

Imagine the invisible

Research & Development



# Xeva-2.35-320 TE4

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

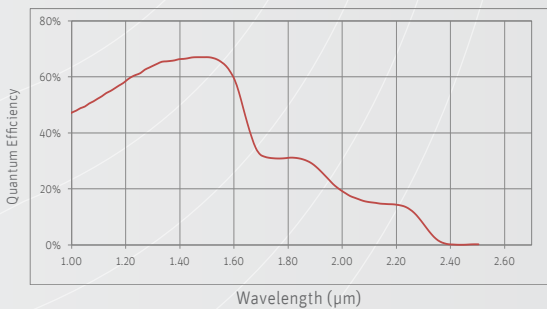
## Superior performance for reliable research

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).

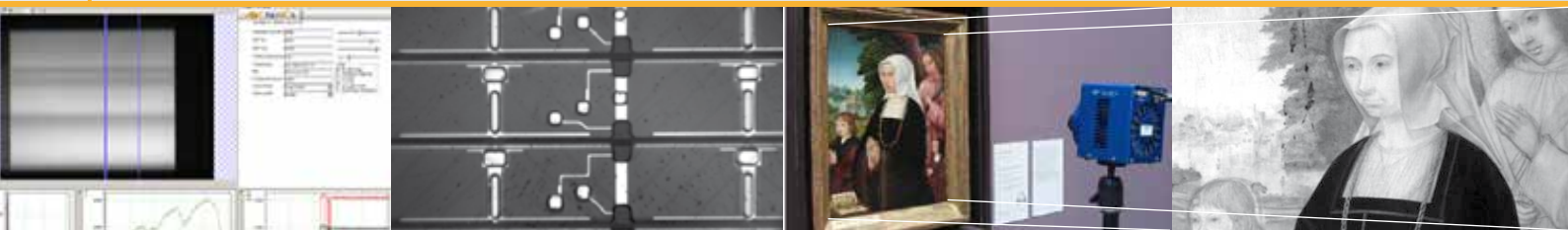
Through its advanced thermo-mechanical design, the Xeva-2.35-320 achieves excellent performance levels using a TE4-cooled device operating down to 203K.

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



\* FPA at -70°C

### 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

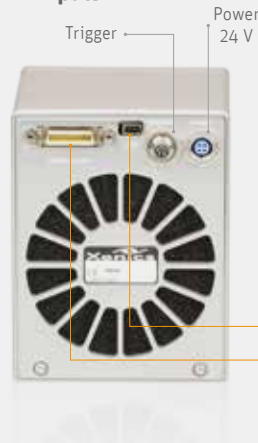
Various focal lengths available



> 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
<b>Imaging performance</b>		
Maximum frame rate	100 Hz	344 Hz full frame; > 10 kHz at 128x8 window
Window of Interest (WoI)	No	Minimum 128 x 8 pixels
Exposure time range*	High gain: up to > 3 ms (selectable in 1 µs steps); HDR**: up to > 60 ms (selectable in 1 µs steps)	
Integration type	Snapshot	
Noise	High gain: 150 electrons; HDR**: 1000 electrons	
Dynamic range	High gain: 61 dB HDR: 71 dB	
A to D conversion resolution	14 bit per pixel	
<b>Interfaces</b>		
Optical interface	C-Mount with filter holder	
Camera control	USB 2.0	
Image acquisition	CameraLink	
Trigger	TTL levels	
<b>Power requirements</b>		
Power consumption	7W without cooling; 84 Watt @ maximum cooling	
Input voltage	24 V	
<b>Physical characteristics</b>		
Camera cooling	Forced convection cooling	
Cool-down time	Approximately 2 minutes	
Ambient operating temperature range	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
Resolution	320 x 256
Pixel size	30 µm x 30 µm
Spectral band	1.0 µm to 2.35 µm
Peak quantum efficiency	30-20 % (from 2 to 2.35 µm)
Pixel operability	> 99%
Array size	W: 9.6 mm H: 7.68 mm D: 12.29 mm or 0.48 in TEC 4 stages
Array cooling	(typical sensor temperature 203 K or -70 °C)
ROIC noise	High gain: 70 electrons; Low gain: 700 electrons
Dark current*	20 - 40 x 10 <sup>6</sup> e-/s/pixel
Full well	High gain: 0.17 x 10 <sup>6</sup> electrons Low gain: 3.5 x 10 <sup>6</sup> electrons

\* Typical value at 203K

## Product selector guide

Part number	Data interface	Frame rate	Cooling
XEN-000538	CameraLink	100 Hz	TE4
XEN-000539		344 Hz	

## Lenses (optional)

Part number	Focal length	F#	Wavelength range
OPT-000236	25 mm	f/2.5	0.9 µm - 2.5 µm
OPT-000237	35 mm	f/2.0	0.9 µm - 2.5 µm
OPT-000238	50 mm	f/2.0	0.9 µm - 2.5 µm