



Scientific



# XS-1.7-320

Flexibility  
for easy research

Imagine the invisible

[www.xenics.com](http://www.xenics.com)

  
**Xenics**  
Infrared Solutions

# Ultra-compact and plug-and-play XS-1.7-320 simplifies the way you work

In a very compact housing, the XS-1.7-320 digital infrared camera combines an uncooled InGaAs detector head and the control and communication electronics.

## High quality, high flexibility

The XS-1.7-320 unit is available with standard InGaAs detector arrays working up to 1.7  $\mu\text{m}$  and comes in a 60 and 100 Hz speed version. It allows you to choose the most suitable detector camera configuration for your specific research application. The camera head interfaces to a PC via standard USB 2.0. Each camera is delivered with a graphical user interface X-Control, which offers direct access to various camera settings such as exposure time and gain setting. The camera outputs 14-bit data. The software tools include two-point uniformity correction and bad pixel replacement.

## Advantages

- Easy integration with ultra-compact housing
- High image quality
- Plug-and-play
- Stand-alone operation (analog out)

## Designed for use in

- R&D (SWIR range)
- Thermal imaging of hot objects (300°C to 800°C range)
- Hyperspectral imaging
- Solar cell inspection
- Laser beam profiling

## Benefits & Features

**High image quality with compact camera**  
320 x 256 pixels, including image processing and interfacing to PC or analog monitor.

### USB 2.0 interface

As much as 100 images per second over standard USB 2.0 connection.

### Stand alone operation

Correction files can be uploaded for stand-alone operation.

### Triggering for synchronised operation

Synchronisation with external sources is straight forward via trigger input.

### TrueNUC image correction

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

### Performance optimization

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

### Extending SWIR imaging to the visible

Spectral response can be further extended into the visible by building an optional VISNIR sensor into the camera.

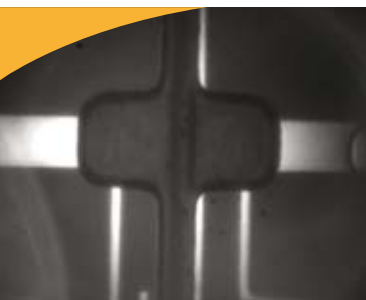
### Flexible programming in an open architecture

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

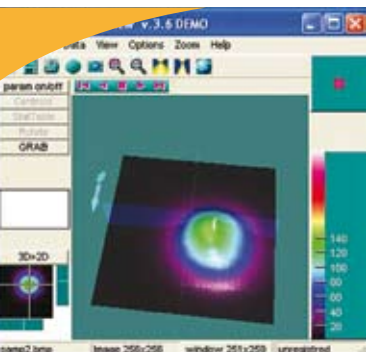
### Exchange of lenses

A variety of wide angle or narrow FOV lenses are available.

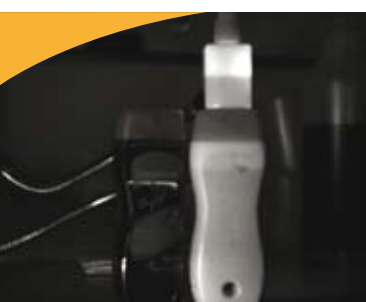




Wafer inspection



Laser beam profiling



Bottle level detection

### Array Specifications

Array Type	InGaAs
Spectral band	Standard 0.9 to 1.7 $\mu\text{m}$
# Pixels	320 x 256
Pixel Pitch	30 $\mu\text{m}$
Array Cooling	Uncooled
Pixel operability	> 99%

### Camera Specifications

#### XS Analog

#### XS Trigger

#### XS Base

#### Lens (included)

Focal length	16 mm f/1.4
Optical interface	C-Mount (Broad selection of lenses available)

#### Imaging performance

Frame rate (full frame)	60 Hz over NTSC 50 Hz over PAL	100 Hz	60 Hz
Integration type	Snapshot		
Exposure time range	1 $\mu\text{s}$ up to 20 ms (Low gain)		
Noise level: Low gain High gain	4 AD counts 15 AD counts		
S/N ratio: Low gain High gain	69 dB 60 dB		
A to D conversion resolution	14 bit		

#### Interfaces

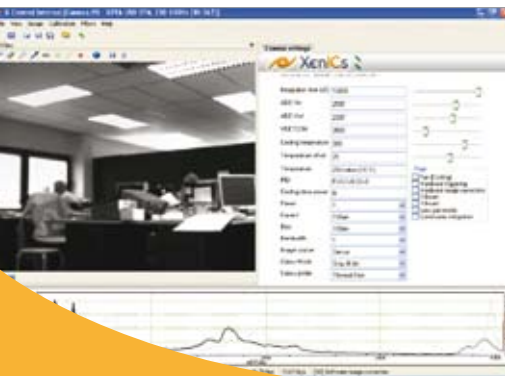
Analog out	PAL or NTSC	-	-
Camera control	USB 2.0		
Image acquisition	USB 2.0		
Trigger	-	TTL levels	-
Graphical User Interface (GUI)	X-control Advanced		

#### Power requirements

Power consumption	< 4 Watt
Power supply	12 V

#### Physical characteristics

Ambient operating temperature	0 to 50 $^{\circ}\text{C}$
Dimensions	50 L x 50 W x 50 H mm
Weight camera head	225 g
Weight power supply	300 g



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

X-Control Advanced	
Software control	<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>
	<ul style="list-style-type: none"> <li>Black hot / White hot</li> <li>False color mode with various color palettes</li> </ul>
Switch Video output format selection	<ul style="list-style-type: none"> <li>PAL (CCIR) or NTSC (RS 170)</li> </ul>

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 and Visual Basic is supplied, as well as a Linux SDK. Labview device drivers and a sample program (executable) are also available.

## Product Selector Guide

XS-1.7-320 Part number	Digital Interface	Frame Rate	Analog Interface	ADC	VISNIR option**	TrueNUC range [integration time up to]	Trigger input
XC117B	USB 2.0	60 Hz	-	14 bit	-	HG 2 msec, LG 15 msec	-
XC117-NTSC	USB 2.0	60 Hz	NTSC	14 bit	✓	HG 2 msec, LG 15 msec	-
XC117-PAL	USB 2.0	50 Hz	PAL	14 bit	✓	HG 2 msec, LG 15 msec	-
XC119	USB 2.0	100 Hz	-	14 bit	✓	HG 2 msec, LG 15 msec	✓

\*Selfstarting option: available on XC117-NTSC, XC117-PAL with fixed integration time and no window of interest capability

\*\* Part numbers visual near infrared (VISNIR) options: XC117V-NTSC, XC117-PAL, XC119V

## Inputs



## Accessories

Cables Part number	Description	Available on following cameras
XC603	Analog out triad to coax	XC117-NTSC, XC117-PAL
XC602	Triad to BNC for triggering	XC119

## 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.





Imagine the invisible

#### ▣ 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.

**Xenics Headquarters**

Sales department  
Ambachtenlaan 44  
BE-3001 Leuven  
Belgium  
T +32 16 38 99 00  
sales@xenics.com

**sInfraRed**

Asian sales, manufacturing  
and custom solutions office  
221 Queensway #12-10  
Viz Holland  
Singapore 276750  
T +65 6 47 666 48  
sales@sinfrared.com

**Xenics North America**

130 Grove Street  
Lexington · MA 02420  
USA  
T +1 781 274 98 93  
luc.debrouckere@xenics.com

**Xenics South America**

Rua Alvaro Rodrigues 182 SL 44  
Cep: 04582-000  
São Paulo · SP, Brasil  
T +55 11 5561 0778  
paul.verminnen@xenics.com

