



## **LOTHAR DAY/NIGHT GUNNER SIGHT**

**LOTHAR (Land Optronic THERmal Aiming Resource) is a modular and compact aiming and firing sight, designed to be integrated into the turrets of Armoured Infantry Fighting Vehicles (AIFVs) and/or Main Battle Tanks (MBTs) as the Gunner Day/Night Sight.**

The sight offers full day/night target aiming capability, as well as observation capability and emergency firing and can be configured with or without stabilisation.

The scene observed by LOTHAR is folded by the head mirror, which is outside the turret, to the sensors which are inside the turret (TV camera, IR camera, Laser Range Finder) ensuring the best possible alignment among the three optical paths of the payload. The mirror can be mechanically linked to the gun or independently stabilised, according to the desired configuration of LOTHAR.

Image information is acquired in electronic format and it can be shared at the vehicle crew level or transmitted to a Command and Control Centre to meet the Network Centric Warfare (NCW) environment requirements.

Its hardware and software modular architecture allows the system to be tailored according to the most demanding requirements ranging from lighter AIFVs to heavier MBTs. A specific mechanical interface can be adapted to fit existing

turrets, with no modifications required for either the sight or the turret itself.

### **KEY FEATURES**

The LOTHAR system is designed as the gunner sight to be integrated inside Fire Control Systems (FCS) directly controlling the gun fire.

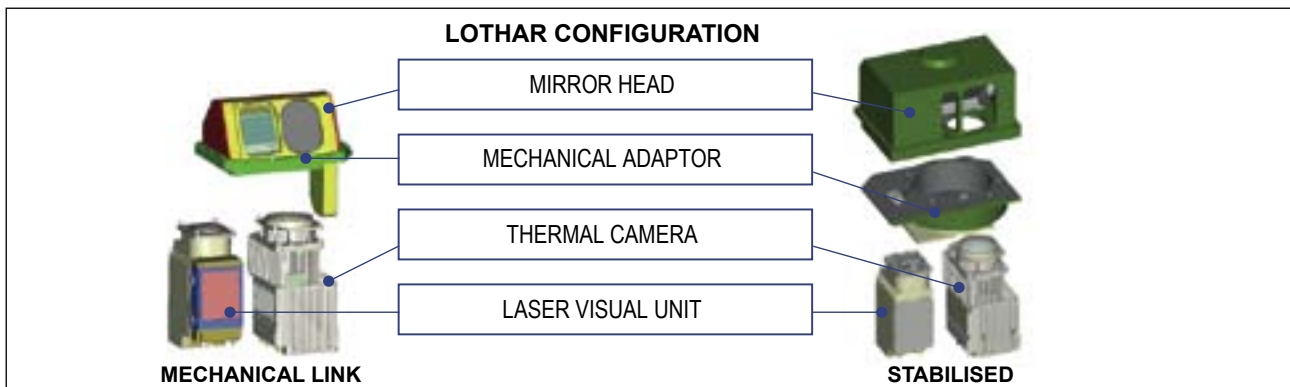
It integrates:

- A mirror head, mechanically linked to the line of fire, or independent and stabilised
- A thermal camera, 2nd generation working in the 8-12  $\mu\text{m}$  bandwidth
- A TV colour camera and an eye-safe Laser Range Finder, integrated in a laser visual unit
- A display panel, working both as the Man Machine Interface for the control of the sight and of the FCS, and as the main image display.

If necessary, also a direct view channel can be included, for backup purposes, controlled by the system mirror as well.

Optionally the sight may feature:

- a built in Muzzle Reference System (MRS)
- ballistic protection
- closing windows wipers
- heating facilities.



### TECHNICAL CHARACTERISTICS

The LOTHAR sight has been designed to fit into several different turrets and to be integrated in FCS controlling a wide range of guns (from 25-30 mm ÷ 120-125 mm).

Its mirror, defining the position of the line of sight, may be mechanically linked to the line of fire (for lighter and lower cost turrets) or stabilised (for higher performance turrets).

In the latter case, the stabilisation is based on a high performance gyroscope gimbal, and allows the gunner to operate with the same high performance when the vehicle is standstill or moving.

The sight provides the gunner (and the FCS) with all the information necessary for an effective fire control: target position and speed, distance.

With all the information available in electronic form, it is possible to transmit it to any C4I system. The sight's electronic unit may integrate a Data/Image Processor able to enhance the acquisition and to select information.

The sight is fitted inside the turret by mounting separately the mirror head and the group of sensors underneath. Between the units a mechanical interface connects the systems to the turret. The same interface includes an optical adaptor to make the optical paths cross the actual hole, whatever the shape (rectangular, circular).

#### Thermal Imager

1st configuration (TILDE) Detector	<ul style="list-style-type: none"> <li>• 2nd Generation</li> <li>• 8÷12 <math>\mu\text{m}</math> bandwidth (LWIR)</li> <li>• 288x4 with Time Delay Integration</li> <li>• 768x576 pixels resolution</li> </ul>
2nd optional configuration (ERICA) Detector	<ul style="list-style-type: none"> <li>• 3rd Generation</li> <li>• 3÷5 <math>\mu\text{m}</math> bandwidth (MWIR)</li> <li>• 384x288 Focal Plane Array</li> </ul>
Filed Of View (FOV)	3.2°x2.4° (Narrow FOV) 8.0°x6.0° (Wide FOV)
Output	CCIR 625/50

#### TV Camera

Type	TVCC Colour
Resolution	752 x 582 pixels
CCD Sensitivity	>10 lux
Output	PAL
FOV	3.2°x2.4° (Narrow FOV) 8.0°x6.0° (Wide FOV)

#### Laser Range Finder

Wavelength	1.54 $\mu\text{m}$ (eye-safe)
Pulse Rate	10 ppm (1 Hz burst)
Cooling System	Air
Processing Range	from 80 ÷ 10000 m

#### Line of Sight

Range	Elevation: -10° ÷ +60° Traverse: -9° ÷ +9°
Stab. Accuracy	0.1 mrad RMS
Max Speed	≥0,5 rad/s (Trav. & Elev)
Max Acceleration	≥1.3 rad/s <sup>2</sup> (Elev)

Interfaces	18÷32 V DC
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