



Goldeye

G-032 Cool

- GigE Vision SWIR camera
- Power over Ethernet (PoE+)
- Very strong sensor cooling

Description

Goldeye G-032 SWIR Cool - low-noise short-wave infrared camera

The Goldeye G-032 SWIR Cool is a short-wave infrared camera that is optimized for scientific grade applications often requiring long exposure times. To enable low-noise imaging in the spectral range from 900 -1700 nm the camera is equipped with a nitrogen filled cooling chamber and enables via the dual-stage thermo-electric cooler (TEC) a very strong sensor cooling of up to -60 #C towards the housing temperature.

The standardized GigE Vision interface and comprehensive I/O control options simplify the connection to many software solution and the synchronization with other system components.

In addition several automated 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

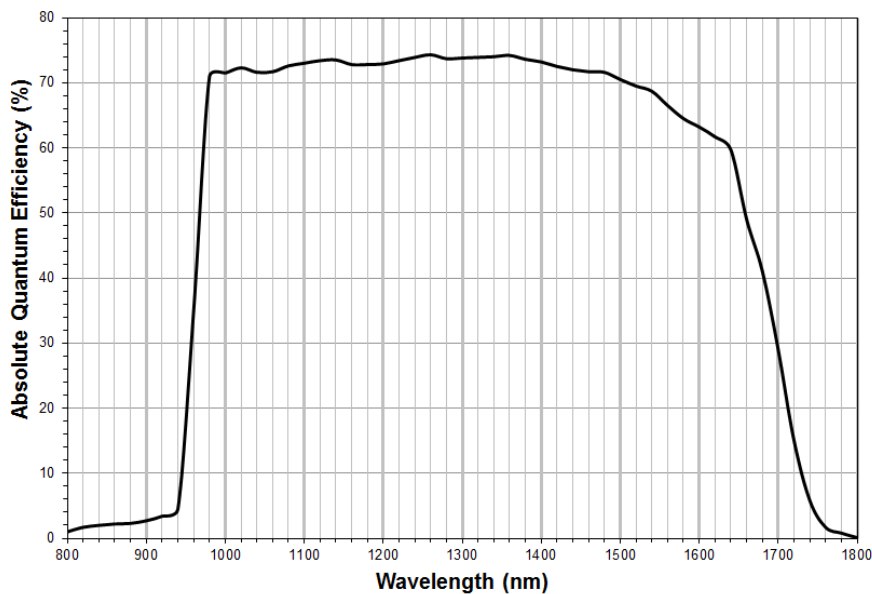
- Very strong sensor cooling for low-noise imaging with long exposure times
- GigE Vision interface with PoE+
- Comprehensive I/O control options
- Automated on-board image correction
- Extended operating temperature range

Options

- Available with C- / F- / M42 Mount

Specifications

Goldeye	G-032 Cool
Interface	IEEE 802.3 1000BASE-T, IEEE 802.3at (PoE+)
Resolution	636 × 508
Spectral range	900 nm - 1700 nm
Sensor	InGaAs FPA 636 x 508
Sensor type	InGaAs
Sensor size	No standard size
Cell size	25 #m x 25 #m
Cooling temperature	-20 °C, -5 °C, +10 °C, or user-configurable
Dark noise	400 e ⁻ (Gain0), 170 e ⁻ (Gain1)
Dark current	30 ke ⁻ /s (@ -20 °C FPA temperature)
Saturation capacity	1.9 Me ⁻ (Gain0), 39 ke ⁻ (Gain1),
Dynamic range	73 dB (Gain0), 47 dB (Gain1),
Lens mount	C- / F- / M42 Mount
Max frame rate at full resolution	100 fps
Netd	256
ADC	14 bit
On-board FIFO	256 Mbyte
Output	
Bit depth	8 - 14 bit
Mono modes	Mono8, Mono12, Mono12Packed, Mono14
General purpose inputs/outputs (GPIOs)	
TTL I/Os	LVTTL I/Os: 1 Input, 1 Output
Opto-isolated I/Os	1 Input, 2 Outputs
RS-232	115 200 Baud, 8N1 (adjustable)
Operating conditions/dimensions	
Operating temperature	-20 °C to +55 °C (Case)
Power requirements (DC)	10.8 V to 30.0 V or via PoE+
Power consumption (@12 V)	19 W (@ 12 V DC), 22 W (@ PoE+)
Mass	810 g (w/ C-Mount adapter)
Body dimensions (L × W × H in mm)	90 × 80 × 80
Regulations	CE, RoHS (2011/65/EU), WEEE, FCC Part 15 Class B



