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SWIR330KMA TE-Cooling C-mount USB3.0 CMOS Short Wavelength IR Camera

Standard C-Mount camera with SONYInGaAs SWIR CMOS sensors;

Visible and SWIR imaging 400nm-1700nm

Two-stage TE-cooling with controllable electric fan;

Sensor chip cooling up to 25~30°C below ambient temperature;

Working temperature can be regulated to specified temperature in 5 minutes;

Smart structure to assure the heat radiation efficiency and avoid the moisture problem;

Up to 1 hour long time exposure;

USB3.0 5Gbit/second interface ensuring high speed data transmission;

With advanced video & image processing application ToupView;

Support both video and trigger modes;

Windows/Linux/macOS/Android multiple platform SDK;

Specification

SWIR330KMA TE-Cooling C-mount USB3.0 CMOS Short Wavelength IR Camera(1)

SWIR330KMA is a TE-Cooling USB3.0 InGaAs SWIR camera, which adopts Sony IMX991 Short-Wavelength Infrared (SWIR)Image Sensor. It is suitable to capture images in both visible range and SWIR range, covering 400nm to 1700nm. With smaller pixel size of 5um, imaging shows higher precision for quantitative researches.

With the two-stage peltier cooling sensor chip to 25~ 30 degree below ambient temperature. This will greatly increase the signal to noise ratio and decrease the image noise. Smart structure is designed to assure the heat radiation efficiency and avoid the moisture problem. Electric fan is used to increase the heat radiation speed.

SWIR comes with advanced video & image processing application ToupView; Providing Windows/Linux/macOS/ Android multiple platform SDK(Native C/C++, C#/VB.NET, Python, Java, DirectShow, Twain, etc);

SWIR camera can be used in electronic board inspection, solar cellinspection, semiconductor inspection,transmission observation,produce inspection, identifying and sorting, water visualization, temperature observation, surveillance, anti-counterfeiting Short wave infrared high-end night vision security applications are also the best choice.

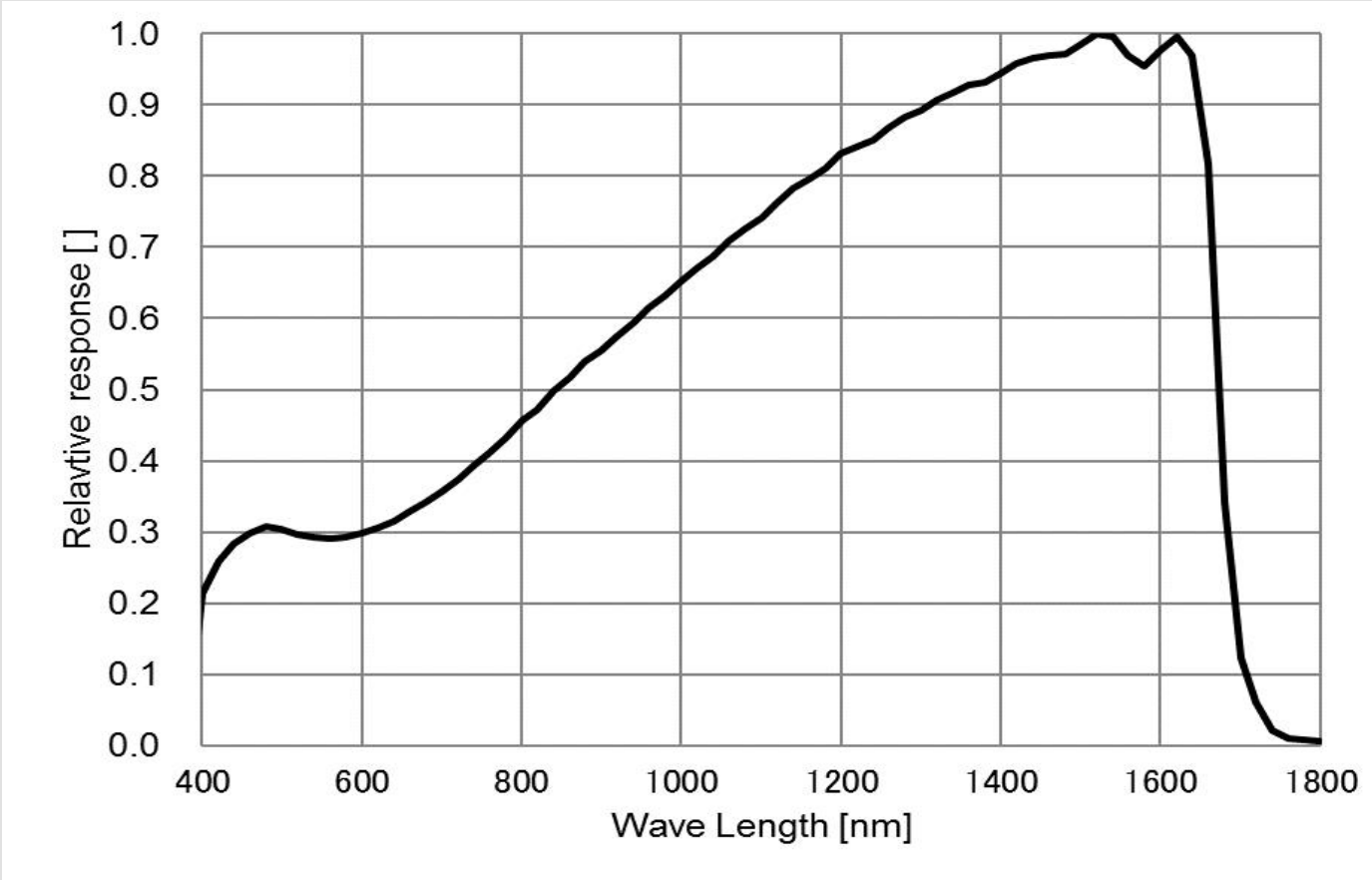
Order Code	Sensor & Size(mm)	Pixel(μm)	G Sensitivity Dark Signal	FPS/Resolution	Binning	Exposure
SWIR330KMA	0.33M/IMX991(M) 1/4”(3.20x2.56)	5 x5	121mV with 1/30s 1.0mV with 1/30s	258.8@640x512 486.1@320x256	1x1 1x1	50us~60s

