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.

- when it has to be right
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 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 Whrs / 104 Amp hrs

BATTERY

Weight 34.8 kg
Size 65 x 32 x 37 cm

ENVIRONMENTAL

Operating temperature 0° C to + 40° C, non-condensing
Storage temperature - 20° C to + 50° C, non-condensing

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 pmm
Accelerometer range 5 g
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.

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.

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

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Size 65 x 32 x 37 cm

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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 95% and levelling. Resulting mean error for X, Y, Z was -0.006, -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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