Photron

TECHNOLOGY / APPLICATIONS / RESEARCH

HIGH-SPEED IMAGING IN FOCUS

Capturing the science of a split second.

PHOTRON QUARTERLY • 2026 EDITION



INSIDE THIS EDITION

01 Orion S40 & extreme imaging

02 Microgravity research in focus

03 CRYSTA polarization insights

04 Research, events & what's next

01 / FEATURED TECHNOLOGY

See more with less noise.

FASTCAM Orion S40

Designed for
demanding high-speed work.

Exceptional light sensitivity and ultra-low image noise help deliver clean, detailed data in applications where both speed and image quality matter.



31,250
fps @ 1,280 × 1,024

312,500
fps at reduced resolution

14-bit
high-dynamic-range imaging

10 GbE
fast data transfer

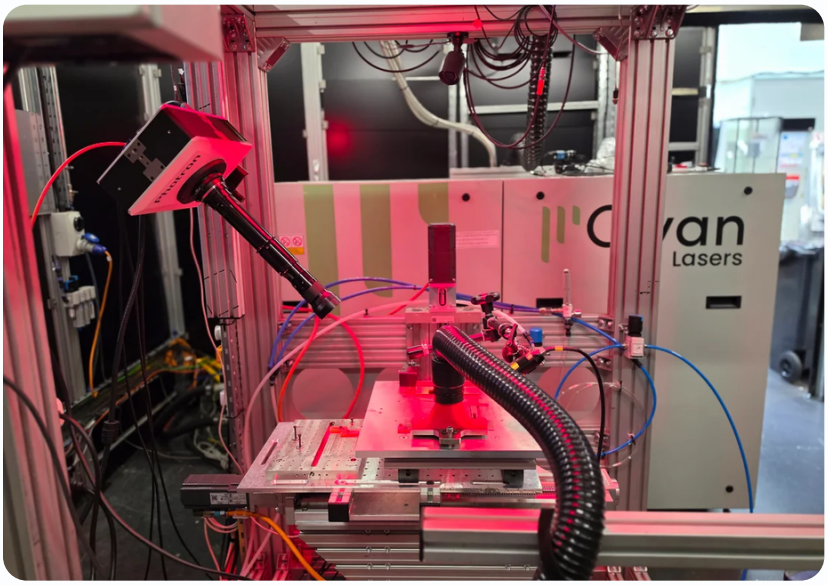
Engineered for detail

From particle image velocimetry (PIV) and digital image correlation (DIC) to schlieren imaging, combustion, and materials testing, the Orion Series pairs high-speed performance with low temporal noise to help reveal subtle information that might otherwise be missed.

EXPLORE ORION

02 / APPLICATION SPOTLIGHT

Capturing detail where extremes collide.



WMG EVALUATION

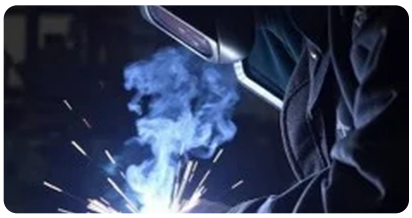
Laser welding + schlieren imaging

At WMG, the FASTCAM Orion S40 was tested in laser-welding and schlieren applications, where extreme differences in brightness challenge conventional imaging. Welding trials ran with and without extraction; schlieren tests used LED and ultra-short-pulse laser illumination.

SEE THE ORION VIDEO

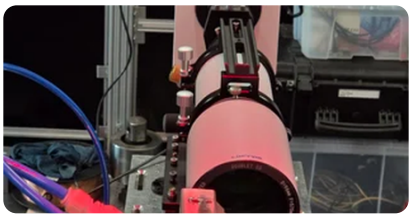
15,000 fps	1/50,000 s	1,280 × 800	SE-HDR
Welding frame rate	Exposure time	Recorded resolution	Single Exposure HDR

Three ways to see more



Laser welding

Preserve bright weld features and darker surrounding detail, including spatter.



Multiphase flow

Low-noise 14-bit imaging reveals subtle changes in rapidly moving flows.



