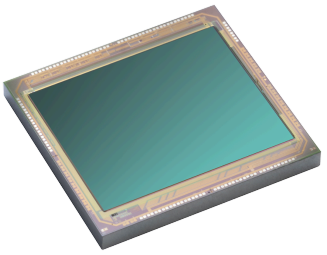
From Space to Earth: LYNRED launches an eSWIR sensor to better measure critical resources and climate signals

Presented at SPIE Photonics West 2026 (20–22 January, booth 1866), Sirocco SW brings Space-grade spectroscopy to mining, agriculture and environmental monitoring.

Grenoble, France, January 19, 2026 — As pressure mounts on access to critical raw materials, food security and climate data, the ability to accurately analyze soils, materials and gases has become a strategic challenge. LYNRED, a global leader in infrared imaging technologies, today announces the launch of Sirocco SW, a new extended-SWIR (eSWIR) detector designed for high-impact industrial and environmental applications, taking benefit of its Space-proven technology.



Capable of detecting wavelengths up to 2.5 microns in VGA resolution (640 × 512), Sirocco SW extends spectral analysis well beyond the limits of conventional SWIR sensors. This range is essential for identifying chemical species, differentiating materials and

characterizing soils — whether to locate new mineral deposits, optimize agricultural land use or monitor greenhouse gases.

In the mining sector, Sirocco SW enables more accurate analysis of soil and rock samples, helping operators refine exploration strategies and identify new deposits, including rare earths and other strategic minerals. By improving material discrimination at early stages, the sensor supports faster decision-making while limiting unnecessary drilling and environmental impact.

In agriculture and land management, the detector supports spectral soil mapping from spaceborne or airborne platforms (satellites, drones or aircraft). This approach makes it possible to characterize soil type, quality and moisture content, a key parameter for optimizing irrigation, improving crop resilience and adapting practices to increasingly volatile climate conditions.

The same spectral capabilities also strengthen environmental monitoring, including the detection of gases such as CO_2, CO, CH_4 and N_2O. These measurements are central to emissions tracking, climate research and regulatory compliance. In industrial settings, Sirocco SW can additionally be used for high-temperature process control above 300 °C, combining the benefits of SWIR and thermal detection.

At the core of Sirocco SW lies LYNRED's MCT (mercury cadmium telluride) technology, developed and qualified through Space programs. Unlike InGaAs-based (Indium gallium arsenide) SWIR sensors, typically limited to 1.7 microns, MCT enables reliable detection up to 2.5 microns, significantly expanding the usable spectral window for spectroscopy — while maintaining high sensitivity and long-term robustness.

"Until now, this level of eSWIR performance was largely confined to space applications," says **Pierre Jenouvrier, Cooled Product Unit Director at LYNRED**. *"With Sirocco SW, we make that capability accessible to industrial and environmental users who need better data to address resource scarcity, climate constraints and sustainability challenges."*

Positioned in a fast-growing eSWIR market, Sirocco SW is available in two configurations: as a focal plane array for custom integration, or as a packaged detector within LYNRED's standard PlugUp platform. A Space-enhanced cryogenic design is under development for New Space applications and should be available soon.

With a spectral response from 0.8 to 2.5 microns, high sensitivity across the full range, frame rates up to 200 frames per second and high proven reliability, Sirocco SW translates Space heritage into a measurement tool designed for ground applications constraints, where precision is a key factor.

About LYNRED

LYNRED, alongside its subsidiaries LYNRED USA, LYNRED Asia-Pacific and New Imaging Technologies (NIT), is a global leader in designing and manufacturing high quality infrared technologies for aerospace, defense and commercial markets. It has a vast portfolio of infrared sensors that covers the entire electromagnetic spectrum from near to very far infrared. Its products are at the center of multiple military programs and applications and are key components in many top brands in commercial thermal imaging equipment sold across

Europe, Asia and North America. LYNRED is the leading European manufacturer for IR detectors deployed in space.

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