Leica HDS3000

Leica Geosystems HDS versatile, high-accuracy time of flight 3D laser scanner

HDS3000 sets the standard - With familiar surveyor instrument look and feel, the Leica HDS3000 increases productivity and minimizes the learning curve while setting the standard for accuracy, performance and quality. The HDS3000 is for professionals who trust the tools they use to get it right and demand the highest standards when adding HDS for data collection.

Mission-critical engineering - When projects require the best results, surveyors, engineers and project managers demand the HDS3000 and trust Leica Geosystems HDS when it has to be right.

Color point clouds for visual fidelity - The Leica HDS3000 is a high accuracy time-of-flight medium-range scanner with bore-sighted high-resolution digital imaging that produces a true-color point cloud model of reality.

Accuracy and range for greatest versatility - The accuracy advantage of 6mm at range and full 360 x 270 degrees field-of-view makes the HDS3000 ideal for safely scanning inaccessible sites, structures and terrain for cost-efficient field data collection.

The right tool for the job - Time-of-flight scanning is beneficial for both exterior and interior work where HDS complements traditional surveying, including civil infrastructure, plant, architectural and other projects. Get more information, or contact Leica Geosystems HDS for a demonstration at: www.hds.leica-geosystems.com.

Leica Geosystems

Leica HDS3000
Product Specifications

GENERAL

INSTRUMENT TYPE	High-speed, high-accuracy laser scanner with maximum 360° x 270° field-of-view
USER INTERFACE	Notebook PC
SCANNER DRIVE	Servo motor
OPTICAL VIEWER	Integrated video camera

SYSTEM PERFORMANCE

SINGLE POINT ACCURACY*

Position	6mm
Distance	4mm
Angle (horizontal)	60 micro-radians
Angle (vertical)	60 micro-radians
MODELED SURFACE PRECISION**	2mm
TARGET ACQUISITION ACCURACY†	1.5mm
DATA INTEGRITY MONITORING	Periodic accuracy self-checking during operation and at startup

** All specifications shown @ 1m - 50m range*
*** Subject to modeling methodology*
† Algorithmic fit to planar HDS targets

LASER SCANNING SYSTEM

TYPE	Pulsed; proprietary microchip
COLOR	Green
LASER CLASS	Class 3R (IEC 60825-1)
RANGE	
Optimal effective range	1m-100m
To 10% reflectivity targets	Up to 100m (typical)
SCAN RATE	Up to 1800 points/second*

* Maximum scan rate dependent on scan resolution and selected field-of-view

SCAN DENSITY (RESOLUTION)

Spot size	≤ 6mm from 0 - 50 meters †
Selectability	Independently selectable vertical and horizontal point-to-point measurement spacing †
Point spacing	Select by total number of points per unit area or minimum distance between points (at specified range) †
Maximum sample density	1.2mm †
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) †
Aiming/Sighting	Optical sighting using QuickScan™ button
SCANNING OPTICS	Single mirror, panoramic, dual-window design † Environmentally protected by housing and two glass shields
SCAN MOTORS	Direct drive, brushless
DATA & POWER TRANSFER TO/FROM TURRET	Contact-free: optical data link and inductive power transfer
COMMUNICATIONS	Static Internet Protocol (IP) Address
COLOR DIGITAL IMAGING	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, spatially rectified
STATUS INDICATORS	3 LED's (on base) indicate system ready, laser on, and comm. status

ELECTRICAL

POWER SUPPLY	12V input, QTY (2) Power Supply units provided with system
POWER CONSUMPTION	<80W average
BATTERY TYPE	Sealed lead acid
POWER PORTS	2, simultaneous use, "hot swap" capable
TYPICAL DURATION	Up to 6 hours continuous use (nominal temp.)
POWER STATUS INDICATORS	5 LEDs indicate charging status and power levels (low/medium/high)

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 atmosphere
SHOCK	40G's (max. to scanner transport case)
DUST/HUMIDITY	IEC Specification IP52

PHYSICAL

	DIMENSIONS	WEIGHT
SCANNER	10.5 D" x 14.5" W x 20" H 265mm D x 370mm W x 510mm H w/o handles, w/o table stand	16 kg (35lbs), nominal
POWER SUPPLY UNIT	6.5" D x 9.25" W x 8.5" H 165mm D x 236mm W x 215mm H w/o handles	12 kg (26lbs), nominal

STANDARD ACCESSORIES

Scanner transport case
Tribrach (Leica Professional Series)
Surveying 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

Cyclone™-SCAN software

HARDWARE OPTIONS

Notebook PC (Standard or Enhanced)
HDS scan targets and target accessories
Service agreement for HDS3000

NOTEBOOK PC FOR SCANNING Δ

COMPONENT	REQUIRED (minimum)
Processor	1.4 GHz Pentium M or similar
RAM	512MB SDRAM
Network card	Ethernet
Display	SXGA+
Operating system	Windows XP Proffesional (SP1 or higher) Windows 2000 (SP3 or higher with up to date security patches)

Δ Minimum requirements for modeling operations are different. Please refer to Cyclone datasheet for specifications.

CYCLONE – SCAN

"Fly-around," pan & zoom, and freely rotate point clouds, true-color intensity mapped clouds, wire meshes, "shrinkwrap" surfaces, and models in 3D
Real-time 3D visualization while scanning †
Point cloud and 3D model Level of Detail (LOD) for fast visualization
Fast "shrinkwrap" rendering of point clouds to meshes
Decimation of point clouds (Nth point)
View point clouds with intensity or true-color mapping
Limit box for efficient viewing and interaction of selected regions
Targeted, single-shot pre-scan ranging †
Automatic creation of panoramic digital image mosaic †
Panoramic digital image viewer †
Georeferencing over known or assumed survey point †
Instrument height (H.I.) input during data capture †
Target height input during data capture †
Point-and-scan QuickScan™ feature to interactively set horizontal field-of-view †
Scan filtering to optionally exclude data based on:
- Area of interest via rectangular areas †
- Range †
- Return intensity †
- Pre-set drop-down list or custom settings †

User-defined quality-of-fit checks
Atmospheric correction
Measure & dimension point clouds and models
- Slope distances
- △X, △Y, △Z distances

Create and manage annotations
Create and manage layers
Assign colors & materials to objects
View scanner locations and field-of-view
Environmental lighting
Save/restore views
Save screen image as image file
Undo/redo support
Automated acquisition of HDS targets †
Scanner command scripting †

DIRECT IMPORT FORMATS

Cyclone native IMP object database format, Object Exchange (COE) format (COE Data Transfer Products), CGP
ASCII point data (XYZ, SVY, PTS, PTX, TXT)
RIEGL 3DD
Zoller Fröhlich ZFS, ZFC
BMP, JPEG, TIFF

DIRECT EXPORT FORMATS

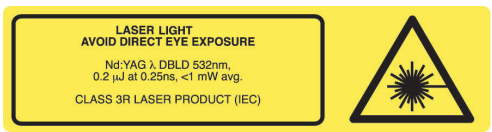
ASCII point data (XYZ, SVY, PTS, PTX, TXT)
BMP, JPEG, TIFF
Cyclone Object Exchange (COE) format (COE Data Transfer Products)

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 HDS LLC or authorized manufacturer's representatives.
All specifications are subject to change without notice.
All ± accuracy specifications are 1 sigma unless indicated otherwise
† SmartScan™ Technology feature



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Leica Geosystems HDS LLC
4550 Norris Canyon Road
San Ramon, CA 94583
www.hds.leica-geosystems.com