Allied Vision

Mako G
G-158

- Sony IMX273 CMOS sensor
- Power over Ethernet
- 1.58 megapixel resolution
- Ultra-compact design

Description

GigE Vision camera featuring the Sony IMX273 CMOS sensor

Mako G-158 is a 1.58 megapixel GigE machine vision camera that incorporates the high quality Type 1/2.9 (6.3 mm diagonal) Sony IMX273 CMOS sensor. At full resolution, this camera runs 75.2 frames per second. With a smaller region of interest, higher frame rates are possible. The Mako G-158 is an ideal replacement for legacy CCD models.

Mako G cameras have an ultra-compact form factor and the same mounting positions as many analog cameras. All models include Power over Ethernet (PoE), three opto-isolated outputs, and a 64 MB image buffer. The image quality profits from the precisely aligned sensor. By default monochrome models ship with no optical filter and color models ship with IRC Hoya C-5000 IR cut filter.

Benefits and features:

- Monochrome (G-158B) and color (G-158C) models
- GigE Vision interface with Power over Ethernet
- Screw mount RJ45 Ethernet connector for secure operation in industrial environments
- Supports cable lengths up to 100 meters (CAT-5e or CAT-6)
- Comprehensive I/O functionality for simplified system integration
- Popular C-Mount lens mount
- Easy camera mounting via standard M3 threads on top and bottom of housing or optional tripod adapter
- Easy software integration with Allied Vision's Vimba SDK and compatibility to the most popular third party image-processing libraries.

Options:

- Available with CS-Mount or 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)

See the Modular Concept for lens mount and optical filter options.
See the Customization and OEM Solutions webpage for additional options.

Specifications

Mako G	G-158
Interface	IEEE 802.3 1000BASE-T, IEEE 802.3af (PoE)
Resolution	1456 (H) × 1088 (V)
Sensor	Sony IMX273
Sensor type	CMOS
Sensor size	Type 1/2.9
Pixel size	3.45 µm × 3.45 µm
Lens mount (default)	C-Mount
Max. frame rate at full resolution	75.2 fps
ADC	12 bit
Image buffer (RAM)	64 MByte
Output	
Bit depth	12 bit
Monochrome pixel formats	Mono8, Mono12, Mono12Packed
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	1 input, 3 outputs
Operating conditions/dimensions	
Operating temperature	+5 °C to +45 °C housing temperature
Power requirements (DC)	12 to 24 VDC AUX or 802.3at Type 1 PoE
Power consumption	2.43 W at 12 VDC; 2.68 W PoE
Mass	80 g
Body dimensions (L × W × H in mm)	60.5 × 29.2 × 29.2 (including connectors)
Regulations	CE: 2014/30/EU (EMC), 2011/65/EU, including amendment 2015/863/EU (RoHS); FCC Class B; CAN ICES-003

