LOGO

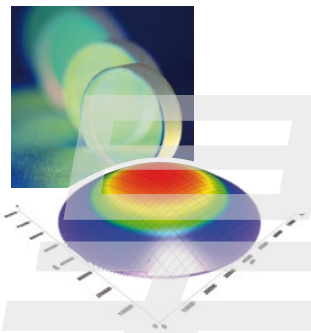
cyber TECHNOLOGIES

PRODUCT

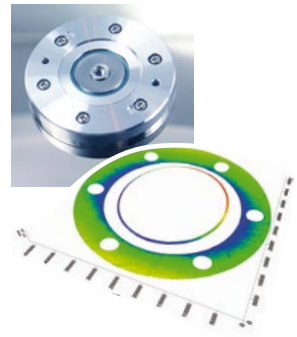
cyberscan CT 350S

- HIGH-END 3D SURFACE MEASUREMENT SYSTEM
- LARGE 350 MM X 350 MM SCANNING AREA
- USER FRIENDLY CONCEPT
- SOPHISTICATED ANALYSIS AND AUTOMATION SOFTWARE

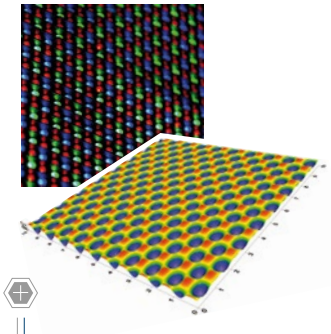
Surface of an asphere



Flatness of a hard disk component



Topography of LED devices



OVERVIEW

The CT 350S is a non-contact profilometer with a 350 mm x-, y-scanning stage and a closed loop 200 mm z-axis. All three axes use air bearings and magnetic linear motors. The system is based on a massive granite construction with a vibration isolated floor stand.
The system offers exceptional performance with a flatness deviation less than 70 nm.
During the scanning process the z-axis can follow the shape of the part. The height reading is a combination of the calibrated z encoder signal and the sensor height. This allows the system to achieve a very high resolution in the vertical z-direction over the entire z-axis range of 200 mm. In combination with the fast chromatic sensors the inspection time is minimized. The sensors are available with a z-resolution down to 3 nm. With our Multi-sensor Technology, several sensor heads can be mounted simultaneously.

APPLICATIONS

The CT 350S was originally designed for measuring precision optic components. Other popular applications are contour measurements, step height, roughness and other 2D and 3D analyses, geometry and position measurement of other highly contoured objects like, gaskets, turbine blades, as well as flatness and coplanarity analysis. The CT 350S offers high accuracy across the entire travel and exceptional z accuracy at a measurement range of 200 mm. Larger parts such as optical components, aspheric lenses, machined parts or gaskets are inspected fast and precisely.

- Lenses, aspheric lenses and other optical components
- Gaskets and large mechanical parts
- Printed products, systems or devices
- Device packaging
- Fuel cell elements
- Medical devices

SOFTWARE

The proprietary cyberTECHNOLOGIES, Windows based software package SCAN SUITE combines system control, data collection and data analysis in a user friendly interface. Comprehensive profile, 3D and roughness analyses conforming to DIN ISO are included. The software can handle up to 10.000 x 10.000 data points in one scan.
An outstanding feature is the ASCAN Software:

- Automation of measurement routines
- Easy programming using tasks and templates
- Offset and fiducial correction
- Built-in SPC Charts with reporting function
- Flexible, user defined data output format
- Barcode or user field input
- Step & Repeat function

TECHNOLOGY

- Fast and accurate scanning system with air bearings in x-, y- and z-direction
- Measurement speed: 4 kHz (14 kHz optional)
- 350 mm travel in x- and y-direction, lateral resolution 1 nm, optional motorized z-axis resolution 1 nm
- 2D profiles and 3D topographical maps
- Large scanning area, up to the maximum travel of 350 mm at maximum x-, y-, z-resolution
- Chromatic white light sensors
- Resolution down to 3 nm
- High resolution off-axis camera
- Collision protection system

