

Model	Specification	V+AP 0300	Model	Specification	V+AP 0300	
System Specifications	Altitude of operation	5 - 600 m	IMU	IMU type	MEMS IMU	
	FOV	70° x 40°		IMU frequency	50-1024 Hz	
	Altitude measurement accuracy	< 0.1 m		GNSS antennae	1-2	
	Relative/absolute horizontal accuracy	< 0.05m / < 0.2m		type of positioning sensor	GPSL1/L2, GLONASSL1/L2, Beidou B1/B2	
	Time synchronization accuracy	<1 μs		typical positioning accuracy	horizontal	0.01m (no lock-lose)
	Accuracy without ground control	1:1000 , 1:2000				0.3m (GNSS lock-lose 60 secs)
	Data storage	Pluggable USB Drive		vertical	0.02m (no lock-lose)	
	Control mode	Independent power switch on both IMU and camera			0.1m (GNSS lock-lose 60 secs)	
	Interface	Ethernet & WiFi		Heading accuracy	0.015° (no lock-lose) 0.03° (GNSS lock-lose 60 secs)	
	Weight	7.2 kg		Pitching Accuracy	0.01° (no lock-lose) 0.02° (GNSS lock-lose 60 secs)	
Operating temperature	-20°C - 55°C	Rolling accuracy	0.01° (no lock-lose) 0.02° (GNSS lock-lose 60 secs)			
Laser Scanner AP-0300	Min. Range	3 (m)	GNSS/INS postprocessing software	Operation mode	Support post-process and PPP	
	Max. Range	800 m (p = 20%)		Base station	≥ 7	
		1300 m(p = 80%)		IMU error model	User defined model	
	Pulse Frequency	50 - 600 kHz		Postprocessing coordinate system	Support 3D coordinate conversion	
	Laser Class	Class I				
	field of view	70° x 40°				
	Range resolution	10mm@100m (5mm + 50 PPM)				
	Angular resolution	0.002°				
	Max. Echo	4				
	Echo intensity	12 bits				
Weight	< 4 (kg)					

# Sky-Lark

## UAV LiDAR System

Sky-Lark UAV LiDAR System, with a 70°x40° field of view, is a customised LiDAR system for small light UAVs.

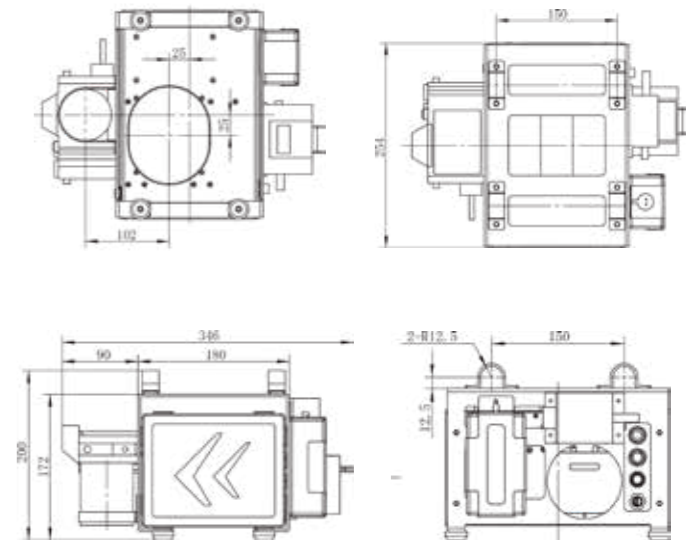
Six advantages of Sky-Lark system:

1. Scanning with a 70°x40° FOV, good description of vertical surfaces.
2. High density point cloud: >100 points/m<sup>2</sup> @ 100m
3. Modular design allows flexible integration.
4. One-button start of Sky-Lark
5. Data saved with a pluggable USB drive, easy to process.
6. Complete outline description of vertical features.



### System Components

Sky-Lark UAV LiDAR System is comprised of an AP-0300 laser scanner as its core sensor, integrated with a mini inertial measurement unit, a digital camera, GNSS antenna and a lithium battery. The total weight of the whole system is 7.2kg.



System size

### Flight Platform



Quadcopter



Hexacopter

ADD:	1-502,5 YongFeng Rd,Haidian Beijing,China	WEB:	www.isurestar.com
TEL:	+86-010-58711158 +86-010-58717175/76/78	FAX:	+86-010-58711158-818
EMAIL:	bkth@isurestar.com	P.C.:	100094



Unmanned Helicopter



Fixed-wing UAV

## System Features

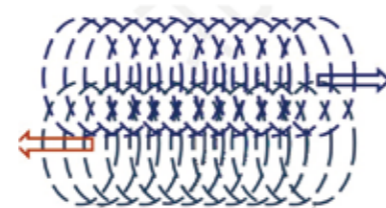
SKY-Lark UAV LiDAR system has the following features and advantages:

### (1) 70 °x 40 ° elliptic scanning field of view

For 3D object it can capture side view and outline of objects . For dense vegetation area, it can penetrate vegetation to scan the ground with different angles, increasing the ground points' density.

