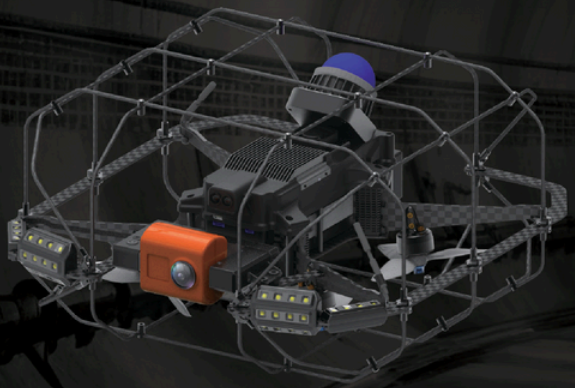
Smart-Scan-300 Mining Edition – Single LiDAR

Purpose-built for GPS-denied underground mines

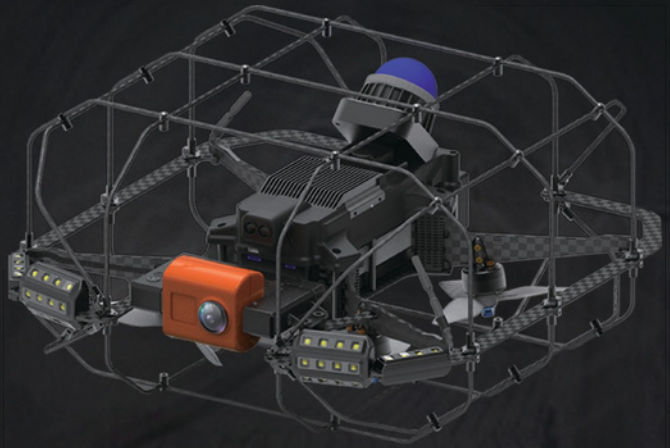


Skyline Technology and Data Pty Ltd

Beyond Infinity

Product Introduction

S300 is under 380mm in size and equipped with a 360° physical protective cage to ensure safe flight. With advanced distance-locking technology and high-precision LiDAR, the system can accurately perceive its surroundings. The 1080P HD video transmission paired with a 4K camera captures detailed imagery with clarity, while up to 10,000 lumens of illumination ensures superior imaging quality. Equipped with dual-system sensing, S300 enables real-time modeling without the need for GPS, fully meeting inspection requirements in complex indoor environments.



Distance Locking

Extended Endurance

Dual-System Sensing

10K lumens

GPS-Free

1080P Video Transmission

LiDAR

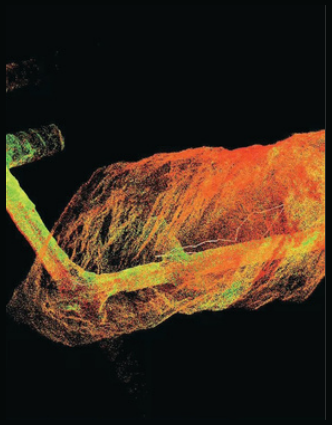
Compact Size

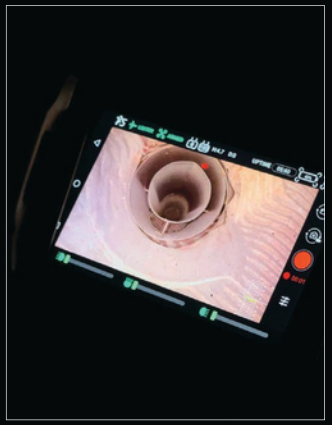
4K Camera

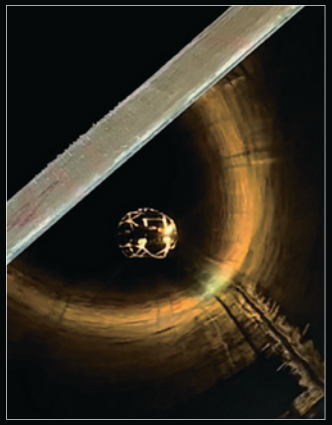
Real-Time Modeling

360°Physical Protection

Indoor Capabilities







Protective Cage

Detachable cage design quickly adapts to different operation scenarios, absorbing collision impact and providing full protection for the drone.

