

GEOMATE

Premium Surveying. Trusted Solutions



GEOMATE VA5

PROFESSIONAL AIRBORNE SURVEY LIDAR



THE MOST EFFICIENT & ACCURATE WAY TO SURVEY FROM THE SKY

VA5 is a new generation of intelligent aerial surveying system from GeoMate. It is the result of six years of innovation and three years of product development, powered by GeoMate's state-of-the-art LiDAR technology. It integrates survey-grade high-precision LiDAR, accurate positioning and orientation system, and a full-frame industrial camera. Combined with GeoMate's pioneering point cloud & image fusion modeling algorithm, it provides survey-grade, highly efficient, and cost-effective 3D data capturing and processing throughout the entire GeoMate workflow. A single mission with VA5 allows for fast and accurate acquisition of 3D data, revolutionizing traditional aerial survey techniques and bringing about a new breakthrough in the aerial survey industry.

SPECIFICATIONS

General system performance

Absolute Hz accuracy	2 cm ~ 5 cm RMS ⁽¹⁾
Absolute V accuracy	2 cm ~5 cmRMS ⁽¹⁾
Mounting	quickly install & release design, easily switch between various UAV platforms
Weight of instrument	1.55 kg
Dimensions of instrument	210mm × 112mm × 131mm
Data storage	512G*2
Coping speed	80 Mb/s

Laser scanner

Laser Product Classification	Class 1 Laser Product according to IEC 60825-1:2014		
Laser Pulse Repetition Rate PRR	100kHz	300kHz	500kHz
Max. Measuring Range			
@ρ > 20% ⁽²⁾	400m	275m	215m
@ρ > 80% ⁽²⁾	800m	480m	280m
Max. Operating Flight Altitude AGL@ρ > 20%	317m	218m	170m
Laser divergence angle	0.032°		
Minimum range	10m		
Accuracy ⁽³⁾	15 mm (1σ,@150m)		
Precision ⁽⁴⁾	5 mm (1σ,@150m)		
Field of view	75°		
Max. Effective Measurement Rate	500,000 meas./sec.		
Scan speed (selectable)	50~250 scans/sec		
Max. Number of return pulses	Up to 8		
Waveform	Full Waveform		

* Specifications are subject to change without notice.

(1) According to CHCNAV test condition :150 m AGL with 8m/s speed

(2) Typical values for average conditions.

(3) Accuracy is the degree of conformity of a measured quantity to its actual (true) value.

(4) Precision is the degree to which further measurements show the same results.

Positioning and orientation system

GNSS system	GPS:L1,L2,L5 GLONASS:L1,L2 BEIDOU:B1,B2,B3 GALILEO:E1,E5a,E5b
IMU update rate	500 Hz
Attitude accuracy after post-processing	0.006° RMS pitch/roll, 0.019° RMS heading
Position accuracy after post-processing	0.010 m RMS horizontal, 0.020 m RMS vertical,

Imaging system

Resolution	45MP
Focal length	21mm
Sensor size	36×24mm (8184 × 5460)
Pixel size	4.4um
Min photoing interval	1s
FOV	81.2°×59.5°

Environmental

Operating temperature	-20 °C to +50 °C
Storage temperature	-20 °C to +60 °C
IP rating	IP64
Humidity (operating)	80%, non-condensing

Electrical

Input voltage	DC 24V(13 ~ 27V)
Power consumption	40W
Power source	Depending on UAV battery or by Skyport(DJI M300/M350).

Equipped software

CoPre Intelligent Processing SW	Data copy, POS process, Adjust & Refine, Generate point cloud
CoProcess Efficient Feature Extraction SW	Terrain module, Road module, Volume module

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