

About the tables

These tables provide information on suppliers of heat pump, solar thermal, PV diverter, direct PV and instantaneous electric hot water systems, and the systems they supply. Data was compiled by Renew using online brochures, technical specifications and information from suppliers directly; please check with suppliers before purchase. Refer to the buyers guide in *Renew 151* for more information on the types of systems and features to look for. Note that many warranties depend on water quality. Also note that for heat pumps, the way COP is measured varies between manufacturers and STCs are a better way of comparing systems of a similar size.

TABLE 1: HEAT PUMPS

Supplier	Model	Capacity (litres)	Split system or integrated	Tank material	Corrosion protection	Insulating material/thickness	Refrigerant type	Backup element (if used)	COP	Min rated ambient temp	Max rated ambient temp	STCs per zone 1 to 5	Defrosting/ freeze protection	Timer and programmability options	Recovery rate	Noise level (dB)	RRP (pre STCs)	Warranty	Comments
Chromagen Pty Ltd ph:1300 367 565 www.chromagen.com.au	Midea HP - 170 - RSJ-15/19ORDN3-C	170	Integrated	Vitreous enamel	Sacrificial anode		R134a	2150W		Heat pump only (ECO): 5°C; heat pump and element (hybrid): -20°C; element only: -20°C	43°C	25 24 29 31 28	Automatic defrost	Inbuilt timer		48		Compressor: 3 years product/1 year labour; tank: 5 years product/3 years labour; all other components: 1 year	Auto disinfection
	Midea HP - 280 (V2) - RSJ-23/30ORDN3-B	280						3000W				26 26 31 33 31		Inbuilt timer, vacation mode					
EarthworkerEnergy Manufacturing Cooperative www.earthworkerenergy.coop	REHP-CO2-315SSEW	315	Split	Stainless steel	Stainless steel	72mm polyurethane + 5mm insulating polymer outer case	R744 (CO ₂)	None (low minimum operating temperature)	5.6 at 30°C ambient, 24°C cold water inlet	-10°C	43°C	26 26 32 34 34	Built-in frost control	Controller allows operation via thermostat, off-peak timed, PV timed, owner-set timer or single-shot boost	Average 3 hours heat recovery from 20°C to 60°C	37	\$4830.10 inc GST	Heat pump: 6 years; tank: 15 years; controller: 1 year	Uses the Reclaim Energy heat pump. A new 250 litre tank model with the same specs is now available, with STCs available in a couple of months.
Hydrotherm ph: 1300 769 904 hydrotherm www.hotwatersystems.com.au	Hydrotherm DYNAMIC/X8	260	Integrated	Vitreous enamel; class Y rating; 3.5mm dome thickness, 2.5mm cylinder thickness	Non-sacrificial impressed current anode	43mm polyurethane	R290 (propane)	1800W	4.619 at 20°C ambient and 15°C to 57°C rise in temperature across whole tank. At 33°C ambient, COP 5.59 under AS/NZS5125 test conditions	-5°C (heat pump switches to element at this ambient temperature)	43°C (heat pump switches to element at this ambient temperature)	25 24 30 32 31	Automatic defrost	On/off timer plus three additional settable timers; programmable boosting option to activate element for 70°C max tank temperature for sterilisation in high compliance installs such as nursing homes and hospitals.	For 40°C rise in water temperature: 1°C ambient = 491 minutes, 9°C ambient = 307 minutes, 19°C ambient = 262 minutes, 33°C ambient = 191 minutes	48	\$2295 inc GST plus delivery	6 year warranty covers all parts and tank in full, including labour	Full stainless steel external construction for maximum durability; no exposed plastic components
iStore ph: 1300 552 619 istore.net.au	iStore-180L Air to Energy	180	Integrated	Vitreous enamel	Sacrificial anode		R134a	1500W				25 26 30 32 31		Four heating modes with/without electric element boosting, programmable timer		46.6dB at 1m		Refrigeration and electrical: 2 years; tank: 5 years; all other components: 1 year	
Quantum Energy Technologies ph:1800 644 705 www.quantumenergy.com.au	150-08AC6-290 150L Solar Heat Pump	150	Integrated	Vitreous enamel	Sacrificial anode		R290	None (low minimum operating temperature)	4.3 at ambient temperature of 20°C	-10°C	35°C	24 24 29 31 30	The refrigerant has a boiling point of -42°C. Therefore, there is no danger of damage to the heat pump from frost.			50dB at 1.5m above ground level		Compressor and electrics: 2 years; tank: 5 years	
	200-08AC6-290 200L Solar Heat Pump	200										24 23 28 30 29							
	270-08AC6-290 270L Solar Heat Pump	270										26 26 31 33 32							
	340-08AC6-290 340L Solar Heat Pump	340										25 25 30 33 32							
Reclaim Energy ph: 1300 383 815 www.reclaimenergy.com.au	REHP-CO2-160GL	160	Split	Vitreous enamel	Sacrificial anode		R744 (CO ₂)	None (low minimum operating temperature)	6.02 at outlet water setting 63°C, inlet cold water 21.1°C, ambient temperature dry bulb 32.6°C	-10°C	43°C	25 24 30 32 32	Built-in freeze/ frost control	External controller- Controller allows operation via thermostat, off-peak timed, PV timed, owner-set timer or single-shot boost	Average of 2.5 hours for 315L	37dB		Heat pump: 6 years, enamel tanks: 7 years, Stainless tank: 15 years, controller and valves: 1 year	Built-in daily Legionella control. 0.87kW power in and 5.24kW thermal output at COP conditions
	REHP-CO2-160SST	160		Stainless steel tall	Stainless steel tall							25 24 30 33 33							
	REHP-CO2-250GL	250		Vitreous enamel	Sacrificial anode							25 23 30 31 31							
	REHP-CO2-250SST	250		Stainless steel tall	Stainless steel tall							25 24 30 32 32							
	REHP-CO2-315GL	315		Vitreous enamel	Sacrificial anode							26 27 32 34 34							
	REHP-CO2-315SSQ	315		Stainless steel squat	Stainless steel squat							26 26 32 34 34							
	REHP-CO2-315SST	315		Stainless steel tall	Stainless steel tall							26 26 32 34 34							
	REHP-CO2-400GL	400		Vitreous enamel	Sacrificial anode							24 22 29 31 31							
	REHP-CO2-400SST	400		Stainless steel tall	Stainless steel tall							25 23 30 32 32							
Rinnai Australia ph:1300 555 545 www.rinnai.com.au	EHPA250VM(H)	250	Integrated	Vitreous enamel	Sacrificial anode (H models have a hard water anode)	40mm	R290 (propane, GWP of 3.3)	2400W element	4 (annual average)	-5°C	45°C	23 23 28 29 29	Automatic	None	65L/h (at COP 4)	48dB	\$2970	Tank: 5 years Compressor: 3 years	Auto disinfection, Australian made, max pressure rating 1000kPa
	EHPA315VM(H)	315										23 22 27 29 28							

