

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

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



Integrations

- ▶ Single rotor UAV
- ▶ Multirotor & VTOL UAV
- ▶ Light Crewed Aircrafts

Technical specifications.

Laser scanner	RIEGL VUX-120 ²³
GNSS inertial solution	Applanix AP+ 30 AIR or AP+ 50 AIR
Precision ⁽¹⁾⁽³⁾	0.5 cm
Accuracy ⁽²⁾⁽³⁾	1 cm
Typ. flight speed	30 m/s
Typ. flying height	300 m
Max. rec. flying height	440 m
Point density ⁽⁴⁾	24 pts / sqm @ 300 m AGL 30 m/s
Laser range	Up to 1250 m
Laser wavelength	1550 nm
Scanner field-of-view	100° x 20°

(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.

Max. data generated ⁽⁵⁾	12 000 000 points/sec
Echoes per shot	Up to 32
Shots per second	Up to 2 000 000
Scanning frequency	Up to 400 Hz (selectable)
RGB camera	Optional
Weight	3.5 kg (7.7 lbs) batt. excl.
Size	L 369 x W 117 x H 183 mm
Autonomy	1 hour typ.
Power consumption	55 W
Operating temperature	-10 to +40 °C

(3) One sigma @ 150 m range under RIEGL test conditions. Accuracy and precision given for AP+50 Air IMU configuration.

(4) Laser Pulse Repetition Rate PRR @ 600 kHz

(5) Theoretical maximum of points with all shots yielding the maximum number of echoes. May vary depending on flight and survey conditions, and surveyed environment.

Package includes.

✓ Hardware:

- ▶ YellowScan Voyager ^(AP+ 30 Air or AP+ 50 Air IMU option)
- ▶ Rugged pelicase
- ▶ 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 Essential to generate, visualize, inspect, and export your data

⊕ Optional:

- ▶ CloudStation Pro: refine and improve your data quality, with more export options
- ▶ Warranty and technical support extensions
- ▶ Optional 20 MP or 60 MP single camera module
- ▶ Optional 35 MP dual-camera module
- ▶ Stand-alone mounting bracket for DJI M600

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

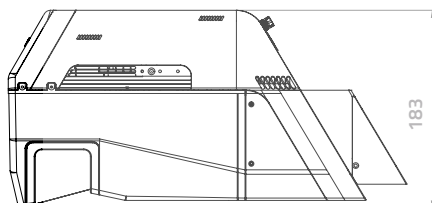
▶ UAV parameters

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

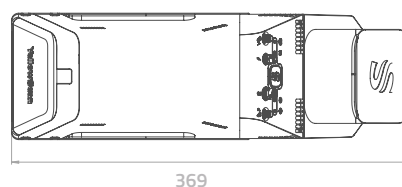
Dimensional drawings.

① Dimensions expressed in millimeters

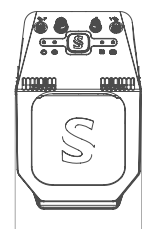
▶ Side view



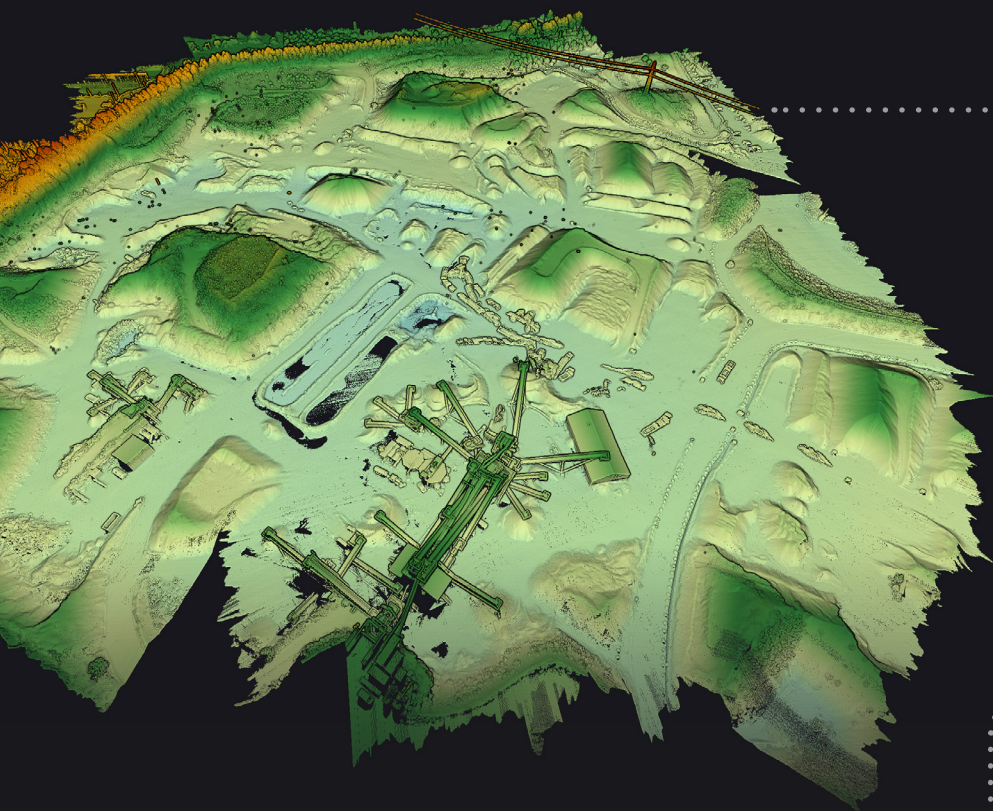
▶ Top view



▶ 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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