



20 MW
775
cycles/hour

- ▶ Modular solution for progressive production increase
- ▶ Low breakage rate
- ▶ 20 MW & 40 MW Stringer + Lay-Up System

GENERAL CHARACTERISTICS

- ▶ Robotic Handling
- ▶ Cell inspection by artificial vision:
 - Breakages detection by backlight
 - Busbars inspection
- ▶ Positioning by:
 - Contour
 - Busbar
 - Average between them
- ▶ Soldering System:
 - IR Lamps
 - Process control by temperature (PID)
- ▶ Flux System:
 - Electrically controlled valves
 - Direct application on cell busbars
 - Flux jet positioning on busbar by means of camera
 - Very narrow (2 mm) flux line. No dirt on cell
 - Flux jet presence (optional)
 - Best in class accuracy

STRING CHARACTERISTICS

Cell	Maximum	Minimum	Gap
156 x 156 mm	12 cells	6 cells	2 mm
125 x 125 mm	15 cells	6 cells	2 mm
156 x 78 mm	24 cells	12 cells	2 mm

GENERAL CONSUMABLE CHARACTERISTICS

- ▶ Connection power: 21 Kw
- ▶ Nominal power consumption: 8 Kw/h
- ▶ Nominal air consumption: 650 l/min
- ▶ Weight: 2000 Kg

OPTIONAL

- ▶ Customized unloading of strings

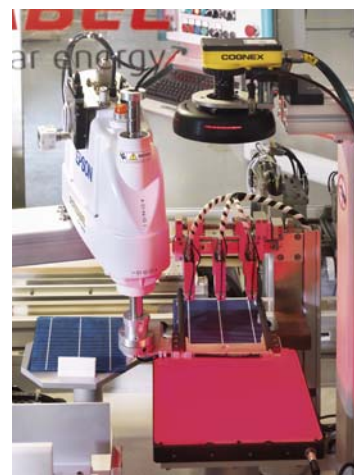
GENERAL PRODUCTIVE CHARACTERISTICS

- ▶ Throughput: 775 cycles/hour (700 cells/hour) **(A) (C)**
- ▶ Cell dimensions: 5", 6" and half of 6"
- ▶ 2 and 3 busbar
- ▶ Configurable distance between cells: 2-50 mm
- ▶ Cell thickness: $\geq 160 \mu\text{m}$ **(B)**
- ▶ Customized unloading of strings (flip-over optional)
- ▶ Friendly human machine interface
- ▶ Remote assistance

(A) The specifications of throughput, cells dimensions, breakage rate and cells thickness are subjected to the materials prescribed by Gorosabel Solar Energy

(B) Minimum tolerance value

(C) Maximum and changeable capacity according to production premises and material





37 MW
1450
cycles/hour

- ▶ **Modular solution for progressive production increase**
- ▶ **Low breakage rate**
- ▶ **37 MW Stringer + Lay-Up System**

GENERAL CHARACTERISTICS

- ▶ Robotic Handling
- ▶ Cell inspection by artificial vision:
 - Breakages detection by backlight
 - Busbars inspection
- ▶ Positioning by:
 - Contour
 - Busbar
 - Average between them
- ▶ Soldering System:
 - IR Lamps
 - Process control by temperature (PID)
- ▶ Flux System:
 - Electrically controlled valves
 - Direct application on cell busbars
 - Flux jet positioning on busbar by means of camera
 - Very narrow (2 mm) flux line. No dirt on cell
 - Flux jet presence (optional)
 - Best in class accuracy

GENERAL PRODUCTIVE CHARACTERISTICS

- ▶ Throughput: 1450 cycles/hour (1300 cells/hour) **(A) (C)**
- ▶ Cell dimensions: 5", 6" and half of 6"
- ▶ 2 and 3 busbar
- ▶ Configurable distance between cells: 2-50 mm
- ▶ Cell thickness: $\geq 160 \mu\text{m}$ **(B)**
- ▶ Customized unloading of strings (flip-over optional)
- ▶ Friendly human machine interface
- ▶ Remote assistance

