

# Leica ScanStation 2

## Exceptional Speed, Outstanding Versatility

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ScanStation 2  
brochure!



### 10-fold scan speed increase makes ScanStation™ category even more productive and versatile

#### Leica ScanStation 2: a higher standard

ScanStation 2 adds blazing speed to the four, fundamental total station features that made ScanStation a new category of laser scanner for as-built and topographic surveys. Now, with a 50,000 points/sec maximum instantaneous scan rate, full field-of-view, survey-grade tilt compensation, survey accuracy for each measurement, and excellent range, ScanStation 2 has set a new standard for versatility, productivity and ease-of-use in High-Definition Surveying™ (HDS™).

#### Unprecedented speed in a pulsed scanner

Pulsed or “time-of-flight” scanners are often considered highly versatile thanks to their excellent distance capabilities. As the fastest pulsed scanner, ScanStation 2 adds sharply increased productivity, plus denser scanning capability for even higher quality deliverables.

#### Full field-of-view

Like a total station, ScanStation 2's full horizontal and vertical field-of-view (FOV) provides optimum versatility and productivity.

#### Survey-grade, dual-axis (tilt) compensation

Users can setup ScanStation 2 over known points, traverse, resection and even stakeout or point its visible beam to a pre-selected position. Benefits include lower project costs, greater field flexibility, and higher project accuracy.

#### Survey-grade accuracy for each measurement

ScanStation 2 delivers survey accuracy for each measurement. Its ultra-fine scanning and small laser spot also let users achieve optimal project control and registration.

#### Excellent practical, useful range

ScanStation 2's capture range (up to 300m for 90% surface reflectivity) combines with its narrow beam and ultra-fine scanning capabilities to address a wide variety of sites.