Powerful & StableTransmission

The long-distance wireless transmission system supports beyond-visual-line-of-sight inspections, capable of penetrating walls or flying around obstacles. Longer-range operations can be enhanced using a relay system.

💡Contact the team for potential fibre transmission solution
1 km of Fibre, unstopped transmission! No signal, No Problem!

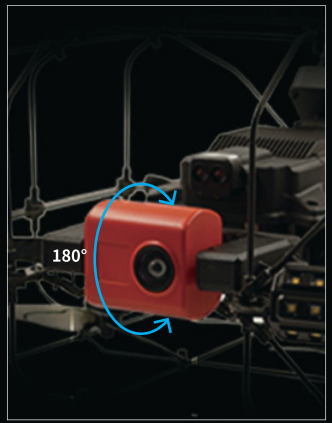
Full HD Live Streaming

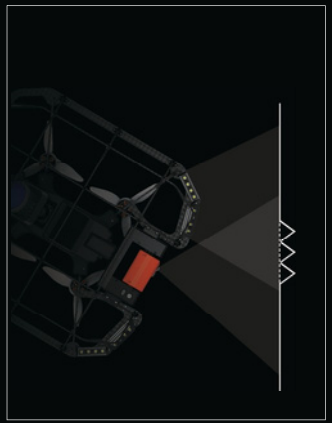
Supports FPV (first-person view) monitoring, offering intuitive situational awareness with video latency as low as 80ms.

Distance Locking

Ideal for inspecting long, repetitive structures such as weld seams or beams. S300 can automatically maintain a preset distance between 20 cm to 300 cm.

Mission Payloads





4K Ultra-Clear Imaging

4K camera supporting 4K@60fps recording, capturing extremely small cracks or gaps.

40-LED High-Power Array

Angled lighting enhances visibility of dents, pits, and cracks; dark areas become clearly observable.

LiDAR

S300 is equipped with a 4-channel LiDAR, capturing up to 200,000 points per second. The onboard computer generates real-time 3D point-cloud models with hovering accuracy under 2 cm.

Multi-function Expansion Port

Supports flexible payload expansion with a modular design, allowing future upgrades for diverse inspection tasks.