Camera Specifications

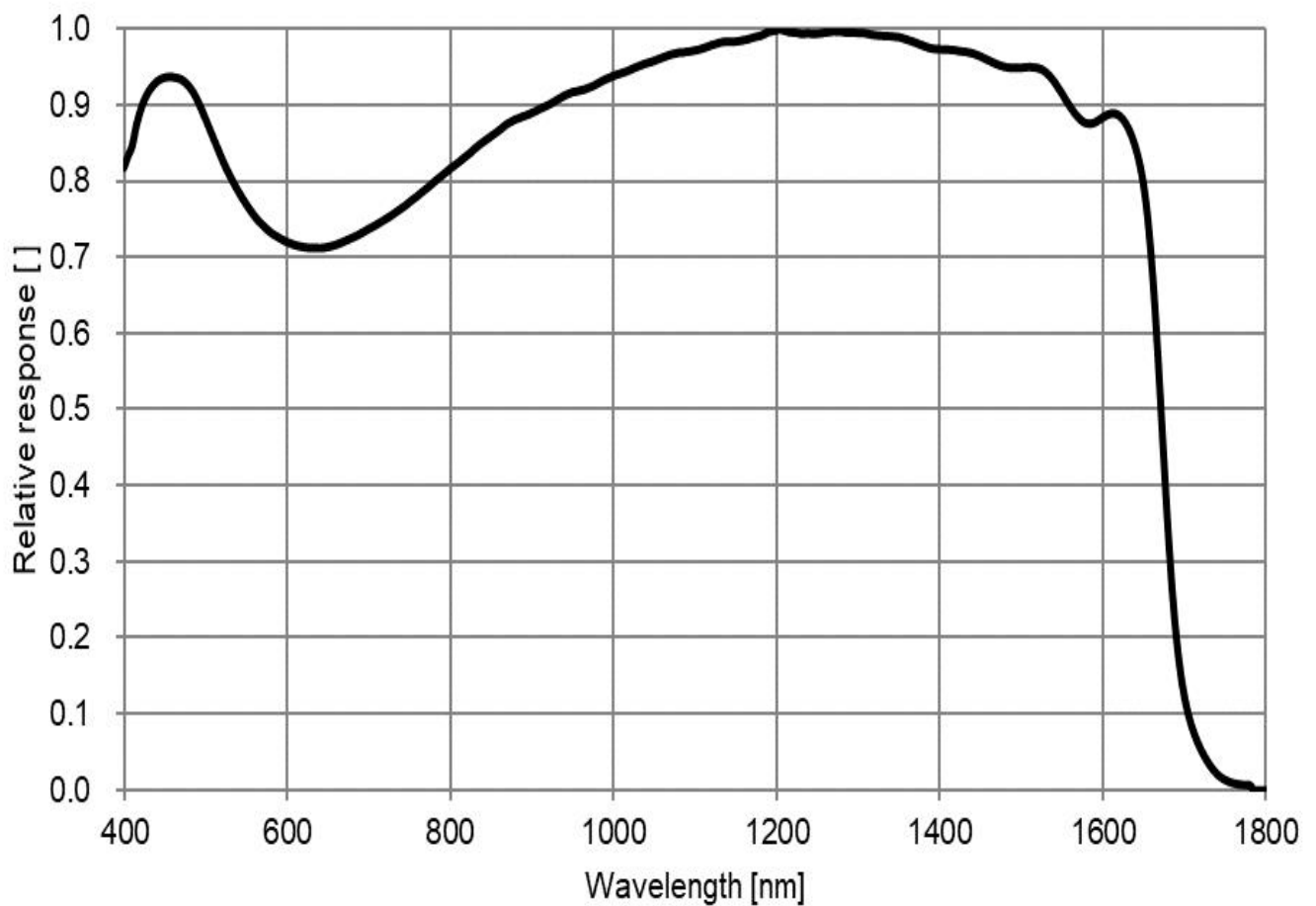
Sensor model	Sony IMX991-AABA-C
Sensor Type	InGaAs
Spectral Range	400nm-1700nm
Pixel size	5.0 μm x 5.0 μm
Sensor size	1/2”
ADC	12 Bit / 8 Bit
Frame rate	8 Bit: 258.8fps@640 x 512、486.1fps@320 x 256 12 Bit: 137.3fps@640 x 512、258.0fps@320 x 256
Image Buffer	512MByte
Conversion Gain	44.3e/ADU
Dynamic range	58.7dB
Readout Noise	211e
Full Well	181.6ke
SNRmax	52.6dB
Sensitivity	121mV
Dark current	383e/s(0C) 510e/s(10C) 638e/s(20C)
Gain range	1x-15x
Exposure time	50μs-60sec
Shutter	Global shutter
Binning	Software2x2, 3x3, 4x4

