YellowScan Explorer.

Long-range, multi-platform LiDAR solution

The YellowScan Explorer is the first LiDAR that can be mounted on a light manned aircraft or helicopter and be switched to a UAV platform like the DJI M300.

This versality allows the end user to tackle a wide range of projects with the proven ease-of-use of YellowScan's UAV LiDAR solutions.

Technologies inside

applanix

Key differentiators

- Longest range
- Compact & lightweight
- Multi-platform

Integrations

- Manned aircraft
- Multirotor UAV
- Fixed-wing UAV

Technical specifications.

Precision[1]	2.6 cm		**Weight**	2.6 kg (5.7 lbs) battery included
Accuracy[2]	2.2 cm		**Size**	L 32.8 x W 12.2 x H 15.6 cm
Echoes per shot	Up to 5		**Autonomy**	1.3 hours typ.
Wavelength	1556 nm		**Power consumption**	50 W
Range	Up to 600 m		**Operating temperature**	−20 to +40 °C
GNSS-Inertial solution	Applanix APX-20 UAV			
Scanner field of view	360°			
Shots per second	Up to 500k			
Scanning frequency	165 Hz			

(1) Precision is considered as the mean value of absolute elevation differences between 2 flight lines recorded in opposite directions over a nadir-located 40 m² hard surface area. Here, precision was obtained by averaging the result from 3 flight levels @60, 90 and 120 m AGL.

(2) Accuracy is considered as the RMSE value of the elevation differences between targets and lidar points extracted from 2 flight lines recorded in opposite directions. Here, accuracy was obtained by averaging the accuracy from 3 flight levels @ 60, 90 and 120 m AGL. Targets are located within a 40 m wide corridor centered along the flight line axis.

Package includes.

✓ **Hardware:**

▶ YellowScan Explorer
▶ Rugged pelicase
▶ Charger and 2 batteries
▶ GNSS antenna and cable
▶ 2 USB flash drives
▶ Documentation

✓ **Services:**

▶ 1-year unlimited technical support
▶ 1-year warranty
▶ In-person or online training
▶ Boresight calibration certificate

✓ **Software:**

▶ Applanix POSPac UAV, to post-process GNSS and inertial data for highest accuracy
▶ YellowScan CloudStation, to generate and visualize your georeferenced point cloud

⊕ **Optional:**

▶ Stand-alone mounting bracket for DJI M300/M600
▶ Warranty and technical support extensions
▶ YellowScan LiveStation: the real-time in-flight LiDAR monitoring kit (includes software and 2 radio-modems)

▶ Strip Adjustment module: a point cloud enhancing toolbox for the CloudStation software
▶ Terrain module: export classified point cloud from the CloudStation software
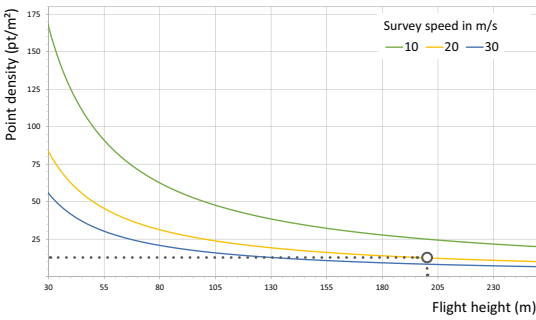
Typical mission parameters.
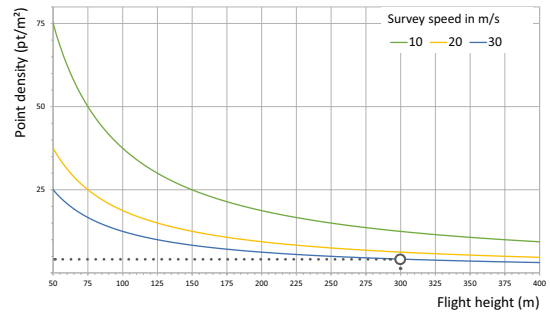
▶ Explorer @500 kHz PRF [(3)]
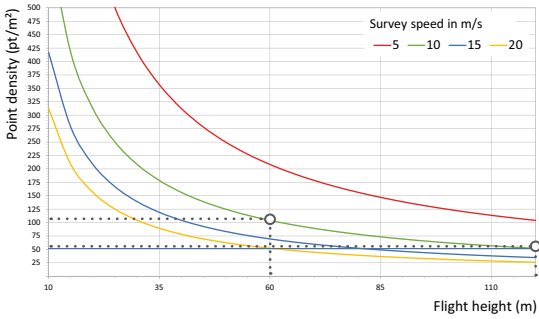
	PRF (kHz)	FLIGHT SPEED	ALTITUDE	POINT DENSITY
UAV	500	10 m/s	60 m	110 pts/m²
	500	10 m/s	120 m	55 pts/m²
VTOL & AIRCRAFT	400	20 m/s	200 m	13 pts/m²
	300	30 m/s	300 m	4 pts/m²