Sony IMX273 absolute QE plot
All measurements were done without protection glass or IR cut filter.
With protection glass or filters, quantum efficiency (QE) decreases by approximately 10%.
The uncertainty in measurement of the QE is +/- 10.25%.
The values are typical and are subject to minor variations.
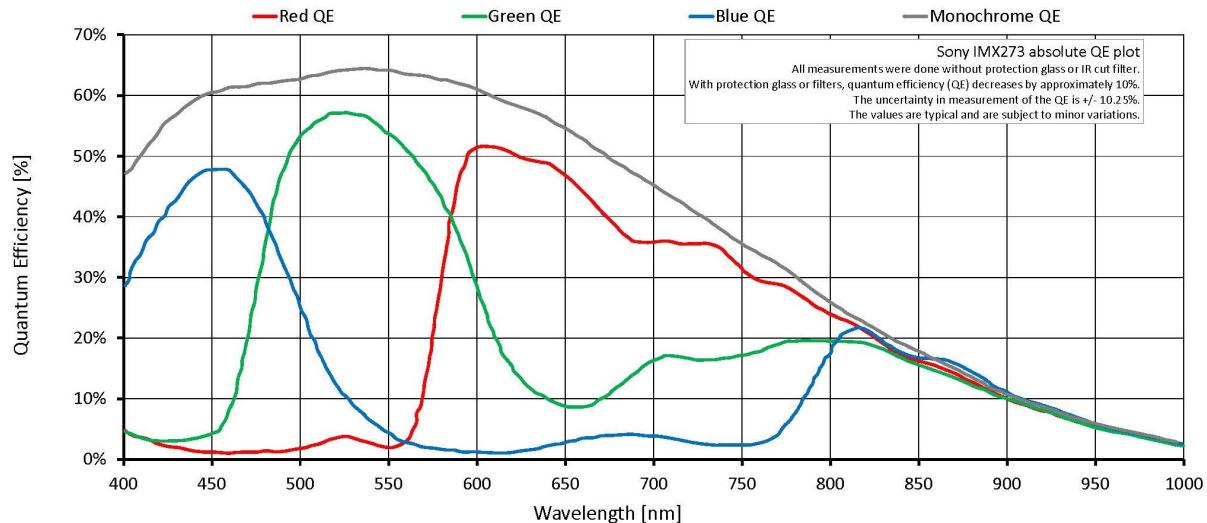
Features

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-158C only)
- Binning
- Color transformation, hue, saturation (G-158C only)
- Decimation
- Gamma correction
- One look-up table (LUT)
- Region of interest (ROI), separate ROI for auto features

Camera control features:

- Event channel
- Image chunk data
- Storable user sets
- StreamBytesPerSecond (bandwidth control)
- Stream hold
- Sync out modes: Trigger ready, input, exposing, readout, imaging, strobe, GPO
- Temperature monitoring (main board)

Technical drawing

C-Mount
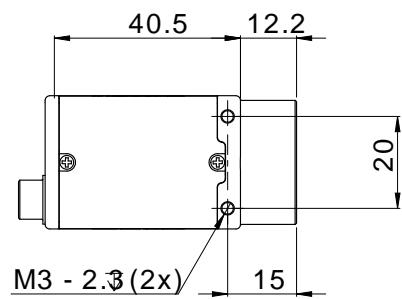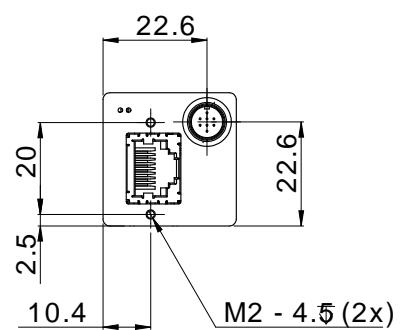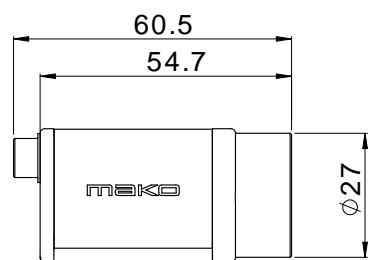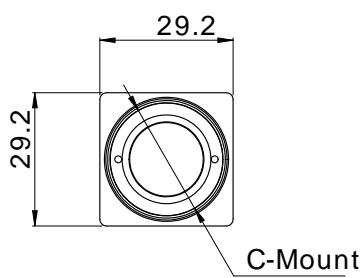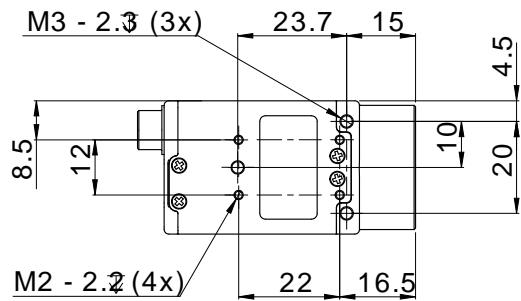
Applications

Mako G-158 is suitable for a wide range of applications including:

- Robotics
- Quality control
- Inspection, surveillance
- Industrial imaging
- Machine vision
- Logistics