

LS-525-C5-F105-DC24-A-ADJ-Y

**525nm Laser Module
Specification**

I. Equipment Name

LS-525-C5-F105-DC24-A-ADJ-Y 525nm 4W round beam laser module.

II. Uses

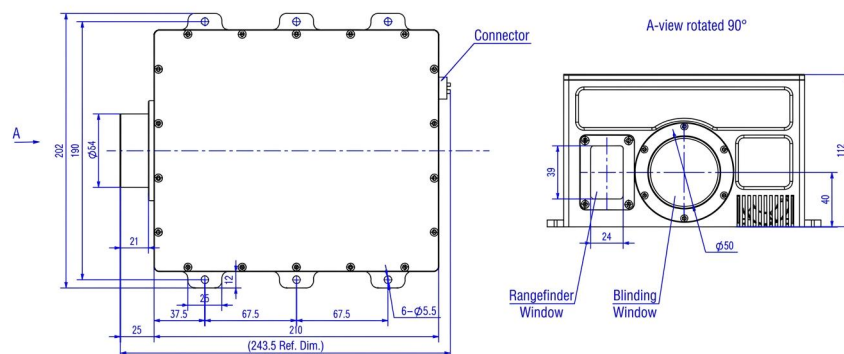
525nm laser module are safety&security systems that emit sensitive and safe laser beams to the human eye, achieving the purpose of dazzling targets, providing warnings, deterring enemies, and denying territories.

III. Composition

The laser module consists of four parts: a laser ranging finder module, a semiconductor laser diode, a zoom optical system, and a control circuit.

IV. Structure

a) Dimensions: $\leq 262\text{mm} \times 210\text{mm} \times 113\text{mm}$ (length $\times$ width $\times$ height), product illustration shown in Figure 1;



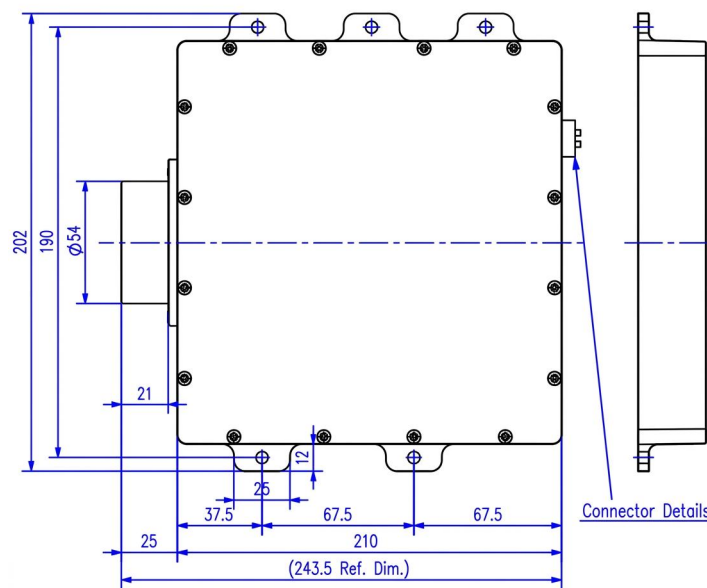
Picture 1. Schematic diagram of laser glare device product.

- b) Weight: $\leq 4\text{kg}$;
- c) The surface is intact and uniform, without obvious peeling, scratches, corrosion and contamination;
- d) The written symbols are correct, clear, and neat;
- e) The surface is free of dents, scratches, cracks, deformation, and other defects.
- f) The coating is free of bubbles, cracks, and peeling.

V. Interface

1. Mechanical interface

The base is designed with six 5.5mm through holes as mechanical interfaces, as shown in the figure below.



Picture2. Laser module mounting hole diagram

2 Communication Interface

The host computer communicates with the laser module via RS-485 with a baud rate of 9600 bit/s and an interface chip voltage of 3.3V. The external 24V power supply interface and communication interface use the same aviation connector, employing a medium-sized round 5-pin waterproof aviation connector (plug model Y50EX-1005TK6, socket model Y50EX-1005ZJ10). The interface definitions are shown in Table 1.

Table 1 Column-mounted laser dazzler electrical interface pin definitions

Stitches	Signal	Signal name	Remark
1	+24V power supply	+24V	

	positive		
2	A	RS485	
3	-	-	Backup
4	B	RS485	
5	+24V power supply ground	GND	

VI. Main Technical Requirements

1. Functional Requirements

- 1) It has power-on self-test and periodic self-test functions; (self-test content includes: voltage, current, laser, rangefinder)
- 2) It has a 70°C high-temperature protection function;
- 3) It has a 24/7 standby function;
- 4) Operating mode: Continuous or flashing operation;
- 5) The spot size can be automatically adjusted according to the distance value;
- 6) The laser module has the function of dazzling upright people within a range of 20m to 200m, which can serve as a warning and deterrent.

2. Performance Requirements

- 1) Effective range: 20 m ~ 200 m;
- 2) Distance measurement index
Ranging capability: 20 m ~ 200 m (atmospheric visibility 10 km, target reflectivity 0.3);
Distance measurement accuracy: $\pm 5\text{m}$ (RMS value);
- 3) Laser specifications
Laser operating modes: Continuous and pulsed, switchable;
Repetition frequency: Adjustable from 1Hz to 10Hz;
Operating wavelength: $525\text{nm} \pm 5\text{nm} @ 25^\circ\text{C}$;
Average laser power: $\geq 4\text{ W} @ 25^\circ\text{C}$
Spot mode: Circular spot ;

Spot size: Within the effective distance range of 20m to 200m, the spot diameter is $\leq 1.7\text{m}$;

Light emission time upon power-on: $\leq 2\text{s}$.

4) Electrical Specifications

Operating voltage: 24V;

Total power consumption: Standby power consumption: $\leq 10\text{ W}$;

Operating power consumption: $\leq 70\text{ W}$.

3. Environmental adaptability requirements

1) Operating ambient temperature: -40°C to $+60^{\circ}\text{C}$;

2) Storage environment temperature: -50°C to $+70^{\circ}\text{C}$;

3) It is equipped with functions such as protection against rain, sand and dust, and damp heat, with an IP rating of IP65;

4) It has the ability to resist vibration and adapt to low air pressure (it can work normally under low air pressure conditions of 47.2 kPa (about 6 km)).