New ultra-high sensitivity CCD camera for emission microscopes is now available!

Hamamatsu now introduces the SI-CCD camera that uses a specially designed sensor and circuits with low-noise characteristics and sensitivity enhancement functions. This camera detects low-level emissions from minute patterns in LSI devices with both high sensitivity and high position accuracy, which drastically shortens the time needed to localize and identify emission points. Measurement data can be read out even during emission image acquisition, so the emission state can be monitored along integration time.

**Features**

- Easily installs in PHEMOS series and iPHEMOS series systems
- Signal enhancement function detects emissions in a much shorter time (about 1/10) than ordinary cooled CCD cameras
- Real-time readout allows observation of the emission state during integration of emission images
- Real-time image recording possible
- Emission image acquired by external trigger

![SI-CCD CAMERA]

Detection time slashed by 90 %

![SNR vs Exposure Time Graph]

**S/N**

- **SI-CCD CAMERA**
- **BT-CCD CAMERA**

**SNR / a.u.**

**Exposure time (s)**

1 0.1 0.01

0 1 10 100
Here are sensitivity comparisons between the SI-CCD camera and the C4880-59 (standard back thinned cooled CCD camera). The two upper graphs show a comparison of intensity profiles, along with images acquired after 10 second integrations at the same light level. The lower right graph shows an intensity profile obtained with the C4880-59 after a 100 second integration. You can see that the signal is enhanced but increasing background noise.

**SPECIFICATION**

<table>
<thead>
<tr>
<th>Type Name</th>
<th>C11231-01 (for PHEMOS)</th>
<th>C11231-02 (for iPHEMOS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cooling temperature</td>
<td>-70 °C (Peltier cooling method by water-cooled heat radiation)</td>
<td></td>
</tr>
<tr>
<td>Spectral Response</td>
<td>400 nm to 1100 nm</td>
<td></td>
</tr>
<tr>
<td>Effective number of pixels</td>
<td>1024 (H) × 1024 (V)</td>
<td></td>
</tr>
<tr>
<td>Cell size</td>
<td>13 μm(H) × 13 μm (V)</td>
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</tr>
<tr>
<td>Effective area</td>
<td>13.3 mm(H) × 13.3 mm (V)</td>
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<tr>
<td>Fastest readout speed</td>
<td>9.5 frames/s to 141 frames/s (Sub-array:124, Binning:4 × 4)</td>
<td></td>
</tr>
<tr>
<td>Binning</td>
<td>2 × 2, 4 × 4</td>
<td></td>
</tr>
</tbody>
</table>

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