

# 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.

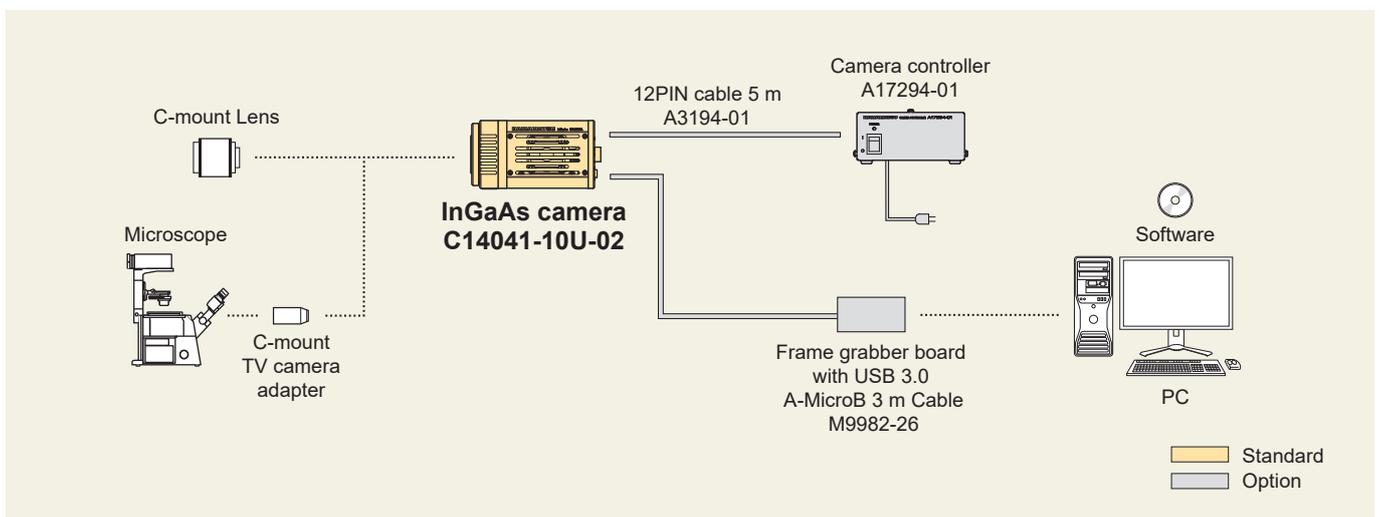
## Features

- 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



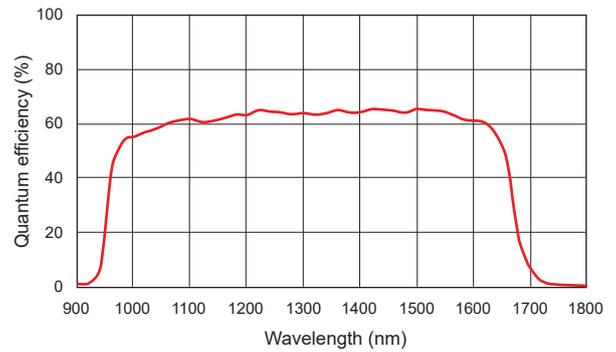
## Specifications

|                               |  |                |
|-------------------------------|--|----------------|
| 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<br>(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 %<br>(with no condensation)             |                |
| Ambient storage temperature   | −10 °C to +50 °C                                   |                |
| Ambient storage humidity      | 90 % max.<br>(with no condensation)                |                |

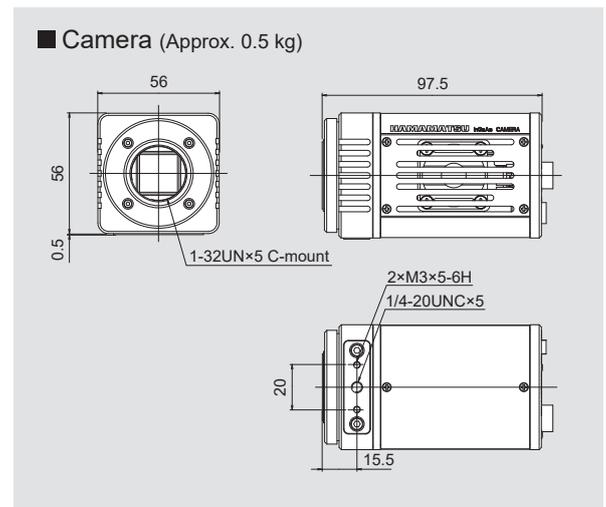
\*1 Equivalent to USB 3.1 Gen 1

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<br>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.
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