Data interface	USB3.0
Digital I/O	One optical-coupling isolated input, one optical-coupling isolated output, two non-isolated input and output
Data Format	Mono8 / Mono12
Cooling performance	25-30 °C below ambient temperature
Optical filter	400-1800nm(default); 1030-1800nm(optional)
CRA	2.35 Deg
General Specification	
Power supply	Power with USB3.0 or 12V Power adapter
Power consumption	<2.1W(without cooling) / <25W(cooling)
Temperature	Working temperature -20~60°C, storage temperature -40~85°C
Humidity	20%-80%, no condensation
Size	80mm×80mm×45.5mm
Weight	380g
Lens mount	C-mount
Software	ToupView/ SDK
Operating system	Win32/WinRT/Linux/macOS/Android
Certification	CE, FCC

Spectral Sensitivity Characteristics and Quantum Efficiency



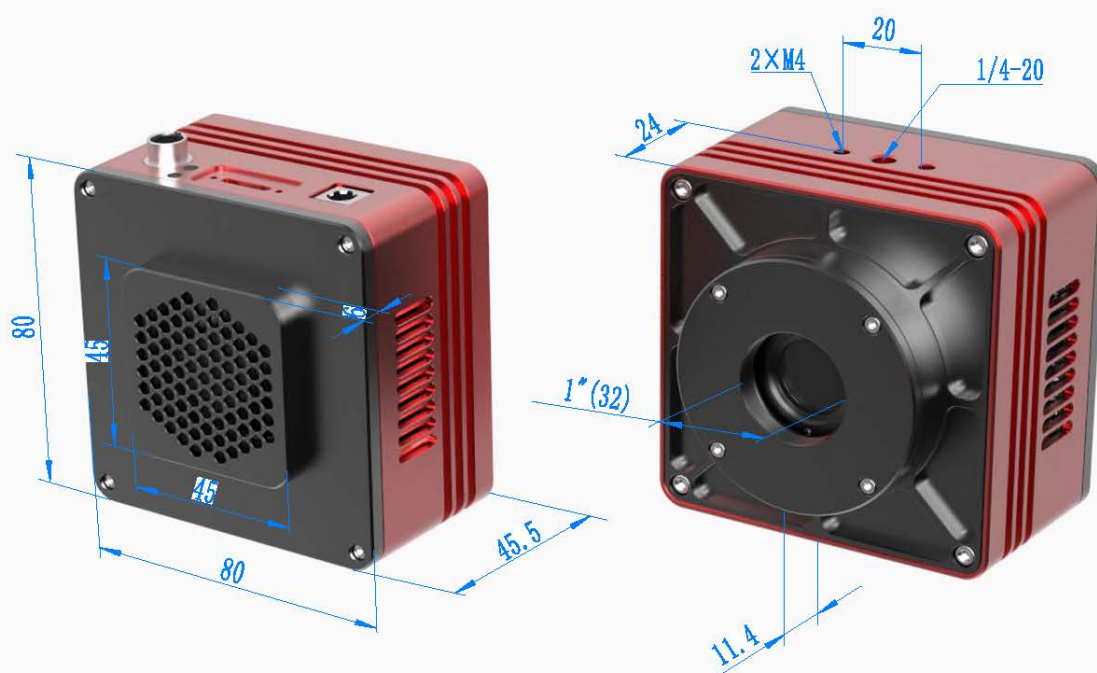
Spectral Sensitivity Characteristics Tj = 15 °C, Characteristics in the package status, Constant irradiation energy at each wavelength)