TABLE 1: HEAT PUMPS (CONTINUED)

Supplier	Model	Capacity (litres)	Split system or integrated	Tank material	Corrosion protection	Insulating material/thickness	Refrigerant type	Backup element (if used)	COP	Min rated ambient temp	Max rated ambient temp	STCs per zone 1 to 5	Defrosting/ freeze protection	Timer and programmability options	Recovery rate	Noise level (dB)	RRP (pre STCs)	Warranty	Comments
Rheem Australia Pty Ltd ph:132 552 www.rheem.com.au	HDi-310 Heat Pump 551310	310	Integrated	Vitreous enamel	Sacrificial anode	Foam dam	R134a	3600W electric element	3.9	3°C to 5°C	45°C to 55°C	22 22 26 27 23	Frost protected	-	65L/hour	49dB	POA	Tank: 5 years product/3 years labour; sealed systems: 2 years inc labour; all other parts and labour: 1 year	Designed for speedy recovery; suitable for cooler climates. NB: Rheem does not recommend installation in Zone 5.
	MPI Series II Heat Pump 551325	325	Two-piece interconnected system	Vitreous enamel	Sacrificial anode	Foam dam	R134a	3600W electric element	3.9	3°C to 5°C	45°C to 55°C	23 21 27 28 26	Frost protected	-	65L/hour	49dB	POA	Tank: 5 years product/3 years labour; sealed systems: 2 years inc labour; all other parts and labour: 1 year	Suitable for moderate to warm climates and average size families. Not available in Tasmania.
	MPI Series II Heat Pump 554325	325										23 21 27 27 25							
Sanden ph:1800 146 123 sales@sanden.com.au www.sanden-hot-water.com.au	GAUS - 160FQS	160	Split	Marine-grade stainless steel	Stainless steel		R744 (CO ₂)	None (low minimum operating temperature)	5.96 at 32.5°C ambient, 18.7°C water	-10°C	43°C	26 26 31 34 33	Inbuilt setting	Inbuilt timer allows operation in defined periods (e.g. off-peak hours or middle of day to work with solar PV)	80 to 100L/h; 4 hours to heat 315L from 17 to 65°C in ambient air of 20°C.	37dB at 1m from tank		Heat pump unit: 6 years (inc labour); stainless steel tank: 15 years (exc WA); vitreous enamel lined tank: 10 years or 5 years WA	
	GAUS - 250FQS	250										26 25 31 34 32							
	GAUS - 300FQS	300										26 25 32 34 32							
	GAUS - 315FQS	315										26 25 32 34 32							
	GAUS - 315FQV	315	Vitreous enamel																
Solahart ph:(02) 9684 9100 www.solahart.com.au	Atmos 325HAV	325	Integrated	Vitreous enamel lined mild steel	Sacrificial anode	47mm polyurethane	R134a	3600W	3.35 at 19°C ambient air temp, 4.52 at 33°C ambient air temp	Unit switches to heating element below 3°C ambient	Unit switches to heating element above 55°C ambient	23 21 27 28 26	Yes, in areas where the ambient air temperature may fall below 1°C, power must be available to the water heater at all times to prevent freezing in the heat pump circuit.	Yes	35L/h for 45°C rise at 19°C ambient air temp	<49	\$4200	5 year cylinder supply, 3 year labour on cylinder, 2 year parts including labour	
Stiebel Eltron ph:1800 153 351 info@stiebel.com.au www.stiebel.com.au	WWK 222	220	Integrated	Vitreous enamel	Impressed current anode	70mm polyurethane	R134a	None (smart element to heat top 80 litres if a high volume of water is drawn)	3.94 annual average COP for climate zone 2	-5°C	42°C	25 26 29 31 31	Active defrost function maintains energy-efficient operation down to -5°C	SG ready function: Connection of activation signal from suitable inverter or equivalent smart control, that will raise the temperature to 65°C at times of surplus PV production and store this extra energy. Connection to Energy Management System: Full optimisation of PV generated power and self-consumption, based on whole-of-house energy monitoring and control system. Soon to be available in Australia (Q4) by using SMA Sunny Home Manager and control power sockets	19.7L/h for cold water at 8°C, heated to 61°C, air temperature 6.5°C, humidity 88%. 38.7 L/h for cold water at 8°C, heated to 61°C, air temperature 33.5°C, humidity 56%. 20.1 L/h for cold water at 9°C, heated to 61°C, air temperature 6.6°C, humidity 86%. 37.9L/h -for cold water at 10°C, heated to 61°C, air temperature 32.8°C, humidity 57%.	45dBA at 1m distance	\$4080 \$4210	Sealed refrigeration system: 2 years; tank and condenser: 5 years; other electrical components: 2 years	The product is suitable for enclosed room installations, with at least 6m ² of floor area and 13m ² of empty space. Maximum power consumption is 700W It can be transported horizontally
	WWK 222 H																		
		WWK 302 WWK 302 H	305						None (smart element)	3.58 annual average COP for climate zone 2			24 25 28 31 30 24 25 28 30 30			\$4360 \$4495			
Thermann www.thermann.com.au	Thermann X Hybrid Heat Pump	220 300	Integrated	Vitreous enamel	Impressed current anode		R134a	1600W	3.94 3.58	-5°C	42°C	25 26 29 31 31 24 25 28 31 30	Frost protection function uses heat pump and electric element below 8°C	Boost button (uses heat pump and electric element)			\$3047 inc. GST \$3251 inc. GST	Sealed refrigeration system: 2 years; tank and condenser: 5 years; other electrical components: 2 years; PTR valve: 1 year	Uses element outside of operating temperature ranges
Wise Living ph:1300 050 940 info@wiseliving.com.au www.wiseliving.com.au	REHP-CO2-160SST REHP-CO2-250SST REHP-CO2-315SSQ REHP-CO2-315SST REHP-CO2-400SST	180 280 330 squat 330 420	Split	Stainless steel	Stainless steel	Polyurethane	R744 (CO ₂)	None (low minimum operating temperature)	5.6 at 30°C ambient, 24°C cold water inlet	-10°C	43°C	25 24 30 33 33 25 24 30 32 32 26 26 32 34 34 25 23 30 32 32	Built-in frost control	Controller allows operation via thermostat, off-peak timed (3 time ranges), PV timed, owner-set timer or single-shot boost		37		Heat pump: 6 years; tank: 15 years; controller: 1 year	Uses the Reclaim Energy heat pump.

