



SENSOR SPECIFICATIONS:

Laser Scanner	RIEGL VUX-1HA
Inertial Navigation System (INS)	IGI Compact MEMS (ROBIN) or FOG (PRECISION upgrade)
GNSS Receiver	Septentrio Dual GNSS
Standard Camera	FLIR Grasshopper 3 12MP camera - CX-Format CMOS

MOUNTING OPTIONS AND WEIGHTS:

ROBIN Pod	7kg
Backpack Mount	4kg
Car Mount	7kg
+PANORAMIC extension	6kg + 9kg (LB5 mount + RCU)

POWER:

Input Voltage	12-15V / Typ 100W
Battery system	Stackable battery system - PAGLINK V-Mount Li-Ion 96
Control unit	Control unit to connect directly to vehicle power
Interface	All power & data interface cables

ENVIRONMENTAL SPECIFICATIONS:

Operating Temperature:	0°C to +40°C
Storage Temperature:	-40°C to +60°C
Relative Humidity:	95% non-condensing
Altitude:	10,000ft

The laser scanner RIEGL VUX-1 meets or exceeds the requirements of the following European Standard:
EN 61326-1:2006: Electrical equipment for measurement, control and laboratory use
 Protection class: IP64, dust and splash-proof

SCANNER SPECIFICATIONS - VUX-1HA:

Scanner Max Range (Slow Speed* / Refl 80%)	420m
Scanner Max Range (High Speed* / Refl 80%)	120m
Scanning Speed	10-250/sec
Field of View	360°
Max Effective Measurement Rate	1,000,000meas/sec
Scanner Precision	3mm

NAVIGATION SPECIFICATIONS - MEMS IMU:

Position	0.02m
Velocity	0.005m/s
Roll/Pitch	0.015°
True Heading	0.03°
Gyro-Bias	1°/h
Gyro-RW	0.07°/√h
Accelerometer Bias	0.1mg
Data Rate	400Hz

CAMERA SPECIFICATIONS:

Resolution	4096 x 3000 (12.3MP)
Frame Rate	3 frames per second
Field of View	96.8° (horizontal)
Pixel Size	3.45µm



AVERAGE POINT CLOUD DENSITY FOR ROBIN SYSTEM:

WALK	6000 Points per m ² , Range 20m at speeds of 5km per hour
DRIVE	2400 Points per m ² , Range 5m at speeds of 50km per hour
FLY	400 Points per m ² , Range 50m at speeds of 30km per hour

MEASUREMENT PRINCIPLES

Time-of-flight measurement
Echo signal digitisation
Online waveform and processing



SOFTWARE:

MMCAPTURE: Touchscreen interface to allow the scanner, camera and navigation system to be controlled and visualised in realtime.

OUTPUT DATA GENERATION: Sensor data is managed by MMProcess, GrafNav & TERRAoffice. Export geo-referenced data into a multitude of different, user defined coordinate systems.

APPLICATION SOFTWARE: Output data can be visualised and used for different applications using Terrasolid software. Terrasolid has been designed for the post-processing and visualisation of laser, trajectory and image data. Running within Bentley Microstation, Terrasolid's applications provide versatile and capable tools for surveyors, civil engineers, designers and planners.



SURVEY GRADE MOBILE MAPPING

ROBIN PRECISION includes an upgraded fibre-optic gyro Inertial Measurement Unit for enhanced performance and accuracy even in areas with low GNSS. The comparison table below represents ROBIN (MEMS IMU) & ROBIN PRECISION (FOG IMU).

The ROBIN PRECISION features a fibre optic IMU making it more suitable for detailed topographic surveys, city modelling and construction or mining environments where GNSS conditions are challenging.

ROBIN PRECISION can be used in WALK, DRIVE and FLY set-ups combined with +PANORAMIC and +WINGS extensions for projects requiring greater accuracy.



PERFORMANCE	Compact MEMS IMU	Compact FOG IMU
Position	0.02m	0.02m
Velocity	0.005m/s	0.005m/s
Roll/Pitch	0.015°	0.008°
True Heading	0.03°	0.015°
Gyro-Bias	1°/hr	0.03°/hr
Gyro-Random Walk	0.07°/√h	0.005°/√h
Accelerometer Bias	0.1mg	0.3mg
Data Rate	400Hz	128Hz
PERFORMANCE*	Compact MEMS IMU	Compact FOG IMU
Position	0.3m	0.1m
Roll/Pitch	0.018°	0.008°
True Heading	0.3°	0.015°

*Compact IMU/GNSS system performance after 60 seconds GNSS outage

WHAT TO EXPECT FROM 3D LASER MAPPING:

Industry Leading Systems Integration

Standard & Advanced Training at Your Location - incl ROBIN set up, data capture, processing including Terrasolid software training

Unrivalled Technical Support: Online, Email & Telephone

