GigE Vision camera with Sony ICX445 EXview HAD sensor

Manta G-125 is a low cost GigE Vision camera. Manta G-125 is offered in both monochrome and color models. It incorporates the high quality Type 1/3 (6.0 mm diagonal) Sony ICX445 CCD sensor with EXview HAD technology. At full resolution, this camera runs 31.0 frames per second. With a smaller region of interest, higher frame rates are possible.

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 B 270 ASG protection glass and color models ship with a Type Hoya C-5000 IR cut filter.

Benefits and features

- Monochrome (G-125B) and color (G-125C) models
- GigE Vision interface with Power over Ethernet option
- Screw mount RJ45 Ethernet connector for secure operation in industrial environments
- Supports cable lengths up to 100 meters (CAT-6 recommended)
- 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 Suite and compatibility to the most popular third party image-processing libraries.

Hardware options

- Various housing options: Select between standard housing, angled-head, or board level versions
- Various lens mounts: Select between C-Mount, CS-Mount, or M12-Mount (adapter)
• Various optical filters: Select between B 270 ASG protection glass and filter types: Jenofilt 217 IR cut filter, Hoya C-5000 IR cut filter, RG715 IR pass filter, or RG830 IR pass filter.
• Available with Power over Ethernet compliant interface
• 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 webpage for additional options.

Specifications

<table>
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<tr>
<th>Manta</th>
<th>G-125</th>
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<tbody>
<tr>
<td>Interface</td>
<td>IEEE 802.3 1000BASE-T, IEEE 802.3af (PoE) optional</td>
</tr>
<tr>
<td>Resolution</td>
<td>1292 (H) × 964 (V)</td>
</tr>
<tr>
<td>Sensor</td>
<td>Sony ICX445</td>
</tr>
<tr>
<td>Sensor type</td>
<td>CCD Progressive</td>
</tr>
<tr>
<td>Shutter mode</td>
<td>Global shutter</td>
</tr>
<tr>
<td>Sensor size</td>
<td>Type 1/3</td>
</tr>
<tr>
<td>Pixel size</td>
<td>3.75 µm × 3.75 µm</td>
</tr>
<tr>
<td>Lens mounts (available)</td>
<td>C-Mount, CS-Mount, S-Mount</td>
</tr>
<tr>
<td>Max. frame rate at full resolution</td>
<td>31.0 fps</td>
</tr>
<tr>
<td>ADC</td>
<td>12 Bit</td>
</tr>
<tr>
<td>Image buffer (RAM)</td>
<td>32 MByte</td>
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**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 monochrome models measured at full resolution without optical filter. Contact Sales or AE for more information.

Quantum efficiency at 529 nm | 55 %
Temporal dark noise | 7.1 e⁻
Saturation capacity | 7100 e⁻
Dynamic range | 59.4 dB
Absolute sensitivity threshold | 7.6 e⁻

**Output**

Bit depth | 8/12 Bit
Monochrome pixel formats | Mono8, Mono12, Mono12Packed
YUV color pixel formats | YUV411Packed, YUV422Packed, YUV444Packed
RGB color pixel formats | RGB8Packed, BGR8Packed, RGBA8Packed, BGRA8Packed
Raw pixel formats | BayerRG8, BayerRG12Packed, BayerRG12

**General purpose inputs/outputs (GPIOs)**

Opto-isolated I/Os | 2 inputs, 2 outputs
Manta G-125

RS232

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<th>Operating conditions/dimensions</th>
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<td>Operating temperature</td>
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<td>Power requirements (DC)</td>
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<tr>
<td>Power consumption</td>
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<tr>
<td>Mass</td>
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<tr>
<td>Body dimensions (L × W × H in mm)</td>
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<td>Regulations</td>
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</table>

Quantum efficiency

Features

Image optimization features:

- Auto gain (manual gain control: 0 to 31 dB; 1 dB increments)
- Auto exposure (21 µs to 60 s; 1 µs increments)
- Auto white balance (G-125C only)
- Binning
- Black level (offset)
• Color correction, hue, saturation (G-125C only)
• Decimation
• Gamma correction
• Three look-up tables
• Region of interest, separate region for auto features
• ReverseX (G-125B only)

Camera control features:

• Auto-iris (video type)
• Event channel
• Image chunk data
• Storable user sets
• StreamBytesPerSecond (bandwidth control)
• Stream hold
• Sync out modes: Trigger ready, input, exposing, readout, imaging, strobe, GPO
Applications

Manta G-125 is ideal for a wide range of applications including:

- Applications which require high sensitivity (low light)
- Quality control
- Intelligent traffic solutions (ITS)
- Semiconductor inspection
- 3D inspection
- Food inspection