Features

IR-specific features (camera and sensor)

- Integrated correction data sets, compensation of sensor inhomogenities and underlying structure (non-uniformity correction, NUC)
- Defect pixel correction
- Background correction
- Automated and manual sensor temperature management via TEC Features
- Temperature status LED

General features

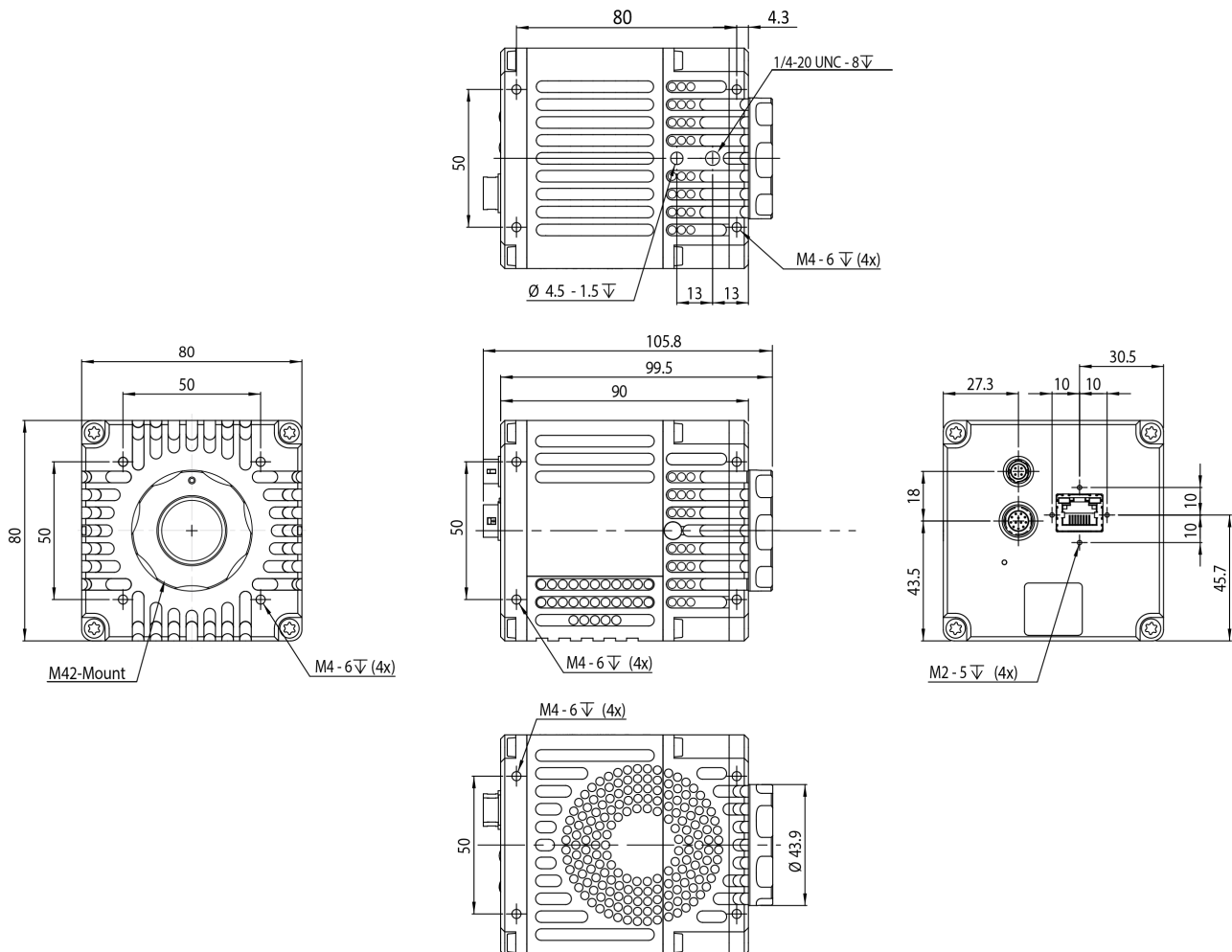
- Exposure time control
- Gain (analog)
- I/O configuration and trigger control
- Stream hold (deferred image output)
- Storable user sets
- Firmware update in the field

Goldeye cameras are compatible with Allied Vision's Vimba SDK. Moreover, in combination with Allied Vision's 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
- ... and more

Technical drawing



Applications

Goldeye cameras are very sensitive in the SWIR spectrum. They can be used in an extended operating temperature range. Thanks to TEC cooling 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: 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

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](#)