



## Acuros™ CQD™ 640 USB3 Camera

Acuros™ CQD™ 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. Acuros cameras built with 640x512, 1280x1024, or 1920x1080 focal plane arrays, are ideal for use in silicon inspection, machine vision, scientific, surveillance, instrumentation, and many more SWIR imaging applications.

### Specifications:

#### Electro-Optical Specifications:

Sensor	Acuros™ CQD™ 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 μm x 15μm
Max frame rate	380 fps at full resolution (10 bit)
Max frame rate	190 fps at full resolution (14 bit)
Pixel operability	99.5% typical
Bit depth	8, 10, 12, 14 selectable
Integration type	Snapshot global shutter
Trigger	External TTL
Integration time	10 μsec to 30 msec
Dynamic range	70 dB typical
Windowing	Array centered
Windowing frame rate	Scales inversely with window size
Binning arrays	2 x 2, 4 x 4
Non-uniformity correction	2-point non-uniformity correction
Temporal dark noise	< 210 electrons rms typical
Quantum efficiency	See typical QE curve.

### Features:

- VGA resolution
- TEC cooling
- Low noise
- Fast frame rate
- Visible-SWIR
- USB3 Vision
- High value

### Applications:

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



# SWIR<sup>®</sup>

VISION SYSTEMS

High Definition. SWIR Vision.

## Specifications:

### Environmental & power specifications, typical performance

Operating case temperature	-20 °C to +55 °C
Power consumption	6.5 watts, full frame rate, 40 °C case temp.
Power supply voltage	6-16 VDC
Regulatory compliance	CE mark

### Mechanical specifications

Dimensions excluding lens	6.1 x 6.1 x 9.7 cm (C-Mount)
Weight excluding lens	508 grams with C-mount adaptor
Lens mounts	C-Mount, 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 and SDK
GenICam compliance	Yes
Interface	USB3 Vision

### Export compliance

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

Part numbers	Acuros-0640-USB3-C-001
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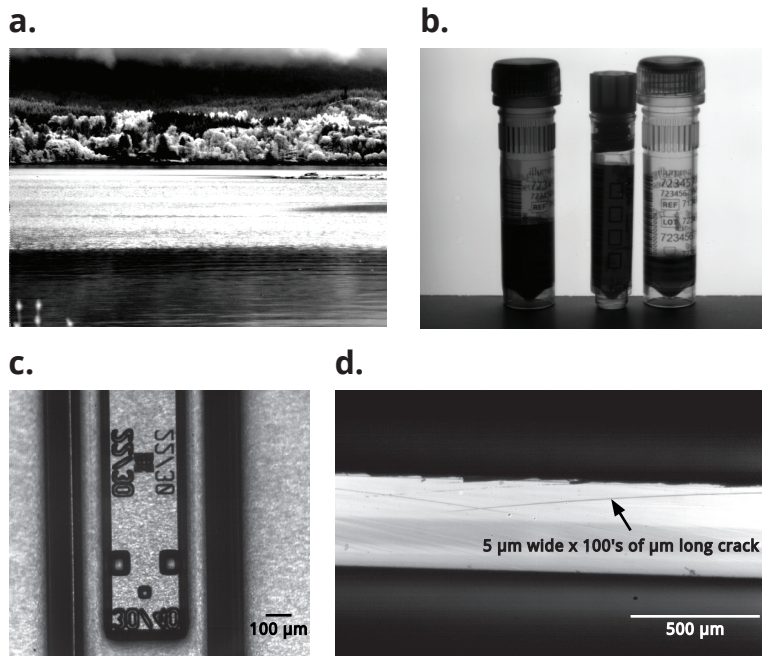


C-mount, F-mount, and M-42 Lens Mounts

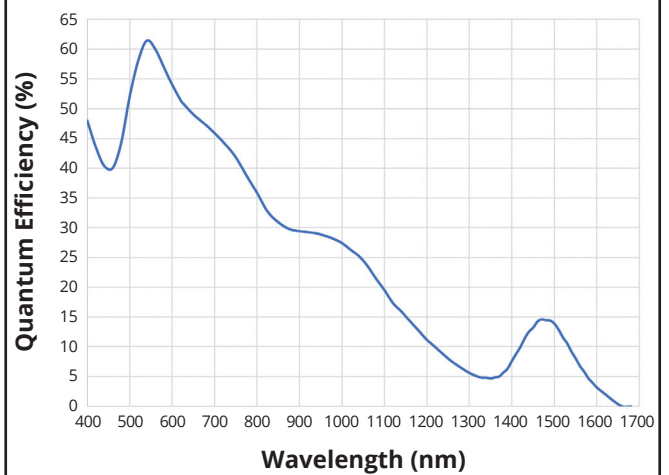


USB3 Vision Interface

### 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

High Definition. SWIR Vision.