- when it has to be **right**

**Leica**  
Geosystems

# Leica ScanStation 2

## Product Specifications

<b>General</b>		<b>Electrical</b>		View scanner locations and field-of-view	
<b>Instrument type</b>	Pulsed, dual-axis compensated, very-high speed laser scanner, with survey-grade accuracy, range, and field-of-view	<b>Power supply</b>	36 V; AC or DC; hot swappable; two (2) Power Supply units provided with system	Level of detail (LOD) for fast visualization	
<b>User interface</b>	Notebook or Tablet PC	<b>Power consumption</b>	<80W avg.	Auto rechecking (re-acquisition) of targets <sup>1</sup>	
<b>Scanner drive</b>	Servo motor	<b>Battery type</b>	Sealed lead acid	Auto acquisition of HDS targets <sup>1</sup>	
<b>Camera</b>	Integrated high-resolution digital camera	<b>Power ports</b>	Two (2) simultaneous use, hot swappable	Target identification	
<b>System Performance</b>		<b>Typical duration</b>	>6 hours, typical continuous use (room temp.)	Traverse <sup>1</sup>	
<b>Accuracy of single measurement</b>		<b>Power status indicators</b>	Five (5) LEDs indicate charging status and power levels	Field Setup - Resection <sup>1</sup>	
<b>Position*</b>	6 mm	<b>Environmental</b>		Field Setup - Known Backsight <sup>1</sup>	
<b>Distance*</b>	4 mm	<b>Operating temp.</b>	0° C to +40° C	Field Setup - Known Azimuth <sup>1</sup>	
<b>Angle (horizontal/vertical)</b>	60 µrad/60 µrad, one sigma	<b>Storage temp.</b>	-25° C to +65° C	Traverse and resection reports	
<b>Modeled surface</b>		<b>Lighting</b>	Fully operational between bright sunlight and complete darkness	Stakeout and id-point	
<b>precision**/noise</b>	2 mm, one sigma	<b>Humidity</b>	Non-condensing	Point to and dwell on preselected coordinates	
<b>Target acquisition***</b>	2 mm std. deviation	<b>Shock</b>	40 G's (max. to scanner transport case)	Direct coordinate/station entry <sup>1</sup>	
<b>Dual-axis compensator</b>	Selectable on/off Resolution 1", dynamic range +/- 5'	<b>Dust/humidity</b>	IP52 (IEC 60529)	Dual-axis compensation on/off	
<b>Data integrity monitoring</b>	Periodic self-check during operation and startup	<b>Physical</b>		Engage/disengage turret	
<b>Laser Scanning System</b>		<b>Scanner</b>		Target and instrument height input	
<b>Type</b>	Pulsed; proprietary microchip	<b>Dimensions</b>	10.5" D x 14.5" W x 20" H 265 mm x 370 mm x 510 mm w/o handle and table stand	Lighting control for digital images	
<b>Color</b>	Green	<b>Weight</b>	18.5 kg, nominal	Acquire and display digital image	
<b>Laser Class</b>	3R (IEC 60825-1)	<b>Power Supply Unit</b>		Set image resolution (high, medium, low)	
<b>Range</b>	300 m @ 90%; 134 m @ 18% albedo	<b>Dimensions</b>	6.5" D x 9.25" W x 8.5" H 165 mm x 236 mm x 215 mm w/o handles	Support of external digital images	
<b>Scan rate</b>	Up to 50,000 points/sec, maximum instantaneous rate Average: dependent on specific scan density and field-of-view	<b>Weight</b>	12 kg, nominal	Real-time 3D visualization while scanning <sup>1</sup>	
<b>Scan resolution</b>		<b>Standard Accessories Included</b>		Fly-around, pan & zoom, rotate clouds, meshes, models in 3D	
<b>Spot size</b>	From 0 - 50 m: 4 mm (FWHH - based); 6mm (Gaussian - based)	Scanner transport case		View point clouds with intensity or true-color mapping	
<b>Selectability</b>	Independently, fully selectable vertical and horizontal point-to-point measurement spacing <sup>1</sup>	Tribrach (Leica Professional Series)		Auto creation of panoramic digital image mosaic <sup>1</sup>	
<b>Point spacing</b>	Fully selectable horizontal and vertical; < 1 mm minimum spacing, through full range <sup>1</sup> ; single point dwell capability	Survey tripod		Global digital image viewer <sup>1</sup>	
<b>Maximum sample density</b>	< 1 mm <sup>1</sup>	Ethernet cable for connection of scanner to notebook PC		Point-and-scan QuickScan to set horizontal FoV <sup>1</sup>	
<b>Field-of-view (per scan)</b>		Two Power Supply cases. Each includes:		User-defined quality-of-fit checks	
<b>Horizontal</b>	360° (maximum) <sup>1</sup>	Power Supply		Measure & dimension: slope dist., Δx, Δy, Δz	
<b>Vertical</b>	270° (maximum) <sup>1</sup>	Cable for battery connection to scanner		Create, manage annotations and layers	
<b>Aiming/Sighting</b>	Optical sighting using QuickScan™ button	Power Supply charger		Save/restore views	
<b>Scanning Optics</b>		User manual		Save screen images	
Single mirror, panoramic, front and upper window design		Cleaning kit		Undo/redo support	
Environmentally protected by housing and two glass shields		Cyclone™-SCAN software		<b>Direct Import Formats</b>	
<b>Scan motors</b>		<b>Hardware Options</b>		Cyclone native IMP object database format, Cyclone Object Exchange (COE) format	
Direct drive, brushless		Notebook PC		ASCII point data (XYZ, SVY, PTS, PTX, TXT)	
<b>Data &amp; power transfer to/from rotating turret</b>		Tablet PC		Leica's X-Function DBX format, Land XML, ZFS, ZFC, 3DD	
Contact-free: optical data link and inductive power transfer		HDS scan targets and target accessories		<b>Direct Export Formats</b>	
<b>Communications</b>		Service agreement for Leica ScanStation 2		ASCII point data (XYZ, SVY, PTS, PTX, TXT), DXF	
Static Internet Protocol (IP) Address		Extended warranty for Leica ScanStation 2		Leica's X-Function DBX format, Land XML, PTZ	
<b>Integrated color digital imaging</b>		<b>Notebook PC for Scanning<sup>Δ</sup></b>		<b>Indirect Export Formats</b>	
User-defined pixel resolution: Low, Medium, High <sup>1</sup>		<b>Component required (minimum)</b>		AutoCAD (via AutoCAD, COE for MicroStation plug-in)	
Single 24° x 24° image: 1024 x 1024 pixels (1 megapixel) @ "High" setting		Processor		MicroStation (via COE for MicroStation plug-in)	
Full 360° x 270° dome: 111 images, approx. 64 megapixels, automatically spatially rectified		RAM		PDS (via MicroStation, COE for MicroStation plug-in)	
<b>Status Indicators</b>		Network card		AutoPLANT (via AutoCAD, COE for AutoCAD plug-in)	
3 LEDs (on stationary base) indicate system ready, laser "on", and communications status		Display		All specifications are subject to change without notice.	
<b>Level indicator</b>		Operating system		All ± accuracy specifications are one sigma unless otherwise noted	
External bubble and via laptop		Windows XP (SP1 or higher)		<sup>1</sup> SmartScan Technology™ feature	
		Windows 2000 (SP2 or higher)		* At 1 m - 50 m range, one sigma	
		<b>Cyclone-SCAN</b>		** Subject to modeling methodology for modeled surface	
		Independent vertical and horizontal scan density <sup>1</sup>		*** Algorithmic fit to planar HDS targets	
		Scan filters: range, intensity <sup>1</sup>		<sup>Δ</sup> Minimum requirements for modeling operations are different. Refer to Cyclone data sheet specifications	
		Selection of scan area via scribed rectangle or pre-sets <sup>1</sup>		Laser class 3R in accordance with IEC 60825-1 resp. EN 60825-1	
		Atmospheric correction		Windows is a registered trademark of Microsoft Corporation. Other trademarks and trade names are those of their respective owners.	
		Customizable longitude/latitude grid lines		Illustrations, descriptions and technical specifications are not binding and may change. Printed in Switzerland - Copyright Leica Geosystems AG, Heerbrugg, Switzerland 2007. 760347en - VI.07 - RDV	
		Targeted, single-shot pre-scan ranging <sup>1</sup>			
		Script management for auto scan sequencing <sup>1</sup>			