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ALPHA3D
MOBILE MAPPING SOLUTION

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MAPPING
& GEOSPATIAL

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HIGH PERFORMANCE
3D MOBILE MAPPING
SOLUTION

The Alpha3D provides geospatial professionals with a high-performance, vehicle-independent mobile mapping solution for capturing mass data in constantly evolving global environments. Projects are completed faster and more accurately to increase return on investment. The Alpha3D combines an advanced long-range, high-speed, precise laser scanner, a high-resolution HDR panoramic camera in combination with cutting-edge GNSS receiver and high-precision IMU. All in one compact and lightweight, yet robust instrument. All these features make Alpha3D one of the most advanced and efficient 3D mobile mapping system.

PREMIUM HIGH PERFORMANCE LASER SCANNER

Long range scanning up to 475 m.

Extremely high-speed scanning of 1.8 M points per second. High point cloud density even on high speed driving. High quality of point cloud with low range noise.

HIGH RESOLUTION 360° IMAGES

30 MP HDR panoramic camera with superb image quality.

Support fully calibrated point clouds and panorama images. You can add additional imagery sensors to get extra information whenever your application needs.

READY NOW TO ANTICIPATE FUTURE

Ready to add 2nd scanner for more density point clouds.

Provide two RS232 ports for external device connection, 2nd GNSS antenna to work on railway or water applications, and an easy-in easy-out SSD hard disk for faster data transfer.

CAPTURE DATA WITH COCAPTURE

Browser-based operation application.

Simple and intuitive, CoCapture manages the mission and automatically capture data via your own Android device browser.

VEHICLE INDEPENDENT PLATFORM

Easily mounted on different type of vehicles, trains, railway trolleys and boats.

Whatever the task is, the Alpha3D rapidly and efficiently collects high density, accurate point clouds and powerful images data, but also adds extra information from additional sensors, such as high-resolution camera, thermal camera, GPR, echo-sounder or extra profiler.

MANAGE PROJECTS WITH COPROCESS

Powerful engine support massive data processing.

Semi-automatic feature extraction information is easily exported to CAD or GIS deliverables via our SW plugins.

GET NEW REVENUE AND INCREASE ROI

Collect more data faster and boost productivity.

The combination of point clouds, high-resolution images and additional sensors, eliminates the need of returning to site for further measurements. Versatile data measurement types allow geospatial professionals to expand into new industries and applications.

ACCURATE 3D DATA CAPTURE

Laser Scanner

Up to 475 m.

HDR Camera

30 MP HDR panoramic camera.

High Connectivity

Add 2nd scanner.

Independent Platform

Mounted on different type of vehicles.

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SPECIFICATIONS

General system performance

Number of laser scanners	Single scanner head system, optional 2nd scanner head on additional platform
Horizontal accuracy	< 0.030 m RMS (typical)
Vertical accuracy	< 0.025 m RMS (typical)
Accuracy conditions	Without control points, open sky conditions
Control unit	Internal multi-core industrial PC, low power consumption
Field software	CoCapture, browser-based, no installation required
Control interface	BYOD (any tablet or laptop), WiFi or LAN cable connection
Data storage	Removable 2 TB SSD hard disk with USB3 interface
3rd party hardware synchronization	1x synchronization port for 2nd GNSS antenna 2x RS232 synchronization ports (NMEA support)
Mounting	Vehicle independent solution, suits for road, rail and water-based application

Laser scanner

Laser class	1 (in accordance with IEC 60825-1:2014)
Measuring principle	Time of flight measurement, echo signal digitization, online waveform processing
Effective measurement rate [1]	From 300 kHz up to 1800 kHz
Maximum range, target reflectivity > 80% [2]	From 235 m up to 475 m
Maximum range, target reflectivity > 10% [2]	From 85 m up to 170 m
Minimum range	1 m
Accuracy [3]	5 mm
Precision [3]	3 mm
Field of view	360° "full circle"
Scan rate	Up to 1 800 000 points/sec
Scan speed (selectable)	Up to 250 scans/sec

Physical

Dimensions of instrument	51.3 cm × 31 cm × 67.2 cm 20.08" × 12.2" × 26.37"
Weight of instrument	19.2 kg
Dimensions of battery	16.5 cm × 12.5 cm × 17.5 cm 6.3" × 4.72" × 6.7"
Weight of battery	8.1 kg (depending on cells type)
Dimensions of optional roof rack extension	72 cm × 31 cm × 12 cm 28.34" × 12.2" × 4.72"
Weight of optional roof rack extension	16.6 kg

Imaging system

Camera type	360° Spherical camera, additional adjustable external cameras as option
Number of cameras	6 sensors
CCD size	2048 x 2448, 3.45 μm pixel size
Lens	4.4 mm
Resolution	30 MP (5 MP x 6 sensors), 10 FPS JPEG compressed
Coverage	90% of full sphere
High Dynamic Range (HDR)	Cycle 4 gain and exposure presets

Positioning and orientation system

GNSS system	Multiple GPS, GLONASS, Galileo, BeiDou, SBAS and QZSS constellation, L-Band, single and dual antenna support
IMU update rate	Standard: 100 Hz (Optional: 600 Hz)
Gyro bias in-run stability	0.25 deg/hr, 1σ
Gyro bias repeatability	7 deg/hr, 1σ
Gyro ARW	0.04 deg/√hr
Gyro range	± 200 deg/sec
Accelerometer range	± 20 g
Accelerometer bias in-run stability	0.025 mg, 1σ
Accelerometer VRW	0.03 m/s/√hr
Accelerometer bias repeatability	1.7 mg, 1σ
Position accuracy NO GNSS outage	0.010 m HRMS, 0.020 m VRMS 0.005 deg RMS pitch/roll and 0.010 deg RMS heading
Wheel sensor (DMI)	Yes, optional

Environmental

Operating temperature	-20 °C to +40 °C
Storage temperature	-20 °C to +50 °C
IP rating	IP64
Humidity (operating)	80%, non-condensing
Maximum vehicle speed for data acquisition	110 km/h (68 mph)

Electrical

Battery type	External battery in protected case, also support direct vehicle power source
Input voltage	24 V DC
Power consumption	Typ. 240 W
Operating time	Up to 8 hrs

*All specifications are subject to change without notice.
(1) Rounded values, selectable by measurement program. (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.

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