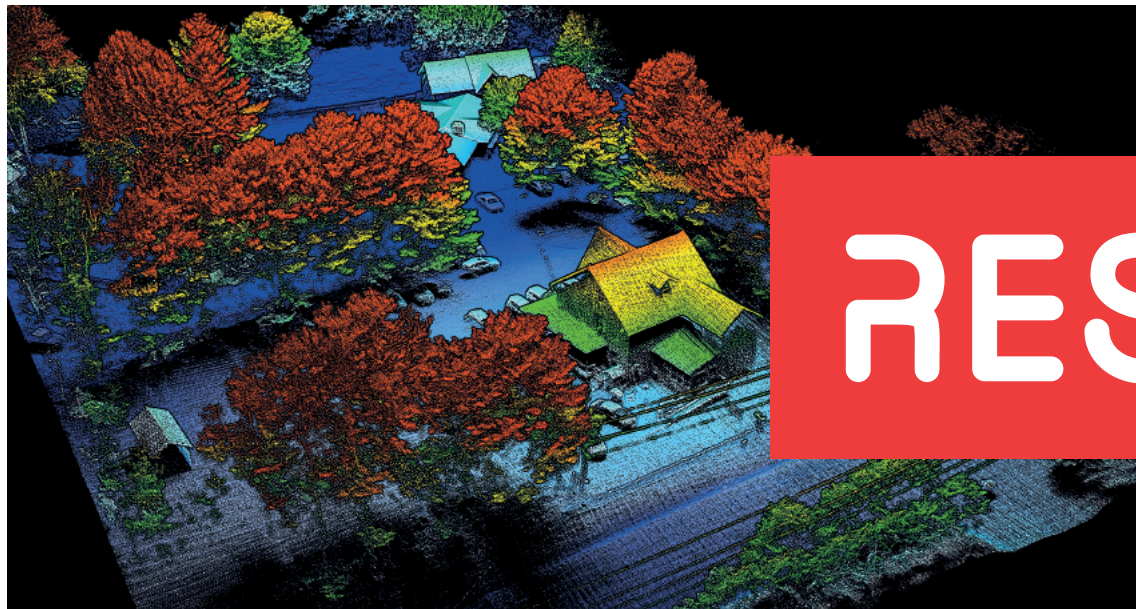


PRODUCT
BROCHURE



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RESEPI™ OUSTER OS1-64

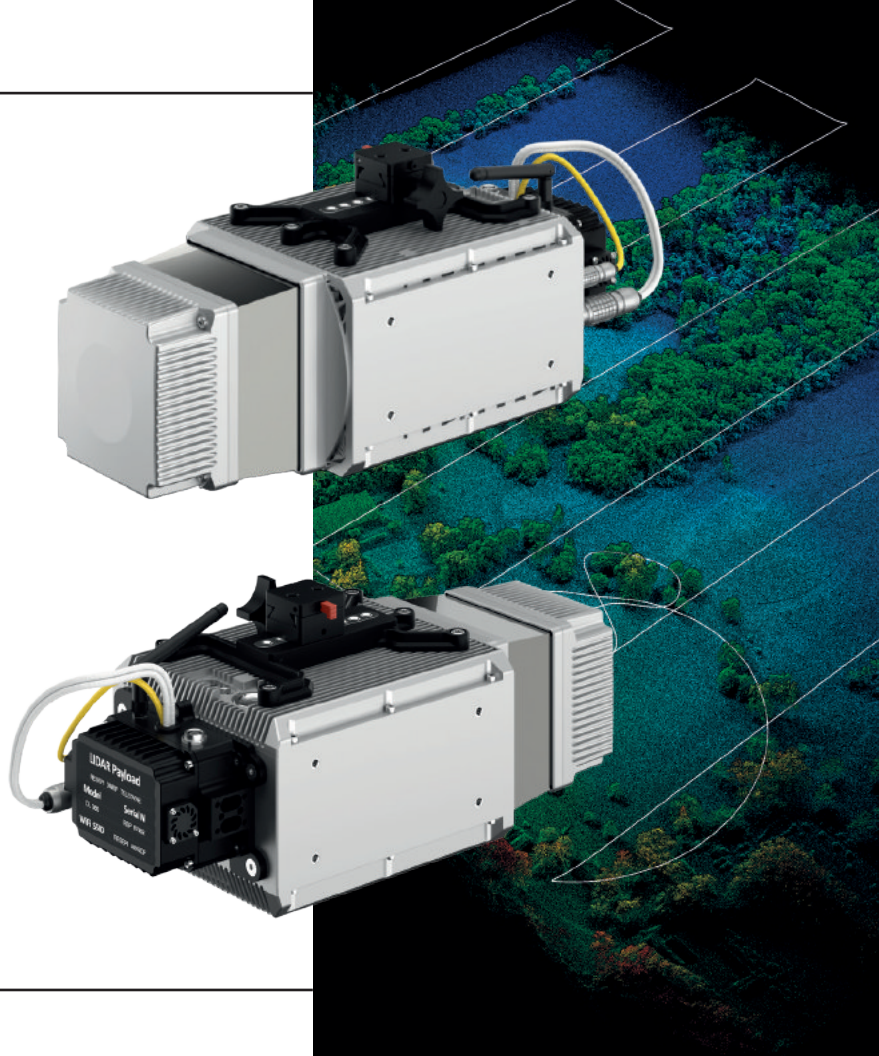
System Vertical Accuracy	3 - 5 cm
Precision	4 - 6 cm
Precision (1 σ Noise Removal)	2 - 4 cm
Recommended AGL	Up to 100 m
Weight	1.4 kg (with camera), 1.0 kg (without camera)
Dimensions	20.6 x 16.5 x 14.2 (cm)
Max Flight Time (DJI M350)	33 minutes
External Storage	256 GB USB Included
System Computer	Quad Core, 1GB RAM, 8GB eMMC
Operational Voltage Range	9-45V
Power Consumption	23W



LiDAR Scanning & Mapping Solution

RESEPI™ TELEDYNE OPTECH CL-360HD

System Vertical Accuracy	1 - 2 cm
Precision	1 - 2 cm
Precision (1 σ Noise Removal)	1 - 2 cm
Recommended AGL	Up to 200 m
Weight	4.3 kg (without camera)
Dimensions	36.9 x 16 x 15.5 (cm)
Max Flight Time (DJI M600)	23 minutes (TB48S batteries)
External Storage	256GB USB Included
System Computer	Quad Core, 1GB RAM, 8GB eMMC