(3) Density calculated assuming 90° field of view.

▶ Explorer @400 kHz PRF [(3)]

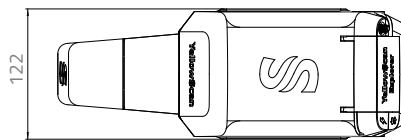

▶ Explorer @300 kHz PRF [(3)]
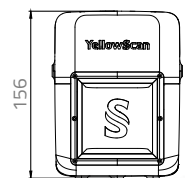

Dimensional drawings.

ⓘ Dimensions expressed in millimeters

▶ Side view

328
160
103
Screws M5
100
YellowScan Explorer
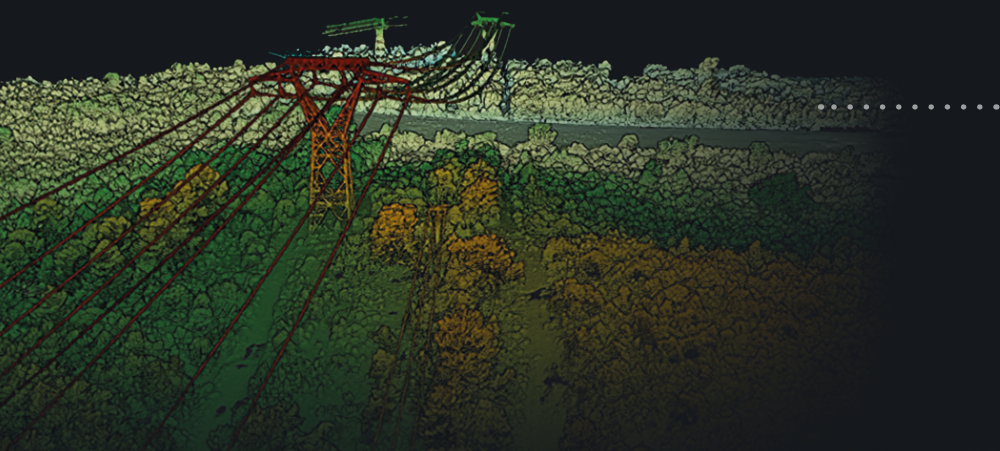
▶ Top view

