



CAMSIGHT LP, YOUR ALLY FOR OPTRONIC SURVEILLANCE IN HARSH ENVIRONMENT

In a world of ever-accelerating changes, the modern battlefield has become an extremely complex environment where situational awareness is key to accomplish strategic missions. As a clear night and day vision gives soldiers the means to take good decisions, at the right time and in all weather conditions, Bertin Instruments is committed to providing them with the best optronics to further improve their defence capabilities in any field application.

Supplying innovative solutions to end users, integrators and manufacturers, it offers a comprehensive answer to their most stringent requirements, both in terms of reliability and performance. The CamSight LP, Bertin Instruments' newest camera module with low-power consumption, is one of those.

This White Paper thus compiles three of the many surveillance applications possible with this ultra-compact optronic device: whatever your aims and objectives are, the CamSight LP can help you fulfil them all.

IMPROVE YOUR SURVEILLANCE CAPABILITIES WITH CAMSIGHT LP

SUMMARY

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ENHANCING DRIVER'S VISION & LOCAL SITUATIONAL AWARENESS WITH CAMSIGHT LP

CONTEXT

When conducting military, reconnaissance, or search & rescue missions, a vehicle's driver & crew need to control their safety & detect potential threats, obstacles, & objects of interest, even in the harshest operational conditions. To increase a mission's capability by enhancing situational awareness, it is primordial to improve night vision & eliminate the blind spots.

Keeping both safety & tactical interests of driver & crew in mind, Bertin Instruments provides the CamSight LP – a thermal imaging camera – to be integrated into complex optronic systems.

Sensitive to thermal radiation without any light, the OEM module is able to produce high-quality pictures in the darkest nights, thus enhancing one's awareness of surroundings.

APPLICATIONS

Ultra-compact, ruggedized & easy-to-install, the CamSight LP was specifically designed for vehicle manufacturers & integrators, to equip combat & tactical-wheeled vehicles, SWAT trucks, mobile command vehicles, Unmanned Aerial Vehicle (UAV) & Unmanned Ground Vehicle (UGV), etc. Moreover, the **robust impact-resistant design** of the camera module is **compliant with military standards** for it to be utterly operational in extreme driving conditions.

In a **Driver Vision Enhancement configuration**: two CamSight LP camera modules are recommended – one in front of the vehicle, the other at the back - to provide the vehicle's operator with the ultimate driving comfort (i.e a field-of-view of 60°)

Whereas in a **Local Situational Awareness system**: four CamSight LP with a 90-degree field-of-view will be necessary to provide wider fields of view, hence offering a 360-degree monitoring of one's surroundings.



MATERIAL

Ultra-compact, the CamSight LP is a **passive thermal imaging system** to be easily integrated into complex optronic devices used to **enhance a driver's viewing capabilities & increase a pilot's situational awareness of surroundings**, even when operating in **challenging working conditions**. The camera, equipped with the latest LYNRED's infrared sensor

(640 x 480 pixels), comes with an uncooled system & a **shutterless** technology that enable real-time, freeze-free image delivery. Thanks to its **low-power consumption** (≤ 1 Watt) & its **outstanding image quality**, the CamSight LP is a **precious asset for any surveillance application** under degraded visual conditions.

CONCLUSION

By significantly enhancing night & day vision, the OEM camera module of Bertin Instruments allows for real-time detection & identification of potential threats or obstacles on the road, in extreme operational conditions. When integrated into tactical vehicles, the CamSight LP allows the driver & his/her crew to navigate safely through the darkest nights, thus participating in the mission's success.



IMPROVING LONG-RANGE OBSERVATION WITH CAMSIGHT LP & WHITE HAWK

CONTEXT

As airborne Intelligence, Surveillance, & Reconnaissance (ISR) functions are becoming increasingly vital to strengthen national defense & security capabilities, tethered aerostats equipped with advanced optronic payloads appeared on the market. Indeed, offering a tailored, persistent & cost-effective surveillance solution to civil & military growing issues, they allow to protect & defend private & public interests in a vast variety of missions.

Therefore, to support the operational needs of its customers, CNIM Group, by means of its subsidiary companies **CNIM Air Space** & **Bertin Technologies**, has developed two complementary solutions well-adapted to long-range thermal monitoring: the **White Hawk tethered aerostat** for one, & the **CamSight LP OEM camera module** for the other.



White Hawk tethered aerostat

EQUIPMENT & APPLICATIONS

Lightweight, impact-resistant & easy-to-install, the CamSight LP is a **passive thermal imaging system** specially designed for manufacturers & integrators to equip, inter alia, gyro-stabilized optronic payloads & electro-optical gimbals, integrated into persistent surveillance platforms such as aerostats or Unmanned Aerial Systems (UAS). By enhancing night & day vision capability, it significantly improves local situational awareness & fosters decision-making when a threat is detected.

The camera, equipped with the latest **LYNRED's infrared sensor** (640 x 480 pixels), comes with an uncooled system & a **shutterless** technology that enable real-time, freeze-free image delivery.

Thanks to its **low-power consumption** (≤ 1 Watt) & its **outstanding image quality**, the CamSight LP is a **precious asset for any surveillance application** under degraded conditions (extreme low light & fast wind speed). Ultra-compact, it can be fitted into any payload before installation in the aerostat, that can carry 5 kg. maximum.

As for the helium-filled White Hawk tethered aerostat, it distinguishes itself by its capacity to conduct unmanned aerial surveillance operations with **360-degree all-round coverage 24 hours a day, 5 days in a row**.

