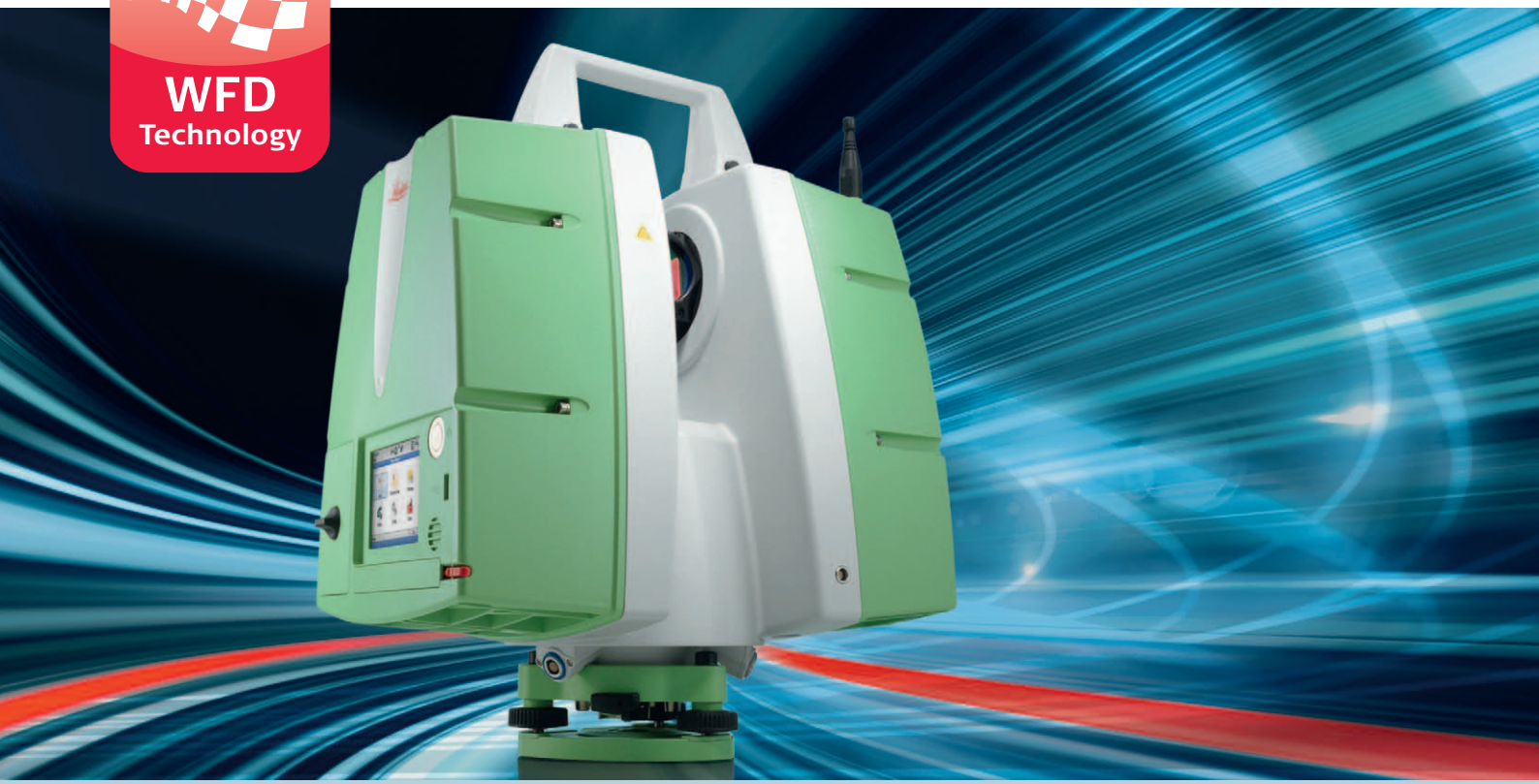
Leica ScanStation P20

Industry's Best Performing Ultra-High Speed Scanner



Unprecedented performance in ultra-high speed laser scanning

Productivity & Accuracy
An innovative combination of advanced time-of-flight range measurement plus modern Waveform Digitising (WFD) technology enables the compact Leica ScanStation P20 to achieve ultra-high scan speeds and low-noise performance at extended range (to 120 m). Together with high-accuracy angular measurements and survey-grade tilt compensation, Leica ScanStation P20 delivers unprecedented ultra-high speed scan data quality for as-built and scene surveys.

Scan up to 1 million points per second
Leica ScanStation P20 is the ideal instrument when very short time windows are available for capturing High-Definition Survey™ data or when ultra-high density, full dome scan data is needed for client deliverables.

Unmatched environmental capabilities
Developed and manufactured by Leica Geosystems, Leica ScanStation P20 lets users apply ultra-high speed scanning in operating temperatures ranging from -20° C to +50° C. Moreover, with an Ingress Protection rating of IP54 and an eye-safe laser rating, users can reap the benefits of ultra-high speed scanning for even more sites and projects.

"Check & Adjust" for added confidence
Leica ScanStation P20 is the first laser scanner to feature a valuable "Check & Adjust" capability. Instead of sending the instrument to a service centre, users can electronically check the accuracy of their ScanStation P20 themselves and automatically adjust instrument parameters to ensure the highest level of performance.

