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# LAWAREC

## Laser Warning Receiver



The LAWAREC (LAsER WArning RECeiver) is a system used for detecting laser and radar irradiation aimed at protected military vehicles and other objects.

# LAWAREC

## Laser Warning Receiver

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### USE AND DESCRIPTION:

The detection system of laser and radar exposure is primarily aimed at the protection of objects against warfare devices that use laser beams for aiming, designation or recognition or radar scanning..

The construction of the detector head enables it to be installed on all kinds of combat and transport vehicles and also on civilian or military stationary objects (for example communication and combat centers, gasoline pumps, bridges, etc.) while the distance between the detection head and the control unit can be from zero to 200 meters. If needed, it can be extended several times.

Detection head is installed on convenient locations on the exterior of the object so that it does not interfere with other functional systems (observation systems, weapon systems etc.).

There are three types of detection heads - detection heads containing either only laser sections with 8 or 12 spatially oriented IR receivers, or a combination of radar sections with 4 radar detection modules and 8 or 12 spatially oriented IR receivers.

The central unit located inside the object processes incoming information from the detection head, evaluates them, and then offers the operator a summary about the laser and radar activities of the enemy. Simultaneously it suggests a solution to the actual situation (firing smoke grenades) which in semi-automatic mode waits for the operator's confirmation and in automatic mode directly executes the countermeasures to defeat enemy activities.

The central unit indicates the actual state in real time, and sends this information through the serial link to the superior system; it also sends an audio signal indicating a threat to the intercom. Simultaneously, it saves all incidents on the internal memory for later review.

Smoke grenade launchers are connected to the central unit (max. two sets, 8 smoke grenades each) to make a smoke screen between the protected object and the source of irradiation.

The central unit also contains security circuits (interlock) as protection against unwanted firing of smoke grenades in the case of an open vehicle hatchway, avoiding injury to the persons on the object. This protection can be in case of the necessity manually blocked for the purpose of manual grenades firing. In automatic mode (in the combat situation), the protection is blocked permanently.

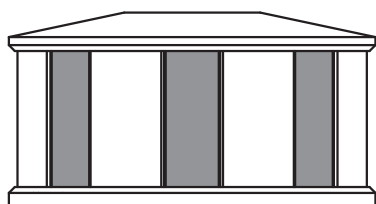
To switch the automatic mode on, it is necessary to keep the algorithm of switching in order to avoid accidental unwanted switching to this mode by reason of the operators' safety against unwanted grenade firing.

Additionally, the central unit allows manual firing of selected smoke grenades in case of the complete failure of internal electronics. This mode with the indication of the grenade launcher's status is fully autonomous and independent of the electronic circuits of the unit. That means that for the operation in manual mode, only board 24 V is needed.

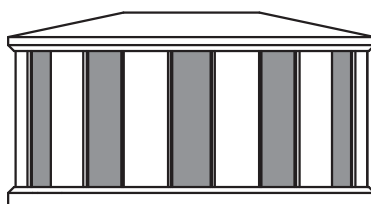


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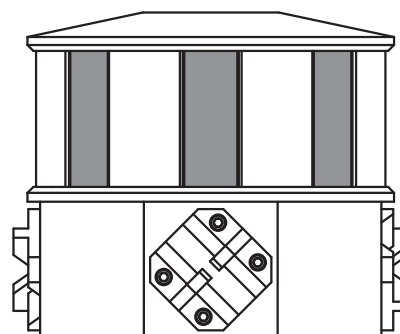
## TECHNICAL DATA:



