

ACUROS® CQD® 640 GigE SWIR Camera

ACUROS-0640-GigE-001

The ACUROS CQD SWIR cameras are sensitive to wavelengths from 400 nm to 1700 nm and feature up to 1920 x 1080 resolution with 15 μ m pixels to enable high performance at the lowest cost. The camera features low noise, highly stable performance, and up to 10 dB higher SNR compared to the competition's 5 μ m pixel InGaAs cameras. It supports a range of applications, including industrial inspection, military intelligence, and advanced research, offering versatility and outstanding image quality for both low-cost and high-performance applications.

Please see the ACUROS eSWIR product line for expanded sensitivity capabilities from 400 nm to 2000 nm.

SPECIFICATIONS

Table 1. ELECTRO-OPTICAL SPECIFICATIONS

Parameter	Value/Description
Sensor	ACUROS CQD sensor
Temperature Stabilization	Single-stage thermo-electric cooler
Sensor Array Format	640 x 512
Resolution	0.33 MP (megapixel)
Spectral Band	400–1700 nm
Array Size	9.6 mm x 7.7 mm, 12.3 mm diagonal
Pixel Pitch	15 μ m x 15 μ 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	100 μ s to 4 s
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	80/70/65 e ⁻ typical
Quantum Efficiency	See typical QE curve (Figure 4)



ORDERING INFORMATION

Part Number
ACUROS-0640-GigE-001

Features

- VGA Resolution
- TEC Cooling
- Low Noise
- Fast Frame Rate
- Visible-SWIR
- GigE Vision

Applications

- Machine Vision
- Silicon Inspection
- Automotive
- Fill-level
- Surveillance
- Hyperspectral
- Chemical Sensors
- Agricultural
- Medical Imaging
- Thermography

ACUROS-0640-GigE-001

Table 2. ENVIRONMENTAL & POWER SPECIFICATIONS, TYPICAL PERFORMANCE

Parameter	Value/Description
Operating Case Temperature	–20 °C to +55 °C
Power Consumption	6.5–12 W depending on TEC settings
Power Supply Voltage	6–16 V dc. POE not supported
Regulatory Compliance	CE mark

Table 3. MECHANICAL SPECIFICATIONS

Parameter	Value/Description
Dimensions Excluding Lens	6.1 x 6.1 x 10.9 cm (C-mount)
Weight Excluding Lens	600 grams with C-mount adapter
Lens Mounts	C, M42 (C-mount flange-back distance)
Power Connector	Hirose 12-pin, HR10A-10R-12PB (71)
Trigger Connector	BNC

Table 4. SOFTWARE AND USER INTERFACE

Parameter	Value/Description
Software Development Kit	Windows GUI & Pleora eBUS SDK (Linux, Windows, macOS)
GenICam Compliance	Yes
Interface	GigE Vision



