

CST-LTD4510 Laser Target Designator (without TEC)



This LTD 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 0.3mrad.

Without TEC, the entire device can operate within an ambient temperature range from -40°C to +35°C. It can achieve illumination for 60s with a 30s interval, continuously cycling for 6 periods; or illumination for 45s with a 30s interval for 2 periods from +35°C to +50°C.

It is compatible with various combat platforms 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

- Without TEC: Keeping illumination energy 45mJ between -40°C and +50°C
- Low power consumption: Peak power consumption does not exceed 70W, and average illumination power consumption does not exceed 35W.
- Lightweight: The entire device weighs is no more than 850g (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	≥3km
Ranging Frequency	1-5Hz
Illumination Frequency	0-25Hz

Continuous Ranging Time	30min@5Hz
Illumination Mode	Cycles
Illumination Time	≥45s@20Hz with 30s interval, workable continuously 2 cycles, and will rest for 30mins after 2 cycles.
Laser Coding Type	Precise frequency code, Variable interval code and customized code.
Coding Accuracy	±1μs
Operating Temperature	-40°C ~ +50°C (illumination≤20s is supported above 50°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	LD-pumped Nd:YAG
Cooling Mode	Conductive cooling, without TEC
Wave Length	1064nm
Single Impulse Energy	≥45mJ
Energy Fluctuation	6% at +25°C (RMS); 10%(RMS) between -40°C and +50°C
Repetition Frequency	0-25Hz adjustable
Impulse Width	15ns±5ns
Divergence Angle	≤0.3mrad
Optical Axis Instability	≤0.05mrad
Laser Startup Time	≤10s
Safety Level	Class 4
Power Supply	20-32V DC (typical: 28V)
Power Consumption	Standby: ≤5W
	Average: ≤35W
	Peak: ≤70W
Communication Interface	RS422(Standard), RS232/485 is optional
Baud Rate	115200 bit/s
Weight	850g
Dimension	158mm*93mm*62mm
Axis Parallel Error to Installation Reference	≤0.5mrad