**LW5-8D**



**LW5-12D**



**LW5-8D-4R**

### Detection head

	LW5-8D	LW5-12D	LW5-8D-4R
Number of IR detection modules	8	12+1	8
Number of radar detection modules	-	-	4
Spectral range of IR detection	750 - 1750 nm (2200 nm)		
Threshold intensity of IR detection	less or equal 10 W/m <sup>2</sup>		
Pulse width:	10 ÷ 500 ns		
Sensitivity of radar detection modules	-	-	-51 dBm
Field of vision of modules in azimuth	45°	30°	45°
Field of vision of modules in elevation	-20° ÷ +60°	-20° ÷ +60°	-20° ÷ +60°
Total field of vision of the detector in azimuth	360°	360°	360°
Total field of vision of the detector in elevation	80°	80°	80°
Weight:	2,5 kg	2,5 kg	3,1 kg
Operating temperature:	-20 ÷ 50°C	-20 ÷ 50°C	-20 ÷ 50°C

### Control unit

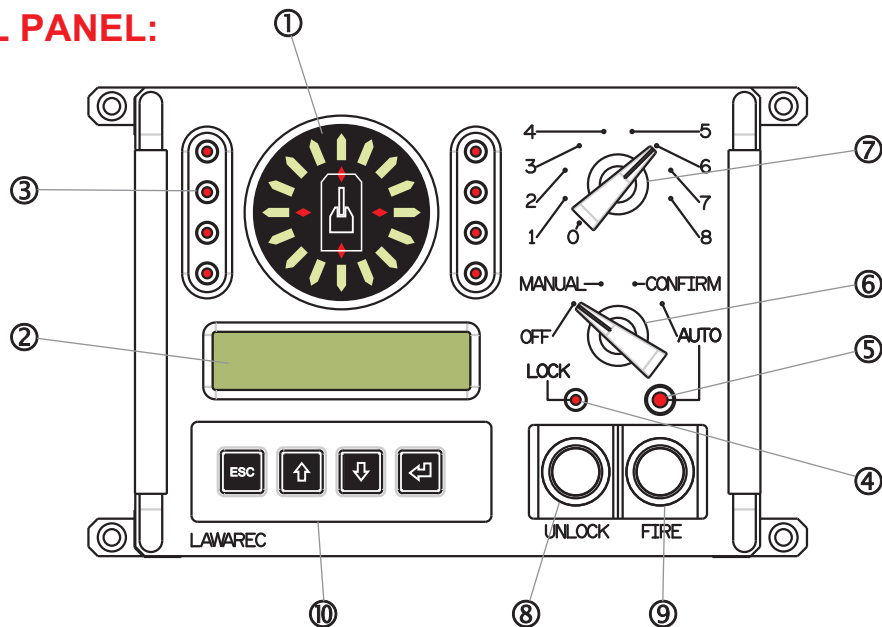
Number of IR distinguished sectors in azimuth	16	24	16
Number of radar distinguished sectors in azimuth	-	-	4
Number of distinguished sectors in elevation	1	2	1
Angle of IR resolution in azimuth	22,5°	15°	22,5°
Angle of radar resolution in azimuth	-	-	90°

Length of IR acoustic warning	can be set 210 s
Radar acoustic warning	according to real radar scanning
Length of visual warning	can be set 2 - 10 s
Time delay of the reaction (in autonomous mode)	can be set 0,5 - 8 s
Power input	24 V (15 - 30V=)
Power consumption	12 W
Dimensions	100 x 160 x 50 mm
Frequency of false detections	less or equal to 1/24h



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## CONTROL PANEL:



### Indicating elements:

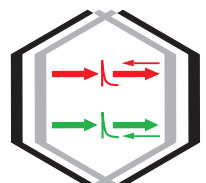
- ① Round display, 16 green light arrows - indication of laser irradiation direction, 4 red light signs - indication of radar irradiation direction
- ② LCD display 2 x 20 - irradiation parameters, records
- ③ 8 x tricolor LED - launcher state
- ④ Two-color LED - interlock state
- ⑤ Flashing LED - automatic operating mode

### Operating elements:

- ⑥ Mode switch:
  - off
  - manual mode
  - semiautomatic (confirmation is needed)
  - automatic mode
- ⑦ Manual launcher selection
- ⑧ Interlock unblocking
- ⑨ Manual shooting / confirmation
- ⑩ Display control:
  - line up
  - line down
  - selection confirmation
  - back

