

CST-LTD 4506Y Laser Target Designator



It employs an LDA-pumped Nd:YAG crystal combined with an electro-optic Q-switching technology, to achieve a typical 1064nm pulsed laser output with a single pulse energy of 45mJ, and a beam divergence angle of 0.5mrad. Utilizing TEC temperature control technology, the entire device can operate within an ambient temperature range from -40°C to +60°C. It can achieve illumination for 47s with a 30s interval, continuously cycling for 2 periods; or illumination for 20s with a 30s interval for 10 periods. It is compatible with various combat platforms EO pods, particularly suitable for miniaturized airborne EO pods, enabling continuous ranging and periodic illumination on targets. It is a crucial laser device for implementing laser semi-active guidance process.

Product Features

- Support continuous illumination at high temperatures: 10 short-cycle continuous illuminations at +60°C.
- Low power consumption: Peak power consumption does not exceed 120W, and average illumination power consumption does not exceed 100W.
- Lightweight: The entire device weighs no more than 450g (weight optimization is possible based on illumination time).

Application

Used for laser semi-active guidance and other electro-optical systems.

- Airborne, shipborne and vehicle-borne EO systems
- EO countermeasure system
- Weapon fire control system
- Ground-based E reconnaissance system
- Portable individual soldier EO system

Technical Specification

Model No.	
Ranging/Illumination Parameters	
Max Range	≥10km
Min Range	≤200m
Accuracy	±2m
Illumination Distance	≥5km
Ranging Frequency	1-5Hz

Illumination Frequency	0-20Hz
Continuous Ranging Time	30min@5Hz
Illumination Mode	Cycles
Illumination Time	Long(short) illumination cycle: 47s (20s) with 30s interval, workable continuously 2 (10) cycles, and will rest for 30mins after 2 (10) cycles.
Laser Coding Type	Precise frequency code, Variable interval code and customized code.
Coding Accuracy	±2.5μs
Operating Temperature	-40°C ~ +60°C
Storage Temperature	-55°C ~ +70°C
Vibration Test	Meet demands of MIL-STD-810H
Impact Test	Meet demands of MIL-STD-810H
Laser Parameters	
Laser Type	LDA-pumped Nd:YAG
Cooling Mode	Air cooling, TEC
Wave Length	1064nm
Single Impulse Energy	≥45mJ
Energy Fluctuation	5% at +25°C (PV Value); 10%(PV Value) between -40°C and +60°C
Repetition Frequency	0-20Hz adjustable
Impulse Width	8-15ns
Divergence Angle	≤0.5mrad
Optical Axis Instability	≤0.05mrad
Laser Startup Time	≤30s
Safety Level	Class 4
Power Supply	20-32V DC (typical: 28V)
Power Consumption	Standby: ≤5W Average: ≤60W
Communication Interface	Peak: ≤120W RS422(Standard), RS232/485 is optional
Baud Rate	115200 bit/s
Weight	<450g
Dimension	97mm*95mm*44mm
Axis Parallel Error to Installation Reference	≤0.5mrad