



Goldeye

CL-008 Cool TEC1

- High performance Camera Link InGaAs SWIR camera
- QVGA resolution
- Efficient cooling with fan, no condensation
- Simple camera configuration via

Goldeye CL-008 Cool - High-performance high-speed QVGA InGaAs camera

The Goldeye CL-008 is one of the fastest QVGA resolution short wave infrared (SWIR) cameras with Camera Link interface. With frame rates up to 344 fps at full resolution, versatile application fields can be addressed and processes can be sped up strongly. To enable low-noise imaging in the spectral range from 900 nm to 1700 nm, the camera is equipped with a nitrogen filled cooling chamber. It enables the thermo-electric cooler (TEC) to operate the sensor at a temperature of 5^o C and avoids condensation. The standardized Camera Link interface with GenCP support 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

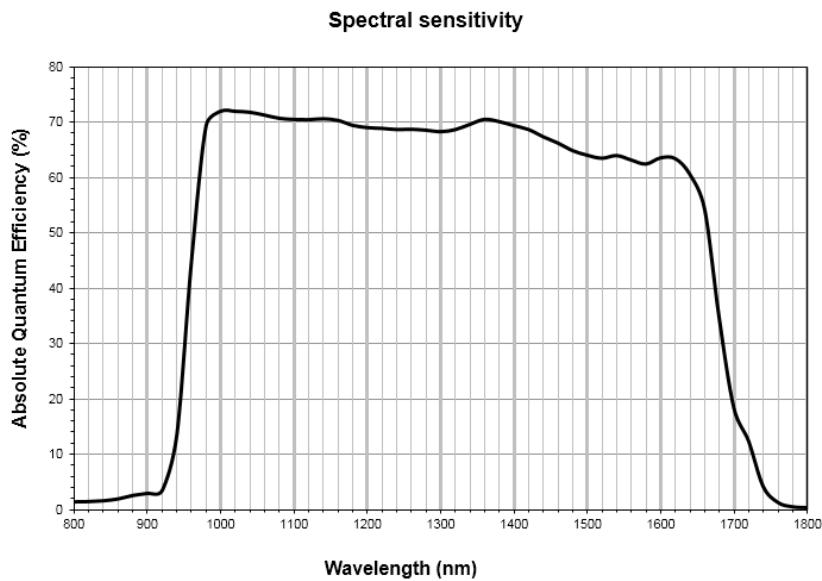
- Nitrogen-filled cooling chamber to avoid condensation
- Up to 344 fps at full resolution
- Camera Link interface with GenCP support
- Comprehensive I/O control options
- Automated on-board image correction
- TEC1 sensor cooling
- Extended operating temperature range

Options

- Available with C-Mount, F-Mount and M42-Mount available on request

Specifications

Goldeye	CL-008 Cool TEC1
Interface	Camera Link Base
Resolution	320 (H) × 256 (V)
Spectral range	900 nm to 1700 nm
Sensor	InGaAs FPA 320 × 256
Sensor type	InGaAs
Sensor size	No standard size
Pixel size	30 μm × 30 μm
Cooling temperature	-5 °C, +5 °C (default and calibrated), +10 °C, +20 °C
Dark current	160 ke ⁻ /s (@ +5 °C FPA temperature)
Lens mount (default)	C-Mount, F-Mount, M42-Mount
Max. frame rate at full resolution	344 fps
ADC	14 bit
Image buffer (RAM)	256 MByte
Imaging performance	
Temporal dark noise	420 e ⁻ (Gain0), 170 e ⁻ (Gain1)
Saturation capacity	2.5 Me ⁻ (Gain0), 170 ke ⁻ (Gain1)
Dynamic range	75 dB (Gain0), 60 dB (Gain1)
Output	
Bit depth	8 - 14 Bit
General purpose inputs/outputs (GPIOs)	
TTL I/Os	LVTTL I/Os: 1 input, 1 output
Opto-isolated I/Os	1 input, 2 outputs
RS232	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
Power consumption	10.5 W (@ 12 VDC)
Mass	760 g (with C-Mount adapter)
Body dimensions (L × W × H in mm)	90 × 80 × 80
Regulations	CE: 2014/30/EU (EMC), 2011/65/EU, incl. amendment 2015/863/EU (RoHS); FCC Class B



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
- Adjustable pixel clock frequency
- Support for Camera Control (CC ports) signals
- Automatic acquisition start after booting the camera



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



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: 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)

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](#)