

Scientific CMOS board level camera C11440-62U



The C11440-62U is a compact and highly sensitive board level camera with a scientific CMOS image sensor. The camera has over 80 % quantum efficiency at 600 nm. The camera runs at 30 frames/s at full resolution and it can reach up to 25 655 frames/s (512 × 8 ROI). The C11440-62U can keep the sensor temperature constant and acquire a stable image by having a sensor temperature stabilization function built-in. The C11440-62U has low readout noise of 2.1 electrons (rms) at 30 frames/s. The compact (92 mm × 92 mm) and light weight design is ideal for integration into various measurement and analytical instruments. In addition to that the camera employs a USB 3.0 digital interface for convenience and compatibility.

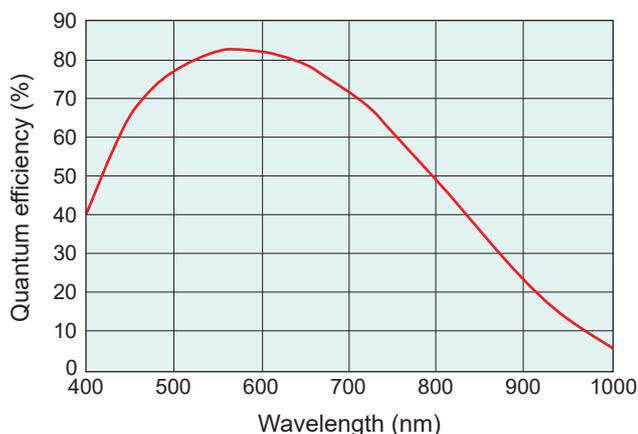
FEATURES

- Sensor temperature stabilization function
- Resolution: 4.0 megapixels (2048 × 2048)
- Readout noise: 2.1 electrons (rms)
1.5 electrons (median)
- Frame rate: 30 frames/s (Full resolution)
- Quantum efficiency: 82 % (Peak QE)

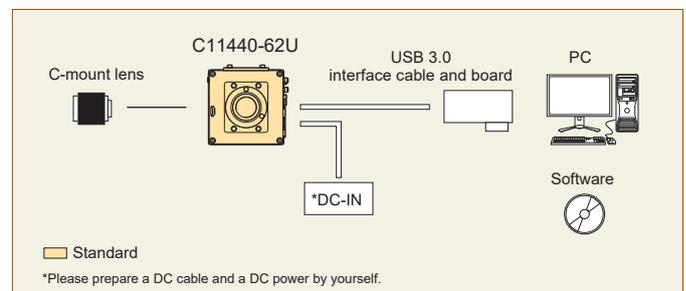
APPLICATIONS

- Super-resolution microscope
- Real time confocal microscope
- Live cell imaging
- Fluorescence time lapse imaging
- DNA sequence
- DNA microarray
- X-ray I.I., X-ray scintillator readout

SPECTRAL RESPONSE



SYSTEM CONFIGURATION



SPECIFICATIONS

Type number	C11440-62U
Imaging device	Scientific CMOS image sensor
Effective number of pixels	2048 (H) × 2048 (V)
Pixel size	6.5 μm (H) × 6.5 μm (V)
Effective area	13.312 mm (H) × 13.312 mm (V)
Full well capacity (Typ.)	30 000 electrons
Dynamic range (Typ.) *1	20 000 : 1
Frame rate	30 frames/s (Full resolution) 25 655 frames/s (512×8 ROI)
Readout noise (Typ.) *2	2.1 electrons (rms), 1.5 electrons (median)
Digital output	16 bit
Exposure time *3	1 ms to 30 s (Internal trigger mode at full resolution)
External trigger input mode	Edge trigger, Level trigger, Synchronous readout trigger, Start trigger, Global reset edge trigger, Global reset level trigger
Trigger output	Programmable timing outputs, Low output, High output, Trigger ready output, Global exposure timing output
Binning *4	2×2, 4×4
Sub-array	Yes
Interface	USB 3.0
Lens mount	C-mount
Connector	USB 3.0 microB type
Power supply	DC +12 V
Power consumption	Approx. 15 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)

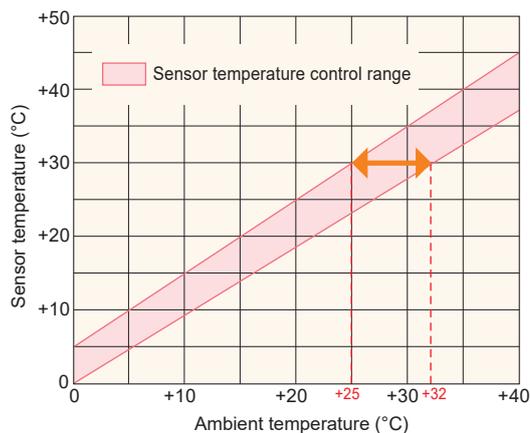
*1: Calculated from the ratio of the full well capacity and the average readout noise.

*2: Value of the sensor temperature 27 °C at 33 ms exposure.

*3: When exposure time is longer than 100 ms, white spots would be visible and image quality would be degraded.

*4: Digital binning processing in the camera

Sensor temperature stabilization function details



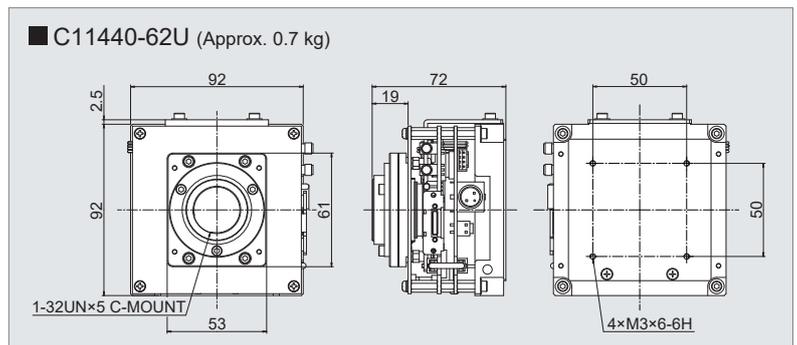
It is a range where the sensor temperature can be kept constant even if environmental temperature fluctuates.

Reference example (shown the orange arrow in figure):

The sensor temperature can be kept at +30 °C within the range of ambient temperature +25 °C to +32 °C.

DIMENSIONAL OUTLINES

(Unit : mm)



OPTIONS

- External trigger cable SMA-BNC 5 m A12106-05
- External trigger cable SMA-SMA 5 m A12107-05
- Board camera case A14875-01

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