TABLE 2: SOLAR THERMAL (CONTINUED)

Make	Model	Split or close coupled	Collector type	Collector material	Glass type	Frost protection	Tank material	Insulating material	Boosting	Capacity (litres)	Total collector area (m ²)	No. of tubes or collectors	Tank pressure	Warranty	RRP (before STCs)	Comments											
Edson Pty Ltd ph:1300 880 154 www.edson.com.au		Split	SR Evacuated Tube Solar Collector (Classic)	Anodised aluminium frame and casing; 42mm header to minimise pressure loss. industry benchmark 2mm thick glass tube and a 24mm heat exchange bulb	Borosilicate glass (twin glass)	Not needed, collectors use heat pipes	Stainless steel	Polyurethane foam	Electric	250, 315, 400	3.14, 4.63, 6.28	20, 30 or 40 tubes	Mains pressure	15 years on manifold tubes, heat pipes and frame, 20 years on tank, 1 year on pump and controller (5 years in Vic), 5 years on valves	POA	360° passive tracking											
									LPG	250, 315, 400	3.14, 4.63, 6.28	20, 30 or 40 tubes															
									Natural gas	250, 315, 400	3.14, 4.63, 6.28	20, 30 or 40 tubes															
			Electric	250, 315, 400	2.53, 3.66, 5.06	14, 20 or 28 tubes																					
			LPG	250, 315, 400	2.53, 3.66, 5.06	14, 20 or 28 tubes																					
			Natural gas	250, 315, 400	2.53, 3.66, 5.06	14, 20 or 28 tubes																					
Rheem Australia Pty Ltd ph: 132 552 www.rheem.com.au	Loline	Split	Flat plate	Copper pipes, aluminium absorber plate, zincalume casing	Low iron tempered glass	Via pump controller	Vitreous enamel lined mild steel	Polyurethane foam	Gas	160	2 to 2.58, depending on collectors used	1 or 2	Mains pressure	10 years gas booster, 5 years cylinder, 5 years collector(s), 3 years labour on cylinder, 1 year parts including labour	POA	Some models and collector types restricted to particular regions or states.											
									Gas or electric	270 325 410	3.98 for 270 and 325 litre models, 5.97 for 410 litre model	2 2 3															
	Premier Loline	Split	Flat plate	Copper pipes, aluminium absorber plate, zincalume casing	Low iron tempered glass	Drainback system	Vitreous enamel lined mild steel	Polyurethane foam	Gas	160	2.1 to 4, depending on collectors used	1 or 2	Mains pressure	10 years gas booster, 5 years cylinder, 5 years collector(s), 3 years labour on cylinder, 1 year parts including labour	POA												
									Gas or electric	270	2.1, 4.2, 6.2, depending on collectors used	1, 2 or 3, depending on model															
	Hiline	Close coupled	Flat plate	Copper pipes, aluminium of copper (for Titan collector) absorber plate, zincalume casing	Low iron tempered glass	None	Vitreous enamel lined mild steel	Polyurethane foam	Gas or electric	180 300	1.98 3.96	1 2	Mains pressure	10 years gas booster, 5 years cylinder, 5 years collector(s), 3 years labour on cylinder, 1 year parts including labour	POA												
						Antifreeze loop	Stainless steel	47 mm thick polyurethane foam	Gas or electric	180 300	1.99 3.98	1 2															
	Premier Hiline	Close coupled	Flat plate	Copper pipes, aluminium absorber plate, zincalume casing	Low iron tempered glass	Antifreeze loop	Stainless steel	Polyurethane foam	Gas or electric	180 300	1.99 3.98	1 2	Mains pressure	10 years gas booster, 7 years cylinder, 5 years collector(s), 3 years labour on cylinder, 1 year parts including labour	POA												
	Rinnai Solar ph: 1300 555 545 www.rinnai.com.au	Sunmaster	Close coupled	Flat plate or evacuated tube	Aluminium/copper (flat plate collectors) or aluminium header and frame assembly with copper heat pipes (evacuated tube collectors)	Low iron tempered glass, borosilicate tubes in evacuated tube option	Evacuated tube versions used in frost-prone areas	Vitreous enamel lined steel	Vitreous enamel lined steel	Gas or electric	200 330		1 Enduro 2 Enduro	Mains pressure	15 years evacuated tube collector, 5 years Sunmaster tanks, 12 years gas booster	POA											
			Split							Gas	175 215 270		1 Enduro or 20 or 25 evacuated tubes 2 Enduro or 25 evacuated tubes 2 Enduro XL or 25 evacuated tubes														
										Electric	250 315		2 Enduro or 25 evacuated tubes 2 or 3 Enduro or 25 or 30 evacuated tubes														
											Gas or electric	180 330						1 2									
Prestige										Close coupled	Flat plate	Aluminium/copper	Low iron tempered glass						Stainless steel		Gas or electric	180 330		1 2	Mains pressure	12 year warranty on heat exchanger, 10 years on storage tank and 7 years on solar collectors	POA
			Split							Flat plate or evacuated tube	Aluminium/copper (flat plate collectors) or aluminium header and frame assembly with copper heat pipes (evacuated tube collectors)	Low iron tempered glass, borosilicate tubes in evacuated tube option	Evacuated tube versions used in frost-prone areas							Gas or electric	250 315		2 or 3 collectors/25 or 30 tubes				
Run On Sun Australia Pty Ltd ph:(02) 6734 6322 www.runonsun.com.au		ROSAHP150EL/ ROSAHP150G	Close coupled	Evacuated tube 'Sydney tubes' tri-element with 2mm wall thickness	Copper heat pipes	Borosilicate glass	Evacuated tube system works down to -15°C	316 stainless steel	52.5 mm polyurethane foam	Electric/Gas Bosch 21e	160			Mains pressure	Tank: 5 years Evacuated tubes: 10 years Frame and mounting kit: 10 years												
											220																
											270																
		ROSAHP200EL/ ROSAHP200G ROSAHP250EL/ ROSAHP250G SPLIT250-24EL/ SPLIT250-24G	Split						Vitreous enamel lined mild steel	Polyurethane foam	Electric or Rinnai gas booster	270	4.3 (footprint)	24 tubes	Mains pressure	Tank: 10 years Solar manifold and evacuated tubes: 12 years	\$3360 (electric)/\$4560 (gas) \$3980/\$4880 \$4980/\$5880	Includes Grundfos pump station that can attach to the tank. Electric-boosted models with mid-element boost. Optional cost-price valve kit and brassware with insulation gloves									
												340	5.3 (footprint)	30 tubes													
												450	8.6 (footprint)	48 tubes (2 x 24 tube collectors)													

