

Laser Rangefinder

905nm Laser Rangefinder Module

Ultra-lightweight high-precision embedded laser rangefinder core

- Ultra-lightweight Design
- High Precision Compensation Algorithm
- Eye Safety & Efficiency
- Rugged Environmental Reliability
- Low Power Consumption



One Platform Many Possibilities

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Overview

905nm Laser Rangefinder: The Precision Core of Miniaturized and High-Efficiency Detection

The 905nm Laser Rangefinder series is an innovative line of semiconductor laser modules designed to integrate advanced technology with a human-centric design approach. Utilizing a unique 905nm laser diode as its core light source, the series ensures Class I eye safety while setting benchmarks for efficient energy conversion and stable output characteristics.

Key Features and Technical Advantages:

- **Exceptional Precision with Advanced Algorithms:** Equipped with high-performance chips and independently developed advanced algorithms, these modules achieve a full-range accuracy control within **1 meter**, with short-range precision accurate to **0.1 meters** through a sophisticated ranging data compensation algorithm.
- **Enhanced Stability and Noise Suppression:** The high-repetition-frequency ranging method effectively suppresses environmental noise and interference, ensuring stable and accurate measurement results even for small targets or in complex outdoor environments.
- **Ultra-Low Power Consumption and Sustainability:** Designed with energy efficiency as a core priority, the series features low power consumption (operating at **1.8W** and standby as low as **0.8W**), significantly enhancing the battery life and economy of portable devices.
- **Extreme Miniaturization for Seamless Integration:** Each module weighs only approximately 11 grams with dimensions of 25 × 26 × 13 mm, offering zero burden for carrying and maximum flexibility for integration into space-constrained systems.
- **Rugged Reliability in Harsh Conditions:** The series demonstrates extraordinary performance under extreme operating ambient temperatures ranging from -40°C to +65°C (model dependent), with high resistance to impact (1000g, 20ms) and vibration.

Qualification

General Technical Specifications (VL-DLRF Series)

Technical Parameter	Specification & Performance	Notes
Laser Eye Safety Class	Class I	Safe for direct viewing
Center Wavelength	905nm ± 5nm	Semiconductor laser diode
Beam Divergence	6 mrad	
Resolution	0.1 m	
Accurate Ratio	98%	
Power Supply	DC 3.0V ~ 5.0V	
Operating Power	1.5W ~ 1.8W	Highly energy-efficient
Standby Power	0.8W	
Communication Type	UART (TTL_3.3V)	Default 115200bps
Dimension	25 × 26 × 13 mm	Ultra-compact design
Net Weight	11g ± 0.5g	Extremely lightweight
Operating Temp	-20°C ~ +65°C	Customizable to -40°C 2
Impact Resistance	1000g, 20ms	Military/Industrial grade reliability

