Specifications

<table>
<thead>
<tr>
<th>Feature</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCD format</td>
<td>512 x 512, front-illuminated, Scientific Grade 1</td>
</tr>
<tr>
<td>Pixel size</td>
<td>24 µm x 24 µm</td>
</tr>
<tr>
<td>Image area</td>
<td>12.3 mm x 12.3 mm, 100% fill factor</td>
</tr>
<tr>
<td>Cooling system</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>Typical readout noise</td>
<td>20 kHz: 3.5 e⁻ rms                                                  1 MHz: 20 e⁻ rms</td>
</tr>
<tr>
<td>Maximum readout noise</td>
<td>20 kHz: 6 e⁻ rms                                                   1 MHz: 25 e⁻ rms</td>
</tr>
<tr>
<td>Minimum pixel well capacity</td>
<td>300 ke⁻</td>
</tr>
<tr>
<td>Typical pixel well capacity</td>
<td>350 ke⁻</td>
</tr>
<tr>
<td>Typical register well capacity</td>
<td>1000 ke⁻</td>
</tr>
<tr>
<td>Typical dark current</td>
<td>0.002 e⁻/pixel/s</td>
</tr>
<tr>
<td>Nonlinearity</td>
<td>20 kHz: &lt;0.4%                                                       1 MHz: &lt;1%</td>
</tr>
<tr>
<td>Scan rates</td>
<td>20 kHz and 1 MHz, software-selectable</td>
</tr>
<tr>
<td>Software-selectable gains</td>
<td>3 software-selectable gains</td>
</tr>
<tr>
<td>Dynamic range</td>
<td>16 bits</td>
</tr>
<tr>
<td>Vertical shift rates</td>
<td>36 µs, 9 µs</td>
</tr>
<tr>
<td>Maximum spectral rate</td>
<td>20 kHz: 18 Hz                                                       1 MHz: 49 Hz</td>
</tr>
<tr>
<td>Physical dimensions (L x W x H)</td>
<td>7 x 4.5 x 4.5 inches</td>
</tr>
<tr>
<td>Physical weight</td>
<td>5.8 lbs</td>
</tr>
</tbody>
</table>

Mechanical Dimensions

![Mechanical Dimensions Diagram](image-url)