

Spi-Assembler™ 6000

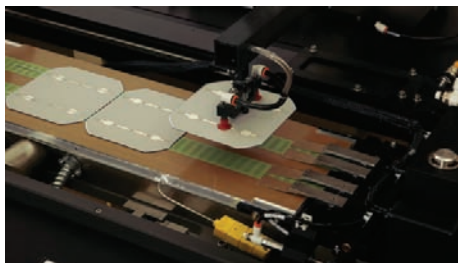
Automated Solar Cell Assembly

The Spi-Assembler™ 6000 is an automated production machine that interconnects solar cells by soldering flat metal leads, or tabs, to cell contacts. Solar cells are processed at a throughput of up to 600 cells per hour with high yield.

The Spi-Assembler unloads solar cells from stacks and aligns their edges using an aligner. Tab material is fed from reels, coated with flux, cut to length, and provided with a stress-relief bend.

Tabs and cells are aligned for soldering. High-intensity lamps in the solder head assembly provide radiant thermal energy to the cells and tabs. Both front and back cell contacts are soldered in a single step, thereby reducing thermal stress on cells. This is particularly important for high yield processing on thin solar cells.

The number of cells per string, cell spacing, the ribbon length, the stress bend location, and the soldering parameters are software programmable. Each completed string is automatically placed in a tray.



Solar cells are aligned and placed prior to soldering



Processes up to 600 solar cells per hour

Options

- **Spi-Module Lay-up Station™**
Automatically aligns and places completed solar cell strings in position for module assembly; can also be purchased for standalone use
- **String I-V Tester**
Measures an I-V curve for each cell string and places the acceptable strings in the proper location for a module
- **Vision Inspection**
- **Third Ribbon Path**
Allows additional interconnect ribbon on larger cells with greater current output

FEATURES AND BENEFITS

Automated and programmable assembly results in reproducible, high quality soldered cell strings

High speed alignment system for multiple cell sizes

High-intensity light soldering with cell preheating for improved throughput and yield

- Rapid soldering process - Minimum mechanical force on cell
- Low thermal stress - Continuously soldered contacts

Software selectable module design

- Tab length and stress-relief bend location - Number of cells per string
- Number of strings per module - Strings arranged in series or parallel configuration

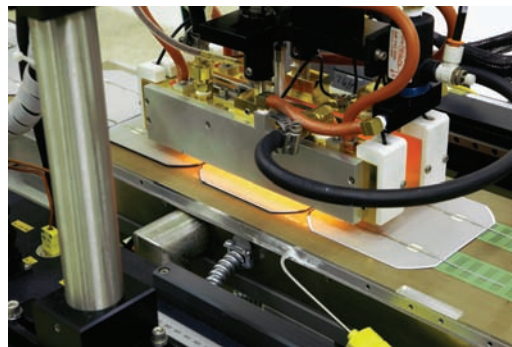
Easily adaptable to a wide range of cell and string designs

Computer controlled with a touch screen graphical interface

Remote diagnostics and service capability



Spi-Assembler 6000 Specifications			
Solar Cell Geometry	Square, rectangular or pseudo-square		
Solar Cell Dimensions	Up to 210 mm x 210 mm (8 in. x 8 in.)		
Interconnect Ribbon	2 ribbon - standard	3 ribbon - optional	
Maximum String Length	200 cm (78.7 in.)		
Nominal Throughput	Up to 600 cells/hour		
Equipment Dimensions without Lay-Up Station	Length 587 cm (231 in.)	Width 213 cm (84 in.)	Height 244 cm (96 in.)
Equipment Dimensions with Lay-Up Station	Length 589 cm (232 in.)	Width 366 cm (144 in.)	Height 244 cm (96 in.)
Equipment Weight, Net	1500 kg (3300 lbs)		
Utility Requirements	Electricity 220 VAC, 50A, 50/60 Hz, three phase Compressed Air Pressure 500 -700 kPa (80-100 psi) Compressed Air Flow 480 l/min. (17 scfm)		
Certifications	CE		



High intensity lamps solder both front and back cell contacts in a single step