

September, 2010

CURRENT ISSUE:



With the development of the new CT 350S measurement system cyberTECHNOLOGIES enables high-precision measurements of optical components.

cyberTECHNOLOGIES provides non-contact 3D measurement solution for industry and science. [see more](#)

INSIDE cyberTECHNOLOGIES:

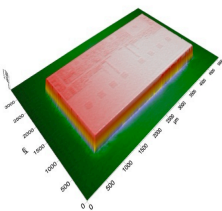
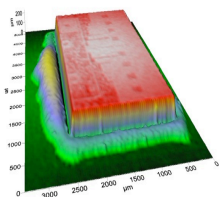


Product Highlight:

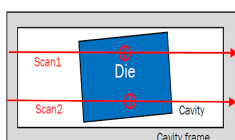
The CT 300 is a non-contact profilometer with a 300mm x-, y-motion system. It can handle up 12" wafer or other large substrates and parts. It is ideal for measuring flatness with sub-micron accuracy over the complete 300mm travel. Using a chromatic white light sensor and a data collection rate of 4kHz the inspection time is minimized. The sensors are available with a resolution down to 3nm and a measurement range up to 25mm. With our multisensor technology several sensor heads can be mounted simultaneously. [see more](#)

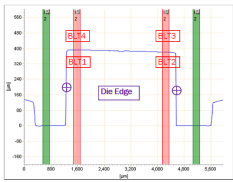
Application Highlight:

Die Tilt / Die Flatness Measurement



In the packaging process of integrated devices the die attach process or the placement of semiconductor chips is a crucial process. It is vital for subsequent processes that the die is not titled on the carrier or substrate material. The cyberTECHNOLOGIES non-contact profilometers offer an ideal solution for controlling the die flatness right after the attachment process. A complete 3D scan of a die is the most accurate way to control the flatness. With this method even warpage of the die can be controlled. The drawback of this method is the timing. To minimize the cycle time, the measurement program is reduced to a certain amount of individual profile scans. With 2 scans over the die, the height in the 4 corners can be measured. The scans can be vertical, horizontal or even diagonal. To compensate for any shift or misplacement of the die, an edge detection algorithm is used. The reference and the measurement area are automatically detected. A very useful feature is the input of the actual die thickness which allows to determine the thickness of the material underneath the chip by substrating the die thickness from the measured chip height. In applications where the die is placed in a cavity, the position of the die can be calculated with only 1 additional scan. Taking advantage of the edge detection feature, the center of the die in x and y can be found as well as the center of the cavity. From the center

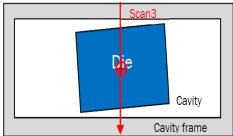




positions of the cavity and the die, the offset is calculated. The rotation is easily extracted from the 2 scans in x. All these analyses can be combined into a single automated program that provides the following process parameters:

- Die Tilt / Flatness**
- Bond Line Thickness**
- Die Offset in x and y**
- Die Rotation**

Using our easy to use step and repeat function, a complete leadframe or carrier can be inspected very quickly. The ASCAN automation software allows the entry of warn, control and specification limits for all analyses and displays a clear GO/NO GO result. All data is saved and entered in a SPC database, which can be automatically exported to link up with other statistical process analysis or factory control systems.



UPCOMING EVENTS:

ESTC 2010, September 14-16, Berlin Maritim Pro Arte
f-cell Stuttgart, September 27-28, Stuttgart

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