

Hamamatsu Photonics Unveils the ORCA®-Quest IQ: The Next Evolution in qCMOS® Camera Technology

News provided by:

Hamamatsu Photonics Europe

September 18, 2025

[Contact us](#)

Share this article:



Powering Discoveries with Scientific Imaging



Hamamatsu Photonics is proud to announce the launch of the ORCA®-Quest IQ, the newest addition to the acclaimed ORCA-Quest series of qCMOS® cameras. Based on groundbreaking qCMOS technology, this camera is set to advance quantitative imaging across various high-demand fields, including adaptive optics and quantum technology.

The ORCA-Quest IQ features an added Camera Link output, significantly enhancing the flexibility and compatibility of data transfer while maintaining the hallmark low-noise performance of the ORCA-Quest series. This new capability allows for high-speed feedback to peripheral devices relying on the

Camera Link interface, making it an ideal option for applications requiring real-time response and data processing.

Key Features of the ORCA-Quest IQ:

- **High Resolution:** Delivers 9.4 megapixels with a 4096 × 2304 pixel resolution for crystal-clear imaging.
- **Exceptional Quantum Efficiency** Achieves a peak quantum efficiency of 85% at 460 nm, offering superior sensitivity.
- **Low Readout Noise:** Achieves a minimum readout noise of 0.3 electrons rms, resolving the tiniest signal changes.
- **Dynamic Range:** Demonstrates a robust dynamic range of 23,000:1 (rms), facilitating detailed imaging across varied light conditions.
- **Cooling Options:** Features both forced-air and water-cooling options, providing reliability and flexibility in temperature management.
- **Advanced Triggering Capacities:** Equipped with flexible external trigger input modes and a software trigger mechanism, catering to diverse experimental setups.

ORCA-Quest IQ inherits the core features of the ORCA-Quest series while evolving into a more versatile camera by allowing image output to connected devices via Camera Link. It also retains support for CoaXPress and USB 3.1. Flexibility in data transfer translates into a variety of possibilities for feedback-based applications. These include:

- Adaptive optics
- Quantum technology
- Super-resolution microscopy

In 2021, Hamamatsu Photonics introduced the world's first qCMOS camera capable of photon number resolving, the "ORCA-Quest". Since then, it has been widely adopted in pioneering research across the life sciences and physics fields. The ORCA-Quest is a camera with a qCMOS image sensor developed using Hamamatsu's patented design technology and the latest manufacturing techniques. It reflects the manufacturer's commitment to pushing the boundaries of quantitative imaging. The ORCA-Quest series continues to evolve.

For more information, please visit the [product page](#) or contact us: marcom@hamamatsu.eu

-----ENDS-----

About Us

Hamamatsu has been designing minimal noise scientific cameras since the 1980s. They currently supply scientific cameras and related products for applications that require cutting-edge imaging technology to capture extremely low-level fluorescence and luminescence, for example, in academic research fields, including life sciences and factory automation (FA). To meet market demands for even further noise reduction, they have been working to devise scientific cameras that exhibit incredibly low noise performance capable of achieving 2D photon number resolving measurement. Please view their full range of cameras: [Scientific camera | Hamamatsu Photonics](#)

Hamamatsu Photonics is a leading provider of cutting-edge photonics technology and products. With 70 years of experience, the company delivers advanced solutions to customers across a wide range of industries, including medical, scientific research, industrial, and telecommunications. Hamamatsu Photonics offers a comprehensive range of products, such as imaging sensors, light sources, and optical systems, designed to meet customers' unique needs.

www.hamamatsu.com

Keywords: ORCA, quantitative imaging, qCMOS, Camera Link, high-resolution imaging, quantum efficiency, low readout noise

[Contact us](#)

Market: Academic research, Life Sciences, Original Equipment Manufacturers (OEMs)
