



The Global Leader in Thermal Technology

# PVD-600 Series

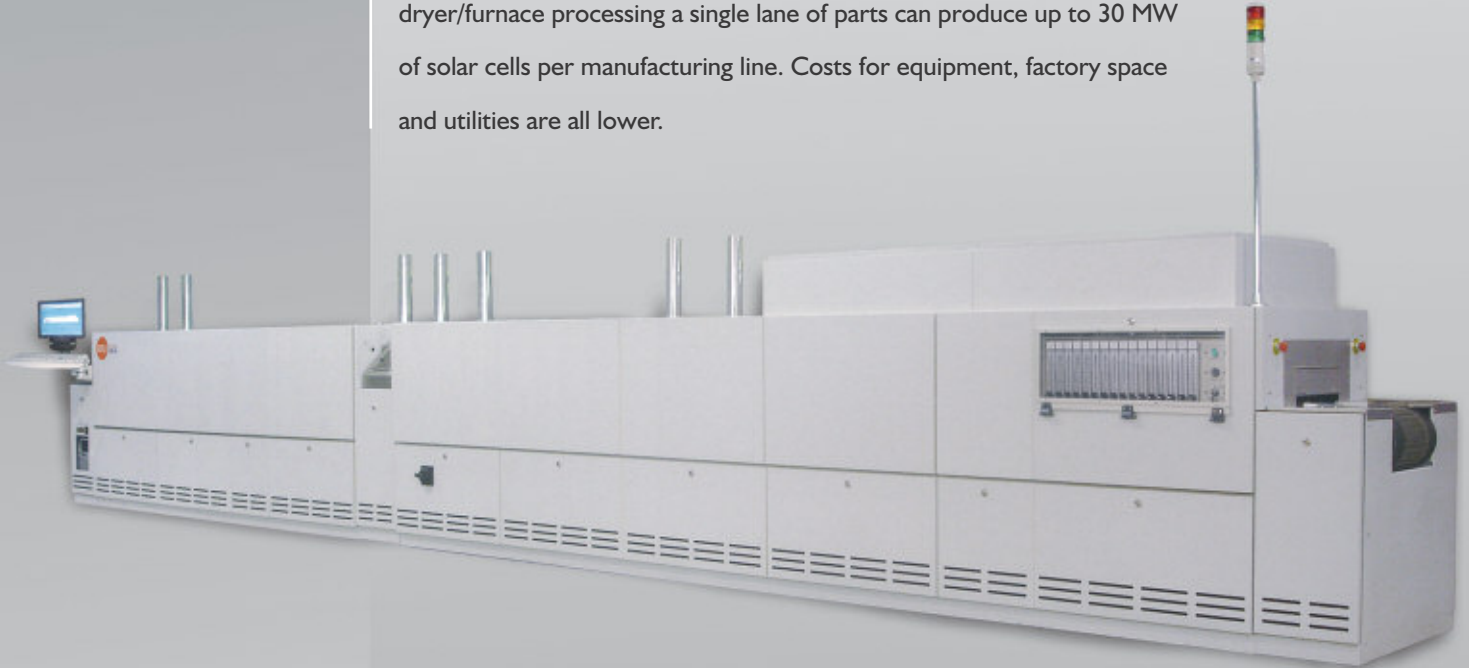
## Integrated Solar Cell Dryer/Firing Furnaces

**Built for Today. Ready for Tomorrow.**

### Rapid Thermal Processing

The PVD-600 Series furnaces combines the Rapid Thermal Processing of a PV-600 Series Solar Cell Firing Furnace with a D-900 Series Dryer on the same belt. Combining drying and firing in one unit saves factory floor space and automation costs as solar cells go directly from the dryer into the furnace.

Lower cost solar cells are produced with faster processing speeds and improved equipment efficiency. With shorter processing time and faster belt speeds, one PVD-600 Series integrated dryer/furnace processing a single lane of parts can produce up to 30 MW of solar cells per manufacturing line. Costs for equipment, factory space and utilities are all lower.