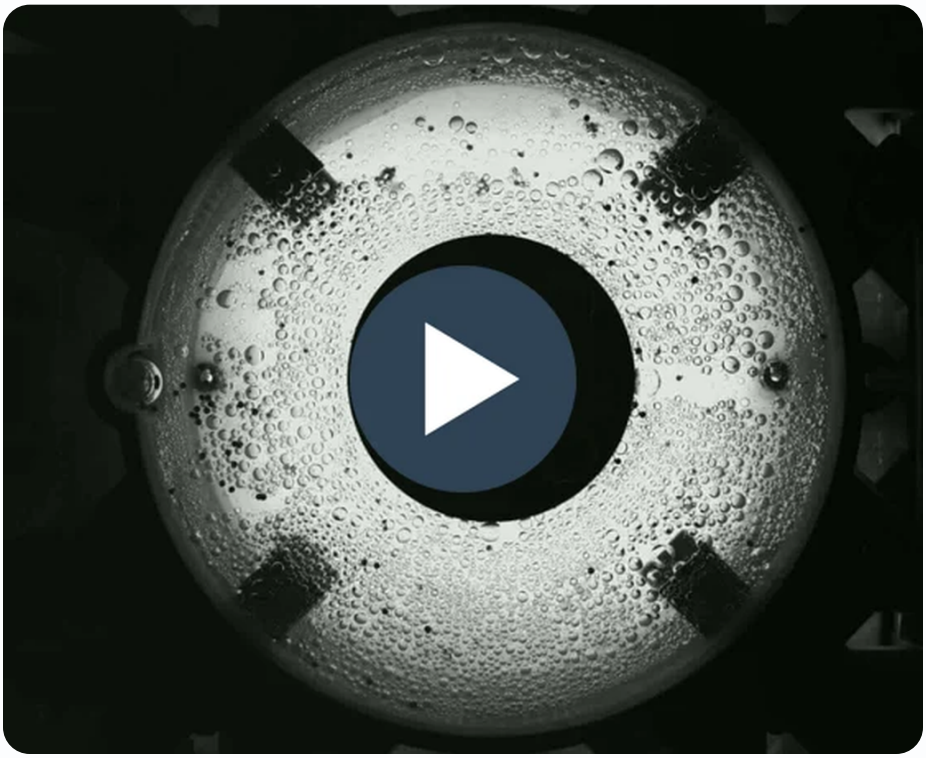
High-speed schlieren

Visualize changes in density and evolving flow structures near energetic processes.

03 / RESEARCH SPOTLIGHT

High-speed imaging takes flight.

Photron Infinicam supports microgravity research



MVIPER PROJECT

Technical University of Munich

10 × 10 cm

imaging field of view

~0.1 mm

smallest observed particles and bubbles

Developed by the Professorship of Human Spaceflight Technology at the Technical University of Munich, MVIPER investigates magnetohydrodynamics for circulating fluid within a photobioreactor without conventional mechanical pumps or membranes. The experiment flew aboard the Novespace Airbus A310 AirZeroG in September 2025 as part of the ESA Academy Experiments Programme.

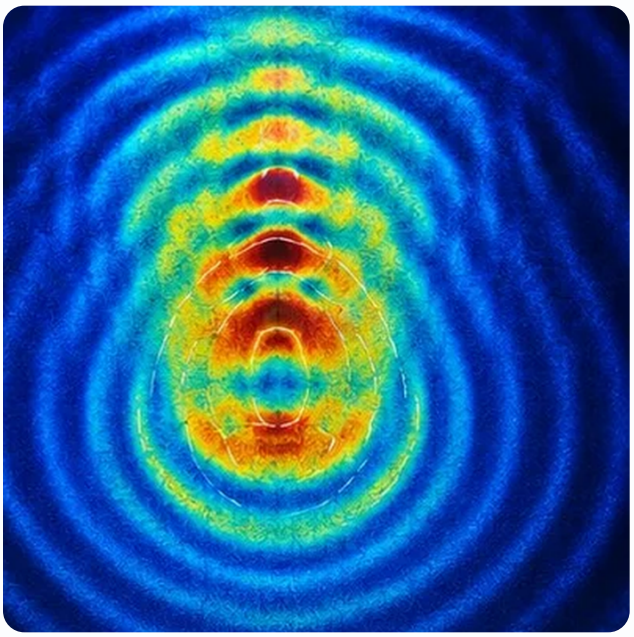
A compact Photron Infinicam captured particle motion and electrolysis-generated bubbles used as tracers. The images revealed vortex-driven flow structures under reduced-gravity conditions, demonstrating how high-speed imaging can capture fast, transient phenomena even when conventional terrestrial flow behavior changes.

