



ZENMUSE L1

Instant Clarity. Superior Accuracy.

The Zenmuse L1 integrates a Livox Lidar module, a high-accuracy IMU, and a camera with a 1-inch CMOS on a 3-axis stabilized gimbal.



GENERAL

Dimensions:	152 × 110 × 169 mm	Weight:	± 900 g
Environmental Protection:	IP44	Power:	30 W
Storage Temperature:	-20° to 60° C	Supported Aircraft:	Matrice 300 RTK
Operating Temperature:	-20° to 50° C		

SYSTEM PERFORMANCE

Detection Range:	450 m @ 80% reflectivity, 0 klx 190 m @ 10% reflectivity, 100 klx	Point Range:	Single return: 240,000 pts/s Multiple return: 480,000 pts/s
System Accuracy:	Horizontal: 10 cm @ 50 m Vertical: 5 cm @ 50 m	Real-time Point Cloud Colouring Modes:	True colour; colouring by reflectivity; colouring by elevation

LIDAR

Ranging Accuracy:	3 cm @ 100 m	Maximum Returns Supported:	3
Scan Modes:	Repetitive line scan mode Non-repetitive petal scan mode	FOV:	Repetitive line scan: 70.4° × 4.5° Non-repetitive scan: 70.4° × 77.2°
Laser Safety:	Class 1		

INERTIAL NAVIGATION SYSTEM

IMU Update Frequency:	200 Hz	Accelerometer Range:	± 8 g
Yaw Accuracy:	Real-time: 0.18° Post-processing: 0.08°	Pitch / Roll Accuracy:	Real-time: 0.03° Post-processing: 0.025°
Angular Velocity Meter Range:	± 2000 dps		

AUXILIARY POSITIONING VISION SENSOR

Resolution:	1280 × 960	FOV:	95°
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RGB MAPPING CAMERA

Sensor Size:	1 inch	Effective Pixels:	20 MP
Photo Size:	4864 × 3648 (4:3) 5472 × 3648 (3:2)	Aperture Range:	f/2.8 - f/11
Shutter Speed:	Mechanical: 1/2000 - 8 s Electronic: 1/8000 - 8 s	ISO:	Video: 100 - 3200 (Auto) 100 - 6400 (Manual) Photo: 100 - 3200 (Auto) 100 - 12800 (Manual)
Focal Length:	8.8 mm / 24 mm (Equivalent)	Aperture Range:	f/2.8 - f/11

GIMBAL

Stabilized System:	3-axis (tilt, roll, pan)	Angular Vibration Range:	0.01°
Mount:	Detachable DJI SKYPORT	Mechanical Range:	Tilt: -125° to +40°; Pan: ±320°
Operating Modes:	Follow / Free / Re-center		

DATA STORAGE

Raw Data Storage:	Photo / IMU / Point Cloud
Point Cloud Data Storage:	Real-time Modeling
Supported microSD Cards:	microSD: Class 10 or UHS-1 rating or above; Max capacity: 256 GB

POST-PROCESSING SOFTWARE

Supported Software:	DJI Terra	
Data Format:	Point cloud format Reconstruction model format	PNTS / LAS / PLY / PCD / S3MB B3DM / OSGB / PLY / OBJ / S3MB