

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 versatility 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
Accuracy ⁽²⁾	2.2 cm
Echoes per shot	Up to 5
Wavelength	1556 nm
Range	Up to 600 m
GNSS-Inertial solution	Applanix APX-20 UAV
Scanner field of view	360°
Shots per second	Up to 500k
Scanning frequency	165 Hz

Weight	2.6 kg (5.7 lbs) battery included
Size	L 32.8 xW 12.2 xH 15.6 cm
Autonomy	1.3 hours typ.
Power consumption	50 W
Operating temperature	-20 to +40°C

(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

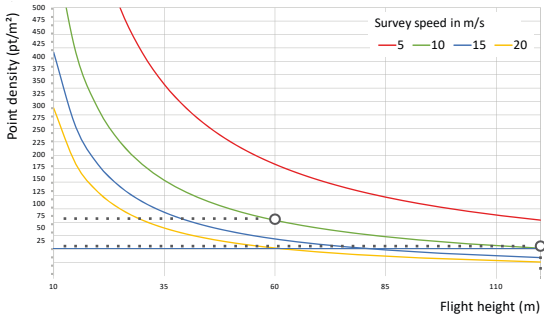


+ Optional:

- ▶ 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.

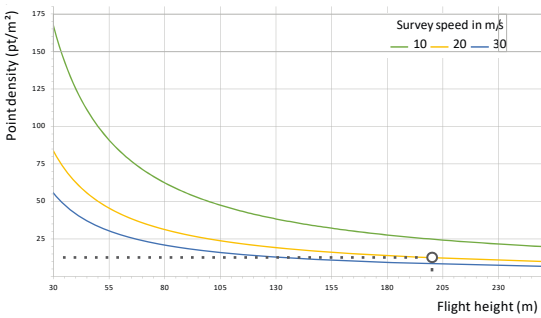
► Explorer @500 kHz PRF (3)



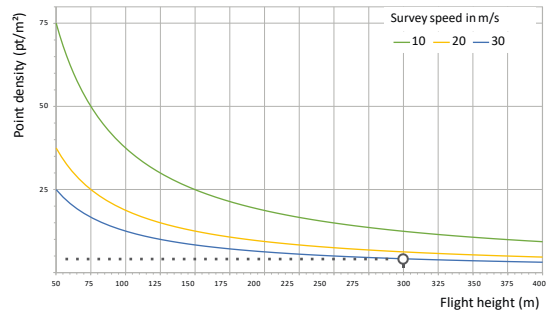
UAV	PRF (kHz)	FLIGHT SPEED	ALTITUDE	POINT DENSITY
	500	10 m/s	60 m	110 pts/m ²
	500	10 m/s	120 m	55 pts/m ²
VTOL & AIRCRAFT	400	20 m/s	200 m	13 pts/m ²
	300	30 m/s	300 m	4 pts/m ²

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

► Explorer @400 kHz PRF (3)



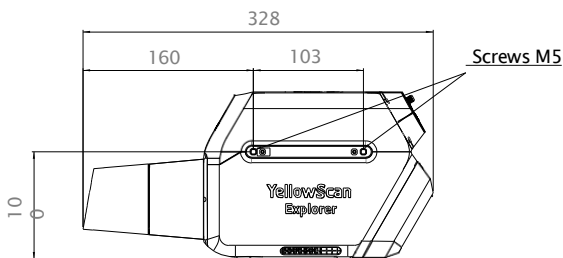
► Explorer @300 kHz PRF (3)



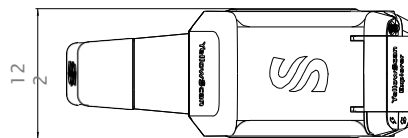
Dimensional drawings.

