

CST-LTD13030 Laser Target Designator



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 130mJ, and a beam divergence angle of 0.25mrad. Utilizing TEC temperature control technology, the entire device can operate within an ambient temperature range from -40°C to +70°C. It can achieve illumination for 90s with a 60s interval, continuously cycling for 4 periods ($\leq +25^{\circ}\text{C}$), or illumination for 2 periods over $+60^{\circ}\text{C}$. 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

- Support continuous illumination at high temperatures: 90s continuous illuminations at $+70^{\circ}\text{C}$.
- Divergence Angle is $\leq 0.25\text{mrad}$
- Lightweight: Total weigh is less than 2.3kg

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	$\geq 30\text{km}$
Min Range	$\leq 300\text{m}$
Accuracy	$\pm 3\text{m}$
Illumination Distance	$\geq 12\text{km}$
Ranging Frequency	1-5Hz
Illumination Frequency	0-20Hz

Continuous Ranging Time	30min@5Hz
Illumination Mode	Cycles
Illumination Time	$\geq 90\text{s}@20\text{Hz}$ with 60s 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	$\pm 1\mu\text{s}$
Operating Temperature	$-40^{\circ}\text{C} \sim +70^{\circ}\text{C}$
Storage Temperature	$-55^{\circ}\text{C} \sim +70^{\circ}\text{C}$
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	Air cooling, TEC
Wave Length	1064nm
Single Impulse Energy	$\geq 130\text{mJ}$
Energy Fluctuation	6% at $+25^{\circ}\text{C}$ (RMS); 10%(RMS) between -40°C and $+70^{\circ}\text{C}$
Repetition Frequency	0-20Hz adjustable
Impulse Width	$15\text{ns} \pm 5\text{ns}$
Divergence Angle	$\leq 0.25\text{mrad}$
Optical Axis Instability	$\leq 0.05\text{mrad}$
Laser Startup Time	$\leq 30\text{s}$
Safety Level	Class 4
Power Supply	20-32V DC (typical: 28V)
Power Consumption	Standby: $\leq 20\text{W}$
	Average: $\leq 120\text{W}$
	Peak: $\leq 300\text{W}$
Communication Interface	RS422(Standard), RS232/485 is optional
Baud Rate	115200 bit/s
Weight	2.3kg
Dimension	236mm*116mm*80.5mm
Axis Parallel Error to Installation Reference	$\leq 0.5\text{mrad}$