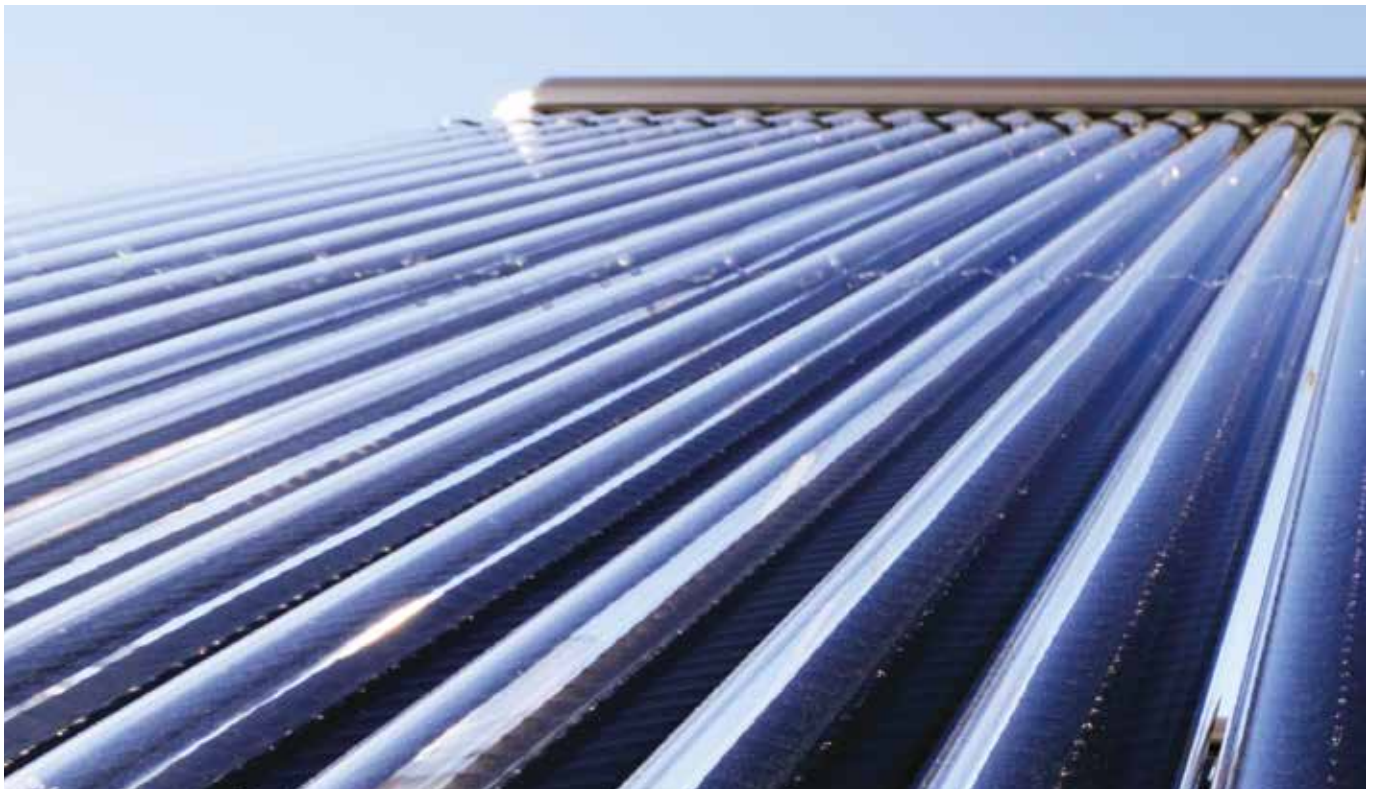


## Technical Specification

		Envirosol™ CPK7210-N Flat Panel	Envirosol™ TZ58-1800 Heat Pipe	
			20 Tube Set	30 Tube Set
Outer dimensions:	Height [mm]	2038	2020	2020
	Width [mm]	1039	1825	2655
	Depth [mm]	98	155	155
Tube dimensions	Diameter [mm]	-	58	58
	Length [mm]	-	1800	1800
Weight	[kg]	38	78	115
Gross collector area	[m <sup>2</sup> ]	2.11	3.507	5.005
Aperture area	[m <sup>2</sup> ]	1.88	1.867	2.791
Max operating pressure	[bar]	10	6	6
Stagnation temperature	[°C]	216	200	200
Angle of inclination permitted		15° to 75°	15° to 75°	15° to 75°
Performance data*				
Zero-loss collector efficiency	$\eta_0$	74.1%	73.4%	73.4%
Collector heat loss coefficient, a1	[W/m <sup>2</sup> K]	3.705	1.529	1.529
Collector performance ratio, a2	[W/m <sup>2</sup> K <sup>2</sup> ]	0.015	0.0166	0.0166
Absorption		> 95%	> 94 %	> 94 %
Emission		< 5%	< 7%	< 7%
Annual energy yield	[kWh/m <sup>2</sup> ]	> 525	> 525	> 525

\*All based on aperture area.



