

Manta

G-040



- Sony IMX287 CMOS sensor
- Power over Ethernet option
- Angled head and board level variants
- Video-iris lens control

Description

GigE Vision camera featuring the Sony IMX287 CMOS sensor

Manta G-040 is a 0.40 Megapixel machine vision camera with a GigE compliant Gigabit Ethernet interface and Hirose port. Manta G-040 incorporates the high quality Type 1/2.9 (6.3 mm diagonal) Sony IMX287 CMOS sensor with Pregius global shutter technology. The Sony IMX287 CMOS sensor provides high frame rates, high sensitivity, and excellent picture quality. The Manta G-040 is offered in monochrome and color models. At full resolution, this camera achieves 286 frames per second. With a smaller region of interest, higher frame rates are possible. You can also achieve a higher frame by adjusting the packet size. The Manta G-040 is an ideal replacement for legacy CCD models.

Manta is one of Allied Vision's versatile GigE Vision cameras with a wide range of features. Particular highlights are the three look-up tables, sophisticated color correction capabilities, a robust metal housing, and many modular options. By default monochrome models ship with protection glass B 270 (ASG) and color models ship with an IRC Hoya C-5000 IR cut filter.

Benefits and features:

- Monochrome (G-040B) and color (G-040C) models
- GigE Vision interface with Power over Ethernet option
- Screw mount RJ45 Ethernet connector for industrial environments
- Supports cable lengths up to 100 meters (CAT-5e or CAT-6)
- Trigger over Ethernet (ToE) Action Commands allow for a single cable solution
- Standard M3 mounting holes on top and bottom of housing
- Support for popular third party image-processing libraries including Cognex VisionPro, MathWorks MATLAB, and National Instruments LabVIEW

Options:

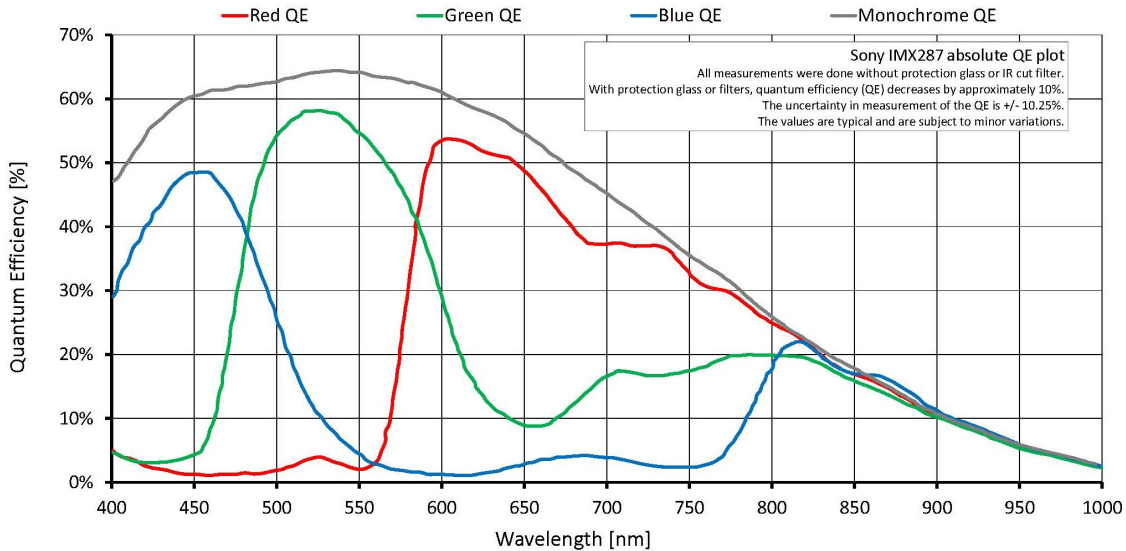
- Power over Ethernet (PoE)

- Available with CS-Mount or CS-Mount with M12-Mount adapter
- Available with Protection glass B 270 (ASG), IRC type Jenofilt 217 (IR cut filter), IRC Hoya C-5000 (IR cut filter), IRP RG715 (IR pass filter), IRP RG830 (IR pass filter)
- Available with various angled head housings or board level version
- Available with white medical design

See the [Modular Concept](#) for lens mount, housing variants, optical filters, case design, and other modular options. See the [Customization and OEM Solutions](#) page for additional options.

Specifications

Manta	G-040
Interface	IEEE 802.3 1000BASE-T, IEEE 802.3af (PoE) optional
Resolution	728 (H) × 544 (V)
Sensor	Sony IMX287
Sensor type	CMOS
Sensor size	Type 1/2.9
Pixel size	6.90 μm × 6.90 μm
Lens mount (default)	C-Mount
Max. frame rate at full resolution	286 fps
ADC	12 bit
Image buffer (RAM)	128 MByte
Output	
Bit depth	8-12 bit
Monochrome pixel formats	Mono8, Mono12Packed, Mono12
YUV color pixel formats	YUV411Packed, YUV422Packed, YUV444Packed
RGB color pixel formats	RGB8Packed, BGR8Packed
Raw pixel formats	BayerRG8, BayerRG12, BayerRG12Packed
General purpose inputs/outputs (GPIOs)	
Opto-isolated I/Os	2 inputs, 2 outputs
RS232	1
Operating conditions/dimensions	
Operating temperature	+5 °C to +45 °C ambient (without condensation)
Power requirements (DC)	8 to 30 VDC; PoE
Power consumption	2.77 W @ 12 VDC; 3.23 W PoE
Mass	190 g; 200 g (PoE)
Body dimensions (L × W × H in mm)	86.3 × 44 × 29 (including connectors)
Regulations	CE: 2014/30/EU (EMC), 2011/65/EU (RoHS); FCC Class B; CAN ICES-003



