

Vertex™ Solar Powered Systems

Zero Running Cost - Pool/Spa Heating

with OKU Panels Adapted for Australian Conditions

If you're still running electrics to heat a spa you might as well be throwing money down the drain.

Dr Gregory Grochola (PhD)



German Certified Panels



Easy DIY
Unlimited
Phone Tech
Support



12V Solar Safe
Fast Payback Times
No Need for Spa Perforations



EcoOnline / Optex Solar Pty Ltd
ABN: 88 128 228 884
Address: 7B Steele Crt, Mentone, 3194, Victoria
Website: www.EcoOnline.com.au
Email: info@EcoOnline.com.au

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best choice under the sun

Vertex™ Exclusive System Features



German
Certified
Panels



Absolutely No Compromise On Materials Selection

- HIGH DENSITY POLYETHYLENE collector panels which are near indestructible in the sun
- 316/314 ALL STAINLESS fixing straps and clamps for maximum strength and longevity
- SILICON joiners with thick reinforced soft grade silicon for perfect seals each time



Efficient, Ultra Durable and Reliable System

- Super efficient and ultra durable open channel, high water flow, no air gap collectors
- Simple system design for ultimate reliability - only one moving part, the pump, that's it
- The system and pump is so efficient; it only requires a small low power solar panel to run



Cockatoo, Hail and Leak Proof

- With NegSheild™ - a negative pressure proofing system
- Guarantees no roof leaks to drain your spa
- Proven HDPE cocky and hail proof track reco



Potable Grade

- No need for winter flushing
- No phthalate PVC plasticisers
- German TUV certification



Zero Running Costs

- System is fully powered by a solar pump and panel
- Heats and filters¹ - reducing heating and filtering costs
- Perfect for off-grid or for people that care about our enviroment



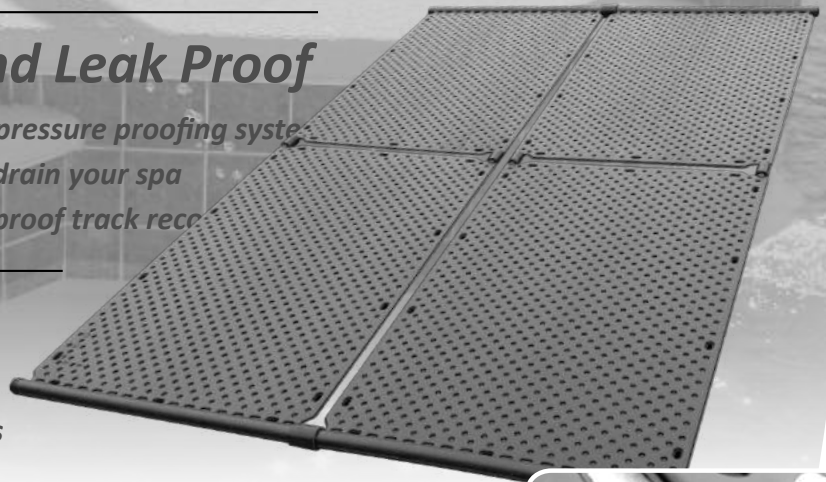
12V Low Voltage Safe - Fun DIY Project

- No electrical work required - uses simple twist lock electrical connectors
- The Vertex Self-Prime requires no spa perforations - uses lines "over the top"
- Makes for a fun and rewarding project with unlimited phone tech support



Stop Paying Huge \$\$\$ Bills for Spa Heating

- We have Queensland customers that are now paying near nothing for heating
- The best investment you'll make - you'll wonder why you didn't do it sooner
- And unlike PV systems you don't have to tell your electricity supplier



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Vertex™ System Plumbing Options



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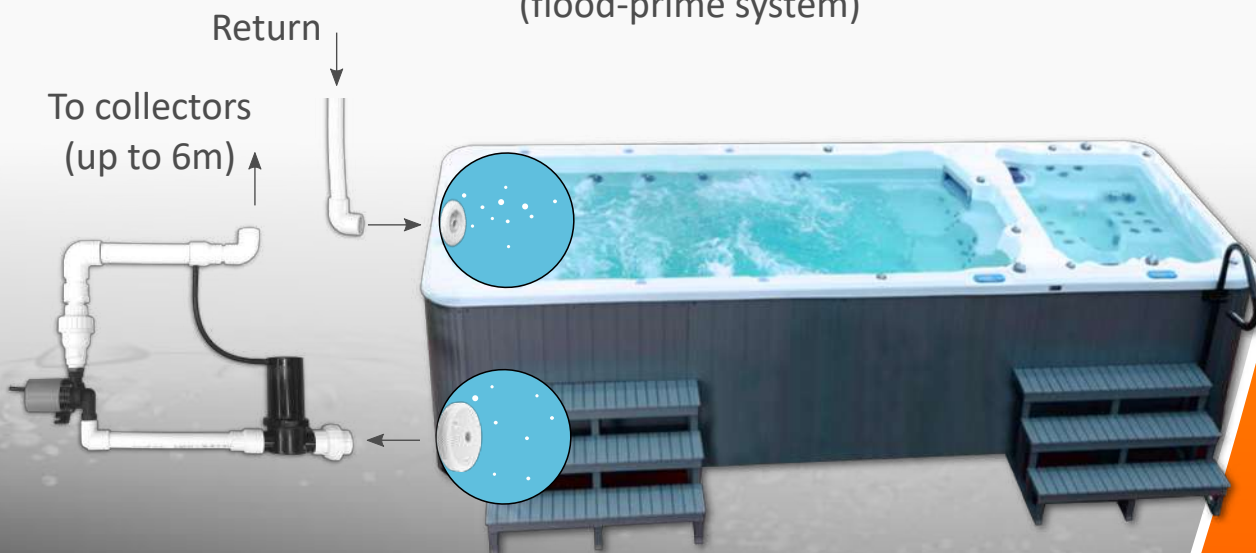
Vertex Self-Prime : Flex lines "over the top" (self-priming up to 2 meters)



