

Imagine the invisible

Research & Development



Cheetah-640CL TE3

High resolution water-cooled InGaAs-camera

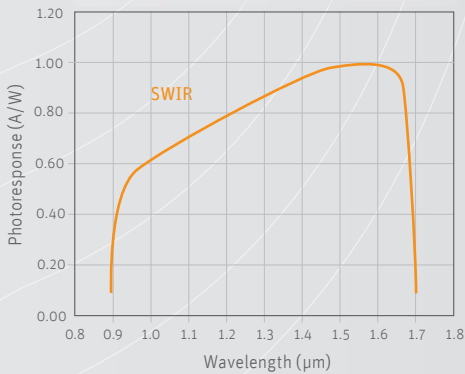
Cheetah-640CL TE3 for low light level imaging and spectroscopy

The Cheetah-640CL TE3 camera is a high resolution, compact infrared camera, equipped with a dedicated low noise InGaAs imager working from 0.9 μm up to 1.7 μm .

It offers you an excellent measurement tool to image low light levels in the SWIR range such as for semiconductor failure analysis or for luminescence spectroscopy applications.

With its TE3-cooled imager and water cooled camerahead, the Cheetah-640CL TE3 is a highly sensitive camera achieving ultra low dark current at long integration times.

The Cheetah- 640CL TE3 is delivered with a software development kit which offers direct access to various camera settings and allows easy integration with your own CameraLink image grabbing system.



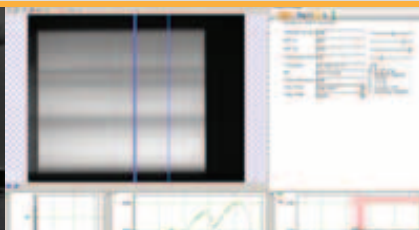
Designed for use in



⌘ Semiconductor analysis



⌘ Reliability study



⌘ Research & Development



⌘ Failure detection

Applications

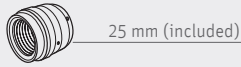
- Fluorescence
- R&D (SWIR range)
- Emission microscopy
- Semiconductor failure analysis
- Low light level imaging spectroscopy: raman, emission, photoluminescence, absorbance

Benefits & Features

- High resolution
- Low dark current
- No need for LN2 cooling
- Spectrograph compatible
- High quantum efficiency (> 80 %)
- Flexible Graphical User Interface (GUI) and Software Development Kit (SDK)

Broad range of accessories available to simplify your research

▶ Lens & filter options



Various focal lengths available



> Discover our Lens Selector Guide
www.xenics.com/LSG



▶ Inputs



▶ Software



- Xeneth Advanced
- Xeneth SDK
- Cheetah-640CL configurator

▶ Outputs

Specifications

Camera specifications	Cheetah-640CL TE3 110 Hz
Lens (included)	
Focal length	25 mm f/2.1 (SWIR)
Optical interface	C-Mount, spectrometer holes
Imaging performance	
Frame rate (full frame)	110 Hz
Integration type	Snapshot
Window of Interest	Frame rate increase; minimum size 32 x 4 pixels
Exposure time range	1 μs to > approx. 40 sec (user selectable integration time)
Readout mode	Integrate Then Read (ITR) Integrate While Read (IWR)
A to D conversion resolution	14-bit
Interfaces	
Camera control	CameraLink (serial LVDS line on CameraLink port 1)
Image acquisition	Base CL (14-bit)
Trigger	3.3 V CMOS logic level triggered (input/output)
Power requirements	
Power consumption	< 4 W without TEC operation; Max. 25 W with TE-cooling
Power supply	12 V DC
Physical characteristics	
Camera cooling	Water cooling
Ambient operating temperature	0 °C to 50 °C
Dimensions	140 W x 135 H x 90 L mm
Weight camera head	2 kg
Software	
Graphical User Interface (GUI)	Xeneth Advanced (12-bit)
Software Development Kit (SDK)	API (C++ based) available for Windows, including samples for LabVIEW

Array specifications	Cheetah-640CL TE3 110 Hz
Sensor type	InGaAs Focal Plane Array (FPA) ROIC with CTIA topology
Spectral band	0.9 to 1.7 μm Optional 0.4 to 1.7 μm (VisNIR)
# pixels	640 x 512
Pixel pitch	20 μm
Peak quantum efficiency	80 %
ROIC noise*	High gain: 60 e-; low gain: 400 e-
Conversion gain*	High gain: 20 μV/e-; low gain: 1.6 μV/e-
Dark current	≈ 2000 e-/s @ -40 °C
Array cooling	TE3
Pixel operability	> 99 %

* At sensor temperature 25 °C

Product selector guide

Part number	TE Cooling	Digital output interface	Frame rate (Hz)	ADC
XEN-000271	TE3	CameraLink	110	14-bit