LUMOS

Nextcore

Nextcore Lumos XM120

Say Hello to the Future

The Lumos 120XM is a new generation of UAV LiDAR solution. At 1.5kg the Lumos XM120 is the lightest and most powerful system in the range. The Lumos 120XM has a precision of 30mm and an accuracy of 40mm. It supports triple returns resulting in data collection with high accuracy and greater detail for high-quality survey models. Lumos XM can be flown at greater altitudes and for a longer duration owing to its lightweight design and powerful return accuracy.

Key differentiators:

- Great flight height
- Supports triple returns
- Lightweight
- Increased flight time
- High point density

Copyright © 2021 Nextcore. All rights reserved. Lumos, Nextcore and the Nextcore logo are trademarks of Nextcore. Visit nextcore.co

LUMOS
Nextcore

M300 Package includes:

Hardware

- Antenna kit for M300
- M300 dampener extensions
- 64GB USB
- Lumos Cable Set
- Small tool kit for payload UAV integration
- Pelican travel case

Software

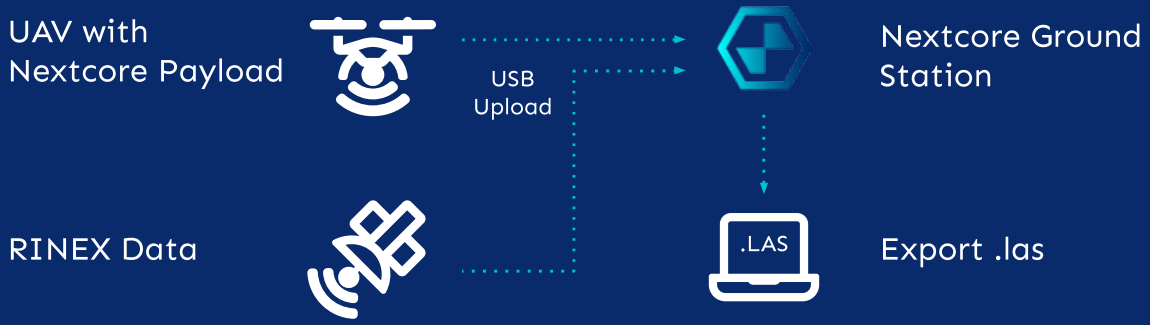
Nextcore Fusion

- Desktop and cloud-based
- Fast processing
- Select (flight lines, distance from scanner, point cloud density, flight line overlap)

Service

- 2-year warranty
- 1/2 day in-person or online training
- 24-hour online support ticketing system

Workflow



Copyright © 2021 Nextcore. All rights reserved. Lumos, Nextcore and the Nextcore logo are trademarks of Nextcore. Visit nextcore.co

Flight height

The system is able to be flown at higher altitudes, reducing scanning time and increasing the safety margin between the drone and obstacles on the ground like trees and powerlines.

Triple return

With its class beating flight height and triple returns, the Lumos XM is the superior system for operating in steep, rugged terrain and through thick vegetation.

Lightweight

The Lumos XM being lighter in weight allows increased flight time, thus facilitating more efficient performance.

UAVs

Designed for the DJI M300 but can be fitted to many other units capable of the same lift capacity like:

- Acecore Technologies Noa
- Acecore Technologies Zoe
- Inspired Flight 1200
- FreeFly Alta8
- Skyfront Perimeter8
- Doosan DS30
- Harris Aerial

Copyright © 2021 Nextcore. All rights reserved. Lumos, Nextcore and the Nextcore logo are trademarks of Nextcore. Visit nextcore.co

A New Generation of UAV LiDAR

The Nextcore Lumos series is manufactured in Australia and our systems are the only UAV LiDAR units to come with a 2-year warranty. Lumos products are built for purpose and tested by our survey team who ensure that our systems are rugged and capable in all scenarios. Price, performance and ease of use distinguish the Lumos series from anything else on the market.

Copyright © 2021 Nextcore. All rights reserved. Lumos, Nextcore and the Nextcore logo are trademarks of Nextcore. Visit nextcore.co

Technical Specifications

Quick Specifications

Combined System Accuracy (RMSE)	40mm
Combined System Precision (RMSE)	30mm
System Range	300m (≈985ft)
Flight Height (AGL)	120m (≈395ft)

LiDAR Sensor

Wavelength	905nm
Laser Class	Class 1 eye safe
Channels	32
Total Range	300m
Range Capabilty (Low Relfectivity)	80m @10% Reflectivity
Range Accuracy	1cm
Range Precision	±0.5cm
FOV (Vertical)	40.3°
Frame Rate	20Hz
Returns	Triple return up to 1,920,000 points/sec

