



Scientific



# Onca-MWIR-InSb

Stable measurements  
with thermal imaging

Imagine the invisible

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Infrared Solutions

# High-detectivity and high-uniformity Onca-MWIR-InSb for accurate analysis

The Onca-MWIR-InSb camera is an affordable midwave infrared imaging camera that is perfect for thermal imaging applications where performance is critical.

## High quality, high flexibility

The Onca-MWIR-InSb uses advanced real-time image correction and is equipped with a state of the art 2D InSb array with 320 x 256 or 640 x 512 pixel resolution. The Onca-MWIR-InSb camera offers 14-bit images at various frame rates. Two speed versions are available: a standard video rate version and a high speed version. All camera functions can be customized and all settings are stored in nonvolatile memory to enable optimized use. The Onca-MWIR-InSb is optimized for highly stable stand alone and PC-driven thermal imaging and thermography applications. Camera control and image acquisition are possible according to two standards: CameraLink and GigE.

## Advantages

- High image resolution
- Multi-spectral imaging
- Highly sensitive imaging performance
- High flexibility in use

## Designed for use in

- R&D (MWIR range)
- Thermography
- Non-destructive testing
- Industrial process monitoring

## Benefits & Features

### High definition images

640 x 512 pixels for high image quality.

### Extended coverage for the midwave range (MWIR)

Total wavelength area of 1 to 5  $\mu\text{m}$  supporting also all-weather and night vision applications.

### Filter Wheel

Up to 5 filters can be added to the filter wheel in order to perform multi spectral measurements.

### Ultimate dynamic range

You can view hot and cold spots in one sequence using super framing mode which increases the dynamic range.

### Window of Interest

Increase frame rate and reduce overhead for high speed process monitoring.

### Performance optimization

Easy and continuous access to control parameters such as integration time and frame rate.

### Thermal imaging

Radiometric calibrations are available to measure temperatures of objects with utmost accuracy.

### Comprehensive thermal analysis

Interface with Thermography Studio, most popular recording and analysis tool for dynamic events.

### CameraLink and full frame rate for high speed imaging

Export real time more than 100 fps.

### GigE Vision-compatible

More than 100 images per second according to GigE Vision standard.





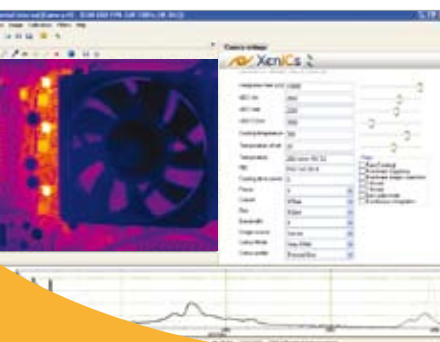
Thermal imaging: cold cup



Medical application: veins



Thermal imaging: electronics circuit



Array Specifications	Onca-MWIR-InSb-320	Onca-MWIR-InSb-640
Array type	InSb	InSb
Spectral band	3.6 to 4.9 $\mu\text{m}$ (optional: 1.0 - 5.0 $\mu\text{m}$ )	3.6 to 4.9 $\mu\text{m}$ (optional: 1.0 - 5.0 $\mu\text{m}$ )
# Pixels	320 x 256	640 x 512
Pixels pitch	30 $\mu\text{m}$	15 $\mu\text{m}$
Array cooling	Stirling cooled	Stirling cooled
Sensitivity (NETD)	< 17 mK	< 20 mK
Pixel operability	> 99.5 %	> 99.5 %
Cold stop F number	f/3.0	f/3.0

Camera Specifications	Onca-MWIR-InSb-320	Onca-MWIR-InSb-640
<b>Lens (included)</b>		
Focal length	25 mm	
Optical interface	Bayonet	
<b>Imaging performance</b>		
Frame rate: Video rate	60 Hz	30 Hz
High speed	488 Hz	120 Hz
Window of interest	32 x 32	16 x 4
Integration type	Snapshot	
Exposure time range	>1 $\mu\text{s}$ , adjustable to full range	
A to D conversion resolution	14 bit	
<b>Interfaces</b>		
Camera control	GigE Serial channel CameraLink	
Image acquisition	GigE: 14 bit full frame rate CameraLink: 14 bit full frame rate Analog: PAL or NTSC	
Trigger	Trigger in and out; LVCMOS	
Graphical User Interface (GUI)	Xeneth Advanced, Xeneth Radiometric, Thermography Studio	
<b>Power requirements</b>		
Power consumption	< 50 Watt at room temperature	
Power supply	24 V	
<b>Physical characteristics</b>		
Camera cooling	Forced convection cooling	
Ambient operating temperature	0 to 50 $^{\circ}\text{C}$	
Humidity	Non-condensing	
Dimensions	250 L x 170 W x 190 H mm	
Weight camera head	5 kg (Lens not included)	
<b>Hardware specifications</b>		
Filter wheel options	Start – stop mode or Continuous mode (max 15 frames/sec)	
# Filters	Up to 5 filters, 25.4 mm diameter, 1.0 mm thickness	
GPS time stamp	Can receive GPS data from Accutime Trimble Gold GPS receiver	

