

UAV LiDAR Systems Guide

COPTRZ and LiDAR USA



The use of airborne LiDAR is set to increase rapidly in the coming months as surveying businesses strive to increase time efficiency and decrease costs. This partnership between COPTRZ and LiDAR USA is expected to make cost-effective LiDAR solutions accessible for more surveying and mapping businesses.

The partnership highlights COPTRZ continued commitment to developing the use of drone technology in the surveying and construction industries. The Leeds-based business has already enabled drone strategies for some of the UK's largest businesses including Veolia, Costain and Jacobs Engineering.

With exclusive access to best-in-world LiDAR systems, COPTRZ will now be offering a complete integration service for those looking to use LiDAR alongside leading UAVs including the DJI Matrice 600 and the ever-popular DJI Matrice 200 Series.

So, what's available?



Revolution Series



The Revolution Series provide a great entry point in terms of cost and accuracy. When 2-4cm accuracy is within specified tolerances, these lidar units are a survey must. These sensors are ideal for a whole range of survey related tasks and are compatible with the ever popular DJI M200 series drone.

The Revolution weight ranges from 1kg to 1.6kg, and has been rigorously tested for balance and performance with real world environments.

It is suitable for the following applications:

- Topographic Surveying
- Archaeology
- Encroachment Survey
- Volume calculation of stockpiles
- Coastline Management

The Revolution series includes a choice of Lidar sensors from the Velodyne Puck, to the Cepton Sora 200 and Quanergy.

	M200 Series	M8
IMU/Sensor	LiDAR USA INS and Velodyne Puck VPL-16 Laser	LiDAR USA INS and Quanergy M8 Laser
Weight	1.5kg	1.6kg
Deployment type	UAV	UAV
Resolution cm	3	2
Range Accuracy	3 to 4 cm	2.5 cm
Range	100m	150m
100K pts/sec	3	4.4
Lines/sec	20(320)	20(160)
Number of lasers	16	8
Horizontal FOV	30	20
Vertical FOV	360 degrees	360 degrees
Number of returns	2	3
Handover Day	Included	Included



Revolution Series M200

A Series



The Snoopy A series offers two LiDAR drone sensors:

- Puck & Puck LITE
- HDL-32E

Snoopy A-Series is a smaller, evolved version of LidarUSA's original Snoopy system. This is a multi-vehicle configurable solution with increased accuracy. The A-Series is light-weight and easy to use. With just a click of a button on your smartphone you can scan over the edge of a boat, the front of a motorcycle, the belly of a drone, the back of a car, the side of a train, the possibilities are endless.

However, if you want something a little more powerful, then the HDL-32E offers:

- A greater degree of accuracy (+/- 2cm)
- 40-degree vertical FOV (25 degrees more than the Puck & Puck LITE)
- Twice as many lasers (32 as opposed to 16)
- It shoots in 700,000 points per second (400,000 more than the Puck & Puck LITE)

It is suitable for the following applications:

- Topographic Surveying
- Building Information Modeling (BIM)
- Precision Forestry
- Town Planning



A Series S16

	S16	S32
IMU/Sensor	LiDAR USA INS and Velodyne Puck VPL-16 Laser	LiDAR USA INS and Velodyne HDL-32 Laser
Weight	1.8kg	2.4kg
Deployment type	UAV/CAR/BOAT	UAV/CAR/BOAT
Resolution cm	3	2
Range Accuracy	3 to 4 cm	1.5 to 2 cm
Range	100m	100m
100K pts/sec	3	7
Lines/sec	20(320)	20(640)
Number of lasers	16	32
Horizontal FOV	30	41
Vertical FOV	360 degrees	360 degrees
Number of returns	2	2
Handover Day	Included	Included

V Series



As a part of the Snoopy V series, you can choose from:

- MINI VUX-1UAV
- VUX-IUAV
- VUX-IUAV-LONG RANGE

Riegl has built a reputation on being a leader in quality and innovation within the survey industry and their airborne Lidar systems are no different. The base model of the V series is the MINI VUX-1 UAV, and it is a powerful 3D mapping solution for businesses across multiple disciplines. It remains operational all the way up to 45 metres in the air, has a field of view of 360 degrees and weighs only 3.1kgs. For increased absolute accuracy and range then the VUX is the only option. With the long range version boasting a range of 550m the VUX collects data which is incomparable to its competitors.



V Series VUX

It is suitable for the following applications:

- Topographic Surveying
- Floor Monitoring
- Coastline Management
- Law Enforcement Forensics

	MiniV	Heli-VUX	Heli-VUX LR
IMU/Sensor	LiDAR USA INS and Riegl Mini VUX-1UAV Laser	LiDAR USA INS and Riegl VUX-1UAV Laser	LiDAR USA INS and Riegl VUX-1UAV Laser
Weight	3.1kg	4.8kg	4.8kg
Deployment type	UAV/CAR/BOAT	UAV/CAR/BOAT	UAV/CAR/BOAT
Resolution cm	1.5	1	1
Range Accuracy	1.5 cm	1 cm	1 cm
Range	150m	350m	550m
100K pts/sec	1	5	5
Lines/sec	100	200	200
Number of lasers	1	1	1
Horizontal FOV	30	30	18
Vertical FOV	360 degrees	360 degrees	330 to 360 degrees
Number of returns	3	3	3
Handover Day	Included	Included	Included

Summary

When LiDAR is brought together with one of COPTRZ range of drones mentioned above, you have an all-in-one solution that can do everything you could possibly need. No longer are drones limited to large corporations with plenty of money to spend on new, experimental 3D mapping technology. These drones have all been proven to work for inexperienced drone operators who are on a budget.

Applications



Topographic Survey



Utility Line Capture



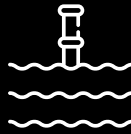
Railroad Track Survey



Volumes



Curb and Gutter
Road Data



Water Shed
Corridor Scanning



Forensics and Road
accident investigation



Contact us or call our friendly team on
0333 222 8247 to discuss your LiDAR needs.



1.10 Platform, New Station Street, Leeds, UK LS1 4JB
Telephone: 0333 222 8247 Email: info@coptrz.com

www.coptrz.com



Registered in England and Wales 10048724