Allied Vision

Prosilica GT
4090NIR

- Type 4/3 CMOS sensor
- IEEE 1588 PTP
- Power over Ethernet
- 9.58 fps at full resolution

Engineered for every environment
High-resolution cameras for demanding applications

Prosilica GT 4090NIR with ON Semi PYTHON 12K NIR runs 9.6 frames per second at 12.5 MP resolution.

The rugged housing optimized for heat dissipation makes Prosilica GT the ideal solution for harsh environments. The various lens control options allow constant adjustment of the image brightness to changing light conditions. Offering resolutions of up to 31 megapixels, they are ideal for high-definition imaging applications with demanding requirements of robustness and design-in flexibility.

Easy software integration with Allied Vision's Vimba Suite and compatibility to the most popular third party image-processing libraries.

See the Modular Concept for lens mount, housing variants, optical filters, case design, and other modular options. See the Customization and OEM Solutions webpage for additional options.

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Specifications

Interface	IEEE 802.3 1000BASE-T, IEEE 802.3af (PoE)
Resolution	4096 (H) × 3072 (V)
Sensor	ON Semi PYTHON 12K NIR
Sensor type	CMOS
Shutter mode	GS (Global shutter)
Sensor size	Type 4/3
Pixel size	4.5 µm × 4.5 µm
Lens mount (default)	F-Mount
Max. frame rate at full resolution	9.58 fps
ADC	10 Bit
Image buffer (RAM)	128 MByte

Imaging performance

Imaging performance data is based on the evaluation methods in the EMVA 1288 Release 3.1 standard for characterization of image sensors and cameras. Measurements are typical values for NIR models measured without optical filter.

Quantum efficiency at 529 nm	53 %
Quantum efficiency at 850 nm	32 %
Temporal dark noise	31.0 e$^-$
Saturation capacity	7700 e$^-$
Dynamic range	47.7 dB
Absolute sensitivity threshold	31.6 e$^-$

Output

Bit depth	10-bit
Monochrome pixel formats	Mono8, Mono10

General purpose inputs/outputs (GPIOs)

TTL I/Os	1 input, 2 outputs
Opto-isolated I/Os	1 input, 2 outputs
RS232	1

Operating conditions/dimensions

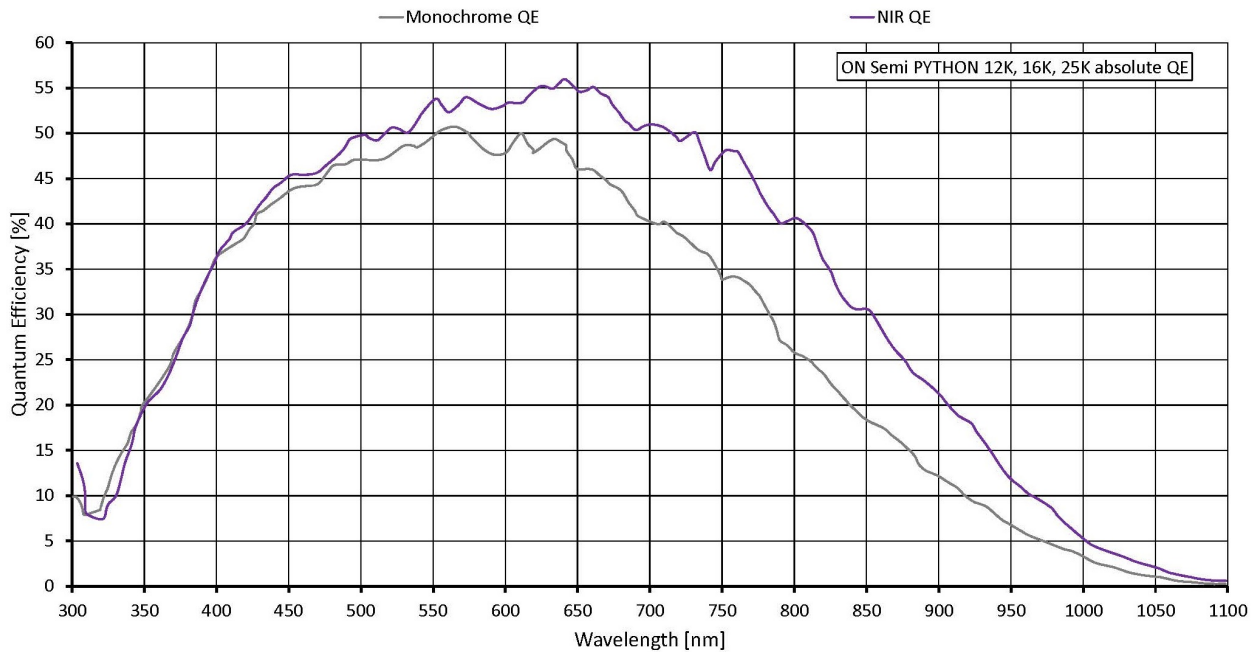|	
Operating temperature	-20 °C to +50 °C ambient (without condensation)
Power requirements (DC)	7 to 25 VDC AUX or 802.3at Type 1 PoE
Power consumption	4.96 W at 12 VDC; 6.7 W PoE
Mass	372 g
Body dimensions (L × W × H in mm)	96 × 66 × 53.3 (including connectors)

