Laser Technology for Dimensional Inspection

CyberScan Vantage employs the latest technological advances from CyberOptics, a leading manufacturer of non-contact scanning systems.

- DRS™ high-resolution, digital laser sensor
- Windows® -based software
- Integrated video camera showing magnified, live view of measurement site
- Streamlined benchtop design

System Features

- Choice of sensors with dynamic resolutions from 0.125 to 4.0 microns (0.005 to 0.16 mils)
- Working ranges from 300 to 8000 microns (12 to 315 mils)
- Spot sizes range from 7 to 85 microns (0.28 to 3.3 mils)
- Computer-controlled x and y stages with 6 x 6 in (15 x 15 cm) travel
- Internal Pentium® computer running Windows
- CyberOptics SCAN™ software with online HELP

System Includes

- Benchtop scanning unit with manual z and motorized x and y stages
- 15-inch monitor, keyboard, trackball and cables
- Factory-installed Microsoft® Windows and SCAN software
- Surfer 3D plotting software
- Ethernet network card
- DRS sensor of choice with camera (see Sensor Specifications)
- *Getting Started* and *Reference* guides

Options

- AutoSCAN™ software for writing customized routines using Microsoft Visual Basic®
- NIST-traceable step standard for calibration verification
- Larger monitors

CyberOptics

CyberScan® Vantage™

3D Non-Contact Scanning System

High-Resolution Topographical Scans

Vantage is a laser-based, non-contact inspection system for scanning a target object and collecting high-resolution, sub-micron z-height measurements. The collected data is used to create a topographical map of the target object.

Non-contact scanning is required for measuring micro-scale objects which are fragile, pliable or highly contoured such as:

- Integrated circuit devices and electronic components
- Precision stamped, machined or molded parts
- Wet surfaces including dispensed epoxy, glue, sealant or solder paste
- Many other hard-to-measure objects

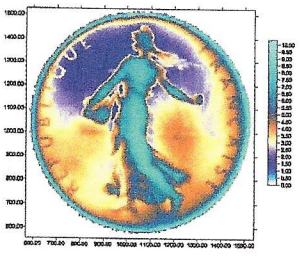
Select measurements from drop-down menus in SCAN:

3D (x, y, z)

- Height (Avg)
- Volume
- Angle (Planar)
- Roughness (Avg, Max, RMS, Rz)
- Base Area

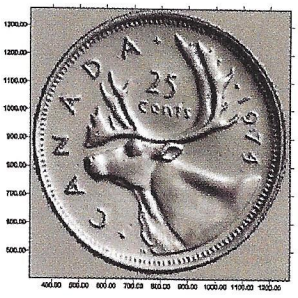
2D (y, z or x, z)

- Height
- Length
- Angle
- Center
- Radius
- Roughness (Avg, Max, RMS, Rz)
- Area

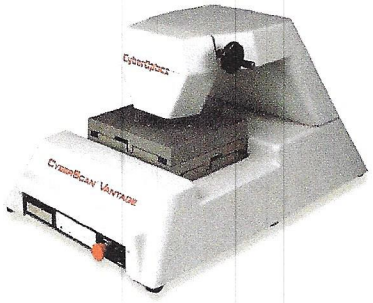


3D mapping choices

- Topographical
- Orthographical
- Shaded relief
- Grayscale
- Colorscale



CyberScan® Vantage™



Vantage combines CyberOptics' latest laser technology with computer-driven x and y-axis stages to produce high-resolution two- and three-dimensional profiles and scans. The system collects a series of height measurements to create a 2D profile, or performs a raster scan of the entire measurement site to produce a 3D topographical map.

- Windows - based SCAN™ software controls measurement functions, analyzes data and displays graphical images on the monitor
- Motorized stages have linear encoders for precise positioning
- Integrated video camera provides an illuminated, magnified view of the measurement site
- Monitor displays video image, topographical map, two-dimensional profile and measurement data log
- Optional AutoSCAN™ can be programmed for multi-site inspections

System Specifications

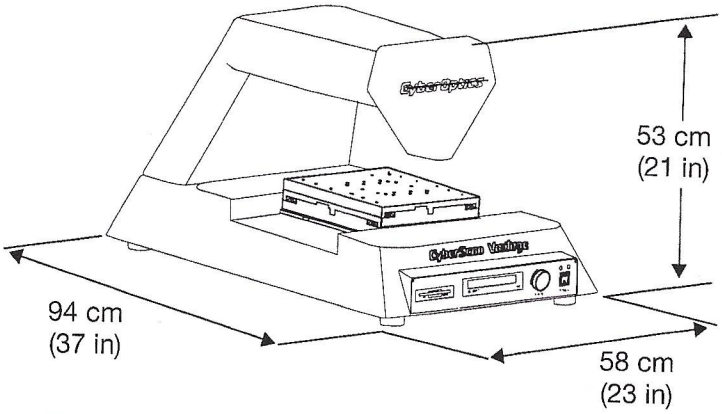
Scan data rate	40 to 60 readings/sec, nominal
Dimensions (w x l x h)	58 x 94 x 53 cm (23 x 37 x 21 in)
Minimum step size	1 micron (0.04 mils)
Weight	approximately 71 kg (156 lbs)
Power requirement	100–120/220–240 V AC, 2A, 50/60 Hz
Operating temperature range	20 to 30°C (68 to 86°F)
System controller	Pentium processor running Windows, 64 MB RAM, hard drive, keyboard, trackball, two RS-232 ports, parallel printer port, CD-ROM drive, floppy drive, 15-inch SVGA monitor

Stage Specifications

Measurement surface size	30.5 x 30.5 cm (12 x 12 in)
Linear encoder scale resolution	0.5 µm (20 µin)
Drive travel limits	
x, y (motorized)	15 x 15 cm (6 x 6 in)
z (manual)	12.7 cm (5 in)
Maximum load on platform	6.8 kg (15 lbs)
Throat depth/throat clearance	33 cm/25 cm (13 in/9.84 in)

Sensor Specifications

Model/ Type	Dynamic Resolution µm (mils)	Measuring Range µm (mils)	Spot Diameter µm (mils)	Camera FOV mm (in)
DRS-300	0.125	300	7 – 12	7.0 x 5.25
Specular	(0.005)	(12)	(0.28 – 0.47)	(0.28 x 0.21)
DRS-500	0.125	500	16 – 23	7.0 x 5.25
Specular	(0.005)	(20)	(0.63 – 0.91)	(0.28 x 0.21)
DRS-2000	1	2000	32 – 48	10.0 x 7.5
Diffuse	(0.04)	(79)	(1.3 – 1.9)	(0.39 x 0.30)
DRS-8000	4	8000	60 – 85	15.0 x 11.25
Diffuse	(0.16)	(315)	(2.4 – 3.3)	(0.59 x 0.44)



For More Information

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CyberOptics

CyberOptics Corporation is certified under ISO 9001 by Bureau Veritas Quality Int'l.

All specifications are subject to change without notice.
All patents applied for or pending.

Safety Considerations
CYBERSCAN VANTAGE complies with all applicable laws for the manufacture of laser devices. This system is classified by the Center for Devices and Radiological Health (CDRH) as a Class II laser device.

Class II systems: Do not stare directly into the laser source or point the laser at another's eye.