Leica ScanStation 2
Exceptional Speed,
Outstanding Versatility

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

**General**

**Instrument type**
Pulsed, dual-axis compensated, very high speed laser scanner, with survey-grade accuracy, range, and field-of-view.

**User interface**
Notebook or Tablet PC

**Scanner drive**
Servo motor

**Camera**
Integrated high-resolution digital camera

**System Performance**

**Accuracy of single measurement**
Position* 6 mm
Distance* 4 mm

**Modeled surface precision/noise**
2 mm, one sigma

**Target acquisition***
2 mm std. deviation

**Dual-axis compensator**
Selectable on/off

**Data integrity monitoring**
Periodic self-check during operation and startup

**Laser Scanning System**

**Type**
Pulsed; proprietary microchip

**Color**
Green

**Class**
3R (IEC 60825-1)

**Range**
300 m @ 90°, 134 m @ 180° albedo

**Scan rate**
Up to 50,000 points/sec, maximum instantaneous rate

**Average**
dependent on specific scan density and field-of-view

**Scan resolution**

**Spot size**
From 0 - 50 m: 4 mm (FWHH - based);
6 mm (Gaussian - based)

**Selectability**
Indepently, fully selectable vertical and horizontal point-to-point measurement space

**Point spacing**
Fully selectable horizontal and vertical; < 1 mm minimum spacing, through full range; single point dwell capability

**Maximum sample density**
< 1 mm²

**Field-of-view (per scan)**

**Horizontal**
360° (maximum)

**Vertical**
270° (maximum)

**Aiming/Sighting**
Optical sighting using QuickScan™ button

**Scanning Optics**
Single mirror; panoramic, front and upper window design

**Environmental**

**Operating temp.**
0°C to +40°C

**Storage temp.**
-25°C to +65°C

**Humidity**
Non-condensing

**Shock**
40 G’s (max. to scanner transport case)

**Dust/humidity**
IP52 (IEC 60529)

**Power Supply Unit**

**Dimensions**
10.5" D x 14.5" W x 20" H

**Weight**
18.5 kg, nominal

**Standard Accessories Included**

**Scanner transport case**

**Trichab (Leica Professional Series)**
Survey tripod

**Ethernet cable for connection of scanner to notebook PC**

**Two Power Supply cases.** Each includes:

**Power Supply**

**Cable for battery connection to scanner**

**Power Supply charger**

User manual

Cleaning kit

Cyclone™-SCAN software

**Hardware Options**

**Notebook PC**

**Tablet PC**

**HDS scan targets and target accessories**

**Service agreement for Leica ScanStation 2**

**Extended warranty for Leica ScanStation 2**

**Notebook PC for Scanning**

**Component**
required (minimum)

**Processor**
1.4 GHz Pentium M or similar

**RAM**
512 MB SDRAM

**Network card**
Ethernet

**Display**
 SXGA+

**Operating system**
Windows XP [SP1 or higher]

**Windows 2000 [SP2 or higher]**

**Cyclone-SCAN**

**Independent vertical and horizontal scan density**

**Scan filters: range, intensity**

**Selection of scan area via scribed rectangle or pre-sets**

**Atmospheric correction**

**Customizable longitude/latitude grid lines**

**Targeted, single-shot pre-scan ranging**

**Script management for auto scan sequencing**

**View scanners locations and field-of-view**

**Level of detail (LOD) for fast visualization**

**Auto rechecking (re-acquisition) of targets**

**Auto acquisition of HDS targets**

**Target identification**

**Traverse**
Field Setup - Reection

**Field Setup - Known Backsight**

**Field Setup - Known Azimuth**

**Traversal and resection reports**

**Stakeout and id point**

**Point to and dwell on preselected coordinates**

**Direct coordinate station entry**

**Dual-axis compensation on/off**

**Engage/disengage turret**

**Target and instrument height input**

**Lighting control for digital images**

**Acquire and display digital image**

**Set image resolution (high, medium, low)**

**Support of external digital images**

**Real-time 3D visualization while scanning**

**Fly-around, pan & zoom, rotate clouds, meshes, models in 3D**

**View point clouds with intensity or true-color mapping**

**Auto creation of panoramic digital image mosaic**

**Global digital image viewer**

**Point-and-scan Quickscan to set horizontal FoV**

**User-defined quality-of-fit checks**

**Measure & dimension: slope dist., Δx, Δy, Δz**

**Create, manage annotations and layers**

**Save/restore views**

**Save screen images**

**Unndo/redosupport**

**Direct Import Formats**

**Cyclone native IMP object database format**, Cureton Object Exchange (COE) format

**ASCII point data (XYZ, SVY, PTS, TXT)**

**Leica’s X-Function DBX format, Land XML, ZFS, ZFC, 3DD**

**Direct Export Formats**

**ASCII point data (XYZ, SVY, PTS, TXT)**

**Leica’s X-Function DBX format, Land XML, ZTC**

**Indirect Export Formats**

**AutoCAD via AutoCAD, COE for MicroStation plug-in**

**MicroStation via COE for MicroStation plug-in**

**PDS via MicroStation, COE for MicroStation plug-in**

**AutoPLANT via AutoCAD, COE for AutoCAD plug-in**

**All specifications are subject to change without notice.**

**Atression specifications are one sigma unless otherwise noted**

1 SmartScan Technology™ Nature

2 SmartScan Technology™ Feature

* At 1 m - 50m range, one sigma

** Subject to modeling methodology for modeled surface

** Algorithmic fit to planar HDS Targets

** Minimum requirements for modeling operations are different. Refer to Cyclone data sheet specifications

** Leica class 3R in accordance with IEC 60825-1 resp. EN 60825-1

** Windows is a registered trademark of Microsoft Corporation.

** Other trademarks and trade names are those of their respective owners.

** Illustrations, descriptions and technical specifications are not binding and may change. Printed in Switzerland - Copyright Leica Geosystems AG, Heerbrugg, Switzerland 2007. 760362wtxUSV1 - V07 - RDV

Leica Geosystems AG
Heerbrugg, Switzerland

www.leica-geosystems.com/hds