① Dimensions expressed in millimeters

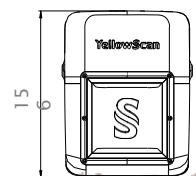
► Side view



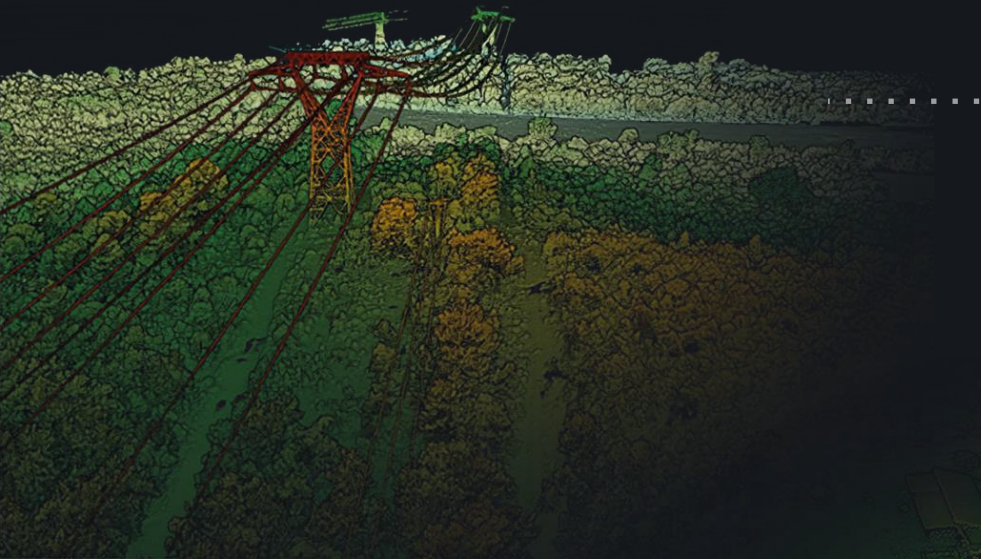
► Top view



► Front view



Typical point cloud snapshots.



Explorer @500 kHz PRF

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



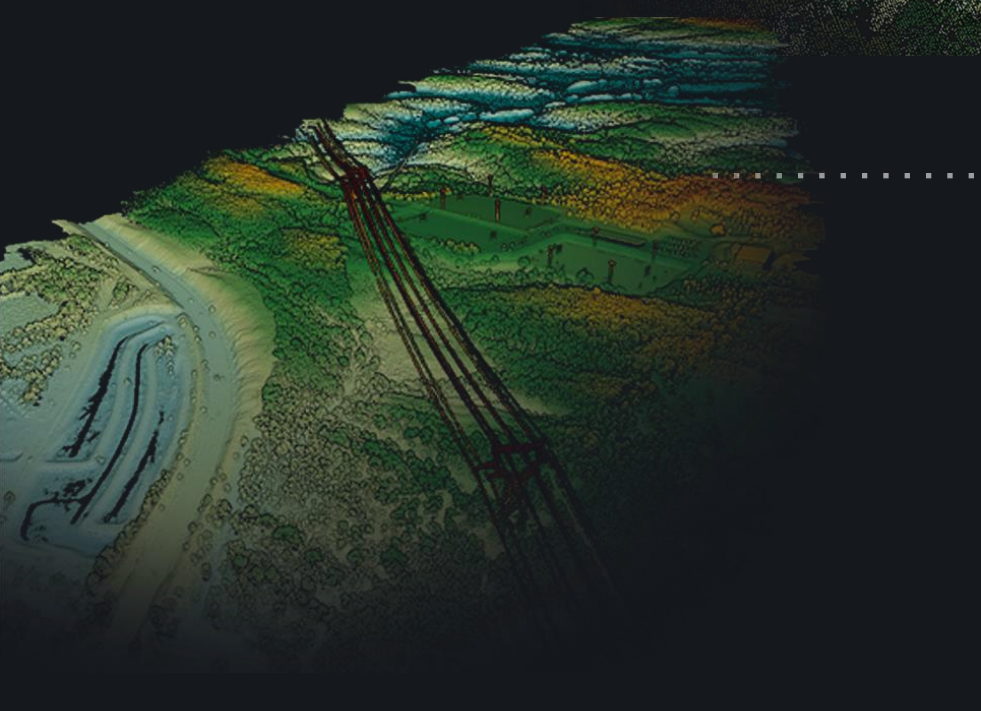
Explorer @500 kHz PRF

- ▶ 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



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