### Applicable OS: Windows 2000 (SP4), XP Pro (SP2), VISTA (SP1)

Xeneth Advanced	Xeneth radiometric
<ul style="list-style-type: none"> <li>Image live view</li> <li>Store digital Pictures / Movies</li> <li>Image histogram</li> <li>Line profiles, Spot meters, Time profiles</li> </ul>	Xeneth Advanced features + thermography
<ul style="list-style-type: none"> <li>Black hot / White hot</li> <li>False color mode with various color palettes</li> </ul>	<b>Thermography studio</b>
Advanced image processing features Including Filter wheel control, Superframing, ...	Analysis and report-generating software of real-time and static images

A dynamic link library (DLL) to communicate with the driver has been designed for flexible software development. A well-documented API with sample code in C, Visual Basic and Delphi is supplied, as well as a Linux SDK. Labview device drivers and a sample program (executable) are also available.

## Product Selector Guide

Onca-MWIR-InSb Part number	# Pixels	Wavelength range	Frame rate (Hz)	Thermography option
ON03GMI060	320 x 256	3.6 to 4.9 $\mu\text{m}$	60 Hz	Yes
ON03GMI488	320 x 256	3.6 to 4.9 $\mu\text{m}$	488 Hz	Yes
ON03GMB060	320 x 256	1.0 to 5.0 $\mu\text{m}$	60 Hz	No
ON03GMB488	320 x 256	1.0 to 5.0 $\mu\text{m}$	488 Hz	No
ON06GMI030	640 x 512	3.6 to 4.9 $\mu\text{m}$	30 Hz	Yes
ON06GMI120	640 x 512	3.6 to 4.9 $\mu\text{m}$	120 Hz	Yes
ON06GMB030	640 x 512	1.0 to 5.0 $\mu\text{m}$	30 Hz	No
ON06GMB120	640 x 512	1.0 to 5.0 $\mu\text{m}$	120 Hz	No

## Accessories

Lenses Part number	Focal Lengths	Optional	Available on following cameras
XC508-307	Asio 7 mm	✓	ON03GMI060, ON03GMI488, ON06GMI030, ON06GMI120
XC508-303	Asio 13 mm	✓	
XC301-302	Asio 25 mm	Included	
XC508-302	Asio 50 mm	✓	
XC508-301	Asio 100 mm	✓	
XC508-308	Asio 2FOV 50/250 mm	✓	
XC508-304	Nyctea 25 mm	Included	ON03GMB060, ON03GMB488, ON06GMB030, ON06GMB120
XC508-305	Nyctea 50 mm	✓	
XC508-306	Nyctea 100 mm	✓	

Cables Part number	Type	Description	Available on following cameras
XC602-306 XC602-307	Trigger in Trigger out	Lemo 1B-303	All
XC603-303	Analog out	Lemo 1B-305	
XC606-301	CameraLink	SDR-26	
XC615-301	Ethernet	RJ45, cat. 5E	
XC411-308	Power supply	Lemo EXP-1S-302-HLN	

Thermography Part number	Description	Available on following cameras
TH0120	Temperature calibration from -20°C to 120°C	ON03GMI060, ON03GMI488, ON06GMI030, ON06GMI120
TH0400	Temperature calibration from 0°C to 400°C	
TH1000	Temperature calibration from 0°C to 1000°C	

Software Part number	Description	Available on following cameras
XEADV	Xeneth Advanced	All
XESDK	Xeneth SDK	
TST08	Thermography Studio	ON03GMI060, ON03GMI488, ON06GMI030, ON06GMI120
XERAD	Xeneth Radiometric	

## Inputs



## Outputs

Information furnished by Xenics is believed to be reliable. However, no responsibility is assumed for possible inaccuracies or omissions. Specifications are subject to change without notice. This information supersedes all previously supplied information.



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#### ▣ About Xenics

Xenics is a leading developer of innovative infrared detection solutions. We design, manufacture and sell infrared detectors and cameras, both linescan and 2-D, covering the infrared wavelength ranges from 0.4 to 14 micrometers. In addition, Xenics delivers tailor-made solutions produced according to customer-agreed specifications and planning. As a European vendor with a worldwide service and distributor network, we are strategically placed to serve global markets with highly innovative products drawing on a strong science and technology background.

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