

# AUTOMATIC SOLAR CELLS PRINTING LINE

## SOC 6A



- Automatically prints electrodes on to solar silicon wafers or thin ceramic SOFC substrates
- Loads wafers from cassettes or inline from other machine by pick and place unit
- Unique, high speed self cleaning wafer transport ensures minimal wafer manipulation and low breakage
- Short exchange time for different wafer dimensions
- Vision wafer alignment and breakage check
- High precision screen printing with precise squeegee control prints the electrodes
- Two zone IR drier for efficient drying
- Modular design, for different machine configuration
- Automatic unloading in to cassettes or on to furnace belt

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High output, low wafer breakage



SOC-6A fully automatic printing line is designed for large scale automatic electrodes printing on to silicon solar cells wafers or on to SOFC fuels cells substrates. Unique wafer or substrate transport ensures low substrate stress and high output. Automatic self cleaning function of the transportation track and precise squeegee pressure adjustment ensures low wafer breakage. Modular design allows custom configurations, easy inline integration and quick substrate or wafer size change.

Following modules are available:

- Wafer or substrates loading station from cassettes or by pick and place unit from a belt
- Substrate or wafer vision alignment and breakage test
- Screen printing station
- Rotation station
- IR drier
- Unloading station from machine to cassette or by pick and place unit on to furnace belt

#### Technical specification:

- Output: up to 1800 PCS/hour
- Machine control: PLC, touch screen on every printing station PC controlled vision system

#### Printer

- Squeegee speed: 50-500 mm/s -linear motor driven
- Squeegee force: 0-100 N - programable
- Squeegee type: 25 x 5 mm , 75 ShA, or on request
- Printing mode: print/flood recommended for higher output
- Snap off: adjustable via HMI
- Screen size: 450 x 450 x 25 mm (outside dimensions) or custom

#### Alignment

- PC based vision system by one high resolution camera on every printer
- Vision resolution: 10 microns
- Screen alignment: by screen moving x, y, theta

#### Substrate loading / unloading

- Loading from cassettes, custom cassettes adaptation possible or inline by vision wafer position detection and pick and place unit
- Unloading in to cassette or on to customer belt

#### Drier

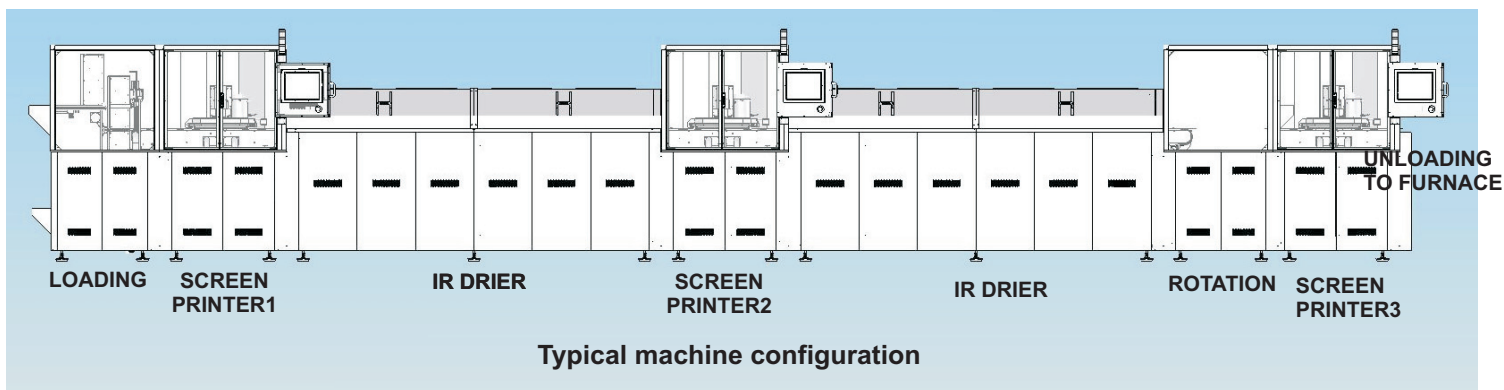
- IR drier, two separate controlled zones
- Heater type: medium wave IR lamps
- Wafer surface temperature: bellow 300 deg. C
- Air flow: blower installed for lamps and wafers cooling

Dimensions: Contact supplier for particular configuration

Power: Adapted to custom voltage

Power consumption app. 10 kW per one printer + drier

Compressed air: 100 NL / printer



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