WATCH THE RESEARCH VIDEO

04 / POLARIZATION INSIGHTS

Visualizing invisible stress and acoustic waves.

Photron CRYSTA high-speed polarization imaging helps researchers examine dynamic stress fields and acoustic wave propagation that are difficult to capture with conventional imaging.



FEATURED WEBINAR / OCT 1, 2026

Therapeutic ultrasonics

Bastiaan Hofmann of Photron Deutschland presented research using CRYSTA cameras to detect polarization states, quantify retardation, and visualize rapidly evolving acoustic-wave and stress-field phenomena. The session highlighted how time-resolved polarization measurement differs from conventional strain optics.

UIA WEBINAR PROGRAM

Expanded CRYSTA range

More ways to measure what changes fast.

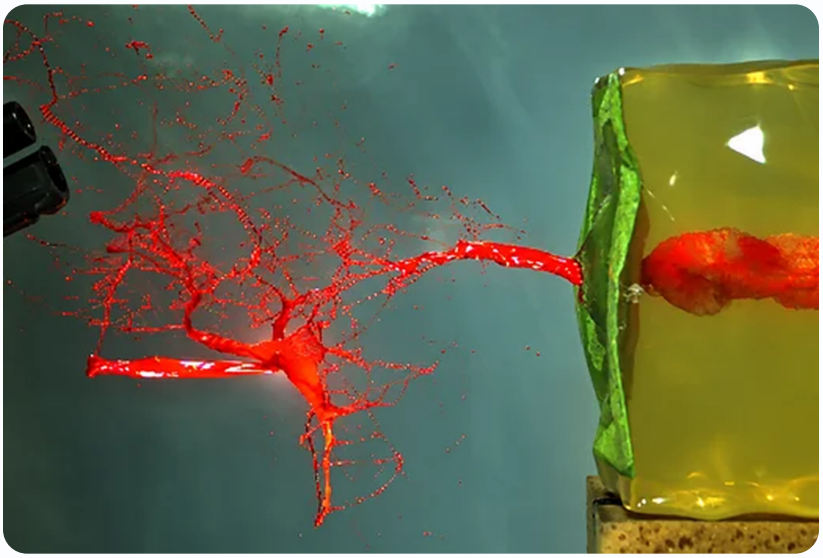
CRYSTA's pixelated polarizer array enables simultaneous measurement of polarization states during fast events. Applications include birefringence, retardation, stress, film thickness, surface behavior, fracture mechanisms, and materials or rheological research.



EXPLORE CRYSTA CAMERAS

05 / RESEARCH IN FOCUS

Forensics, in fractions of a second.



RESEARCH FEATURE

High-speed imaging in forensic science

High-speed imaging offers researchers ways to examine transient phenomena in bloodstain-pattern and wound-ballistics research, revealing motion that unfolds too quickly for the human eye.

EXPLORE THE RESEARCH

Looking ahead

More imaging and measurement stories are on the horizon.

Rheo-IRIS

Combining rheology with advanced visualization and measurement.

Photron Ellipsometry Solutions

Optical measurement approaches for surface and materials characterization.

Are you using Photron in your research?

Your work could be featured in a future article, newsletter or application story.

SHARE YOUR WORK

06 / 2026 EVENT CALENDAR

Where innovation meets the community.

A look at the 2026 conferences connecting Photron with engineers, researchers and scientists across industries.

OCT 25–29

SOCIETY OF RHEOLOGY

Boston, Massachusetts

Rheology, fluid dynamics, materials analysis and advanced scientific imaging.

EVENT DETAILS

NOV 1–6

HYPERVELOCITY IMPACT SYMPOSIUM

Monterey, California

Impact dynamics, ballistics, fragmentation and extreme high-velocity events.

EVENT DETAILS

OCT 27–29

AUTOMOTIVE TESTING EXPO

Novi, Michigan

High-speed imaging for automotive testing, validation and research & development.

EVENT DETAILS

NOV 22–24

APS DIVISION OF FLUID DYNAMICS

Orlando, Florida

Multiphase flow, turbulence, aerodynamics, visualization and research applications.

EVENT DETAILS