[www.swirvisionsystems.com](http://www.swirvisionsystems.com)

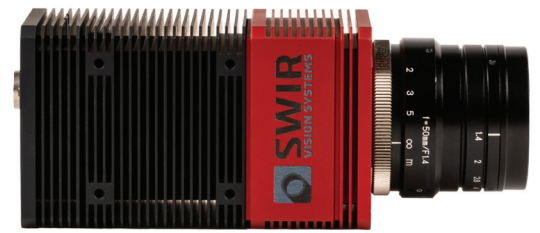
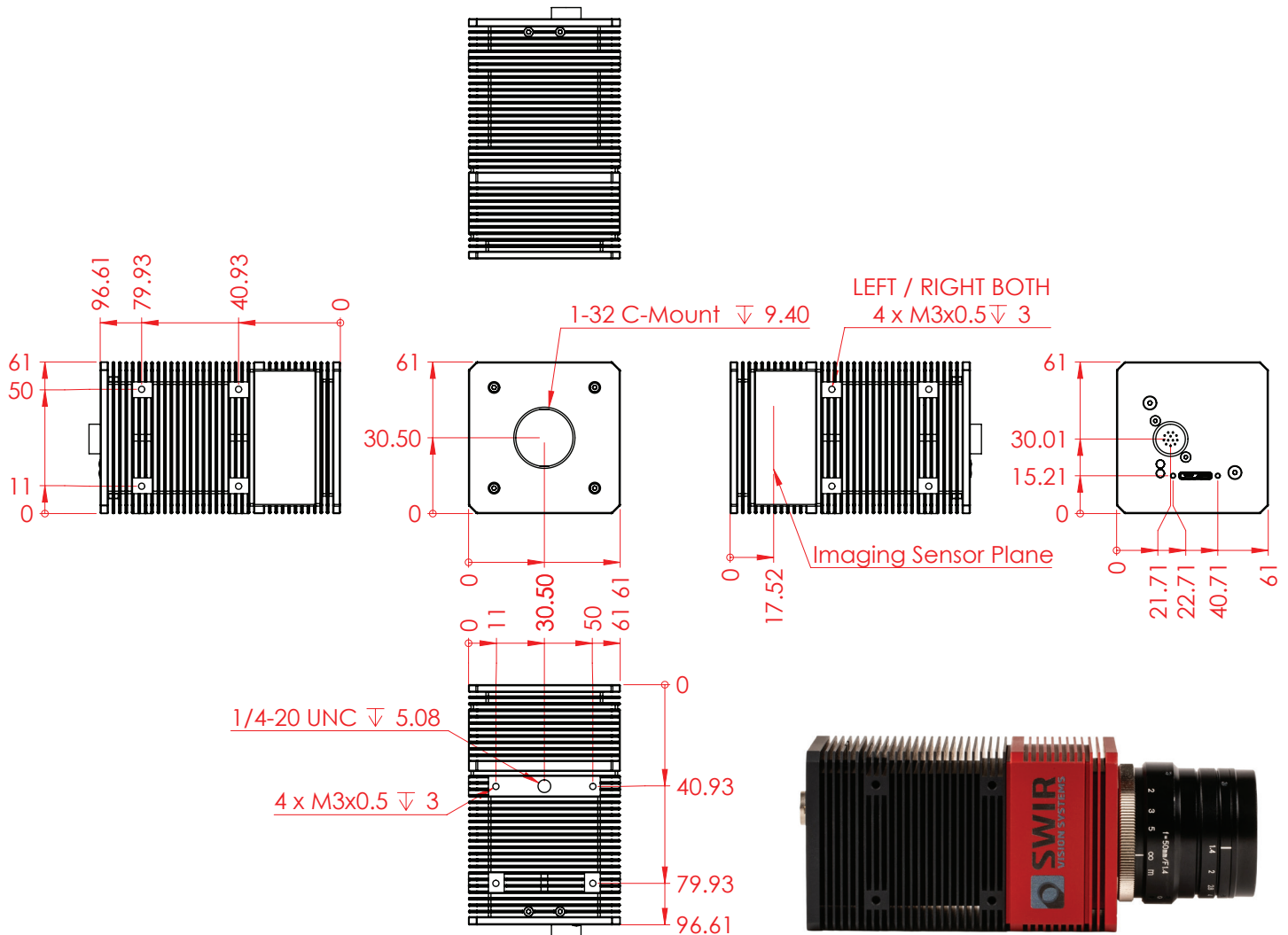


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## Mechanical Drawings



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