Tailored to meet any tactical mission's requirements, it offers, when fitted with CamSight LP, an **improved situational awareness of one's surroundings** in challenging environments with a **limited logistic footprint & small operational costs**.

Fast-to-deploy (only 45 minutes necessary), the CamSight LP-equipped aerostat can be used for **short- & middle-term operations** to monitor military bases, industrial sites, sensitive infrastructures (nuclear facilities, offshore platforms), borders & customs, major public events, urban crowd gatherings, etc.

Thanks to the OEM camera module's long focal length, it is able to **anticipate & eliminate potential threats by detecting, identifying & tracking fixed or mobile targets at long range**.

In such a configuration, data transmission is made via an Ethernet cable.

CONCLUSION

By significantly enhancing night & day vision, the OEM camera module CamSight LP allows for real-time detection & identification of potential threats under poor visibility conditions. When fitted into payloads installed in CNIM Air Space persistent platform, the CamSight LP improves short- & middle term surveillance operations through the darkest nights, thus participating in the mission's success.



CARRYING OUT SURVEILLANCE & GATHERING INTELLIGENCE WITH CAMSIGHT LP & FLEXNET

CONTEXT

Having a greater awareness of one's surroundings is highly strategic for the military when conducting Intelligence, Surveillance, & Reconnaissance missions.

On the field, information is collected through enduring observation by deployed soldiers, along with a wide variety of sensors, whose aim is to increase military capabilities & gather intelligence when the environment is hostile. To support the Armed Forces, Bertin Instruments has designed, developed & manufactured a **whole range of optronic solutions** dedicated to the **improvement of local situational awareness & consequently the protection of soldiers & the enhancement of decision-making**. The **OEM camera module CamSight LP** is one of those. Compliant with military standard, this **passive imaging system** is able to **detect thermal radiation & produce high-quality pictures** in the darkest nights, thus providing operators with valuable, strategic information. When integrated into Exensor' Scout camera, the CamSight LP becomes a precious asset within the Unattended Ground Sensor (UGS) system Flexnet. Indeed, as a tailored solution, Flexnet is based on wireless, battery-operated sensors (seismic, acoustic & infrared), combined with day/night motion cameras, to be rapidly deployed on operations. Operating over a mesh network, CamSight LP is consequently an essential component of the system, as it confirms the nature of the detected threat & increases both effectiveness & coordination of the team.



CamSight LP



SCOUT camera



Flexnet

EQUIPMENT & APPLICATION

Ultra-compact, ruggedized & easy-to-install, the CamSight LP is a especially designed for manufacturers & integrators to equip complex optronic devices such as Unattended Ground Sensor (UGS) systems, Unmanned Aerial Vehicles, combat vehicles, etc. The lightweight camera, fitted with the latest LYNRED's **infrared sensor**, comes with an **uncooled system & a shutterless technology** that enable real-time, freeze-free image delivery.

Thanks to its **impact-resistant design**, its **low-power consumption** (≤ 1 Watt) & its **outstanding image quality**, the CamSight LP is a **valuable asset for any fixed or mobile surveillance application under harsh operational conditions**.

Having a **19-millimeters lens** (32° Field-Of-View) in its standard configuration, the Scout camera is also available with 3 optional lens - 60mm (10°), 35mm (18°) & 25mm (25°) – to clearly extend the operator's FOV.

As an **early warning** device, the CamSight LP-equipped camera acts as a backup team, allowing soldiers to focus on their mission's purpose & to free up capacity, without fearing for their personal safety. Using intelligent motion detection, the Flexnet's camera performs advanced recognition to remotely obtain relevant information. Providing the operators with extra sharp eyes, it supports intelligence gathering of the enemy's movements, dispositions & intents by contributing to a better understanding of the ground.

CONCLUSION

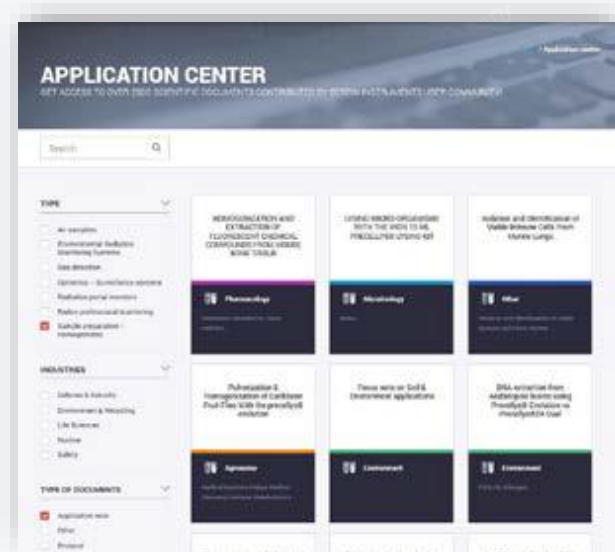
Improving the operators' situational awareness, the Made-in-France camera module of Bertin Instruments allows for early warning detection & identification of potential threats in harsh operational conditions. When integrated into sensors like Exensor' Scout camera, the CamSight LP enables them to remotely dispel doubt, in time to take necessary actions & protect themselves & their interests.



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The CamSight® LP is the latest Original Equipment Manufacturer (OEM) digital core camera designed & developed by Bertin Instruments, to be integrated into any optronic system.

- Ultra-compact & very low-power consuming (< 1W)
- Very fast time to image (1.2 seconds)
- Best shutterless sensor technology
- Based on French components

