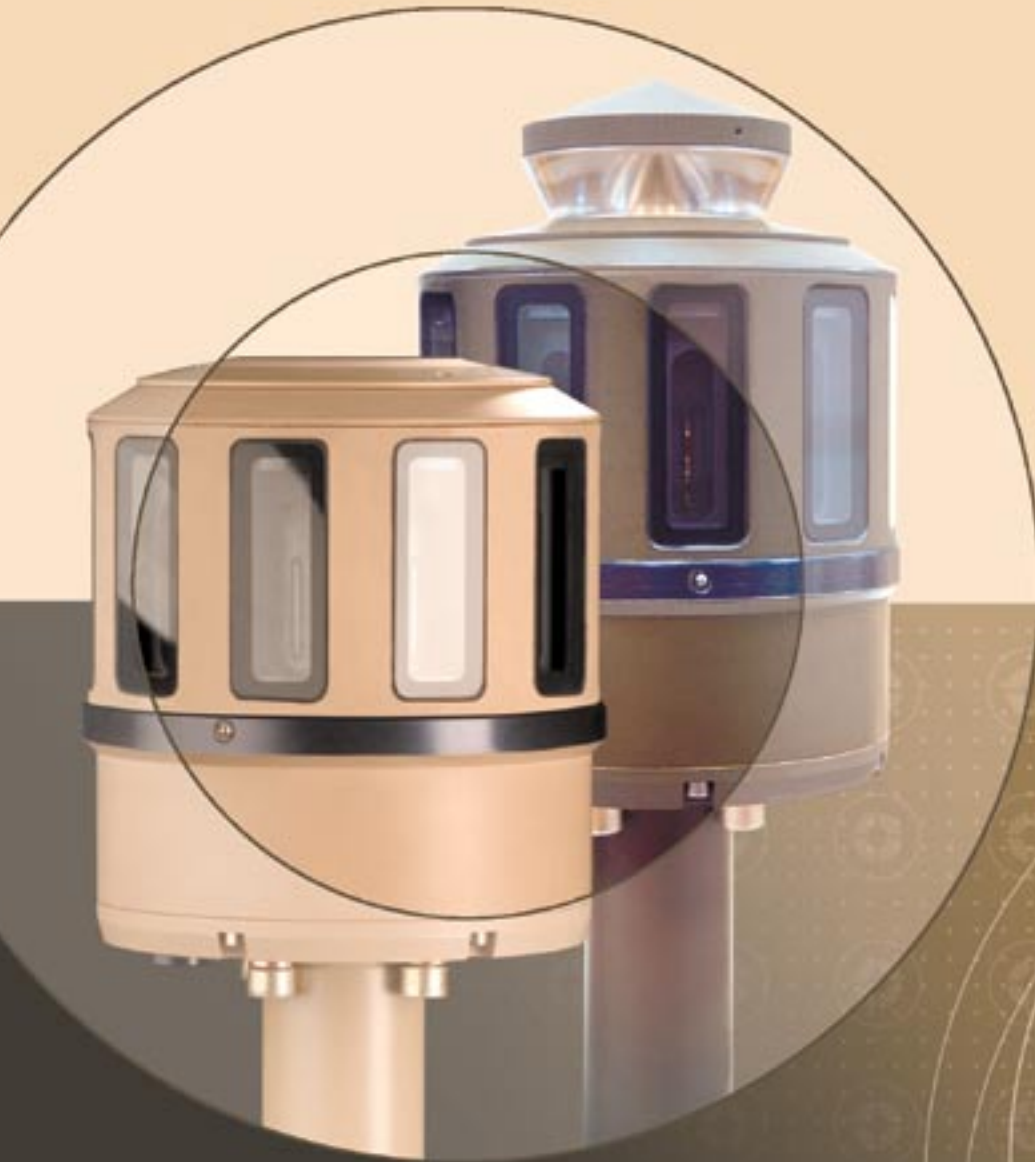


The difference between life or death



Laser Warning System
L I R D - 4

Fotona[•]

General

The purpose of the LIRD-4 system is to reduce vulnerability of protected objects to laser associated weapon threats by providing the crew with a visual and audio warning that their vehicle / ship / gun post etc is being irradiated by a pulsed laser rangefinder or laser designator/illuminator or that a laser beam-riding missile is being aimed at. It is today widely accepted that these missiles are the most lethal threat to tanks and other armored vehicles and that timely detection of and a counteraction against their guiding lasers could mean the difference between life or death for the tank crew. The warning will enable the crew to take appropriate self-protective action or countermeasure (maneuver, smoke screen deployment etc...).