Operational Voltage Range	9-36V
Power Consumption	42W (@ 100 Hz); 47W (@ 250 Hz)



LiDAR Scanning & Mapping Solution

RESEPI™ Hesai XT-32M2X

System Vertical Accuracy	2 - 3 cm
Precision	2 - 4 cm
Precision (1 σ Noise Removal)	1.5 - 2.5 cm
Recommended AGL	Up to 150m
Weight	1.4 kg (with camera), 1.0 kg (without camera)
Dimensions	20.8 x 16.5 x 14.2 (cm)
Max Flight Time (DJI M350)	33 minutes
External Storage	256 GB USB Included
System Computer	Quad Core, 1GB RAM, 8GB eMMC
Operational Voltage Range	9-45V
Power Consumption	17W



LiDAR Scanning & Mapping Solution

RESEPI™ Hesai XT-32

System Vertical Accuracy	2 - 3 cm
Precision	2 - 4 cm
Precision (1 σ Noise Removal)	1.5 - 2.5 cm
Recommended AGL	Up to 100 m
Weight	1.7 kg (with camera), 1.3 kg (without camera)
Dimensions	20.8 x 17 x 14.2 (cm)
Max Flight Time (DJI M350)	33 minutes
External Storage	256 GB USB Included
System Computer	Quad Core, 1GB RAM, 8GB eMMC
Operational Voltage Range	9-45V
Power Consumption	17W



