

Leica ScanStation P30/P40

Because every detail matters



The right choice

Whether you want to digitally explore an archaeological excavation or research historic monuments in 3D, when recording and analysing heritage and archeology projects for future generations, it is imperative to collect data with the cleanest and most accurate results. The new ScanStation laser scanners from Leica Geosystems are the right choice, because every detail matters.

High performance under harsh conditions

The Leica ScanStations deliver highest quality 3D data and HDR imaging at an extremely fast scan rate of 1 mio points per second at ranges of up to 270m. 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.

Reduced downtime

The extremely durable new laser scanners perform even under the toughest environmental conditions, such as extreme temperatures ranging from -20°C to $+50^{\circ}\text{C}$ and comply with the IP54 rating for dust and water resistance.

Complete scanning solution

Leica Geosystems offers the new Leica ScanStation portfolio as an integrated part of a complete scanning solution including hardware, software, service, training and support. 3D laser scanner data can be processed in the industry's leading 3D point cloud software suite, which consists of Leica Cyclone stand-alone software, Leica CloudWorx plug-in tools for CAD systems and the free Leica TruView.

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Product specifications

System Accuracy	
Accuracy of single measurement *	
Range accuracy	1.2 mm + 10 ppm 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	≤ 3.5 mm (FWHM)
Range and reflectivity	Minimum range 0.4 m
	Maximum range at reflectivity
	120 m 180 m 270 m
P30	18 % – –
P40	8 % 18 % 34 %
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 megapixels per each 17°×17° colour image; 700 megapixels for panoramic image
Pixel size	2.2 μ m
Video	Streaming video with zoom; auto-adjusts to ambient lighting
White balancing	Sunny, cloudy, warm light, cold light, custom
HDR	Tonemapped / full range
External camera	Canon EOS 60D and 70D 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/Humidity	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 controller or any other remote desktop capable device, including iPad, iPhone and other Smartphones; external simulator.	

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 or scan
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

Ordering Information	
Contact your local Leica Geosystems representative or an authorised Leica Geosystems dealer.	

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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Leica ScanStation P16



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- when it has to be **right**

Leica
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