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# Fixing Options

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## Pitched – On-Roof Installation

All Firebird EnviroSol™ solar collectors can be installed on a normal slate or tiled roof using our weatherproof aluminium mounting frame kits. Mounting kits are constructed from robust materials and come with easy to follow instructions. Mounting kits for EnviroSol™ CPK7210-N Flat Panel collectors are available for double and single collector configurations. Mounting kits for EnviroSol™ TZ58-1800 Heat Pipe Solar collectors are supplied for sets of 20 and 30 tubes.

Product Code	Product Description
SOL101FMT	On-roof Mounting Kit – 2 CPK7210-N Flat Panel Collectors
SOL103FMT	On-roof Mounting Kit – 1 extra CPK7210-N Flat Panel Collector
SOL822KIT	On-roof Mounting Kit – 20 TZ58-1800 Heat Pipe Solar Collector
SOL832KIT	On-roof Mounting Kit – 30 TZ58-1800 Heat Pipe Solar Collector



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## Pitched In-Roof Installation

An in-roof installation kit is available for EnviroSol™ CPK7210-N Flat Panel Collectors. Note that in-roof installation is not possible with EnviroSol™ TZ58-1800 Heat Pipe Solar Collectors. With an in-roof kit the collectors are set lower on the roof giving a more aesthetically pleasing finish. Our in-roof kit comes with side, top and bottom flashings, collector mounting rails, coach bolts, rubber seals and installation instructions. Available in double and single collector configurations – for tiled and slate roof constructions. For slate roofs, order SOL513SRS and either SOL511TRF or SOL512SRS.

Product Code	Product Description
SOL511TRF	In-Roof Mounting Kit Tile Roof – 2 CPK7210-N Flat Plate Collectors
SOL512TRF	In-Roof Mounting Kit Tile Roof – 1 extra CPK7210-N Flat Plate Collector
SOL513SRS	In-Roof Soaker Kit Slate Roof – Soakers Only



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## Flat Roof Installation

If EnviroSol™ solar collectors have to be installed on a flat roof or surface, then a flat roof mounting kit is required. Flat roof kits are available for all collectors and come with mounting frame, coach bolts, rubber seals and installation instructions. Available in double and single collector configurations.

Product Code	Product Description
SOL102FMT	Flat Roof Kit – 2 CPK7210-N Flat Panel Collectors
SOL104FMT	Flat Roof Kit – 1 extra CPK7210-N Flat Panel Collector
SOL174FRK	Flat Roof Kit – 20 TZ58-1800 Heat Pipe Solar Collector
SOL172FRK	Flat Roof Kit – 30 TZ58-1800 Heat Pipe Solar Collector



# Solar Controllers & Pump Stations

## Controller

The Firebird solar controller ensures the efficient operation of the solar system, managing the efficient transfer of the solar energy from the collectors to the water storage tank. The controller is easy to use and displays key system data at the touch of a button, i.e.:

- Collector temperature
- Upper and lower tank temperatures
- Activation of solar circulating pump
- Hours of operation
- Alternative arrangement layouts
- Pump speed efficiency
- Emergency safety shut-off
- Additional antifreeze functions
- Easy-to-use holiday function
- Anti-legionella control

In addition the controller has a second available relay that facilitates features such as:

- Back-up heat source available for central heating or immersion connection
- Timer setup for back up heat source heating
- Surplus energy usage



## Pump Station

The Firebird solar pump station houses the key plumbing components for a solar system including solar circulating pump, non-return gravitational valves, flow rate regulator, pressure relief valve, connection for expansion vessel as well as filling points.

Product Code	Product Description
SOL405CTR	Deltasol SLL Controller
SOL545PMP	Twin Line HE Pump Station



## East / West Controller & Pump Station

For East / West installations, you will require the Deltasol SLL controller and two twin line HP pump stations.

Product Code	Product Description
SOL405CTR	Deltasol SLL Controller
SOL545PMP	Twin Line HE Pump Station x 2



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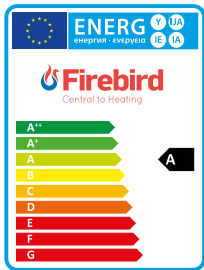
# Envirocyl™ Water Storage Cylinders

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The Envirocyl™ solar twin coil cylinder is used to store hot water heated by the solar system. The cylinder has two internal coils; the solar circuit provides heat through the lower coil while the back-up heating system (boiler / air source heat pump) will heat the hot water via the upper coil.

