

cyberscan

CT 350T / CT 250T

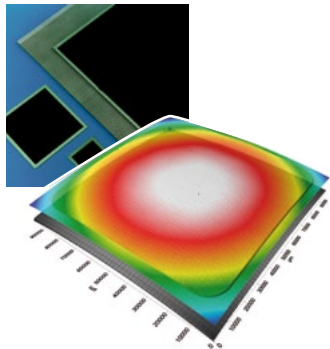
- DUAL NON-CONTACT MEASUREMENT SYSTEM
- 3D MAPPING OF THICKNESS, BOW, WARPAGE AND ROUGHNESS
- USER FRIENDLY CONCEPT
- SOPHISTICATED ANALYSIS AND AUTOMATION SOFTWARE

OVERVIEW

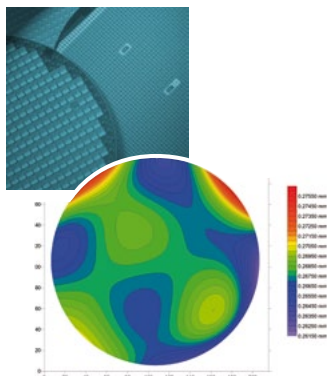
The CT 350T is a non-contact double-sided optical profilometer with a 300 mm x-y- scanning stage. The upper sensor is mounted on a highly accurate z-axis with 100 mm range, while the lower sensor is stationary inside the granite platform. Both sensors collect height data synchronized with x-, y- encoder signals and are aligned axially in order to ensure accurate differential thickness measurements. The software generates 2D profiles and 3D maps simultaneously from the top and the bottom surface and calculates the corresponding total thickness profile or map.

The motion system uses fast and accurate magnetic linear motors. By triggering the chromatic white light sensors at a data rate of 4 kHz the inspection time is minimized. The sensors are available with a z-resolution down to 3 nm and a measurement range up to 25 mm. With an adapter plate on the stage aperture the system can be used as a standard optical surface profilometer which makes the CT 350T the most versatile surface and thickness measurement system. The system is also available in a smaller version as CT 250T with 200 mm travel ideally for 8" wafers or substrates and solar wafers.

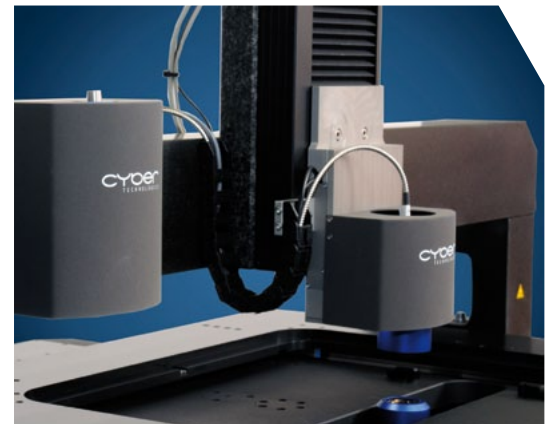
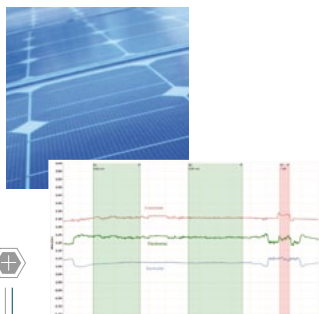
Thickness of a Fuel Cell Component



Wafer Thickness Map



Front- and Backside Metallization of a Solar Cell



Aside from the standard surface metrology parameters, the CT 350T measures Thickness, Total Thickness Variation, Radius of Curvature, Bow and Warp.

SOFTWARE

The proprietary cyberTECHNOLOGIES Windows based software package SCAN SUITE combines system control, data collection and data analysis in a user friendly interface. Comprehensive thickness, 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 a single scan.

Outstanding capabilities are provided by 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 dual scanning system
- Measurement speed: 4 kHz
- 300 mm (200 mm) travel in x- and y-direction, lateral resolution 50 nm, motorized z-axis resolution 5 nm
- 2D profiles and 3D topographical maps and 3D thickness maps
- Large scanning area
- Maximum x-, y-, z-resolution up to the full maximum travel of 300 mm (200 mm)
- Chromatic white light sensors
- Z-resolution down to 3 nm, measurement range up to 25 mm
- High resolution off-axis camera

APPLICATIONS

The CT 350T was originally designed for measuring thickness of substrates and wafers. It provides accurate measurements independent of material and surface properties. There is no limitation on the minimum thickness, even measurements of samples with a thickness of only a few microns can easily be taken. Some sample applications are:

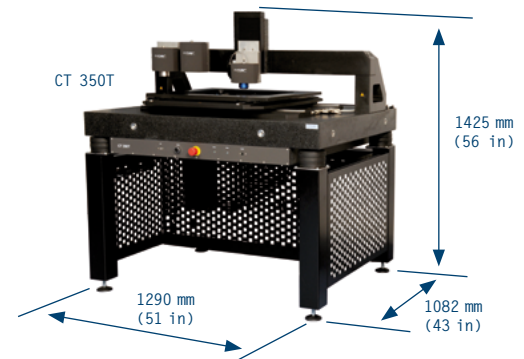
- Patterned or bumped wafers
- GaAs or solar wafers
- Fuel cell elements
- Medical devices
- Special application foils and membranes

SYSTEM INCLUDES

- CT 350T (CT 250T) base unit with motorized x-, y- and z-axis
- 2 sensors of choice (see sensor specifications)
- Granite base with floor stand and integrated vibration isolation elements
- Joy-Stick Control
- PC Workstation (current version)
- Factory installed Windows 7
- 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, ability to re-analyze previously collected data
- Adapter plates for various substrates and wafer sizes
- Additional sensors
- Traceable calibration tools and certification targets
- License for offline data analysis software, allowing the user to analyze measurement data at the desk rather than in front of the system
- 14 kHz controller for increased throughput



SPECIFICATIONS

	CT 350T	CT 250T
DIMENSIONS (L X W X H)	1290 x 1082 x 1425 [mm] (approx. 43 x 51 x 56 [in])	1060 x 887 x 1425 [mm] (approx. 35 x 42 x 56 [in])
WEIGHT	650 kg (1.433 lbs)	460 kg (1.021 lbs)
INTEGRATED 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 (100 V)	
OPERATING TEMPERATURE	18°-20°C (64° F - 68° F)	
MEASUREMENT SURFACE SIZE	300 x 300 [mm] (12 x 12 [in])	200 x 200 [mm] (8 x 8 [in])
LINEAR ENCODER RESOLUTION	X, Y: 50 nm (2 µin) Z: 5 nm (0.2 µin)	
MINIMUM LATERAL RESOLUTION	1 micron (stage resolution: 50 nm)	
TRAVEL LIMITS IN X AND Y (MOTORIZED)	350 x 300 [mm] (13.8 x 12 [in])	250 x 200 [mm] (9.8 x 8 [in])
TRAVEL LIMIT IN Z (MOTORIZED)	100 mm (4 in)	
MAXIMUM LOAD ON PLATFORM	10 kg	
AVAILABLE SENSORS	Confocal White Light Sensors	