Features

Image optimization features:

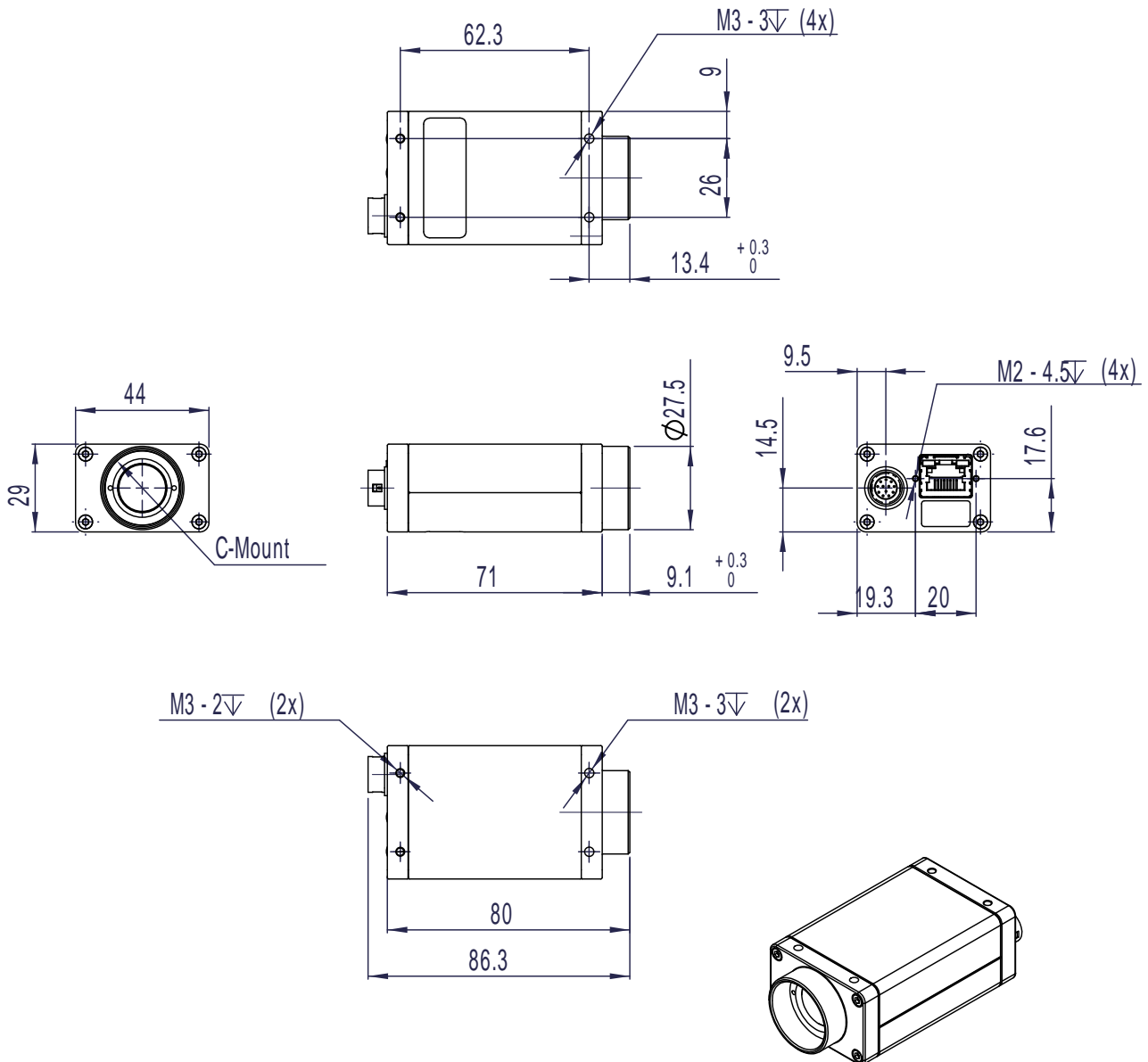
- Auto gain (manual gain control: 0 to 40 dB; 0.1 dB increments)
- Auto exposure (exposure time control varies by pixel format)
- Auto white balance (G-040C only)
- Binning
- Black level (offset)
- Color correction, hue, saturation (G-040C only)
- Decimation
- Gamma correction
- Three look-up tables (LUTs)
- Region of interest (ROI), separate ROI for auto features
- Reverse X/Y

Camera control features:

- Auto-iris (video type)
- Event channel
- Image chunk data
- IEEE 1588 Precision Time Protocol
- Storable user sets
- StreamBytesPerSecond (easy bandwidth control)
- Stream hold

- Sync out modes: Trigger ready, input, exposing, readout, imaging, strobe, GPO
- Temperature monitoring (main board)
- Trigger over Ethernet (ToE) Action Commands

Technical drawing





Applications

The Manta G-040 is the perfect model for industrial applications that require accurate imaging of fast-moving subjects. Equipped with a Pregius global shutter function, the camera provides high-quality image capture that is not affected by focal plane distortion or flash bands. The Sony IMX287's 6.9 μm x 6.9 μm pixel size achieves sensitivity four times that of the IMX273. This means that the same sensor output can be obtained with a shorter shutter time, making it possible to increase inspection speeds in factories. In addition, high sensitivity is achieved even in the near-infrared wavelength band that generally has low quantum efficiency, thereby realizing superior performance.

Manta G-040 is ideal for a wide range of applications including:

- Machine Vision
- Broadcast analysis requiring Full HD such as sports analytics
- Industrial inspection
- Security and surveillance
- Intelligent traffic solutions (ITS) including traffic monitoring, speed enforcement, and toll collection
- Low light and/or high sensitivity conditions
- Outdoor applications with dynamic lighting situations