LiDAR Scanning & Mapping Solution

RESEPI™ VELODYNE VLP-32C

System Vertical Accuracy	3 - 5 cm
Precision	4 - 6 cm
Precision (1 σ Noise Removal)	2 - 4 cm
Recommended AGL	Up to 100 m
Weight	1.8 kg (with camera), 1.4 kg (without camera)
Dimensions	21.9 x 14.2 x 14.2 (cm)
Max Flight Time (DJI M350)	33 minutes
External Storage	256 GB USB Included
System Computer	Quad Core, 1GB RAM, 8GB eMMC
Operational Voltage Range	9-45V
Power Consumption	16W



LiDAR Scanning & Mapping Solution

RESEPI™ VELODYNE VLP-16

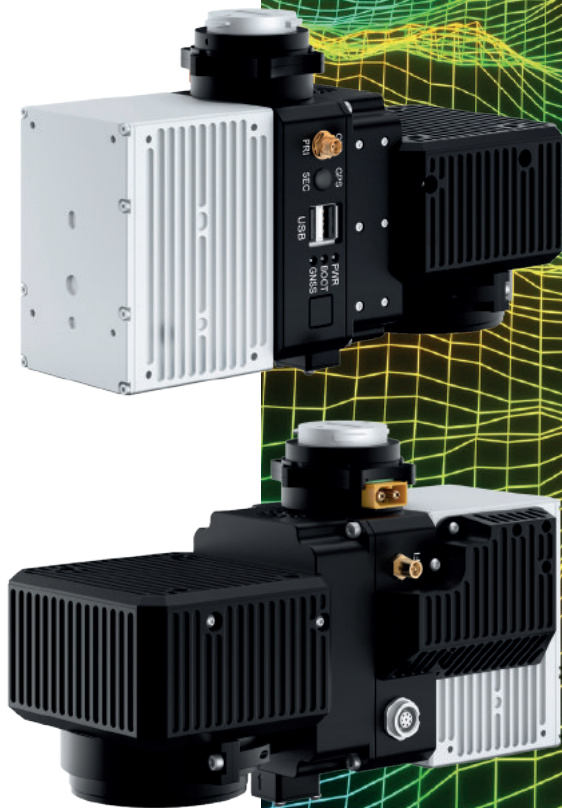
System Vertical Accuracy	3 - 5 cm
Precision	4 - 6 cm
Precision (1 σ Noise Removal)	2 - 4 cm
Recommended AGL	Up to 65 m
Weight	1.7 kg (with camera), 1.3 kg (without camera)
Dimensions	20.5 x 14.2 x 14.1 (cm)
Max Flight Time (DJI M350)	33 minutes
External Storage	256 GB USB Included
System Computer	Quad Core, 1GB RAM, 8GB eMMC
Operational Voltage Range	9-45V
Power Consumption	15W



LiDAR Scanning & Mapping Solution-

RESEPI™ LIVOX AVIA

System Vertical Accuracy	3 - 5 cm
Precision	4 - 5 cm
Precision (1 σ Noise Removal)	2 - 3 cm
Recommended AGL	Up to 85 m
Weight	1.2 kg (with camera), 0.9 kg (without camera)
Dimensions	20 x 13 x 9.2 (cm)
Max Flight Time (DJI M350)	33 minutes
External Storage	256 GB USB Included
System Computer	Quad Core, 1GB RAM, 8GB eMMC
Operational Voltage Range	9-45V
Power Consumption	16W



LiDAR Scanning & Mapping Solution

RESEPI™ QUANERGY M8-PLUS

System Vertical Accuracy	5 - 10 cm
Recommended AGL	Up to 100 m
Weight	1.8 kg (with camera), 1.4 kg (without camera)
Dimensions	21.9 x 15.2 x 14.2 (cm)
Max Flight Time (DJI M350)	33 minutes
External Storage	256 GB USB Included
System Computer	Quad Core, 1GB RAM, 8GB eMMC
Operational Voltage Range	9-45V
Power Consumption	23W



