

ORCA[®]-spark

Digital CMOS camera C11440-36U



The ORCA[®]-spark is a high-sensitivity digital CMOS camera using a 2.3 megapixel CMOS sensor. It has global shutter to achieve a high-speed readout of approx. 65 frames/s, making it ideal for imaging fast moving objects. The ORCA[®]-spark also delivers readout noise levels as low as 6.6 electrons, enabling imaging with high S/N ratio even when capturing images of dark objects.

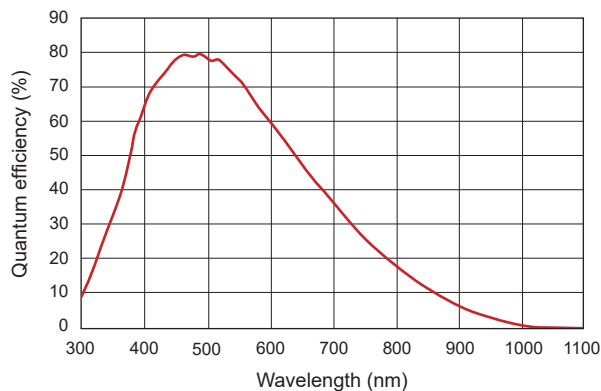
Features

- 2.3 megapixel CMOS sensor
- High-speed readout of approx. 65 frames/s
- Low readout noise of 6.6 electrons
- Wide dynamic range of 5000:1
- Global shutter
- USB 3.0 interface

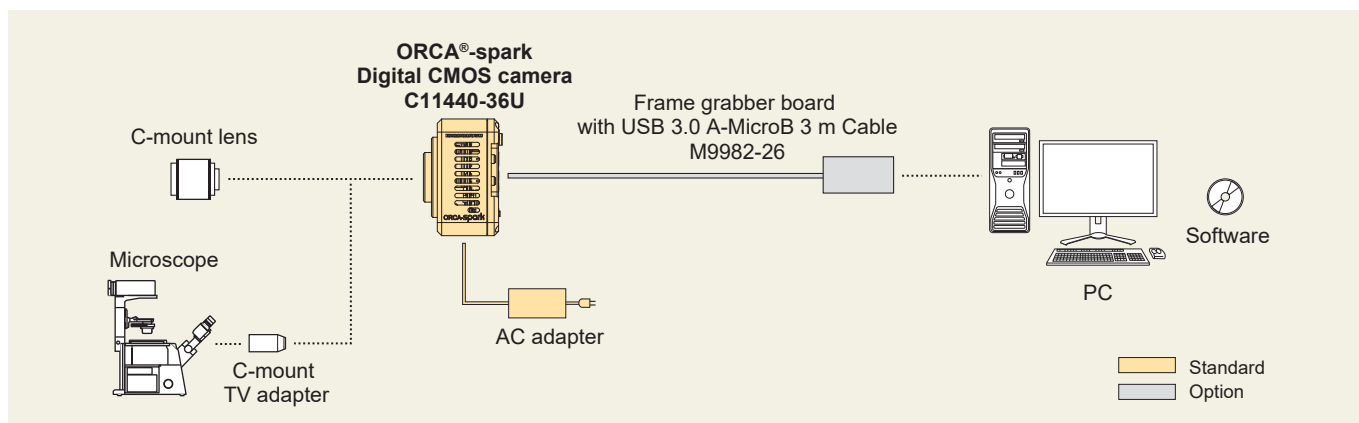
Applications

- Low-light-level imaging
- Microscope observation
- X-ray scintillator readout

Spectral response



System configuration



Specifications

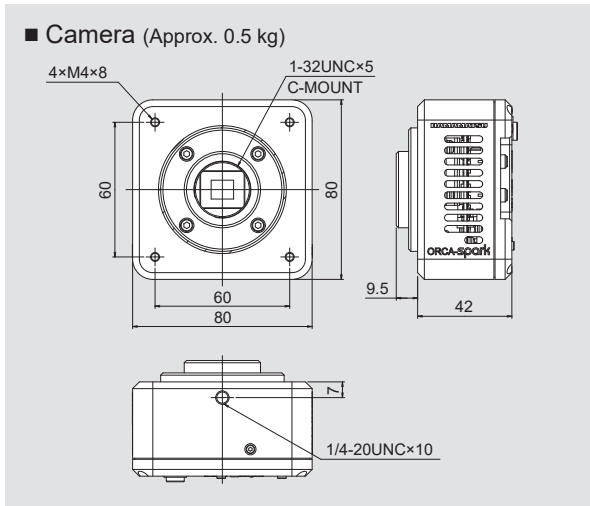
| | | |
|-------------------------------|--|--|
| Product number | C11440-36U | |
| Imaging device | CMOS image sensor | |
| Effective number of pixels | 1920 (H) × 1200 (V) | |
| Cell size | 5.86 μm (H) × 5.86 μm (V) | |
| Effective area | 11.25 mm (H) × 7.03 mm (V) | |
| Full well capacity (typ.) | 33 000 electrons | |
| Analog gain | 1× to 15.8× (240 steps) | |
| Dynamic range (typ.) *1 | 5000 : 1 | |
| Frame rate | Full resolution | 64.9 frames/s |
| | 2 Line Sub-array | 2008.9 frames/s |
| Readout noise (rms) (typ.) | 6.6 electrons | |
| Digital output | 12 bit | |
| Exposure time | Internal mode | 26.17 μs to 10 s |
| | External trigger mode | 26.17 μs to 10 s (Edge trigger, Start trigger) 1 ms to 1 s (Level trigger, Synchronous readout trigger) |
| External trigger input | Yes | |
| External trigger input mode | Edge trigger, Level trigger, Synchronous readout trigger, Start trigger | |
| Trigger delay function | 0 s to 10 s in 1 μs steps | |
| Trigger input connector | SMA | |
| Trigger output | Programmable timing outputs, Low output, High output, Global exposure timing output, Trigger ready output | |
| Binning *2 | 2×2 | |
| Sub-array | Yes | |
| Interface | USB 3.0 *3 | |
| Lens mount | C-mount | |
| Connector | USB 3.0 microB type | |
| Power supply | AC 100 V to AC 240 V, 50 Hz/60 Hz | |
| Power consumption | Approx. 20 VA | |
| Ambient operating temperature | 0 °C to +40 °C | |
| Ambient operating humidity | 30 % to 80 % at Forced-air cooled (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 readout noise.

*2 Digital binning processing in the camera

*3 USB 3.1 Gen 1 compatible

Dimensional outlines (Unit: mm)



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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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Options

| Product number | Product name |
|----------------|--|
| A12106-05 | External trigger cable SMA-BNC 5 m |
| A12107-05 | External trigger cable SMA-SMA 5 m |
| M9982-26 | Frame grabber board with USB 3.0 A-MicroB 3 m Cable |

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