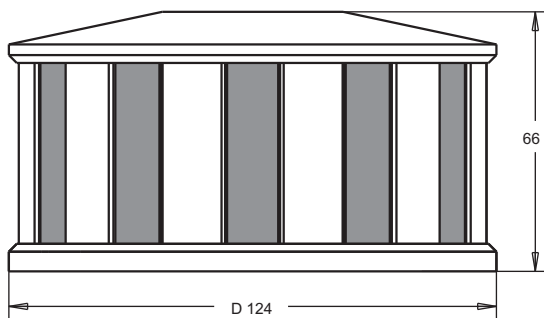
### Inputs/Outputs:

- 6 pin Cannon female - detection heads chain connection
- 6 pin Cannon male - superior system interface
- 12 pin Cannon female - grenade launcher connection
- 12 pin Cannon male - power supply, interlock, intercom

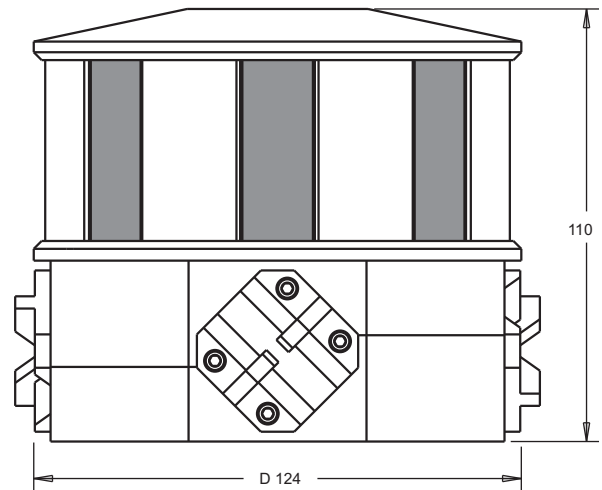


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## BASIC DIMENSIONS

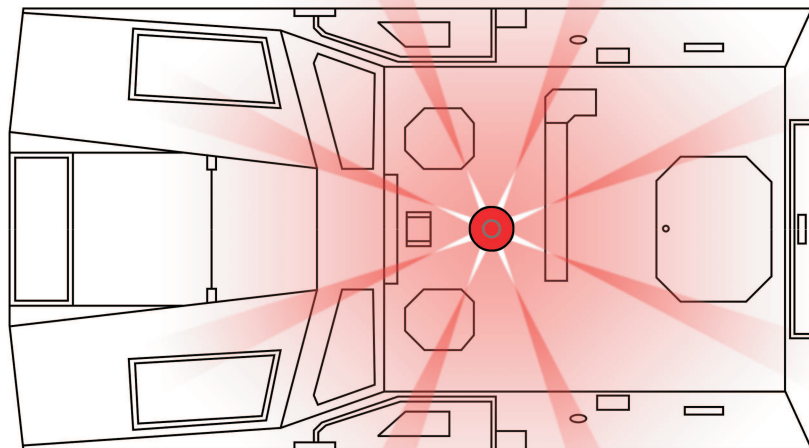


**LW5-8D, LW5-12D**



**LW5-8D-4R**

## EXAMPLE OF LAWAREC INSTALLATION



**METRODAT s.r.o.** is a development, production and distribution company established in 1990, focused on the development of military applications of laser technologies and the development of technical means for the fight against terrorism.

## PRODUCTS:



**LAWAREC LW5-8D**  
Laser Warning Receiver



**LAWAREC LW5-12D**  
Laser Warning Receiver



**LAWAREC LW5-8D-4R**  
Laser/Radar Warning Receiver



**LAWAREC BRICK**  
Laser/Radar Warning Receiver



**LAWAREC BUTTON**  
Laser Warning Receiver



**GARVAN GV04**  
Laser Rangefinder



**ML-780B-R**  
Ruggedized Thermal Imaging Module



**MS-780C**  
Thermal Imaging Weapon Scope

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