Suggested Operating Examples

Flight Speed	5m/s
Flight Height	120m
Maximum Swath Width	180m

Navigation System

Horizontal Position accuracy (PPK)	0.01m
Vertical Position accuracy (PPK)	0.015m
Velocity Accuracy (PP)	0.05m/s
Roll & Pitch Accuracy (PP)	0.01°
Heading Accuracy (1m Antenna Sepration)	0.01°
Navigation Update Rate	200Hz
Supported Navigation Systems	GPS L1, L2 GLONASS L1, L2 GALILEO E1, E5b BeiDou B1, B2
Supported SBAS System	WAAS, EGNOS, MSAS, GAGAN, QZSS
GNSS Update Rate	8Hz
Hot Start Fix	3s
Hot Start Battery Capacity	48hrs
Cold Start Fix	30s

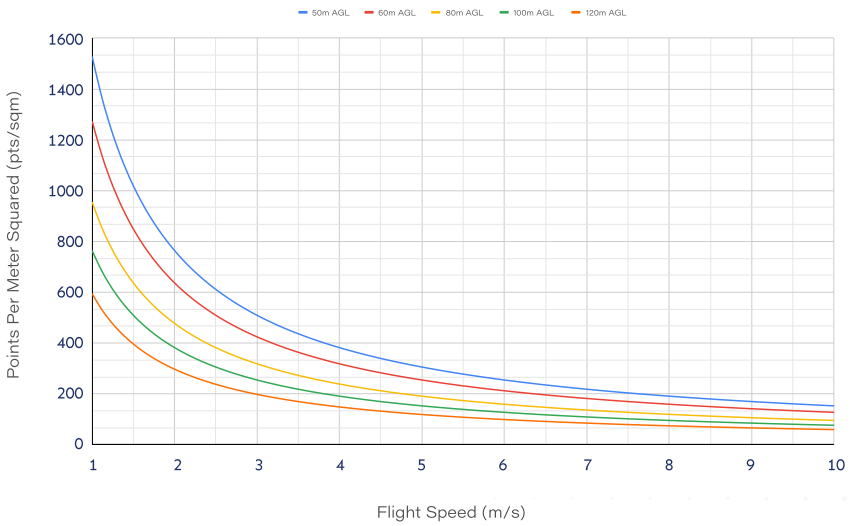
Platform

Weight	1.5kg
Dimensions	163mm x 160mm x 155mm
Operating Temperature	-20°c to +55°c
Operating Voltage	12-34V
Power Consumption (Typical)	10W

Copyright © 2021 Nextcore. All rights reserved. Lumos, Nextcore and the Nextcore logo are trademarks of Nextcore. Visit nextcore.co

LiDAR System

Lumos Series - Expected Point Density



*Based on 80% return rate of the LiDAR. Actual density will vary based on reflectance and topography.

At 5m/s flight speed,

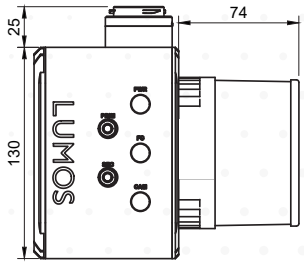
Altitude	Point Density
50m AGL	~306 pts/sqm
60m AGL	~255 pts/sqm
80m AGL	~191 pts/sqm
100m AGL	~153 pts/sqm
120m AGL	~119 pts/sqm

For 30min flight at 5m/s, 500m length Flightlines	@recommended setting
Area Covered (20% Side Overlap)	67ha
Area Covered (50% Side Overlap)	48ha

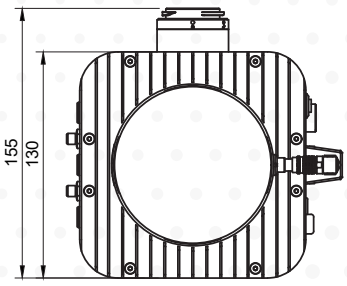
Dimensional Drawings

*measurements are in mm

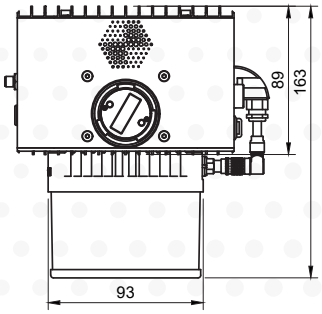
Side view



Front view



Bottom view



Copyright © 2021 Nextcore. All rights reserved. Lumos, Nextcore and the Nextcore logo are trademarks of Nextcore. Visit nextcore.co