TABLE 2: SOLAR THERMAL (CONTINUED)

Make	Model	Split or close coupled	Collector type	Collector material	Glass type	Frost protection	Tank material	Insulating material	Boosting	Capacity (litres)	Total collector area (m ²)	No. of tubes or collectors	Tank pressure	Warranty	RRP (before STCs)	Comments																
Solahart ph:(02) 9684 9100 www.solahart.com.au	181SPg or CS13Cg	Close coupled	Flat plate	SP = non-selective black powder coat surface mild steel absorber CS13 = sputtered selective surface copper absorber	Low iron	Yes	Vitreous enamel lined mild steel	Polyurethane	Gas	180	2	1 collector	Mains pressure	For single family domestic dwellings, standard thermosiphon series is 5/5/5: 5 years supply tank and collectors, 5 years labour tank and collectors, 5 years components supply and labour. Free Heat series is 10/5/5: 10 years supply tank and collectors, 5 years labour tank and collectors, 5 years components supply and labour For single family domestic dwellings, split series is 5/3/2: 5 years supply tank and collectors, 3 years labour tank and collectors, 2 years components supply and labour	Ask your local dealer for a free on-site quote	Roof-mounted closed circuit system with heat exchanger. Suitable for frost areas and/or poorer water chemistry areas. 300 litre range also available with an extended warranty.																
	302SPg or CS13Cg									300	4	2 collectors																				
	181SP or CS13C									180	2	1 collector																				
	302SP or CS13C									300	4	2 collectors																				
	181Lg						No			Gas	180	2	1 collector				Roof-mounted direct system. Suitable for warmer climates with good water chemistry. 300 litre range also available with an extended warranty.															
	302Lg										300	4	2 collectors																			
	181L										180	2	1 collector																			
	302L										300	4	2 collectors																			
	272MLVg or MCS07Vg	Split		L = non-selective black powdercoat surface aluminium absorber CS07 = sputtered selective surface copper absorber			Limited		Polyurethane	Gas	270	4	2 collectors					Split system with tank at ground level, suitable for areas with good water chemistry. Models with non-selective surface collectors suitable for warm and mild climates, and with selective surface collectors for southern areas.														
	322MLVg or MCS07Vg										320	4	2 collectors																			
	412MLVg or MCS07Vg										410	4	2 collectors																			
	413MLVg or MCS07Vg										410	6	3 collectors																			
	272MLV or MCS07V										270	4	2 collectors																			
	322MLV or MCS07V										320	4	2 collectors																			
412MLV or MCS07V	410										4	2 collectors																				
413MLV or MCS07V	410										6	3 collectors																				
Solar Lord ph:1300 133 782 info@solarlord.com.au www.solarlord.com.au	E270U15-O	Mains pressure, split system, open circuit, suitable for good quality water, anti-freeze level 2	AIN/AIN-SS/CU surface, novel sputtering treatment, U copper tubes collector	Evacuated borosilicate glass tube			Vitreous enamel lined mild steel	Polyurethane	Continuous/ off-peak electric	270	1 collector (15 x 2100 mm long U-tubes)			5 years on Rinnai gas instantaneous booster, 5 years on collector skeleton, 5 years on tank, 1 years on parts	POA	Winner of HIA GreenSmart Award—Product of the Year 2007.																
	E340U15-O									340																						
	E450U30-O									450	2 collectors (30 x 2100 mm long U-tubes)																					
	E450U45-O									450	3 collectors (45 x 2100 mm long U-tubes)																					
	G270U15-O									Instantaneous gas	1 collector (15 x 2100 mm long U-tubes)											270										
	G340U15-O																					340										
	G450U30-O																					450	2 collectors (30 x 2100 mm long U-tubes)									
	G450U45-O																					450	3 collectors (45 x 2100 mm long U-tubes)									
	E180H16-O																					Mains pressure, split system, open circuit, suitable for hard to poor quality water, anti-freeze level 2	AIN/AIN-SS/CU surface, novel sputtering treatment, heat pipe collector					Polyurethane	Continuous/ off-peak electric	180	1 collector (16 x 1800 mm heat pipe tubes)	
	E270H24-O																													270	1 collector (24 x 1800 mm heat pipe tubes)	
	E340H32-O																													340	2 collectors (32 x 1800 mm heat pipe tubes)	
	E450H40-O																													450	2 collectors (40 x 1800 mm heat pipe tubes)	
	E450H48-O	450	2 collectors (48 x 1800 mm heat pipe tubes)																													
	G180H16-O	Instantaneous gas	1 collector (16 x 1800 mm heat pipe tubes)										180																			
	G270H24-O												270	1 collector (24 x 1800 mm heat pipe tubes)																		
	G340H32-O												340	2 collectors (32 x 1800 mm heat pipe tubes)																		
	G450H40-O									450	2 collectors (40 x 1800 mm heat pipe tubes)																					
	G450H48-O									450	2 collectors (48 x 1800 mm heat pipe tubes)																					
	E450U45-OH									Mains pressure, split system, open circuit, suitable for hard to poor quality water, anti-freeze level 2	U copper tube collector					Polyurethane	Continuous/off-peak electric	450	3 collectors (45 x 2100 mm long U-tubes)													
	E450H48-OH	450	3 collectors (48 x 1800 mm heat pipe tubes)																													
	G450U45-OH	Instantaneous gas	2 collectors (45 x 2100 mm long U-tubes)						450																							
	G450H48-OH								450									2 collectors (48 x 1800 mm heat pipe tubes)														
	E250U15-O	Mains pressure, split system, open circuit, anti-freeze level 2	AIN/AIN-SS/CU surface, novel sputtering treatment, U copper tubes collector					Stainless steel	Continuous/off-peak electric	250	1 collector (45 x 2100 mm long U-tubes)																					
	E315U15-O									315																						
G250U15-O	Instantaneous gas									250						250																
G315U15-O																315																
E250H24-O	AIN/AIN-SS/CU surface, novel sputtering treatment, heat pipe collector														Polyurethane	Continuous/off-peak electric	250	1 collector (24 x 1800 mm heat pipe tubes)														
E315H32-O																	315	2 collectors (32 x 1800 mm heat pipe tubes)														
G250H24-O																	Instantaneous gas	250						250	1 collector (24 x 1800 mm heat pipe tubes)							
G315H32-O																								315	2 collectors (32 x 1800 mm heat pipe tubes)							
Thermann www.thermann.com.au	Gas boosted solar	Split	Evacuated tube	Copper heat pipes with aluminium absorber fins	Borosilicate glass	Heat pipes inherently frostproof	Vitreous enamel	Polyurethane foam	26L/min continuous gas booster using natural or LPG	250, 315, 400	3.28, 4.40 (footprint sizes)	22, 30, 44 tubes respectively for 250, 315 and 400L units	Mains pressure	Cylinder: 10 years, tubes and manifold: 15 years	\$5350/ \$6020/ \$7520																	
	Electric boosted solar									250, 315, 400								\$4340/ \$5000/ \$6470	Bottom- or middle-mounted booster element in 315L and 400L models (250L is bottom-mounted element only)													

