

SPD MINI – NIGHT VISION & THERMAL

SPD1200N2

LASER CLASS

CLASS 1

IEC 60825-1

Miniature 905 nm ranging module for civil electro-optical products needing stable distance measurement in an extremely compact Ø15.7 × 21.3 mm, ≈ 5 g package.

MAX RANGE	ACCURACY	WEIGHT	INTERFACE
0.2–1,200 m (1,500 m night)	±0.3 m (≤100 m)	≈ 5 g	UART-TTL

TECHNICAL SPECIFICATIONS

FULL SHEET

Laser wavelength	905 nm ± 5 nm
Laser beam divergence	< 4.5 mrad
Optical material	PMMA
Receiving aperture	Ø 6.5 mm
Measurement range	0.2–1,200 m (max 1,500 m at night)
Ranging accuracy	±0.3 m (≤100 m) · ±0.3 m + d·0.7% (100–1,200 m)
Measurement frequency	2–15 Hz / 4–15 Hz adaptive
Accuracy rate	≥ 98%
False alarm rate	≤ 1%
Interface	UART-TTL (customizable)
Baud rate	115200 bps (default)
Supply voltage	3.3–5 V
Startup time	≤ 200 ms
Average laser power	On request
Response time	On request
Operating power	Average ≈ 0.45 W · max ≤ 0.75 W
Operating temperature	-20 to +60 °C
Storage temperature	-30 to +70 °C
Protection rating	IP67 (inside lens cavity)
Laser safety class	IEC Class 1
Dimensions	Ø15.7 mm × 21.3 mm (cylindrical, sealing groove)
Weight	≈ 5 g
Shock / vibration	1000 g/ms (10×/s along optical axis) · 5–50–5 Hz, 2.5 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 → host
5	RXD	Host → module
6	SW-SHOT	Function enable (active high)

APPLICATION FIT

- NIGHT VISION
- THERMAL IMAGING
- CIVIL OPTICS

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