

PremierPlus Solar

Solar Water Heating

Features

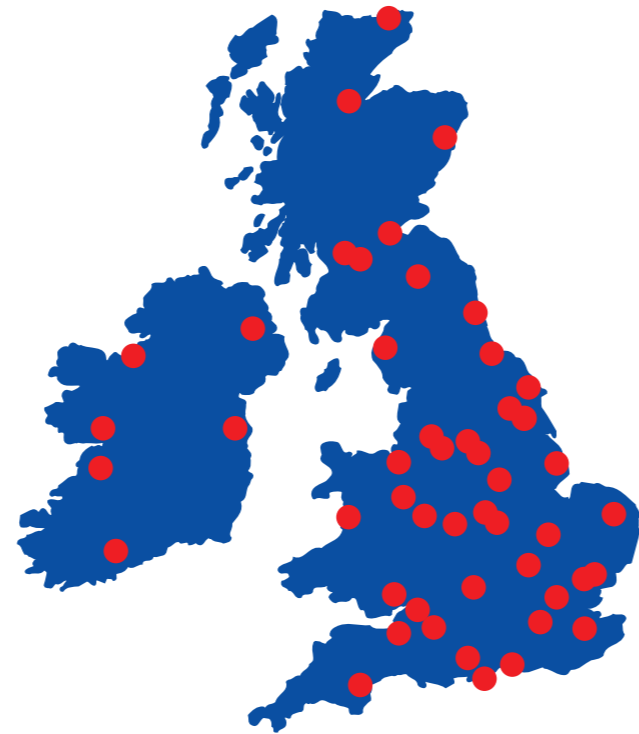
- Mains pressure (unvented) hot water for balanced supply to showers and mixers
- Duplex stainless steel cylinder for long life ¹
- 190, 210, 250 and 300 litre capacities
- Choice of direct or indirect auxiliary heat input ²
- Specially designed solar coil for maximum solar efficiency ³
- Complete package includes
 - Safety and hot water controls ⁴
 - Remote expansion vessel
- High flow rates for improved hot water delivery
- Compatible with a wide range of UK solar systems
- Lower running costs and reduced energy bills
- Environmentally friendly - reduced carbon emissions
- Equally suited for New Build or Refurbishment projects
- Fully indemnified design service
- 25 year on-site parts and labour cylinder guarantee



Solar Water Heating

National Service Network

A nationwide network of experienced engineers is available to provide fast and efficient on-site service support if required. Spare parts for Santon products are readily available through a network of approved spares stockists.



SANTON

Santon, Hurricane Way, Norwich, Norfolk, NR6 6EA

Sales

Tel: 08700 603263 Fax: 08700 600403 E-mail: sales@santon.co.uk

Service provided by Heateam

Tel: 08701 600126 Fax: 08701 600181 E-mail: santonservice@heateam.co.uk

Specification / Technical Queries

Tel: 01603 420128 Fax: 01603 420229 E-mail: specifier@santon.co.uk

Website

www.santon.co.uk

The pace of product development is such that we reserve the right to change product specifications without notice. We do, however, strive to ensure that all information in this catalogue is accurate at the time of going to publication.

Solar Water Heating

PremierPlus Solar

Solar Water Heating

Climate change is now an undeniable fact which has increased the focus on alternative energy sources. Solar energy direct from the sun is such a source of energy which, when harnessed, can be converted into heat to generate hot water for the home whilst at that same time helping to reduce carbon emissions and reduce global warming.

PremierPlus Solar has been designed specifically for solar applications. It offers all of the benefits of the standard PremierPlus unvented cylinder to give powerful mains pressure showering and fast filling baths, with the added benefit of lower running costs – as much as 60% less than traditional systems*.

Designed for use with a wide range of solar systems now available in the UK, PremierPlus Solar is an environmentally friendly and efficient way of providing domestic hot water. Unlike some other 'twin coil' cylinders (which simply use heating coils designed for traditional boiler heated cylinders), PremierPlus Solar cylinders have a purpose designed solar heating coil at the base of the cylinder, which ensures maximum heat input and efficiency from the solar energy.

