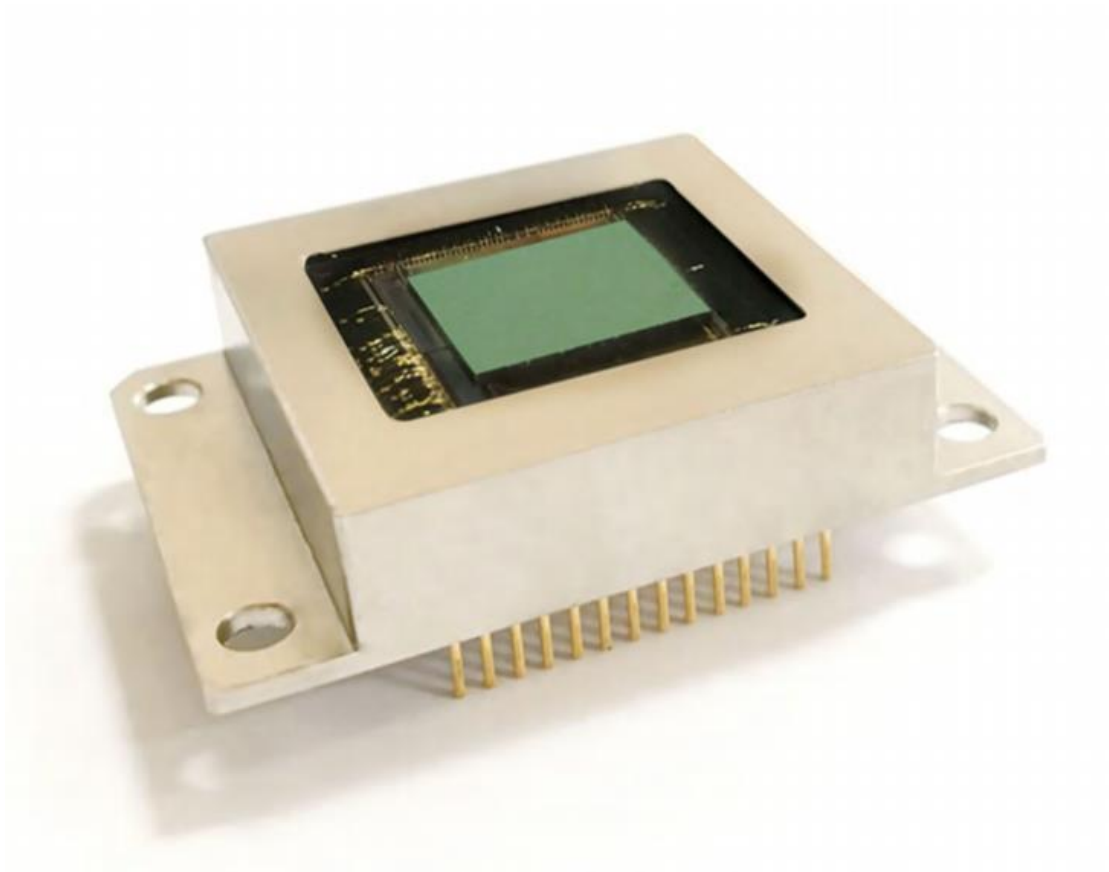


SWIR InGaAs

SENSORS & IMAGERS

III/V FOUNDRY



KY SWIR Cameras

KY-SWU2 SWIR Camera Series

KY-SWU2 Series SWIR camera supports up to 640 x 512, 50Hz, 14bit digital image output, and are equipped with USB2.0 interface for industrial applications, which can meet the demand of high sensitivity system in short-wave infrared band, used for quality inspection, process quality control in industrial production.

- ◆ On-board image processing
- ◆ Small size, light weight, low power consumption
- ◆ SDK provided
- ◆ PAL & Analog video sync output

