



## Acuros<sup>®</sup> CQD<sup>®</sup> 640 GigE SWIR Camera

Acuros<sup>®</sup> CQD<sup>®</sup> cameras are the highest pixel resolution SWIR cameras sold commercially, enabling users to see features with the finest details. Our novel CQD sensors deliver full visible-to-SWIR band response, achieving lower costs per megapixel compared to InGaAs SWIR cameras. The Acuros CQD 640 SWIR camera is designed with an integrated, multi-purpose 640x512 TEC Cooled CQD sensor, resulting in low noise and highly stable performance. Acuros cameras have up to a 10db higher SNR than competitive 5 $\mu$ m pixel InGaAs cameras.

### Specifications:

#### Electro-Optical Specifications:

Sensor	Acuros <sup>®</sup> CQD <sup>®</sup> sensor
Temperature stabilization	Single-stage thermo-electric cooler
Sensor array format	640 x 512
Resolution	0.33 megapixels
Spectral band	400 nm - 1700 nm
Array size	9.6 mm x 7.7 mm, 12.3 mm diagonal
Pixel pitch	15 $\mu$ m x 15 $\mu$ m
Max frame rate at full resolution	270 fps (8 bit), 180 fps (10, 12, 14 bit)
Pixel operability	99.9% typical, 99.75% min
Bit depth	8, 10, 12, 14 bit selectable
Integration type	Snapshot global shutter
Trigger	External TTL
Integration time	10 $\mu$ sec to 4 sec
Dynamic range	70 dB typical
Windowing & windowing frame rate	Array centered. Scales inversely to window size
Laser beam fringeless operation	No (See Acuros Laser Series Cameras)
Binning arrays	2 x 2, 4 x 4
Non-uniformity correction	2-point non-uniformity correction
Temporal dark noise	65e <sup>-</sup> typical (high gain)
Quantum efficiency	See typical QE curve.

### Features:

- VGA resolution
- TEC cooling
- Low noise
- Fast frame rate
- Visible-SWIR
- GigE Vision
- High value

### Applications:

- Machine vision
- Silicon inspection
- Automotive
- Fill-level
- Surveillance
- Hyperspectral
- Chemical sensors
- Agricultural
- Medical imaging
- Thermography



# SWIR<sup>®</sup>

VISION SYSTEMS

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## Specifications:

### Environmental & power specifications, typical performance

Operating case temperature	-20 °C to +55 °C
Power consumption	6.5 -12 W depending on TEC settings
Power supply voltage	6-16 VDC. POE not supported.
Regulatory compliance	CE mark

### Mechanical specifications

Dimensions excluding lens	6.1 x 6.1 x 10.3 cm (C-Mount)
Weight excluding lens	508 grams with C-mount adaptor
Lens mounts	C-, M42 (C-Mount flange-back distance)
Power connector	Hirose 12-pin, HR10A-10R-12PB (71)
Trigger connector	BNC

### Software and user interface

Software development kit	Windows GUI & Pleora eBUS SDK (Linux, Windows, MacOS)
GenICam compliance	Yes
Interface	GigE Vision

### Export compliance

US export designation	EAR-99. No license required for lawful export
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### Ordering

Part numbers	640: Acuros-0640-GigE-001
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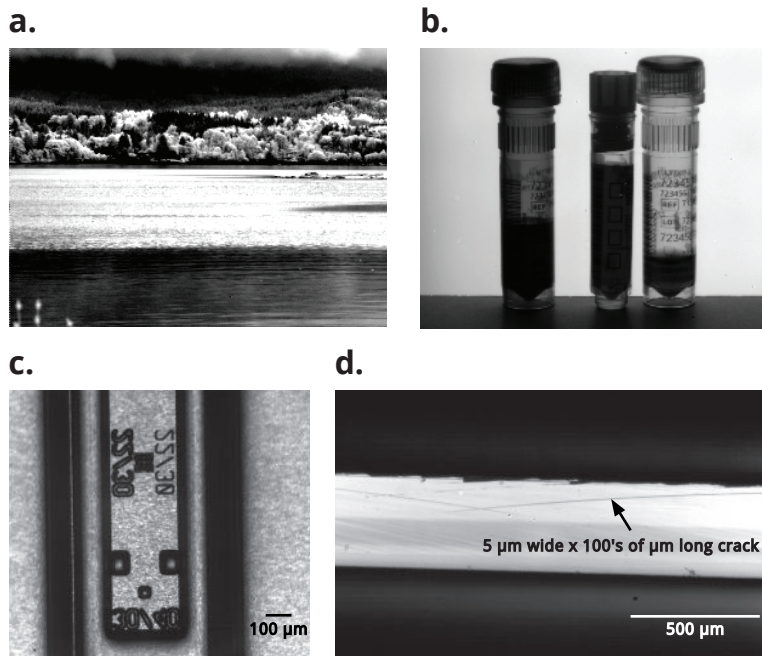


