ACUROS® CQD® 1920L USB3 eSWIR Camera

ACUROS-1920-USB3-004

The ACUROS CQD L-Series extended SWIR (eSWIR) cameras feature large sensor area, low angular dependence and a long working distance for highly divergent emitters and collimated beams. ACUROS cameras deliver high resolution, high dynamic range and very high detectivity imaging from 400 nm to 2000 nm. The L-Series cameras are designed for use exclusively in laser beam diagnostics, laser beam imaging and laser alignment applications by mitigating interference fringing sources.

SPECIFICATIONS

Table 1. ELECTRO-OPTICAL SPECIFICATIONS

Parameter	Value/Description
Sensor	ACUROS CQD sensor
Temperature Stabilization	Single-stage thermo-electric cooler
Sensor Array Format	1920 x 1080
Resolution	2.07 MP (megapixel)
Spectral Band	400–2000 nm
Array Size	28.8 mm x 16.2 mm, 33 mm diagonal
Pixel Pitch	15 μm x 15 μm
Max Frame Rate at Full Resolution	58 fps (8, 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 (high gain)
Quantum Efficiency	See typical QE curve (Figure 4)

ORDERING INFORMATION

Part Number
ACUROS-1920-USB3-004

Features

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

Applications

- Laser beam Diagnostics
- Laser Beam Imaging
- Laser Alignment

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
Regulatory Compliance	CE mark

Table 3. MECHANICAL SPECIFICATIONS

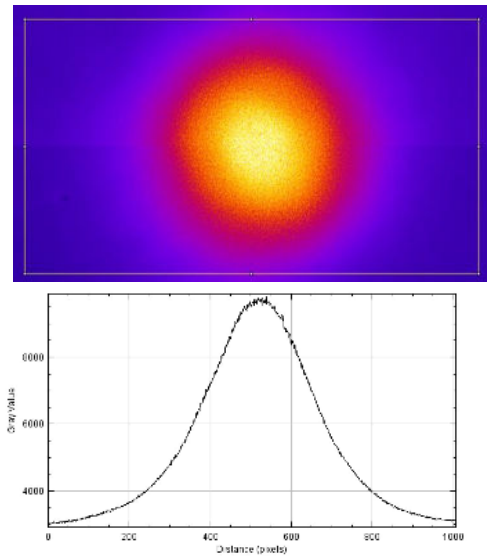
Parameter	Value/Description
Dimensions Excluding Lens	6.1 x 6.1 x 9.1 cm (C-mount)
Weight Excluding Lens	495 grams with (C-mount) adapter
Lens Mounts	Standard mount (C-mount). Inquire for other options.
Power Connector	Hirose 12-pin, HR10A-10R-12PB (71)
Trigger Connector	BNC

Table 4. SOFTWARE AND USER INTERFACE

Parameter	Value/Description
Software Development Kit	Windows GUI & Pleora eBUS SDK (Linux, Windows, macOS)
GenICam Compliance	Yes
Interface	USB3 Vision

