

# Leica ScanStation P30/P40

## Because every detail matters



HDS™



### The right choice

Whether capturing 3D geometry of roads, rails, tunnels and bridges or high-definition scan data for topographic maps and as-built surveys, you know you'll need an accurate long range scanning tool for your projects – 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°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.

# Leica ScanStation P30/P40

## Product specifications

System Accuracy	
<b>Accuracy of single measurement *</b>	
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
<b>Target acquisition **</b>	2 mm standard deviation at 50 m
<b>Dual-axis compensator</b>	Liquid sensor with real-time onboard compensation, selectable on/off, resolution 1", dynamic range $\pm 5'$ , accuracy 1.5"

Distance Measurement System	
<b>Type</b>	Ultra-high speed time-of-flight enhanced by Waveform Digitising (WFD) technology
<b>Wavelength</b>	1550 nm (invisible) / 658 nm (visible)
<b>Laser class</b>	1 (in accordance with IEC 60825:2014)
<b>Beam divergence</b>	< 0.23 mrad (FWHM, full angle)
<b>Beam diameter at front window</b>	$\leq 3.5$ mm (FWHM)
<b>Range and reflectivity</b>	Minimum range 0.4 m
	Maximum range at reflectivity
	120 m      180 m      270 m
P30	18 %      –      –
P40	8 %      18 %      34 %
<b>Scan rate</b>	Up to 1'000'000 points per second
<b>Range noise *</b>	0.4 mm rms at 10 m 0.5 mm rms at 50 m
<b>Field-of-View</b>	
Horizontal	360°
Vertical	290°
<b>Data storage capacity</b>	256 GB internal solid-state drive (SSD) or external USB device
<b>Communications/Data transfer</b>	Gigabit Ethernet, integrated Wireless LAN or USB 2.0 device
<b>Onboard display</b>	Touchscreen control with stylus, full colour VGA graphic display (640×480 pixels)
<b>Laser plummet</b>	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	
<b>Internal camera</b>	
Resolution	4 megapixels per each 17°×17° colour image; 700 megapixels for panoramic image
Pixel size	2.2 $\mu$ m
Video	Streaming video with zoom; auto-adjusts to ambient lighting
White balancing	Sunny, cloudy, warm light, cold light, custom
HDR	Tonemapped / full range
<b>External camera</b>	Canon EOS 60D and 70D supported

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

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

Physical	
<b>Scanner</b>	
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)
<b>Battery (internal)</b>	
Dimensions (D×W×H)	40 mm × 72 mm × 77 mm / 1.6" × 2.8" × 3.0"
Weight	0.4 kg / 0.9 lbs
<b>Mounting</b>	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	
<b>Survey workflows and onboard registration</b>	Quick orientation, Set azimuth, Known backsight, Resection (4 and 6 parameters), Traverse
<b>Check &amp; Adjust</b>	Field procedure for checking of angular parameters, tilt compensator and range offset
<b>Onboard target acquisition</b>	Target selection from video or scan
<b>Onboard user interface</b>	Switchable from standard to advanced
<b>One button scan control</b>	Scanner operation with one button concept
<b>Scan area definition</b>	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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Leica Cyclone MODEL

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- when it has to be **right**

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