CCD Arrays

Linear CCD & PDA (OEM & Retail)

Sygnature linear CCD & PDA family for Spectroscopy. OEM Linear detectors.

**Linear CCD sensor with UV coating:** (Spectral response 190-1100nm)

**Sony ILX-511B (2048 x 1) [14 x 200µm] L=28.7mm**
Toshiba TCD 1304AP (3648 x 1) [8 x 200µm] L=29.2mm
ADC dynamic range: 16 bit

**Linear CCD sensor - Back-thinned:** (Spectral response 190-1100nm)

**S9840 CCD (2048 x 14) [14 x 200µm] L=28.7mm**

Photodiode Arrays

High dynamic range photodiode arrays with spectral response from 200 to 1000nm.

**CMOS:**
- S8377-128 (128 x 1) [50 x 500µm] L=6.4mm
- S8378-256 (256 x 1) [25 x 500µm] L=6.4mm
- S8377-512 (512 x 1) [50 x 500µm] L=25.6mm
- S8378-1024 (1024 x 1) [25 x 500µm] L=25.6mm

**NMOS:**
- S3902-512 (512 x 1) [50 x 500µm] L=25.6mm
- S3903-1024 (1024 x 1) [25 x 500µm] L=25.6mm
- S3904-1024 (1024 x 1) [25 x 2500µm] L=25.6mm

ADC dynamic range: 16 bit

**TAOS photodiode arrays**

- TSLW1301 (128 x 1) [55.5 x 63.5 µm]
- TSLW1401

ADC dynamic range: 14 bit

**1D/2D Arrays (OEM Only)**

Imaging (high end - ultra-low light level) and Spectroscopy

Sony CCD sensor

TRUE USB-2 INTERFACE

**ICX-285**

<table>
<thead>
<tr>
<th>CCD</th>
<th>(1344x1024)</th>
<th>[6.4x6.4µm]</th>
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<tbody>
<tr>
<td>ADC</td>
<td>dynamic range: 18,000 e-</td>
<td>16 bit</td>
</tr>
<tr>
<td>Full well capacity:</td>
<td>(1x1 binning, 2x2, 3x3, 4x4)</td>
<td></td>
</tr>
<tr>
<td>Readout noise:</td>
<td>8 e- or better</td>
<td></td>
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</table>

Full frame acquisition for low light imaging applications (1X,2X,3X,4X - For more, call us)
S7031 Back-thinned CCD with 1-stage TE cooling. Various options in height: 1.5-3-6 mm

A TE Board is optional for stabilization in temperature.

2D CCD Arrays (OEM & Retail)

Synapse: High End CCD family for Spectroscopy and Imaging Spectroscopy.

E2V CCD sensors

| E2V CCD30 | 1024x256 | [26 µm sq] |
| E2V CCD42 | 2048x512 | [13.5 µm sq] |
| E2V CCD77 (512 x 512) | 24 µm sq |

TE Cooling: -70°C (203 K) @ Tc = +20°C
ADC dynamic range: 16 bit

The sophisticated and compact design of the Synapse detector contains all of the electronics necessary to read and control the CCD sensor. The detector’s high technology architecture is targeted for optimum performance and high-speed spectral/image acquisition and offers end users two different modes of acquisition selectable via software control:

- 20kHz Slow Scan Acquisition Mode
- 1MHz Fast Scan Acquisition Mode
- High Sensitivity & Low Noise
- Excellent Linearity
- Thermoelectric Cooling
- Hi-Speed USB-2
- Auxiliary Signal Input
- Built-in Shutter Driver
- Flexible Triggering

High Sensitivity & Low Noise: The Synapse CCD is the next generation in detection electronics, offering unparalleled sensitivity and extremely low noise. The low-noise amplifiers are located next to the CCD sensor to minimize any noise from the external environment.

Signal Linearity: The Synapse’s electronics are specifically designed to provide excellent signal linearity over the entire dynamic range. This allows for more accurate data and better results over a wide variety of signal levels. To ensure such high performance, each Synapse CCD is tested for linearity, full well capacity, and read noise values.

The OEM Division routinely adapts its spectrographs to solid state and other detectors chosen by the customer, as well as to customers’ interface requirements. Alternatively, we can supply the entire assembly, including the detector, accessories, and electronics that best suits the application. HORIBA Jobin Yvon is a leading manufacturer of detector assemblies for use in spectroscopy.

The OEM Division specializes in sales to original equipment manufacturers and government-funded projects. For one off spectroscopy detectors you should visit the HORIBA Jobin Yvon Optical Spectroscopy Pages.

Download brochure for Synapse
Other OEM Imaging CCD’s / Imaging CCD’s

For volume OEM applications, please contact us at oem@jobinyvon.net to discuss your specifications for Imaging or Spectroscopy applications.

- Sony ICX 414AL mounted on single electronics board
- USB
- Low Noise & High Dynamic Range
- UV to NIR
- Low Cost

<table>
<thead>
<tr>
<th>Sony ICX 414AL</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensor Architecture</td>
<td>Interline</td>
</tr>
<tr>
<td>Imaging Area</td>
<td>7.48 mm x 6.15 mm</td>
</tr>
<tr>
<td>Pixels</td>
<td>659 x 494</td>
</tr>
<tr>
<td>Pixel Size</td>
<td>10 µm square</td>
</tr>
<tr>
<td>Measured Dynamic Range</td>
<td>&gt; 70dB (11-12 bits)</td>
</tr>
<tr>
<td>Measured Full Well Capacity 2x2 Binning</td>
<td>47384 e- typical</td>
</tr>
</tbody>
</table>

OEM Imaging Board - We can design and produce various compact electronics packages for your low level light measurements for volume applications.

Click here to see more about CCD, PDA detector definitions.