C-mount, F-mount, and M-42 Lens Mounts

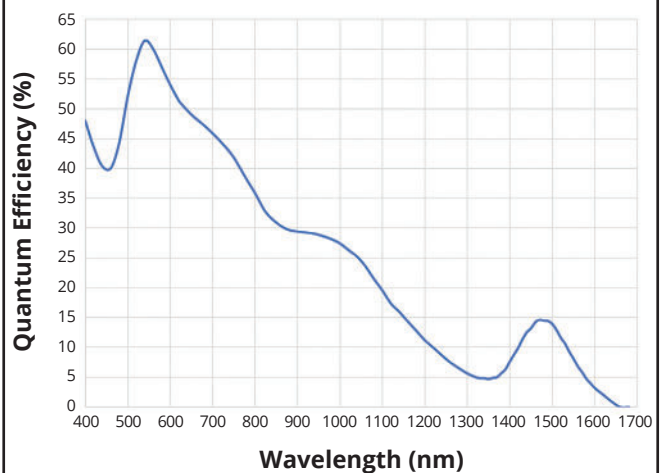


GigE Vision Interface

## Acuros CQD SWIR camera images



## Typical QE Performance



- a. Acuros 640: imaging through maritime rain event
- b. Acuros 640: imaging through pharmaceutical vial labels
- c. Acuros 1280: alignment mark in bonded wafers
- d. Acuros 1920: mag image of semiconductor chip edge

Acuros-0640-GigE-001

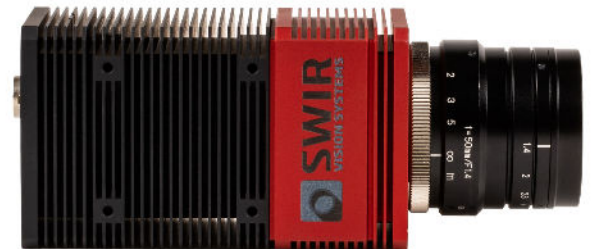
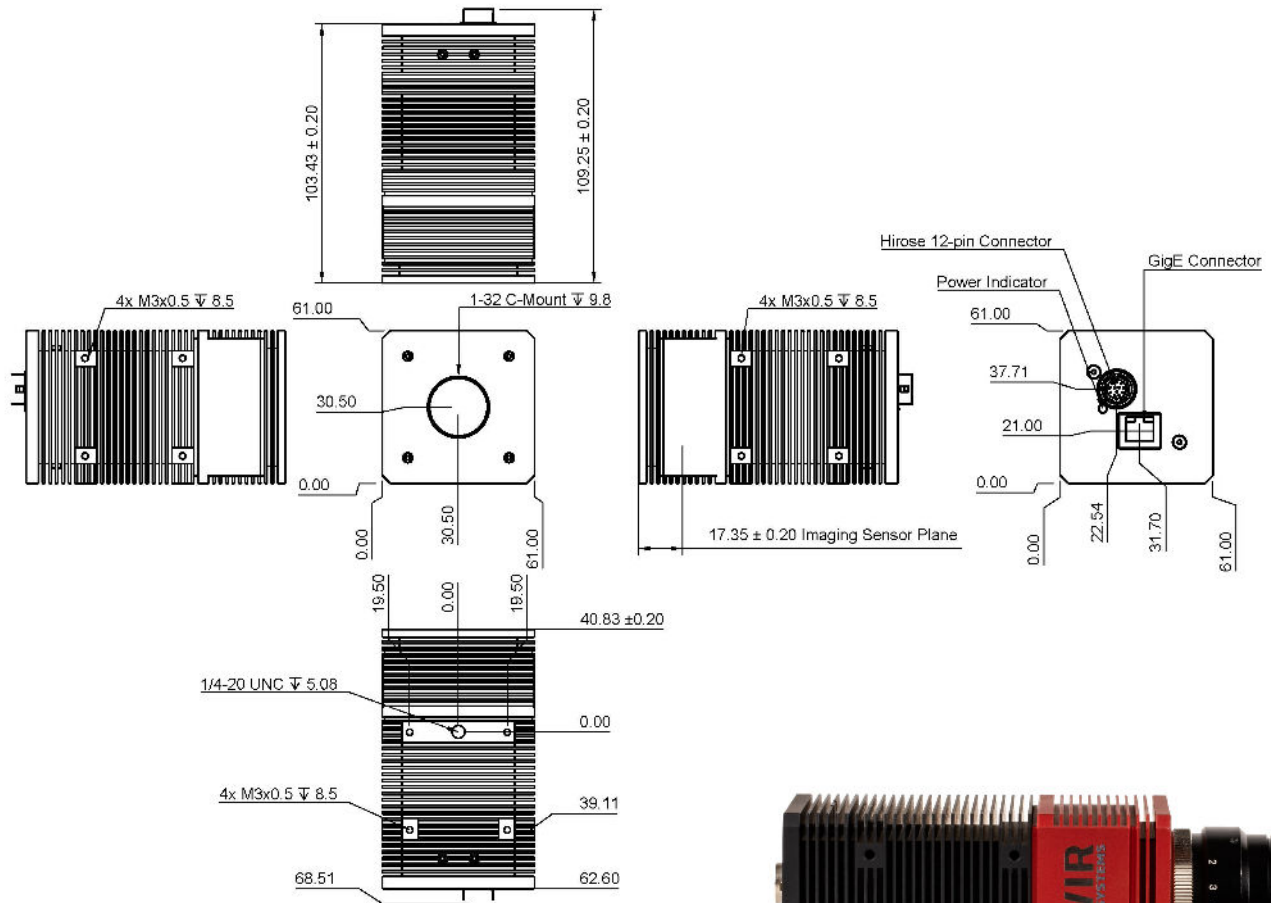


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## Mechanical Drawings



Distribution in the UK & Ireland



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