

GEOMATE

Premium Surveying. Trusted Solutions



GEOMATE VA20

MULTI-PLATFORM HIGH-END LIDAR SOLUTIONS



NEW GENERATION OF FLEXIBLE AND EFFICIENT LIDAR SOLUTIONS

The VA20 represents the next generation of cost-effective, multi-platform mobile mapping systems. It is the result of six years of innovation and product development powered by GeoMate's state-of-the-art LiDAR technology. In airborne scenarios, the VA20 delivers superior data and improves survey efficiency thanks to its exceptional vegetation penetration capability, extended measurement range, high accuracy, and data density. The VA20's unique, flexible installation design, coupled with GeoMate's LiDAR technology, ensures the best combination of point cloud density, accuracy, and quality. The system provides accurate point cloud and immersive panoramic imagery optimized for a variety of applications, including road surfaces, highway maintenance, and asset management through vehicle-based surveying. Mobile mapping has never been more flexible with the VA20, democratizing the reality capture industry and making it accessible to all.

SPECIFICATIONS

General system performance

Absolute Hz & V accuracy	< 0.025 m RMS @ 30 m range < 0.050 m RMS @ 150 m range
Accuracy conditions	Without control points, UAV survey with 7 m/s speed, car survey without DMI with 9.7 m/s speed
Weight of instrument ⁽¹⁾	2.82 kg / 3.12 kg 10.97 kg AlphaPano vehicle platform
Dimensions of instrument	262.3 × 141.5 × 161 mm
Data storage	512 G (Optional for 1 T)
Coping speed	80 Mb/s

Positioning and orientation system

GNSS system	Multiple GPS, GLONASS, Galileo, BeiDou, SBAS and QZSS constellation, L-Band
IMU update rate	600 Hz
Attitude accuracy after post-processing	0.005° RMS pitch/roll, 0.010° RMS heading
Position accuracy after post-processing	0.010 m RMS horizontal, 0.020 m RMS vertical,

Imaging system UAV

Resolution	45 MP
Focal length	21 mm/35 mm
Sensor size	36 × 24 mm (8184 × 5460)
Pixel size	4.4 μm
Min photoing interval	1 s
FOV	81.2°/59.5° / 53.4°/37.8

Environmental

Operating temperature	-20 °C to +50 °C
Storage temperature	-20 °C to +65 °C
IP rating	IP64
Humidity (operating)	80%, non-condensing

Electrical

Input voltage	24 V (Range 15 - 27 V)
Power consumption	60 W
Power source	Depending on UAV battery. External battery in for car setup, also support direct vehicle power source

Laser scanner

Laser divergence angle	0.032°
Minimum range	1.5 m
Accuracy ⁽⁴⁾	15 mm (1σ, @ 150 m range) 5 mm (1σ, @ 30 m range)
Precision ⁽⁵⁾	5 mm (1σ, @ 150 m)
Multi-Period capability	Up to 7 zones
Field of view	360°, selectable
Scanning mechanism	rotating mirror
Max. Effective Measurement Rate	2 000 000 meas./sec (depending on the mode)
Scan speed (selectable)	10~200 scans/sec
Max. Number of return pulses	Up to 16

Laser scanner

Laser Product Classification	Class 1 Laser Product according to IEC 60825-1:2014									
Laser Pulse Repetition Rate PRR	100kHz	200kHz	300kHz	400kHz	500kHz	800kHz	1 MHz	1.5 MHz	2 MHz	
Max. range, @p >80% ⁽²⁾	1450m	1320m	1220m	1120m	1000m	790m	706m	576m	500m	
Max. range, @p >20% ⁽²⁾	750m	660m	610m	560m	500m	395m	353m	288m	250m	
Max. Operating Flight Altitude AGL, @p >20% ⁽³⁾	530m	467m	431m	396m	354m	279m	250m	204m	177m	



* Specifications are subject to change without notice.

(1) Weight calculated with & without camera. (2) Typical values for average conditions. (3) Flat terrain assumed, scan angle ±45° FOV. (4) Accuracy is the degree of conformity of a measured quantity to its actual (true) value. (5) Precision is the degree to which further measurements show the same results.

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