

New Compact Infrared Hyperspectral Camera Promises Easier Airborne Surveys

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Airborne hyperspectral surveys are notoriously challenging: complex measurement devices and cumbersome support equipment need to be installed aboard aircrafts while massive amounts of collected data require heavy post-processing to generate meaningful results.

But Canadian infrared camera manufacturer Telops has put its mind to simplify this process. Building on the world-renowned Hyper-Cam – the gold-standard in standoff hyperspectral imaging – Telops has developed a new compact hyperspectral imaging system: the Hyper-Cam Airborne Mini, paving the way to a striking revolution in infrared hyperspectral imaging.

At just 50 pounds and with a volume of roughly one cubic foot, the Hyper-Cam Airborne Mini can be installed into small aircrafts in minutes, allowing for increased efficiency at reduced operational cost, and without compromising performance.

The Hyper-Cam Airborne Mini uses the spectral signal measured in the longwave infrared to detect and identify gases and minerals. It can be used to spot indicator minerals during geological exploration missions, to provide true signature measurement of military targets, to detect gas leaks at an oil plant, or to quantify VOC emissions to support environmental compliance efforts.

“In the past, we needed two strong people to raise the airborne platform, and it took at least a couple of hours to install. It was not a small feat! Now the Hyper-Cam Airborne Mini is so small it could fit in your backpack. Installation is easier, and smaller aircrafts can be used,” says Philippe Lagueux, scientific product line manager.

INNOVATIVE IMAGE CONTROL TECHNOLOGY

In-flight operation of the Hyper-Cam Airborne Mini is simple: the software continuously adapts system parameters to the everchanging flight conditions, and a state-of-the-art active stabilization platform coupled with a re-engineered Image Motion Compensation system brings unprecedented mapping and targeting capabilities.

Once in the air, the control and processing unit can automate the data acquisition process or allow the user to retain full control over acquisition parameters.

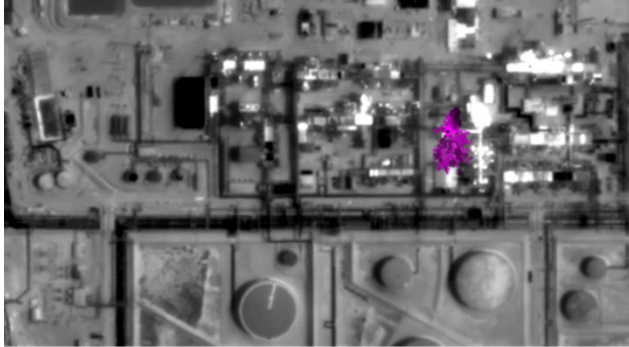
“The Hyper-Cam Airborne Mini offers the best sensitivity and spectral resolution available, and is user-selectable up to 0.5 cm^{-1} . This, coupled with swappable fore-optics, maximizes measurement flexibility and ensures optimal ground coverage at all times,” says Lagueux.

REAL-TIME DETECTION

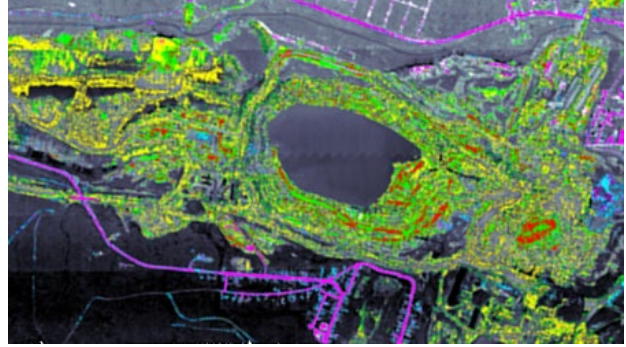
With an optional plug-in, the control and processing unit can run powerful data analysis algorithms to present gas detection, identification, and quantification results in real-time, allowing the user to make fast and informed decisions.

“We are proud and very excited about the launch of this new generation of the Hyper-Cam after years of intense development engineering. The Hyper-Cam Airborne Mini is tailored to the requirements of modern remote sensing and will without a doubt contribute to the success of our scientific customers in the field of remote sensing,” says Lagueux. 🌍





Gas emission at an oil plant (in purple)



Mineral exploration at an open-pit mine
(each color corresponding to a different
mineral signature)

About Telops

Telops is a leading supplier of hyperspectral imaging systems and high-performance infrared cameras for defence, industrial, and academic research applications. The Telops Hyper-Cam is an advanced thermal hyperspectral imaging system available in ground-based or airborne configurations.

Telops also offers high-performance scientific infrared cameras, including the MS-IR series of multispectral cameras, which offer high-speed spectral signature analysis; the FAST-IR cameras, which offer up to 100 000 frames per second and are perfect for the analysis of dynamic events; and the HD-IR series of high-definition infrared cameras, which are ideal for the detection of challenging targets.

All Telops thermal infrared imaging systems offer exceptional accuracy and sensitivity in a fully ruggedized enclosure.

To Contact Us:

Jean-Philippe Gagnon

jean-philippe.gagnon@telops.com

[Linkedin.com/company/Telops](https://www.linkedin.com/company/telops)