TABLE 3: INSTANTANEOUS ELECTRIC

Brand	Model	Power rating	Single or 3 phase	Flow rate	Response time	Minimum flow to activate	Heat exchange material	Element type	Element/heat exchanger replaceable?	Suitable for	RRP	Warranty	Comments		
Chronomite ph:1300 123 452 sales@chronomite.com.au www.chronomite.com.au	RBAM-15L-240-35C, 40C, 42C & 49C	3.6kW	Single	1.5 to 7.6L/min	<5 seconds	1.5L/min minimum	Heating coils are nichrome	Microprocessor-controlled bare wire heating coils	No	Kitchen and bathroom basins/sinks	\$635 + GST	1 year	No standing heat losses. Conserves water, materials savings on pipework. Compact, self cleaning, low install costs, low running costs		
	RBAM-20L-240-35C, 40C, 42C & 49C	4.8kW		2.7L/min minimum											
	RBAM-30L-240-35C, 40C, 42C & 49C	7.2kW													
	RBAM-40L-240-35C, 40C, 42C & 49C	9.6kW													
Elwa Pty Ltd ph:(08) 8377 6666 sales@elwa.com.au www.elwa.com.au	HOTRUN 35	3.5kW	Single	Fixed at 2L/min	<10 seconds	1.5L/min (rated performance is at flow rate of 2L/min)	Polyamide	Nickel-chrome	Yes	1 handwash basin	\$624.75	1 year on-site, 2 years return to base	All models 35 to 90 are also available with fixed tamperproof temperature limiter built-in, set at 38°C, 43°C, 45°C or 50°C		
	HOTRUN 46	4.6kW		Fixed at 2.5L/min		1.7L/min (rated performance is at flow rate of 2.5L/min)				1 handwash basin	\$690				
	HOTRUN 60	6kW		Fixed at 3L/min		1.9L/min (rated performance is at flow rate of 3L/min)				2 handwash basins	\$716.10				
	HOTRUN 72	7.2kW		Single or 2 phase		Fixed at 4L/min				2.1L/min (rated performance is at flow rate of 4L/min)	2 handwash basins or 1 hairdresser basin or in warm climate 1 shower			\$787.50	
	HOTRUN 90	9kW	Fixed at 5L/min		2.3L/min (rated performance is at flow rate of 5.1L/min)	3 handwash basins or 1 shower or 1 hairdresser basin or 1 kitchen sink	\$827.40								
	HOTRUN 120VE	12kW	3 phase		Variable 2.5-8L/min	2.5L/min (rated performance is at flow rate of 8L/min)	3 handwash basins or 1 shower or 1 hairdresser basin or 1 kitchen sink	\$1,065.75							
	HOTRUN 150VE	15kW		Variable 2.5-9L/min	2.5L/min (rated performance is at flow rate of 9L/min)	4 handwash basins or 2 showers in warm climate or 2 hairdresser basins or 2 kitchen sinks in warm climate	\$1,094.75								
	HOTRUN 180VE	18kW		Variable 2.5-10L/min	2.5L/min (rated performance is at flow rate of 10L/min)	5 handwash basins or 2 showers or 2 hairdresser basins or 2 kitchen sinks	\$1,123.75								
	HOTRUN 210VE	21kW		Variable 2.5-11L/min	2.5L/min (rated performance is at flow rate of 11L/min)	5 handwash basins or 2 showers or 2 hairdresser basins or 2 kitchen sinks	\$1,152.75								
	HOTRUN 240VE	24kW		Variable 2.5-14L/min	Min 60kPa 2.5L/min (rated performance is at flow rate of 12L/min)	6 handwash basins or 2 showers or 3 hairdresser basins or 2 kitchen sinks	\$1,167.25								
	HOTRUN X6	2.8kW		Single phase	1.5L/min	<10 seconds						1 handwash basin		2 years extendable to 6 years	Base model selection on winter water inlet temperature
		3.8kW			1.9L/min								1 handwash basin		
		4.8kW	3L/min									1 handwash basin			
		6kW	3.6L/min									2 handwash basins			
	HOTRUN X11	7.6kW	Single or 2 phase	5L/min							2 handwash basins or 1 shower in warm climate or 1 hairdresser basin or 1 kitchen sink in warm climate.		12 months of on-site service in Australia, and/or 2 years of return and repair service	Remote life-time monitoring and diagnostics for fault conditions	
		8.6kW		5.5L/min							2 handwash basins or 1 shower or 1 hairdresser basin or 1 kitchen sink				
		9.6kW		6L/min							3 handwash basins or 1 shower or 1 hairdresser basin or 1 kitchen sink				
		11kW		7L/min							3 handwash basins or 1 shower or 1 hairdresser basin or 1 kitchen sink				
	HOTRUN X21	12kW	3 phase	7.4L/min							3 handwash basins or 1 shower or 1 hairdresser basin or 1 kitchen sink				
15kW		9.3L/min								4 handwash basins or 2 showers in warm climate or 2 hairdresser basins or 2 kitchen sinks in warm climate					
18kW		11.4L/min								5 handwash basins or 2 showers or 2 hairdresser basins or 2 kitchen sinks					
21kW		13.2L/min								5 handwash basins or 2 showers or 2 hairdresser basins or 2 kitchen sinks					