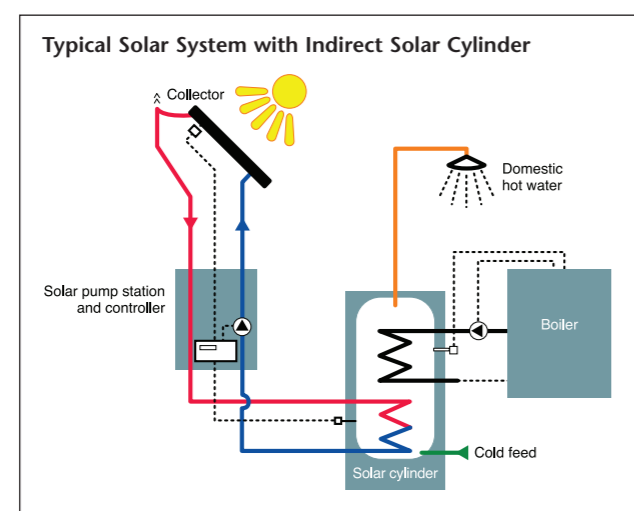
Available in 190, 210, 250 and 300 litre capacities, with a choice of direct (Electric auxiliary heat input) or indirect (Gas, Oil or Electric boiler auxiliary heat input) versions.

How much of your water heating energy needs can be provided by solar?

During the summer months as much as 100% of the energy used by PremierPlus could be solar*. In winter, despite the lower intensity of the sun's rays and fewer daylight hours as much as 30% could be solar*. On average throughout the year up to 60% of a dwelling's hot water requirement can be provided by solar power*. The balance is provided by traditional means; either indirect (via a gas, oil or electric boiler heating a second coil within the cylinder) or direct (via electric immersion heaters in the cylinder).

How does PremierPlus Solar work?

The Solar cylinder is used in conjunction with solar panels (not supplied) which convert energy collected from the sun's rays to heat a water / glycol liquid in its pipe work. This liquid is circulated through a specially designed solar coil in the base of the cylinder where the liquid transfers its heat to the water stored before being pumped back to the solar panel to be re-heated. The design of this coil allows maximum solar gain to be achieved ensuring that the solar system is being used to its full potential.



*savings vary depending on type of solar system used, location and usage patterns.

PremierPlus Solar

Technical Specification

Which unit to use

The choice of capacity for traditional cylinders is based on the hot water requirements of the dwelling. With solar cylinders the usable hot water will vary due to a number of factors such as siting of solar panels, time of year and weather conditions. For this reason, when choosing a solar cylinder you should ensure that sufficient usable hot water will be available during winter months where solar gain is at its lowest. For example a non-solar dwelling of 3 inhabitants with a bath and a shower would normally require a 145 litre indirect cylinder. However, in line with the ClearSkies* recommendation, at least 30% of the cylinder capacity must be dedicated to solar, therefore the same dwelling with a solar system would require a 210 litre indirect solar cylinder which would provide 147 litres of hot water during periods where there is little or no solar gain. For guidance please refer to the table below. Some applications may require larger water quantities or higher recovery rates, therefore it is important to calculate the hot water requirement before selecting the cylinder capacity.

Sizing guidance – Solar Cylinders

APPLICATION	INDIRECT CAPACITY LITRES	DIRECT CAPACITY LITRES
Bedsit	190	190
1 bed 1 bath & 1 shower	190	190
2 bed 1 bath & 1 shower	190	210
3 bed 1 bath & 1 shower	210	250
4 bed 1 bath & 1 shower	210/250	250/300
4/5 bed 2 bath & shower	250/300	300
4/5 bed 3 bath & shower	300	n/a†

† For high demand direct auxiliary heating applications and other commercial uses, cylinders can be linked to provide larger capacity output. Contact Specification Advice on 01603 420128 to discuss your application.

