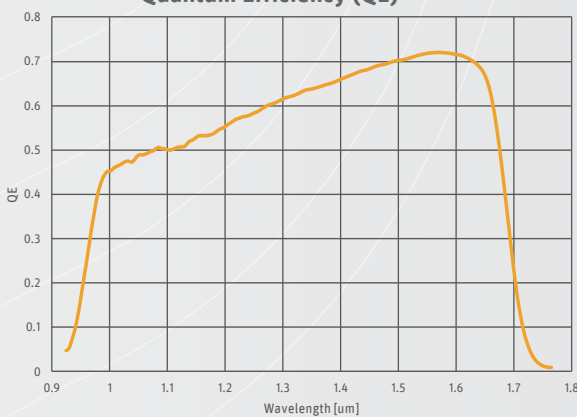# Bobcat-GigE Scientific series

Small form factor SWIR InGaAs camera

Low noise and dark current with fast data transfer over GigE Vision

Quantum Efficiency (QE)

*QE at 306 K sensor temperature

With superior image quality, the Bobcat-GigE Scientific is available as a complete digital infrared camera system with on-board image processing. The cameras comes in two versions:

- Bobcat-320-GigE Scientific with 320 x 256 resolution

- Bobcat-640-GigE scientific with 640 x 512 resolution

The Bobcat-GigE comes with an industry-standard GigE Vision interface which makes it much easier to integrate in your own set-up.

You can look through glass with the Bobcat-GigE SWIR camera, so standard C-Mount lenses and protective camera housings can be used. This makes the camera affordable for a wide variety of R&D applications.
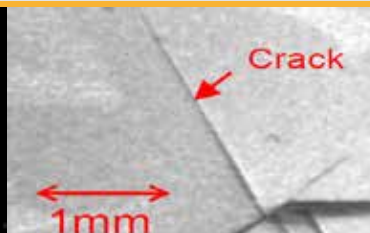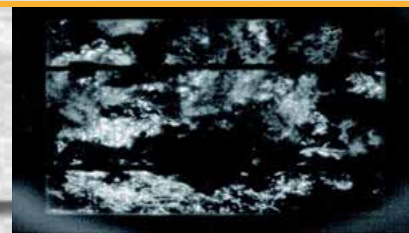
Designed for use in

⊩ Wafer & Die inspection

⊩ Silicon ingot and brick inspection

⊩ Solar cell crack inspection

⊩ Solar cell inspection

Applications

- Semiconductor inspection
- Adaptive Optics / Wavefront Sensing
- Fiber optic alignment
- Fiber optic device inspection
- Art, painting inspection
- Laser analysis
- Solar cell inspection

Benefits & Features

- Small form factor with GigE interface
- On-board image processing
- Wide operating temperature range
- High sensitivity and excellent image quality
- Flexible programming in an open architecture

Broad range of accessories available to simplify your research

▷ **SWIR lenses available**
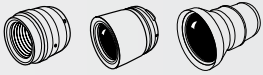
> **Discover our Lens Selector Guide**
> **www.xenics.com/LSG**

▷ **Also included:**
- Power Supply
- Trigger cable
- Ethernet Cable(GigE) in transit case

▷ **Inputs**

Trigger in or out

Power 12 V

Gigabit Ethernet

▷ **Outputs**

▷ **Software**

- Xeneth advanced
- Xeneth SDK
- Xeneth LabVIEW SDK (optional)

▷ Specifications

Camera specifications	Bobcat-320-GigE (100 Hz)	Bobcat-320-GigE (400 Hz)	Bobcat-640-GigE
Lens			
Focal length	Broad selection of SWIR lenses available (optionally): focal lengths 8 mm, 12.5 mm, 16 mm, 25 mm, 35 mm, 50 mm, 75 mm, 100 mm or 200 mm *		
Optical interface	C-mount		
Imaging performance			
Frame rate	100 Hz	400 Hz	100 Hz
Window of interest	NA	Minimum size 32 x 4	
Integration type	Snapshot		
Exposure time range	1 µs - 40 ms		1 µs - 40 ms in high gain mode**
Noise***	120 e-		High gain: 120 e- Low gain: 400 e-
Readout mode	Integrate Then Read (ITR)		Integrate Then Read (ITR) Integrate While Read (IWR)
Onboard image processing	4 Fixed Non Uniformity Calibrations (NUC) for fixed exposure time can be uploaded, auto gain		
A to D conversion resolution	14 bit		
Control & Data			
Camera control	GigE Vision		
Image acquisition	GigE Vision		
Trigger	Trigger In or Out (configurable)		
Electrical specifications			
Power consumption***	+/- 4 W (without TEC)		
Power supply	12 V		
Environmental 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 82 L mm (without lens)		
Weight camera head	+/- 334 g (lens not included)		

Array specifications	Bobcat-320-GigE	Bobcat-640-GigE
Sensor type	InGaAs Focal Plane Array (FPA) ROIC with CTIA**** topology	
Spectral band	0.9 to 1.7 µm	0.9 to 1.7 µm Optional 0.4 to 1.7 µm (VisNIR)
# pixels	320 x 256	640 x 512
Pixel pitch	20 µm	
Quantum efficiency	Peak value +/- 80 %	
ROIC noise**	High gain: 60 e-	High gain: 60 e-; low gain: 400 e-
Dark current	0.19×10^6 e-/s or 30 fA at 200 mV bias at 288 K	
Gain (Full well sizes)	100 Ke-	High gain: 60 Ke- Low gain: 900 Ke-
Array cooling	TE1-stabilized	
Pixel operability	> 99 %	
Detector size	6.4 mm x 5.12 mm (0.25" x 0.2")	12.8 mm x 10.24 mm (0.5" x 0.4")
Image diagonal	8.2 mm (0.32")	16.4 mm (0.64")

**** Capacitor TransImpedance Amplifier

▷ Product selector guide

Part number	Model	Interface	Frame rate	VisNIR
XEN-000296	Bobcat-640-GigE			No
XEN-000099	Bobcat-640-GigE		100 Hz	Yes
XEN-000621	Bobcat-320-GigE (100Hz)	GigE Vision		No
XEN-000622	Bobcat-320-GigE (400Hz)		400 Hz	No

*   SWIR lenses in the 900 - 1700 nm range
**   Standard calibration packs not valid under 100 µs
*** Typical values

www.xenics.com

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Xenics
Infrared Solutions

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