

# LiAIR X3C-H

## Compact UAV LiDAR System



The LiAir X3C-H is a new compact high-performance UAV LiDAR system. It adopts a new integrated design style and a built-in high-resolution mapping camera, providing higher performance and convenient operation for power-line inspection, topographic surveying, agricultural and forest monitoring, and more.

### Advantages

#### I Integrated Design

The operation interface is compact and convenient, with an unpluggable TF Card and engineered data storage model that allows for one-touch operation and copying of laser and camera data.

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

The built-in high-resolution mapping camera has been upgraded to 26 megapixels, providing ultraclear picture quality and enabling the creation of high-quality true-color point clouds and orthophotos for Photogrammetry. Additionally, the external camera interface allows for simultaneous mounting of infrared cameras and other camera types, making the LiAir X3C-H a versatile tool for a wide range of applications.

### 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.



#### I Lightweight and easy to disassemble

The overall weight of the handheld part is 0.68 kg, 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.

#### I High-efficiency operation

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

#### I 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.

#### I 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

## System Specifications

|                       |                                 |                      |                |
|-----------------------|---------------------------------|----------------------|----------------|
| Detection Range       | 80 m (reflectivity $\geq$ 10%)  | Accuracy (Vertical)  | 5 cm @ 70m     |
|                       | 200 m (reflectivity $\geq$ 54%) | Typical Flight Speed | 5-10 m/s       |
|                       | 300 m (reflectivity $\geq$ 90%) |                      |                |
| Weight                | 1.12 kg                         | Memory               | 256 GB TF Card |
| Voltage               | 12~24 V                         | Power Consumption    | 24 W           |
| Operating Temperature | -20~50 °C                       | Storage Temperature  | -30~60 °C      |
| Communication         | WIFI                            |                      |                |

## LiDAR Unit

|            |                                   |                    |                                    |
|------------|-----------------------------------|--------------------|------------------------------------|
| Wavelength | 905 nm                            | Number of Channels | 32                                 |
| Point Rate | First Return: 640,000 points/s    | FOV                | 360° (Horizontal)×40.3° (Vertical) |
|            | Dual Return: 1,280,000 points/s   | Number of Returns  | 3                                  |
|            | Triple Return: 1,920,000 points/s |                    |                                    |

## Inertial Navigation System

|                   |                           |                    |        |
|-------------------|---------------------------|--------------------|--------|
| GNSS              | GPS, GLONASS, Galileo, BD | Azimuth Accuracy   | 0.038° |
| Attitude Accuracy | 0.008°                    | IMU Data Frequency | 200 Hz |

## Camera

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

## Software

|                |                |                 |                                   |
|----------------|----------------|-----------------|-----------------------------------|
| Pre-processing | LiGeoreference | Post-processing | LiDAR360 / LiPowerline (Optional) |
|----------------|----------------|-----------------|-----------------------------------|

## Compatible Platforms

DJI, Freefly, etc.

## Handheld Accessories

### System Parameters

|   |                      |                    |                          |   |        |
|---|----------------------|--------------------|--------------------------|---|--------|
| Handheld Size                                 | L181.8×W108×H88 (mm) | Handheld Weight    | 0.68 kg (Including base) | Voltage                                 | 15.2 V |
| Battery Box Size                              | L146×W57×H148 (mm)   | Battery Capacity   | 5870 mAh                 | Antenna                                 | AT-106 |
| Single-Flight<br>Continuous<br>Operation Time | Maximum 55 mins      | Battery Box Weight | 0.81 kg                  | Working Time<br>of One Battery<br>Block | 3 h    |

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 | $\leq$ 5 cm | Point Cloud Format | LAS, LiData |
|-------------------|-------------|--------------------|-------------|