

ACUROS[®] CQD[®] 640L GigE eSWIR Camera

ACUROS-0640-GigE-004

The ACUROS CQD L-Series SWIR cameras feature large sensor area, low angular dependence and a short working distance for highly divergent emitters. ACUROS cameras deliver high resolution, high dynamic range and very high detectivity imaging to 2000 nm.

The L-Series cameras are designed for use exclusively in laser beam diagnostics, laser beam imaging and laser alignment applications.



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	350–2000 nm
Array Size	9.6 mm x 7.7 mm, 12.3 mm diagonal
Pixel Pitch	15 μm x 15 μm
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 μs to 4 s
Dynamic Range	65 dB typical
Windowing & Windowing Frame Rate	Array centered. Scales inversely to window size
Laser Beam Fringeless Operation	Yes
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-004

Features

- Large Sensor Size
- Short Working Distance for Highly Divergent Beams
- Low Angular Dependence
- Dynamic Range up to 70 dB
- Linear Photoresponse
- VGA Resolution
- TEC Cooling
- Low Noise
- GigE Vision
- Visible-eSWIR

Applications

- Laser Beam Diagnostics
- Laser Beam Imaging
- Laser Alignment

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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 9.8 cm
Weight Excluding Lens	505 grams
Lens Mounts	Standard mount. Inquire for other options.
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

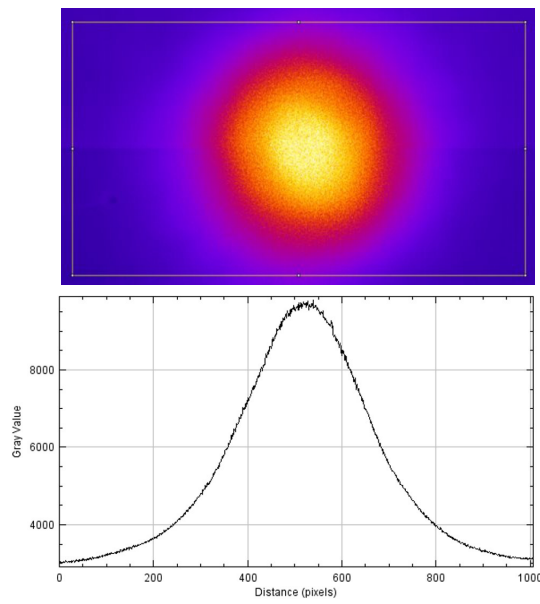


Figure 1.



Figure 2. GigE Vision Interface

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1550 nm Laser image and corresponding line file
(false color added post image)

