



Scientific



Xeva-1.7-320

Advanced research
in SWIR imaging

Imagine the invisible

www.xenics.com


Infrared Solutions

Cooled and stable Xeva-1.7-320 for excellent image quality research

In one compact housing, the Xeva-1.7-320 digital camera combines a thermo-electrically cooled InGaAs detector head and the control and communication electronics.

High quality, high flexibility

The Xeva-1.7-320 unit is available with standard (up to 1.7 μm) InGaAs detector arrays and comes in various speed versions: 60 Hz, 100 Hz and 350 Hz. It allows you to choose the most suitable detector-camera configuration for your specific application. The camera head interfaces to a PC via standard USB 2.0 or CameraLink. Each camera is delivered with a graphical user interface X-Control, which offers direct access to various camera settings such as exposure time and operating temperature. The software tools include two-point uniformity correction and bad pixel replacement.

Advantages

- Extended coverage from SWIR into the visible range
- High sensitivity for low-light conditions
- Flexible and easy-to-use
- Spectrograph compatible

Designed for use in

- R&D (SWIR range)
- High temperature thermography (300°C to 1200°C range)
- Hyperspectral imaging
- Semiconductor inspection

Benefits & Features

CameraLink and triggering for high speed imaging

Export real time up to 350 fps. Synchronization with external sources is straightforward in triggered applications.

TrueNUC image correction

State-of-the-art image processing power offering corrected images while continuously changing the integration time.

Flexible programming in an open architecture

Software Development Kit (SDK) supporting C++, Visual Basic, Labview or Linux.

Cooled operation for low light-level imaging

Achieve long integration times with Xeva-1.7-320-TE3 resulting in reduction of noise and dark current.

Extending SWIR imaging to the visible

Further extended spectral response into the visible by building an optional VISNIR sensor into the camera.

Window of Interest

Increase frame rate and reduce overhead for high speed process monitoring. Tracking moving objects becomes feasible.

Thermal imaging of hot objects

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

Comprehensive thermal analysis

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

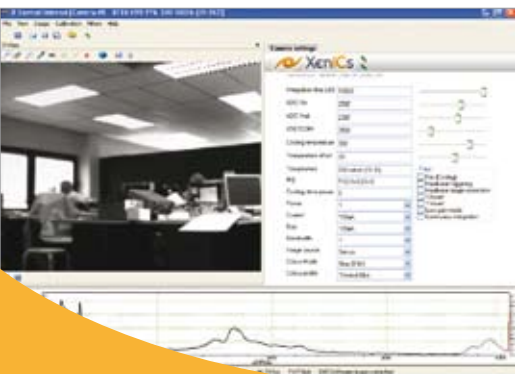




Top: art inspection infrared
Bottom: art inspection visual



Top: fruit inspection infrared
Bottom: fruit inspection visual



Array Specifications	
Array Type	InGaAs
Spectral band	Standard: 0.9 to 1.7 μm ; Optional: 0.4 to 1.7 μm
# Pixels	320 x 256
Array operability	30 μm
Array Cooling	TE1-cooled down to 263K / TE3-cooled down to 223K
Pixel operability	> 99%
Full well capacity	3,750,000 e ⁻ low gain 187,500 e ⁻ high gain

Camera Specifications	Xeva 60 Hz	Xeva 100 Hz	Xeva 350 Hz
Lens (included)			
Focal length	16 mm f/1.4		
Optical interface	C-Mount spectrograph fixation holes (Broad selection of lenses are available)		
Imaging performance			
Frame rate (full frame; uncorrected images)	60 Hz	100 Hz	350 Hz
Window of interest	Smallest window 8 x 32	Smallest window 8 x 64	Smallest window 8 x 128 Max 15 kHz
Integration type	Snapshot		
Exposure time range	1 μs up to 100 seconds (TE3; Low gain)		
Noise level: Low gain High gain	6 AD counts on 14 bit 15 AD counts on 14 bit		
S/N ratio: Low gain High gain	68 dB 60 dB		
A to D conversion resolution	12 bit or 14 bit		
Interfaces			
Camera control	USB 2.0		
Image acquisition	USB 2.0 / CameraLink		
Trigger	TTL levels		
Graphical User Interface (GUI)	X-control Advanced		
Power requirements			
Power consumption	< 4 Watt, cooler: 30 Watt max		
Power supply	12 V		
Physical characteristics			
Camera cooling	Forced convection cooling		
Ambient operating temperature	0 to 50 °C		
Dimensions	90 L x 110 W x 110 H mm		
Weight camera head	App. 1.8 kg		
Weight power supply	300 g		