Figure 1. C-mount and M-42 Lens Mounts



Figure 2. GigE Vision Interface

ACUROS-0640-GigE-001

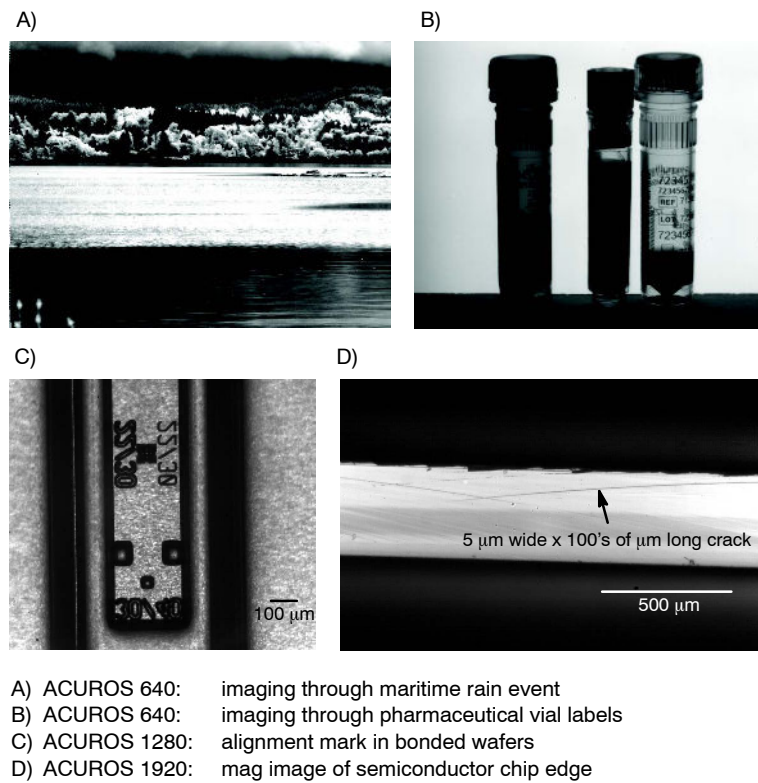


Figure 3. ACUROS CQD SWIR Camera Images

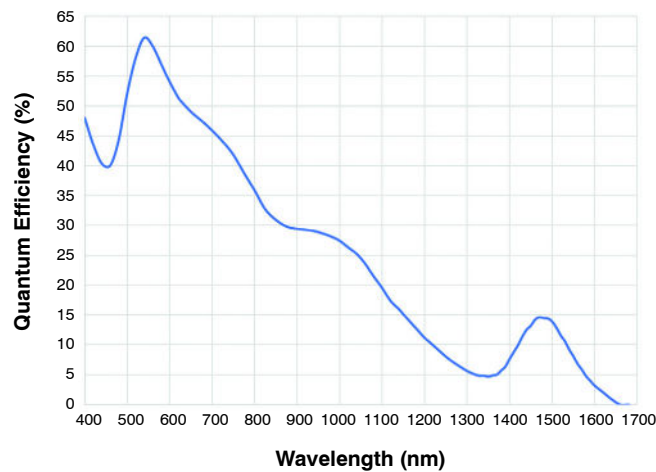
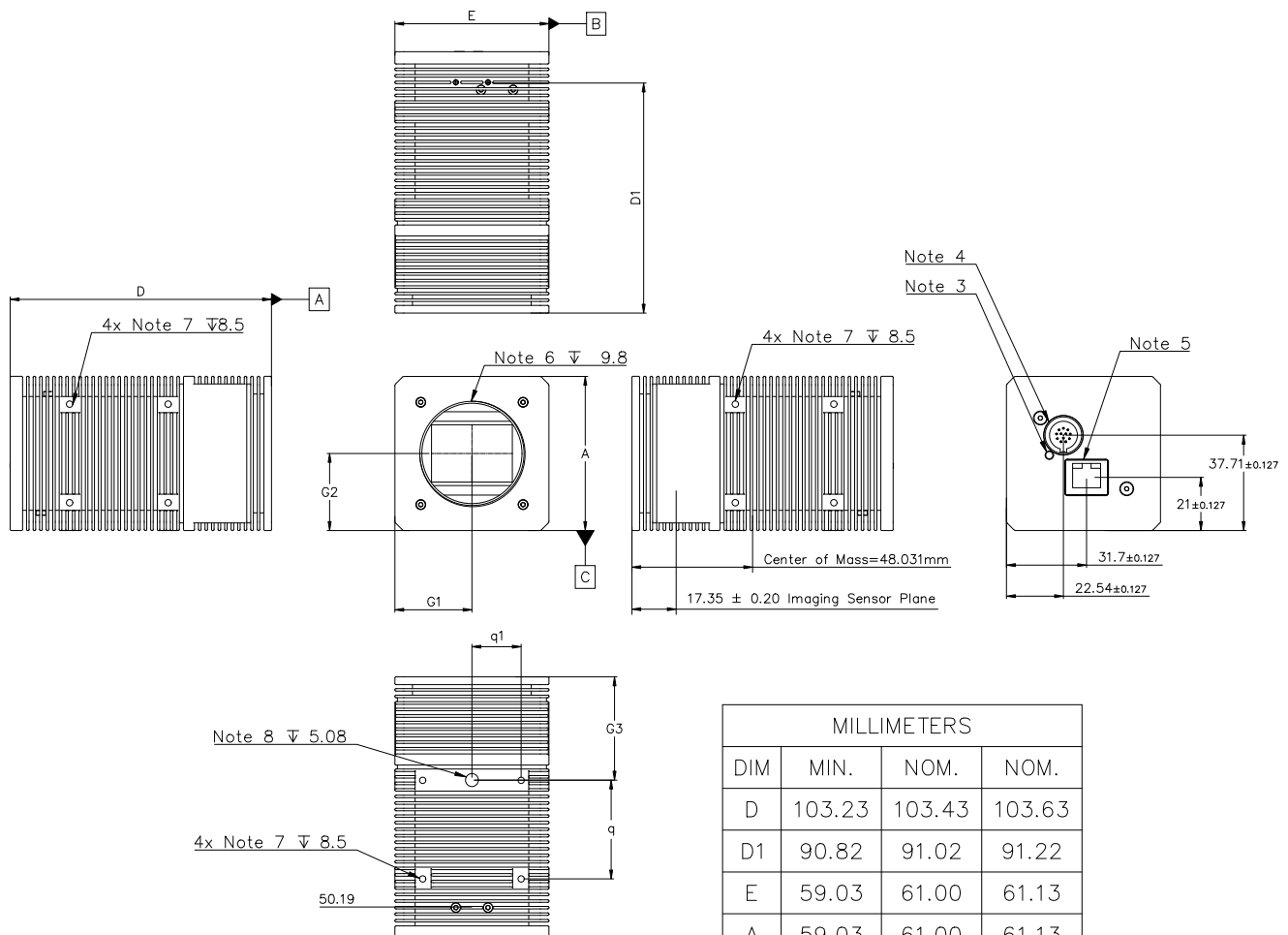


