



Goldeye Pro

G5-320 VSWIR TEC1

- IMX993 SenSWIR sensor
- 5GigE Vision
- Power over Ethernet
- Compact industrial design
- No fan
- Visible and SWIR sensitivity

Excellence in SWIR image quality

High-resolution SWIR cameras with thermo-electric sensor cooling (TEC)

Goldeye Pro G5-320 VSWIR TEC1 with Sony IMX993 | InGaAs runs 159 frames per second at 3.2 MP resolution.

Goldeye Pro cameras are designed to leverage your SWIR vision system to the next level regarding throughput, quality, and imaging performance. The 5 GBit/s GigE Vision compliant interface optimally supports the bandwidth requirements of latest SWIR sensor solutions. An efficient thermoelectric cooling (TEC) stabilizes the sensor temperature and several on-board image correction features facilitate the output of an outstanding and reproducible image quality. Goldeye Pro supports multiple mounting options to let the camera fit easily into space-constraint systems.

GenICam-compliant feature control and **Vimba X SDK** with its comprehensive GUI viewer application provide you a plug-and-play feeling. This simplifies integrating Goldeye Pro cameras into software solutions, even if you are using typical third-party image processing libraries.

Alternatively, **AcquireControl** provides extensive image analysis functions, such as:

- Pseudo color LUT with several color profiles
- Auto contrast
- Auto brightness
- Analyze multiple regions (rectangular, circle) within the image
- Real-time statistics and histogram display

The **Modular Concept** offers various options for housing designs, optical filters, sensors with removed cover glass and more. See the **Customization and OEM Solutions webpage** for additional options.

Specifications

Interface	IEEE 802.3: 5GBASE-T or 2.5GBASE-T (NBASE-T) and 1000BASE-T, IEEE 802.3af Power Class 0 PoE
Resolution	2080 (H) × 1544 (V)
Spectral range	400 nm to 1700 nm
Sensor	Sony IMX993 InGaAs
Sensor type	InGaAs
Shutter mode	GS (Global shutter)
Sensor size	Type 1/1.8
Pixel size	3.45 µm × 3.45 µm
Lens mount (default)	C-Mount
Max. frame rate at full resolution	159 fps at 525 MByte/s, Mono8
ADC	12 Bit
Image buffer (RAM)	256 MByte
Non-volatile memory (Flash)	≈ 4 GByte (eMMC), 32 MByte (Flash)
Cooling temperature	+20 °C (default) +5 °C, +35 °C, +50 °C User configurable
Dark current	8.9 ke ⁻ /s (at +20 °C FPA temperature)
Temporal dark noise	183 e ⁻ (0 dB), 166 e ⁻ (18 dB)
Saturation capacity	72.1 ke ⁻ (0 dB), 4.0 ke ⁻ (18 dB)
Dynamic range	51.9 dB (0 dB), 27.6 dB (18 dB)

Output

Bit depth	10-bit; 12-bit
Monochrome pixel formats	Mono8, Mono10, Mono10p, Mono10Packed, Mono12 (default), Mono12p, Mono12Packed, Mono14, Mono16

General purpose inputs/outputs (GPIOs)

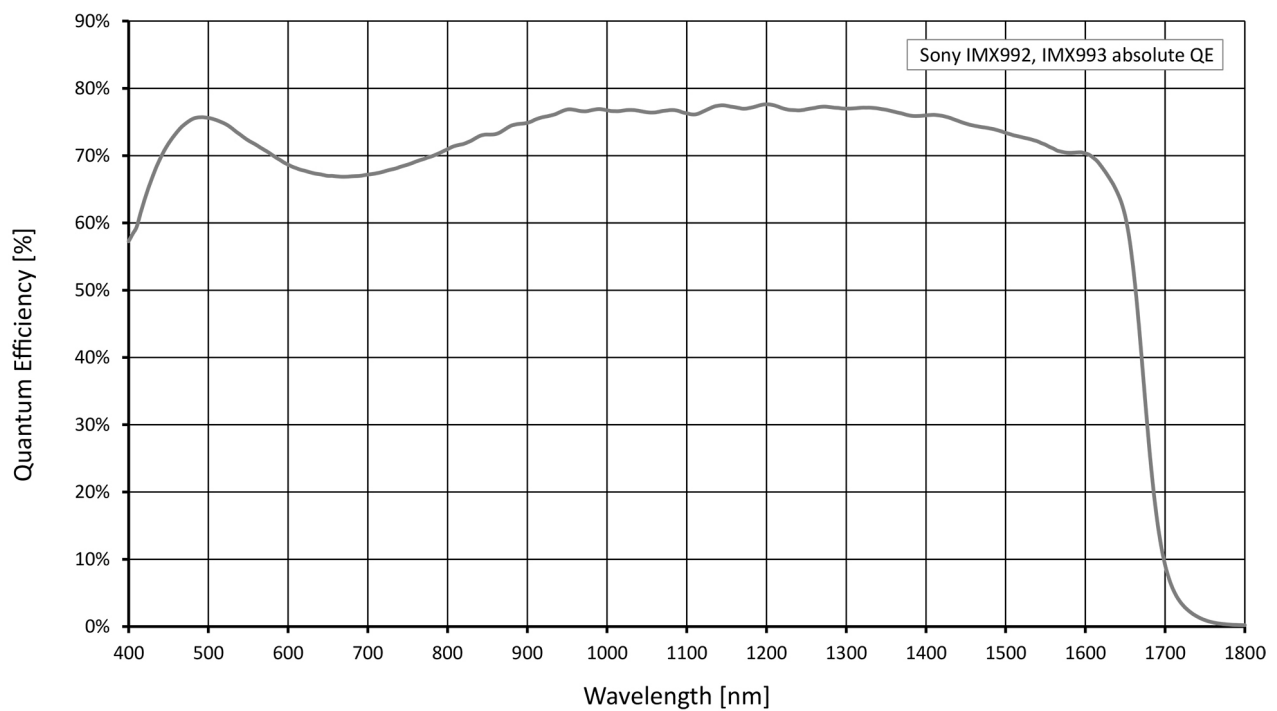
TTL I/Os	4 bidirectional I/O lines
Opto-isolated I/Os	1 input, 3 outputs

