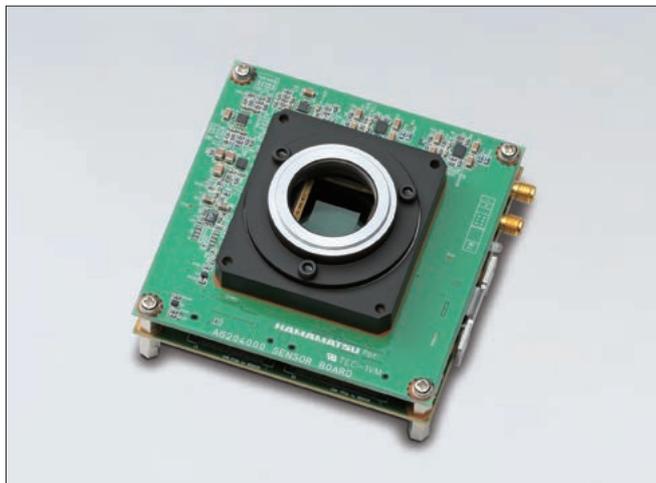


Scientific CMOS board level camera C11440-52U30



The C11440-52U30 is a compact and highly sensitive board level camera with a scientific CMOS sensor. The camera has over 80 % quantum efficiency. The camera runs at 30 frames/s at full resolution and it can reach up to 25 655 frames/s (512 × 8 ROI). This enhanced QE means that you have a possibility of detecting the faintest of signals. Or, for moderately dim samples, that the ideal image is achievable with shorter exposure times.

The C11440-52U30 has low camera noise of 2.3 electrons (rms) at 30 frames/s. The compact (90 mm × 90 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.

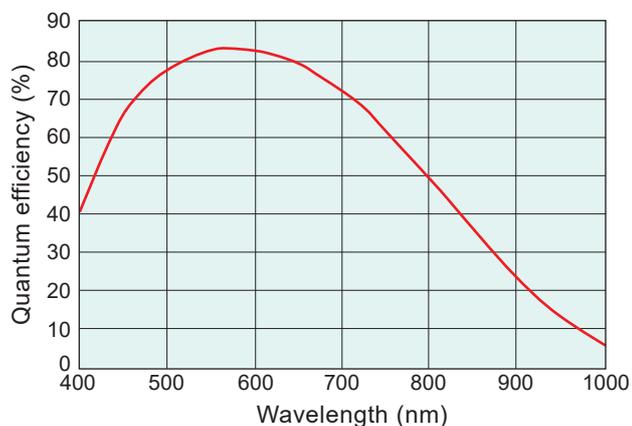
FEATURES

- Resolution: 4.0 megapixels (2048 × 2048)
- Camera noise: 2.3 electrons (rms)
1.6 electrons (median)
- Frame rate: 30 frames/s (Full resolution)
- Quantum efficiency: 82 % (Peak QE)

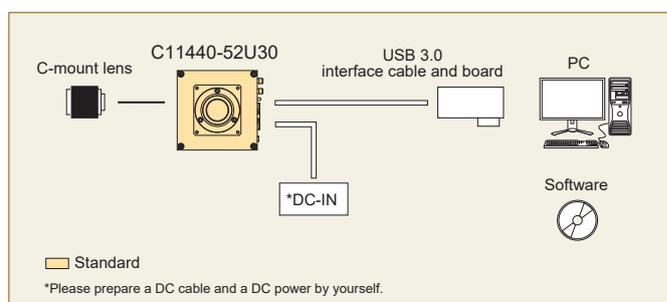
APPLICATIONS

- DNA sequence
- Gene expression
- Imaging cytometry
- High content screening
- Live cell imaging
- Genomic and proteomic analysis and diagnostics
- X-ray I.I., X-ray scintillator readout

SPECTRAL RESPONSE



SYSTEM CONFIGURATION



SPECIFICATIONS

Type number	C11440-52U30
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	18 000 : 1
Frame rate	30 frames/s (Full resolution) 25 655 frames/s (512×8 ROI)
Readout noise (Typ.) *2	2.3 electrons (rms), 1.6 electrons (median)
Digital output	16 bit
Exposure time *3	1 ms to 30 s (Internal trigger mode, 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	3 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. 9 W
Ambient operating temperature	0 °C to +40 °C *5
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: Including dark current at 33 ms exposure.

