

SWIR 900–1700 1.3MP 15um

产品简介



Goptica SWIR series 400-1700nm is a short-wave infrared camera with USB3 / GigE / 10G/CameraLink interfaces, using domestic InGaAs chips, featuring high quantum efficiency and high sensitivity, suitable for numerous common SWIR applications in various industrial segments.

Application

- Semiconductor industry: Solar cell and chip testing
- Agriculture: Spectral remote sensing applications through multi-rotor aircraft
- Recycling industry: Material sorting of plastics, garbage and other materials
- Medical Imaging and Research: Hyperspectral and multispectral imaging
- Food industry: Quality inspection and grading
- Beverage industry: Liquid level detection in opaque containers
- Packaging: Sealing inspection
- Glass industry: Detection of high-temperature glass transparency defect
- Printing industry: Transparent hidden features
- Video surveillance: Visual enhancement (such as smoke perspective)
- Security: Counterfeit product detection, such as currency, wigs or skin

Basic Characteristic

- The 900-1700nm version adopts SONY SenSWIR indium gallium arsenide chip
- The resolution covers 5MP to 0.33MP
- Available in both cooled and uncooled versions
- Precise temperature control can achieve a temperature difference of 10 to 25 degrees Celsius lower than the ambient temperature
- A wide spectral response range of 900-1700nm
- 15um / 5um / 3.45um pixels
- Global shutter
- Multiple data interfaces such as USB3 / GigE / 10G/CameraLink/analog AV
- Up to 14-bit ADC
- 4Gb of memory
- Supports external IO trigger control
- A frame rate that exceeds the official parameters
- Support on-site firmware update
- Accept OEM customized development

SWIR 900–1700 1.3MP 15μm

SWIR1302KMB-U200

Model	SWIR1302KMB-U200
Parameters	1.3-megapixel 1.5 "InGaAs USB camera
Camera Parameters	
Sensor model	Domestic 1280x1024
Sensor type	InGaAs CMOS image sensor
Spectral Range	900nm-1700nm
Pixel Size	15μm x 15μm
Target size	1.5"
ADC	14-bit
Frame rate & resolution	200fps@1280 x 1024
Memory	512MB
QE	≥70@1.55μm
Conversion Gain	1μV/e- (LG), 16μV/e- (MG), 53.3μV/e- (HG)
Dynamic Range	70.59dB(LG), 67.96dB(MG), 47.98dB(HG) *1 (For reference only)
Readout noise	586.82e(LG), 35.05e(MG), 68.44e(HG) (For reference only)
Full well charge	1.9Me- (LG), 118.75Ke- (MG), 33.75Ke- (HG) *1
Maximum Signal-to-Noise Ratio	62.98dB(LG), 49.43dB(MG), 42.34dB(HG) (For reference only)
Dark current	30fa@0.1V&18°C (For reference only)
Exposure time range	16us~1s
Data interface	Global shutter
Data format	USB3
Digital IO	1 optical coupler isolated input, 1 optical coupler isolated output, 2 non-isolated input/output ports
Data format	Mono 8 / Mono 14 / Packet12
Refrigeration temperature difference	40°C lower than room temperature
General Parameters	
Power Supply Method	DC12V power supply
Power consumption	8.4W (TEC OFF) / <16W (TEC ON)
Temperature	Operating temperature -30~60°C, storage temperature-40~85°C
Humidity	20%-80%, no condensation
Dimensions	68mm×68mm×89.8mm
Weight	485g
Lens interface	M42
Software	Complete SDK development package/ToupView

*1: LG: CDS-OFF, DeNoise-ON; MG: CDS-ON, DeNoise-OFF; HG: CDS-ON, DeNoise-OFF.

SWIR 900–1700 1.3MP 15um

SWIR1302KMB-10G

Parameters	Model	SWIR1302KMB-10G
	1.3-megapixel 1.5 "InGaAs 10G camera	
Camera Parameters		
Sensor model	Domestic 1280x1024	
Sensor type	InGaAs CMOS image sensor	
Spectral Range	900nm-1700nm	
Pixel Size	15μm x 15μm	
Target size	1.5”	
ADC	14-bit	
Frame rate & resolution	200fps@1280 x 1024	
Memory	512MB	
QE	≥70@1.55μm	
Conversion Gain	1μV/e- (LG), 16μV/e- (MG), 53.3μV/e- (HG)	
Dynamic Range	69.2dB(LG), 63.2dB(MG), 57.4dB(HG) *1（For reference only）	
Readout noise	1.3DN(LG), 2.7DN(MG), 5.0DN(HG)（For reference only）	
Full well charge	1.9Me- (LG), 118.75Ke- (MG), 33.75Ke-(HG) *1	
Maximum Signal-to-Noise Ratio	65.4dB(LG), 48.5dB(MG), 40.7dB(HG)（For reference only）	
Dark current	30fa@0.1V&18°C（For reference only）	
Exposure time range	25us~5s	
Data interface	Global shutter	
Data format	10GigE	
Digital IO	1 optical coupler isolated input, 1 optical coupler isolated output, 2 non-isolated input/output ports	
Data format	Mono 8 / Mono 14	
Refrigeration temperature difference	40°C lower than room temperature	
General Parameters		
Power Supply Method	DC12V power supply	
Power consumption	8.4W（TEC OFF） / <16W（TEC ON）	
Temperature	Operating temperature -30~60°C, storage temperature-40~85°C	
Humidity	20%-80%, no condensation	
Dimensions	68mm×68mm×89.8mm	
Weight	485g	
Lens interface	M42	
Software	Complete SDK development package/ToupView	

*1: LG: CDS-OFF, DeNoise-ON; MG: CDS-ON, DeNoise-OFF; HG: CDS-ON, DeNoise-OFF.