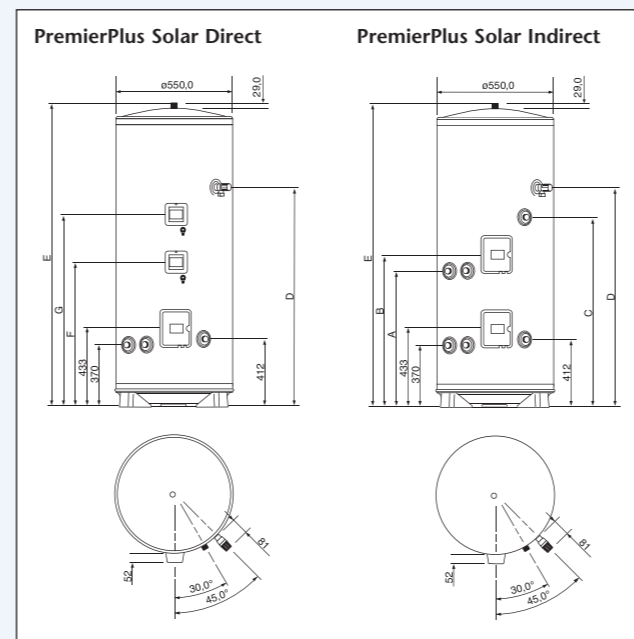
Figures are for guidance only and are based on BS6700 recommendations. BS6700 gives recommendations for water supply for domestic use. Some applications may require larger water quantities or higher recovery rates and so should be individually calculated to ensure the correct size unit is selected. The Santon specifier advice team should be contacted to discuss requirements and designs for specific sites. Actual usage requirements should be assessed in selecting the correct cylinder.

Ordering Guide

Model	Capacity (litres)	Nominal Auxiliary Element @ 240V (kW)	Auxiliary Direct Heat Up		Auxiliary Coil Surface Area (m ²)	Indirect Auxiliary Recovery** (mins)	Solar Coil Surface Area (m ²)	Heat Loss Per Day (kWh/24h)	Weight Empty (kgs)	Weight Full (kgs)	Product Code	
			Lower 3kW	Upper Boost 3kW								
PP190BSOLAR	190	1 x 3kW	N/A	60	16.0	0.61	18	1.1	2.08	45.5	235.5	94050140
PP210BSOLAR	210	1 x 3kW	N/A	60	18.3	0.68	18	1.1	2.30	47.5	257.5	94050141
PP250BSOLAR	250	1 x 3kW	N/A	60	20.0	0.79	19	1.1	2.45	56.5	306.5	94050142
PP300BSOLAR	300	1 x 3kW	N/A	60	20.0	0.79	23	1.1	2.72	66.5	366.5	94050143
PP190ESOLAR	190	2 x 3kW	130	60	N/A	N/A	N/A	1.1	2.08	40.5	230.5	94050135
PP210ESOLAR	210	2 x 3kW	148	60	N/A	N/A	N/A	1.1	2.30	42.5	252.5	94050136
PP250ESOLAR	250	2 x 3kW	183	60	N/A	N/A	N/A	1.1	2.45	51.5	301.5	94050137
PP300ESOLAR	300	2 x 3kW	220	60	N/A	N/A	N/A	1.1	2.72	61.5	361.5	94050138

*ClearSkies is a government funded initiative run by the Building Research establishment. Further details can be found at www.clear-skies.org or Tel: 08702 430930.

**Recovery time based on heating 70% of auxiliary volume through 45°C.



Dimensions

Model	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)
PP190BSOLAR	732	803	1017	1137	1401		
PP210BSOLAR	892	808	1054	1181	1502		
PP250BSOLAR	1140	868	1256	1376	1760		
PP300BSOLAR	1438	1024	1571	1692	2067		
PP190ESOLAR				1137	1401	754	900
PP210ESOLAR				1181	1502	759	1001
PP250ESOLAR				1376	1760	819	1259
PP300ESOLAR				1692	2067	975	1566

Cylinder capacities

Model	Total solar heated capacity (litres)	Auxiliary top-up hot water capacity (litres)
PP190BSOLAR	190	127
PP210BSOLAR	210	147
PP250BSOLAR	250	175
PP300BSOLAR	300	210
PP190ESOLAR	190	124
PP210ESOLAR	210	141
PP250ESOLAR	250	175
PP300ESOLAR	300	210

PremierPlus Solar

Technical Specification

Specification

Nominal Capacities
190, 210, 250 & 300 litres.

Element
Long-life Superloy 825 sheathed element, incorporated into an easily removable heater plate, should replacement be necessary. Rated 3.0kW @ 240V.

Outer Casing
Grey Plastisol with grey high impact thermoplastic moulded top and bottom covers.

Thermal Insulation
CFC/HCFC free (ODP ZERO) fire retardant expanded polyurethane. 50mm thickness. GWP 3.1 (Global Warming Potential).

Inner Container
Duplex stainless steel, pressure tested to 15 bar.

Primary Coil (for auxiliary heating boiler)
22mm diameter stainless steel. Coil-in-coil design for improved performance.

