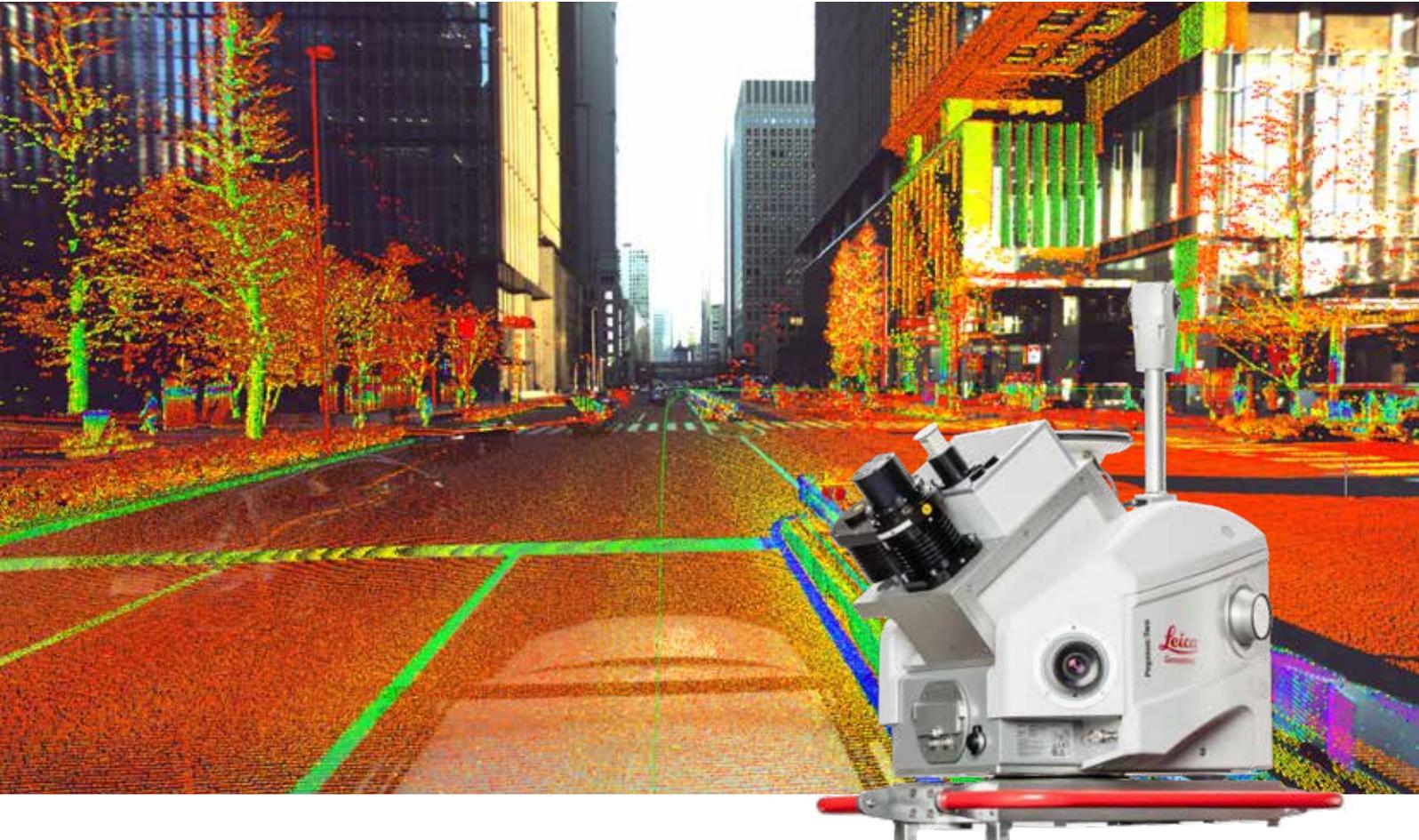


# Leica Pegasus:Two Ultimate

## 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

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

## 360° SPHERICAL CAMERA

<b>Number of cameras</b>	2 dual fish-eye cameras
<b>Sensor</b>	24 MP panoramic camera system (2 x 12 MP)
<b>Pixel size</b>	3.45 µm
<b>Coverage</b>	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)

<b>Typical operating time</b>	9 hrs (profiler version); 13 hrs (scanner version)
<b>VAC input voltage</b>	100 min to 240 max VAC autoranging
<b>AC input power (charge cycle)</b>	350 W max
<b>AC input frequency</b>	50/60 Hz
<b>Time to full charge</b>	11.0 hr max starting at 0 %
<b>DC output</b>	21 – 29 V
<b>Watt/Amp hours</b>	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.

<b>Frequency</b>	200 Hz
<b>MTBF</b>	35,000 hr
<b>Gyro bias in-run stability</b>	0.75 ±deg/hr
<b>Gyro bias offset</b>	0.75 deg/hr
<b>Gyro angular rand. walk</b>	0.1 deg/√hr
<b>Gyro scale factor</b>	300 ppm
<b>Gyro range</b>	450 ±deg/s
<b>Accelerometer bias</b>	1 mg
<b>Accelerometer scale factor</b>	300 ppm
<b>Accelerometer range</b>	5 ±g
<b>Position accuracy after 10 sec of outage duration</b>	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.

### Rotational platform

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

## BATTERY

<b>Weight</b>	34.8 kg
<b>Size</b>	65 x 32 x 37cm

## ENVIRONMENTAL

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

## TYPICAL ACCURACY\*

<b>Horizontal accuracy</b>	0.020 m RMS
<b>Vertical accuracy</b>	0.015 m RMS
<b>Conditions</b>	Without control points, open sky conditions

## PRODUCTIVITY\*

<b>Data produced per project (compressed)</b>	129 GB/h or 3.3 GB/km (estimate)
<b>Data produced after post processing (images and point cloud)</b>	180 GB/h or 4.5 GB/km (estimate)

## EXPORT OPTIONS\*

<b>Images</b>	JPEG and ASCII for photogrammetric parameters
<b>Point cloud</b>	Binary LAS 1.2, X,Y,Z, intensity, RGB values Colourisation by camera pictures Hexagon Point Format, Recap, E57

## ACCURACY TEST CONDITIONS\*

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

<b>Weight</b>	51 kg (without case), 86 kg (with case)
<b>Size</b>	60 x 76 x 68 cm, profiler version 60 x 79 x 76 cm, Leica ScanStation P20,P40,P50
<b>Size with case</b>	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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