



## Acuros™ CQD™ 1280 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       | 1280 x 1024                         |
| Resolution                | 1.31 megapixels                     |
| Spectral band             | 400 nm - 1700 nm                    |
| Array size                | 19.2mm x 15.4 mm, 24.6 mm diagonal  |
| Pixel pitch               | 15 µm x 15µm                        |
| Max frame rate            | 90 fps at full resolution (10 bit)  |
| Max frame rate            | 45 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:

- HD 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

## 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, 594g (F-mount)  |
| Lens mounts               | C-, F-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 |
|-----------------------|-----------------------------------------------|

### Ordering

|              |                                                |
|--------------|------------------------------------------------|
| Part numbers | Acuros-1280-USB3-C-001, Acuros-1280-USB3-F-001 |
|--------------|------------------------------------------------|

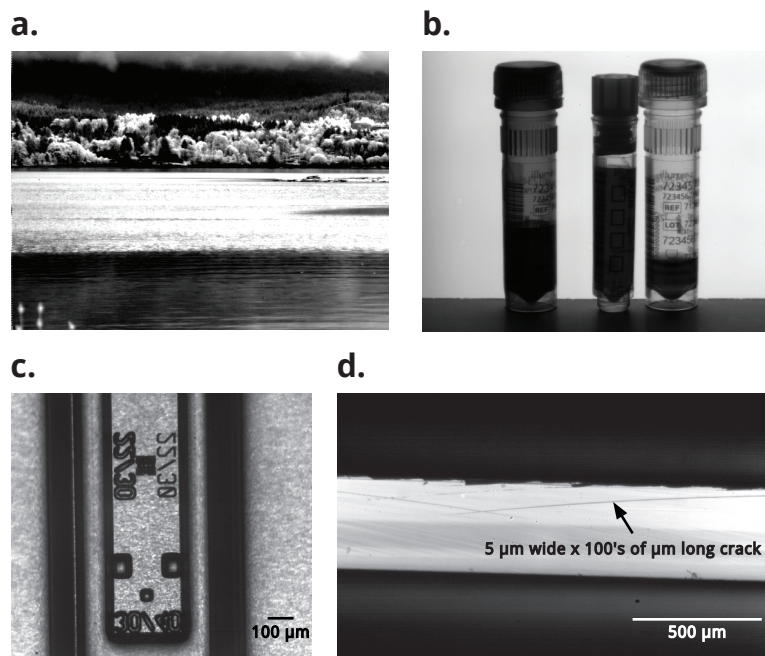


**C-mount, F-mount,  
and M-42 Lens  
Mounts**

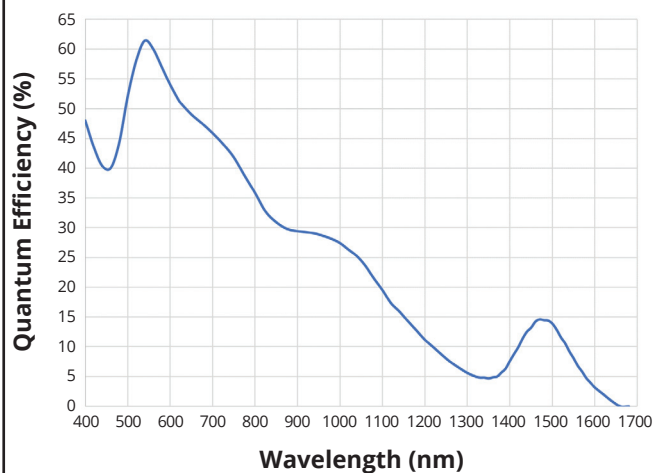


**USB3 Vision  
Interface**

### 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

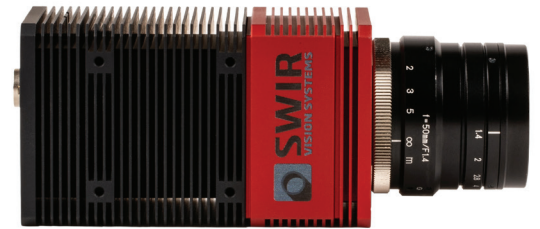
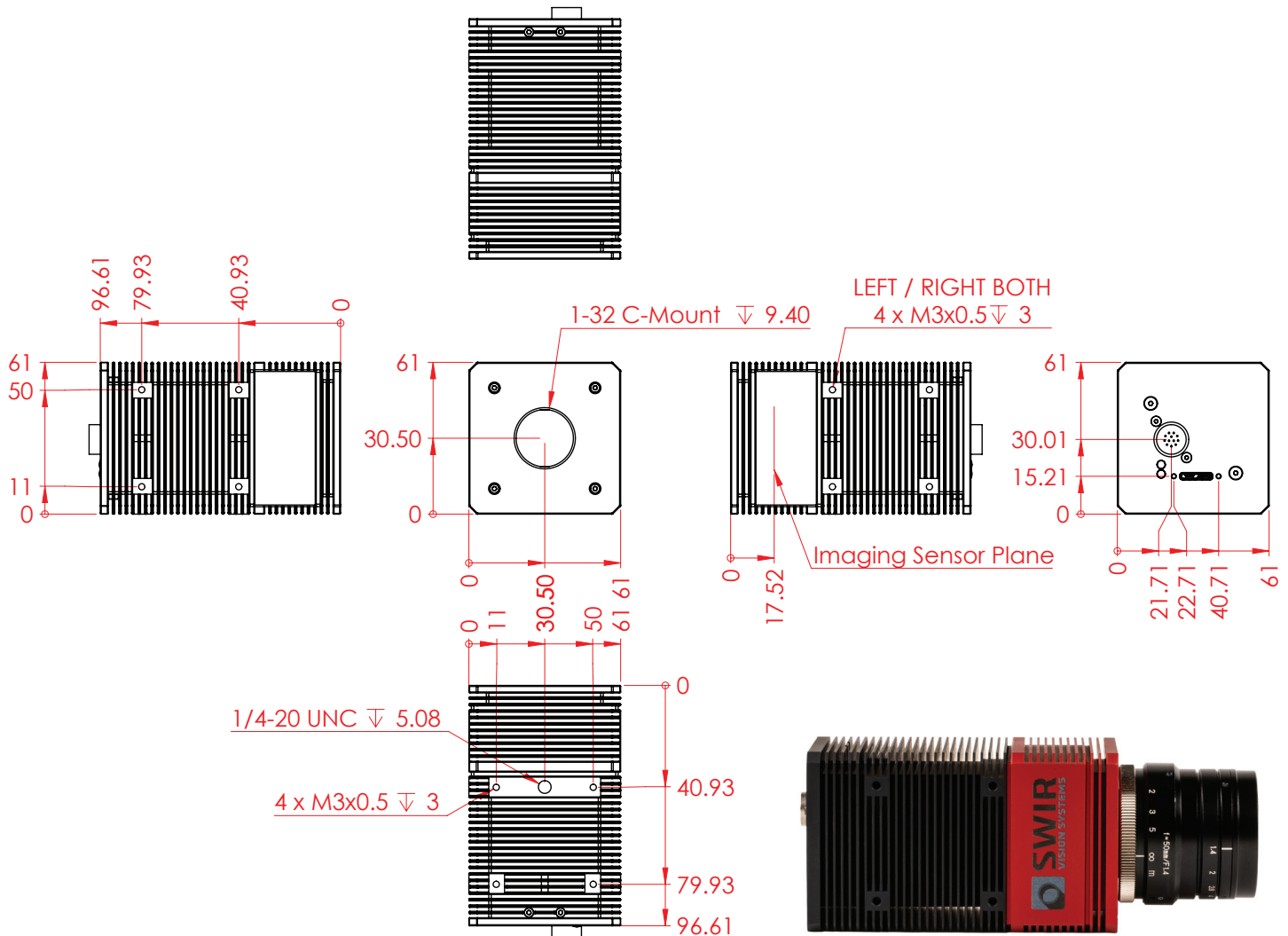


# SWIR<sup>®</sup>

VISION SYSTEMS

High Definition. SWIR Vision.

## Mechanical Drawings



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