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

Figure 2. USB Vision Interface



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

Figure 3. ACUROS CQD SWIR Camera Image of Laser

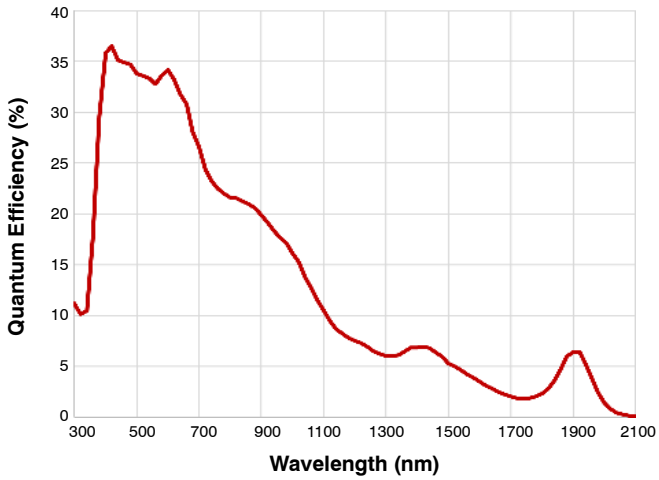
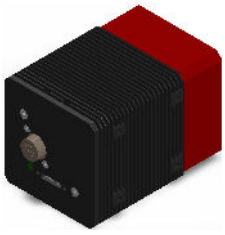
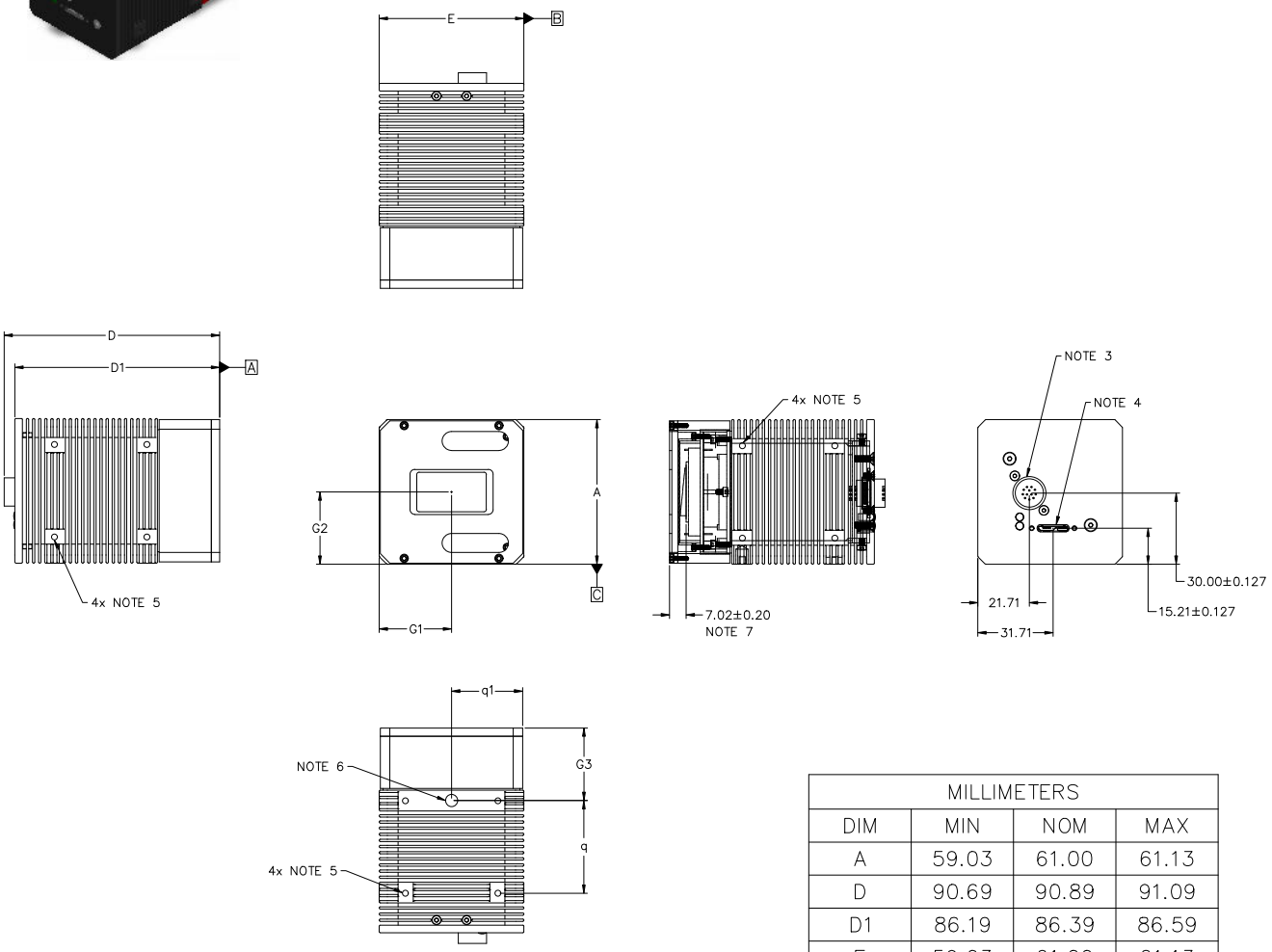


Figure 4. Typical QE Performance

CMOD 90.89x61.00x61.00
CASE 810AF
ISSUE A

DATE 03 DEC 2024





MILLIMETERS			
DIM	MIN	NOM	MAX
A	59.03	61.00	61.13
D	90.69	90.89	91.09
D1	86.19	86.39	86.59
E	59.03	61.00	61.13
G1	30.37	30.50	30.63
G2	30.37	30.50	30.63
G3	30.49	30.61	30.74
q	38.00	39.11	39.24
q1	19.37	19.50	19.63

NOTES:
1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M. 2018.
2. CONTROLLING DIMENSION: MILLIMETER
3. HIROSE 12 PIN CONNECTOR
4. USB 3.0 Micro−B
5. M3X0.5 DEPTH ↧ 8.5.
6. 1/4−20 UNC DEPTH ↧ 5.08
7. IMAGING SENSOR PLANE

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