ACUROS$^\circledR$ CQD$^\circledR$ 1920 GigE eSWIR Camera

ACUROS-1920-GigE-002

The ACUROS CQD extended SWIR (eSWIR) cameras have sensitivity from 400 nm to 2000 nm. This novel, wide bandwidth capability opens up new applications for chemical sensing, surveillance imaging, plastic sorting, and more. Acuros eSWIR cameras have unmatched SNR without the need for expensive cooling systems.

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 bit), 27 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	Array centered
Windowing Frame Rate	Scales inversely to window size
Binning Arrays	2 x 2, 4 x 4
Non-uniformity Correction	2-point non-uniformity correction
Temporal Dark Noise	80/70/65 e$^-$ typical
Detectivity	See typical detectivity curve (Figure 4)

ORDERING INFORMATION

Part Number
ACUROS-1920-GigE-002

Features

- Full HD Resolution
- TEC Cooling
- Low Noise
- Fast Frame Rate
- Visible-eSWIR
- GigE Vision

Applications

- Hydrocarbon Detection
- Chemical Sensing
- Medical Imaging
- Plastic Sorting
- Hyperspectral
- High Resolution
- Thermal Imaging
- Surveillance
- Machine Vision
- Silicon Inspection
- Instrumentation

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

Figure 2. GigE Vision Interface
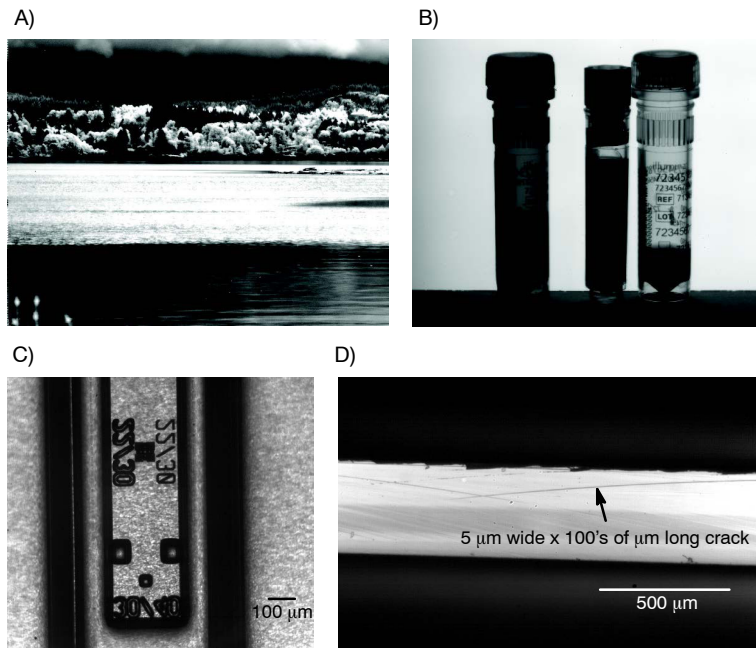
A) ACUROS 640:   imaging through maritime rain event
B) ACUROS 640:   imaging through pharmaceutical vial labels
C) ACUROS 1280:   alignment mark in bonded wafers
D) ACUROS 1920:   mag image of semiconductor chip edge

Figure 3. ACUROS CQD SWIR Camera Images
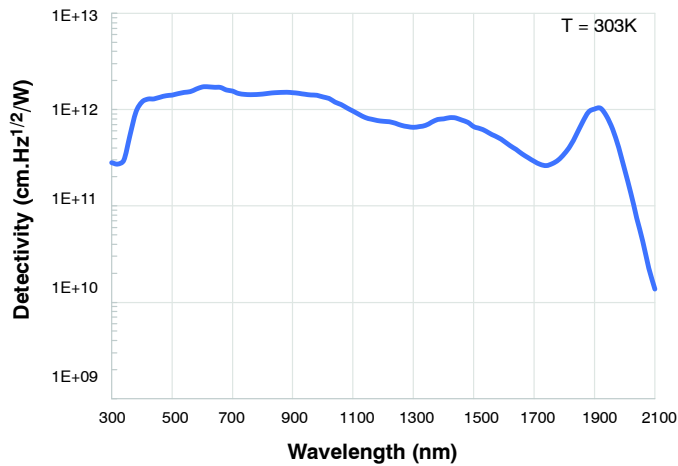
Figure 4. Typical Detectivity Performance