TABLE 3: INSTANTANEOUS ELECTRIC (CONTINUED)

Brand	Model	Power rating	Single or 3 phase	Flow rate	Response time	Minimum flow to activate	Heat exchange material	Element type	Element/heat exchanger replaceable?	Suitable for	RRP	Warranty	Comments
Gleamous Australia ph:1300 550 490 info@gleamoushotwater.com.au www.gleamoushotwater.com.au	DSK 45EP / Gleamous GSK Low Pressure Showerhead / Aerator kit	3.3kW	Single phase	5L/min maximum						BBQ Areas, homes, apartments, commercial factories, offices, team rooms, rest rooms, schools, bathroom and kitchen sinks. Laundries, hospitals, sheds	\$240	Parts: 2 years domestic use from date of purchase. Exclusions: Damage or faulty operation due to foreign matter or corrosive elements in the water supply.	
	DSL 30N / 5 Litre Storage Hot Water Unit									Outdoor sinks (pool/BBQ area), caravans, sheds, canteens, commercial premises, workshops	\$395		Stainless steel tank 5L storage capacity up to 75°C
	GL5 Series Electric Tankless Hot Water System 14kW	14kW	3 phase							Homes, apartments, granny flats, factories, commercial premises	\$695		
	GL5 Series Electric Tankless Hot Water System 24kW	24kW	3 phase							Homes, apartments, granny flats, factories, commercial premises	\$995		
	GL6 Electric Tankless Hot Water System 7.5kW	7.5kW	Single phase							Granny flats, apartments, outdoor showers (pool/BBQ area), offices, factories, commercial premises	\$595		
Microheat (Australian owned, designed and made) ph:(03) 9545 0722 info@microheat.com.au www.microheat.com.au	CFEWH Series 1-10	Variable up to 9.6kW	Single phase	Up to 5.5L/min (for 25°C temperature increase), no maximum flow limit.	Immediate	1.5L/min minimum	No heat exchange	No element (uses water conductivity)	Not required	Single point of use, multi point, centralised, boosting existing hot water supplies, pre-heating hot water supplies, warm water heater for sensor taps, water heater for circulated underfloor hydronic heating	POA	3 years	No scale, no burn out. Settable and accurate outlet temperature to 1°C, so no scalding. Building Management System ready.
	CFEWH Series 1-20 Tandem	Variable up to 19.2kW	2 x Single phase	Up to 11L/min (for 25°C temperature increase), no maximum flow limit.									As above, consists of two CFEWH Series 1-10 units used in series, with most parameters doubled.
	CFEWH Series 2	Available in power ratings from 15 to 30kW	3 phase	From 8.5L/min up to 17L/min (for 25°C temperature increase), no maximum flow limit.									50 or 65°C maximum settable temperature.

