Preliminary

Xenics
Infrared Solutions

Imagine the invisible

Modules & Components

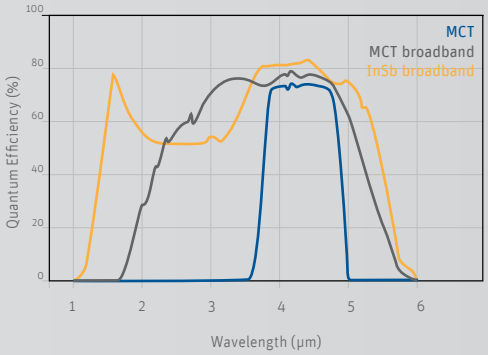
XCO-640

Midwave Infrared Cooled Camera Core

Reliable and versatile infrared camera module for security and industrial applications

Cooled Detector

The XCO-640 is based on a stirling cooled MWIR engine with low NETD. The detector itself is based on either HgCdTe (MCT) or InSb, with a 640 x 512 resolution. For both material options we offer a broadband version for applications requiring extension into the shortwave infrared (SWIR) wavelength band.



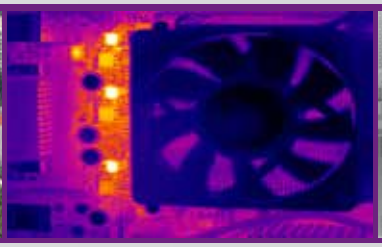
Lenses

The XCO-640 is highly flexible and is available with a range of continuous zoom lenses with auto-focus. For OEM customers who want to design their own optical system, the standard XCO-640 without lens is available. The broadband XCO version comes with an optional fixed focal length broadband lens (SWIR & MWIR).

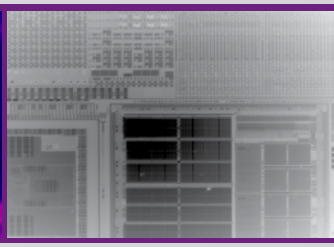
Designed for use in

Long range surveillance

Monitoring systems



Thermal imaging



Semiconductor inspection

Applications

- Long range thermal imaging
- Semiconductor inspection (Lock in thermal imaging)
- Spectral imaging in MWIR / SWIR
- Airplane tracking systems

Benefits & Features

- Made in Europe
- Cooled MCT or InSb detector
- On-board image processing
- High resolution and autofocus (with zoom lenses)
- Easy integration with security or industrial systems
- Broadband InSb or MCT detectors available
- Zoom lenses available (15-330mm or 30-660mm)

Advanced on-board image processing algorithms

XIE
The Xenics Image Enhancement (XIE) algorithm enhances contrast by different amounts in different areas of an image. For example, this allows for areas that already have high contrast to be left untreated, whilst bland areas are enhanced to highlight fine details.
The algorithm dynamically adjusts the contrast within the image to enable better visualisation, ensuring that small details within imagery, that might otherwise be missed, are enhanced to draw the attention of the observer.

AGC
The Automatic Gain Control (AGC) algorithm enhances contrast on a global scale. It allows controlling the offset and/or gain parameters in a manual way or in an automatic way.

NUC
The onboard Non-Uniformity Correction, which compensates for offset and gain deviations of each pixel, guarantees a good image under varying environmental conditions. Bad pixel correction is also taken care of.

Auto-focus (in combination with zoom lenses)
The onboard auto-focus algorithm controls the lens in order to obtain optimal focus positions quickly and automatically, ensuring that the focus is not lost during zooming.

Specifications

Detector specifications	XCO-MCT 640		XCO-InSb 640	
	MCT	MCT-BB	InSb	InSb-BB
Array type	MCT		InSb	
Spectral band	3.7 to 4.8 µm	1.5 – 6 µm	3.6 to 4.9 µm	1.5 to 5.4 µm
Resolution	640 x 512			
Pixel pitch	15 µm			
Array cooling	Stirling cooled (80 K detector temperature)			
Sensitivity (NETD)	22 mK		25 mK	
Gain modes	Single Gain		High (HG) and Low gain (LG)	
Pixel operability	> 99.6 %		> 99.5 %	
Aperture	F/2 or F/4	F/3	F/2 or F/4	F/3
Camera specifications	**XCO-MCT-640**		**XCO-InSb-640**	
Imaging performance				
Maximum frame rate	105 Hz		320 Hz*	
Window of interest	Minimum size 160 x 64		Minimum size 64 x 64	
Readout mode	Integrate Then Read / Integrate While Read			
A to D conversion resolution	14 bit		13-14-15 bit selectable on detector	
On-board image processing	2-point Non Uniformity Correction (NUC) Bad Pixel replacement Auto gain & offset control XIE (Xenics Image Enhancement) (Optional)			
Interfaces				
Camera control	CameraLink and GigE Vision			
Image acquisition	CameraLink, GigE Vision, HD-SDI and Analog (PAL/NTSC)			
Trigger	In or Out (configurable)			
Power requirements				
Power consumption	22 W			
Power supply	24 V			
Physical characteristics				
Ambient operating temperature	-40 °C to 60°C			
Dimensions (L x W x H mm)	199 x 100 x 145 , (lens not included)			
Weight camera head	< 1.6 kg (lens not included)			

*via cameralink and not full bit resolution
▪ maximum frame rate in combination with XIE is 210 Hz

Product selector guide

Part number	F/#	Array type	Wavelength range (µm)
XEN-000579	F/4	InSb	3.6 – 4.9 µm
XEN-000586	F/2		3.6 – 4.9 µm
XEN-000588	F/4	MCT	3.7 – 4.8 µm
XEN-000589	F/2		3.7 – 4.8 µm
XEN-000597	F/3	InSb-BB	1.5 – 5.4 µm
XEN-000598	F/2	MCT-BB	1.5 – 6 µm

More information available:

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Xenics
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ISO 9001:2015 certified