

Imagine the invisible

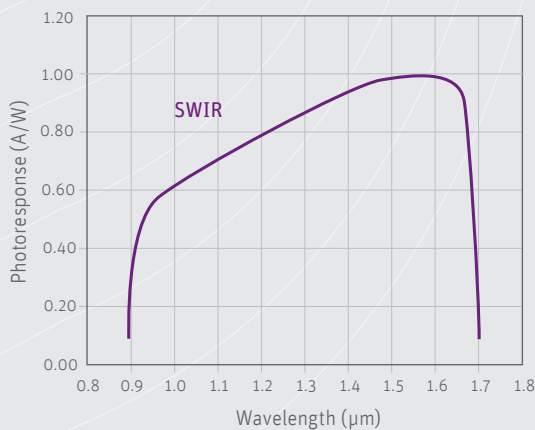
Modules & Components



# XSW-320 Gated

TE1 stabilized  
SWIR OEM module

## Extremely short 100 nsec integration time for SWIR gated imaging

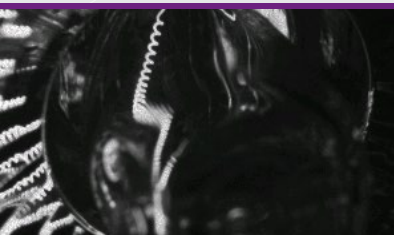


The XSW-320 Gated SWIR module operates in the 0.9 to 1.7  $\mu\text{m}$  spectral band. It provides extremely short integration times down to 100 ns.

The InGaAs detector is available in a 20  $\mu\text{m}$  pixel pitch. A special feature of the XSW-320 Gated is the programmable trigger-out delay between the internally generated trigger-out pulse and the start of integration.

The exposure time of the sensor is configurable from 100 ns up to 1 ms in steps of 100 ns, or 1 ms to 40 ms (standard mode).

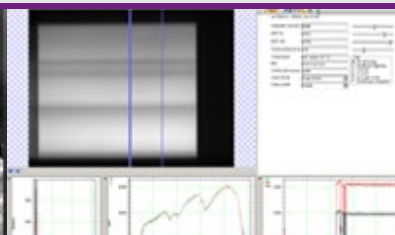
With all these features, the XSW-320 Gated is ideally suited for the inspection of light bulbs and hot or fast moving objects.



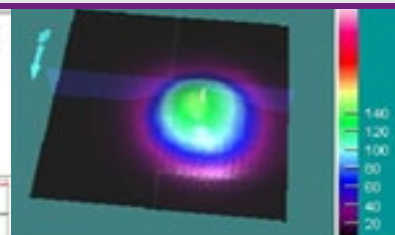
Light bulb inspection



Turbine blades inspection



R&D SWIR



Laser beam profiling

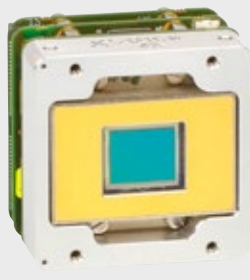
### Applications

- R&D (SWIR) with short integration times
- Laser gated imaging
- Imaging of hot or moving objects such as light bulb or turbine blades inspection
- Measurement systems needing synchronisation of the module with a pulsed laser

### Benefits & Features

- Extreme short 100 nsec integration time
- Programmable trigger out
- Flexible programming in an open architecture
- CameraLink or Ethernet standard interfaces
- High sensitivity and excellent image quality

# Ready-to-integrate



Front of module



16bitDV



GigE Vision interface



CameraLink interface

Trigger in/out

Trigger in/out

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

## Specifications

Module Specifications	XSW-320-Samtec Gated	XSW-320-CL Gated	XSW-320-GigE Gated
<b>Imaging performance</b>			
Maximum frame rate	400 Hz		
Window of Interest	Minimum size 32 x 4		
Exposure time range	0.1 $\mu$ s to 40 ms		
Readout mode	Integrate Then Read (ITR)		
Noise*	110 e-		
Dynamic Range*	61 dB		
A to D conversion resolution	14 bit		
On-board image processing	Auto-Gain and Offset, Auto-Exposure		Auto-Gain and Offset
<b>Interfaces</b>			
Optical interface	C-mount		
Digital output	16bitDV	CameraLink	GigE Vision
Module control	16bitDV	CameraLink	GigE Vision
Trigger	In or out (configurable)		
<b>Power requirements</b>			
Power consumption**	2.5 W	2.8 W	4 W
Power supply	12 V		
<b>Physical characteristics</b>			
Ambient operating temperature range	-40 °C to 70 °C		
Storage temperature range	-45 °C to 85 °C		
Dimensions (W x H x L mm <sup>3</sup> )	45 x 45 x 51,1	45 x 45 x 55,4	45 x 45 x 65
Weight core head	120 g	129 g	165 g
* Typical value ** Without TEC			

Array Specifications	
Array type	InGaAs Focal Plane Array (FPA) ROIC with CTIA** topology
Resolution	320 x 256
Pixel pitch	20 $\mu$ m
Spectral band	0.9 $\mu$ m to 1.7 $\mu$ m
Pixel operability	> 99 %
Array dimensions	6.4 x 5.12 mm <sup>2</sup> ; 8.2 mm diagonal
Array cooling	TE cooled (single stage Peltier cooler)
ROIC noise*	60 e-
Dark current*	0.19 x 10 <sup>6</sup> e-/s/pixel at 200 mV bias at 288 K
Full well	125 k e-

\*\* Capacitor TransImpedance Amplifier

## Product Selector Guide

Part number	Interface	Frame rate	
XEN-000593	GigE (Gated)	400 Hz	
XEN-000594	CL (Gated)		
XEN-000596	16bitDV		
Part number	Interface	Connects with	Optional
ASY-000880***	CameraLink (16bitDV)	XEN-000596	Yes

\*\*\*Optional test board interface