

Specifications

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) when using RGB mapping camera: 0° to 50° C (32° to 122° F)
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 1σ)*	Horizontal: 10 cm @ 50 m Vertical: 5 cm @ 50 m
Real-Time Point Cloud Coloring Coding	Reflectivity, Height, Distance, RGB
LIDAR	
Ranging Accuracy (RMS 1σ)*	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 1σ)*	Real-time: 0.3°, Post-processing: 0.15°
Pitch/Roll Accuracy (RMS 1σ)*	Real-time: 0.05°, Post-processing: 0.025°
Auxiliary Positioning Vision Sensor	
Resolution	1280×960
FOV	95°
RGB Mapping Camera	
Sensor Size	1 in
Effective Pixels	20 MP
Photo Size	5472×3078 (16:9), 4864×3648 (4:3), 5472×3648 (3:2)
Focal Length	8.8/24 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	$\pm 0.01^\circ$
Mount	Detachable DJI SKYPORT
Controllable Range	Tilt: -120° to $+30^\circ$, Pan: $\pm 320^\circ$
Operation Modes	Follow/Free/Re-center
Data Storage	
Raw Data Storage	Photo/IMU/Point cloud/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 Cards**	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
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

* 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.

** The recommended microSD cards may be updated in future. Visit the DJI official website for the latest information.