



# WEMHÖNER VARIOLAM



Machines and equipment  
for high efficient lamination  
of PV modules



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## TECHNICAL HIGHLIGHTS

### Features

- Active Pin-System in each daylight
- Automatic Membrane Tensioning
- Membrane-Quick-Change

### Cost of Ownership

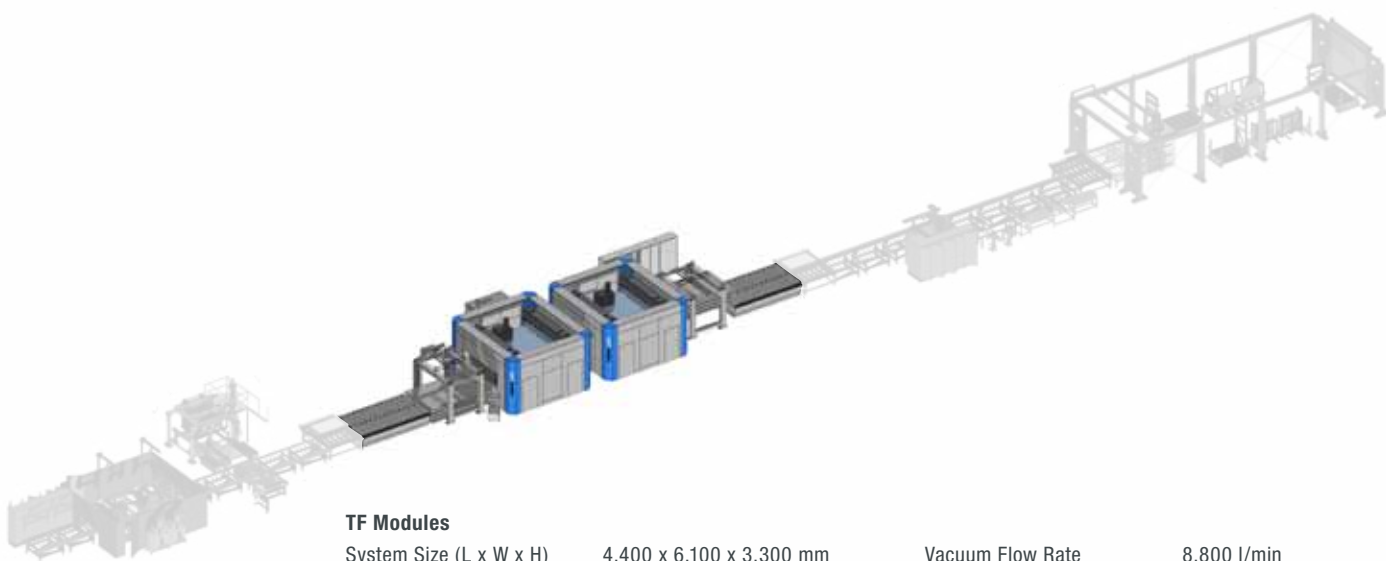
- 99,8 % Yield
- 98 % Availability (acc. VDI 3223)
- Optimised Footprint due to Multi-Daylight Design

### HMI

- Windows Compatible
- Touch-Panel operated
- Recipe controlled
- Interlink with MES-Systems
- Remote Diagnostic

## WEMHÖNER THINFILM ENCAPSULATION

The Wemhöner multi-daylight VARIOLAM integrated into a full automatic thinfilm PV-module production. High availability, temperature homogeneity as well as the up to 4-daylight concept are features to guarantee an optimal integration into a high end “glass-to-glass” PV-module production. Capacity increase by means of an affiliated secondary cooling process. The open, Windows compatible HMI structure allows an easy integration and combination with up- or downstream processing equipment e.g. foil management systems.

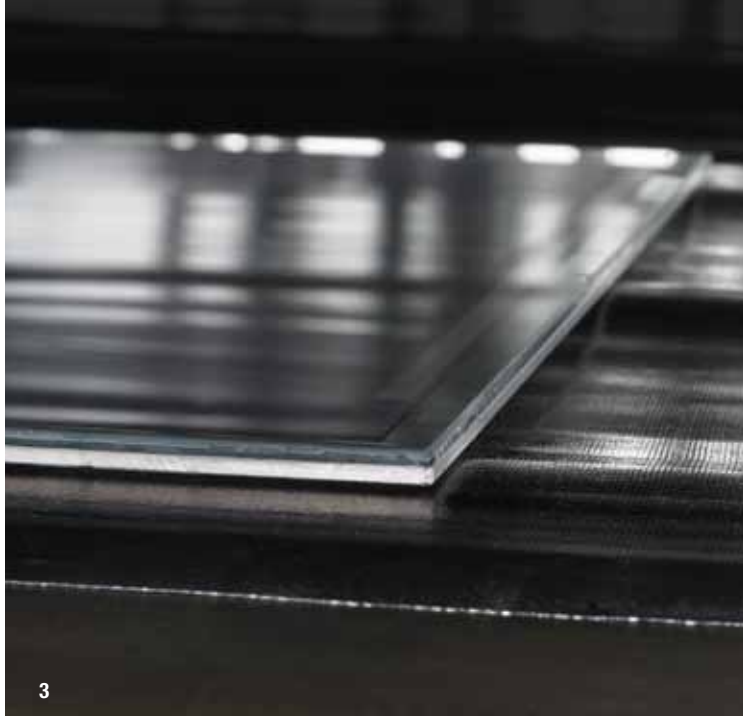


### TF Modules

System Size (L x W x H)	4.400 x 6.100 x 3.300 mm
Effective Lamination Area	2.800 x 2.400 mm
Chamber Height	20–40 mm
No. of Heating Areas	2–4
Controllable Heating Zones	12–20
Max. Temperature	190°C

Vacuum Flow Rate	8.800 l/min
Total Power Consumption <sup>1</sup>	170 kW
Constant Temperature Cycle for	
Standard-cure EVA	12–20 min.
Fast-cure EVA	8–12 min.

<sup>1</sup> depending on configuration



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### The Pictures:

1. Wemhöner VARIOLAM for production of PV modules.
2. Thermo-Oil and Vacuum Supply Lines.
3. Pin System in each daylight.
4. Automatic Membrane Tensioning and Quick-Changing System.
5. Windows based HMI with Touch-Panel.



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## WEMHÖNER CRYSTALLINE ENCAPSULATION

Crystalline module encapsulation with the Wemhöner multi-daylight VARIOLAM. The crystalline PV-module market offers a wide range of module sizes. The Wemhöner VARIOLAM for crystalline modules implements this market demand with an effective lamination area of 3.600 x 2.200 mm. Reduced production costs is one of the core targets of Wemhöner. Achieved by e.g. an increased life time of the membrane and reduced downtime for maintenance. A smart concept that goes hand in hand with up- and downstream equipment.



### c-Si Modules

System Size (L x W x H)	5.400 x 5.900 x 3.300 mm
Effective Lamination Area	3.600 x 2.200 mm
Chamber Height	20–40 mm
No. of Heating Areas	2–4
Controllable Heating Zones	12–20
Max. Temperature	190°C

Vacuum Flow Rate	8.800 l/min
Total Power Consumption <sup>1</sup>	170 kW
Constant Temperature Cycle for	
Standard-cure EVA	12–20 min.
Fast-cure EVA	8–12 min.

<sup>1</sup> depending on configuration

## Wemhöner Surface Technologies

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