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

X-Control Advanced <ul style="list-style-type: none"> Image live view Store digital Pictures / Movies Image histogram Line profiles, Spot meters, Time profiles 	Xeneth radiometric <ul style="list-style-type: none"> X-control advanced features + thermography
<ul style="list-style-type: none"> Black hot / White hot False color mode with various color palettes 	Thermography studio <ul style="list-style-type: none"> Analysis and report-generating software of real-time and static images
<ul style="list-style-type: none"> Video output format selection: PAL (CCIR) or NTSC (RS 170) 	

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.



Top: night vision VISNIR
Bottom: night vision visual

Product Selector Guide

Xeva-1.7-320 Part number	Digital output Interface	Cooling	Frame Rate	Analog Interface	ADC	VISNIR option**	TrueNUC range [integration time up to]
XC130	USB 2.0	TE1	100 Hz	-	12 bit	Yes	HG 5 msec, LG 100 msec
XC131	USB 2.0	TE3	100 Hz	-	12 bit	-	HG 50 msec, LG 500 msec
XC132-PAL	USB 2.0	TE1	100 Hz	PAL	12 bit	Yes	HG 5 msec, LG 100 msec
XC132-NTSC				NTSC			
XC133-PAL	USB 2.0	TE3	100 Hz	PAL	12 bit	-	HG 50 msec, LG 500 msec
XC133-NTSC				NTSC		-	
XC134-060Hz	CameraLink	TE1	60 Hz	-	14 bit	Yes	HG 5 msec, LG 100 msec
XC134-100Hz	CameraLink	TE1	100 Hz	-	14 bit	Yes	HG 5 msec, LG 100 msec
XC134-350Hz	CameraLink	TE1	350 Hz	-	14 bit	Yes	HG 5 msec, LG 100 msec
XC135-060Hz	CameraLink	TE3	60 Hz	-	14 bit	-	HG 50 msec, LG 500 msec
XC135-100Hz	CameraLink	TE3	100 Hz	-	14 bit	-	HG 50 msec, LG 500 msec
XC135-350Hz	CameraLink	TE3	350 Hz	-	14 bit	-	HG 50 msec, LG 500 msec

* Selfstarting option: available on XC132-PAL, XC132-NTSC, XC133-PAL and XC133-NTSC with fixed integration time and no window of interest capability

** Visual near infrared (VISNIR) part numbers: XC130V, XC132V-PAL, XC132V-NTSC, XC134V-060Hz, XC134V-100Hz, XC134V-350Hz

Inputs



Outputs

Accessories

Cables Part number	Type	Description	Available on following cameras
XC603	Analog video	Analog out triad to coax	XC132, XC132-V, XC133
XC602	Trigger	Triad to BNC	All
XC606-5	CameraLink	MDR-26	All CameraLink cameras
XC503-201	Frame grabber	Xenics PCI-CL	All CameraLink cameras

Thermography Part number	Description	Available on following cameras
TH0800	Temperature calibration from 300°C to 800°C	XC130, XC131
TH1200	Temperature calibration from 300°C to 1200°C	XC130, XC131

Software Part number	Description	Available on following cameras
XERAD	Xeneth Radiometric	XC130, XC131
TST08	Thermography Studio	XC130, XC131

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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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