



TEKNISOLAR

Innovative Engineering Solutions



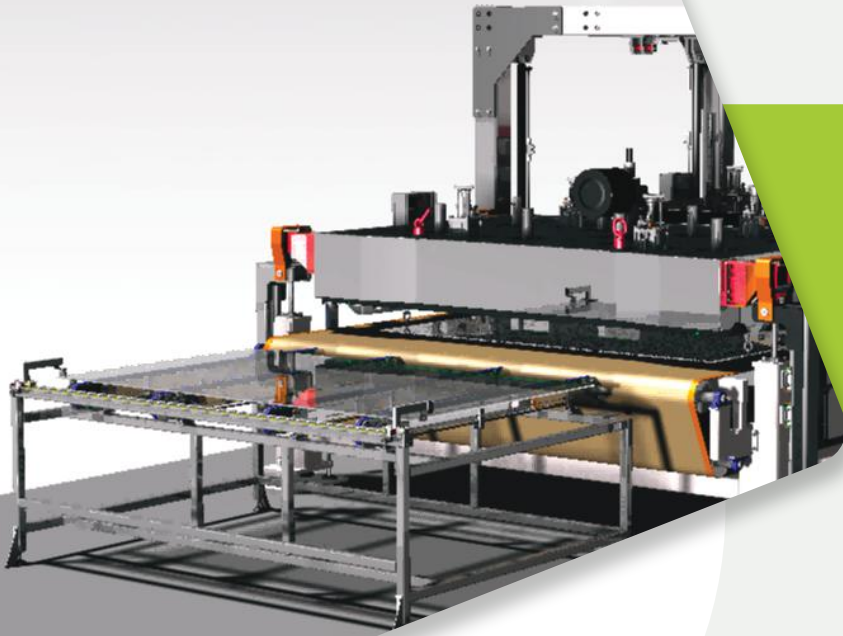
ROBOSTAK™ LAMINATOR

- HIGH PERFORMANCE
- DIAPHRAGM-FREE
- PHOTOVOLTAIC LAMINATION LINE



2021

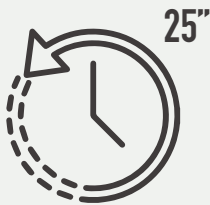
TEKNISOLAR SRL
Innovative Engineering Solutions
www.teknisolar.com



ROBOSTAK™ LAMINATOR

ROBOSTAK™

Unique Features



Super-fast vacuum



Double heated platens



Multi-stage
crosslinking

The fastest cycle time in the world.

TYPICAL CYCLE TIME
with EVA UFC

GLASS-GLASS: 160 sec - 200 sec
GLASS-BACKSHEET: 110 sec - 120 sec

MAIN FEATURES AND BENEFITS

UNIFORM, CONTROLLED PRESSURE APPLICATION

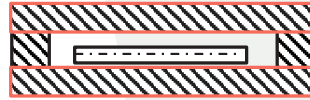
No edge pinch

No encapsulant outflow

No belt cleaning



NO MEMBRANE



LESS DOWNTIME, FEWER CONSUMABLES, REDUCED LABOUR

No downtime or waste caused by membrane replacement

No downtime for belt cleaning

No kit, frames, or temporary tape needed

NO BOWING



Instant vacuum
+ heating on both sides
= NO PINS USED

PERFORMANCE



Lowest cycle time on market

High performance of up to 128 P.V. crystalline panels/hour

Capacity range up to 460 MW/year

Optimal crosslinking process

Longer panel durability (no edge defects)

Small and flexible footprint

High uptime

Fully automatic line (no personnel required)

COST



No ordinary silicone membrane replacement

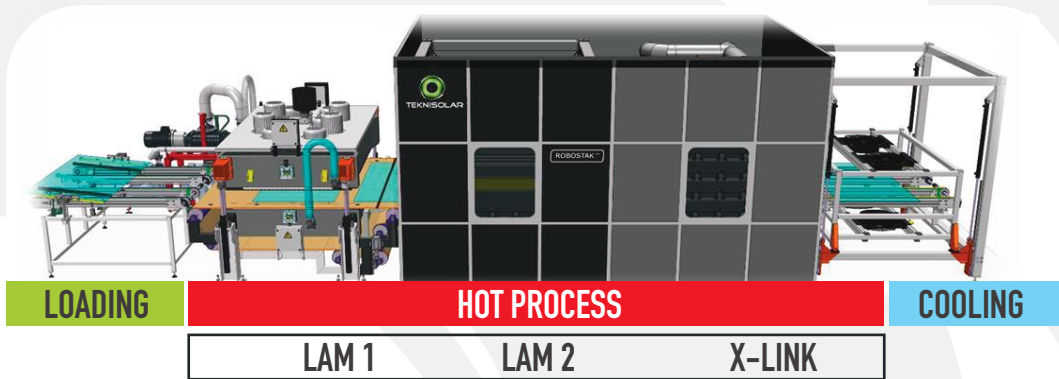
Reduced power consumption

Reduced manual labor costs

Very low use of consumable materials

No extra equipment required to process either glass/glass, glass backsheet and thin/film

Fewer laminators required to reach highest production capacity



STEP 1 - LAMINATOR 1



- HEAT (BOTH SIDES)
- DEEP VACUUM
- PRESSURE (FLAT PRESS)

Time spent in this stage = **CYCLE TIME**

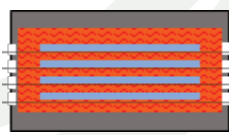
STEP 2 - LAMINATOR 2



- HEAT (BOTH SIDES)
- PRESSURE (FLAT PRESS)

