

Leica Pegasus:Stream

Above and below ground mapping in a single integrated vehicle-towed solution



Leica Pegasus:Two Product Specifications

Camera Sensor

Number of cameras	8
CCD size	2000 x 2000
Pixel size	5.5 x 5.5 microns
Maximum frame rate	8 fps x camera, equal to 256 M pixels x second (collected, compressed, stored)
Lens	8.0mm focal, ruggedised; 2.7mm focal, top
Coverage	360° x 270° excluding rear down facing camera

Scanner

Please refer to scanner manufacturer datasheet.

Control Unit

Multi-core industrial PC, low power consumption, 1TB SSD hard disk with USB3 interface. USB, Ethernet, and wireless connections available through the battery system. Service support available through remote interface.

Battery System Performance

Typical operating time	9 hrs, profiler version; 13 hrs, scanner version
VAC input voltage	100 min to 240 max VAC autoranging
AC input power (charge cycle)	350W Max
AC input frequency	50/60 Hz
Time to full charge	11.0 max h starting 0%
DC output	21 - 29 volts
Watt/Amp hours	2685 Watts hours/104 Amp hours

GNSS/IMU/SPAN Sensor

Includes triple band – L-Band, SBAS, and QZSS for GPS, GLONASS, Galileo, and BeiDou constellations, single and dual antenna support, wheel sensor input, tactical grade – no ITAR restrictions, low noise FOG IMU.

Frequency	200 Hz
MTBF	35,000 hour
Gyro bias in-run stability (\pm deg/hr)	0.75
Gyro bias offset (deg/hr)	0.75
Gyro angular rand. walk (deg/ \sqrt hr)	0.1
Gyro scale factor (ppm)	300
Gyro range (\pm deg/s)	450
Accelerometer bias (mg)	1
Accelerometer scale factor (ppm)	300
Accelerometer range (\pm g)	5
Position accuracy after 10 sec of outage duration	0.020 m RMS horizontal, 0.020 m RMS vertical, 0.008 degrees RMS pitch/roll, 0.013 degrees RMS heading.

Sensor Platform

Weight	51 kg (without case), 86 kg (with case)
Size	60 x 76 x 68 cm, profiler version 60 x 79 x 76 cm, Leica ScanStation P20
Size with case	68 x 68 x 65 cm

Battery

Weight	34.8 kg
Size	65 x 32 x 37 cm

Environmental

Operating temperature	0° C to +40° C, non-condensing
IP protection level	IP52, excluding the scanner. Please refer to scanner documentation.
Storage temperature	- 20° C to +50° C, non-condensing

Typical Accuracy*

Horizontal accuracy	0.020 m RMS
Vertical accuracy	0.015 m RMS
Conditions	Without control points, open sky conditions

Productivity*

Data produced per project (compressed)	43 GB/h or 1.1 GB/km
Data produced after post processing (images and point cloud)	60 GB/h or 1.5 GB/km
Post processing time	1 hr of data collection equals 1 hr post-processing without colourising, 1 hr of data collection equals 5 hrs of post-processing with colourising.

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Export Options

Images	JPEG and ASCII for photogrammetric parameters
Point cloud	Binary LAS 1.2. X,Y,Z, intensity, RGB values Colourisation by camera pictures Hexagon Point Format

Accuracy Test Conditions*

Scanner frequency	1,000,000 points per second
Image distance	3 m
Driving speed	40 km/h
System configuration	No wheel sensor, no dual antenna
Laser scanner	ZF 9012
Max baseline length	3.2 km

Repeatability*

Based on open sky, GPS+GLONASS processing, and phase differential. Points were measured manually from within the point cloud. A ring with 26 check points were collected 4 times, for a total of 104 observations. Check points were measured with TPS and levelling.

Resulting mean error for X,Y,Z was -0.004,-0.004,0.001 meters, and the resulting standard deviation for X,Y,Z was 0.011,0.012,0.008 meters.

* If not specified, datasheet is refers to a Leica Pegasus:Two with a ZF9012 profiler and an iMAR FSAS IMU. Datasheet is subject to change without notice.

IDS Stream EM Specifications

System Specifications

Overall weight (PC not included)	228 kg (500 lbs)
Max. acquisition speed (@ std. Scan interval)	18 kph (12mph)
Power consumption	72 W
Positioning	Survey wheel and/or GPS or Total station
Number of control unit	3 synchronized DAD MCH FW
Scan rate per channel: (@512 samples/scan)	87 scans/sec
Scan Interval	17 scans/m@200 MHz - 33 scan/m @ 600 MHz
Power Supply	SLA Battery 12VDC 100 Ah

Antenna Specifications

Environmental	IP65
Antenna FootPrint	1.84 m Width
Number of channels	38
Antennas Central Frequencies	200MHz (34 channels) and 600 MHz (4 channels)
Antenna Polarization	Horizontal (HH) and Vertical (VV)
Antenna spacing	6 cm
Certification	EC, FCC, IC

Accuracy

X,Y	\pm 5 cm (up to 1 m in depth)
Z	\pm 5 % of the depth (up to 1 m in depth)

Software Specifications

Output formats	SHP, DWG, DXF
Control	Leica Pegasus MDA control stop/start

Software Features

- GREG HD 3D CAD
- Tomographic map view (c-Scan) including radar scan fusion
- 3D data visualization
- Advanced targeting using radarscan and tomographic view
- Radarscan viewer, filter and advanced filtering macros, multiple radar scan viewer
- Layer picking for automatic analysis of sub-layers