The LIRD-4 detects a number of laser sources in a wide range of visual and near infrared part of the spectrum between 400 and 1800 nm, including:

- Frequency doubled Nd:YAG,
- Ruby,
- Nd:YAG, Nd:glass
- Various semiconductor lasers
- Er:glass, Raman shifted Nd:YAG,
- etc.

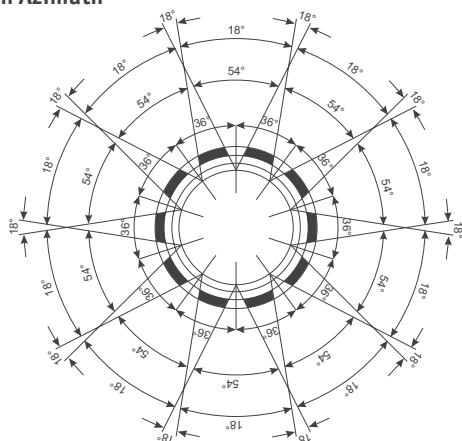
Description

Basic LIRD-4 system consists of hermetically sealed detector head and indicator unit, together with associated cables and mounting accessories.

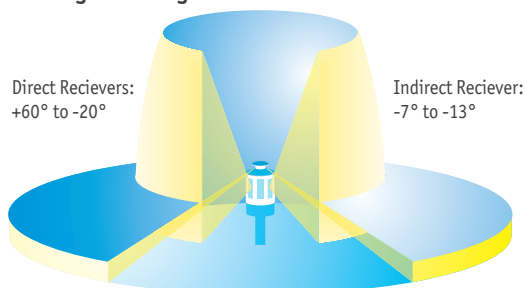
Detection head consists of several detection modules for direct laser illumination. Horizontal angular sector, from which the threat is coming, is identified and displayed on the indicator unit, together with other threat features.

A Real Time Interface signal, which exactly reproduces the incoming sequence of laser pulses, is another standard feature of LIRD-4. This signal may be used in counter-measure systems for control of deceptive laser sources.

Detection Angle Coverage in Azimuth



Detection Angle Coverage in Elevation



Direct Receivers:
+60° to -20°

Indirect Receiver:
-7° to -13°



Technical data

Direct detection module	
Spectral range	0.4 – 1,8 μm
Number of receivers	10
Number of sectors	20
Field of view in azimuth	20 x 18 ° = 360 °
Field of view in elevation	-20 ° to +60 °
Indirect detection module (LIRD-4A)	
Spectral range	1.0 – 1,6 μm
Number of receivers	1
Field of view in azimuth	360 °
Field of view in elevation	-7 ° to -13 °
Indicator unit	
Angular resolution in azimuth	20 x 18 °
Threat characterization	LR – laser rangefinder LD – laser designator IN – indirect radiation (LIRD-4A) BR – beam rider (LIRD-4B)
Memory	
	20 last threats
Data transmission	
	RS 422 (threat events, events from memory, self-test) RTI (Real time interface pulse)
Data transmission	
Interfaces	
	• to smoke grenades discharging system • to intercom (audio warning signal)
Dimensions	
Detector head	Φ 150 x 200 mm
Indicator unit	62 x 120 x 190 mm
Mass	
Detector head	3.2 kg
Indicator unit	1.6 kg

LIRD-4A: Detection of indirect – scattered – light is an important and unique feature of LIRD-4A. Laser sources may intentionally be aimed at the vicinity in order to avoid detection.

LIRD-4B: Its most important feature is beam rider detection capability.

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