SLOGAN

BECAUSE ACCURACY MATTERS

cyberscan CT 350S

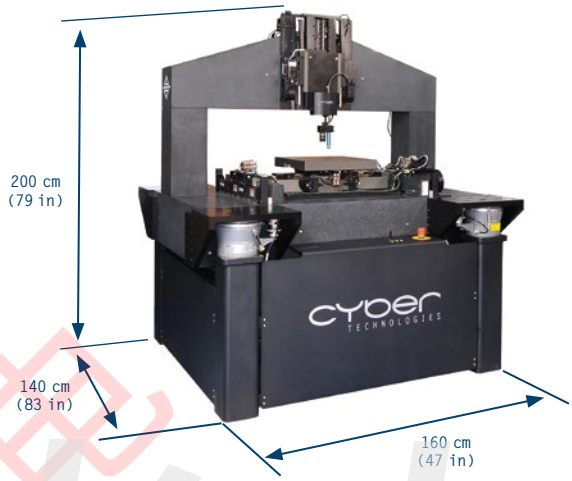
INFO

SYSTEM INCLUDES

- CT 350S base unit with motorized x-, y- and z-axis
- One sensor of choice (see sensor specifications)
- System control console
- Joy-Stick Control
- PC Workstation (current version)
- Factory installed Windows XP and cyberTECHNOLOGIES SCAN SUITE license
- 22” widescreen monitor, keyboard, mouse
- Reference manuals and user guides

OPTIONS

- ASCAN Software for automation of measurement tasks and analyses, 2D and 3D, Step & Repeat
- High speed sensor and controller (14 kHz)
- Additional sensors
- Square shaped optical flat for flatness calibration
- Traceable calibration tools and certification targets



INFO

SPECIFICATIONS

DIMENSIONS (L X W X H)	1600 x 1400 x 2000 [mm] System (63 x 55 x 79 [in]) 600 x 800 x 2000 [mm] Control Console (24 x 32 x 79 [in])
WEIGHT	2500 kg (5500 lbs)
SYSTEM CONTROLLER	Includes Motion Control, Sensor Controller (4 kHz), Power Supplies, USB Interface to Workstation
WORKSTATION PC	Inquire about current specification, 22” widescreen monitor
CONNECTIONS	Ethernet, DVD Drive, USB (front and back side), Parallel Port, Keyboard, Mouse, DVI and Analog Video Output
POWER REQUIREMENTS	100-240 V AC, 50-60 Hz, 2.0 amps (240 V), 5 amps (100V)
OPERATING TEMPERATURE	20°C (68F)
MEASUREMENT SURFACE SIZE	400 x 400 [mm] (16 x 16 [in])
LINEAR ENCODER RESOLUTION	1 nm (0.04 µin)
MINIMUM LATERAL RESOLUTION	1 micron
TRAVEL LIMITS IN X AND Y (MOTORIZED)	350 x 350 [mm] (13.8 x 13.8 [in])
TRAVEL LIMIT IN Z (MOTORIZED)	200 mm (8 in), 1 nm (0.04 µin) resolution
MAXIMUM LOAD ON PLATFORM	10 kg
AVAILABLE SENSORS	Confocal White Light Sensors

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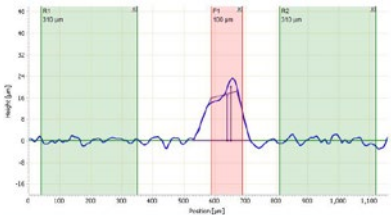
SCAN SUITE 8

SCAN CT – PROFILE AND 3D ANALYSIS SOFTWARE

SCAN CT is a software package for measuring and analyzing 2D profiles and 3D raster maps.
It offers complete 2D and 3D surface measurement parameters as well as sophisticated filter and compensation methods.
All combined in an operator friendly user interface.

