

SUN IS RISING.

Ypsator®

Multi-Opening
Lamination
Technology



BURKLE 
PROCESS TECHNOLOGIES

Bürkle is among the world market leaders in the field of lamination and surface-finishing technologies. With a staff of 700 employees we plan and manufacture e. g. machines and lines for the photovoltaic-, printed circuit board-, plastic card- and woodworking industry.

Owing to an above-average expenditure for research and development and the high technological standards, our machines and lines are well known beyond German borders. Robert Bürkle GmbH, founded in 1920, are in the Black Forest region in the South-West of Germany.

Over 80 % of Bürkle machines are exported around the globe. The company has branches in Europe, America and Asia. We offer our know-how from planning and design to installation and start-up of complete systems. Quality and the power of innovation are the key to our market success.



economic application systems by BÜRKLE

e.a.sy solutions – economic efficiency, system technology and service are in the foreground.

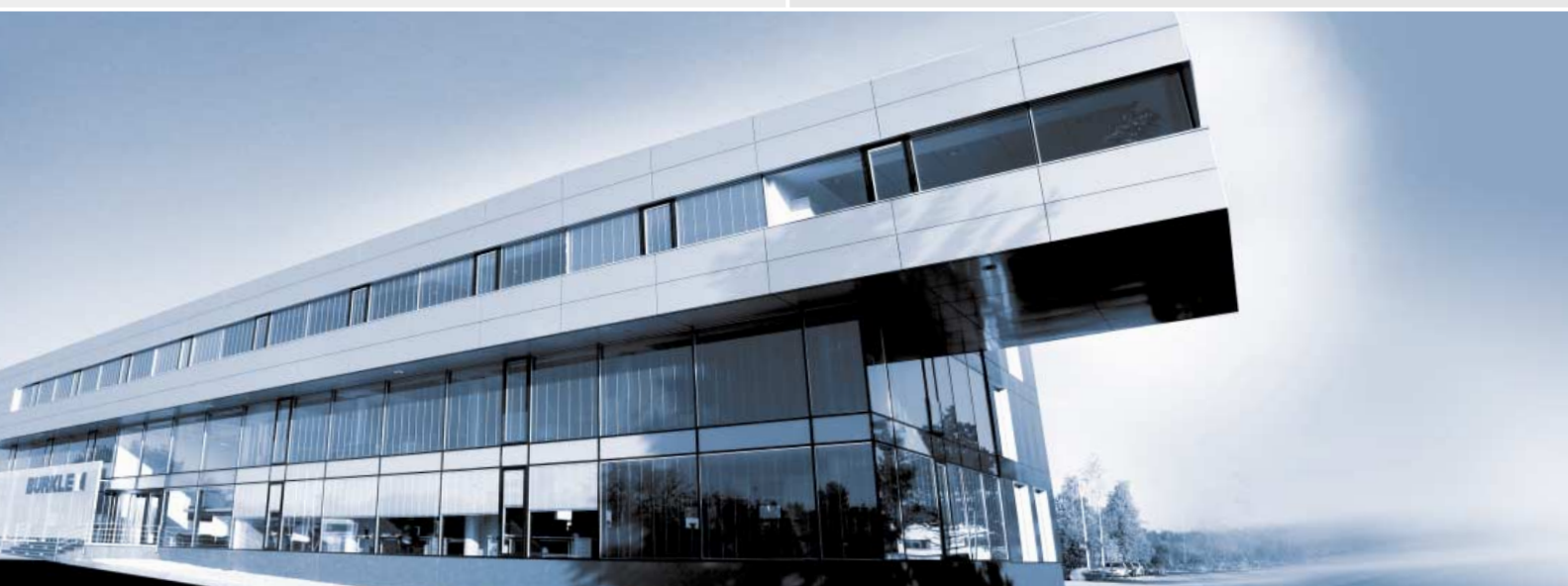
Bürkle customers rely on the sophisticated and future-oriented technology of our machines and lines.

Therefore, the requirements of our customers are implemented consistently according to economic aspects.

From the advisory service, development and design to installation and start-up of a line, we have one goal: the result must be e.a.sy!

This means: our supplied systems allow an absolutely economic production, meet highest technical demands and can be extended by adding modules at any time.

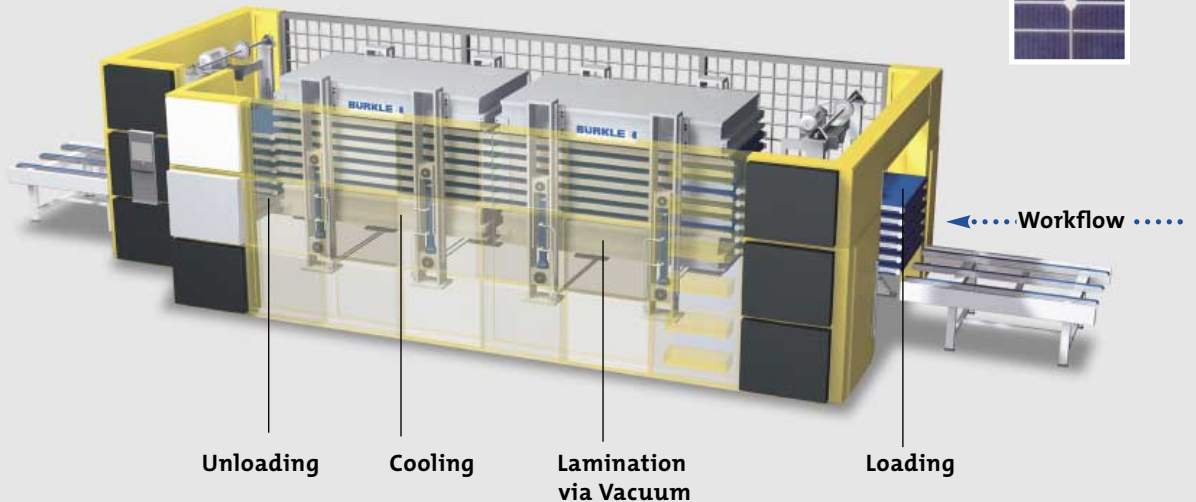
A consistent service orientation completes our programme: service hotline and sophisticated diagnostic systems are a standard feature for us and ensure the highest possible process reliability.



