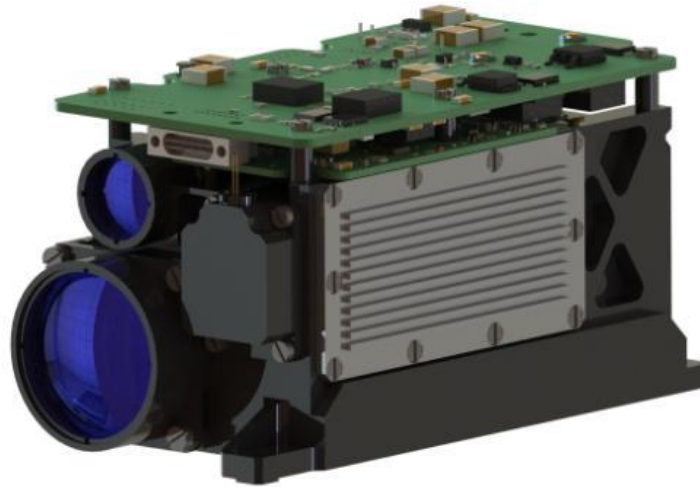


## 45mJ Laser Target Designator with Rangefinder

Model:JIO-D45M



JIO-D45M small Laser Target Designator with Rangefinder is an airborne equipment that provides sufficient guidance reflection energy for laser semi-active guided bombs and missiles, continuously tracking and implementing laser irradiation on targets. Communication is achieved through the RS422 communication interface, which has the characteristics of outstanding performance and simple operation. It has a wide range of application scenarios and the following advantages: small size, light weight, low power consumption, suitable for various platform environments such as airborne, vehicular, and shipborne. Laser wavelength: 1064nm, direct contact with the human eye is prohibited.

### Product Functions

Laser ranging function and real-time reporting distance value;

Power polarity reverse protection, over current and over voltage circuit protection;

Can be laser irradiated at the built-in set frequency of 20Hz;

Can be triggered by external synchronization signal for Laser Target Designator and Rangefinder (laser irradiation (external synchronization) state);

Overtemperature alarm function: When the working temperature of the Laser Target Designator and Rangefinder is too high to continue emitting laser, it can send the overtemperature alarm status information to the upper computer and protect the safety of the Laser Target Designator and Rangefinder.

laser output times reporting function;

Laser software version features

### Product features:

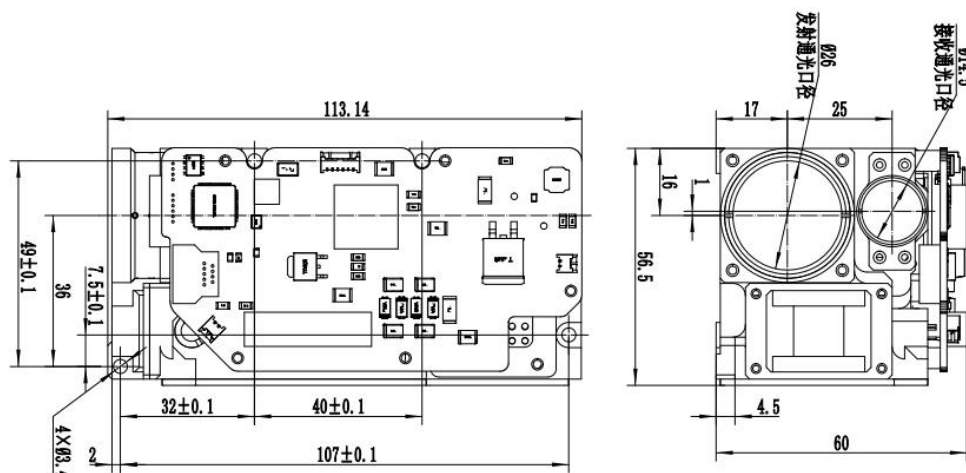
1. Wide temperature non-thermal system design, strong anti-tuning ability, good optical axis stability, can achieve a wide temperature range of work;
2. Using unique pulse detection and automatic compensation technology, high energy stability;

3. Choose active Q-switching pump mode, fine adjustment step, high coding precision.

## Product performance indicators

project	Indicator data
Wavelength	1064nm±10nm
Average energy	≥45mJ
Energy stability	10% (statistics after 3s of light)
Angle of divergence	≤0.5mrad
Pulse width	15ns±5ns
Radiation distance	≥3800m
Range range	≥5km
Service frequency	Single run, 1Hz, 5Hz, and 20Hz
Encoded mode	Accurate frequency encoding, and external synchronization
Encoding accuracy	≤±2.5
Service voltage	18V ~ 32V
Standby power consumption	≤4W
Size	≤115mm×57mm×62mm
Weight	≤800g

## Mechanical and optical interfaces



## Electrical interface

Electrical interface requirements are as follows:

The upper computer terminal realizes the crosslinking test with the end connector master head J30JZLN15ZKWA000 through the connector plug J 30 JZ / XN15TJCAL01-300. The pins of the power supply and communication port at the metering device end are defined as shown below.

Definition of the photosensor terminal power supply and communication port pin

Socket socket J30JZLN15ZKWA000		
Corresponding to the plug, J 30 JZ / XN15TJCAL01-300		
The pin number	Signal name	explain
1	28V	Power positive pole
2	28V	Power positive pole
3	28V	Power positive pole
4	POWER+	Laser power on controls the positive electrode
5	422_A	Upper computer-> laser measurement assembly +
6	422_B	Upper computer-> Laser measuring assembly-
7	422_GND	422 Communication ground wire
8	SYNC-	External Synchronization Signal-
9	28VGND	Power anode
10	28VGND	Power anode
11	28VGND	Power anode
12	POWER-	The laser power on controls the negative electrode
13	422_Y	Laser measuring assembly- -> upper computer +
14	422_Z	Laser measuring assembly-> upper machine-
15	SYNC+	External Synchronization Signal +

## Software

### Communication protocol definition

The communication interface adopts RS-422 bus, and its features are as follows:

- ◆ Baud rate: 38.40kbps;

- ◆ Byte construction: low byte in front, high byte behind; low in front, high behind;
- ◆ Byte composition format: 1 start bit, 8 data bits, 1 stop bit;
- ◆ Communication cycle: 20ms.

## The system software sends the instructions to the laser photo reader

The control command information format is shown below.

Control command information received by the viewer

order number	Information name	byte data	remarks
0	Frame head	0x55	
1	Command word 1	0x00	await the opportune moment
		0x02	Single ranging
		0x03	1HZ ranging
		0x04	5HZ ranging
		0x05	shining
		0x08	Stop the ranging / irradiation
		0x0A	Report the cumulative number of laser pulses
2	Command word 2		Laser irradiation: laser code 1~8
3	Command word 3		During irradiation: laser irradiation time setting (1~47)
4	Frame tail	verification	Results of 0-3 bytes

The photographic detector return data is shown below.

Data returned by the photo tester

order number	name	explain	remarks
0	Frame head	0x55	
1	State word 1		See Table 4
2	Distance value high bytes / cumulative laser pulses high bytes		
3	Distance value low bytes / cumulative laser pulses low bytes		
4	temperature		
5	Frame tail	verification	Results of 0-4 bytes

Status word 1 information definition

BIT07	BIT06	BTI05	BTI04	BTI03	BTI02	BTI01	BTI00
0: No laser 1: There is a laser	0: The range is effective 1: Invalid range measurement	Laser logo Alternate 1 / 0	1: Overtemperature alarm 0: The temperature is normal				00: Standby 01: Distance measurement 02: Instructions