

# LiAIR X3-H

## Enhanced Lightweight UAV LiDAR System



LiAir X3-H is the newest compact, high-performance unit in the LiAir series by GreenValley International. It adopts a new integrated design style and integrates lightweight LiDAR, self-developed inertial navigation, a high-resolution mapping camera and on-board computer systems providing new levels of efficiency.

### Advantages

#### Lightweight & Simple

Integrated simple yet rugged design, allowing for protection against the elements with an IP54 rating. The operation interface is straightforward, allowing one touch operation for maximum efficiency.

#### New Camera, providing ultra-clear picture quality

Built-in new high-resolution custom mapping camera, the image resolution is upgraded from 24 Megapixels to 26 Megapixels, allowing for high-quality true-color point clouds as well as orthophotos for Photogrammetry.

#### LiPlan Flight Assistance Software, making field work easy

LiPlan supports real-time point cloud display, parameter adjustment, and status monitoring. It can be directly installed on the M300 RTK remote controller and used in conjunction with the X3-H to help operators control the site conditions in real time.

### Handheld Accessories

Lightweight and quick-release design, one-button operation for efficient work. 3 hours of extra-long battery life. GNSS module with SLAM technology for signal-blocking resistance, enabling operation in indoor and outdoor spaces. Compatible with multiple fields such as forestry, mining surveying, power monitoring, and building facade surveying.



#### Lightweight and easy to disassemble

The overall weight of the handheld part is 0.68kg, and the ergonomic design allows for easy grip. The single battery has a battery life of 3 hours, and with one-button operation and installation, it can be used immediately after installation.

#### High-precision fusion

From aerial (with GNSS signal) to indoor (without GNSS signal) operation in all spaces, with a flying platform and handheld kit, directly obtain ground point cloud data with absolute coordinates and airborne point cloud data, meeting the needs of multiple scenarios. The point cloud fusion accuracy can reach centimeter level.

#### High-efficiency operation

3-5cm super high accuracy, point density better than 10,000 points/m<sup>2</sup>, effective measurement range of 190m (10% reflectivity), and an operation efficiency of up to 100,000m<sup>2</sup> per hour.

#### Multi-scene operation

With SLAM technology and GNSS module for accurate positioning, it can be used in areas without GNSS signal to generate accurate 3D point cloud models and rich features. It is suitable for multiple applications such as forestry, mining surveying, power monitoring, building scanning, and more.

# Specifications

## LiAir X3-H

### System Specifications

Detection Range	190m @ 10% reflectance 450m @ 80% reflectance	System Accuracy (Vertical)	5cm @ 70m
Dimensions	136×106×129mm	Typical Flight Speed	5-10 m/s
Weight	1.25 kg	Voltage	12~24V, 0.9A @ 24VDC
Power Consumption	22W	Internal Storage	256GB TF Card
Operating Temperature	-20~50°C	Storage Temperature	-30~60°C

### LiDAR Sensor Technical Parameters

Wavelength	905nm	Laser Class	Class1
Range Accuracy	2cm (1σ@20m)	FOV	70.4° (Horizontal) ×4.5° (Vertical)
Scan Rate	720,000 points/s (Triple return)	Returns	Up to 3 returns
Scan Method	Repetitive Scan		

### Inertial Navigation System

GNSS	GPS, GLONASS, BeiDou	Azimuth Accuracy	0.038°
Attitude Accuracy	0.008°	IMU Data Frequency	200HZ

### Camera

Image Sensor	APS-C	Pixels	26 Megapixels
Focal Length	16mm/24mm (Equiv. Focal Length)	Image Size	6252×4168

### Software

Post-Processing	LiDAR360	Pre-Processing	LiGeoreference
Flight Planning and Control Software	LiPlan		

## Handheld Accessories

### System Parameters

Handheld Size	L181.8×W108×H88 (mm)	Handheld Weight	0.68kg (Including Base)	Voltage	15.2V
Battery Box Size	L146×W57×H148 (mm)	Battery Capacity	5870mAh	Antenna	AT-106
Protection Level	IP54	Battery Box Weight	0.81kg	Working Time of One Battery Block	3h
Single-Flight Continuous Operation Time	Maximum 55min	Applicable Environment	Applicable to multiple scenarios both indoors and outdoors		

### Mapping Method

Mapping Principle	SLAM、PPK-SLAM	Real-Time Calculation	Not Supported
-------------------	---------------	-----------------------	---------------

### Data Results

Absolute Accuracy	≤ 5cm	Point Cloud Format	Las, LiData
-------------------	-------	--------------------	-------------