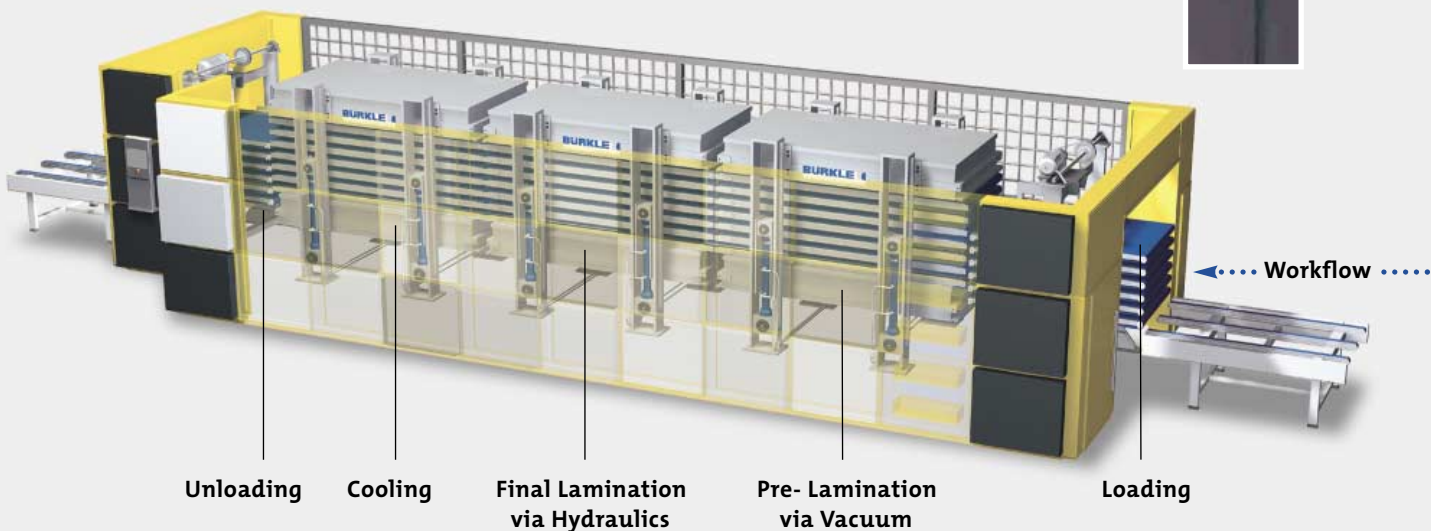
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Multi-Opening Lamination Line Ypsator® for Crystalline Cell Modules – 2-Step Process



Multi-Opening Lamination Line Ypsator® for Glass-Glass Modules (e. g. Thin-Film Applications) – 3-Step Process



Technical Data			
YPSATOR®	1228 Thin-Film	1722 Crystalline Modules	2022 Crystalline Modules
Useful area [mm]	1200 x 2850	1700 x 2200	2000 x 2200
Number of openings	4 – 10*	4 – 10*	4 – 10*
Operating temperature max. [C°]	180	180	180
Heating medium	Thermal oil	Thermal oil	Thermal oil
Temperature accuracy [C°]	± 2	± 2	± 2
Specific pressure [N/cm ²]	0,1 – 9	0,1 – 9	0,1 – 9
Final vacuum pressure [mbar]	< 1	< 1	< 1
Evacuation time to 1 mbar in process room [sec]*	90	90	90
Clearance of openings [mm]	100	100	100
Second laminator (no vacuum)	included	optional	optional
Heating medium	Thermal oil	Thermal oil	Thermal oil
Specific pressure by hydraulic [N/cm ²]	20	20	20
Cooling unit (no vacuum)	included	optional	optional
Cooling medium	Water	Water	Water
Specific pressure by hydraulic [N/cm ²]	20	20	20
* others on request			

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Multi-Opening Lamination
Line Ypsator® for High Volume
Production

Advantages of Bürkle
Multi-Opening Lamination
System Standard Process



From the Pioneer of the Multi-Opening Technology

For the Production of Crystalline Cell Modules (2-Step Process):

- High volume production
- Small overall footprint
- Economical high volume production
- Thermal oil provides uniform platen temperature accuracy
- Uniform and repeatable process control
- High energy efficiency

- Uniform heating to the top + bottom of the module
- Short vacuum extraction time
- Module is held off platen during transportation
- Deselectable single opening for maintenance
- Fast replacement of membrane under heated operating conditions
- Parallel press closing

- Controlled cooling of modules under pressure – preventing module from warping and shortens process time
- Robust machine design provides high equipment utilization

And additional advantages for the Production of Glass-Glass Modules (3-Step Process):

- Different process parameters possible in either station
- Heating of modules on both sides in the second station – fast and symmetrical heat transfer
- Split process improves "Cycle Time"
- Maintenance friendly



- 1 Ypsator 1722, 2-Step-Process with 6 openings for the production of Crystalline Solar Modules replaces 3 conventional Single-Opening Lamination Lines.
- 1 Ypsator 1228, 3-Step-Process with 6 openings for the production of Glass-Glass Modules replaces 6 conventional Single-Opening Lamination Lines.

BÜRKLE WORLDWIDE:



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