STRING CHARACTERISTICS

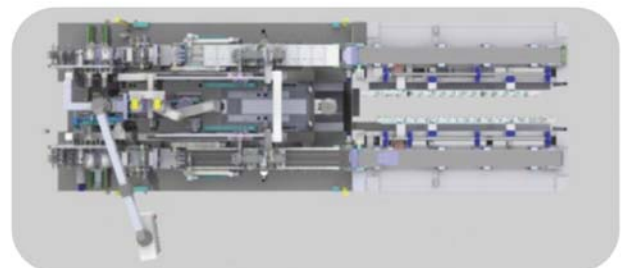
Cell	Maximum	Minimum	Gap
156 x 156 mm	12 cells	6 cells	2 mm
125 x 125 mm	15 cells	6 cells	2 mm
156 x 78 mm	24 cells	12 cells	2 mm

GENERAL CONSUMABLE CHARACTERISTICS

- ▶ Connection power: 47 Kw
- ▶ Nominal power consumption: 13 Kw/h
- ▶ Nominal air consumption: 700 l/min
- ▶ Weight: 4200 Kg

OPTIONAL

- ▶ Customized unloading of strings



(A) The specifications of throughput, cells dimensions, breakage rate and cells thickness are subjected to the materials prescribed by Gorosabel Solar Energy
(B) Minimum tolerance value
(C) Maximum and changeable capacity according to production premises and material



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Tabber & Stringer



New BIPV model

**50 MW
2000
cycles/hour**

- ▶ **Highest throughput in market: 1,8 sec. / cycle**
- ▶ **Low breakage rate**
- ▶ **50 MW & 100 MW Stringer + Lay-Up Systems**
- ▶ **BIPV Model available**
 - **Max string length 3000 mm**
 - **Configurable distances between cells in the same string**

GENERAL CHARACTERISTICS

- ▶ Robotic Handling
- ▶ Cell inspection by artificial vision:
 - Breakages detection by backlight
 - Busbars inspection
- ▶ Positioning by:
 - Contour
 - Busbar
 - Average between them
- ▶ Soldering System:
 - IR Lamps
 - Process control by temperature (PID)
 - Pre-heating and post-heating stations by IR lamps
 - Advanced cooling system to minimize the cell stress
- ▶ Flux System:
 - Electrically controlled valves
 - Direct application on cell busbars
 - Flux jet positioning on busbar by means of camera
 - Very narrow (2 mm) flux line. No dirt on cell
 - Flux jet presence (optional)
 - Best in class accuracy

GENERAL PRODUCTIVE CHARACTERISTICS

- ▶ Throughput: 2000 cycles/hour (1800 cells/hour) **(A) (C)**
- ▶ Cell dimensions: 5", 6" and half of 6"
- ▶ 2 and 3 busbar
- ▶ Configurable distance between cells: 2-50 mm
 - Configurable distances between cells in the same string (BIPV model)
- ▶ Cell thickness: $\geq 160 \mu\text{m}$ **(B)**
- ▶ Customized unloading of strings (flip-over optional)
- ▶ Friendly human machine interface
- ▶ Remote assistance

(A) The specifications of throughput, cells dimensions, breakage rate and cells thickness are subjected to the materials prescribed by Gorosabel Solar Energy
(B) Minimum tolerance value
(C) Maximum and changeable capacity according to production premises and material

STRING CHARACTERISTICS

- ▶ String dimensions
 - Standard model: Max. 2050 mm
 - BIPV model: Máx. 3000 mm

Cell	Standard model Max.	BIPV model Max.
156 x 156 mm	12 cells	18 cells
125 x 125 mm	15 cells	23 cells
156 x 78 mm	24 cells	37 cells

GENERAL CONSUMABLE CHARACTERISTICS

- ▶ Connection power: 72 Kw
- ▶ Nominal power consumption: 18 Kw/h
- ▶ Nominal air consumption: 800 l/min
- ▶ Weight: 4200 Kg

OPTIONAL

- ▶ Customized unloading of strings
- ▶ BIPV lay-up available

