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. The Acuros CQD 1920 SWIR camera, designed with integrated, multi-purpose 1920x1080 TEC Cooled CQD sensor, is ideal for use in silicon inspection, machine vision, scientific, surveillance, and many more SWIR imaging applications. The Acuros CQD 1920L SWIR camera is designed for use exclusively in laser beam diagnostics, laser alignment and interferometry applications. All Acuros CQD cameras are TEC cooled for low noise and highly stable performance.

**Specifications:**

<table>
<thead>
<tr>
<th>Electro-Optical Specifications:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensor</td>
<td>Acuros® CQD® sensor</td>
</tr>
<tr>
<td>Temperature stabilization</td>
<td>Single-stage thermo-electric cooler</td>
</tr>
<tr>
<td>Sensor array format</td>
<td>1920 x 1080</td>
</tr>
<tr>
<td>Resolution</td>
<td>2.07 megapixels</td>
</tr>
<tr>
<td>Spectral band</td>
<td>400 nm - 1700 nm</td>
</tr>
<tr>
<td>Array size</td>
<td>28.8 mm x 16.2 mm, 33 mm diagonal</td>
</tr>
<tr>
<td>Pixel pitch</td>
<td>15 μm x 15μm</td>
</tr>
<tr>
<td>Max frame rate at full resolution</td>
<td>58 fps (8 bit), 27fps (10 bit, 12 bit)</td>
</tr>
<tr>
<td>Pixel operability</td>
<td>99.5% typical</td>
</tr>
<tr>
<td>Bit depth</td>
<td>8, 10, 12 bit selectable</td>
</tr>
<tr>
<td>Integration type</td>
<td>Snapshot global shutter</td>
</tr>
<tr>
<td>Trigger</td>
<td>External TTL</td>
</tr>
<tr>
<td>Integration time</td>
<td>10 μsec to 30 msec</td>
</tr>
<tr>
<td>Dynamic range</td>
<td>70 dB typical</td>
</tr>
<tr>
<td>Windowing &amp; windowing frame rate</td>
<td>Array centered. Scales inversely to window size</td>
</tr>
<tr>
<td>Laser beam fringeless operation</td>
<td>Acuros 1920: No</td>
</tr>
<tr>
<td>Binning arrays</td>
<td>2 x 2, 4 x 4</td>
</tr>
<tr>
<td>Non-uniformity correction</td>
<td>2-point non-uniformity correction</td>
</tr>
<tr>
<td>Temporal dark noise</td>
<td>&lt; 210 electrons rms typical</td>
</tr>
<tr>
<td>Quantum efficiency</td>
<td>See typical QE curve.</td>
</tr>
</tbody>
</table>

**Features:**

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

**Applications:**

- Machine vision
- Silicon inspection
- Instrumentation (1920L)
- Beam profiling (1920L)
- Automotive
- Fill-level
- Surveillance
- Hyperspectral
- Chemical sensors
- Agricultural
- Medical imaging
- Thermography

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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 13.2 cm (F-mount) or 6.1 x 6.1 x 10.3 cm (M-42)
- Weight excluding lens: 594g with F-mount, 508g with M-42 mount
- Lens mounts: 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: GigE Vision

**Export compliance**
- US export designation: EAR-99. No license required for lawful export

**Ordering**
- Part numbers:
  - 1920: Acuros-1920-GigE-001
  - 1920L: Acuros-1920-GigE-003

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**Acuros CQD SWIR camera images**

- **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

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**Typical QE Performance**

Quantum Efficiency (%) vs. Wavelength (nm)

- 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
Mechanical Drawings for F-Mount interface
- See Acuros 640 Drawings for M-42 mount

Contact Us:
For technical, pricing, and sales information, or to learn more about Acuros cameras or CQD sensor technology, please contact us at:

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