

Imagine the invisible

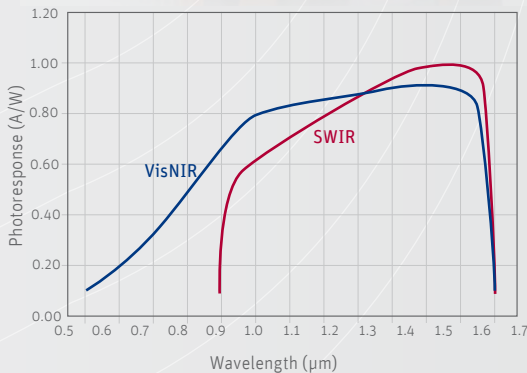
Industrial

Bobcat-640-CL

High resolution small form factor InGaAs camera



Smallest SWIR CameraLink camera with low noise and dark current



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

The Bobcat-640-CL is perfectly suited for high speed imaging at full 640x512 resolution with high frame rates up to 100 Hz. The camera comes with an industry-standard CameraLink interface for data transfer at full frame rate. In windowing mode the frame rate can even be further increased.

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

The pixel pitch of 20 µm makes the Bobcat-640-CL compatible with a broader range of C-mount lenses and other lower-cost lenses.

Designed for use in



Moisture detection in paper: visible vs. SWIR

Pharmaceutical inspection: visible vs. SWIR

Applications

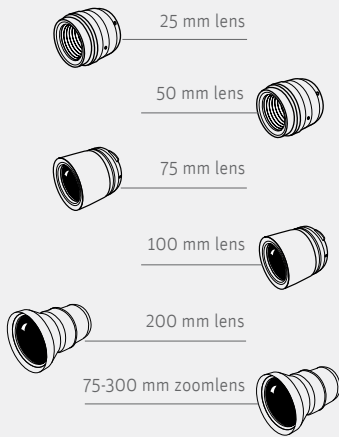
- Waste sorting
- Food inspection
- Failure analysis
- Semiconductor inspection
- Thermal imaging of hot objects (> 300°C)

Benefits & Features

- Made in Europe
- On-board image processing
- High Operating Temperature range
- Frame rates of 100 Hz in full resolution
- Smallest complete SWIR CameraLink camera
- Low noise and low dark current for excellent image quality
- Compliant with National Instruments and Euresys framegrabbers

Broad range of accessories available to simplify your inspection

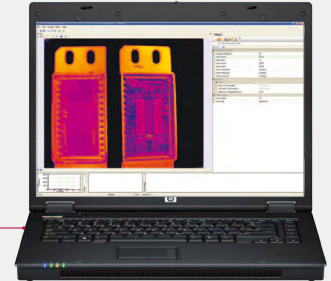
Lens & filter options



Inputs



Software



- Xeneth advanced
- Xeneth SDK (optional)

Outputs

Specifications

Camera specifications	Bobcat-640-CL
Lens	
Focal length	Broad selection of lenses available
Optical interface	C-mount
Imaging performance	
Frame rate	100 Hz
Window of interest	Minimum size 32 x 4
Integration type	Snapshot
Exposure time range	1 μ s - 40 ms in high gain mode
Noise*	High gain: 120 e- Low gain: 400 e-
Gain	High gain: 1.28 e-/ADU Low gain: 16.2 e-/ADU
Onboard image processing	Image correction (TrueNUC for high gain and low gain), auto gain, auto exposure, histogram equalization, trigger possibilities
A to D conversion resolution	14 bit
Operating mode	
Self-starting	Yes
Interfaces	
Camera control	CameraLink
Image acquisition	CameraLink or Xeneth API/SDK
Trigger	Trigger In or Out (configurable)
Power requirements	
Power consumption*	+/- 2.8 W (without TEC)
Power supply	12 V
Physical characteristics	
Shock	40 G, 11 ms halfsine profile, according to MIL-STD810G
Vibration	5 G, (20 Hz to 2000 Hz), according to MIL-STD883J
Operating case temperature	-40 °C to 70 °C (industrial components)
Storage temperature	-45 °C to 85 °C (industrial components)
Dimensions	55 W x 55 H x 72 L mm (without lens)
Weight camera head	+/- 285 g (lens not included)

* Typical values

Array specifications	Bobcat-640-CL
Sensor type	InGaAs Focal Plane Array (FPA) ROIC with CTIA** topology
Spectral band	0.9 to 1.7 μ m Optional 0.4 to 1.7 μ m (VisNIR)
# pixels	640 x 512
Pixel pitch	20 μ m
Readout mode	Integrate Then Read (ITR) Integrate While Read (IWR)
Quantum efficiency	80 % @ 1.6 μ m (SWIR) 85 % @ 0.95 μ m (VisNIR)
ROIC noise*	High gain: 60 e-; low gain: 400 e-
Dark current*	0.8 x 10 ⁶ e-/s
Integration capacitor	High gain: 6.7 fF; low gain: 85 fF
Array cooling	TE1- stabilized
Pixel operability	> 99 %

** Capacitor TransImpedance Amplifier

Product selector guide

Part number	Interface	Frame rate	VisNIR
XEN-000140	CameraLink	100 Hz	Yes
XEN-000297			No