Imagine the invisible

Bobcat-640-GigE
High resolution small form factor InGaAs camera

Smallest SWIR GigE Vision camera with low noise and dark current

The ultra-compact Bobcat-640-GigE meets machine vision system designers who need high sensitivity in the SWIR range for specialized quality inspection and high temperature process control.

The industry-standard GigE Vision interface and small form factor reduces cost and increases the ease of integration. Furthermore the pixel pitch of 20 µm makes the Bobcat-640-GigE compatible with a broader range of C-mount lenses and other lower-cost lenses.

The Bobcat-640-GigE comes as a complete camera with on-board image processing and Thermo Electric cooling for low dark current and optimized noise performance (90e-), all resulting in superior image quality. A VisNIR option extends the wavelength into the visible realm for best sensitivity in low-light applications.

The Bobcat-640-GigE reaches high frame rates of 100 Hz in full resolution of 640x512. In windowing mode the frame rate can be further increased.

Benefits & Features
- On-board image processing
- High Operating Temperature
- Smallest complete SWIR GigE camera
- Standard GigE Vision for ease of integration
- Easy to export with frame rates up to 100 Hz
- Low noise and low dark current for excellent image quality

Applications
- Waste sorting
- Food inspection
- Failure analysis
- Semiconductor inspection
- Thermal imaging of hot objects (300°C to 800°C range)

Designed for use in

- Quality inspection of food: visible vs. SWIR
- Thermal imaging of hot objects
- Fluid level monitoring

Preliminary
### Specifications

#### Camera Specifications

**Bobcat-640-GigE**

- **Lens (included)**: 25 mm
- **Focal length**: 25 mm
- **Optical interface**: C-mount (broad selection of lenses available)

#### Imaging performance

- **Frame rate**: 100 Hz
- **Window of interest**: Minimum size 32 x 4
- **Integration type**: Snapshot
- **Exposure time range**: 1 µs - 40 ms
- **Noise**: 90 e-
- **Sensitivity**: High gain: 20 µV/e-
  - Low gain: 1.6 µV/e-
- **Dark current**: 1.3 x 10^6 e-/s
- **Readout mode**: Integrate Then Read (ITR)
- **Integrate While Read (IWR)**
- **Onboard image processing**: User-configurable single NUC Auto gain and auto level
- **A to D conversion resolution**: 14 bit

#### Interfaces

- **Camera control**: GigE Vision
- **Image acquisition**: GigE Vision or Xeneth API/SDK
- **Trigger**: Trigger In or Out (configurable)

#### Power requirements

- **Power consumption**: +/- 4 W (without TEC)
- **Power supply**: 12 V or Power over Ethernet (PoE)

#### Physical characteristics

- **Ambient operating temperature**: -40°C to 70°C
- **Dimensions**: 55 W x 55 H x 85 L mm³
- **Weight camera head**: < 150 g (lens not included)

#### Product selector guide

<table>
<thead>
<tr>
<th>Part number</th>
<th>Interface</th>
<th>Frame rate</th>
<th>VisNIR</th>
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<tbody>
<tr>
<td>XEN-000139</td>
<td>GigE Vision</td>
<td>100 Hz</td>
<td>Yes</td>
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<tr>
<td>XEN-000298</td>
<td></td>
<td></td>
<td>No</td>
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</tbody>
</table>

#### Array specifications

**Bobcat-640-GigE**

- **Array type**: InGaAs
- **Spectral band**: 0.9 µm to 1.7 µm
  - Optional 0.4 µm to 1.7 µm
- **# Pixels**: 640 x 512
- **Pixel pitch**: 20 µm
- **Array cooling**: TE1 cooled
- **Gain settings**: High gain: 6.7 IF
  - Low gain: 85 IF
- **Pixel operability**: > 99%

### Outputs

- **Network**: Gigabit Ethernet
- **Software**:
  - Xeneth advanced
  - Xeneth SDK (optional)

### Stock 3.0

ISO 9001:2008 certified

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