OPTRIX 3D

2D and 3D Wafer Inspection

The OPTRIX 3D automated optical inspection (AOI) systems of vision-OS were developed for the highly accurate measurement and inspection of Wafer.
Exceptionell reliability, precision and ease-of-use are the results of this development.
Due to the fast feedback of the optical inspection, you increase your quality and reduce the customer complaints.

Technical Description

OPTRIX 3D Wafer Inspection System delivers a comprehensive and flexible AOI solution in your Wafer production up to the final inspection of the frame mounted wafer after taping of the components.
With OPTRIX 3D you can perform 2D or 3D inspection tasks.
Thanks to OPTRIX 3D´s approved patented phase-measuring triangulation technology and over 10 years experience in 3D measurement, the sensor measures not only the x/y dimensions, but also the height for true 3D measurements.
The measurement is insensitive to typical surface structure reflectivity and color.

Key benefits at a glance:

- Real 3D bump measurement
- Combined 2D and 3D inspection
- Increasing of the quality by early error recognition
- Avoid customer complains
- Easy handling of frame mounted Wafer directly of the magazine
- Latest 8 Megapixel camera
- Integration into existing process management systems
- Wafer management software
- Barcode and DataMatrixCode capability
- Special solutions possible

VISION OS

Automatic **O**ptical **I**nspection Systems

OPTRIX 3D

Technical Data:

Inspection method	Non-contact 3D measurement using phase-measuring triangulation sensor with simultaneous 2-D inspection
Camera/sensor	Patented phase-measuring triangulation sensor, 1 to 3 cameras
Sensor resolution (x/y)	2 – 26 µm (depending on customer's requirements) standard head options: 2 µm, 5 µm, 19 µm, 26 µm
3D repeatability	Area repeatability 1 - 5 µm (depends on camera resolution)
Recognizable fiducials	All current types
False alarms/ false accept rate	Up to 20/0 dpm
Inspection speed	Up to 40 cm^2/sec (for standard sensors)
Position tolerance	Axis tolerance ~ 1 µm with linear encoder
Wafer size	4″, 6″, 8″ unframed wafer or framed wafer on foil
Conveyor height	800 - 950 mm
Conveyor interface	SMEMA or SIEMENS (customer-specific interface upon request)
Frame	The foundation of the x/y unit is made of an artificial stone plate embedded in a welded steel housing
Computer	High-speed processor, Windows® 7
Safety certifications	CE, VDE
Dimensions (W x D x H)	1,000 mm x 1,430 mm x 1,600 mm
Compressed air	6 bar, < 10 L/min (for conveyor operation only)
Power supply	240 V~, 1 ph., 5 kVA
Weight	~ 950 kg

Sample measuring speed for a 6 inch Wafer

The measurement speed depends on the inspection task and the resolution of the sensor.
Please feel free to ask for the inspection time for your special inspection.

Features:

- Fast inspection cycle for improved performance
- Extremely low number of false alarms and false accept rates
- Effective and extremely fast detection of any defect
- More flexibility with customer-specified inspection criteria
- Low personnel costs
- Extremely short startup time
- Multiple line monitoring for faster responses and more stable processes

Additional features:

- Flexible statistics thanks to customizable SQL queries
- Integrated editor for flexible programming
- Quality Monitoring System (QMS) for monitoring multiple lines and communicating to P & P system
- Inspection, evaluation & rework station all integrated into a single system
- Barcode and DMC capability

VISION OS
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