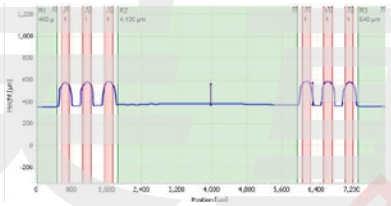
2D PROFILE MEASUREMENTS

- Step Height (avg., max. and min. height)
- Flatness and Warpage
- Width and Length
- Cross Section Area
- Angle, Radius, Contour Analysis



Height and Width Measurement of a solar cell finger

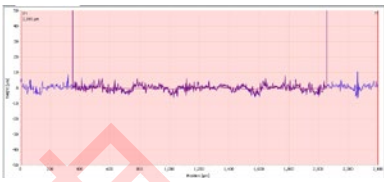
Define base line and measurement areas using reference and measurement cursors. Select analysis from dropdown menu.



Profile analysis on a metal precision part

PROFILE ROUGHNESS MEASUREMENTS

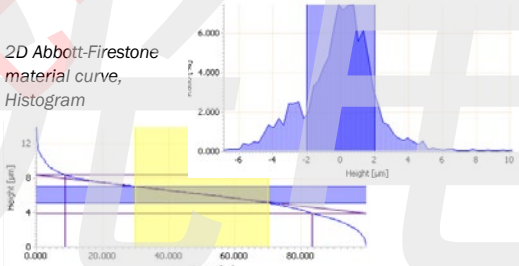
- DIN EN ISO conform Roughness Parameters
- Shape Removal Algorithm
- Abbott-Firestone Material Curve
- Histogram
- Tip Simulation for Non-Contact Systems



Roughness Measurement on a metal surface

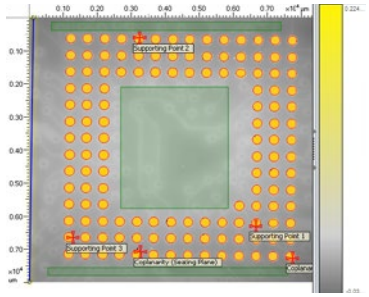
Advanced roughness analysis, even on round or angled surfaces using shape compensation. Display waviness and roughness profile.

2D Abbott-Firestone material curve, Histogram



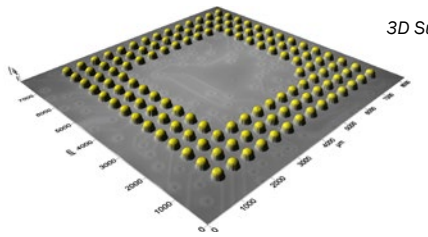
3D COPLANARITY MEASUREMENTS

- 3D Height (avg., max. and min. height)
- Flatness and Warpage
- Coplanarity



Coplanarity Measurement of a BGA Component

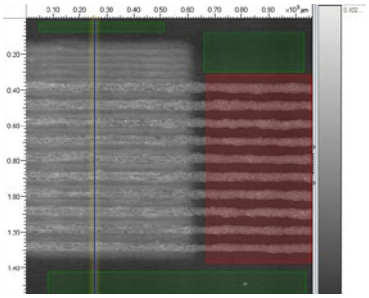
Draw rectangle, round or polygon cursors to define base plane and measurement areas.



3D Surface

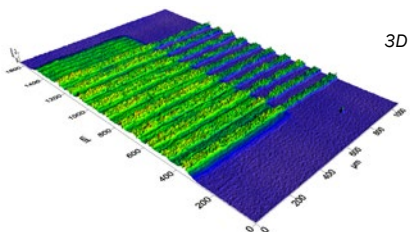
3D VOLUME MEASUREMENTS

- Volume (Cuts, Fills, Net Volume)
- Planar area
- Surface area



Volume calculation on a thin film print

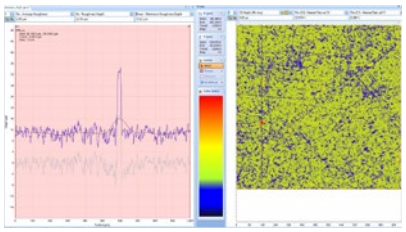
Measures cuts and fills and uses height threshold. Accurate areal and planar surface calculations



3D Surface

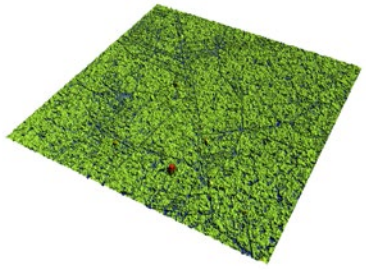
3D ROUGHNESS MEASUREMENTS

- New DIN EN ISO 25178 Parameters
- 3D Waviness Filters
- 3D Abbott-Firestone material curve, Histogram



