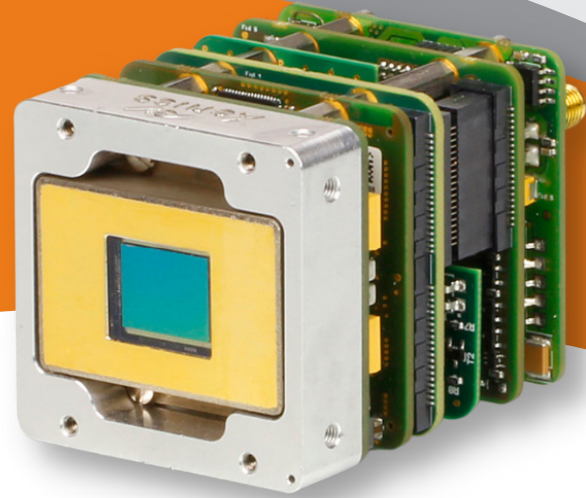# XSW 320 SERIES
Area-scan SWIR Module

- SWIR cooled module with 320 x 256 resolution
- In-house developed InGaAs sensor

SMALL, HIGH PERFORMANCE InGaAs CAMERA MODULE

The XSW 320 series is based on an in-house developed, temperature stabilised InGaAs detector with a 320 x 256 pixel resolution.

The XSW 320 camera modules are offered with frame rates of up to 400 Hz.

The camera modules come with either a CameraLink, GigE Vision or QTE Samtec interface and features low weight and power.
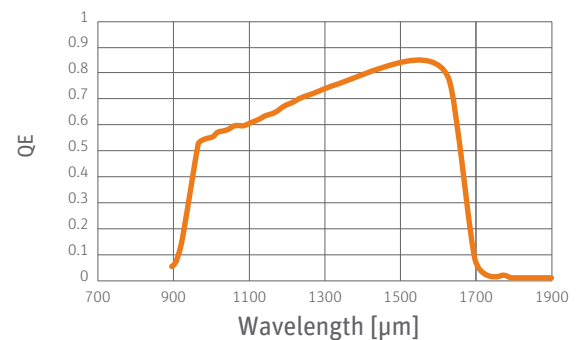
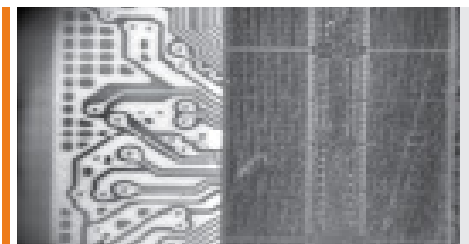### DESIGNED FOR USE IN

- Machine Vision
- Safety & Security

ADVANTAGES

- Flexible and easy-to-use
- CameraLink, GigE Vision, QTE Samtec or RS232 interfacing options
- Low dark current
- Small SWIR area-scan module

Quantum Efficiency (QE)

Wavelength [µm]

* QE at 306 K sensor temperature

Semiconductor inspection

Night vision

Fire detection

SPECIFICATIONS

Camera Specifications	XSW 320 CL 100 XSW 320 CL 400	XSW 320 GigE 100 XSW 320 GigE 400	XSW 320 16bitDV 100 XSW 320 16bitDV 400
Mechanical specifications			
Approximate dimensions - excluding lens [width x height x length] [mm]	45 x 45 x 56	45 x 45 x 65	45 x 45 x 52
Weight [gr] - excluding lens	129	165	122
Optical interface [optional]	C-mount or M42		
Connector GigE	-	RJ-45	-
Connector CameraLink	Standard SDR	-	-
Connector power	Hirose HR10-7R-SA[73]	Hirose HR10-7R-SA[73]	-
Connector trigger	SMA	SMA	-
Connector analog	-	-	-
Connector RS232	-	-	-
Connector general I/O	-	-	QTE-020-03-L-D-A Samtec
Environmental & power specifications			
Operating case temperature [°C]: lso available in temperature range 0 - 50	From -40 to +70		
Storage temperature [°C]	From -45 to +85		
Power consumption [W]	2.8 [no TE cooler]	4 [no TE cooler]	2.5 [no TE cooler]
Power supply voltage	DC 12 V		
Shock	IE60068-2-27 Ed4.0; half-sine; terminal saw tooth; 50 g [11 ms]		
Vibration	Random: IEC60068-2-64 Ed2.0; 4.3 g [20 - 1000 Hz]. Sine: IEC60068-2-6 Ed7.0; 1 g [10 - 2000 Hz]		
Regulatory compliance	RoHS		
Electro-optical specifications			
Image format [pixels]	320 x 256		
Pixel pitch [µm]	20		
Detector type	InGaAs photodiode array with CTIA ROIC		
Sensor temperature stabilization	TE cooler		
Integration type	Snapshot - global shutter		
Active area and diagonal [mm]	6.4 x 5.12 [diagonal 8.2]		
Optical fill factor	100%		
Spectral range [nm]	900 - 1700		
Quantum efficiency	~80% [typical peak value]		
Gain modes	Single Gain		
Full well capacities [electrons]	70k		
Read noise [electrons]	110		
Dark current [electrons/second]	<100k [at 288K sensor temp and 150 mV reverse bias]		
Read out mode	ITR		
Pixel operability	>99.5%		
Preconfigured exposure time range [ms]	0.5 to 10 for 100 Hz; 0.01 to 40 for 400 Hz	0.5 to 10 for 100 Hz; 0.01 to 40 for 400 Hz	0.5 to 10 for 100 Hz; 0.01 to 40 for 400 Hz
Max frame rate [Hz] [full frame]	100 or 400	100 or 400	100 or 400
Region of interest	Yes [only for 400 Hz model]	Yes [only for 400 Hz model]	Yes [only for 400 Hz model]
Min region size [pixels]	32 x 4 [step 4 x 1] [only for 400 Hz model]	32 x 4 [step 4 x 1] [only for 400 Hz model]	32 x 4 [step 4 x 1] [only for 400 Hz model]
Max frame rate [Hz] [min region size]	>10000 [only for 400 Hz model]	>10000 [only for 400 Hz model]	>10000 [only for 400 Hz model]
Analog-to-Digital [ADC] [bits]	14		
Command and control	CameraLink	GigE Vision	QTE Samtec
Digital output format	CameraLink [16 bit]	GigE Vision [16 bit]	Digital Video [16 bit]
Trigger	In or out via SMA or in via CL-CC1 [Configurable]	In or out via SMA [Configurable]	In or out via QTE Samtec [Configurable]
Product selector guide			
Part number	XEN-000532 [100]	XEN-000531 [100]	XEN-000529 [100]
	XEN-000591 [400]	XEN-000592 [400]	XEN-000595 [400]

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