LiDAR Scanning & Mapping Solution

RECOMMENDED DRONES



WISPR Ranger
Pro 1100



Sony Airpeak S1



Freefly Astro



Freefly Alta X

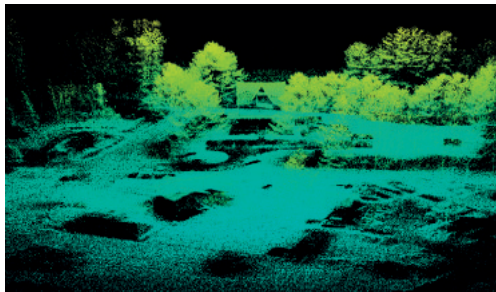


DJI Matrice 350



DJI Matrice 300

USE CASES FOR THE RESEPI



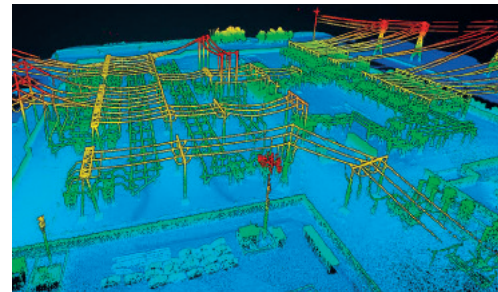
REMOTE SENSING WITH LIDAR

Sometimes called a 3D laser scanner, LiDAR is a surveying method that measures the distance to a target by illuminating the target with pulsed laser light and measuring the reflected pulses with a sensor. It has terrestrial, airborne, and mobile applications. Some models of 3D automotive LiDAR (used in cost effective aerial mapping) can generate up to 1,920,000 points per second. There are plenty of exceptional producers on the market, for example, Hesai®, Quanergy® and Velodyne®.



SCANNING AND MAPPING

Perhaps area mapping is still the most significant domain for remote sensing. Making sense of the physical world by analyzing maps and 3D models allows businesses to make faster and more informed decisions that increase efficiency and profit and, more importantly, improve safety. A few of the most often used bases can be on our land vehicles or Unmanned Aerial Vehicles (UAV).



UTILITY INSPECTION

Drones equipped with LiDAR and Photogrammetry technology are a much cheaper and safer option when compared to other aerial scanning methods or manual inspection. With innovative LiDAR and Photogrammetry algorithms, users can reconstruct utilities and identify potential hazards and damages.



SIMULTANEOUS LOCALIZATION AND MAPPING (SLAM) ALGORITHM DEVELOPMENT

RESEPI can generate a point cloud in real time. This feature, aiding imagery from other optical sources such as RGB and thermal cameras, can lay the foundation for SLAM algorithm development.



CONSTRUCTION SITE MONITORING

Drones equipped with RGB cameras and LiDAR technology enable construction companies to monitor project progress regularly. In addition, LiDAR point cloud color schemes are a helpful tool for the visualization of elevation, which makes 3D analysis of the ground and structures much more accessible.



PRECISION AGRICULTURE WITH LIDAR

LiDAR technology is instrumental in developing 3D farmland models, aiding crop planning, and producing accurate maps of natural resources. In addition, it can be used in crop yield forecasting, field management, land segmentation, and determination of soil type.

RESEPI

RESEPI™ (Remote Sensing Payload Instrument) is a sensor-fusion platform designed for accuracy-focused remote sensing applications. RESEPI utilizes a high-performance Inertial Labs INS (GPS-Aided Inertial Navigation System) with a tactical-grade IMU and a high-accuracy single or dual-antenna GNSS receiver, integrated with a Linux-based processing core and data-logging software. The platform also provides a WiFi interface, optional imaging module, and external cellular modem for RTCM corrections. RESEPI can be operated by a single hardware button or from a wirelessly connected device via a simple web interface.

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