



 **COOLPV™**



**SOLAR IS FREE ENERGY ... FOREVER!**

# COOLPV - IT'S THE COMPLETE SOLUTION TO LIMITED ROOF SPACE.



COMBINING PHOTOVOLTAIC (PV) PANELS WITH SOLAR POOL HEATING PROVIDES FOUR TIMES THE ENERGY OUTPUT FROM THE SAME ROOF SPACE.

When roof space is limited, you can still have Photovoltaic electricity panels on your roof and heat your pool with solar by installing the patented CoolPV electric plus water heating system. **Two systems - one footprint!**

## SIMPLE IDEA ... EXTRAORDINARY TECHNOLOGY.

The top layer is an array of high efficiency PV cells that generate electricity for use in your home - or fed back into the grid when you have a surplus.

One downside of modern PV cells is that they generate a significant amount of heat and that heat reduces their effectiveness.

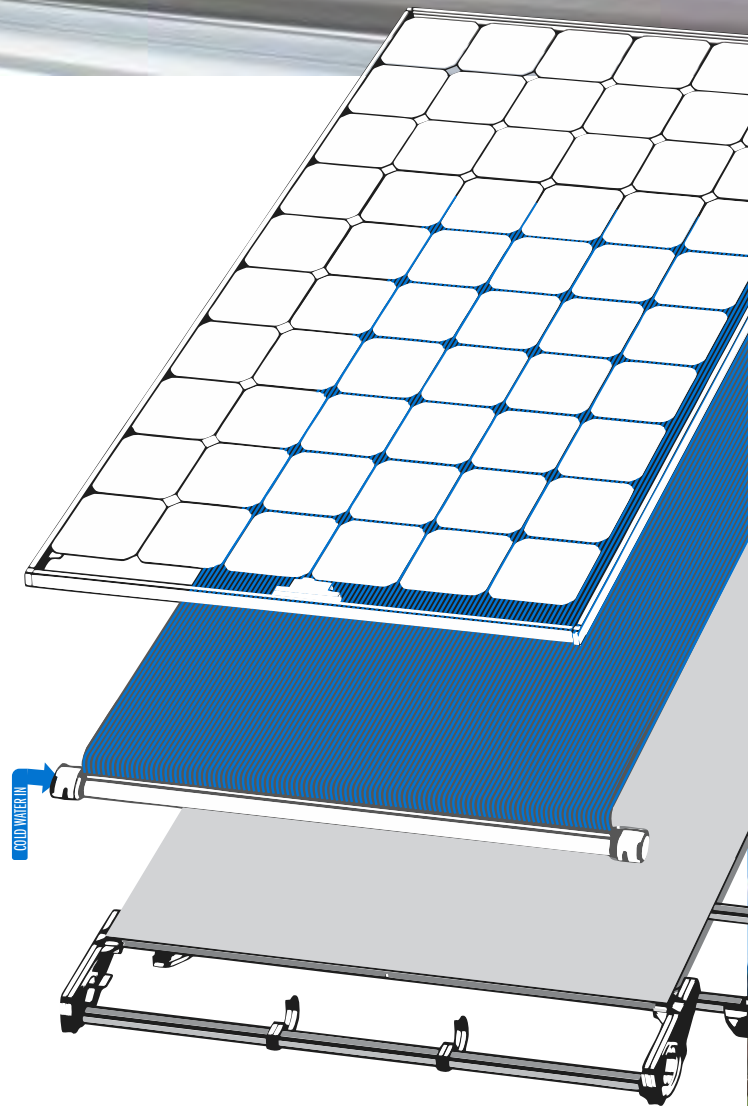
Directly behind that array is a **pool water heat exchanger** made up of hundreds of tiny tubes. A pump pushes pool water through these tubes gathering up all that wasted heat and delivering it back to the pool.

## THE SYSTEMS ARE COMPLIMENTARY SO BOTH BENEFIT.

Instead of overheating being a major problem for PV panels, CoolPV converts it into a major benefit.

By running cool pool water behind the cells to draw off that heat, CoolPV cells are up to 20% more efficient than other PV cells.

At the same time, that heat warms the pool. In the end, CoolPV achieves **FOUR TIMES** more energy per square metre of roof space.



## COOLPV COMES WITH A PROUD SOLAR POOL HEATING HERITAGE ... AND AN IMPECCABLE PEDIGREE!

Fafco USA have been a leader in solar pool heating since 1969 and are responsible for a number of significant innovations. Fafco has been responsible for more than 20 US patents and even featured in Newsweek magazine's 'History of Solar'.

To produce CoolPV they not only drew on their own deep understanding of solar and pool hydraulics, they worked in collaboration with the US Navy and the National Renewable Energy lab to conceive and bring CoolPV to life.

### PRACTICAL INNOVATION PLUS SUPERIOR BUILD QUALITY.

A prime example of Fafco/Sunbather's focus on bullet-proof technology is the Quick Union.