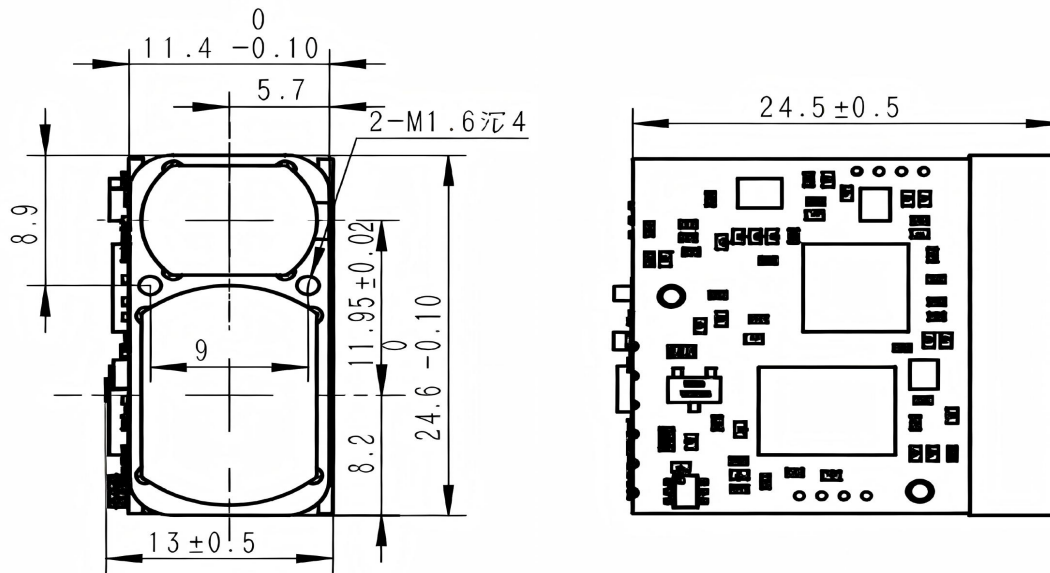
Selection Chart

VL-DLRF Series Selection Guide

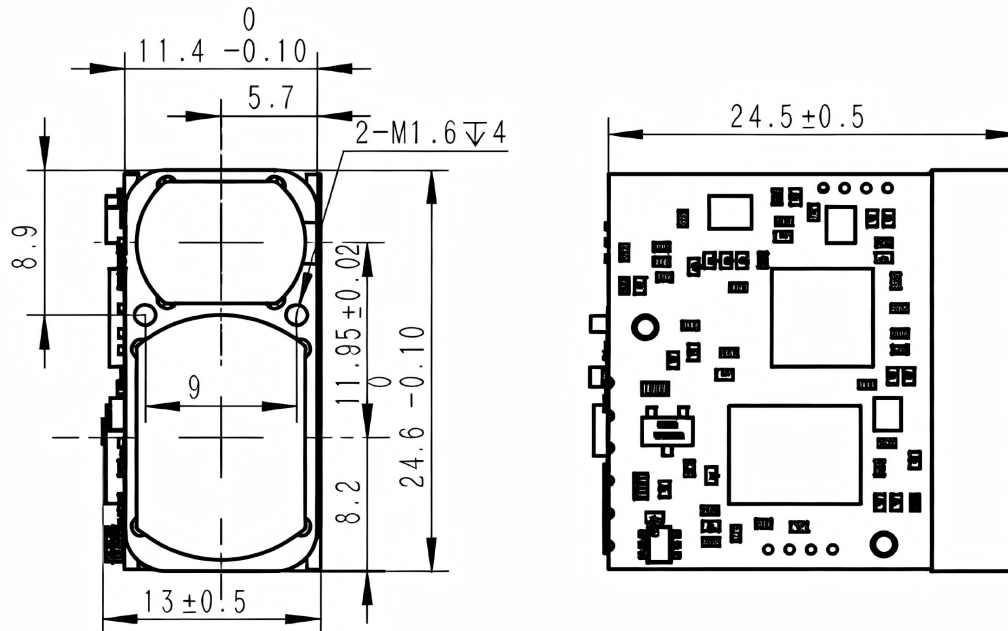
Model	Ranging Capacity (Building)	Ranging Frequency	Ranging Accuracy
VL-DLRF-1200F	0.5m ~ 1,200m	60Hz ~ 800Hz (Self-Adaptive)	±0.5m (< 80m); ±1m (>80m)
VL-DLRF-1500	3m ~ 1,500m	1Hz ~ 10Hz (Self-Adaptive)	±1m (< 1000m); 0.2±0.0015*L (>1000m)
VL-DLRF-2000	3m ~ 2,000m	1Hz ~ 10Hz (Self-Adaptive)	±0.5m (< 80m); ±1m (<1000m); ±(0.2+0.0015*D) (>1000m)