Solar Coil
25mm diameter stainless steel. Coil-in-coil design and large surface area for improved performance.

Thermostat
Element thermostat adjustable from 10°C to 70°C. Factory fitted cylinder thermostat adjustable to 70°C for auxiliary heating source. A pocket is provided for solar controls suitable for insertion of solar controller temperature probe.

Safety Features
All Models: Temperature and pressure relief valve, factory set to operate at 10 bar and 90°C. High limit thermostat, factory set at 80°C. Manually re-settable cut-out, set to 80°C. A 2-port motorised valve is supplied with twin coil models to provide over-temperature protection when heating using the auxiliary heating (boiler) coil. Factory fitted thermal cut-out for integration in to a solar circuit.

Anode
None required.

Approvals
BEAB approved. Kiwa approved. ClearSkies accredited. Manufactured in the UK in an ISO 9001:2000 registered factory.

Guarantee
The PremierPlus Solar Duplex stainless steel vessel carries a full 25 year on-site parts and labour transferable guarantee against faulty manufacture or materials provided that:

- It has been correctly installed as per the instructions contained in the instruction manual and all relevant Codes of Practice and Regulations in force at the time of installation.
- It has not been modified in any way, other than by Santon.
- It has not been frost damaged.
- It has only been used for the storage of potable water.
- It has not been tampered with or been subjected to misuse or neglect.
- Within 60 days of installation the user completes and returns the certificate supplied along with the proof of purchase to register the product.
- It has been installed in the United Kingdom.

Expansion vessel is guaranteed for a period of 5 years from the date of purchase. The PremierPlus Solar components, immersion heater and thermal controls are guaranteed for a period of 2 years from the date of purchase. Evidence of purchase and date of supply must be submitted. The unit is not guaranteed against damage due to frost. The guarantee is transferable. This guarantee does not affect your statutory rights.



Installation

Unvented units over 15 litre capacity must be installed by a competent installer in accordance with Local Regulations:

England & Wales – Building Regulation G3.

Scotland – Technical Standards P3.

N. Ireland – Building Regulation P5.

Fixing
Feet on bottom moulding for floor mounting.

Plumbing Connections
Inlet/Outlet.
22mm compression fittings / 3/4" BSP parallel thread.

Indirect Coil
22mm compression fittings / 3/4" BSP parallel thread.

Solar Coil
22mm compression fittings / 3/4" BSP parallel thread.

Temperature and Pressure Relief Valve
15mm compression outlet.

Cold Water Control
Integrated cold water control set comprising pressure reducing valve and strainer – factory set at 3.5 bar, expansion relief valve – factory set at 6 bar and check valve. 22mm compression fittings.

Mains pressure
Min 1.0 bar, Max 16 bar.

Flow Rates
Up to 55 litres per minute @ 6 bar pressure.

Operating Pressure
3.5 bar.

Expansion Relief Valve Pressure
6.0 bar.

Operating Temperature
Recommended 60°C. Adjustable 10 - 70°C on auxiliary heating controls.

Water Expansion
Remote expansion vessel – 25 litre vessel supplied with all models.

Minimum Water Supply Requirements
Recommended minimum supply pressure – 1.5 bar/20 l/min flow rate. If there are any doubts about water supply pressure or flow rates, please contact our Specification Advice Team to discuss.

Secondary Circulation
1/2" BSP female connection provided. Secondary circulation is NOT recommended for units using off-peak electricity tariffs for auxiliary heating.

Pressure Testing
Units are tested to 15 bar.

Compatible Boilers
Electric, gas or oil fired – open vent or sealed system type, fitted with integral control thermostat and cut-out.

Tundish
15mm compression inlet and 22mm compression outlet.

Electrical

Direct Models:
Connection is to the combined thermostat/thermal cut-out, housed within the integrated controls housing. The electrical supply must be permanently connected via a double pole linked isolating switch with a minimum break capacity of 13A.

Indirect twin coil models:
Controls should be wired to the boiler, programmer etc. in accordance with the control scheme being used.

The solar coil must be connected to a fully pumped solar primary system that should be controlled by a suitable solar controller and hydraulic set. The solar controller temperature sensor must be inserted in the pocket supplied on the heater. All electrical wiring must conform to the latest IEE Wiring Regulations. The solar thermal cut-out (factory fitted) should be wired in series with the solar controls (not supplied).