Leica Geosystems HDS versatile, high-accuracy, long-range 3D laser scanner

**Leica HDS3000 sets the standard**
With a familiar survey instrument feel, including a 360° x 270° field-of-view, the Leica HDS3000 sets the standard for versatile, high-accuracy laser scanners. Since it was introduced, the Leica HDS3000 has become the industry's most popular laser scanner for both demanding and “everyday” as-built and topographic surveys.

**Mission-critical data**
Leica HDS300’s high-accuracy, low-noise scan data combined with its narrow beam and ultra-fine scanning have made it the preferred choice for mission-critical projects ... when it has to be right.

**Versatility and productivity**
Leica HDS3000’s integration of high accuracy, excellent useful range, full field-of-view, and robotic operation into a single scanner results in significantly reduced as-built survey costs for a wide range of everyday projects.

**Powerful visualization**
With an integrated high-resolution camera and the option to use external digital cameras, the Leica HDS3000’s 3D laser scans provide users with powerful site visualization capabilities.

**The right tool for the job**
Fully complementary with traditional surveying methods, the Leica HDS3000 delivers significant benefits for civil, plant, architectural and related projects.

Get more information or contact Leica Geosystems for a demonstration at: www.leica-geosystems.com/hds

- when it has to be right
Leica HDS3000
Product Specifications

General
Instrument type: Pulsed, 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
Angle (horizontal/vertical): 60 microradians / 60 microradians,
Distance*: 4 mm
Position*: 6 mm

Scan resolution
Spot size: From 0 - 50 m: 4 mm (FWHH-based);
6 mm (Gaussian - based)
Selectability: Independently, fully selectable vertical
and horizontal point-to-point measure-
ment spacing†
Point spacing: Fully selectable horizontal and vertical;
1.2 mm minimum spacing, through full range†
Maximum sample density: 1.2 mm†
Scan row (horizontal): 20,000 points/row, maximum†
Scan column (vertical): 5,000 points/column, maximum†

Field-of-view (per scan)
Horizontal: 360° (maximum)†
Vertical: 270° (maximum)†

Scanning Optics
Optical sighting using QuickScan™ button

Scan motors
Direct drive, brushless

Data & power transfer to/from rotating turret
Contact-free: optical data link and inductive power transfer

Communications
Static Internet Protocol (IP) Address
User-defined pixel resolution:
Low, Medium, High
Single 24° x 24° image: 1024 x 1024
pixels (1 megapixel) @ “High” setting
Full 360° x 270° dome: 111 images,
approx. 64 megapixels, automatically spatially rectified

Status Indicators
3 LEDs (on stationary base) indicate system ready, laser “on”,
and communications status

Bubble level: External

Electrical
Power supply: 36 V; AC or DC; hot swappable; two (2)
Power Supply units provided with system
Power consumption: < 80W avg.
Battery type: Sealed lead acid
Power ports: Two (2) simultaneous use, hot swappable
Typical duration: >6 hours, typical continuous use
(room temp.)
Power status indicators: Five (5) LEDs indicate charging status and
power levels

Environmental
Operating temp.: 0°C to +40°C
Storage temp.: -25°C to +65°C
Lighting: Fully operational between bright
sunlight and complete darkness
Humidity: Non-condensing
Shock: 40 G’s (max. to scanner transport case)
Dust/humidity: IEC Specification IP52

Physical
Scanner
Dimensions: 10.5” D x 14.5” W x 20” H
265mm x 370mm x 510mm,
with handle and table stand
Weight: 17 kg, nominal
Power Supply Unit
Dimensions: 6.5” D x 9.25” W x 8.5” H
165 mm x 236 mm x 215 mm
w/o handles
Weight: 12 kg, nominal

Standard Accessories included
Scanner transport case
Tribach (Leica Professional Series)
Survey tripod
Ethernet cable for connection of scanner to notebook PC
Two Power Supply cases. Each includes:
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 HDS3000
Extended warranty for Leica HDS3000

Notebook PC for Scanning†
Component: required (minimum)
Processor: 1.4 GHz Pentium III 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-set†
Atmospheric correction
Customizable longitude/latitude grid lines
Targeted, single-shot pre-scan ranging†
Script management for auto scan sequencing†
View scanner 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
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
Undo/redo support

Direct Import Formats
Cyclone native IMP object database format,
Cyclone Object Exchange (COE) format
ASCII point data (XOY, SV5, PTS, PTX, TXT)
Leica’s X-Function DBX format, Land XM1, 2FC, 3DD

Direct Export Formats
ASCII point data (XOY, SV5, PTS, PTX, TXT), DXF
Leica’s X-Function DBX format, Land XM1

Indirect Export Formats
AutoCAD (via COE for AutoCAD 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)

Ordering Information
Contact Leica Geosystems or authorized
manufacturer’s representatives

All specifications are subject to change without notice.
All ± accuracy specifications are one sigma unless
otherwise noted
† SmartScan Technology™ feature

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www.leica-geosystems.com/hds