Allied Vision’s Goldeye SWIR cameras are designed to fulfill the highest quality standards. Every component in the camera was carefully selected to provide a robust vision solution. A small form factor and multiple mounting options let the camera fit easily into compact system designs. In addition, standardized interfaces (GigE Vision including PoE or Camera Link) and comprehensive I/O control options simplify the connection to your software solution and the synchronization with other system components.

These two new models incorporate innovative Sony SenSWIR sensors which have a wide waveband from 400 nm to 1700 nm allowing imaging in both visible and SWIR spectrums. The integrated single-stage sensor cooling (TEC1) and several on-board image correction features are your key factors to see more beyond the visible with outstanding image quality.

<table>
<thead>
<tr>
<th>New Models</th>
<th>Sensor Model</th>
<th>Resolution</th>
<th>Frame Rate</th>
<th>Pixel Size</th>
<th>Optical Format</th>
<th>Cooling Power</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goldeye G/CL-030 TEC1</td>
<td>Sony IMX991 SenSWIR</td>
<td>656 x 520</td>
<td>234 fps</td>
<td>5 µm</td>
<td>Type 1/4</td>
<td>max. ΔT=25 K</td>
<td>&lt; 344 g</td>
</tr>
<tr>
<td>Goldeye G/CL-130 TEC1</td>
<td>Sony IMX990 SenSWIR</td>
<td>1280 x 1024</td>
<td>94 fps</td>
<td>5 µm</td>
<td>Type 1/2</td>
<td>max. ΔT=25 K</td>
<td>&lt; 344 g</td>
</tr>
</tbody>
</table>

**Smart Features**
- Multiple acquisition modes: SingleFrame, MultiFrame, Continuous, or RecorderMode
- Control of up to 8 ROIs for advanced spectral band selection and frame rate optimization
- High analog gain mode to increase sensitivity
- Built-in image correction for optimized image quality:
  - Non-uniformity correction with automatic adaption
  - Defect pixel correction
  - Background correction
- Look-up tables to increase contrast
- User sets for simplified camera setup
- Digital binning to increase sensitivity
- Auto Gain & Contrast

**Camera Highlights**
- High visible & SWIR sensitivity
- Camera Link or GigE Vision interface
- Comprehensive I/O control options
- Automated on-board image correction
- Stabilized sensor cooling, fan-less design
- Extended operating temperature range
Operating Conditions

<table>
<thead>
<tr>
<th>Power requirements</th>
<th>10.8 to 30 VDC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power consumption</td>
<td>&lt; 11.4 W with TEC1 enabled</td>
</tr>
<tr>
<td>Operating temperature</td>
<td>-20 °C to +55 °C (case temperature)</td>
</tr>
<tr>
<td>Storage temperature</td>
<td>-30 °C to +70 °C (ambient)</td>
</tr>
<tr>
<td>Regulations</td>
<td>CE, RoHS, FCC Class B, CAN ICES-3 (B)</td>
</tr>
<tr>
<td>Pixel operability</td>
<td>&gt; 99.5 %</td>
</tr>
</tbody>
</table>

Applications

Goldeye cameras with Sony SenSWIR InGaAs sensors enable you to see further into the infrared spectral range than classic CCD/CMOS cameras. Due to the sensor’s high quantum efficiency between 400 to 1700 nm many SWIR application fields can benefit from the visible light sensitivity by enabling single camera solutions with lower system costs. In addition, the 5 µm pixel size enables higher inspection precision.

Advanced features like Ultra Short Exposure mode enable exposure times down to 3 µs to inspect fast moving objects, and via the Multiple Regions of Interest feature dedicated spectral bands can be selected to speed up processes in push-broom based spectral imaging applications.

Semiconductor / Solar Cell inspection

At wavelengths above 1100 nm silicon becomes transparent. Thus, SWIR cameras are perfect for analyzing metallization errors on the backside of wafers.

In addition, light emitted by silicon has a peak at 1150 nm. Therefore, luminescence imaging helps to identify non-uniformities in solar cells by forcing it to emit light.

Hyperspectral Imaging

Each inorganic material has a different chemical composition and crystalline structure resulting in an unique spectral response corresponding to its specific light absorption characteristics.

Hyperspectral Imaging combines digital imaging with spectroscopy to obtain detailed information across multiple ranges of the electromagnetic spectrum. Popular application fields include recycling & plastic sorting and geology & mineral inspection.

Further Applications

- Agriculture such as airborne remote sensing
- Food inspection
- Moisture detection
- Laser beam profiling
- Print industry, for example banknote inspection
- Glass production
- Scientific and medical including hyperspectral imaging, microscopy, and optical coherence tomography
- Vision enhancement and many more...