Wafer inspection beside standard AOI – detecting micro cracks in semi processes
ISRA VISION at a glance

Markets of ISRA VISION beside SEMI/Solar

Highlights of ISRA Vision

- Established 1985
- Legal form AG, public since 1995
- Employees > 700
- Sales (15/16) 128 mill. €
- R&D – Invest ~ 20% p.a.
ISRA MultiView Technology

› Scanning with LineScan Camera(s)
  ▪ Simultaneous recording of different viewing directions
  ▪ Correlation of various illuminations
  ▪ Different wave lengths / spectra

› Higher speed than matrix camera systems
  ▪ Optimal basis for automatic classification
  ▪ Sequential scanning and image processing

Schematic view of the multimode inspection process
Applications in wafering and backend

Specialized for micro crack detection, which are hidden within wafer material

Micro cracks:
› < 5 µm width
› in Si and Compound Materials

Secure defect Identification and decision base with Automated Defect Classification (ADC)

Latest stage optical systems for superior defect recognition by patented illumination and optical systems
Task: Detect micro cracks before wafers enter polishing machine

Adaptive Filter to reduce grinding marks

Detection and Classification of Defects
Various Defects detected & classified

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<tr>
<th>Slot</th>
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CrackScan – Inspection of diced wafers

Scanning process

- Micro crack detection with <5 µm crack width
- Enabled for clean room class 1000 (ISO 6) or optional for class 1 (ISO 3)
- Typical resolution < 20µm
- Motorized x-y axis system
- Optional chuck with vacuum fixation for 2" to 12" wafers
- One or more\(^1\) high resolution cameras
- Wafer mapping / 2D coordination map
- Unique & adjustable illumination system
SEMI compliant Inspection unit

Key-Features:

› Semi E63 & E131  BOLTS-M (mechanical) interface  
› Semi E142 for  wafer mapping  
› Semi E84  compliant automation interface  
› Semi E94/95 for  compliant GUI integration  
› Semi Secs2Gem  compliant process integration

ISRA offers you a seamless integration, using standard SEMI interfaces
Configurations/Automation Options

You can choose a one-stop full solution...

... or the integration in third party automation

ISRA offers you a customized, seamless integration into wafer handling solutions
Thanks for your attention!