

ZENMUSE L1



GENERAL

Product Name

Zenmuse L1

Dimensions

152×110×169 mm

Weight

930±10 g

Power

Typical: 30 W; Max: 60 W

IP Rating

IP54

Supported Aircraft

Matrice 300 RTK

Operating Temperature Range

-20° to 50° C (-4° to 122° F)

0° to 50° C (32° to 122° F) (when using RGB mapping camera)

Storage Temperature Range

-20° to 60° C (-4° to 140° F)

SYSTEM PERFORMANCE

Detection Range

450 m @ 80% reflectivity, 0 klx ;

190 m @ 10% reflectivity, 100 klx

Point Rate

Single return: max. 240,000 pts/s ;

Multiple return: max. 480,000 pts/s

System Accuracy(RMS 1 σ)1

Horizontal: 10 cm @ 50 m;

Vertical: 5 cm @ 50 m

Real-time Point Cloud Coloring Modes

Reflectivity, Height, Distance, RGB

LIDAR

Ranging Accuracy (RMS 1 σ)2

3 cm @ 100 m

Maximum Returns Supported

3

Scan Modes

Non-repetitive scanning pattern, Repetitive scanning pattern

FOV

Non-repetitive scanning pattern: 70.4° (horizontal) × 77.2° (vertical) ;

Repetitive scanning pattern: 70.4° (horizontal) × 4.5° (vertical)

Laser Safety

Class 1 (IEC 60825-1:2014) (Eye Safety)

INERTIAL NAVIGATION SYSTEM

IMU Update Frequency

200 Hz

Accelerometer Range

±8 g

Angular Velocity Meter Range

±2000 dps

Yaw Accuracy (RMS 1 σ) 1

Real-time: 0.3°, Post-processing: 0.15°

Pitch / Roll Accuracy (RMS 1 σ) 1

Real-time: 0.05°, Post-processing: 0.025°

GRIDX
metering and control

ZENMUSE L1

AUXILIARY POSITIONING VISION SENSOR

Resolution

1280×960

FOV

95°

RGB MAPPING CAMERA

Sensor Size

1 inch

Effective Pixels

20 MP

Photo Size

5472×3078 (16:9); 4864×3648 (4:3); 5472×3648 (3:2)

Focal Length

8.8 mm / 24 mm (Equivalent)

Shutter Speed

Mechanical Shutter Speed: 1/2000 - 8 s

Electronic Shutter Speed: 1/8000 - 8 s

ISO

Video: 100 – 3200 (Auto), 100 – 6400 (Manual)

Photo: 100 - 3200 (Auto), 100 - 12800 (Manual)

Aperture Range

f/2.8 - f/11

Supported File System

FAT (≤32 GB); exFAT (>32 GB)

Photo Format

JPEG

Video Format

MOV, MP4

Video Resolution

H.264, 4K: 3840×2160 30p



GIMBAL

Stabilized System

3-axis (tilt, roll, pan)

Angular Vibration Range

0.01°

Mount

Detachable DJI SKYPORT

Mechanical Range

Tilt: -120° to +30°; Pan: ±320°

Operation Modes

Follow/Free/Re-center

DATA STORAGE

Raw Data Storage

Photo/IMU/Point cloud data storage/GNSS/Calibration files

Supported microSD Cards

microSD: Sequential writing speed 50 MB/s or above and UHS-I Speed Grade 3 rating or above; Max capacity: 256 GB

Recommended microSD Cards3

SanDisk Extreme 128GB UHS-I Speed Grade 3

SanDisk Extreme 64GB UHS-I Speed Grade 3

SanDisk Extreme 32GB UHS-I Speed Grade 3

SanDisk Extreme 16GB UHS-I Speed Grade 3

Lexar 1066x 128GB U3

Samsung EVO Plus 128GB

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POST-PROCESSING SOFTWARE

Supported Software

DJI Terra

Data Format

DJI Terra supports exporting standard format point cloud models:

Point cloud format: PNTS/LAS/PLY/PCD/S3MB format

NOTES

1. The accuracy was measured under the following conditions in a DJI laboratory environment: after a 5-minute warm up, using Mapping Mission with Calibration Flight enabled in DJI Pilot, and with the RTK in FIX status. The relative altitude was set to 50 m, flight speed to 10 m/s, gimbal pitch to -90° , and each straight segment of the flight route was less than 1000 m. DJI Terra was used for post-processing.
2. Measured in an environment of 25°C with a target (80% reflectivity) 100 meters away. The result may vary under different test conditions.
3. The recommended microSD cards may be updated in future. Visit the DJI official website for the latest information.

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