



SINGLE LANE SYSTEM  
2500 CYCLES/HOUR

INFRARED SOLDERING

## CHARACTERISTICS

- BREAKAGE LESS THAN 0.2%
- UP TO 12BB, COMPATIBLE WITH 9-10-11-12 BUS BAR (Wire Option!)
- INFRARED SOLDERING TECHNOLOGY
- WORKS WITH P-TYPE PERC, N-TYPE TOPCON, N-TYPE HJT, FULL & HALF CUT
- LASER CUTTER UNIT EMBEDDED IN THE MACHINE (ON REQUEST)
- COMPATIBLE CELL SIZES: M6, M10, G12
- HIGHLY ACCURATE RIBBON HANDLING AND POSITIONING

CAPACITY  
**2500**  
CYCLES/HOUR

CELLS  
P-TYPE PERC  
N-TYPE TOPCON  
N-TYPE HJT  
FULL & HALF CUT

CELL INSPECTION

UP TO  
**12** BUS BAR  
CELLS

## OPTIONAL:

- LASER CUTTER UNIT EMBEDDED IN THE MACHINE
- STRING LENGTH > 2300 mm
- 16 BUS BAR

WORKS WITH  
6 AXIS LAYUP STATION



ECOLAYUP R

Images for illustrative purposes only



## TECHNICAL SPECIFICATIONS

THROUGHPUT	2500 cycles/hour, 2300 half-cut cells/hour * Minor speed decrease with Full cells. *According to raw material's grade and soldering process.
TECHNICAL AVAILABILITY	> 92%
CHANGEOVER KITS	Changeover kits necessary for flat ribbon
RANGE OF FULL SOLAR CELL DIMENSIONS	Full cells compatibility: M6 (166 x 166mm), M10 (182 x 182mm), M12 (210 x 210mm)
RANGE OF HALF-CUT SOLAR CELL DIMENSIONS	Half-cut cells compatibility: M6 (166x83mm), M10 (182x91mm), M12 (210x105mm)
RANGE OF TRIPLE-CUT SOLAR CELL DIMENSIONS	M12 (210x70mm) Only on specific request.
CELL POSITIONING ACCURACY	Positioning deviation: $\leq \pm 0.1\text{mm}$ Angular deviation: $\leq 0.04^\circ$ Cutting accuracy: $\leq 0.1\text{ mm}$
LASER CUTTING UNIT (Optional)	Embedded laser cutting unit and auto breaking unit. Peak Power 50W. (Used only for half cut and triple cut cells)
LASER SCRIBING BREAKAGE RATE	Broken cells discarded <1%
SOLDERING TECHNOLOGY	InfraRed soldering technology
CELL BASKET LOADING	Automatic, nos. 4 cell baskets included
SOLAR CELL THICKNESS	160 $\mu\text{m}$ -300 $\mu\text{m}$
CELL INSPECTION	Vision system for alignment and for broken cell detection
ALIGNMENT OF CELLS	Performed optically
RIBBON POSITIONING ACCURACY	$\pm 0.2\text{ mm}$ . Centerline of ribbon must coincide with the centerline of solder pad
FLAT RIBBON SIZE	Width: 0.50 to 1.1 mm; Thickness: 0.18 x 0.25 mm
CELL TO CELL GAP ACCURACY	$\pm 0.3\%$
ROUND WIRE SIZE (MBB) (OPTIONAL)	$\varnothing 0.29$ to $\varnothing 0.45\text{ mm}$ (OPTIONAL)
BUS BAR COMPATIBILITY	From 9-10-11-12 BB
STRING LENGTH	Max 2300mm
STRING LENGTH ACCURACY	$\pm 0.1\text{ mm}$
HEAD/TAIL EXTRA RIBBON	$\geq 9\text{ mm}$ (The length of extra ribbon for the first and last string)
DISTANCE BETWEEN CELLS	From 1.5 mm to 8 mm (Adjustable upon request)
DISTANCE BETWEEN STRINGS	Minimum distance is >18mm (Optionally can go shorter)
OPERATOR INTERFACE	User friendly touch-screen with different languages available (English as standard, others on request)
REMOTE ASSISTANCE	Provided with ethernet connection
UNLOADING SYSTEM	Dual belt system, flipper unit included on the unloading belt
PREHEATING ZONE	5 heating zones
TEMPERATURE CONTROL ACCURACY	$\pm 7.5\text{ }^\circ\text{C}$
PEEL FORCE STRENGTH (FRONT SIDE)	1 N/mm for flat ribbon; (OPTIONAL: 0.8 N/mm for wire)
PEEL FORCE STRENGTH (REAR SIDE)	1.4 N/mm for flat ribbon
RIBBON SPOOL	Inner diameter $\geq 16\text{mm}$ outer diameter $\leq 200\text{mm}$ , width $\leq 180\text{mm}$ , 8 kg max per spool
BAD SOLDERING STRING	$\leq 0.2\%$ (with machine in continuous work flow without any stop)
MODULE REWORK RATIO	Flat ribbon: $\leq 10\%$ (with laser 12%) [OPTIONAL: Wire ribbon: $\leq 15\%$ (with laser 18%)]
STRING ALIGNMENT ACCURACY	$\pm 0.5\text{ mm}$
ENVIRONMENT TEMPERATURE	15 - 35 $^\circ\text{C}$
ENVIRONMENT HUMIDITY	30 - 70 %
AIR SUPPLY COMPOSITION	Max solid particle: 15 $\mu\text{m}$ m (class 3) Min pressure dew point: +3 $^\circ\text{C}$ (class 4) Max oil vapor concentration: 5mg/m <sup>3</sup> (class 4)



## UTILITY SPECIFICATIONS

ELECTRICAL CHARACTERISTICS	
LINE	3P+N+E *
VOLTAGE	400 V *
FREQUENCY	50/60 Hz *
PEAK POWER	40 kW
AVG. POWER CONSUMPTION	20 kW
MAX CURRENT	30 A
PRE FUSE	40 A
AIR CHARACTERISTICS	
AIR PRESSURE	8 bar
AIR CONSUMPTION	400 NL/1'
AIR PEAK FLOW	700 NL/1'
AIR CONNECTION	1/2"
EXHAUST FAN EXTRACTION CAPACITY	750 mc/h
DIMENSIONS	
HEIGHT	2300 mm
LENGHT	9000 mm
WIDTH	1600 mm
CE WEIGHT	4000 kg
<b>WE SUGGEST TO USE AN EXTRACTOR FOR EXHAUST FUMES</b>	EXTRACTOR'S LINE LENGTH DEPENDS ON YOUR CHOICE OF EXTRACTOR