Operating conditions/dimensions

Operating temperature	0 °C to +55 °C (housing)
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Power requirements (DC)	12 VDC to 24 VDC ($\pm 10\%$) or via PoE
Power consumption	Max: 11 W (12 to 24 VDC); 12.9 W (PoE)
Mass	350 g
Body dimensions (L $\times$ W $\times$ H in mm)	78 $\times$ 55 $\times$ 55

Quantum efficiency



Features

Image control

- Black level
- DPC (defect pixel correction)
- High Conversion Gain
- NUC (non-uniformity correction)
- ROI (regions of interest)
- Speed-to-noise priority (IntegrationMode)

Camera control

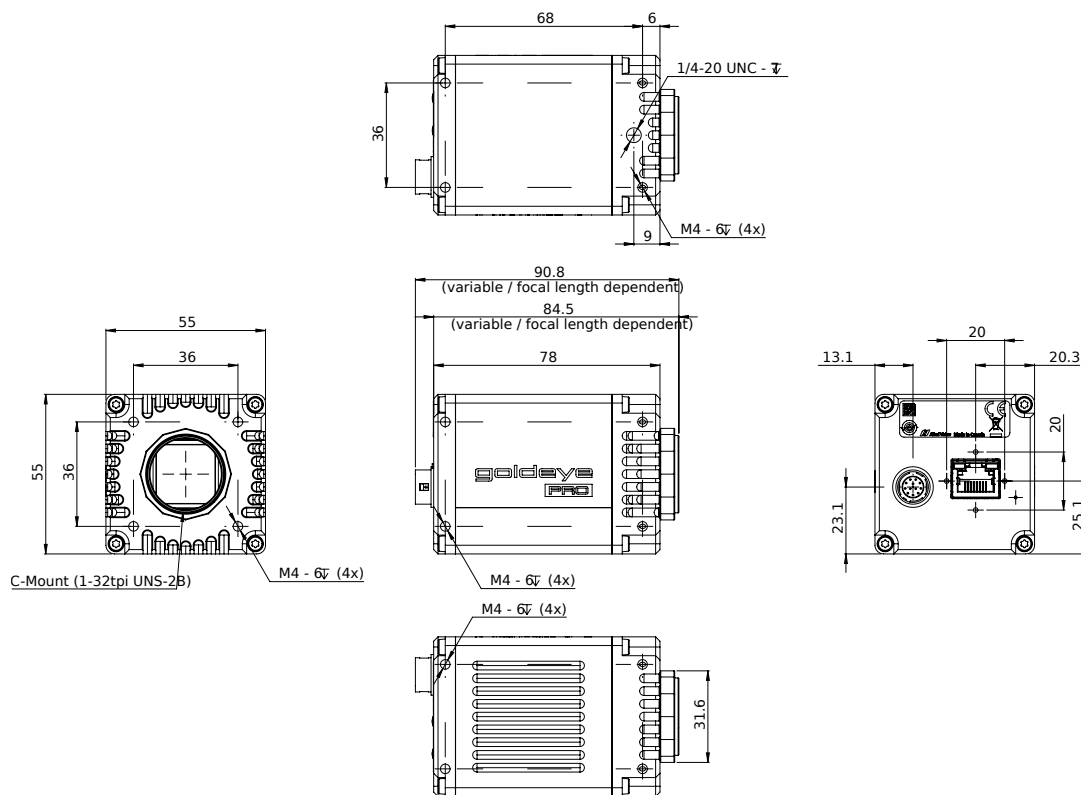
- Acquisition frame rate
- Bandwidth control
- Firmware update in the field
- I/O and trigger control
- Readout modes (SensorBitDepth)
- User sets

Sensor temperature control

- Temperature monitoring
- Sensor temperature control (automatic or manual)

Please note: Future firmware versions will add new features, such as: Look-up tables (LUT) or Binning. Please check our [firmware downloads webpage](#) for latest firmware versions or [contact our support team](#) to obtain a FW update.

Technical drawing



Applications

Goldeye Pro cameras with Sony IMX99x SenSWIR sensor technology are very sensitive in the SWIR and visible spectrum (400 nm - 1,700 nm). They can be used in an extended operating temperature range. Thanks to TEC cooling and integrated image correction, Goldeye Pro cameras achieve an outstanding image quality with low noise. They are well-suited for many typical SWIR applications in various industry branches:

- Semiconductor industry: Solar cell and chip inspection
- Recycling industry: Plastics sorting
- Medical and scientific imaging: Hyperspectral imaging, microscopy, OCT
- Metal and glass industry: Thermal imaging of hot objects (250 °C to 800 °C)
- Agriculture industry: Airborne remote sensing
- Printing industry: Banknote inspection
- Electronics industry: Laser beam profiling
- Surveillance and security: Vision enhancement (e.g., through fog or night vision)
- ... and many more

To learn more about typical applications for SWIR cameras, download the [SWIR brochure](#).