SWIR SYSTEMS

Component product series

SL512

Standard Linear Array SWIR Camera

Tiin SL512 short-wave infrared (SWIR) line scan camera uses an excellent performance InGaAs sensor, which has extremely high sensitivity in the 0.9~1.7um bands. The camera's integrated image processing algorithm and low dark current ensure high-quality image effects, and have strong environmental adaptability, low readout noise, extreme dynamic range, low power consumption, stable performance, compact structure, and easy system integration. , Can be widely used in the semiconductor industry, material sorting, industrial inspection, machine vision and other application fields.

Performance Index

Detector		Interface	
Detector type	InGaAs Focal plane	Optical interface	C
Spectral response	0.9um~1.7um	Control interface	UART/USB(2.0)
pixel	512	Digital output	USB/CameraLink
Image spacing	25um	External trigger	Internal/External
Quantum efficiency	>70%@1.0~1.6μm	**Power Supply**	
Effective pixel	≥99.5%	Power input	DC 12V ± 3V
Dynamic Range	Low gain：70dB	Power dissipation	≤3.5W
Noise	60e	**Environmental Adaptability**	
Image		Operating temperature	-20℃~+50℃
Line Rate	19.5KHz	Storage temperature	-30℃~+60℃
Exposure time	≥10us	**Physical Properties**	
ADC	14bit	Weight	≤225g
On-board image processing	Gain control 、 Non-uniform correction（offset&gain）、 Failed pixel replacement 、 Image enhancement (adjustable)	Size	56mm×58mm×59mm

Product Features

- Corresponding Band：900~1700nm
- Detector：512 resolution InGaAs line array
- Image Spacing：25um
- Quantum Efficiency：70%@1.0~1.6um
- High speed, the maximum line frequency can reach 19.5kHz
- High-speed digital interface　CameraLink
- High sensitivity, low dark current ,wide dynamic range
- Stable performance, simple operation, easy equipment integration
- Onboard image processing algorithm, provide SDK to support secondary development
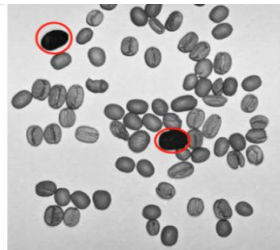- Low power consumption, light weight, compact structure。

Product Applications

- Food and Agricultural Products：
  Bruise detection, damage inspection, quality screening, material identification, etc.
- Semiconductor：
  Silicon wafer prototype inspection, solar cell EL/PL inspection, etc.
- Medical Field：
  Optical coherence tomography（OCT）
- Hyperspectral Imaging：
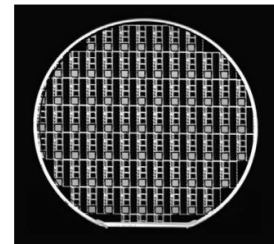 Composition analysis, waste classification, humidity measurement, fat analysis

Imaging Effect

Visible　（impurity sorting）　SWIR

Visible　（silicon wafer）　SWIR

Shortwave infrared solar wafer defect detection