

SL8

Dual-Camera Laser RTK



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SatLab SL8 Laser RTK combines dual cameras, GNSS, IMU, and visible laser technology to make surveying faster and easier. With non-contact measurement, image-assisted targeting, CAD live-view stakeout, and a built-in LoRa radio, it ensures smooth, reliable work even in complex or GNSS-limited environments.



Features



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25N105

Note:

①Maximum ranging distance tested under ideal conditions.

Features

Laser Measurement — Wide Coverage for Typical Tasks

Our Laser RTK delivers 2 cm accuracy within 10 m, enabling effortless measurements even in GNSS-denied areas. It ensures dependable, high-precision surveying across bridges, tunnels, rivers, and other challenging environments.



Exclusive Image-assisted Targeting

Laser points are directly overlaid on real-time images via Satsurv software, allowing users to quickly and accurately aim at distant objects, significantly improving field efficiency.

Automotive-grade IMU — Greatly Boosted Efficiency

The vehicle-grade IMU requires no manual calibration, allowing users to start measuring immediately without initialization. It delivers stable, accurate data, enhancing precision by up to 40%, and ensuring smooth operations in GNSS-challenged zones.



Extended-Range LoRa Communication — Reliable Working Distance

Equipped with a built-in LoRa transceiver supporting multiple protocols and compatible with various RTK brands, our self-developed LoRa algorithms deliver reliable data transmission over distances of more than 15 km.

CAD & Visual Stakeout — 50% Faster Layout

Combining a high-performance CAD engine with real-world imagery, users can perform visual, CAD-based stakeout, seeing target points directly on-site. This integration boosts stakeout efficiency by up to 50%, offering a safer, smarter, and more intuitive surveying workflow.



Technical parameters

GNSS Signal ^[1]	Channel	1760
	GPS	L1C/A, L1C, L2P(Y), L2C, L5
	BDS	B1I, B2I, B3I, B1C, B2a, B2b
	GLONASS	L1, L2, L3
	Galileo	E1, E5a, E5b, AltBOC, E6
	QZSS	L1, L2, L5, L6*
	NavIC	L5
	SBAS	L1, L2, L5
	PPP	B2b-PPP
Positioning Performance ^[2]	High-Precision Static	Horizontal: 2.5 mm + 0.1 ppm RMS Vertical: 3.5 mm + 0.4 ppm RMS
	Static and Fast Static	Horizontal: 2.5 mm + 0.5 ppm RMS Vertical: 5 mm + 0.5 ppm RMS
	Post Processing Kinematic (PPK / Stop & Go)	Horizontal: 3 mm + 1 ppm RMS Vertical: 5 mm + 1 ppm RMS Initialization time: 10min for base and 5min for rover Initialization reliability: typically >99.9%
	PPP	Horizontal: 10 cm Vertical: 20 cm
	Code Differential GNSS	Horizontal: ±0.25 m+1 ppm RMS Vertical: ±0.5 m+1 ppm RMS SBAS: 0.5 m (H), 0.85 m (V)
	RTK(UHF)	Horizontal: 8 mm+1 ppm RMS Vertical: 15 mm + 1 ppm RMS Initialization time: typically < 10s Initialization reliability: typically > 99.9%
	RTK(Network)	Horizontal: 8 mm+0.5 ppm RMS Vertical: 15 mm + 0.5 ppm RMS Initialization time: typically < 10s Initialization reliability: typically > 99.9%
	Positioning Rate	1 Hz, 5 Hz and 10 Hz
	Time to First Fix	Cold start: < 45 s Hot start: < 30s Signal re-acquisition: < 2 s
	Hi-Fix ^[3]	Horizontal: RTK+ 10 mm / minute RMS Vertical: RTK+ 20 mm / minute RMS
	Tilt Survey Performance ^[4]	200 Hz, auto calibration, additional horizontal pole-tilt uncertainty typically less than Horizontal: 8 mm+0.7mm/° tilt (0~120°) Vertical: 15mm+0.7mm/° tilt (0~120°)
	Image Stakeout Accuracy	2 cm accuracy
	Laser Measurement	2 cm accuracy within 10 m
Physical	Dimensions (W x H)	130.97 mm × 68.7 mm
	Weight	≤ 0.73 kg (1.61 lb)
	Operation Temperature	-40 C ~ +75 C (-40°F ~ +167°F)
	Storage Temperature	-55 C ~ +85 C (-67°F ~ +185°F)
	Humidity	100% non-condensing
	IP Rating	IP68 (according to IEC 60529)
	Shock and Vibration	MIL- STD- 810 G, 514.6
	Free Fall	Designed to survive a 2 m natural fall onto concrete
	Material	Magnesium alloy shell
Electrical	Internal Battery ^[5]	Rechargeable 7.2V / 4900 mAh lithium battery; RTK rover: up to 20 h; RTK base: up to 17 h
	External Power	Using standard smartphone chargers or external power banks (Support 5V 2.8A Type-C USB external charging)
Communication	I/O Interface	1 × USB type C port, UHF cable supported to connect with LEMO 5-pin port; 1 × SMA antenna port; 1 × Nano SIM card slot
	Wi-Fi	Frequency 2.4 GHz, supports 802.11 a/b/g/n/ac/ax
	Bluetooth	BT 5.2, 2.4 GHz
	NFC	Near field communication for device touch pairing
	Network Modem	TDD-LTE, FDD-LTE, GSM Power: 1 W / 2 W adjustable Frequency: 410 MHz~470 MHz
	Internal UHF Radio	Protocol: LoRa, HI-TARGET, TRIMTALK450S, TRIMMARK III, SATEL-3AS, TRANSEOT, etc. Working range: 15-20 km ^[6] Channel: 116 (16 scalable)
	Laser	Laser Performance
Camera	Front Camera	5MP, support image-assisted measurement and AR stakeout
	Bottom Camera	2MP, support AR stakeout
Control Panel	Physical Button	1
	LED Lights	Satellite, signal, power
System Configuration	Storage	64GB ROM internal storage
	Output Format	ASCII: NMEA-0183
	Output Rate	1 Hz~20 Hz
	Static Data Format	GNS, Rinex
	Real Time Kinematic (RTK)	RTCM2.X, RTCM3.X, CMR
Network Mode	VRS, FKP, MAC, support NTRIP protocol	

Note:

[1]QZSS L6 can be provided by firmware upgrade.

[2]The measurement accuracy, precision, reliability and initialization time depend on various factors, including tilt angle, number of satellites, geometric distribution, observation time, atmospheric conditions and multi-path validation, etc. The data are derived under normal conditions.

[3]Accuracies are dependent on GNSS satellite availability. Hi-Fix Positioning ends after 5 minutes without differential data.Hi-Fix is not available in all regions, check with your local sales representative for more information.

[4]Irregular operations such as rapid rotation and high-intensity vibration may affect the inertial navigation accuracy.

[5]Operating time varies with environment, temperature, and battery condition.

[6]This distance can be achieved when using a super base station

*Descriptions and Specifications are subject to change without notice