Quantum efficiency

Features

Image optimization features:

- Auto gain (manual gain control: 0 to 22 dB)
- Auto exposure (manual exposure control: 1 μs to 1 s, 1 μs increments)
- Binning (horizontal and vertical) (sum)
- Decimation X/Y
- Enhanced Defect Pixel Correction
- Fixed Pattern Noise Correction
- Gamma correction
- Three look-up tables
- Region of interest

Camera control features:

- EF lens control (order option -18)
- Event channel
- Image chunk data
- IEEE 1588 Precision Time Protocol
- RS232
- Storable user sets
- StreamBytesPerSecond (bandwidth control)
- Stream hold
- Sync out modes: Trigger ready, input, exposing, readout, imaging, strobe, GPO
- Temperature monitoring (main board and sensor board)
- Trigger over Ethernet Action Commands

Technical drawing
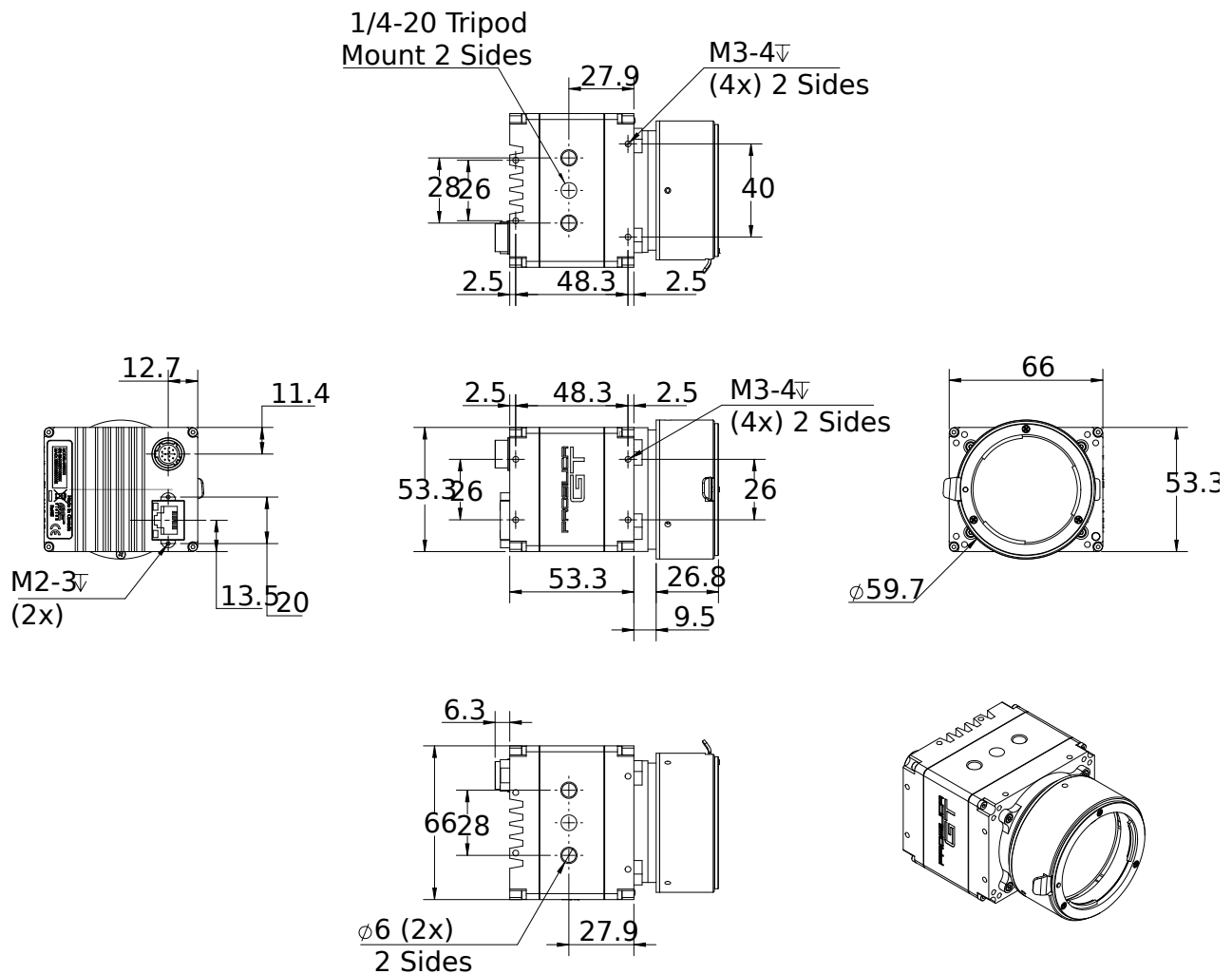
Applications

Prosilica GT4090NIR is ideal for a wide range of applications including:

- Outdoor imaging
- Intelligent Traffic Systems
- Public security and surveillance
- Industrial inspection (for example food, bottles, recycling, labels)
- Microscopy
- Military and space applications
- Medical and healthcare
- Other machine vision applications