



**GigE**  
VISION



# Goldeye

## G-130 TEC1

- GigE Vision InGaAs SWIR camera
- SXGA resolution
- Visible and SWIR sensitivity
- Power over Ethernet
- Compact industrial design, no fan

## Goldeye G-130 TEC1 - High-resolution SXGA InGaAs camera

Goldeye G-130 TEC1 is a fast short wave infrared (SWIR) camera with SXGA resolution and GigE Vision interface. Frame rates up to 93 fps at full resolution enable you to access versatile application fields and to speed up your processes. This camera incorporates the Sony IMX990 SenSWIR Type 1/2" (8.2 mm diagonal) sensor, with a wide spectral range from 400 nm to 1700 nm enabling both visible and SWIR spectrum imaging. Due to the sensor's small 5µm pixels this is also possible with high spatial resolution for high inspection precision.

Save time and money to integrate the camera into your system: A small form factor and multiple mounting options let the camera fit easily into compact system designs. In addition, its standardized GigE Vision interface including Power over Ethernet (PoE) and comprehensive I/O control options simplify the connection to your software solution and the synchronization with other system components.

The integrated thermo-electric sensor cooling and several on-board image correction features contribute to the Goldeye's outstanding image quality. Reveal more of the invisible with Goldeye SWIR cameras!

### Benefits and features

- Compact industrial design
- Up to 93 fps at full resolution
- GigE Vision interface with Power over Ethernet
- Comprehensive I/O control options
- Automated on-board image correction
- Stabilized sensor cooling, no fan
- Extended operating temperature range

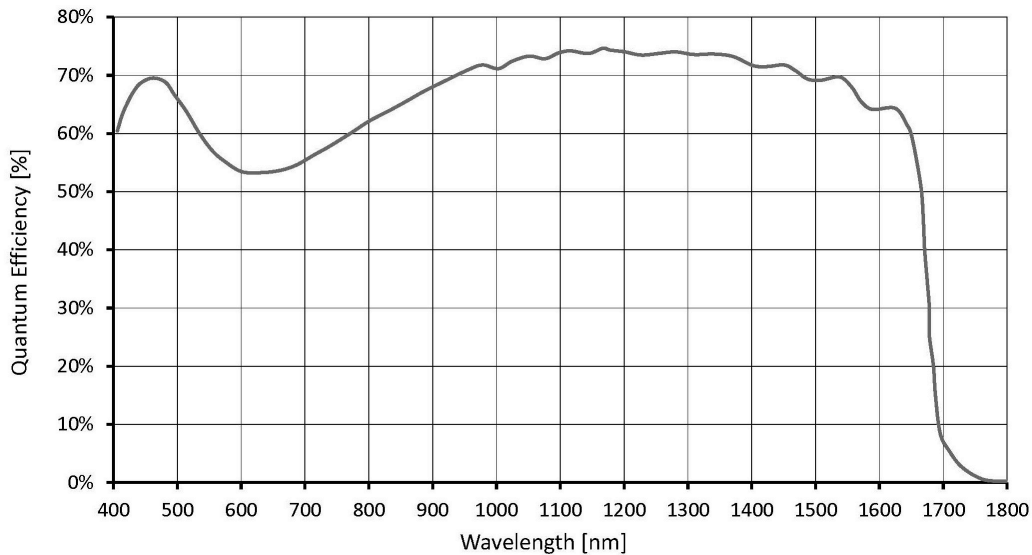
### Hardware options

- Filter: Type IRBP 1450 IR bandpass filter or type LP920 visible cut-off
- Interface: Camera Link Base

## Specifications

| <b>Goldeye</b>                                | <b>G-130 TEC1</b>   |
|---|---|
| Interface                                     | IEEE 802.3 1000BASE-T, IEEE 802.3af (PoE)   |
| Resolution                                    | 1280 (H) × 1024 (V)   |
| Spectral range                                | 400 nm to 1700 nm   |
| Sensor  | Sony IMX990   |
| Sensor type                                   | InGaAs  |
| Shutter mode                                  | Global shutter  |
| Sensor size                                   | Type 1/2  |
| Pixel size                                    | 5 μm × 5 μm   |
| Lens mount (default)                          | C-Mount   |
| Max. frame rate at full resolution            | 93 fps  |
| ADC   | 12 Bit  |
| Image buffer (RAM)                            | 256 MByte   |
| <b>Imaging performance</b>                    |   |
| Cooling temperature                           | +5 °C, +20 °C (default and calibrated), +35 °C, +50 °C, or user-configurable      |
| Dark current                                  | 4,800 e <sup>-</sup> /s (at +20 °C FPA temperature)                               |
| Temporal dark noise                           | 260 e <sup>-</sup> (at 0 dB gain)   |
| Saturation capacity                           | 170 ke <sup>-</sup> (at 0 dB gain)  |
| Dynamic range                                 | 56.3 dB (at 0 dB gain)  |
| <b>Output</b>                                 |   |
| Bit depth                                     | 8 - 12 Bit  |
| Monochrome pixel formats                      | Mono8, Mono12, Mono12Packed   |
| <b>General purpose inputs/outputs (GPIOs)</b> |   |
| TTL I/Os                                      | 1 input, 1 output   |
| Opto-isolated I/Os                            | 1 input, 2 outputs  |
| RS232   | 115 200 Baud, 8N1 (adjustable)  |
| <b>Operating conditions/dimensions</b>        |   |
| Operating temperature                         | -20 °C to +55 °C (housing)  |
| Power requirements (DC)                       | 10.8 V DC to 30.0 V or via PoE  |
| Power consumption (max.)                      | 10.8 W (at 12 VDC), <11.8 W (PoE)   |
| Mass  | 344 g (with C-Mount adapter)  |
| Body dimensions (L × W × H in mm)             | 78 × 55 × 55  |
| Regulations                                   | CE: 2014/30/EU (EMC), 2011/65/EU, incl. amendment 2015/863/EU (RoHS); FCC Class B |

