Jonas & Redmann
The Automation Company

LASER CONTACT OPENING - LCO

Laser Tool for PERC-Process

Jonas & Redmann offers a highly developed system solution for the process-proof ablation of passivation layers on silicon solar cells. The consistently modular LCO system combines well-prooven laser and automation modules with customer-specific requirements. The precise and flexible Laser Contact Opening tool makes the process safe, reproducible and economical. The machine can be used flexibly in product development and is equally suited for production at an industrial scale.

- opening ultra-thin insulation layers by residual free laser ablation
- freely configurable laser | customized patterns
- fully automated laser process tool including loading and unloading device
- excellent CoO / ROI
- very gentle and steady transport of wafers and very high wafer positioning accuracy
- easy to maintain filter- and dust-extraction-system (HEPA filter)
- buffer system after laser ablation and wafer reject handling
- breakage detection and automatic sample reject function available
- compact design with small foot print

Configuration:

Laser with High Beam Quality

Laser Features	Continuous Process	Cycled Process
Positioning accuracy	± 30 µm	± 15 µm
Laser wavelength	1064 nm	
Pulse width range	12-500 ns	
Pulse energy	>1 mJ	
Scribing speed	max. 30 m/sec	
Laser power	100 W	
Laser field of work	max. 180x180 mm	
Repetition rate	1-1000 kHz	
Focus position	wafer surface ± 1mm	
Laser scribe width	35-90 µm	
Laser spot shape	Gaussian	

The integrated software *Jonas & Redmann EasyScribe* allows the comfortable access to a broad range of laser process parameters and provides customers with line -, dash - and dot pattern or any customized pattern. The system processes pattern as DXF. files or accesses libraries in the laser control.

Laser with High Beam Quality

Technical Data	Continuous Process	Cycled Process		
		Single Head	Double Head	
Throughput (gross):	≥3,000 c/ hr	≥2,000 c/ hr	≥3,400 c/ hr	single-lane equipment
Throughput (gross):	≥6,000 c/ hr	≥4,000 c/ hr	≥6,800 c/ hr	dual-lane equipment
Uptime	>98%	>98%	>98%	according SEMI E10
Breakage rate	<0.02%	<0.1%	<0.1%	wafer thickness up to ≥ 180 µm
Wafer format	156x156mm – 162x162mm			square, semi-square

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