Can switch between two bodies
of water for winter²/ summer

OR

Vertex Flood-Prime : Hard plumbed (flood-prime system)



¹ Fine strainer filtering only

² Warm states only - system will not heat well in southern states in winter



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Vertex™ System Specifications



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Performance+ OKU Panel Thermal Specs	
Pressure drop at 3.3L/m ² /m ²	0.06 psi
Efficiency at 1000W/m ²	0.89
Minimum flow rate	as low as 1L/min/m ²
Weight	6 kg or 12kg with water
Water content	<6 Litres
Recommended working pressure	-1 to 1psi

Performance+ OKU Panel Mechanical Specs	
Gross panel area	1.2m ²
Panel length x width	1370mm x 345mm
Dual header pipe OD	40mm metric
Interconnect pipe OD	25mm metric
Frost resistant	Yes
Cockytoo resistant	Yes
Suitable for water types	All
Material (polyethylene)	HDPE grade
Certification	SRCC
Temperature range	-20 to +115°C
Warranty	35 Years

Vertex PV Panel Mechanical Specs	
60W panel length x width	670mm x 630mm
100W panel length x width	1015mm x 670mm
Cell type (varied)	MOTECH Multicrystalline
Number of cells	36 cells
Weight of 60W / 100W panel	5.2Kg / 7.1Kg
Warranty -Pmax not less than	90%/80% in 10/20ys

Vertex Pump Specs	50W	60W	Dual 50W
Working voltage	18V DC	18V DC	18V DC
Solar panel power	60W	60W	100W
Max head lift	4.6m	5.5m	9.2m
Max recommend lift	~3m	~3.5m	~6m
Working current	2.8A	3.5A	2.8A
Max flow rate	25L/min (18V)	30L/min (18V)	25L/min (18V)
Max water temperature	40C°	40C°	40C°
Warranty	2 years + 2 year at cost replacement		

Vertex PV Panel Specs	60W	60W	100W
Maximum power (Pmax)	60W	60W	100W
Positive power tolerance	0 - +10%	0 - +10%	0 - +10%
Voltage at max power (Vmp)	17.4Vmp	17.4Vmp	17.4Vmp
Current at max power (Imp)	3.45A	3.45A	5.75A
Open circuit voltage(Voc)	21.6V	21.6V	21.6V
Short circuit current (Isc)	3.79A	3.79A	6.33A
Operating temperature	-40°C to +85°C		

Vertex System Specs	
Under-temperature panel sensor ON/Reset	38C° / 29C°
Over-temperature return sensor OFF/Reset	39C° / 29C°
Spa temperature adjustable range	~28C° to ~39C°

Vertex™ System Payback Times

Your energy savings will depend on what you're using to heat your pool, swim spa or spa pool and where you are located. The table below gives the total heating costs saved across a single swimming season when offsetting the heating cost of a gas heater, an electric heat element or heat pump unit. Since the cost of a 10 panel Vertex (Flood-Prime) system is approx \$1,700, the payback times range from 1-5 years. This compares to a 5-10 year payback time for solar PV system!

Energy saving from a 10 panel Vertex Swim Spa system in a single swimming season*					
	Ave Daily Sun (1.1m ²)	Energy Collected	Gas (1kWh=3.6 MJ)	Electric Element	Heat Pump
Melbourne (Oct-Mar)	6.7 kWh	733 kWh	\$910.00	\$1,650.00	\$410.00
Sydney (Oct-Apr)	6.5 kWh	696 kWh	\$860.00	\$1,570.00	\$390.00
Brisbane (Oct-Apr)	6.7 kWh	716 kWh	\$890.00	\$1,610.00	\$400.00



But it doesn't end there, the OKU panels on a Vertex system have a longer warranty period than PV panels and the Vertex system is DIY which means reduced ongoing servicing costs as compared to solar PV. But best of all you don't have to report a Vertex system to your electricity supplier like you do with a PV system and face higher contract cost. All this makes the Vertex System an absolute no brainer for your next pool or spa heating system.

Assumptions:

- * We assume the Vertex system is optimally mount and undersized so that each collector is maximally utilized.
- * We count only the energy collected across the swimming season specified.
- * Assumed Average Daily Insolation across the swimming seasons are 6.08kWh/m² (Melbourne), 5.94kWh/m² (Sydney) and 5.91kWh/m² (Brisbane).
- * We assume an average gas price of 2.75c/MJ and electricity price of 22.5c/kWh.
- * We assume an overall OKU panel efficiency of 60%, gas boiler efficiency of 80%, and heat pump efficiency of 300%.



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