LiDAR

905nm
Eye-safe

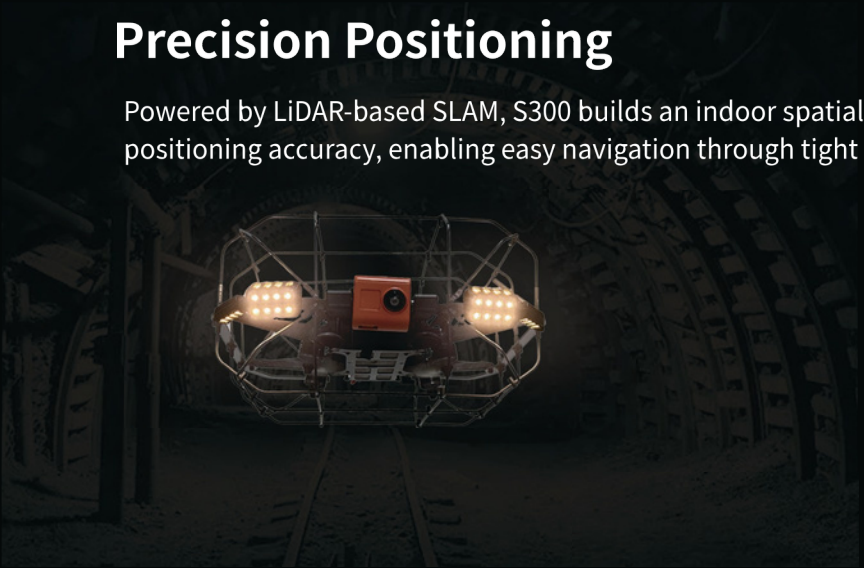
360°
Omnidirectional sensing

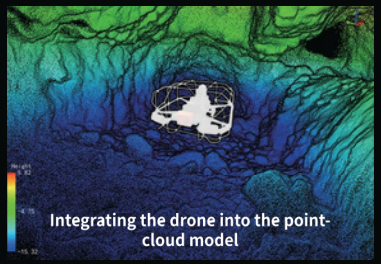
70m
Long-range detection

200,000 pts/sec
Designed for precise confined-space inspectio

Precision Positioning

Powered by LiDAR-based SLAM, S300 builds an indoor spatial model in real time with millimeter-level positioning accuracy, enabling easy navigation through tight spaces.





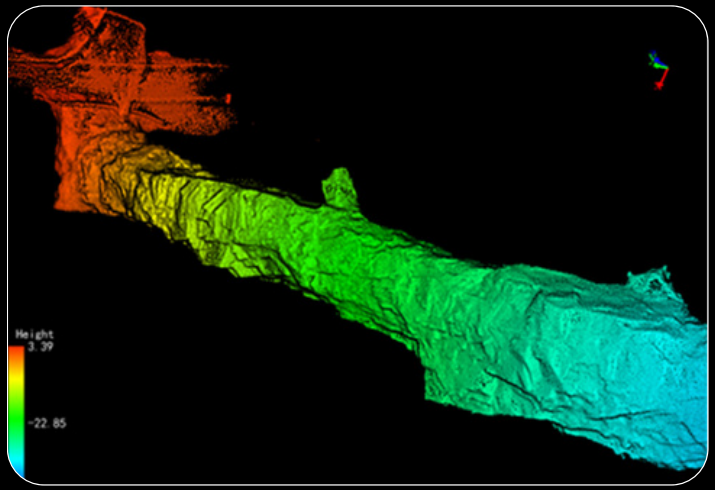
Real-Time Point-Cloud Modeling

Point-cloud data and flight path displayed in real time, ensuring thorough inspections

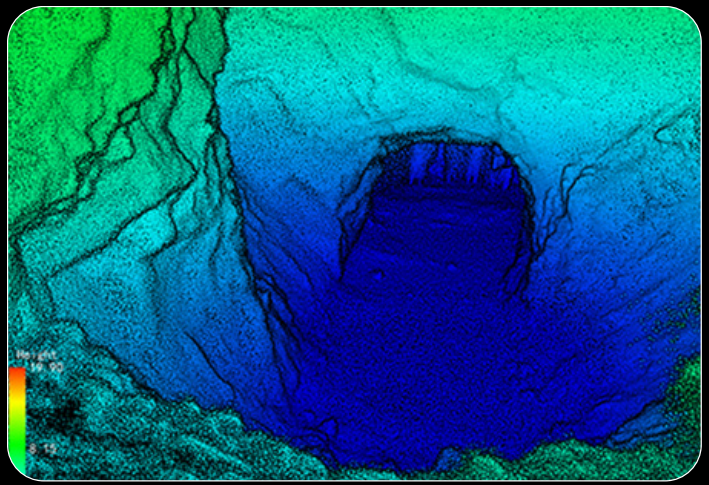
Flight path and point-cloud data are displayed synchronously, helping pilots immediately identify unscanned areas and ensuring full space coverage.