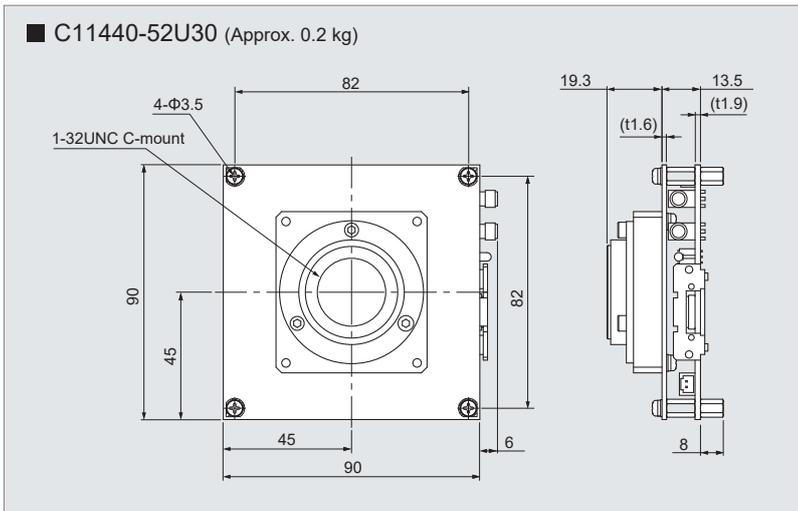
*3: When exposure time is longer than 100 ms, white spots would be visible and image quality would be degraded.

*4: Digital binning processing in the camera

*5: When ambient operating temperature is higher than +35 °C, white spots would be visible and image quality would be degraded.

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: A12456-03

- Product and software package names noted in this documentation are trademarks or registered trademarks of their respective manufacturers.
- Subject to local technical requirements and regulations, availability of products included in this promotional material may vary. Please consult your local sales representative.
- Information furnished by HAMAMATSU is believed to be reliable. However, no responsibility is assumed for possible inaccuracies or omissions. Specifications and external appearance are subject to change without notice.

© 2020 Hamamatsu Photonics K.K.

HAMAMATSU PHOTONICS K.K. www.hamamatsu.com

Systems Division

812 Joko-cho, Higashi-ku, Hamamatsu City, 431-3196, Japan, Telephone: (81)53-431-0124, Fax: (81)53-433-8031, E-mail: export@sys.hpk.co.jp

U.S.A.: Hamamatsu Corporation: 360 Foothill Road, Bridgewater, NJ 08807, U.S.A., Telephone: (1)908-231-0960, Fax: (1)908-231-1218 E-mail: usa@hamamatsu.com

Germany: Hamamatsu Photonics Deutschland GmbH.: Arzbergerstr. 10, D-82211 Herrsching am Ammersee, Germany, Telephone: (49)8152-375-0, Fax: (49)8152-265-8 E-mail: info@hamamatsu.de

France: Hamamatsu Photonics France S.A.R.L.: 19, Rue du Saule Trapu, Parc du Moulin de Massy, 91882 Massy Cedex, France, Telephone: (33)1 69 53 71 00, Fax: (33)1 69 53 71 10 E-mail: infos@hamamatsu.fr

United Kingdom: Hamamatsu Photonics UK Limited: 2 Howard Court, 10 Tewin Road, Welwyn Garden City, Hertfordshire AL7 1BW, UK, Telephone: (44)1707-294888, Fax: (44)1707-325777 E-mail: info@hamamatsu.co.uk

North Europe: Hamamatsu Photonics Norden AB: Torshamnsgatan 35 16440 Kista, Sweden, Telephone: (46)8-509 031 00, Fax: (46)8-509 031 01 E-mail: info@hamamatsu.se

Italy: Hamamatsu Photonics Italia S.r.l.: Strada della Moia, 1 int. 6, 20020 Arese (Milano), Italy, Telephone: (39)02-93 58 17 33, Fax: (39)02-93 58 17 41 E-mail: info@hamamatsu.it

China: Hamamatsu Photonics (China) Co., Ltd.: 1201 Tower B, Jiaming Center, 27 Dongsanhuan Beilu, Chaoyang District, 100020 Beijing, P.R. China, Telephone: (86)10-6586-6006, Fax: (86)10-6586-2866 E-mail: hpc@hamamatsu.com.cn

Taiwan: Hamamatsu Photonics Taiwan Co., Ltd.: 8F-3, No.158, Section 2, Gongdao 5th Road, East District, Hsinchu, 300, Taiwan R.O.C. Telephone: (886)3-659-0080, Fax: (886)3-659-0081 E-mail: info@hamamatsu.com.tw

Cat. No. SCAS0126E03
AUG/2020 HPK
Created in Japan