



SOLAR PHOTOVOLTAIC INDUSTRY

CRYSTALLINE PV WAFER INSPECTION AUTOMATION

New inspection and metrology technologies are increasingly being adopted to support aggressive goals for improving efficiency and yield. Successfully integrating these test methods into high volume manufacturing requires automation platforms that meet in-line throughput, factory automation, and damage requirements.

Automation Platform

The Owens c-Si Inspection Automation Platform provides high speed, high reliability handling in

customizable configurations to meet advanced factory automation requirements. Input load modules can be configured for either cassette or coin stack input. The output sorter module can be expanded from 6 to 18 bins by daisy chaining up to 3 modules inline.

Inspection / Metrology

Owens will integrate inspection and metrology systems to meet your test requirements. These can be of your own design or a third party product you specify. Owens will develop the



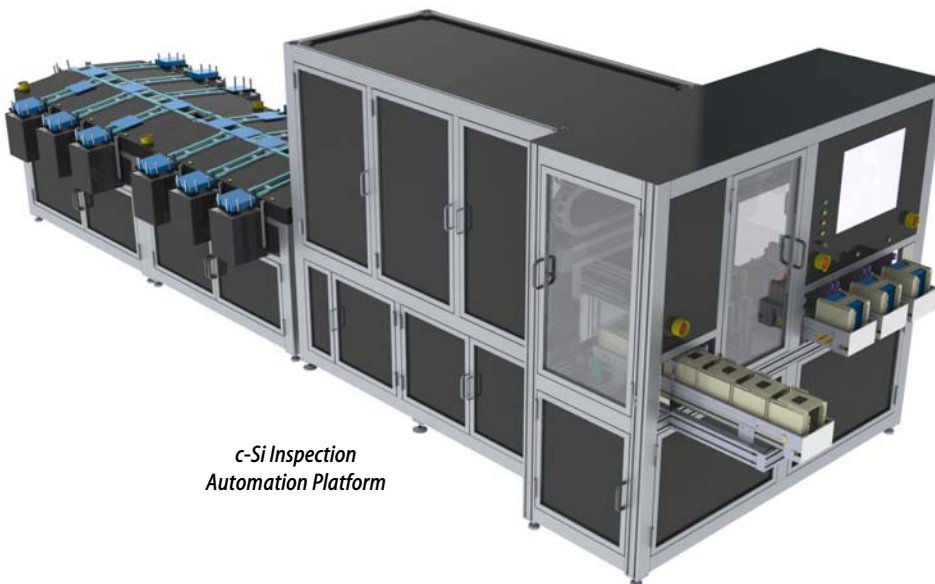
Input Load Module Options Support Cassette or Coin Stack Loading

necessary electro-mechanical and software interfaces to integrate the measurement modules seamlessly with the automation platform.

Owens' Solutions

Owens has built an outstanding reputation for the collaborative development of complex, production ready advanced technology equipment over our 25 year history.

Our in-depth experience providing high speed solar handling solutions can help make your next technology introduction a greater success.



c-Si Inspection Automation Platform



CRYSTALLINE PV WAFER INSPECTION AUTOMATION (CONT'D)

Wafer Handling

- Wafer dimensions: 125 x 125 and 156 x 156 mm
- Typical wafer thicknesses: 150 to 300 um
- Throughput: Up to 3600 cells / hour
- Wafer Breakage: less than 0.2%

Inspection / Metrology

- Third party inspection and metrology heads will be integrated per customer's requirement

Configurations

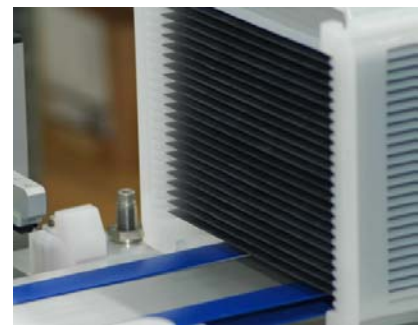
- Input Options: Cassette, Coin Stack, or Custom Carriers
- Output Options: Coin Stack - 6 bins per output module
Up to 3 output modules can be sequenced (18 bins)

Factory Integration

- Safety and Regulatory: NFPA, UL, CE, Local Jurisdiction
- Ergonomic Guidelines
- Standard communication to factory control software
- Standard User Interface and Recipe Management



Coin Stack Output Bin Option



Cassette Input Option



Cassette Input Buffer Conveyor