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

DATE 16 OCT 2024

Center of Mass=48.031mm

17.35 ± 0.20 Imaging Sensor Plane

37.71±0.127

21±0.127

31.7±0.127

22.54±0.127
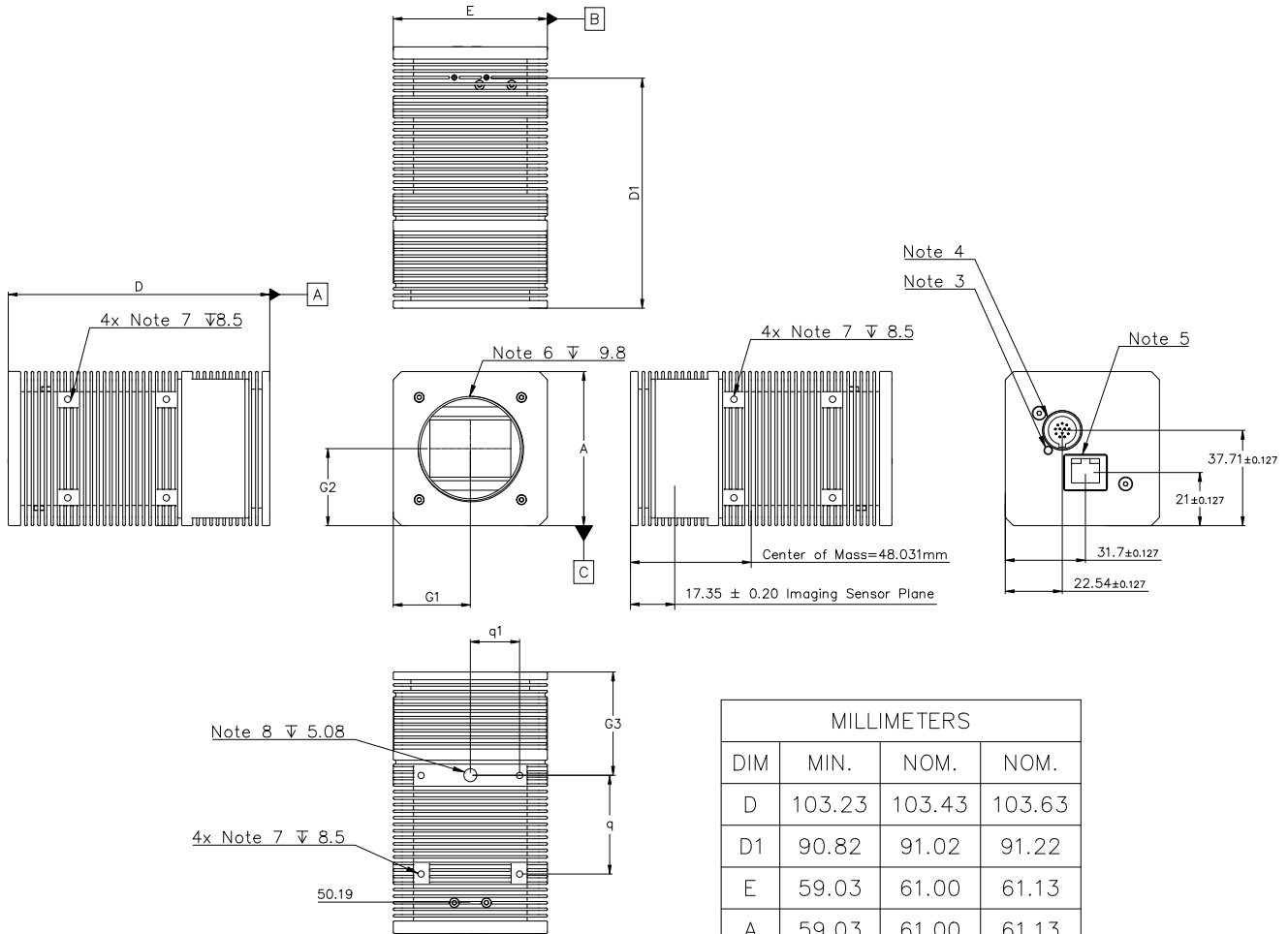
NOTES:
1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M. 2018.
2. CONTROLLING DIMENSION: MILLIMETER
3. POWER INDICATOR
4. HIROSE 12 PIN CONNECTOR
5. GigE CONNECTOR
6. M42 MOUNT DEPTH ⧄ 9.8
7. M3X0.5 DEPTH ⧄ 8.5
8. 1/4-20 UNC DEPTH ⧄ 5.08

DIM	MILLIMETERS		
	MIN.	NOM.	NOM.
D	103.23	103.43	103.63
D1	90.82	91.02	91.22
E	59.03	61.00	61.13
A	59.03	61.00	61.13
G1	30.37	30.50	30.63
G2	30.37	30.50	30.63
G3	52.88	53.08	53.28
q	38.98	39.11	39.24
q1	19.37	19.50	19.63

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DESCRIPTION:	CMOD 103.43x61.00x61.00	**PAGE 1 OF 1**

ADDITIONAL INFORMATION

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