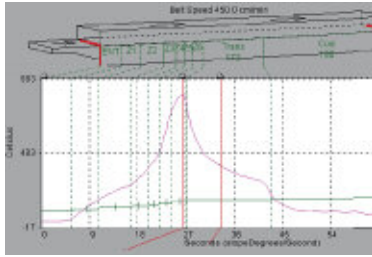


- Paste Drying
- Metallization Firing

# PVD-600 Series Integrated Solar Cell Dryer/Firing Furnaces

## Technology Benefits

**Fast heating** is achieved with a higher density of IR lamps in shorter temperature zones. Heat up rates can exceed 75°C per second



130mm polycrystalline solar cell,  
250\_m thick, 450cm/min

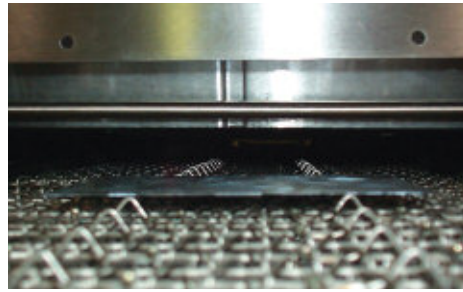
between 400°C and 875°C.

**Fast cooling** is achieved with water-cooled cold walls above and below the conveyor belt. The cold walls are separated from the last heated zone by a

13cm transition tunnel with CDA-fed curtain and

baffles. Cool down rates can exceed 65°C per second between 875°C and 400°C. Solar cells exit the furnace at 40°C or less.

**Fast belt speeds** transport lightweight solar cells smoothly. Belt vibration is



Dimpled belt holds solar cells above the belt

minimized with a friction drive roller. Optional dimpled belts enable faster heating and cooling by reducing solar cell contact with the conveyor belt.

**Uniform atmosphere** with a laminar flow of pre-heated clean dry air (CDA) produces a broad

process window. CDA is fed into the heating chamber through the top and bottom porous ceramic chamber walls (RTC patent). A controlled atmosphere of specialized gas can be maintained in selected furnace zones.

## Standard Features

- BTU WINCON™ Control Software
- BTU Intellimax™ Controller
- Redundant Over-temperature Protection
- Element Monitoring
- On-board Profiling
- Process Ready/Not Ready Light Tower
- Panel Safety Interlocks
- Multi-language Software

## Options

- 15 in. Ext. Tables
- Ultrasonic Belt Cleaner
- Uninterruptible Power Supply
- Air Purifier
- CE Compliance
- Datapaq 9000 Profiler
- Dimpled Belt
- Spares Kits

## SPECIFICATIONS

	PVD-609	PVD-614
Parts Clearance (in, cm)	0.75, 1.9	0.75, 1.9
Belt Width (in, cm)	9, 23	14, 36
Conveyor Speed (ipm, cm/min)	22-220, 56-560	22-220, 56-560
Load and Unload Stations, each (in, cm)	15, 38	15, 38
Dryer Entrance Baffle, Exhaust (in, cm)	14, 35.5	14, 35.5
Dryer Heated Length (in, cm)	90, 229	90, 229
Number of Dryer Heated Zones	3	3
Dryer Exit Baffle, Exhaust (in, cm)	15, 38	15, 38
Open Inspection Area (in, cm)	15, 38	15, 38
Furnace Entrance Baffle, Exhaust (in, cm)	15, 38	15, 38
Furnace Heated Length (in, cm)	60, 152	60, 152
Number of Furnace Heated Zones	6	6
Heat Up Time (minutes)	15	15
Transition Tunnel (in, cm)	5, 13	5, 13
Water Cooling Length (in, cm)	20, 51	20, 51
Forced Air Cooling Length (in, cm)	90, 229	90, 229
Atmosphere, CDA, typical (scfh, m3/hr)	900, 25.2	1700, 47.6
Process Exhaust, Venturi Assist	5	5
Electrical	208-480 VAC 3Ø 50/60 Hz (4-Wire or 5-Wire available)	
Power (KW) Peak, Typical	90, 36	136, 54
Overall Length (in, cm)	367, 932	367, 932
Overall Width (in, cm)	38, 96.5	38, 96.5
Overall Height (in, cm)	66, 167.4	66, 167.4

\* Additional configurations available to meet your exact process requirements.

## Customer Support

- 24-Hour, 7-Day Worldwide Customer Support
- Global Field Offices
- PBET Certified Training
- Process Engineering Support and Training
- Regional Locations with Replacement Parts In-Stock
- Electronic User Documentation



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