Envirocyl™ solar water storage cylinders are manufactured from premium quality stainless steel and include an electric immersion as standard.

Product Code	Product Description
SOL215ITK	Twin Coil Solar Envirocyl™ Cylinder – 210 litres
SOL255ITK	Twin Coil Solar Envirocyl™ Cylinder – 250 litres
SOL305ITK	Twin Coil Solar Envirocyl™ Cylinder – 300 litres



# Other System Components

The following components may be supplied as standard on certain EnviroSol™ solar system kits.

## Expansion Vessels

An expansion vessel is necessary to absorb the expansion of the solar fluid when high temperatures are reached in the solar collector. Currently available sizes are 24 and 35 litres.

Product Code	Product Description
SOL502EXP	24 litre Expansion Vessel
SOL503EXP	35 litre Expansion Vessel



## Intermediary Vessels

Product Code	Product Description
SOL505EXP	Intermediary Vessel, 5 litre
SOL012EXP	Intermediary Vessel, 12 litre



## Flexi Pipes, 1m

High grade 1m stainless steel flexi pipes which can be connected to the flow and return side of the collector array. This avoids having to make complicated pipe bends through the roof of the house. Fittings can be included to connect the pipe to the different solar collector types.



Product Code	Product Description
SOL402FPP	1m Flexi Pipe
SOL001ELB & SOL001FEM	Fittings for EnviroSol™ CPK7210-N Flat Panel Collector
SOL075ELB & SOL075TAP	Fittings for EnviroSol™ TZ58-1800 Heat Pipe Solar Collector

## Accessory Kit – Expansion Vessel

Expansion vessel accessory kit includes check valve, wall bracket and 1 flexi hose.

Product Code	Product Description
SOL521PPK	Expansion Vessel Accessory Kit



## Solar Antifreeze

The heat transfer fluid used in a solar circuit is normally a mixture of water and a polypropylene glycol antifreeze. The glycol antifreeze also contains an additive to protect against corrosion and evaporates at higher temperatures than water to allow higher system temperatures. Firebird recommends a 40% glycol to 60% water mix to ensure frost protection to circa -25°C.

Product Code	Product Description
SOL506FFL	Tyfocon L Antifreeze for EnviroSol™ CPK7210-N Flat Panel Collector
SOL507VFL	Tyfocon LS for EnviroSol™ TZ58-1800 Heat Pipe System



## Stainless Steel Insulated Twin Pipe

Flexible pre-insulated twin pipe with UV protection sheath for linking collectors to solar tank. Saves considerable installation time and cost.

Product Code	Product Description
SOL010TWP	Insulated Twin Pipe DIN16 – 10m
SOL015TWP	Insulated Twin Pipe DIN16 – 15m
SOL025TWP	Insulated Twin Pipe DIN16 – 25m



# Other System Components

## Anti-Scald Mixing Valve

Anti-Scald (mixing) valve must be fitted close to the hot water outlet of the solar tank so that delivery to the taps does not exceed 48°C.

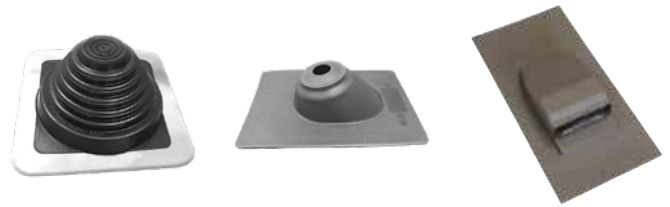
Product Code	Product Description
SOL504MIX	Anti-scald Mixing Valve



## Pipe Flashing

The pipe flashings provide an aesthetically pleasing solution for passing solar flow and return pipes through the roof.

Product Code	Product Description
SOL509TRF	Pipe flashing – tiled roof
SOL510SRF	Pipe flashing – slate roof
SOL524VTL	Glidevale G1 Vent Tile (BBA/IAB Approved)



## Air Vent

An automatic air vent should be fitted at the highest point in the solar circuit system in order to remove air from the system during commissioning. An isolating valve should be fitted before the air vent and isolated once the system has been commissioned.

Product Code	Product Description
SOL501AIR	Air Vent
SOL505STP	Isolating Valve



## Accessories

Product Code	Product Description
SOL514FPC	Weatherproof Cover for EnviroSol™ CPK7210-N Flat Panel Collector
SOL000FPS	Solar Filling & Flushing Pump
SOL527RFR	Refractometer
SOL528CFL	Solar Cleaning Fluid, 500ml
SOL000BOV	Blow-off Storage Vessel
SOL010TSV	TSV Lightning Protection (for controller)
SOL526RLY	Auxillary Relay HR230 (for controller)