Figure 3. ACUROS CQD SWIR Camera Image of Laser

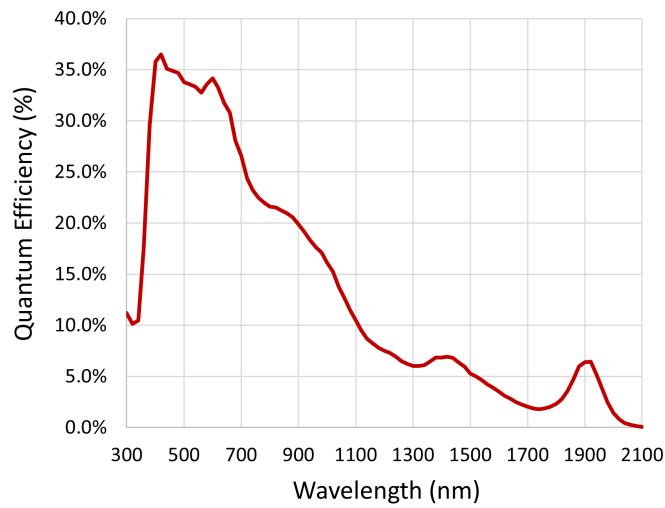
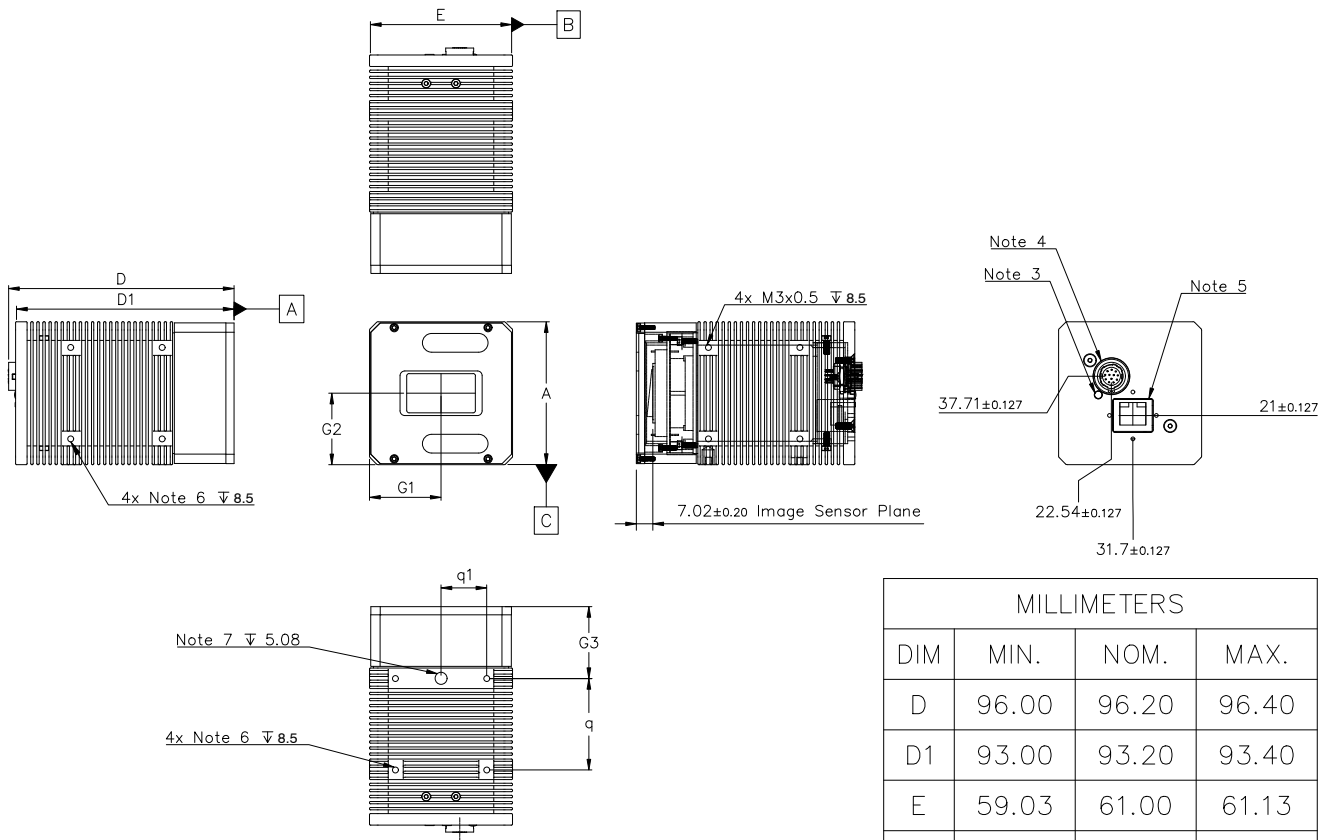


Figure 4. Typical QE Performance

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NOTES:

1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M. 2018.
2. CONTROLLING DIMENSION: MILLIMETER
3. POWER INIDCATOR
4. HIROSE 12 PIN CONNECTOR
5. GigE CONNECTOR
6. M3X0.5 DEPTH ∇ 8.5.
7. 1/4–20 UNC DEPTH ∇ 5.08

MILLIMETERS			
DIM	MIN.	NOM.	MAX.
D	96.00	96.20	96.40
D1	93.00	93.20	93.40
E	59.03	61.00	61.13
A	59.03	61.00	61.13
G1	30.35	30.48	30.61
G2	30.35	30.48	30.61
G3	30.47	30.60	30.73
q	38.98	39.11	39.24
q1	19.37	19.50	19.63

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