TABLE 4: PV DIVERTERS

Brand/supplier	Model	Number of diversion outputs/ maximum power per output	Minimum diversion power	Threshold setting	Boost and/or timer function	Configurability	Displays/monitoring options	Dimensions/weight	RRP	Warranty	Comments
Australian Wind and Solar ph:1300 736 458 www.australianwindandsolar.com	SunMate 2.0	Two outputs, each configurable in variable or threshold mode, up to 3.6kW output each, or up to 16kW using external contactors. Optionally 3-phase compatible. Up to two SunMate units can be connected together for the same system.	50W	Threshold minimum 100W on either output	Boost 1 to 4 hours, three separate on/off timers for weekdays and weekends	Wireless or current transformer clamp power sensing (optional wireless sensor unit). Optional temperature sensor or can use water heater's original thermostat. Installer and user menu. Inbuilt timer to prevent rapid cycling of loads like heat pumps.	LCD with import / export data and all other configuration information and operational status. All data refreshed every two seconds.	198 x 132 x 68mm, 0.76kg. Wall mount with rear or bottom cable entry	\$935 inc GST	5 years	SunMate has variable power mode for resistive water heating and threshold setting mode for diversion to appliances or devices such as heat pumps or even EV chargers.
Catch Power ph:1300 131 995 www.catchpower.com.au	Blue	One output to 4.8kW maximum	100W	No threshold mode	Yes	* Heat water right now * Heat when Off Peak available * Use solar power only * Use algorithm to decide, based on conditions or energy use and weather	Yes via online portal. Includes information display and control options.	Diverter: 150 x 70 x 120mm Communicator: 150 x 70 x 100mm	\$1700 inc GST, installed	5 years	Advanced learning algorithm that learns user's energy usage profile. 60m maximum distance between Diverter and Communicator
	Green					None	No, and does not require internet	150 x 70 x 120mm	\$1000 inc GST, installed		
Fronius ph:(03) 8340 2900 pv-sales-australia@fronius.com www.fronius.com.au	Ohmpilot	One output, 3kW (single phase), 9kW (three-phase)	Variable from 0W	Can be used with a smart-grid ready heat pump using programmable thresholds (see Ohmpilot documentation for setup)	4 hour boost mode	Web interface for setting boost, temperatures, providing status etc.	Network connectable (ethernet, wifi and Modbus via RS485), inbuilt web interface.	340 x 270 x 123mm, 3.9kg	POA	5 years	Used in conjunction with Fronius inverter. A Fronius Datamanager 2.0 (integrated into many Fronius inverters) and a Fronius Smart Meter are required to use the Ohmpilot.
Paladin Solar Australia ph:0416 245 439 sales@paladinsolarcontroller.com.au www.paladinsolarcontroller.com.au	Solar Power Diverter & Controller	One output to 4kW maximum	Variable from 0W	No threshold mode	Boost function	40°C (adjustable) or 50°C trigger point, night boost option.	4-line backlit LCD	200 x 120 x 120mm, 0.92kg	\$900 inc GST	5 years	Three metre temperature probe cable. Uses Delta-T (water temperature change rate) to anticipate the tank heater turn on point.
PowerDiverter ph:0432 121 633, (08) 7079 5533 sales@powerdiverter.com info@powerdiverter.com www.powerdiverter.com.au	PowerDiverter model 2	One output to 4.8kW maximum	50W (AC wireless and wired sensor mode) or 100W (Battery mode)	No threshold mode	Both: Boost timer for 1, 2, 3 hour steps or always on. Controlled load sensing input for detecting off-peak times of day	Easy boost, transmitter pairing button, 7 day digital programmable timer	Sensor: Transmitting measured power, pairing, status (1 red importing and green exporting LED) Controller: Power level, Easy Boost time, pairing, status (3 red LEDs), wireless signal reception, battery low warning (1 green LED), LCD timer display	Sensor: 114 x 76 x 40mm excluding plugs and antenna wire. Power adaptor 61 x 47 x 47mm excluding cable Weight: 250g Controller: 320 x 250 x 140mm, 4.5kg	POA	Extendable 5 years	Operating temperature range Sensor: -10 °C to +50 °C (AC mode) or -5°C to +50°C (battery mode) Controller: -10 °C to +50 °C
Plasmatronics ph:(03) 9486 9902 orders@plasmatronics.com.au www.plasmatronics.com.au	Jackal (for off-grid systems only)	1, up to 4.8kW	Variable from 0W	Resistive loads only	Manual boost only via bypass switch (not included)	Can be used in current sense mode (monitoring PV array current), frequency shift mode (for AC coupled systems) and constant voltage mode (to maintain a fixed battery voltage)	Single multi-colour LED indicator	176 x 150 x 93mm	\$690 inc GST	5 years	For use in 12, 24 and 48V battery based off-grid systems where the hot water system element is connected to the main house inverter and is switched as a diversion load by the Jackal, which monitors battery voltage, PV current etc. Not for grid connected homes.
Solahart ph:(02) 9684 9100 www.solahart.com.au	PowerStore 315PVV	1, up to 3.6kW	Variable from 0W	No threshold mode	Top element always heats to ensure hot water	Fully automatic	4 x LEDs, 1 pushbutton switch (used to reset the unit), RS485 serial communications	1661 x 701 x 638mm	\$4999 before STCs	For single family domestic dwellings: 10 years supply tank, 3 years labour tank, 3 years components supply and labour	Powerstore is a combined 315 litre vitreous enamel lined tank and PV diversion controller. Unit has dual heating elements and is Home Energy Management System (HEMS) compatible.
SolarEdge australia-info@solaredge.com ph:1800 465 567 www.solaredge.com/aus	Smart Energy	1, up to 4.8kW	5% of load rating	No threshold mode	Via SetApp, the inverter LCD or the monitoring platform / app	Via SetApp, the inverter LCD or the monitoring platform / app	Zigbee networking	375 x 240 x 110mm	\$1250	5 years	For use in SolarEdge inverter systems