### (2) High-resolution digital camera

It can not only capture point cloud and image data simultaneously at one flight, but also collect the high precision exterior orientation elements for each image, facilitating image registration.



Elliptic Scan

### (3) Modular design

Modular design enable a highly integrated system, yet allows a flexible configuration according to various circumstances. Camera could be dispatched easily from the system when image data is not required in order to reduce payload, extend working hours and improve efficiency.



### (4) One button to start up.

The system will start to acquire data according to the pre-set configuration file once power is on.

### (5) Built-in pluggable USB.

It's a convenient to save, copy and manage data with pluggable USB.

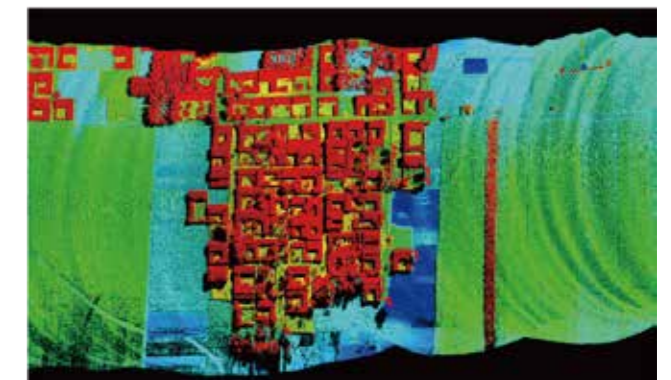
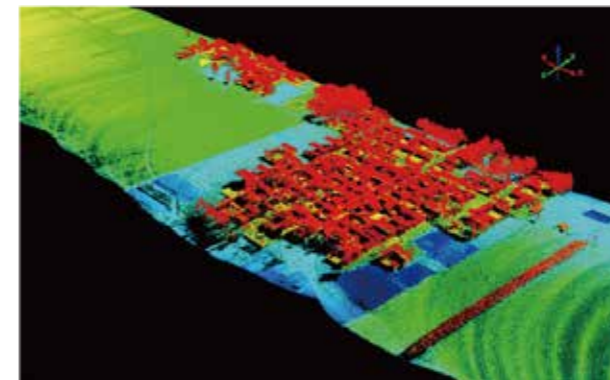


Pluggable USB Drive

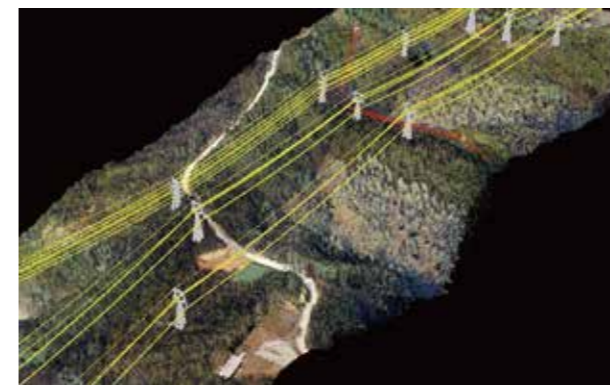
## Applications

- Topography
- Transmission line survey
- Surface mining measurement
- Civil engineering
- Emergency survey
- Rail road and oil pipe line survey
- Beach survey
- Corridor mapping

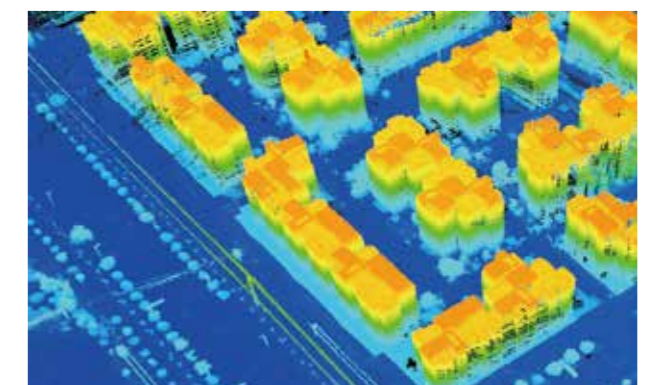
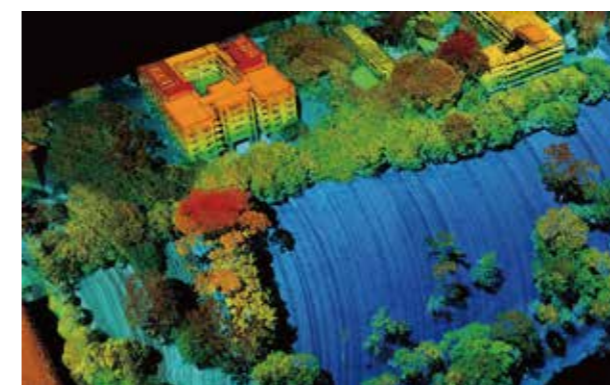
## Measurement results



Topography



Powerline Inspection



Urban Modelling