SWIR 900–1700 1.3MP 15um

SWIR1302KMA-CL200 nationally produced

Parameters	Model	SWIR1302KMA-CL200
	1.3-megapixel 1.5 "InGaAs CameraLink camera	
Camera Parameters		
Sensor model	Domestic 1280x1024	
Sensor type	InGaAs CMOS image sensor	
Spectral Range	900nm-1700nm	
Pixel Size	15μm x 15μm	
Target size	1.5”	
ADC	14-bit	
Frame rate & resolution	200fps@1280 x 1024	
Memory	512MB	
QE	≥70@1.55μm	
Conversion Gain	1μV/e- (LG), 16μV/e- (MG), 53.3μV/e- (HG)	
Dynamic Range	69.2dB(LG), 63.2dB(MG), 57.4dB(HG) *1 (For reference only)	
Readout noise	1.3DN(LG), 2.7DN(MG), 5.0DN(HG) (For reference only)	
Full well charge	1.9Me- (LG), 118.75Ke- (MG), 33.75Ke-(HG) *1	
Maximum Signal-to-Noise Ratio	65.4dB(LG), 48.5dB(MG), 40.7dB(HG) (For reference only)	
Dark current	30fa@0.1V&18°C (For reference only)	
Exposure time range	16us~1s	
Data interface	Global shutter	
Data format	CameraLink Full	
Digital IO	1 optical coupler isolated input, 1 optical coupler isolated output	
Data format	Mono 14	
Refrigeration temperature difference	40°C lower than room temperature	
Camera type	All-domestic components	
General Parameters		
Power Supply Method	DC12V power supply	
Power consumption	8.4W (TEC OFF) / <16W (TEC ON)	
Temperature	Operating temperature -30~60°C, storage temperature -40~85°C	
Humidity	20%-80%, no condensation	
Dimensions	68mm×68mm×89.8mm	
Weight	485g	
Lens interface	M42	
Software	A complete SDK development package and CLView software based on Delsa acquisition cards	

*1: LG: CDS-OFF, DeNoise-ON; MG: CDS-ON, DeNoise-OFF; HG: CDS-ON, DeNoise-OFF.

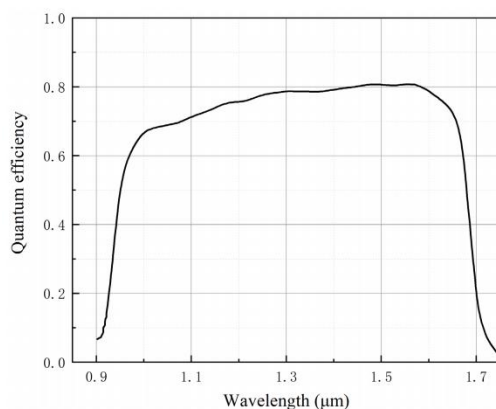
SWIR 900–1700 1.3MP 15um

SWIR1302KMB-CL200

Model Parameters	SWIR1302KMA-CL200
	1.3-megapixel 1.5 "InGaAs CameraLink camera
Camera Parameters	
Sensor model	Domestic 1280x1024
Sensor type	InGaAs CMOS image sensor
Spectral Range	900nm-1700nm
Pixel Size	15μm x 15μm
Target size	1.5"
ADC	14-bit
Frame rate & resolution	200fps@1280 x 1024
Memory	512MB
QE	≥70@1.55μm
Conversion Gain	1μV/e- (LG), 16μV/e- (MG), 53.3μV/e- (HG)
Dynamic Range	69.2dB(LG), 63.2dB(MG), 57.4dB(HG) *1 (For reference only)
Readout noise	1.3DN(LG), 2.7DN(MG), 5.0DN(HG) (For reference only)
Full well charge	1.9Me- (LG), 118.75Ke- (MG), 33.75Ke- (HG) *1
Maximum Signal-to-Noise Ratio	65.4dB(LG), 48.5dB(MG), 40.7dB(HG) (For reference only)
Dark current	30fa@0.1V&18°C (For reference only)
Exposure time range	16us~1s
Data interface	Global shutter
Data format	CameraLink Full
Digital IO	1 optical coupler isolated input, 1 optical coupler isolated output
Data format	Mono 14
Refrigeration temperature difference	40°C lower than room temperature
Camera type	High performance
General Parameters	
Power Supply Method	DC12V power supply
Power consumption	8.4W (TEC OFF) / <16W (TEC ON)
Temperature	Operating temperature -30~60°C, storage temperature -40~85°C
Humidity	20%-80%, no condensation
Dimensions	68mm×68mm×89.8mm
Weight	485g
Lens interface	M42
Software	A complete SDK development package and CLView software based on Delsa acquisition cards

*1: LG: CDS-OFF, DeNoise-ON; MG: CDS-ON, DeNoise-OFF; HG: CDS-ON, DeNoise-OFF.

SWIR1302 QE curve



SWIR331 QE curve

SWIR1302 frame rate and ROI

The camera supports hardware ROI. The smaller the ROI size, the faster the frame rate.

CL120 ROI Typical frame Rate table

X Size	Y Size	FPS
1280	1024	207
1280	512	413
640	512	693
320	256	2057
200	200	3206

U120 ROI Typical frame Rate table

X Size	Y Size	FPS
1280	1024	207
1280	512	413
640	512	693
320	256	2057
200	200	3206

U120 ROI Typical frame Rate table

X Size	Y Size	FPS
1280	1024	207
1280	512	413
640	512	693
320	256	2057
200	200	3206