The Laser Warning System (LWS) is designed by Thales to provide enhanced platform survivability for today’s battlefield environment. It does this by providing the crew with early warning of Laser Rangefinder and Designator threats, thereby allowing evasive action to be taken and thus increasing platform survivability.

The system provides coverage over a wide range of single, continuous and multiple pulse lasers. LWS can be integrated into the platform management system or provide laser warning for a defensive aid system.

To protect the vehicle from attacks, sensors are integrated onto the platform to provide optimum 360° coverage. Also, LWS has an extremely low false alarm rate with a typical response time of less than 100 milliseconds.

The unit has been integrated onto a wide range of vehicles, ranging from small wheeled vehicles up to large tracked vehicles.

Optronics

Laser Warning System

Enhances survivability in hostile environments
FEATURES
- Detects laser rangefinders and designators
- Covers a wide range of single and multiple pulse lasers
- Flexible configuration
- Large detection footprint
- Can be integrated with existing countermeasures

SYSTEM CONFIGURATION
- A Laser Warning System is made up of a Junction Box and a number of semi-circular detector arrays (from 1 to 8).

JUNCTION BOX
- The junction box contains the processing electronics, the system interface and power conditioning for LWS. The processing electronics provides an interface to the detector arrays for pre-processing of the data and the correlation of the data from the various arrays to determine the beam type and its bearing relative to the platform. The resulting data is formatted for transmission via the serial interfaces (CanBus or RS422 or RS232) or Ethernet to either a Platform management system or the LWS display.
- Audio output: un-buffered audio warning signal is available for connection into the vehicle internal comms system.
- The junction box has internal power conditioning for vehicle +28V. This provides power for the detector arrays and the internal processor. The conditioning is fully compliant to Def-Stan 61-5. Additionally LWS can operate from regulated +5V and +15V.

DETECTOR ARRAYS
- The detector arrays each have an azimuth field of view of more than 180° with a resolution of ±7.5° and can be deployed on the front, sides and rear of the vehicle, positioned for optimum sensor coverage of the vehicle.

DISPLAY:
- A colour LCD provides a graphical indication of the threat bearing on a compass rose, with a 4 digit bearing in mils (or degrees) in the centre of the screen, with an indication of the threat type.

SOFTKILL DAS
- LWS and the grenade launchers are a key building block of Thales’ Cerberus DAS system

TECHNICAL SPECIFICATION
DETECTION (FOR EACH DETECTOR ARRAY)
- Azimuth field of view 195°
- Vertical field of view -12° to +90°
- Azimuth resolution ±15°
- Spectral response 400–1600 nm.
  This includes: 532 nm frequency doubled Nd:YAG, 694 nm Ruby, 850–950 nm gallium arsenide, 1060–1064 nm Nd:glass & Nd:YAG, 1540 nm Erbium glass, 1540 nm Raman shifted Nd:YAG

DETECTION RANGE
- Depends on laser type, power, beam divergence and atmospheric conditions
- 10 km typical

CAPTURE DIAMETER
- Depends on laser type, power, distance, beam divergence and atmospheric conditions
- 2 metres typical

RESPONSE TIME
- Less than 0.2 seconds
- (Less than 0.1 seconds typical)

FALSE ALARM RATE
- Better than 1 per 24 hours

THREAT DISCRIMINATION CAPABILITY
- Single pulse laser or designator

OUTPUTS
- RS422 data port for compatibility with existing, in-service equipment. Ethernet or CANBUS data port for integration with vehicle data management equipment. Audio tone for injection into vehicle intercom.

SUPPLY VOLTAGE
- 18–32V dc

POWER CONSUMPTION
- Typically 15W for 4 arrays

DIMENSIONS:
- ARRAY
  - Diameter 155mm (half circle)
  - Height 50mm
  - Mass <1kg

- JUNCTION BOX
  - 170 x 130 x 165 mm (Bracketed dims x 65 x 82 mm incl. Connectors L x W x D and switches)