| Type | KY-SWU2- vs64051215 | KY-SWU2- 64051215 | KY-SWU2- 64051225 | KY-SWU2- 320256 |
|---------------------------|--|----------------------|----------------------|--------------------|
| Array Type | InGaAs | | | |
| Spectral Response | 0.4 ~ 1.7 μ m | 0.9 ~ 1.7 μ m | 0.9 ~ 1.7 μ m | 0.9 ~ 1.7 μ m |
| FPA Format | 640 x 512 | 640 x 512 | 640 x 512 | 320 x 256 |
| Pixel Pitch | 15 μ m | 15 μ m | 25 μ m | 30 μ m |
| Active Area | 9.6mm x 7.68mm | 9.6mm x 7.68mm | 16.0mm x 12.8mm | 9.6mm x 7.68mm |
| Quantum Efficiency | >70% (1.0 ~ 1.6 μ m) | | | |
| Frame Rate | 50 Hz/ 100 Hz | | | |
| Integration Type | Snapshot | | | |
| Integration Time Range | 50 μ s ~ 20 ms | | | |
| On-board Image Processing | One/two-point correction、bad pixel replacement、image denoising 、image smoothing, controllable shutter compensation | | | |
| ADC | 14bit | | | |
| Analog Output | Adaptive PAL & NTSC, SMA interface | | | |
| Digital Output | USB | | | |
| Power Input | 12V DC | | | |
| Power Consumption | less than 3W in steady state (25 $^{\circ}$ C) | | | |
| Dimensions(no lens) | 65 mm x 58 mm x 64.5 mm | | | |
| Weight(no lens) | 300 g | | | |
| Lens Mount | C-Mount | | | |
| Installation Mount | 1/4-20 standard mount | | | |
| Operating Temperature | -20 $^{\circ}$ C ~ +50 $^{\circ}$ C (standard) (optional: -40 $^{\circ}$ C ~ +60 $^{\circ}$ C) | | | |
| Storage Temperature | -40 $^{\circ}$ C ~ +80 $^{\circ}$ C | | | |

APPLICATIONS

Border Defense

The image under short-wave infrared is very similar to that of visible. The difference is that the short-wave infrared wavelength can see through the fog and particles in the sputum and clearly imaged. For example, SWIR cameras can penetrate the sea fog to view and identify distant ships and details, the SWIR cameras also can penetrate the smog to observe and monitor border security in special environments.



- ◆ Penetrating fog to discover ships
- ◆ Border Defense
- ◆ Special environmental monitoring such as airports
- ◆ Auxiliary landing in bad weather conditions
- ◆ Others

Forest fire

One of the main advantages of SWIR cameras is their ability to clearly image in low visibility or harsh environments. For example, a SWIR camera can penetrate large fire smoke, and it is possible to clearly find the target fire source and effectively discover the rescue target in fire.

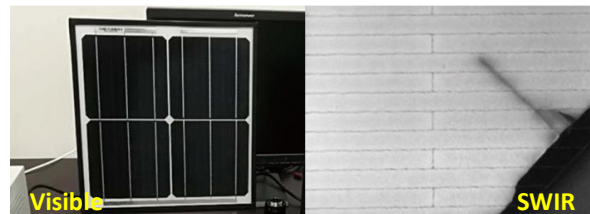


See through smoke

- ◆ Find the fire source in the forest
- ◆ Forest fire rescue
- ◆ Real-time monitoring of forest fire
- ◆ Others

Semiconductor Inspection

SWIR cameras have special properties such as high sensitivity and wide dynamic range that can penetrate some special materials. For example, inspection of crystalline silicon bricks, imaging through semiconductor wafers and integrated circuit chips for defect inspection, contactless and non-destructive testing on the solar cell.

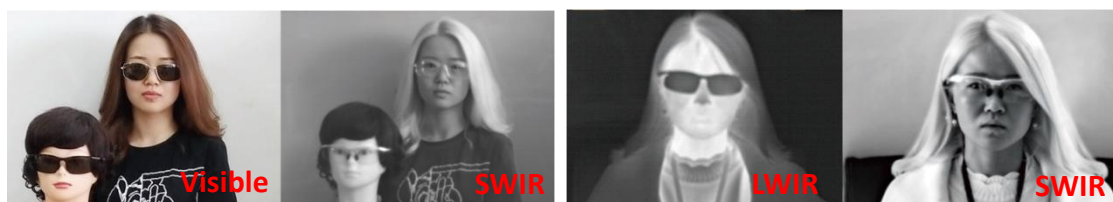


Solar cell inspection

- ◆ Integrated circuit inspection
- ◆ Internal inspection of solar silicon ingots
- ◆ Solar cells sorting
- ◆ Performance testing of solar modules
- ◆ MEMS detection
- ◆ Detection of semiconductor material growth
- ◆ Others

Face Recognition

Short-wave infrared imaging is different from long-wave infrared imaging. Short-wave infrared imaging is reflected light, which can better present the details of the target. And short-wave infrared can imaging through the sunglasses, even the camouflage can be identified under the short-wave infrared.



Face recognition

- ◆ Entry and exit security identification
- ◆ Identification in anti-terrorism
- ◆ Intelligent parking lot identification
- ◆ Others

Thermal Imaging

SWIR cameras can use more cost-effective standard lens to imaging thermal features (above 140 °C), with contactless detection, and generate 2D temperature mapping, which can be used in steel, glass, ceramic, cement and other production processes.



Hot glasses imaging

- ◆ Non-destructive testing of rolling steel
- ◆ Hot glassed detection
- ◆ Process inspection of ceramic
- ◆ Others