

InGaAs camera C14041-10U-02



The C14041-10U-02 is an InGaAs camera with sensitivity in the near infrared region from 950 nm to 1700 nm. It has a USB 3.0 interface port which supports 14 bit image acquisition and exposure time adjustment. This makes the C14041-10U-02 ideal for use in a wide range of applications including internal inspection of silicon wafers and devices, laser beam alignment and evaluation of solar cells.

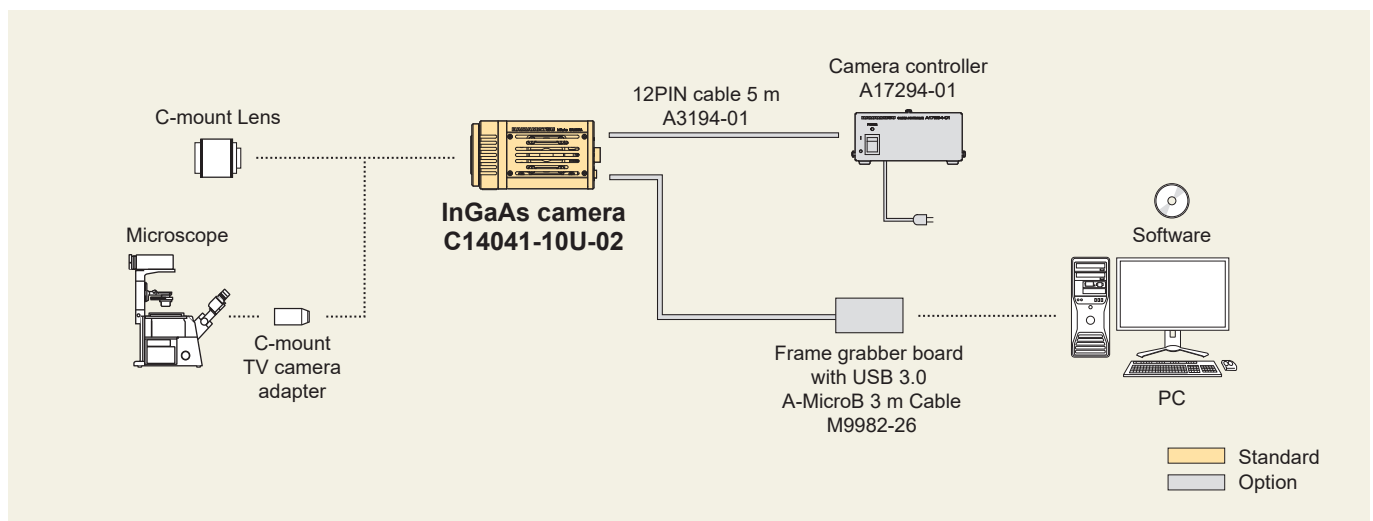
Features

- High sensitivity in the near infrared region
- 320 × 256 pixels
- Low noise and high stability with cooling
- High-image quality rolling shutter mode and the global shutter mode capable of simultaneous exposure to the entire screen mounted
- Frame rate of approx. 216 frames/s (rolling shutter mode)

Applications

- Inspection of internal defects in Si wafers, chips, and MEMS
- Evaluation and analysis of optical communication devices such as IR beam profilers
- Evaluation of semiconductor materials such as solar cells
- Inspection of food and agricultural products
- Moisture detection
- Observation of cultural assets

System configuration



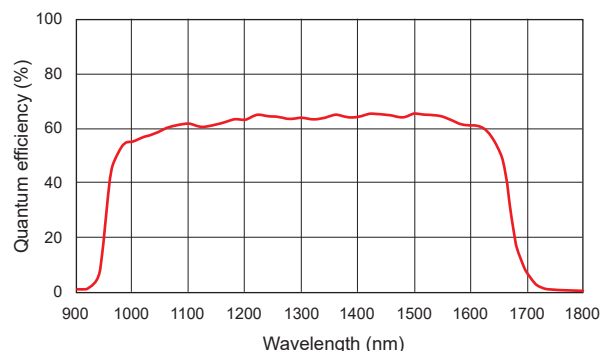
Specifications

Product number	C14041-10U-02	
Imaging device	InGaAs sensor	
Effective number of pixels	320 (H) × 256 (V)	
Pixel size	20 μm (H) × 20 μm (V)	
Effective area	6.4 mm (H) × 5.12 mm (V)	
Cooling method	Peltier cooling	
Cooling temperature	Forced-air cooled (Ambient temperature: +25 °C)	+10 °C
Frame rate	Rolling shutter	216.6 frames/s
	Global shutter	214.3 frames/s
Digital output	14 bit	
Exposure time	Rolling shutter	4.6 ms to 1 s
	Global shutter	100 μs to 1 s
External trigger input mode	Edge trigger, Level trigger, Start trigger	
Trigger delay function	0 s to 1 s in 10 μs steps	
Trigger input connector	SMA	
Interface	USB 3.0 *1	
Image processing functions	Background subtraction, Shading correction	
Lens mount	C-mount	
Connector	USB 3.0 microB type	
Power supply	DC +12 V	
Power consumption	Approx. 16 W	
Ambient operating temperature	0 °C to +40 °C	
Ambient operating humidity	30 % to 80 % (with no condensation)	
Ambient storage temperature	-10 °C to +50 °C	
Ambient storage humidity	90 % max. (with no condensation)	

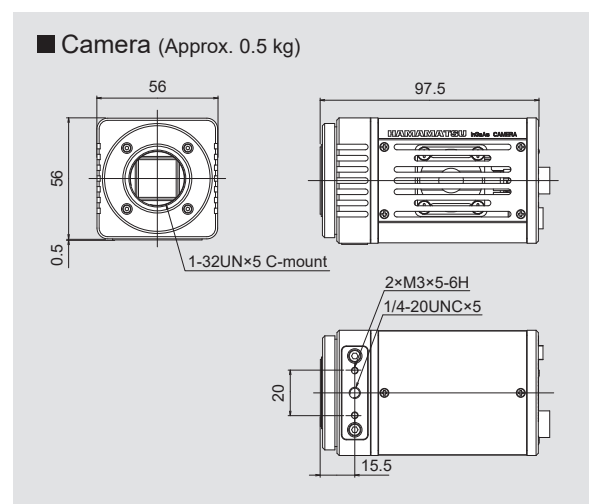
*1 Equivalent to USB 3.1 Gen 1

As the characteristics of InGaAs sensor, uneven pattern where the brightness of the pixels is different from surrounding area may appear in the image, depending on the exposure time or ambient temperature.

Spectral response



Dimensional outlines (Unit: mm)



Options

Product number	Product name
A17294-01	Camera controller
A3194-01	12PIN cable 5 m
M9982-26	Frame grabber board with USB 3.0 A-MicroB 3 m Cable

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 - Subject to local technical requirements and regulations, availability of products included in this brochure may vary. Please consult your local sales representative.
 - The product described in this brochure is designed to meet the written specifications, when used strictly in accordance with all instructions.
 - The spectral response specified in this brochure is typical value and not guaranteed.
 - Specifications and external appearance are subject to change without notice.
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