

YellowScan Voyager.



Precision meets reality.

The YellowScan Voyager is our highest range LiDAR solution, with a range of up to 440m.

Its laser scanner's wide field of view of 100° and its extremely fast data acquisition rate of up to 2.4 MHz, makes this solution the best option for projects requiring the highest point density.



Technologies inside

aplanix | RIEGL



Key differentiators

- ▶ 2 million pts/second
- ▶ Up to 32 echoes
- ▶ Multi-platform



Integrations

- ▶ Manned aircraft
- ▶ Multirotor UAV
- ▶ Fixed-wing UAV



Technical specifications.

Scanner precision ⁽¹⁾⁽³⁾	0.5 cm
Scanner accuracy ⁽²⁾⁽³⁾	1 cm
Laser scanner	RIEGL VUX-120 ²³
Laser Pulse Repetition Rate	Up to 2.4 MHz
Echoes per shot	Up to 32
Wavelength	Near infrared
Range	Up to 440 m
Scanner field of view	100°
GNSS-Inertial solution	Applanix APX-20 UAV or AP+ 50 AIR

Size	L 36.9 x W 11.7 x H 18.3 cm
Autonomy	1 hours typ.
Power consumption	55 W
Operating temperature	-10°C to +40°C
Weight	3.3 kg (7.3 lbs) battery excluded 3.7 kg (8.2 lbs) battery included

(1) Precision, also called reproducibility or repeatability, is the degree to which further measurements show the same result.

(2) Accuracy is the degree of conformity of a measured quantity to its actual (true) value.

(3) One sigma @ 150 m range under RIEGL test conditions.

Package includes.

✓ Hardware:

- ▶ YellowScan Voyager (APX-20 UAV or AP+ 50 AIR IMU option)
- ▶ 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 MMS, to post-process GNSS and inertial data for highest accuracy
- ▶ YellowScan CloudStation, to generate and visualize your georeferenced pointcloud

⊕ Optional:

- ▶ Colorization module: export colorized point clouds from LiDAR + camera acquisition
- ▶ Strip Adjustment module: a pointcloud enhancing toolbox for the CloudStation software
- ▶ Terrain module: export classified point cloud from the CloudStation software
- ▶ Built-in 20 MP camera module
- ▶ Built-in 60 MP camera module
- ▶ Stand-alone mounting bracket for DJI M600
- ▶ Warranty and technical support extensions

Typical mission parameters.

▶ Airborne parameters

PRF	FLIGHT SPEED	FLIGHT HEIGHT	POINT DENSITY	TARGET PER PULSE
150 kHz	30 m/s	440 m AGL	3.9 pts/m ²	32
150 kHz	15 m/s	440 m AGL	7.9 pts/m ²	32
300 kHz	30 m/s	320 m AGL	10.9 pts/m ²	32
300 kHz	15 m/s	320 m AGL	21.8 pts/m ²	32
600 kHz	30 m/s	230 m AGL	30.3 pts/m ²	24
600 kHz	15 m/s	230 m AGL	60.9 pts/m ²	24

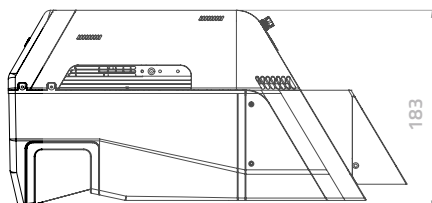
▶ UAV parameters

PRF	FLIGHT SPEED	FLIGHT HEIGHT	POINT DENSITY	TARGET PER PULSE
1200 kHz	25 m/s	160 m AGL	105 pts/m ²	11
1200 kHz	5 m/s	160 m AGL	525 pts/m ²	11
1800 kHz	25 m/s	130 m AGL	193.5 pts/m ²	7
1800 kHz	5 m/s	130 m AGL	969 pts/m ²	7
2400 kHz	25 m/s	110 m AGL	306 pts/m ²	5
2400 kHz	5 m/s	110 m AGL	1527 pts/m ²	5

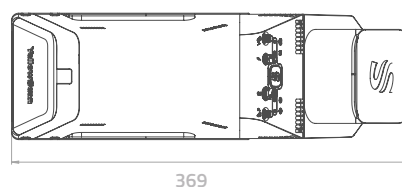
Dimensional drawings.

① Dimensions expressed in millimeters

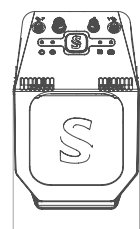
▶ Side view



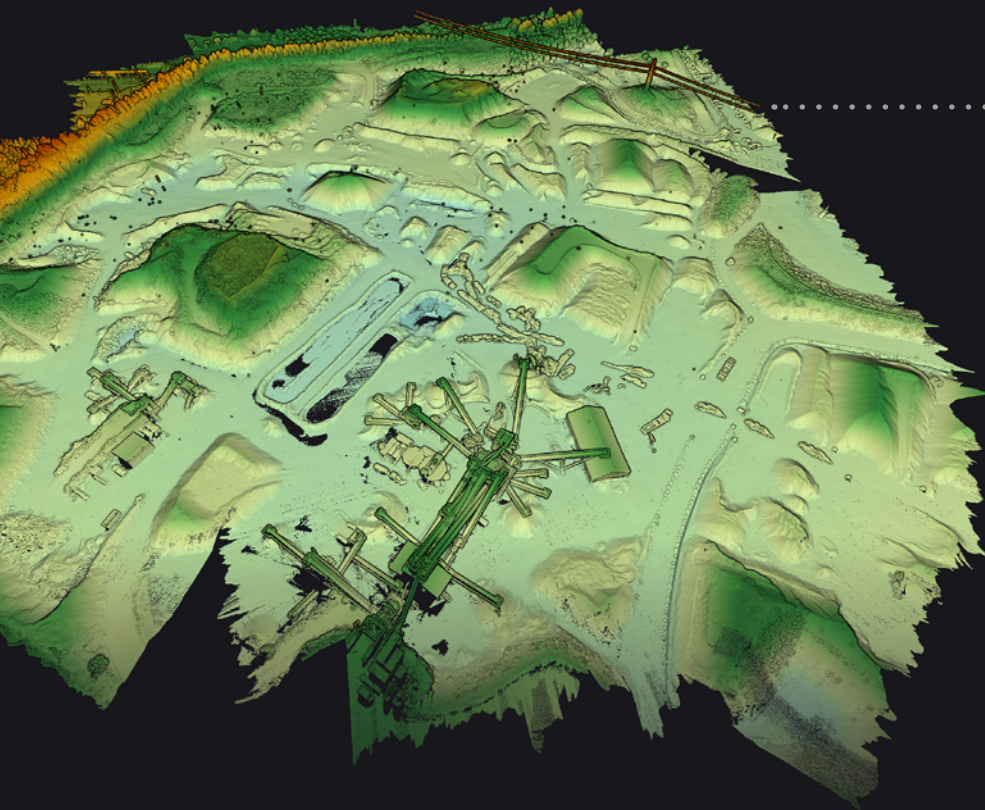
▶ Top view



▶ Front view



Typical pointcloud snapshots.



Voyager @1800 kHz PRF

- ▶ Platform: Multirotor UAV
- ▶ Flight height: 80 m AGL
- ▶ Speed: 5 m/s



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