122
YellowScan

▶ Front view

156
YellowScan
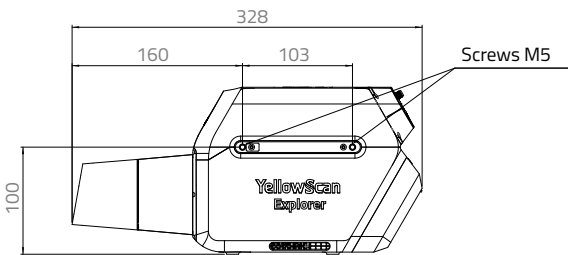
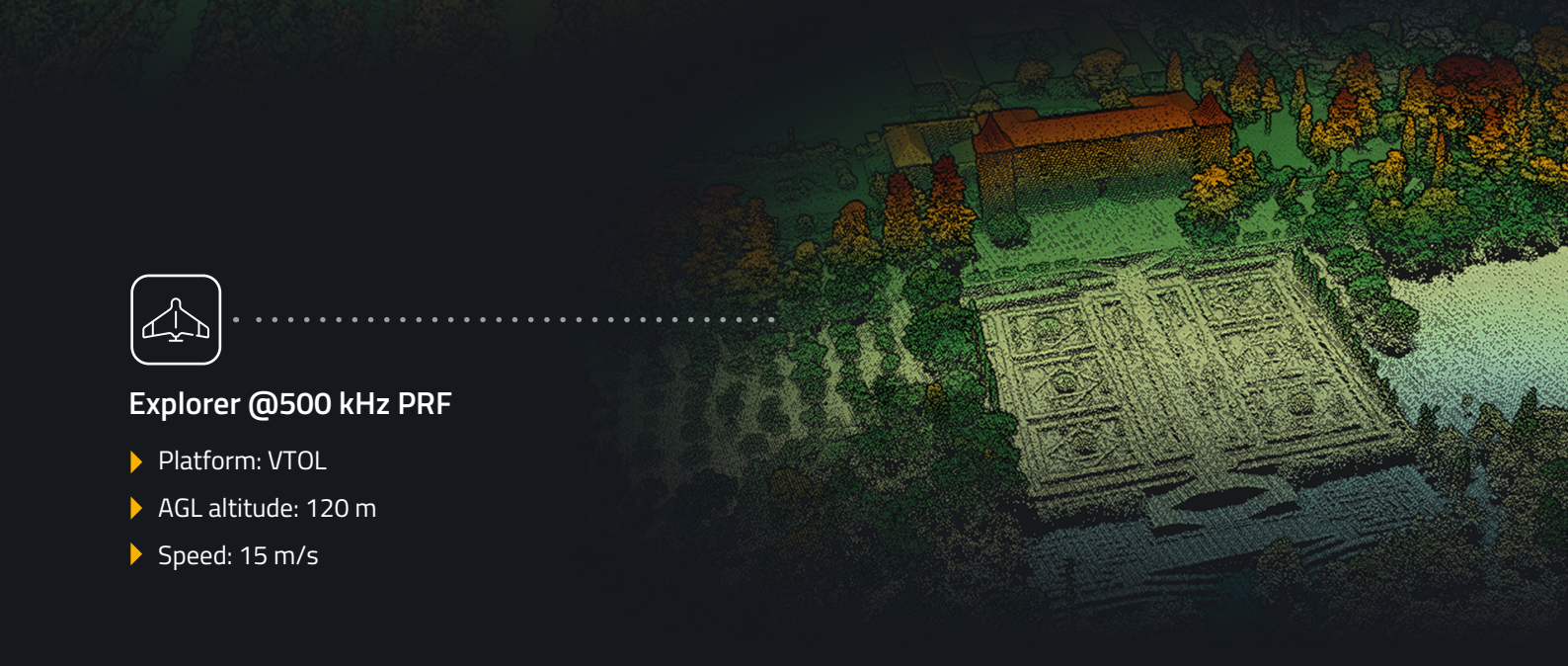# Typical point cloud snapshots.

Explorer @500 kHz PRF

- ▶ Platform: Multirotor UAV
- ▶ AGL altitude: 100 m
- ▶ Speed: 10 m/s

Explorer @500 kHz PRF

- ▶ Platform: VTOL
- ▶ AGL altitude: 120 m
- ▶ Speed: 15 m/s

Explorer @400 kHz PRF

- ▶ Platform: Ultralight Manned Aircraft
- ▶ AGL altitude: 200 m
- ▶ Speed: 35 m/s