

# YellowScan Mapper+

Advanced performance fitted  
into a compact survey solution

The YellowScan Mapper+ integrates Livox AVIA laser scanner together with high performance GNSS-aided inertial navigation system into a lightweight, standalone and easy-to-use lidar system.

Proven capabilities and stable results  
over a wide range of applications.



Technologies inside

applanix **LIVOX**



Key differentiators

- ▶ High point density
- ▶ Lightweight
- ▶ 100 m typ. flying height



Integrations

- ▶ Single rotor UAV
- ▶ Multirotor UAV
- ▶ VTOL UAV

## Package includes.

### ✓ Hardware:

- ▶ YellowScan Mapper+
- ▶ Quick release adapter (DJI skyport or Gremsy)
- ▶ 2 batteries
- ▶ UAV GNSS antenna and cable
- ▶ 2 USB flash drives
- ▶ Rugged backpack



### ✓ Services:

- ▶ 1-year unlimited technical support
- ▶ 1-year warranty
- ▶ In-person or online training
- ▶ Camera & boresight calibration certificate

### ✓ Software:

- ▶ Applanix POSPac UAV, to process GNSS and inertial data for highest accuracy
- ▶ YellowScan CloudStation Essential to generate, visualize, inspect, and export your data.

## Optional camera module.

### Product presentation:

- ▶ The camera is a Sony APS-C size Exmor™ CMOS image sensor with a BIONZ X™ processor to produce high-precision images.
- ▶ The camera module is compatible with the SONY E-Mount and comes with a lens allowing an FOV of 83°.

### Key features:

- ▶ Collect LiDAR and RGB data in a single flight
- ▶ Data are georeferenced automatically
- ▶ No need of pre-flight calibration
- ▶ The operation will be as simple as our LiDAR operation: «Just press the Yellow button»



# Technical specifications.

## ▶ Mapper+ LiDAR system

Laser scanner	Livox AVIA	Max. data generated <sup>(3)</sup>	720 000 points/sec
GNSS inertial solution	Applanix APX-15 UAV	Echoes per shot	Up to 3
Precision <sup>(1)</sup>	3.5 cm	Shots per second	Up to 240 000
Accuracy <sup>(2)</sup>	4 cm	Scanning frequency	Up to 10 Hz
Typ. flight speed	10 m/s	RGB camera	Optional
Typ. flying height	80 m	Weight	1.1 kg (2.4 lbs) batt. excl.
Max. rec. flying height	100 m	Size	L 150 x W 104 x H 132 mm
Point density	170 pts/sqm @ 100m AGL 10 m/s	Autonomy	1 hour typ.
Laser range	Up to 230 m	Power consumption	35 W
Laser wavelength	905 nm	Operating temperature	-10 to +40 °C
Scanner field-of-view	70.4° x 4.5°		

(1) Precision, also called reproducibility or repeatability, accounts for the variation in successive measurements taken on the same target. Here precision value is obtained by averaging the precision from 3 flight levels @60, 90 and 120mAGL. At each flight level, the precision is considered as the mean value of absolute elevation differences between 2 flight lines recorded in opposite directions over a nadir-located 40m<sup>2</sup> hard surface area.

(2) Accuracy is the degree of conformity of a measured position to its actual (true) value. Here accuracy value is obtained by averaging the accuracy from 3 flight levels @ 60, 90 and 120mAGL. At each flight level, the accuracy is considered as the RMSE value of the elevation differences between targets and the point cloud extracted from 2 flight lines recorded in opposite directions. Validation targets are located within a 40m wide corridor centered along the flight line axis.

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

## ▶ Optional camera module

Sensor	APS-C Type Exmor CMOS	Depth	82 mm
Resolution	19.8 Mpx	Weight	0.3 kg (0.6 lbs) with camera lens
Lens	Sony E 16mm F2.8	Power	Powered by Mapper+
Width	78 mm	Power consumption	2.2 W
Height	73 mm		

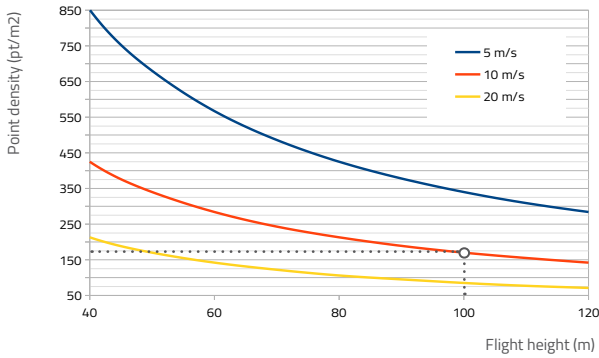
# Add-ons.

## ⊕ Optional:

- ▶ YellowScan LiveStation: the real-time in-flight LiDAR monitoring kit (*includes software & 2 radio-modems*)
- ▶ CloudStation Pro: refine and improve your data quality, with more export options
- ▶ Warranty and technical support extensions
- ▶ Stand-alone mounting bracket for DJI M600/300
- ▶ Stand-alone mounting bracket for DJI M210
- ▶ DJI skyport or Gremsy quick release adapters
- ▶ Single- or Dual-camera modules (RGB)

# Typical mission parameters.

## Mapper+ LiDAR system



FLIGHT SPEED	ALTITUDE	POINT DENSITY
<b>5m/s</b>	<b>100m</b>	<b>340pts/sqm</b>

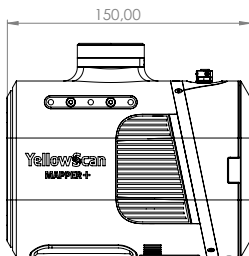
FLIGHT SPEED	ALTITUDE	POINT DENSITY
<b>10m/s</b>	<b>100m</b>	<b>170pts/sqm</b>

FLIGHT SPEED	ALTITUDE	POINT DENSITY
<b>20m/s</b>	<b>100m</b>	<b>90pts/sqm</b>

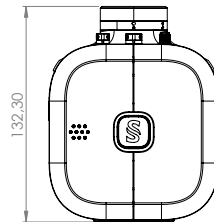
## Dimensional drawings.

*i* All dimensions are in millimeters

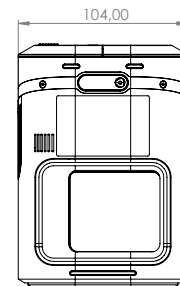
### Mapper+ side view



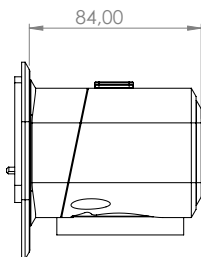
### Mapper+ front view



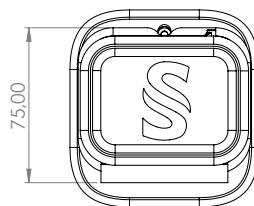
### Mapper+ bottom view



### Camera module side view



### Camera module front view



### Camera module top view

