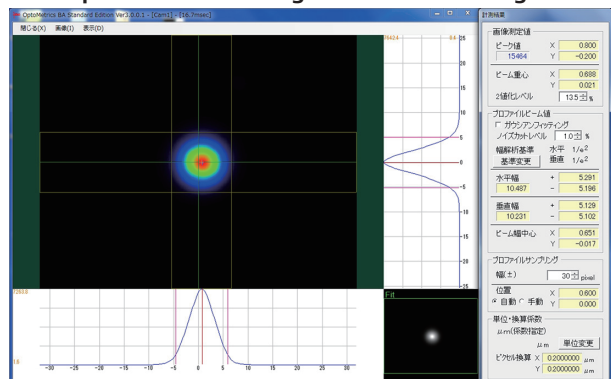


## InGaAs HIGH SENSITIVITY NIR DETECTOR ISA041 series

InGaAs solid state image sensing detector, having high sensitivity up to 1700nm NIR wavelength range.

**InGaAs high sensitivity NIR detector** is a NIR detector having high spectral sensitivity from 950nm to 1700nm wavelength range. Especially, it has very high spectral sensitivity in 1310nm-1550nm wavelength range, so it is best for beam profile measurement and analysis, beam observation, inspection, assembling adjustment of various optical devices and modules for optical communication. In addition, it is applicable for inspection of semiconductor device and general purpose NIR image observation.

## [Example of infrared image observation using InGaAs detector]



This is an example of using a light source of 1550 nm and observing an infrared beam spot of about 10  $\mu\text{m}\phi$  collected by the light collection module.

- Optics: NFP measurement optics **M-Scope type S**
- Objective lens: **M-Plan Apo NIR 100x**
- Detector: InGaAs high sensitivity NIR detector **ISA041H2**



This is an example of using a light source of 1550 nm and observing the light from the exit side of Silicon waveguide. At the same time, by using infrared halogen coaxial epi-illumination, microscopic image of exit side of silicon waveguide is observed.

- Optics: Optical measurement optics **M-Scope type J/PF**
- Objective lens: **M-Plan Apo NIR 100x**
- Detector: InGaAs NIR detector **ISA041M**

## InGaAs HIGH SENSITIVITY NIR DETECTOR

## ISA041H2/ISA041VH

Standard type InGaAs imaging detector for optical beam profile measurement from 950nm to 1700nm spectral range.

InGaAs high sensitivity NIR detector **ISA041H2/ISA041VH** are NIR detectors using InGaAs solid state imaging detector. Best suits for beam profile measurement and image processing, NIR image observation in 950~1700nm spectral range. **ISA041H2/ISA041VH** are standard imaging detectors for NIR beam profile measurement system in combination with Synos' M-Scope series optics and optical beam analysis module **AP013**.

## [Summary of specification]

Model	ISA041H2	ISA041VH
Imaging device	InGaAs image densor	
Spectral range	950nm - 1700nm	
Pixel number	320(H) × 256(V) pixels	640(H) × 512(H) pixels
Sensor pitch	20 $\mu\text{m}$ × 20 $\mu\text{m}$	
Effective device size	6.4mm(H) × 5.12mm(V)	12.8mm(H) × 10.24mm(V)
Cooling temperature	10°C ±0.5°C (at ambient temperature 25°C, forced-air cooling)	
Detector interface	USB3.0 (connector type : USB3.0 microB type)	
Exposure time	4.6ms ~ 1s (at rolling shutter mode) 100 $\mu\text{s}$ ~ 1s (at global shutter mode)	16.7ms ~ 1s
Maximum frame rate	216.6 frame/sec (at rolling shutter mode) 214.3 frame/sec (at global shutter mode)	59.774 frame/sec
ADC	14bit	
External trigger mode	edge trigger, level trigger, start trigger	
Camera mount	C mount	
Power consumption	16W or less	
Input voltage	DC+12V	
Ambient operation temp.(recommended)	+25°C ±3°C	
Ambient operation temperature/humidity	0°C ~ +40°C / 30% ~ 80% (no condensation)	
Ambient storage temperature/humidity	-10°C ~ +50°C / under 90% (no condensation)	

\* The specification shown above is for use with the detector alone. The functions shown above may be restricted depending on the hardware and software used.

\* With this detector, bright pixels, dark pixels, and unevenness may appear depending on the exposure time setting and environmental temperature. Please note that this is due to the characteristics of the InGaAs sensor and is not a defect or failure.

## [Dimension, weight of ISA041H2 detector head]

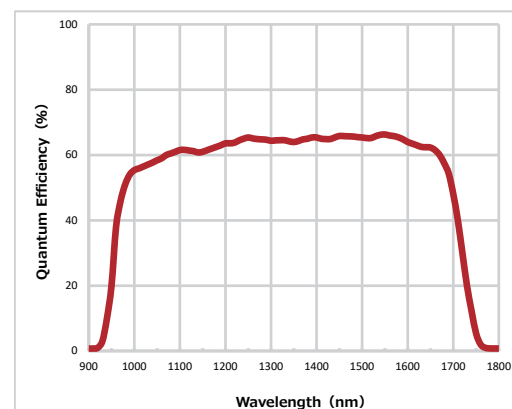
- \* Outside dimension : 56(H) × 56(W) × 98(D) mm (excluding projection portion)
- \* Weight : approx. 520g

[Detector type selection of InGaAs NIR detector **ISA041H2** / **ISA041VH**]

**ISA041H2** and **ISA041VH** have the same pixel pitch, so the resolution is the same. On the other hand, since total number of pixels is different, effective element size will change. **ISA041H2** is suitable for use in combination with Synos' NFP measurement optics and standard type FFP measurement optics **M-Scope type F**. On the other hand, when used in combination with IR high-resolution FFP measurement optics **M-Scope type FHR** and the wide area FFP measurement optics **M-Scope type FW**, **ISA041VH** is indispensable. Please contact us for the details of the detector selection.



## [Spectral sensitivity]



## [Standard component]

- \* Detector head: 1
- \* Camera adapter for ISA041H2: 1
- \* 12pin camera cable: 1
- \* USB cable for ISA041H2: 1