High-Precision Point-Cloud Model

Equipped with a 4-channel LiDAR generating up to 200,000 pts/sec, the onboard computer constructs real-time 3D point-cloud models with hovering accuracy under 2 cm. LiDAR could be customised based on specific needs, the advance Smart-Scan 400 could be equiped LiDAR generating up to 500,000 pts/sec



Void Hazard Zone



Mine Shaft

Payload Options

Visible-Light Camera Version (Standard)

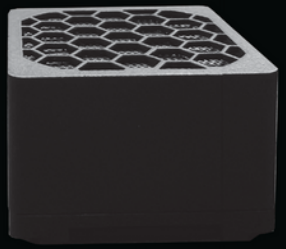
Ideal for detecting tiny cracks

1/2.3” CMOS / 12.3 MP
4K/60fps recording
Aperture F1.8

Dual-Spectrum Version (Optional)

Thermal imaging for detecting hidden issues

Effective detection distance: 200m



Gas Sensor (Optional)

Provides real-time and accurate gas data for specialized environments

CO (Carbon Monoxide)
H^2S (Hydrogen Sulfide)
O^2 (Oxygen)
CH^4 (Methane)

Technical Specifications

Airplane

Aerodynamic Configuration	Quadcopter multirotor
Dimensions	380mmx380mmx200mm
Weight	1118g（without battery）/ 1750g(with batte r y)
Flight-Control Sensors	IMU, magnetometer, barometer, dual range sensors
Flight Modes	SLAM mode, ATTI - Attitude mode
Flight Time	12min(hover)
Max Climb / Descent Speed	1m/s(SLAM mode) 1m/s(Attitude mode)
Max Takeoff Weight	**1910g**
Max Wind Resistance	**3m/s(**SLAM mode) **5m/s(**Attitude mode)
Materials	Carbon-fiber composite, magnesium alloy, high-strength thermoplastic, aviation-grade aluminum
Motor Type	Brushless motor
Motor Lifespan	100h
Noise Level	85dB
Onboard Computer	Six-core high-performance 64-bit processor Linux-based operating system
Operating Temperature	0°C～ 50°C
Propeller Lifespan	25h
Propellers	4 propellers; 5-inch

Battery & Charger

Battery Lifespan	100 cycles
Charging Time	40min
Energy	146. 9Wh
Battery Weight	632g
Nominal Voltage	23.1v
Operating Temperature	10°C～ 45°C
Rated Capacity	6000mAh

Remote Controller

Operating Frequency	2.4G+5.8G
Signal Bandwidth	10MHz/20MHz/40MHz
Max Line-of-Sight Transmission Distance	5000m
Operating Endurance	4h
Weight	850g
Operating Temperature	-20° C ～ 50° C

Illumination System

Lighting Type	40 high-efficiency LEDs
Brightness	10000lm

Visible-Light Camera

Sensor	1/2.3"CMOS	**Aperture**	F1.8
Effective Pixels	1230 mp	**Sensitivity**	Optimized for low-light performance
Lens	FOV260°	**Video Recording Resolution**	4K UHD 3840×2160 @ 60fps

LiDAR

Laser Wavelength	905 nm	**FOV**	Horizontal: 360°
Eye Safety Classification1	Class1(IEC60825-1:2014) Eye Safety	**Point Cloud Output**	200,000 pts/sec
Range (@ 100 klx)	40 m @ 10% reflectivity 70 m @ 80% reflectivity		
Blind Zone2	0.1 m		

Thermal Imaging Camera (Optional)

Max Image Resolution	256x192	**Pixel Size**	12um
Lens Focal Length	9.7 mm	**Field of View**	18.1° (H)x13.6° (V)，22.6° (D)
Minimum Focus Distance	2m	**Max Aperture**	F1.0

Gas Sensor (Optional)

Detectable Gas	CO (Carbon Monoxide) HS (Hydrogen Sulfide)O (Oxygen) CH (Methane)

Note

[1] Thedivergence angle of the built-in laser emitter in the laser rangefinder is typically 25.2° (horizontal) × 8° (vertical) (FWHM). Peak laser power may exceed 70 W. Do **not disassemble the Mid-360 to avoid safety hazards.**

[2] When the target distance is between 0.1 m and 0.2 m, the laser rangefinder can detect and output point-cloud data. However, due to limited measurement accuracy in this range, the data is for **reference only.**

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