

Imagine the invisible

Modules & Components



# XCO-640

## Midwave Infrared Cooled Camera Core

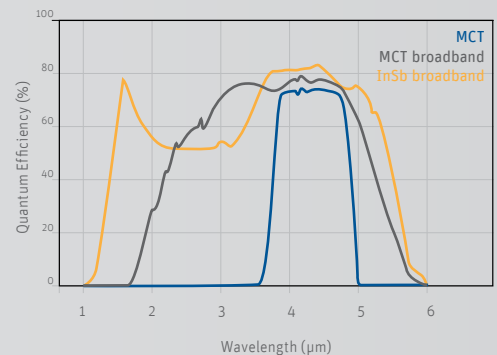
Reliable and versatile infrared camera module for security and industrial applications

### 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).



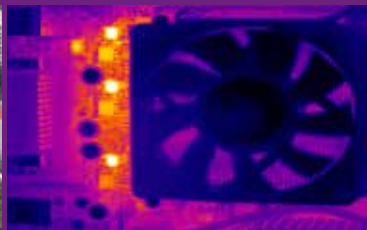
### Designed for use in



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 $\mu\text{m}$	1.5 – 6 $\mu\text{m}$	3.6 to 4.9 $\mu\text{m}$	1.5 to 5.4 $\mu\text{m}$
Resolution	640 x 512			
Pixel pitch	15 $\mu\text{m}$			
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
<b>Imaging performance</b>		
Maximum frame rate	117 Hz	250 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)	
<b>Interfaces</b>		
Camera control	CameraLink and GigE Vision	
Image acquisition	CameraLink, GigE Vision, HD-SDI and Analog (PAL/NTSC)	
Trigger	In or Out (configurable)	
<b>Power requirements</b>		
Power consumption	22 W	
Power supply	24 V	
<b>Physical characteristics</b>		
Ambient operating temperature	-40 °C to 60°C	
Dimensions (W x H x L mm <sup>3</sup> )	199 x 100 x 145 (l x b x h)	
Weight camera head	3.5 kg	

\*not at the highest bit resolution

## Product selector guide

Part number	Array type	Wavelength range ( $\mu\text{m}$ )
XEN-000579	InSb	3.6 – 4.9 $\mu\text{m}$
XEN-000586		3.6 – 4.9 $\mu\text{m}$
XEN-000588	MCT	3.7 – 4.8 $\mu\text{m}$
XEN-000589		3.7 – 4.8 $\mu\text{m}$
XEN-000597	InSb-BB	1.5 – 5.4 $\mu\text{m}$
XEN-000598	MCT-BB	1.5 – 6 $\mu\text{m}$

## Lenses

Part number	Lens	ASY-#
XEN-000579 (F/4)	15-330 mm, F/4, RP Optical	ASY-001112
	15-330 mm, F/4, IR Zoom	ASY-000954
XEN-000588 (F/4)	30-660 mm, F/4, RP Optical	ASY-001113
	30-660 mm, F/4, IR Zoom	ASY-000977
XEN-000597 (F/3)	Bayonet mount	ASY-001240
	25 mm, BB, F/2, with bayonet mount	ASY-001426
XEN-000586 (F/2)	No standard lens	
XEN-000589 (F/2)		

More information available:

