PixelCam™
OEM Multispectral Cameras

Portable OEM multispectral video cameras

PixelCam multispectral cameras provide live imaging of 3-9 spectral bands at video rates. Simultaneous multi-channel “snapshot” acquisition delivers rich real-time data without scene change or pixel shift. Custom dichroic filter arrays are integrated into the focal plane array at wafer-level to create robust linear and area sensors that extract high-contrast spectral information at specific visible and infrared wavelengths. This breakthrough technology enables easy integration into handheld, mobile and aerial cameras – all with the same frame rate, size, weight, and power consumption as monochrome cameras.

PixelCam cameras are fabricated to user-defined wavelengths. The unique combination of high-speed multi-band imaging and small form factor supports a variety of dedicated applications including agriculture, biomedical, machine vision, surveillance & authentication, and unmanned systems. Customized OEM multispectral camera modules are engineered from the wafer-level to deliver scalable volume production and easy integration into handheld and portable devices. Standard PixelCam camera modules are available for 3- and 4-band SWIR (Short Wave Infrared), delivering intuitive colorized infrared imaging.
### Spectral response

<table>
<thead>
<tr>
<th></th>
<th>VIS-NIR</th>
<th>VIS-SWIR</th>
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</thead>
<tbody>
<tr>
<td>Spectral response</td>
<td>400-1000nm (VIS+NIR)</td>
<td>500-1700nm (VIS+NIR+SWIR)</td>
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<tr>
<td>Spectral bands (user-defined)</td>
<td>Nominal example, 4 bands: Blue (~400-500nm) Green (~500-600nm) Red (~600-700nm) NIR (~700-1000nm)</td>
<td>Nominal example, 4 bands: 900nm CWL, 400nm FWHM 1200nm CWL, 100nm FWHM 1400nm CWL, 100nm FWHM 1650nm CWL, 100nm FWHM</td>
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<tr>
<td>Sensor</td>
<td>Scientific CCD, silicon 512 x 512 px, 24µm pixel pitch</td>
<td>Solid state InGaAs 640 x 512 px, 15µm pixel pitch</td>
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<tr>
<td>Active area</td>
<td>12.3mm H x 12.3mm V</td>
<td>9.6 x 7.68mm</td>
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<tr>
<td>Digital output</td>
<td>USB 2.0, 16 bit</td>
<td>CameraLink, 14 bit</td>
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</tbody>
</table>

### Spectral response

- **PixelCam VIS-NIR**
- **PixelCam VIS-SWIR**

### Benefits
- Simultaneous multi-band imaging
- Custom VIS-NIR-SWIR spectral bands
- Portable size, weight & power consumption
- 30 frames/second snapshot acquisition
- Robust, high reliability, scalable production

### OEM Customization
- Application-specific spectral bands
- Custom pixel-scale mosaic patterning
- Sensor / camera / housing options
- Mechanical & environmental requirements
- Proof of concept prototypes to high volume production

### Applications
- Aerial mapping
- Biomedical imaging
- Machine vision
- Product screening
- Remote sensing
- Surveillance & authentication
- Unmanned systems
- Water quality measurement

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