## Quantum efficiency



## Features

### IR-specific features (camera and sensor)

- Integrated correction data sets, compensation of sensor inhomogeneity and underlying structures (non-uniformity correction - NUC)
- Defect pixel correction
- Background correction
- Automated and manual sensor temperature management via TEC features
- Temperature status indicator
- Temperature specific events

### General features

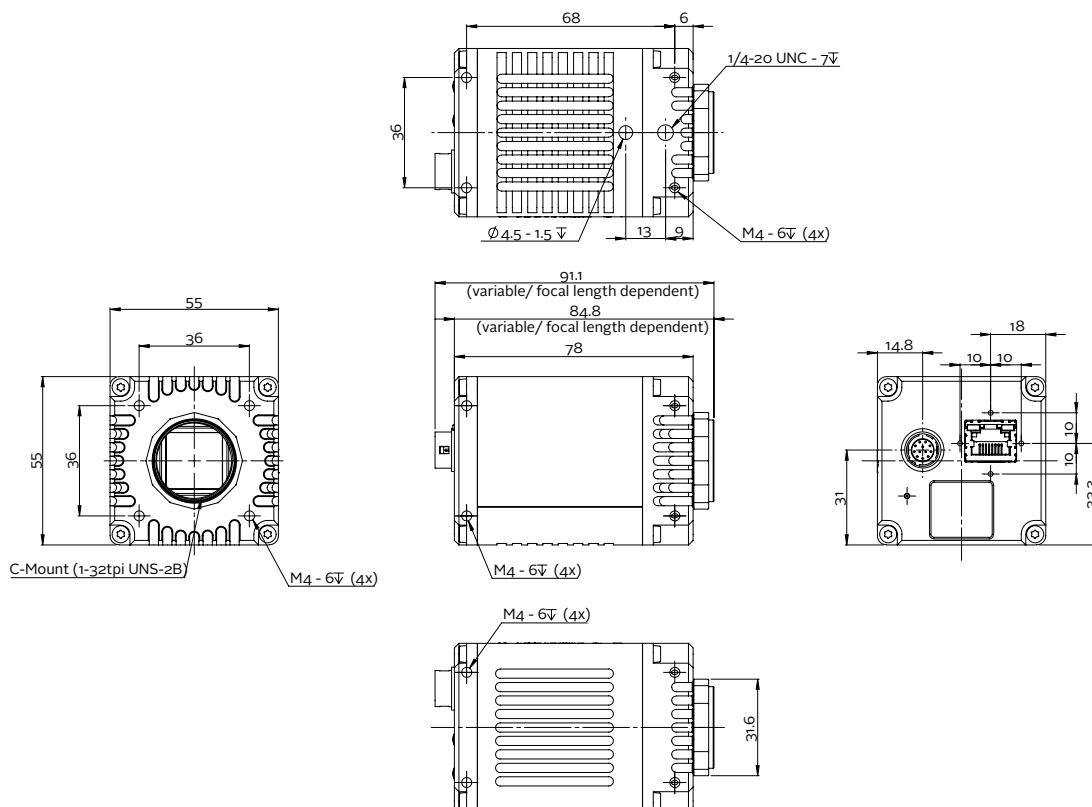
- Automatic exposure time control
- Gain (analog)
- I/O configuration and trigger control
- Stream hold (deferred image output)
- Storable user sets
- Firmware update in the field
- Region of interest (ROI) control, look-up table (LUT) support, as well as various auto features



Goldeye cameras are compatible with Allied Vision's Vimba SDK. Moreover, in combination with our AcquireControl software, extensive image analysis functions are available:

- 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

## Technical drawing





## Applications

Goldeye cameras are very sensitive in the SWIR spectrum. They can be used in an extended operating temperature range. Thanks to temperature stabilization and integrated image correction, Goldeye cameras achieve an outstanding image quality with little noise and a high dynamic range. 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 imaging, sciences: hyper- and multi-spectral imaging, microscopy, optical coherence tomography (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 (for example, seeing through fog)

### White Paper

To learn more about typical application fields for SWIR cameras, download our White Paper:

[Seeing beyond the visible – short-wave infrared \(SWIR\) cameras offer new application fields in machine vision](#)