

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

aplanix **LIVOX**



Key differentiators

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



Integrations

- ▶ Multicopter drones
- ▶ Helicopter drones
- ▶ Fixed-wings

Package includes.

✓ Hardware:

- ▶ YellowScan Mapper +
- ▶ Quick release adapter (DJI skyport or Gremsy)
- ▶ Charger and 2 batteries
- ▶ 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

✓ Software:

- ▶ Applanix POSPac UAV, to process GNSS and inertial data for highest accuracy
- ▶ YellowScan CloudStation to generate, visualize, adjust strips, classify, colorize and export your georeferenced point cloud

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 20 MP images.
- ▶ The camera module is compatible with the SONY E-Mount and comes with a lens allowing an FOV of 83°.

Built-in camera module:

- ▶ 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

Scanner	Livox AVIA	GNSS-Inertial solution	Applanix APX-15 UAV
Wavelength	905 nm	Size	L 15 x W 10.4 x H 12.8 cm
Precision ⁽¹⁾	2.5 cm	Autonomy	1 hour typ.
Accuracy ⁽²⁾	3.0 cm	Power consumption	35 W
Shots per second	240 k	Weight	1.1 kg battery excl. 1.3 kg battery incl.
Echoes per shot	Up to 3	Operating temperature	-20 to +40 °C
Scanner field of view	70.4°		

(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 40m² 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.

► Camera Module

Sensor	APS-C Type Exmor CMOS	Depth	82 mm
Resolution	19.8 Mpx	Weight	305 gr (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 software:

- YellowScan LiveStation
- Colorization module: export colorized point clouds from LiDAR + camera acquisition
- Strip Adjustment module: a point cloud enhancing toolbox for the CloudStation software
- Terrain module: export classified point clouds from the CloudStation software

⊕ Optional hardware:

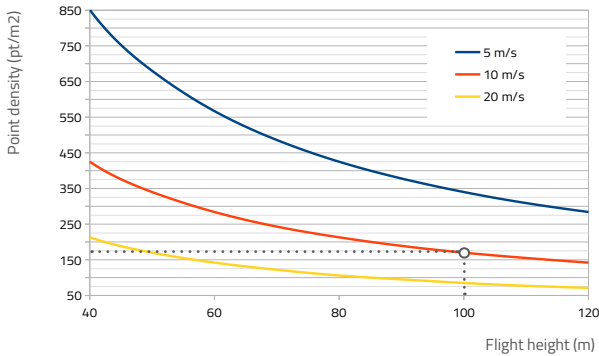
- Stand-alone mounting bracket for DJI M600/300
- Stand-alone mounting bracket for DJI M210
- DJI skyport or Gremsy quick release adapters

⊕ Optional services:

- Warranty and technical support extensions

Typical mission parameters.

Mapper+ LiDAR system



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

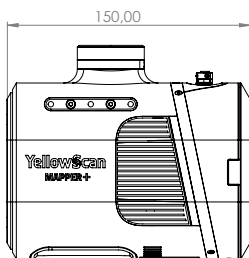
FLIGHT SPEED	ALTITUDE	POINT DENSITY
10m/s	100m	170pts/sqm

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

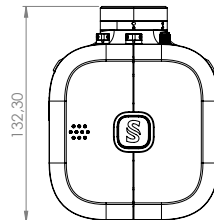
Dimensional drawings.

i All dimensions are in millimeters

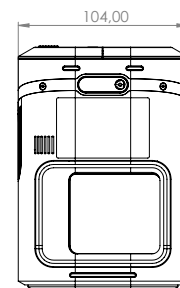
Mapper+ side view



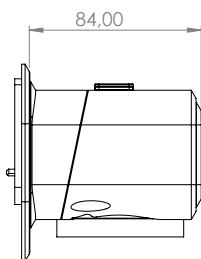
Mapper+ front view



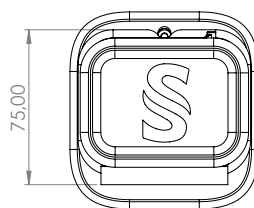
Mapper+ bottom view



Camera module side view



Camera module front view



Camera module top view

