

ACUROS® CQD® 1280L GigE SWIR Camera

ACUROS-1280-GigE-003

The ACUROS CQD L-Series SWIR cameras feature large sensor area, low angular dependence and a longer working distance for highly divergent emitters and collimated beams. Auros cameras deliver high resolution, high dynamic range and very high detectivity imaging from 400 nm to 1700 nm. The L-Series cameras are designed for use in laser beam diagnostics, laser beam imaging and laser alignment applications by mitigating interference fringing sources.

Please see the Auros 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 | 1280 x 1024 |
| Resolution | 1.31 MP (megapixel) |
| Spectral Band | 400–1700 nm |
| Array Size | 19.2 mm x 15.4 mm, 24.6 mm diagonal |
| Pixel Pitch | 15 μ m x 15 μ m |
| Max Frame Rate at Full Resolution | 88 fps (8 bit), 45 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 | 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 5) |



ORDERING INFORMATION

| Part Number |
|----------------------|
| ACUROS-1280-GigE-003 |

Features

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

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 | 508 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 |

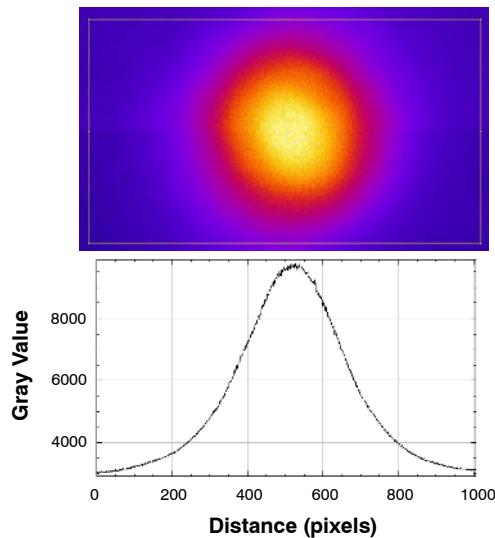


Figure 1. Lens Mount



Figure 2. GigE Vision Interface

ACUROS-1280-GigE-003



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

Figure 3. ACUROS CQD SWIR Camera Images of Laser

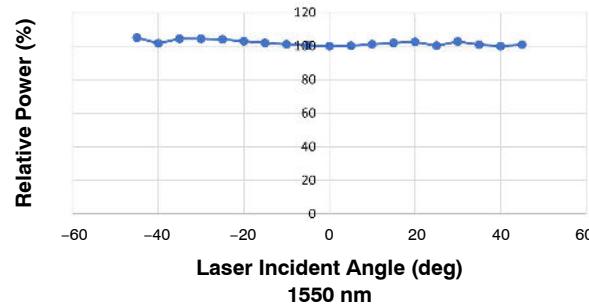


Figure 4. Angular Dependence Data

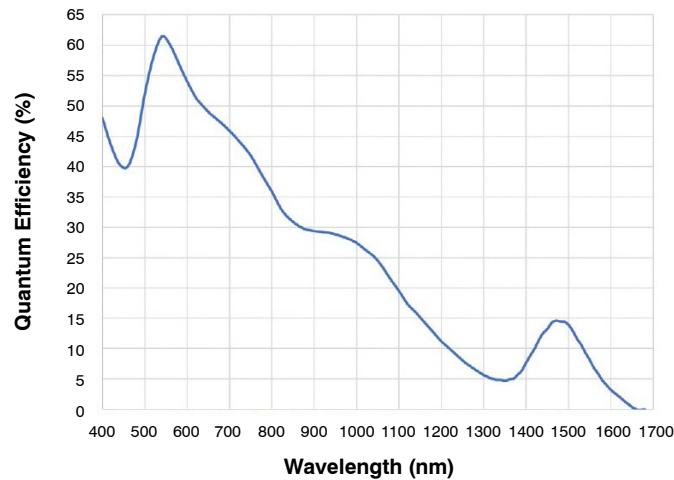


Figure 5. Typical QE Performance

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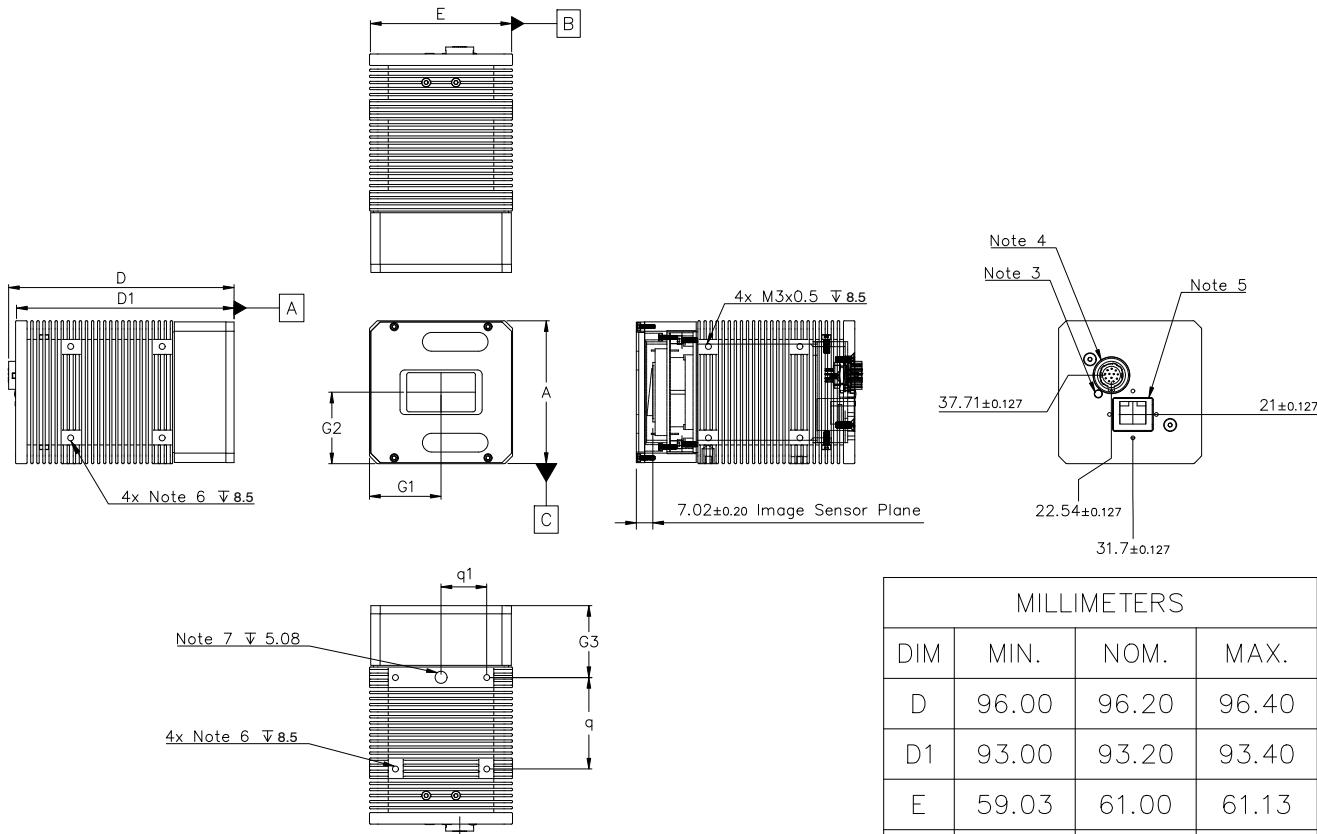
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CASE 810AD

ISSUE A

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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. M3X0.5 DEPTH V 8.5.
7. 1/4-20 UNC DEPTH V 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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