# Leica Pegasus:Backpack
## Mobile reality capture


### Real estate property documentation

Enhanced trajectory calculation with SLAM technology for indoor mapping purposes makes updating 2D drawings easy while adding the further value of images and LiDAR together.

### Indoor mapping

Unlimited data collection even in pedestrian-only urban areas. Accelerate the data collection in underground areas or even in GNSS-denied areas - just wear, scan and produce. Document heritage sites with limited access or aged undocumented underground utility infrastructures.

### BIM authoritative documentation

Bring productivity for BIM documentation to the next level. Supervise the construction progressively with a time economical professional solution that combines flexibility and accuracy in a unique system. Capturing accurate data for modelling or documenting a renovation has never been easier.

# Leica Pegasus:Backpack product specifications

## Camera sensor

| | |
|---|---|
| **Number of cameras** | 5 |
| **CCD size** | 2046 x 2046 |
| **Pixel size** | 5.5 x 5.5 microns |
| **Maximum frame rate** | 2 fps x camera, equal to 160 M pixels x second |
| **Lens** | 6.0 mm focal |
| **Coverage** | 360° x 200° |

## Scanner

| | |
|---|---|
| **Type** | Dual Velodyne VLP-16 |
| **FOV horizontal/vertical** | 270°/30° (±15°) per scanner |
| **Channels** | 16 |
| **Acquisition** | 600,000 pts/sec |
| **Frequency** | 10 Hz |
| **Range** | Usable range: 50 m |

## Control unit

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

## Battery system performance

| | |
|---|---|
| **Typical operating time** | 4 hrs |
| **Time to full charge** | 3 hrs |
| **Batteries** | 2 or 4 batteries |
| **Battery life time extension** | Batteries are hot-swappable (no shut down needed) |
| **DC output** | 14.8 V |
| **Amp hours** | 23.2 Ah |
| **Weight** | 1.8 kg for 4 batteries |

## GNSS/IMU/SPAN sensor

Includes triple band – L-Band, SBAS, and QZSS for GPS, GLONASS, Galileo, and BeiDou constellations, single and dual antenna support.

## Environmental

| | |
|---|---|
| **Operating temperature** | 0° C to +40° C, non-condensing |
| **IP protection class** | IP 52 |
| **Storage temperature** | – 20° C to +50° C, non-condensing |

## Productivity

| | |
|---|---|
| **Data produced per project (compressed)** | 1 GB every minute of walking |

## Accuracy

| | |
|---|---|
| **Relative accuracy** | 2 cm – 3 cm for outdoor and indoor |
| **Absolute position accuracy outdoor** | 5 cm |
| **Absolute position accuracy indoor (SLAM based without control points)** | 5 cm to 50 cm for 10 minutes walking, minimum 3 loop closures or double passes conditions<br><br>A variety of factors can influence a trajectory accuracy negatively including:<br><br>• Small rooms or hallways<br>• A need to pivot while walking<br>• Stairs and uneven pavement<br>• Extremely smooth or blank surfaces<br>• Surfaces too far from the scanners<br>• Fast vertical movement - elevators are not supported<br><br>Under typical indoor conditions, the lower range of the accuracy specification can be achieved. |
| **Images** | JPEG and ASCII for photogrammetric parameters |
| **Point cloud** | Binary LAS 1.2. X,Y,Z, intensity, RGB values<br>Colourisation by camera pictures<br>Hexagon Point Format<br>E57, 2D/3D DXF, PTS, DWG, DGN |
| **Trajectory** | NMEA, KMZ |

## Sensor platform

| | |
|---|---|
| **Frame material** | Carbon fiber |
| **Cover material** | High resistance industrial textile |
| **Weight** | 11.5 kg without batteries |
| **Weight with case** | 32 kg including accessories |
| **Size** | 73 x 27 x 31 cm |
| **Size with case** | 95 x 53 x 43 cm |


From left to right:
Case, prism, tablet device, sensor system,
4 batteries with charging dock, external converter



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- when it has to be **right**

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