

**THERMAL
SENSORS
TECHNOLOGIES
FOR DISMOUNTED
SOLDIER**

ON THE OPERATION FIELD

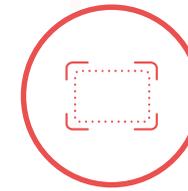
The soldier's equipment is a subject of major importance. Today, it benefits from the latest innovations, especially in the field of thermal imaging.

The latest developments in thermal imaging sensors contribute to improving their survival conditions and their performance by extending their autonomy, their intelligence and intervention capacity but also by participating in tactical choices whatever the conditions.

To support them in these missions, LYNRED offers a wide range of cooled and uncooled thermal detectors covering the infrared spectrum.



RELIABILITY



HIGH
RESOLUTION



IMAGE
QUALITY



RUGGEDIZED
FOR HARSH
ENVIRONMENTS

Soldier's equipment:

- BINOCULARS
- MONOCULARS
- CLIP-ON HELMET
- RIFLE SIGHT ...

Use cases:

- FIELD RECONNAISSANCE
- TARGET ACQUISITION
- BORDER CONTROL
- SITUATION AWARENESS



CHALLENGES

Thermal imaging meets the needs of the soldier to see beyond the visible by extending his operational capabilities by day and night; and this in all operational environments (dust, fire...).

The natural defogging properties of infrared technologies support the soldier's decision making in the field of operations.

The key factors necessary for these missions are :

- **IMAGE FLUIDITY**
- **EASE OF USE**
- **COMPATIBILITY OF THE EQUIPMENT WITH THE SOLDIER'S MOBILITY**

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Thermal imaging must be incorporated into the soldier's ecosystem and facilitate the analysis of information collected by other sensors (acoustic, laser, radio frequency)

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LYNRED: the partner you can rely on

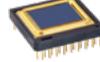
- **High-performance infrared detectors for more than 30 years** (high sensitivity, high frame rate..). Our products provide a tactical advantage through their unmatched detection, recognition and target identification capabilities, helping to protect lives
- **An extensive range of cooled and uncooled thermal detectors** covering the entire infrared spectrum to support infantry troops with their missions
- **Reliable products** approved for use in harsh environments (MIL-STD-810/833, Thermal weapon sight) and guaranteed long-term availability compatible with military programs
- **A dedicated customer support** tasked with providing assistance and technical support. We take a proactive approach to responding to your questions and needs. Our engineers have the skills to work efficiently with your people, from R&D to engineering. Our customer support are fully integrated into our product lineup, personalized, and available to all customers. Our mission is to help boost your technical capabilities to make your infrared solution development processes more efficient and shorten time to market
- **Independent supplier** located in Europe

LYNRED infrared detectors bring your thermal systems to life



2 millions detectors
delivered since 2016

LYNRED PRODUCTS RANGE

UNCOOLED FOR SHORT TO MEDIUM RANGE	PRODUCT	FORMAT & PIXEL PITCH	SPECTRAL BAND	NETD	POWER CONSUMPTION		WEIGHT	SIZE (TYPE PACKAGING)
					DIGITAL OUTPUT MODE	ANALOG OUTPUT MODE		
 Clip-on to helmets, monoculars and TWS	 ATTO640D-02™	VGA, 640 x 480 , 12µm	8 - 14µm	<50mK (f/1, 300K, 30Hz)	<300mW @ 60Hz <285 mW @ 30Hz	<150mW @ 60Hz <140mW @ 30Hz	<3gr	17.3 x 17.3 x 4.9 mm ³ (Wafer level packaging)
	 ATTO1024-02™	XGA, 1024 x 768, 12µm	8 - 14µm	< 50 mK (f/1, 300K, 30Hz)	-	≤ 470 mW @ 50Hz (2 outputs) ≤ 550 mW @ 100Hz (4 outputs)	<10gr	29.5 x 29.5 x 5.6 mm ³ (Ceramics)
	 ATTO1280-02™	SXGA, 1280 x 1024, 12µm	8 - 14µm	< 50 mK (f/1, 300K, 30Hz)	-	≤ 470 mW @ 30Hz (2 outputs) ≤ 550 mW @ 60Hz (4 outputs)	<10gr	29.5 x 29.5 x 5.6 mm ³ (Ceramics)
	 PICO640S™	VGA, 640 x 480 , 17µm	8 - 14µm	< 30 mK (f/1, 300K, 30Hz)	-	< 130 mW	<6.5gr	24.4 x 24.4 x 4.7 mm ³ (Ceramic)

COOLED FOR HIGH PERFORMANCE & LONG RANGE	PRODUCT	FORMAT & PIXEL PITCH	SPECTRAL BAND	TYPICAL NETD*	POWER CONSUMPTION		WEIGHT	SIZE	CDT@20°C
					REGULATED INPUT POWER	COOLDOWN INPUT POWER			
 Multifunction binoculars	 GALATEA MW™	VGA, 640 x 512, 15µm	3.6-4.2µm	< 25mK (f/4, 300K, 60Hz, 50% well fill)	2Wdc @20°C	6.9 Wdc @20°C	230 gr	96 x 50 x 48mm (230cm ³)	180s
	 LEO MW™	VGA, 640 x 512, 15µm	3.7-4.8µm	20mK (f/5.5, 293K, 60Hz, 50% well fill)	5.3 Wdc @20°C	2.4 Wdc @20°C	<355gr	121 x 73 x 58.5mm (516cm ³)	250s

*Typical value done with standardized LYNRED setup

Discover all of our defense products





35 years

of experience

80%

exports

1,100

employees

15%

revenue
invested in R&D

LYNRED
*(merger between Sofradir and
ULIS) designs infrared sensors
to meet the needs in a wide range
of markets.*

Our infrared sensors lineup covers the entire infrared spectrum from SWIR through VLWIR. Our products are capable of satisfying the demanding requirements of a variety of industries.

They are reliable and rugged enough for defense applications, compact and powerful enough for surveillance applications, and stable and sensitive enough for thermography, industrial systems, firefighting and search & rescue applications.

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