

# Leica ScanStation P30/P40 Product Specifications

## SYSTEM ACCURACY

### Accuracy of single measurement \*

|                       |   |
|-----------------------|---|
| Range accuracy        | 1.2 mm + 10ppm over full range  |
| Angular accuracy      | 8" horizontal; 8" vertical  |
| 3D position accuracy  | 3 mm at 50 m; 6 mm at 100 m   |
| Target acquisition ** | 2 mm standard deviation at 50 m   |
| Dual-axis compensator | Liquid sensor with real-time onboard compensation, selectable on/off, resolution 1", dynamic range $\pm 5'$ , accuracy 1.5" |

## DISTANCE MEASUREMENT SYSTEM

|                               |  |       |       |       |
|-------------------------------|--|-------|-------|-------|
| Type                          | Ultra-high speed time-of-flight enhanced by Waveform Digitising (WFD) technology |       |       |       |
| Wavelength                    | 1550 nm (invisible) / 658 nm (visible)   |       |       |       |
| Laser class                   | 1 (in accordance with IEC 60825:2014)  |       |       |       |
| Beam divergence               | < 0.23 mrad (FWHM, full angle)   |       |       |       |
| Beam diameter at front window | $\leq 3.5$ mm (FWHM)   |       |       |       |
| Range and reflectivity        | Minimum range 0.4 m  |       |       |       |
|                               | Maximum range at reflectivity  |       |       |       |
|                               |  | 120 m | 180 m | 270 m |
|                               |  | 18 %  | –     | –     |
| P30                           | 8 %  | 18 %  | 34 %  |       |
| P40                           |  |       |       |       |
| Scan rate                     | Up to 1,000,000 points per second  |       |       |       |
| Range noise *                 | 0.4 mm rms at 10 m   |       |       |       |
|                               | 0.5 mm rms at 50 m   |       |       |       |

### Field-of-View

|                                  |  |
|----------------------------------|--|
| Horizontal                       | 360°   |
| Vertical                         | 290°   |
| Data storage capacity            | 256 GB internal solid-state drive (SSD) or external USB device   |
| Communications/<br>Data transfer | Gigabit Ethernet, integrated Wireless LAN or USB 2.0 device  |
| Onboard display                  | Touchscreen control with stylus, full colour VGA graphic display (640×480 pixels)  |
| Laser plummet                    | Laser class 1 (IEC 60825:2014)<br>Centring accuracy: 1.5 mm at 1.5 m<br>Laser dot diameter: 2.5 mm at 1.5 m<br>Selectable ON/OFF |

## IMAGING SYSTEM

### Internal camera

|                     |  |
|---------------------|--|
| Resolution          | 4 MP per each 17°×17° colour image;<br>700 MP for panoramic image          |
| Pixel size Video    | 2.2 $\mu$ m<br>Streaming video with zoom; auto-adjusts to ambient lighting |
| White balancing HDR | Sunny, cloudy, warm light, cold light, custom<br>Tonemapped / full range   |
| External camera     | Canon EOS 60D/70D/80D/90D supported  |

## POWER

|              |  |
|--------------|--|
| Power supply | 24 V DC, 100 – 240 V AC  |
| Battery type | 2× Internal: Li-Ion; External: Li-Ion (connect via external port, simultaneous use, hot swappable) |
| Duration     | Internal > 5.5 h (2 batteries)   |
|              | External > 7.5 h (room temp.)  |

## ENVIRONMENTAL

|                       |   |
|-----------------------|---|
| Operating temperature | –20°C to +50°C / –4°F to +122°F                           |
| Storage temperature   | –40°C to +70°C / –40°F to +158°F                          |
| Humidity              | 95 %, non-condensing                                      |
| Dust/Water            | Solid particle/liquid ingress protection IP54 (IEC 60529) |

## PHYSICAL

### Scanner

|                    |   |
|--------------------|---|
| Dimensions (D×W×H) | 238 mm × 358 mm × 395 mm / 9.4" × 14.1" × 15.6" |
| Weight             | 12.25 kg / 27.0 lbs, nominal (w/o batteries)    |

### Battery (internal)

|                    |  |
|--------------------|--|
| Dimensions (D×W×H) | 40 mm × 72 mm × 77 mm / 1.6" × 2.8" × 3.0" |
| Weight             | 0.4 kg / 0.9 lbs                           |
| Mounting           | Upright or inverted                        |

## CONTROL OPTIONS

Full colour touchscreen for onboard scan control.  
Remote control: Leica CS10/CS15/CS20/CS35 controller or any other remote desktop capable device, including iPad, iPhone and other SmartPhones; external simulator.  
Leica Cyclone FIELD 360 with tablet and SmartPhone (iOS and Android).  
Leica Cyclone FIELDWORX with Windows® Surface tablet.

## FUNCTIONALITY

|   |   |
|---|---|
| Survey workflows and onboard registration | Quick orientation, Set azimuth, Known backsight, Resection (4 and 6 parameters), Traverse |
| Check & Adjust                            | Field procedure for checking of angular parameters, tilt compensator and range offset     |
| Onboard target acquisition                | Target selection from video, scan or red laser beam                                       |
| Onboard user interface                    | Switchable from standard to advanced  |
| One button scan control                   | Scanner operation with one button concept   |
| Scan area definition                      | Scan area selection from video or scan; batch job scanning                                |
| Double scan                               | Automatic removal of point cloud noise introduced by moving objects                       |