- when it has to be **right**

Leica Geosystems

联系人： 李滨 13910106639 bohe@foxmail.com

Leica ScanStation P20
Product Specifications

General	
Instrument type	Compact, ultra-high speed pulsed laser scanner with survey grade accuracy, range and field-of-view; integrated camera and laser plummet
User interface	Onboard control, notebook or tablet PC, PDA
Data storage	Integrated solid-state drive (SSD) or external USB flash drive
Camera	Auto-adjusting, integrated high-resolution digital camera with zoom video

System Performance	
Accuracy of single measurement	
3D Position Accuracy	3 mm at 50 m; 6 mm at 100 m
Linearity error	≤ 1 mm
Angular accuracy	8" horizontal; 8" vertical
Target acquisition*	2 mm standard deviation up to 50 m
Dual-axis compensator	Selectable on/off, resolution 1", dynamic range +/– 5', accuracy 1.5"

Laser Scanning and Imaging System	
Type	Ultra-high speed time-of-flight enhanced by Waveform Digitising (WFD) technology
Wavelength	808 nm (invisible) / 658 (visible)
Laser class	2 (in accordance with IEC 60825-1)
Beam divergence	0.2mrad
Beam diameter at front window	≤ 2.8 mm
Range	Up to 120 m; 18% reflectivity (minimum range 0.4 m)
Scan rate	Up to 1'000'000 points/s

Range noise**

Range	Black (10%)	Gray (28%)	White (100%)
10 m	0.8 mm rms	0.5 mm rms	0.4 mm rms
25 m	1.0 mm rms	0.6 mm rms	0.5 mm rms
50 m	2.8 mm rms	1.1 mm rms	0.7 mm rms
100 m	9.0 mm rms	4.3 mm rms	1.5 mm rms

Scan time and resolution (hh:mm:ss)

7 pre-set point spacings (mm at 10 m)

Spacing	Quality level			
mm	1	2	3	4
50	00:20	00:20	00:28	----
25	00:33	00:33	00:53	01:43
12.5	00:58	01:44	03:24	06:46
6.3	01:49	03:25	06:46	13:30
3.1	03:30	06:47	13:30	26:59
1.6	13:33	27:04	54:07	----
0.8	54:07	1:48:13	----	----

Field-of-View	
Horizontal	360°
Vertical	270°
Aiming/Sighting	Parallax-free, integrated zoom video
Scanning optics	Vertically rotating mirror on horizontally rotating base Up to 50 Hz with internal battery Up to 100 Hz with external power supply
Data storage capacity	256 GB onboard solid-state drive (SSD) or external USB device
Communications	Gigabit Ethernet or integrated Wireless LAN
Imaging	5 megapixels per each 17° x 17° colour image; streaming video with zoom; auto-adjusts to ambient lighting
Onboard display	Touchscreen control with stylus, full colour VGA graphic display (640 x 480 pixels)
Level indicator	External bubble, electronic bubble in onboard software
Data transfer	Ethernet, WLAN or USB 2.0 device
Laser plummet	Laser class 1 (IEC 60825-1) Centering accuracy: 1.5 mm at 1.5 m Laser dot diameter: 2.5 mm at 1.5 m Selectable ON/OFF

Electrical	
Power supply	24 V DC, 100 – 240 V AC
Power consumption	40 W typical
Battery type	Internal: Li-Ion; External: Li-Ion
Power ports	Internal: 2, External: 1 (simultaneous use, hot swappable)
Duration	Internal > 7 h (2 batteries), External > 8.5 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
Lighting	Fully operational between bright sunlight and complete darkness
Humidity	Non-condensing
Dust/Humidity	IP54 (IEC 60529)

Physical	
Scanner	
Dimensions (D x W x H)	238 mm x 358 mm x 395 mm / 9.4" x 14.1" x 15.6"
Weight	11.9 kg / 26.2 lbs, nominal (w/o batteries)
Battery (internal)	
Dimensions (D x W x H)	40 mm x 72 mm x 77 mm / 1.6" x 2.8" x 3.0"
Weight	0.4 kg / 0.9 lbs
Battery (external)	
Dimensions (D x W x H)	95 mm x 248 mm x 60 mm / 3.7" x 9.8" x 2.4"
Weight	1.9 kg / 4.2 lbs
AC Power Supply	
Dimensions (D x W x H)	170 mm x 85 mm x 42.5 mm / 6.6" x 3.3" x 1.6"
Weight	0.86 kg / 1.9 lbs
Mounting	Upright or upside down

Standard Accessories Included

Scanner transport case
Tribrach (Leica Geosystems Professional Series)
4 x Internal batteries
Battery charger / AC power cable, car adapter, daisy chain cable
Data cable
Height metre and distance holder for height metre
1 year CCP Basic support contract

Additional Accessories & Services

B&W scan targets and target accessories
Range of Customer Care Products (CCPs) that include Support, Hardware & Software maintenance and Extended warranty.
External battery with charging station, AC power supply and power cable
Professional charger for internal batteries
AC power supply for scanner
Tripod and tripod star
Upside down mounting adapter

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.

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.
* Algorithmic fit to planar B&W targets
** Detailed explanation on request

Scanner: Laser class 2 in accordance with IEC 60825-1 resp. EN 60825-1
Laser plummet: Laser class 1 in accordance with IEC 60825-1 resp. EN 60825-1

iPhone and iPad are trademarks of Apple Inc.

Illustrations, descriptions and technical data are not binding. All rights reserved. Printed in Switzerland – Copyright Leica Geosystems AG, Heerbrugg, Switzerland, 2013.
795781en – II.13 – galledia

联系人：
李 滨
13910106639
bohe@foxmail.com

Leica Geosystems AG
Heerbrugg, Switzerland

www.leica-geosystems.com/hds

- when it has to be **right**

Leica Geosystems