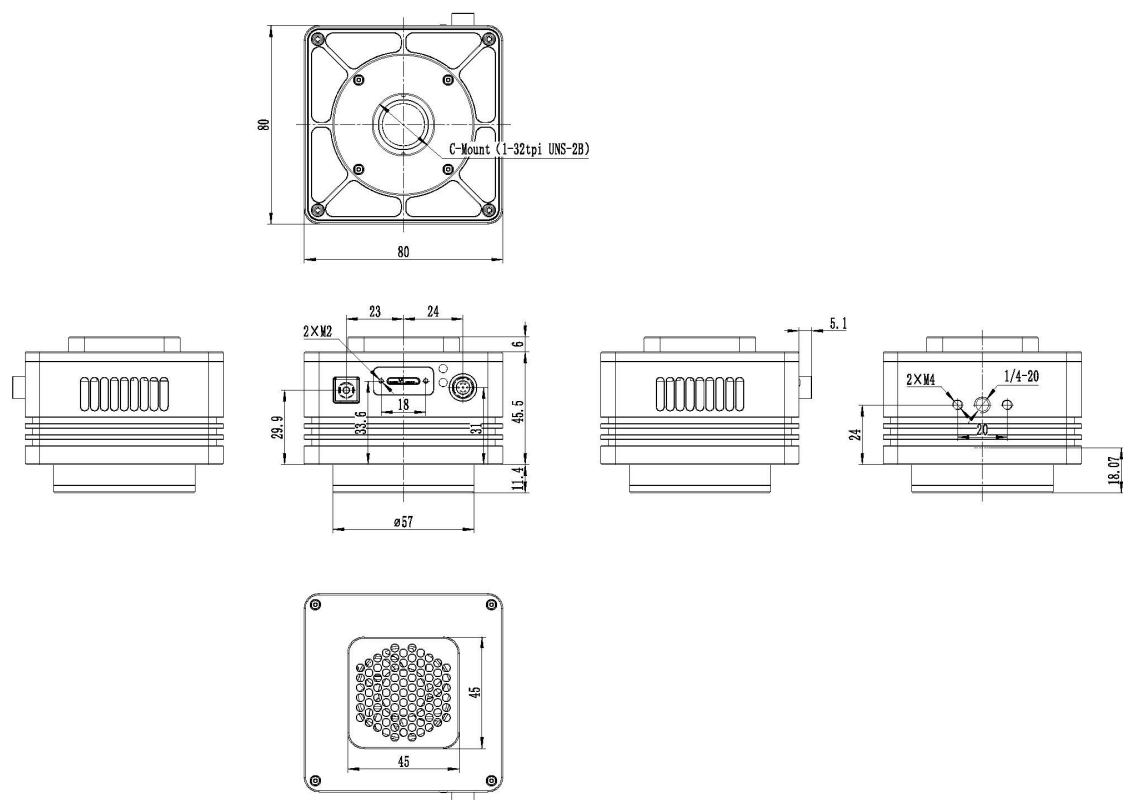


Quantum Efficiency $T_j = 15^\circ\text{C}$, Characteristics in the package status, Constant photon number at each wavelength)

Dimension of SWIR Series Camera

Installation drawings(Click to enlarge). The SWIR series camera body, made from CNC aluminium alloy, ensures a heavy duty, workhorse solution. The camera is designed with a high quality IR-CUT to protect the camera sensor. No moving parts included. This design ensures a rugged, robust solution with an increased lifespan when compared to other industrial camera solutions.





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