Roughness Measurement on a solar wafer

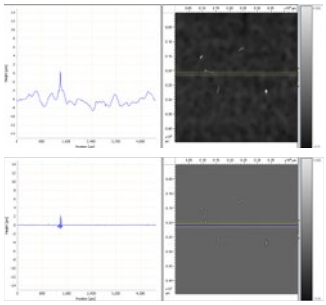
Use advanced DIN /TS 16610 Filters. 3D Roughness Analysis even on warped or uneven surfaces.



3D Surface

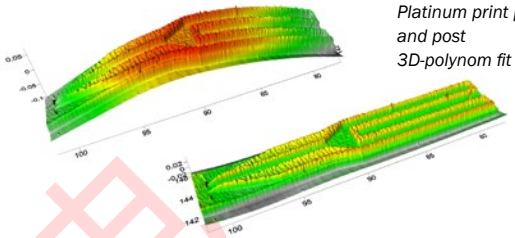
2D AND 3D SURFACE COMPENSATIONS

- 2D and 3D Polynom Fit
- Pre- and after measurements
- Areal Waviness Compensation



Copper surface defect with areal waviness filter

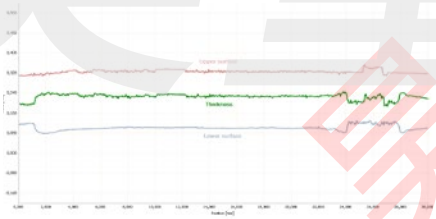
Surface compensation is only applied based on the data in the reference cursors.



Platinum print pre and post 3D-polynom fit

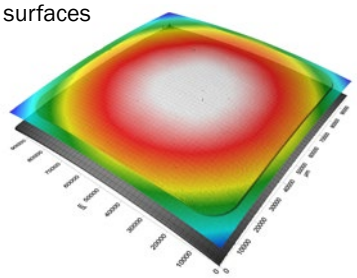
PARALLEL DATA COLLECTION

- Parallel scanning with up to 4 sensors
- Collect Top, Bottom and Thickness data
- Average Thickness, Bow and Curvature
- Total Thickness Variation
- Parallel Intensity Masking



Top, bottom and thickness profile of a solar wafer

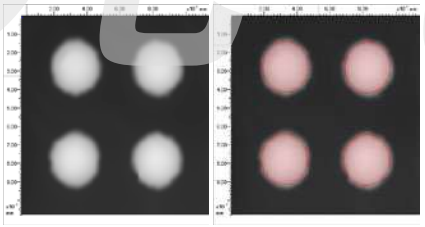
Graphical display of thickness maps and top/bottom surfaces



Top and bottom surface of a fuel cell component

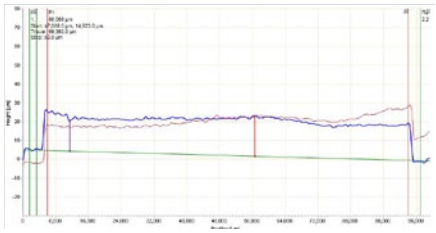
MORE FEATURES AND HIGHLIGHTS

- x-, y-, z-data stitching capability
- 2D and 3D edge detection algorithm
- Windows 7 64 bit Version available
- Raster up to 200,000,000 data points
- Integrated user management



Automatic detection of BGA bumps

Compare geometry by overlaying profiles.



Profiles across a fuel cell component

SUMMARY

SCAN CT is a complete, unique and easy to use surface analysis software. It offers outstanding features and includes the following highlights:

- Complete 2D and 3D surface analysis
- Profile and 3D roughness measurements according to DIN ISO EN Standards
- Comprehensive profile and surface compensations
- Advanced filter technologies
- Uni- / bi-directional scanning
- Linear, circular and ellipsoidal scanning
- Simultaneous data collection of up to 4 sensors
- Dedicated user management
- Up to 200 Mio. data points per raster
- Fast multithread technology

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