

# Leica ScanStation P50

## Because every detail matters



### The right choice

Whether you have to 3D capture the world's tallest buildings, document the widest infrastructure objects or scan the biggest open pit mines, you know long range scanning will be essential for your job. Adding long range scanning capability to the market leading ScanStation P-Series, the Leica ScanStation P50 is the right choice, because every detail matters.



### Scan inaccessible places

The ScanStation P50 delivers highest quality 3D data and HDR imaging at an extremely fast scan rate of up to 1 mio points per second and ranges of more than 1 km. Unsurpassed range and angular accuracy paired with low range noise and survey-grade dual-axis compensation form the foundation for highly detailed 3D colour point clouds mapped in realistic clarity.



### Complete scanning solution

Leica Geosystems offers the ScanStation P50 as a complete scanning solution including hardware, software, service, training and support. Captured data can be visualised and pre-registered in the field with Cyclone FIELD 360 app or fully registered with Cyclone FIELDWORX app, then processed in the industry's leading 3D point cloud office software suite, comprising Cyclone stand-alone software, JetStream, CloudWorx plug-in tools for CAD systems and the cost-free TruView.

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# Leica ScanStation P50 Product Specifications

## SYSTEM ACCURACY

### Accuracy of single measurement \*

Range accuracy	1.2 mm + 10ppm over full range (120 m / 270 m mode) 3 mm + 10ppm over full range (570 m / >1 km mode)
Angular accuracy	8" horizontal; 8" vertical

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 ±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 ≤ 3.5 mm (FWHM)

Range and reflectivity	Minimum range 0.4 m	
	Maximum range mode	
	120 m	8%
	270 m	34%
	570 m	60%
	>1 km	80%

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 / 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)  
Centring accuracy: 1.5 mm at 1.5 m  
Laser dot diameter: 2.5 mm at 1.5 m  
Selectable ON/OFF

## IMAGING SYSTEM

### Internal camera

Resolution 4 MP per each 17° × 17° colour image;  
700 MP for panoramic image

Pixel size Video 2.2 μm  
Streaming video with zoom; auto-adjusts to ambient lighting

White balancing HDR Sunny, cloudy, warm light, cold light, custom  
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

All specifications are subject to change without notice.  
All accuracy specifications are one sigma unless otherwise noted.

\* At 78 % albedo

\*\* Algorithmic fit to planar HDS 4.5" B&W targets

Scanner: Laser class 1 in accordance with IEC 60825:2014

Laser plummet: Laser class 1 in accordance with IEC 60825:2014

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Customer Care

### Your Trusted Active Customer Care

Active Customer care is a true partnership between Leica Geosystems and its customers. Customer Care Packages (CCPs) ensure optimally maintained equipment and the most up-to-date software to deliver the best results for your business. The myWorld @Leica Geosystems customer portal provides a wealth of information 24/7.



Leica ScanStation P30/P40



Leica RTC360 3D Reality Capture Solution



Leica Cyclone REGISTER 360

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