

// Goldeye G/CL-034 XSWIR TEC2
 // Goldeye G/CL-008 XSWIR TEC2

Machine Vision eXtended SWIR cameras



Allied Vision's extended SWIR Goldeye cameras are designed to fulfill the highest quality standards. Every component in the camera was carefully selected to provide a robust vision solution. A compact form factor and multiple mounting options let the camera fit easily into compact system designs. In addition, standardized interfaces (GigE Vision including PoE or Camera Link), GenICam compliant feature control, and comprehensive I/O control options simplify the connection to your software solution and the synchronization with other system components.

The new models incorporate latest extended SWIR InGaAs sensors, which can detect wavelength up to 1.9 μm or 2.2 μm at high quantum efficiencies. The integrated dual-stage sensor cooling (TEC2) and several on-board image correction features are your key factors to make specific spectral features visible with outstanding image quality.

New Models	Spectral Range	Resolution	Frame Rate	Pixel Size	Optical Format	Cooling Power ⁽¹⁾	Weight
G/CL-034 XSWIR 1.9 TEC2	1.1 μm – 1.9 μm	636 x 508	303 fps	15 μm	Type 1"	Max. $\Delta T = 60 \text{ K}$	< 750 g
G/CL-034 XSWIR 2.2 TEC2	1.2 μm – 2.2 μm						
G/CL-008 XSWIR 1.9 TEC2	1.1 μm – 1.9 μm	320 x 256	344 fps	30 μm			
G/CL-008 XSWIR 2.2 TEC2	1.2 μm – 2.2 μm						

(1) Specifies max. temperature difference between sensor and housing

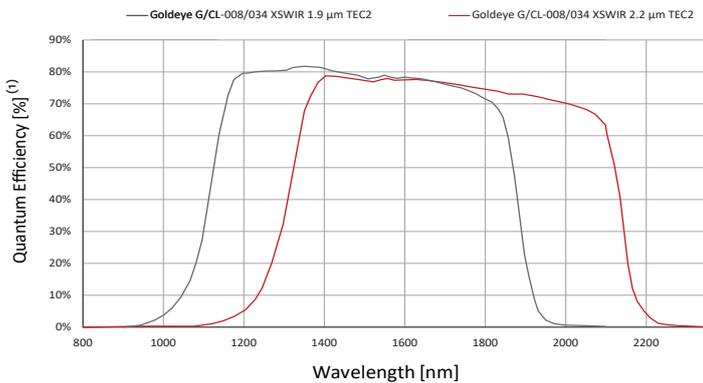
Smart Features

- // Multiple acquisition modes: SingleFrame, MultiFrame, Continuous, or RecorderMode
- // Built-in image correction for optimized image quality:
 - Non-uniformity correction with automatic adaption
 - Defect pixel correction
 - Background correction
- // Control of up to 32 ROIs for advanced spectral band selection and frame rate optimization
- // High analog gain modes and digital binning to increase sensitivity
- // Auto-Gain, Auto-Contrast, and Look-up tables to increase contrast
- // User sets for simplified camera setup

Camera Highlights

- // High SWIR sensitivity up to 2,200 nm
- // GigE Vision or Camera Link interface
- // Comprehensive I/O control options
- // Automated on-board image correction
- // Stabilized sensor cooling, up to 60 °C below housing temperature
- // Extended operating temperature range

Absolute Quantum Efficiency



(1) Valid for -20°C SensorTemperature

Operating Conditions

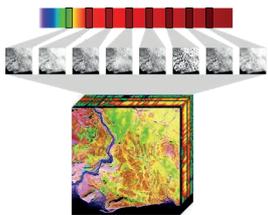
Power requirements	10.8 to 30 VDC, or PoE+
Power consumption	< 22 W with TEC2 enabled
Operating temperature	-20 °C to +55 °C (case temperature)
Storage temperature	-30 °C to +70 °C (ambient)
Regulations	CE, RoHS, FCC Class B, CAN ICES-3 (B)
Pixel operability	> 98.5 %

Applications

Each material has its unique spectral footprint. The further you can see into the infrared the more unique spectral features can be detected to distinguish different materials. This is especially important for sorting applications or to determine material concentrations in composites. By using an optical bandpass filter, it is possible to emphasize certain features, which eases the image analysis.

To capture multiple distinct wavelengths at once, spectrometers are used in push-broom applications to gather the spectral image data cube. The faster the image data cube can be captured for the relevant wavelengths the more processes can be speed-up. Therefore, Goldeye XSWIR cameras enable to select multiple ROIs, each reflecting a certain wavelength range, to increase the frame rate and to capture only the information required to solve an image processing task.

Hyperspectral Imaging



Each material has a different chemical composition and crystalline structure resulting in an unique spectral response corresponding to its specific light absorption characteristics.

Hyperspectral Imaging combines digital imaging with spectroscopy to obtain detailed information across multiple ranges of the electromagnetic spectrum. Popular application fields include recycling like plastic sorting or geology & mining to identify types of minerals & rocks.

Further Applications

Goldeye XSWIR cameras allow you to look deeper into the infrared and open new imaging and sensing opportunities for many applications fields:

- // Airborne remote sensing
- // Pharmaceutical process control
- // Food quality sorting
- // Cell analysis in bioimaging
- // Water content (moisture) detection
- // Vision enhancement
- // Laser beam profiling
- // and many more ...