Dimensions Diagram

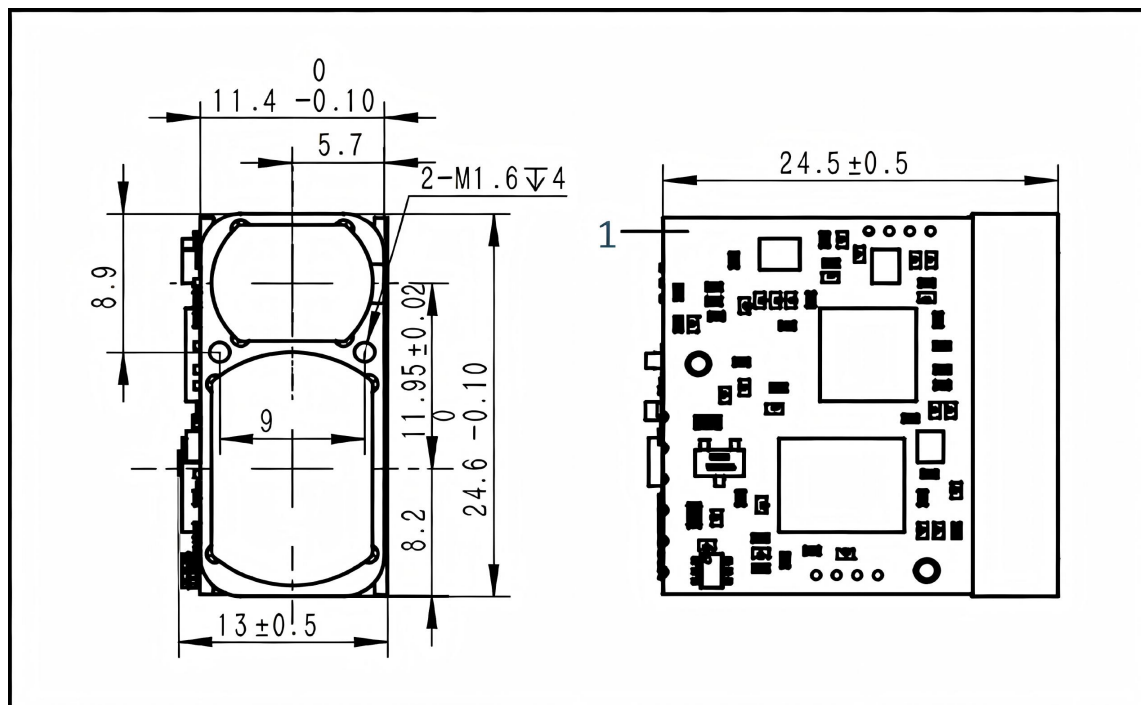
VL-DLRF-1200F



VL-DLRF-1500



VL-DLRF-2000



Service & Support

We are dedicated to delivering exceptional optoelectronic solutions to every client. From precision manufacturing and secure delivery to full-lifecycle technical support, we are here to ensure a seamless and reliable experience at every step.

1. Warranty Policy

Quality First, Worry-Free Operation

Warranty Period: We offer a **two-year** warranty service for all of our core optoelectronic products, effective from the date of shipment.

Coverage: We provide free repair or replacement services for malfunctions caused by material defects or workmanship errors under normal operating conditions.

Rapid Response: Upon receiving a warranty claim, we guarantee to initiate the assessment process within **24 hours** to minimize your equipment downtime.

2. Technical Support

Expert Team, Full-Process Guidance

Technical Consultation: Our team of senior optical engineers provides **24/7 online support** to assist with installation, commissioning, optical path alignment, and parameter optimization.

Scheduled Maintenance: We offer full-lifecycle maintenance recommendations, including firmware upgrades, optical component cleaning guidelines, and precision calibration services.

Training Services: We provide customized remote or on-site operational and safety training to ensure your team can operate the equipment efficiently and safely.

3. Logistics & Delivery

Precision Packaging, Global Reach

Professional Packaging: Given the fragile nature of optical instruments, we utilize industrial-grade shockproof, anti-static, and moisture-proof vacuum packaging to ensure zero damage during transit.

Logistics Partners: We partner with top-tier global logistics providers (**DHL / FedEx / UPS / SF Express**) to offer reliable shipping with real-time tracking.

Shipping Insurance: All shipments are fully insured to eliminate logistics risks.

4. Compliance & Certification


Strict Standards, Total Compliance

Quality Certification: Our manufacturing process is **ISO 9001 certified**, and our products comply with international standards such as **CE** and **RoHS**.

Export Compliance: "Committed to environmental responsibility, all our products comply with **RoHS 2.0** and **REACH** standards, ensuring safety and global compliance."

Explore Series

Model	Ranging Accuracy	Ranging Capacity (Building)	Ranging Frequency
VL-DLRF-1200F	$\pm 0.5\text{m}$ ($\leq 80\text{m}$); $\pm 1\text{m}$ ($>80\text{m}$)	0.5m ~ 1,200m	60Hz ~ 800Hz (Self-Adaptive)
VL-DLRF-1500	$\pm 1\text{m}$ ($\leq 1000\text{m}$); $0.2 \pm 0.0015 * L$ ($>1000\text{m}$)	3m ~ 1,500m	1Hz ~ 10Hz (Self-Adaptive)

 Get in touch with our team to explore configurations, request a quote, or learn more about customized solutions tailored to your needs.

Let us help you move science forward—faster and smarter.

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