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INSPECTION

PrimaScan™ P

Defect and Contamination Inspection for Unpatterned Glass Panel and Blanket Films

The PrimaScan P panel level tools are designed to provide an all-surface contamination and defectivity inspection and imaging capability for unpatterned glass panel substrates. The PrimaScan P is designed to serve R&D as well as high-volume production needs offering both high throughput and high sensitivity at the lowest cost of ownership per pass.

KEY FEATURES AND BENEFITS

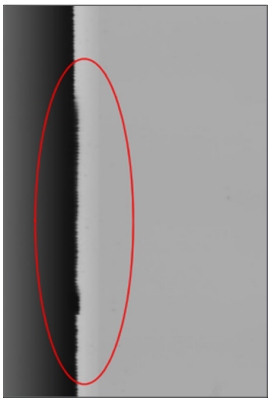
- Panel sizes: ≤600mm x 600mm
- Four detection channels:
  - Polarization, slope, BF and DF
- All-surface scan (FS/BS/Edge) and imaging with sub-nanometer sensitivity
- Particle defect (≥150nm PSL) / Surface contamination (≥5Å)
- Simultaneous FS / BS inspection (transparent & semi-transparent substrates only)
- Thin (≥100µm) and thick (≤5mm) panel handling
- Dynamically compensate for surface bow and warp
- Multiple load options
  - Manual, EFEM
- Automated image based defect classification capability
- Online and offline review capability

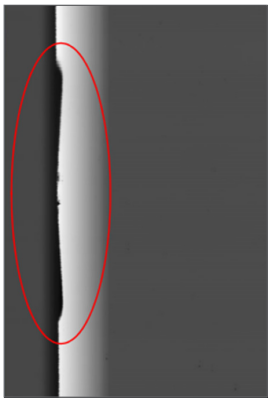
PRIMASCAN P SYSTEM DESCRIPTION

As the panel substrate segment of the advanced packaging market transitions to from copper-clad laminates (CCL) to glass the industry must adapt its substrate monitoring discipline to ensure starting substrates are free of killer defects or latent defects that may result in yield loss or scrapped panels at later stages in the process flow. The PrimaScan P product line is specifically designed to address challenges in incoming glass panel quality control for both the advanced IC substrate (AICS) and fan-out panel level processing (FOPLP) application segments within the rapidly growing advanced packaging market. The PrimaScan P system enabled by a unique laser-based scanning and imaging technique leveraging proprietary optics and sensing technologies for reliable inspection of nanometer sized defects on a variety of glass substrate sizes. Utilizing multiple channel inspection technologies, the system can detect, measure and image surface particles, scratches, pits, surface contamination, stains, film or bulk panel stress, voids/inclusions, including chips and cracks at the edge of the panel.

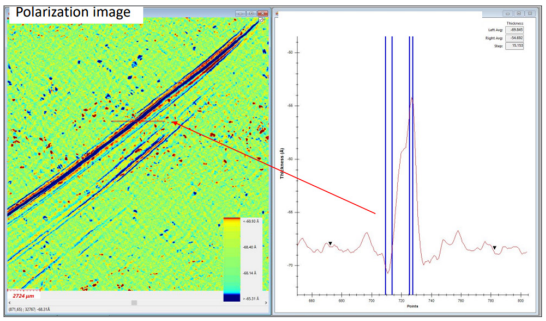
INSPECTION APPLICATIONS

Incoming unpatterned glass panel quality inspection
Blanket dielectric or metallic coated panels
Coating thickness variation for glass
Monolayer organic residues
Photoresist coating defects
Across panel stress and induced point stress
TGV formation inspection
Voids in transparent films
Glass panel wafer edge chip
Haze detection and metrology
High bow/warp wafer handling and measurement

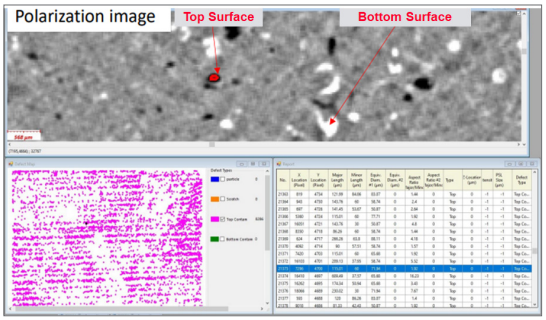




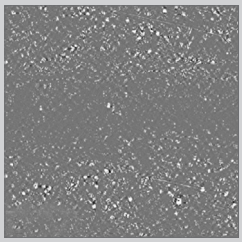
Panel Edge Chip Detection



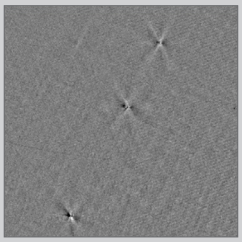
Contamination Metrology
~15Å Thick Layer



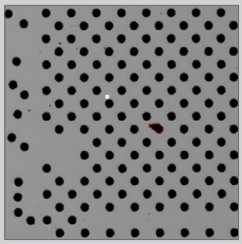
Simultaneous FS/BS Panel
Contamination Scan



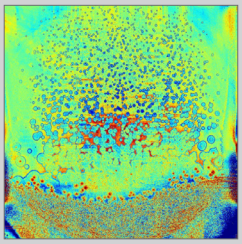
Particle Detection
(≥150nm)



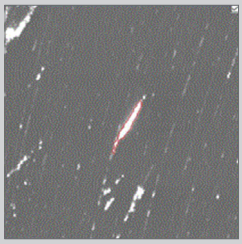
Stress Induced
Defects



Poorly Formed TGV



Post-Clean Water Mark



Surface Scratches

WORLDWIDE LOCATIONS

- **USA**
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- **Taiwan**
- **China**
- **Singapore**
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