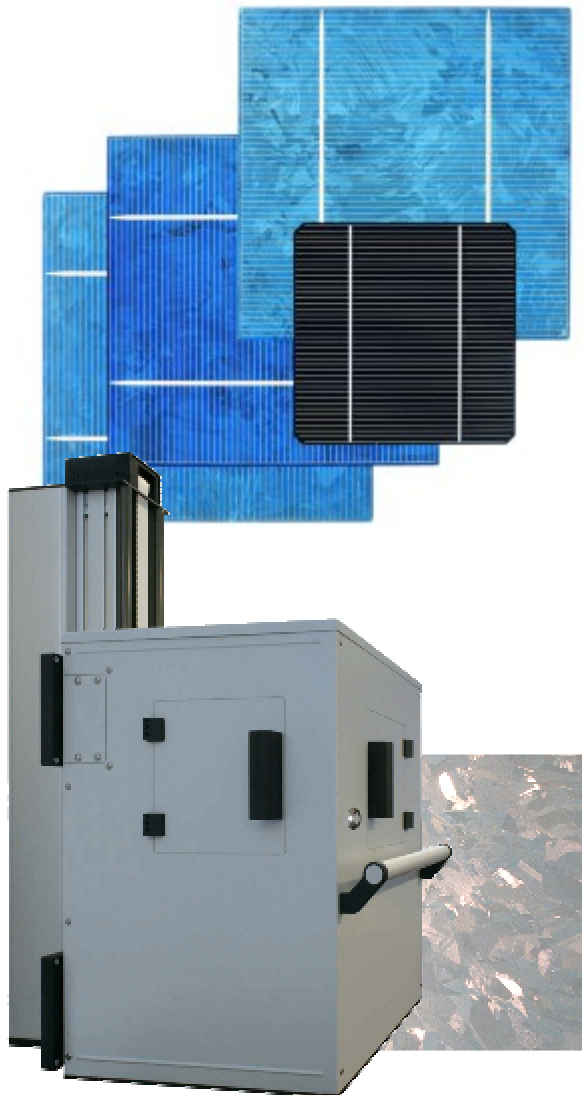


Automatic Geometry Inspection on Solar Cells

G/SOLAR CG Cell Geometry



> Applications

- Cell manufacturing – incoming wafers
- Module production – incoming cells

> Features

- Geometrical checks:
 - dimensions
 - edge chamfer
- Damages:
 - contour defects
 - visible cracks
 - breakage
 - holes

> Benefits

- Available for all common cell sizes
- Modular concept
- Low costs of ownership
- Easy adaptable to user specifications
- Easy integration in customers production lines
- Reliable defect detection
- Detection of all relevant defect types
- Rapid identification of process problems

> Options

Available setups for G/SOLAR CG are:

- Basic
- Standard
- Advanced
- High Resolution

Technical Data & References



Photovoltaic Applications

Field:	Inspection:
Cell manufacturing: (Silicon)	Cell Geometry Cell Texture Cell AR Coating Cell Front/Rear printing Hotspot Electroluminescence Cell count
Module production: (Silicon)	Cell features (color, printing, defects) Cell alignment String (completeness, shape, defects) Layup Laminate / Module Frame
Float glass	Incoming glass inspection
Module production: (Thin-film)	Coating layer, scribes and grooves Texture and surface faults

References (Extract)

Photovoltaics:

DeutscheCell, Enfoton, Evergreen, Kyocera, Q-Cells, Solarwatt, Solon, Sunways, Calyxo, Malibu, Solibro, Würth Solar

Glass:

Bystronic, General Electric, Osram, Philips, Saint-Gobain Sekurit, Samsung, Schott

Electronics and Semiconductors:

Epcos, Epigap, Infineon, OSA Opto, Siemens, Silicon Sensor

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G/SOLAR CG Cell Geometry

> **Technical Data**

G/SOLAR CG cell sizes 5" and 6"		Basic	Standard	Advanced	High Res
Conveyor Speed	mm/s	600	500	400	300
Cycle Time	s	0.2	0.3	0.5	1.2
Resolution	µm/pixel	85	62	45	25
Measuring Accuracy	±mm	0.4	0.4	0.4	0.01
Breakage	Length mm	0.20	0.13	0.09	0.05
	Depth mm	0.10	0.07	0.05	0.03
Visible Cracks	Length mm	0.30	0.20	0.15	0.08
	Depth mm	0.04	0.03	0.02	0.01
Particles	mm ²	0.09 ²	0.07 ²	0.05 ²	0.03 ²

For cell formats larger 6" please contact us.