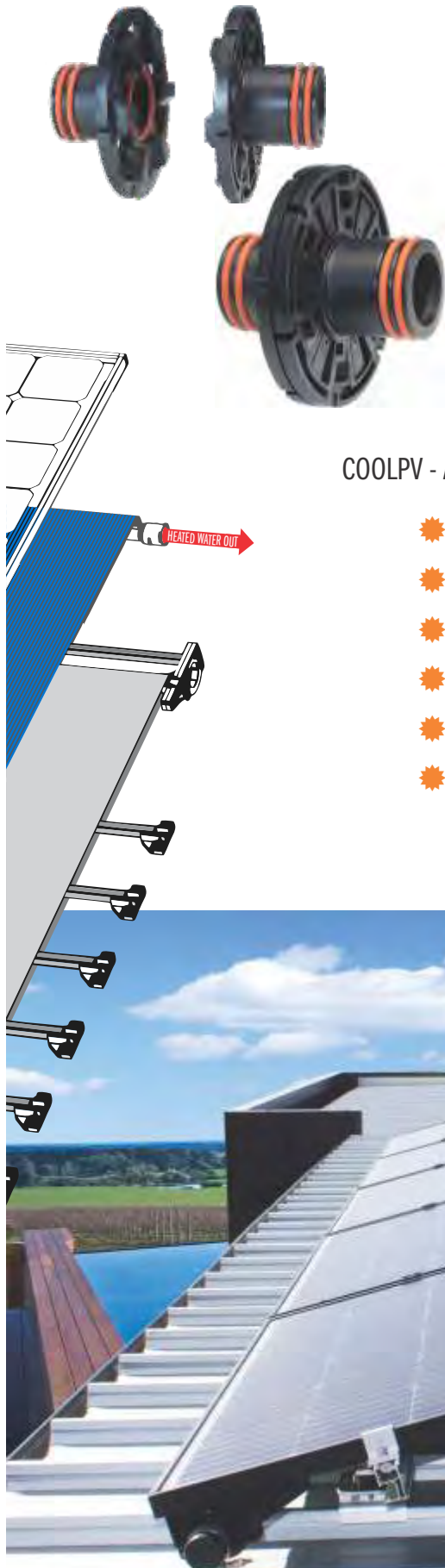
Ideally, PV arrays involve multiple panels linked together, but for pool water heating, that means multiple connections at the top and bottom of each panel. In the past, connections have been weak points in the system and the source of potential leaks.

Quick Union is an incredibly strong coupling with multiple seals.

It bonds the panels together so securely they become one. And it does it with a quick and simple click and twist action. That makes connecting a large number of panels quick, easy and totally reliable without any fear of leaks, distortion or deterioration.

### COOLPV - A NEW SOLAR POOL HEATER THAT'S GROUND-BREAKING ON SO MANY LEVELS:

- ☀ It generates up to 4 times the energy output from the same area of roof space.
- ☀ It's exceptionally well constructed and an attractive addition to any roof.
- ☀ It's up to 20% more efficient at generating electricity than un-cooled PV systems.
- ☀ It can even pay its way by selling surplus energy back to the grid.
- ☀ Governments support PV installations with STC rebates in most locations.
- ☀ Patented COOLPV is the new benchmark in environmental responsibility.



## COOLPV 285W PANEL SPECIFICATIONS:

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Panel Area	1.70 Sqm
Panel Size (LxWxH)	1675 x 1000 x 115
Panel Weight (Dry)	28.40 kg
Roof Load (Dry Weight)	16.70kg/sqm
Panel Fluid Capacity	3 Litres
Panel Water Pipe Connection	Fafco Proprietary
Electrical Connection Type	Mc4
Installation Layout	Portrait
Minimum Panel Pitch	10° (2:12)
Fire Rating	UI1703

### ELECTRICAL SPECIFICATIONS\*

Rated Electrical Output (Pmax)	285 Watts
Open Circuit Voltage (V oc)	39.7 V
Rated Voltage (V mpp)	31.3 V
Short Circuit Current (Isc)	9.84 A
Rated Current (Imp)	9.20 A
Temperature Coefficient - Pmax	-0.43 %/°C
Temperature Coefficient - Voc	-0.31 %/°C
Temperature Coefficient - Isc	-0.44 %/°C
Electrical Efficiency - STC	17.0%
System Voltage Max	1000VDC
Power Tolerance	-0 / +5 Wp
Number of Cells/Type	60/Mono-crystalline
Nominal Operating Cell Temp-NOCT	48°C
Clean Energy Australia Approval	Yes
Manufacturer	SolarWorld USA
Standard Approval	AS 5033

### THERMAL SPECIFICATIONS\*

Heat Output	1000 Watts
Recommended Operating Pressure	138KPa
Factory Test/Burst Pressure	345/1,517 Kpa
Recommended Flow Rate Per Panel	5.7 LPM (0.06 l/sq/sec)
Delta T (At 'y' Intercept)	-16°C
Operating Temperature Range	15°C - 40°C
Stagnation Temperature	80°C
PV Panel Improvement	Up to 20%

\*All performance data calculated at STC (Standard Test Conditions) 25°C, 1000 w/m<sup>2</sup>, 1.5AM, Inlet Water @ 20°C.

## NATIONAL SERVICE & INSTALLATION NETWORK.

Solar is the perfect match for the Australian climate, so long as it's manufactured to withstand the harsh conditions and installed correctly. Sunbather is focused on durability and backs it up with a nationwide network of highly trained Sunbather installers and service technicians.



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