

TECHNICAL DATA

SolarPaq

For profiling the lamination process

Datapaq® has been supplying temperature profiling solutions into the solar photovoltaic manufacturing industry for many years. As part of our continuing product innovation, we now offer two solutions for profiling the vacuum lamination process.

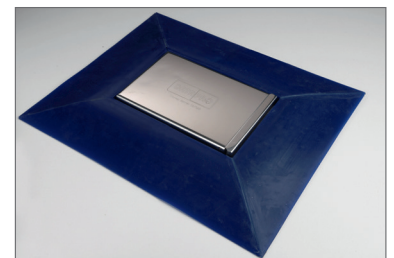
The temperature profile that the module is subjected to during the lamination process is critical to the correct curing of the ethylene vinyl acetate (EVA) and as such, has a direct effect on module lifetime. Datapaq SolarPaq temperature profiling systems enable the process to be monitored without disrupting normal production. The logger and its associated thermocouples are placed into the laminator, along with the module to be monitored. The system passes through the laminator and on exiting, the temperature profile information can be downloaded and analyzed.



A Complete Solution

By monitoring temperatures at up to 10 points across the entire surface of the module, the Datapaq system provides the engineer with the information needed to set up and optimize their process.

This system has been designed to eliminate the need for trailing long leads in and out of the laminator press and is therefore, significantly safer in operation than existing methods of profiling. The barrier and its surrounding frame have been designed, following consultation with equipment manufacturers, to ensure minimal stress on the laminator transport and membranes.



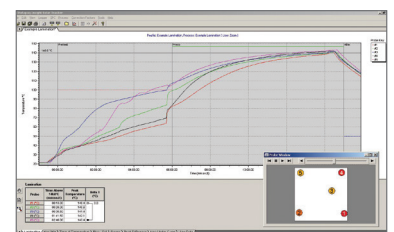
Protection Frame with Thermal Barrier

Benefits

- Safely profile the lamination process
- Obtain accurate repeatable results, enabling process optimization
- Save time and money setting up or adjusting process throughput
- Enable regular monitoring of process performance to be conducted quickly and easily

Solar Insight™ Software

This software has been designed specifically for use within the photovoltaic (PV) solar industry and contains many process-specific analysis displays. Wizards guide the users step-by-step to quickly obtain the data and analysis of the required results. This ensures that both experienced and novice users can obtain maximum benefit in the shortest possible time.



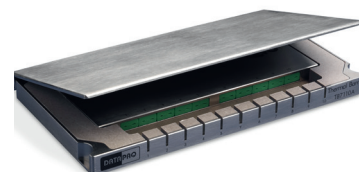
Insight Software

Technical Specifications

Thermal Barriers and Frames

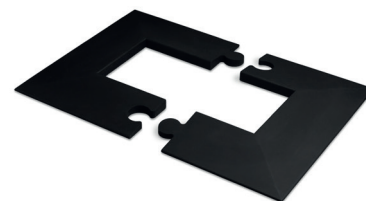
The thermal barriers and frames have been designed to protect the logger from temperature and pressure during the process, and to ensure that no extra stress points are created on the laminator membrane.

Barrier Model	TB7100	TB7110
Dimensions (H x W x L)	20 mm x 150 mm x 225 mm (0.79 in x 5.91 in x 8.86 in)	20 mm x 150 mm x 263 mm (0.79 in x 5.91 in x 10.35 in)
Weight	1.25 kg (2.76 lb)	2.3 kg (5.07 lb)
Material	Stainless steel outer with microporous ceramic insulation	



TB7110 Thermal Barrier with DP5 Data Logger

Frame Model	TB7160	TB7170
Dimensions (H x W x L)	20 mm x 365 mm x 445 mm (0.79 in x 14.37 in x 17.51 in)	20 mm x 365 mm x 485 mm (0.79 in x 14.37 in x 19.09 in)
Weight	650 g (1.43 lb)	
Material	Silicone Rubber	



TB7170 Silicone Protection Frame

Data Logger

The Datapaq DP5 logger features rugged, reliable and accurate data acquisition circuits, clear status indicators and an intelligent battery management system.

Model	DP5600	DP5650
Number of channels	6 channels	10 channels
Sampling interval	0.05 seconds to 10 minutes	
Accuracy	±0.5 °C (±0.9 °F)	
Resolution	0.1 °C (0.2 °F)	
Maximum internal operating temperature	85 °C (185 °F)	
Temperature range	-100 °C to 1370 °C (-148 °F to 2498 °F)	
Memory	50,000 readings per channel	
Data collection start	Start/stop buttons, time or temperature trigger	
Battery	NiMH rechargeable	
Thermocouples	Type K	



Datapaq DP5600 Data Logger



Datapaq DP5650 Data Logger

Recommended Thermocouples

Type K fine wire adhesive patch probe

Model	Length	Description
PA0060	1.5 m (5 ft)	PTFE insulated cable, fast response 0 °C to 265 °C (32 °F to 509 °F) max.
PA0061	1.0 m (3.25 ft)	
PA0062	3.0 m (10 ft)	

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