Crosslinking stabilizes under pressure

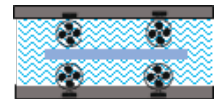
STEP 3-6 CROSSLINKING FINISH



- HEAT (4 LEVELS)

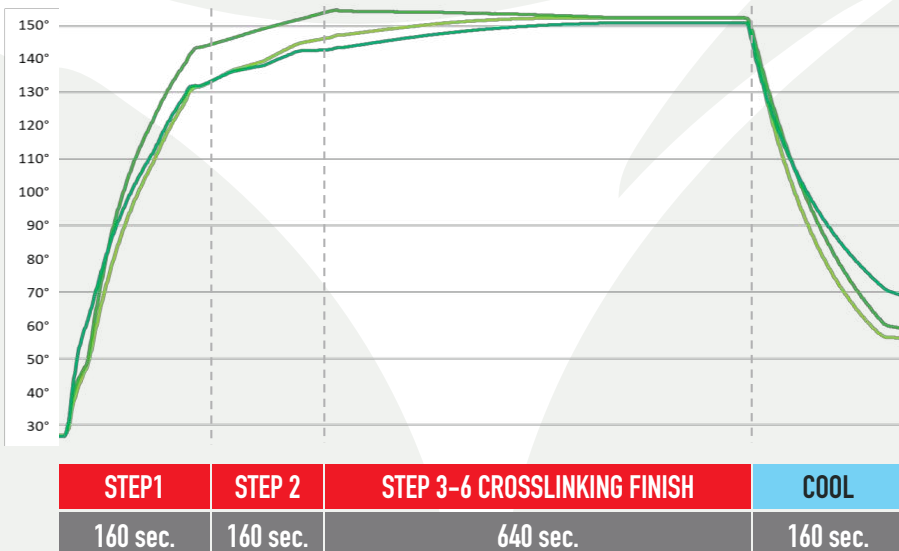
Crosslinking finish =
Plateau temperature for 4 times
the length of the cycle time

COOLING



- FAN COOLING TOP AND BOTTOM

Inverters for totally-controlled
air flow
No bowing



ROBOSTAK TECHNOLOGY

De-aeration starts immediately when modules enter the lamination chamber. This allows for heat to be applied immediately as well, which means that no pins are used. These functions, as well as the multi-stage crosslinking chamber, result in a significantly reduced cycle time.

TRY BEFORE YOU BUY

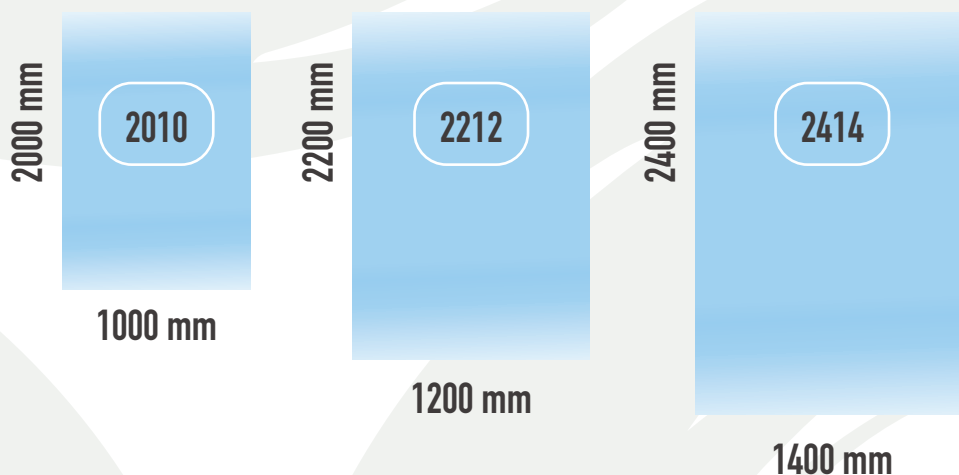
Teknisolar offers free lamination trials on your modules.
You send us your BOM, we laminate your panels,
we send you test results and guaranteed achieved cycle times.
A Non-Disclosure Agreement must be stipulated prior to trials and conditions may apply.

NO OUTFLOW OF
ENCAPSULANT



ZERO
EDGE PINCH

HOW MUCH LAMINATION AREA PER PLATEN? STANDARD DIMENSIONS



CUSTOM SIZES CAN ALSO BE REQUESTED

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ROBOSTAK LAMINATOR PRODUCTION CAPACITY*

	Module size up to	Module size up to	Module size up to	Modules per hour
	2000 x 1000 mm (350 Wp)	2200 x 1200 mm (450 Wp)	2400 x 1400 mm (550 Wp)	
1 module per load	1P-2010	1P-2212	1P-2414	30-32
MWp	90 MW	115 MW	140 MW	
2 modules per load	2P-2010	2P-2212	2P-2414	60-64
MWp	180 MW	230 MW	285 MW	
3 modules per load	3P-2010	3P-2212	3P-2414	90-96
MWp	270 MW	350 MW	430 MW	
4 modules per load	4P-2010	4P-2212	-	120-128
MWp	365 MW	465 MW	-	

After choosing the max lamination area per platen, choose the number of platens required.



* MW calculations based on Glass-Backsheet modules, 350 days per yr, 24 hrs per day, 97% availability



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FOR MORE INFORMATION



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TEKNISOLAR

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*“ Everyone has the power
to make the world a better place ”*