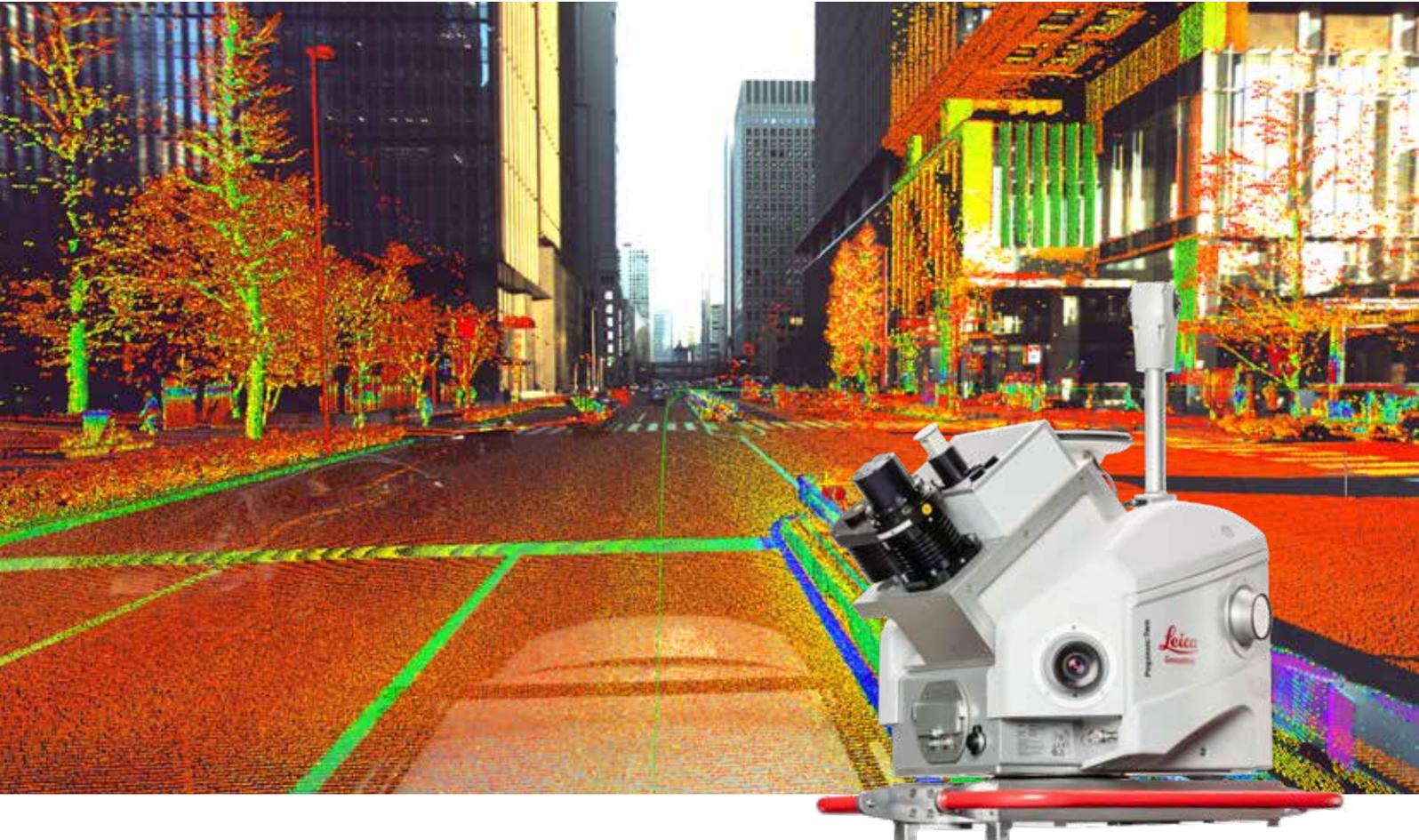


Leica Pegasus:Two Ultimate

Mobile reality capture



Improved flexibility

Increasing your working day - allowing capture in a variety of lighting conditions and vehicle speeds - a higher dynamic range is enabled by a large sensor to pixel ratio and a dual-light sensors. Photogrammetry and image quality is improved with the increased side camera resolution of twelve mega pixels and onboard JPEG compression.



City digitisation

Digitisation of city infrastructures, planning, and resources is the foundation of the Smart City, the Pegasus:Two Ultimate will enable your growth and ability to offer the best solution for this market. Seamless 360° imagery calibrated to the digital point cloud will help you to deliver easily realised data assets for a future with autonomous vehicles.



More data, faster

More sensor expansion ports offer additional means to capture the city in ones and zeros by connecting additional sensors. Time savings are further increased with an industrial, yet removable, USB 3.0 hard drive, enabling the user to save the data directly on the removable drive and connect seamlessly to any PC or server with a USB 3.0 interface.

Leica Pegasus:Two Ultimate specifications

FRAME & PAVEMENT CAMERAS

Number of cameras	4 built-in cameras, optional 1 or 2 additional adjustable external cameras
Sensor	High-sensitivity CMOS 12 MP (4000x3000)
Pixel size	3.45 µm
Maximum frame rate	8.6 fps x camera, equal to max. 825 MP x sec (collected, compressed, stored)
Lens	12 mm
Coverage	61° x 47° FOV

360° SPHERICAL CAMERA

Number of cameras	2 dual fish-eye cameras
Sensor	24 MP panoramic camera system (2 x 12 MP)
Pixel size	3.45 µm
Coverage	360° x 167° FOV with one stitching line, equal to 98% of full sphere

SCANNER

Please refer to scanner manufacturer datasheet.

CONTROL UNIT

Multi-core industrial PC, low power consumption, 2 x additional camera ports for pavement cameras or additional side cameras, removable 1 TB HDD with USB3.0 interface, sync port for PPS/NMEA/DMI outputs. USB, ethernet and wireless connections available through the battery system. Service support available through remote interface.

BATTERY SYSTEM PERFORMANCE (LITHIUM-ION)

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)	350 W max
AC input frequency	50/60 Hz
Time to full charge	11.0 hr max starting at 0 %
DC output	21 – 29 V
Watt/Amp hours	2685 W hrs / 104 Amp hrs

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 hr
Gyro bias in-run stability	0.75 ±deg/hr
Gyro bias offset	0.75 deg/hr
Gyro angular rand. walk	0.1 deg/√hr
Gyro scale factor	300 ppm
Gyro range	450 ±deg/s
Accelerometer bias	1 mg
Accelerometer scale factor	300 ppm
Accelerometer range	5 ±g
Position accuracy after 10 sec of outage duration	0.010 m RMS horizontal, 0.020 m RMS vertical, 0.004 degrees RMS pitch/roll, 0.013 degrees RMS heading.

OPTIONAL ACCESSORIES

Wheel sensor

1,000 pulses per rotation, IP 67, integrated time stamping of wheel sensor data (handled by GNSS controller). Processing of wheel sensor data is integrated with the Kalman filtering based trajectory computational software. A variety of wheel sizes supported.

Rotational platform

Optional rotational platform is available to provide an alternative scanner or profiler position while maintaining the camera geometry.

BATTERY

Weight	34.8 kg
Size	65 x 32 x 37cm

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)	129 GB/h or 3.3 GB/km (estimate)
Data produced after post processing (images and point cloud)	180 GB/h or 4.5 GB/km (estimate)

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, Recap, E57

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.

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,P40,P50
Size with case	68 x 68 x 65 cm

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

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