TABLE 5: DIRECT PV INVERTERS

Brand/supplier	Model	Maximum PV array power	Maximum PV input voltage/current	Suitable element sizes	Boosting and grid connection	Tank temperature control?	Displays/monitoring options	Dimensions/weight	RRP	Warranty	Comments
Commodore Australia (Techluck) Ph:1300 669 256 sales@commodoreaustralia.com.au www.commodoreaustralia.com.au	Techluck Solar Hybrid Hot Water Controller	2000W (minimum recommended array 440W)	200V, 10A	3600W, 4500W	No boosting or grid connection	Uses original thermostat (MPPT unit switches the output on and off rapidly, so AC thermostat can operate correctly)	1 LED	115 x 115 x 38mm (supplied as complete control PCB on backing plate for you to fit in a suitable enclosure).	\$398 inc GST	1 year	More information at techluck.com
Easy PV (Aust) Pty Ltd barbara@easywarm.co.nz www.easywarm.co.nz	Hot PV™ 3.6kW	5000W	550V/12.5A per MPPT (dual MPPT)	3600W to deliver 300 litres a day	There is no risk of overheating in summer from the HotPV™ system, so the number of rooftop PV modules can be increased to also cover almost all winter water heating needs. On low sunlight days, an optional programmable controller is offered to allow grid boost, with two boost bands a day, 7 day individual day programming; optional grid connect of PV array after water has been heated is also available.	Yes, element thermostat	Inverter displays include power to element and total energy to element that day; wi-fi connection through home router to webpage on home computer, hourly, daily and historical daily data available	415 x 378 x 143mm, 10.8kg	HotPV 3.6kW inverter: \$950 + GST, HotPV controller \$490 + GST	Inverter 5 years, controller 2 years	HotPV™ is a standalone (independent of grid) solar PV hot water system connected to the cylinder element with optional grid boost. It supplies alternating current (AC) to the element, and no wiring changes need to be made at the cylinder. The grid boost controller can be bypassed in event of network power outages so hot water system continues to work in power cuts without grid boost. PV arrays can be oversized but must not exceed the inverter's input current and voltage limits. * The HotPV™ system consists of a VOV™ (or 'variable output voltage') inverter and optional HotPV™ controller, connected to a standard PV array. Price of array depends on STCs claimable—as it is a standalone PV system not connected to the grid, a HotPV™ system allows all of the panels to claim STCs, not limited by the inverter/array ratio as grid connected systems. A HotPV™ system does not affect the 44c/kWh FiT in Queensland. Specs are current at time of printing.
	Hot PV™ 5kW	7000W	550V/12.5A per MPPT (dual MPPT)	4800W to deliver 400 litres a day							
Plasmatronics ph:(03) 9486 9902 orders@plasmatronics.com.au www.plasmatronics.com.au	PLW	4500W	100V maximum open circuit voltage, up to 80A array at nominal 48V	Kit comes with ELV 2250W element	Optional boosting via boosting output (control output only), no grid connection.	Top and bottom temperature sensors, original tank thermostat as a backup	LCD for all functions and programming	520 x 175 x 90mm	\$990 inc GST	5 years	Supplied as a kit of controller, replacement element, temperature sensors and solar isolator. Works with nominal 48V solar arrays.

TABLE 6: DIRECT PV COMPLETE SYSTEMS

Make	Model	Capacity (litres)	Type of system	Tank pressure	Tank material	Insulating material	Collector details	Boosting	RRP (before STCs)	Comments	Warranty
Energy Smart Water ph:(03) 9939 6722 www.esw.net.au	ROSC20-328E (electric boost) or 328A (alternate boost)	300	Mypv Direct PV system with Rotex unpressurised on-ground tank	Unpressurised tank with mains pressure heat exchange coils	Polypropylene with stainless steel heat exchange coil. No sacrificial anode; corrosion resistant. Exceptional heat retention (less than 1.4kWh/day thermal losses)	Polyurethane foam 50mm	2kW of dedicated PV modules provide direct DC power for heating water. Monocrystalline or polycrystalline PV solar panels/modules	Alternative heat source (wood heater etc)	POA	Hot water even during blackouts. No inverter. No roof plumbing. No refrigerants. Exceptional heat retention. Hygienic separation of potable water and heated storage water with a first-in-first-out principle. Has water quality specifications for pH, total dissolved solids, total hardness, chlorides, magnesium, calcium, sodium, iron. Registered with CEC on its Approved Inverters list of compliant inverters and power conversion equipment (PCE).	2 years on electronics and elements, 10 years on tank/storage container, 3 years on stainless steel heat exchanger coils for potable water, 10 years on gas instantaneous heat exchanger. Applies to domestic installations only. In the event of poor water quality, coils can be replaced at owner's expense. Water quality outside the water quality recommendations will void the warranty.
	ROSC20-343E or A							Electric			
	ROSC20-34319E or A										
	ROSC20-544E or A	500				Polyurethane foam 80mm		Alternative heat source (wood heater etc)			
	ROSC20-54432E or A					Electric					
	ROSC20-5443216E or A							Instantaneous gas			
	ROSC20-54443E or A										

Table terms explained

'Sydney tubes': another term for the most common type of evacuated tubes. Named after the Solar Energy Research Group at the University of Sydney as they developed an all-glass evacuated tube for solar collectors which has become the industry standard design.

Closed loop: Also called a closed circuit or indirect system, closed loop systems use a heat exchanger in the tank which is coupled to the collectors. Heat transfer fluid circulates between the solar collectors and the heat exchanger, transferring the heat to the potable water in the tank.

The heat transfer fluid and the water are never in contact. Closed loop systems may use water in the closed loop, but normally use low freezing point liquids such as propylene glycol, especially if installed in frost-prone areas. Closed loops may be used in both close-coupled and split systems.

Open loop: Also called direct systems, open loop systems have the collectors directly coupled to the tank. The potable water in the tank flows between the tank and the collectors and is itself the heat transfer fluid. Direct systems are not usually used in frost-prone areas due to the risk of water freezing in the collectors.

Drainback system: A system using an unpressurised closed loop where there is an air space in the loop and a small reservoir for the heat transfer fluid. Heat transfer fluid (usually pure water) is pumped to the collectors where it is heated and drains back under gravity. Drainback systems have some advantages over other closed loop systems—they can prevent system overheating simply by turning off the circulating pump. The same applies for freeze protection. Their main disadvantage is that the pump will use more energy compared to a regular closed loop system as it has to overcome gravity to push water up to the collector. Some drainback

systems may even have two pumps, the second circulates potable water from the main tank to the HTF tank's heat exchange coil for heating.

Selective surface: a surface coating that increases solar absorption while decreasing heat emission. Used to make solar collectors more efficient.

References for table data

Grades of stainless steel: http://en.wikipedia.org/wiki/SAE_steel_grades#Stainless_steel

List of refrigerants: http://en.wikipedia.org/wiki/List_of_refrigerants