

LR1500E2 · 905 NM

ADAPTIVE-FREQUENCY E SERIES

LR1500E2

LASER CLASS

CLASS 1

IEC 60825-1

A ≤ 10 g rectangular module with a small laser spot and graded precision: 4–1,500 m by day, up to 1,800 m at night, on a 2–10 Hz adaptive cadence. Ultra-low power for controllers, robots and outdoor positioning.

MAX RANGE	ACCURACY	WEIGHT	INTERFACE
4–1,500 m (1,800 m night)	± 1 m (≤ 500 m)	≤ 10 g	UART-TTL

TECHNICAL SPECIFICATIONS

FULL SHEET

Laser wavelength	905 nm $\pm$ 5 nm
Laser divergence	< 6 mrad (small spot)
Optical material	Resin aspherical lens
Receiving aperture	9.2 $\times$ 14.5 mm
Measurement range	4–1,500 m (max 1,800 m nighttime)
Ranging accuracy	$\delta \leq \pm 1$ m (6–500 m) · ± 50 cm + d·1% (500–1,000 m)
Measurement frequency	2–10 Hz adaptive
Accuracy rate	$\geq 98\%$
Interface	UART-TTL (customizable)
Baud rate	115200 bps
Supply voltage	3.3–5 V
Startup time	≤ 200 ms
Operating power	≈ 1 W (short-range ≈ 0.4 W, standby ≈ 0.2 W)
Sleep power	< 1 mW
Operating temperature	-20 to +55 °C (-40 °C custom)
Storage temperature	-40 to +60 °C
Protection rating	IP67 (inside lens cavity)
Laser safety class	IEC Class 1
Dimensions	25.65 $\times$ 13.2 $\times$ 24.6 mm
Weight	≤ 10 g
Reliability	MTBF ≥ 1500 h



INTERFACE

UART-TTL

PIN	SIGNAL	DESCRIPTION
1	GND	Power –
2	VCC	Power +
3	I/O	Reserved for expansion
4	TXD	Module $\rightarrow$ host
5	RXD	Host $\rightarrow$ module
6	SW-SHOT	Function enable (active high)

APPLICATION FIT

- OUTDOOR POSITIONING
- ROBOTICS
- INDUSTRIAL MEASUREMENT

Standard 8-byte UART frame (0x55 0xAA header, function code, 4 data bytes, checksum); distance returned $\times 10$ for a one-decimal reading. Full integration manual ships with samples.