

Imagine the invisible

Research & Development



# Xeva-2.35-320 TE4

Versatile SWIR T2SL camera with response up to 2.35  $\mu\text{m}$

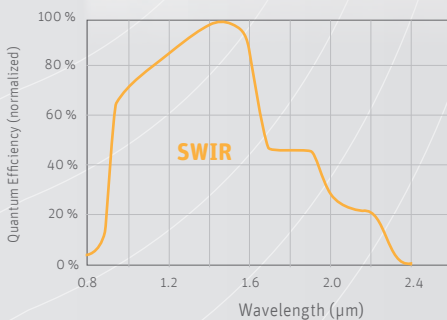
## Superior performance for reliable research

The Xeva-2.35-320 is a compact digital camera operating a T2SL detector array for imaging in the 1.0 to 2.35  $\mu\text{m}$  wavelength range. The camera features a resolution of 320 x 256 pixels with a 30  $\mu\text{m}$  pixel pitch. It outputs 14-bit data and comes in a 100 Hz (USB 2.0) or 350 Hz (CameraLink) version.

which offers direct access to various camera settings such as exposure time and operating temperature. The camera allows for exposure times from 1  $\mu\text{s}$  to 60 ms in high dynamic range mode (with TE4 cooling).

Through its advanced thermo-mechanical design, the Xeva-2.35-320 achieves excellent performance levels using a TE4-cooled device operating down to 203K.

The camera interfaces to a PC via standard USB 2.0 and CameraLink. Each camera is delivered with a Graphical User Interface (GUI) Xeneth,



### Designed for use in



⌘ Hyperspectral imaging

⌘ Semiconductor inspection

⌘ Art inspection

### Applications

- R&D (SWIR range)
- Semiconductor inspection
- Hyperspectral SWIR imaging
- Art inspection (seeing through paint)
- Laser beam profiling (1.0 - 2.35  $\mu\text{m}$ )

### Benefits & Features

- Spectrometer compatible
- CameraLink for high speed imaging
- Scientific image recording and analysis
- High speed SWIR imaging up to 2.35  $\mu\text{m}$
- Windowing mode for even higher frame rates
- Flexible programming in an open architecture
- Smallest TE4-cooled camera for low dark current
- Two gain modes for High Sensitivity (HS) or High Dynamic Range (HDR)

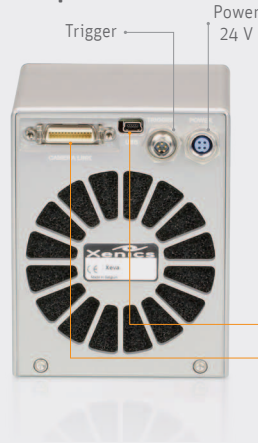
# Complete camera and software package to simplify your research

## Lens & filter options



> Discover our Lens Selector Guide  
[www.xenics.com/LSG](http://www.xenics.com/LSG)

## Inputs



## Software



- Xeneth Advanced
- Xeneth SDK
- Xeneth LabVIEW SDK (optional)

## Outputs

## Specifications

Camera specifications	100 Hz	350 Hz
Lens (included)		
Focal length	Visible lens, 16 mm f/1.4	
Optical interface	C-Mount with filter holder	
Imaging performance		
Maximum frame rate	100 Hz	344 Hz full frame; > 10 kHz at 128x8 window
Window of Interest (WoI)	No	Minimum 128 x 8 pixels
Integration type	Snapshot	
Exposure time range*	High gain: 1 µs to > 3 ms (selectable in 1 µs steps); HDR**: 1 µs to > 60 ms (selectable in 1 µs steps)	
Noise	High gain: 150 electrons; HDR**: 1000 electrons	
Gain	High gain: 10 electrons/ADU; HDR**: 210 electrons/ADU	
A to D conversion resolution	14 bit per pixel	
Interfaces		
Camera control	USB 2.0	
Image acquisition	CameraLink or USB 2.0	CameraLink
Trigger	TTL levels	
Graphical User Interface (GUI)	Xeneth Advanced	
Power requirements		
Power consumption	7W without cooling; 84 Watt @ maximum cooling	
Input voltage	24 V	
Physical characteristics		
Camera cooling	Forced convection cooling	
Cool-down time	Approximately 2 minutes	
Ambient operating temperature	0 to 40 °C	
Dimensions	87 W x 115 H x 109 L mm <sup>3</sup>	
Weight camera head	App. 1.8 kg (without lens)	

\* Typical value

\*\* High Dynamic Range mode

Array specifications	Xeva-2.35-320
Array type	T2SL
Spectral band	1.0 µm to 2.35 µm
Resolution	320 x 256
Pixel pitch	30 µm
Array dimensions	W: 9.6 mm H: 7.68 mm D: 12.29 mm or 0.48 in
Dark current array per pixel*	20 - 40 x 10 <sup>6</sup> e-/s
ROIC noise	High gain: 70 electrons; Low gain: 700 electrons
Integration capacitor	High gain: 10 fF; Low gain: 210 fF
Full well	High gain: 0.17 x 10 <sup>6</sup> electrons Low gain: 3.5 x 10 <sup>6</sup> electrons
Array cooling	TEC 4 stages (typical sensor temperature 203 K or -70 °C)
Pixel operability	> 99%

\* Typical value at 203K

## Product selector guide

Part number	Data interface	Cooling	Frame rate	ADC
XEN-000538	CL/USB	TE4	100 Hz	14 bit
XEN-000539	CL	TE4	344 Hz	14 bit