Figure 4. Typical QE Performance

ACUROS, CQD and SWIR VISION SYSTEMS are registered trademarks of Semiconductor Components Industries, LLC dba "onsemi" or its affiliates and/or subsidiaries in the United States and/or other countries. All other brand names and product names appearing in this document are registered trademarks or trademarks of their respective holders.

CMOD 103.43x61.00x61.00
CASE 810AA
ISSUE O

DATE 16 OCT 2024



NOTES:

1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 2018.
2. CONTROLLING DIMENSION: MILLIMETER
3. POWER INDICATOR
4. HIROSE 12 PIN CONNECTOR
5. GigE CONNECTOR
6. M42 MOUNT DEPTH ∇ 9.8
7. M3X0.5 DEPTH ∇ 8.5
8. 1/4-20 UNC DEPTH ∇ 5.08

DOCUMENT NUMBER:	98AON65003H	Electronic versions are uncontrolled except when accessed directly from the Document Repository. Printed versions are uncontrolled except when stamped "CONTROLLED COPY" in red.
DESCRIPTION:	CMOD 103.43x61.00x61.00	PAGE 1 OF 1

onsemi and onsemi are trademarks of Semiconductor Components Industries, LLC dba onsemi or its subsidiaries in the United States and/or other countries. onsemi reserves the right to make changes without further notice to any products herein. onsemi makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does onsemi assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. onsemi does not convey any license under its patent rights nor the rights of others.

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for [Cameras & Camera Modules](#) ***category:***

Click to view products by [ON Semiconductor](#) ***manufacturer:***

Other Similar products are found below :

[1202](#) [73-540-420I](#) [Web Camera module 5.0M pixel](#) [LI-USB30-OX05B1S-VCSEL-OMS-96717-200H](#) [LI-USB30-IMX490-GMSL2-120H](#) [LI-USB30-OV2312-GMSL2-110H](#) [LI-IMX675-MIPI-076H](#) [82635DSD456](#) [LI-AR0234CS-GMSL2-OWL](#) [5390](#) [5389](#) [107821](#) [LI-IMX728-9295-070H](#) [OAK-1-W-PoE](#) [LI-AR0341-GM2B-124H](#) [LI-IMX563-MIPI-AF](#) [LI-VENUS-OX03F10-OAX40-GM2A-060H](#) [STC-MCS163U3V](#) [LI-OG01A1B-MIPI-146D](#) [LI-VB1940-VCL-OMS-FP3-137H](#) [106681](#) [107402](#) [108010](#) [1202](#) [AC164150](#) [SEN0158](#) [2392](#) [106695](#) [106988](#) [107146](#) [106732](#) [LI-USB30-AR023ZWDR](#) [LI-OV2640-USB-M6](#) [LI-OV5640-MIPI-AF-NIR](#) [82635DSASMDLPRQ](#) [106687](#) [106493](#) [106688](#) [106682](#) [106694](#) [106989](#) [106693](#) [106696](#) [106683](#) [107140](#) [106982](#) [106685](#) [107141](#) [107147](#) [106878](#)