GET SMART

GET SOLAHART

SOLAHART HEAT PUMPS



Solahart®

HOT WATER *Free* FROM THE SUN®

RENEWABLE HOT WATER IS WHAT WE DO BEST

Long before anyone had heard of global warming and climate change, a pioneering company based in Australia recognised that the sun was the best power source available to heat water in Australian homes.

Now with over 65 years of commitment to sustainability and providing high quality and reliable renewable energy technology, Solahart is a global leader in solar innovation. Unsurprisingly given its direction and drive, the evolution of the Solahart product range now includes both residential and commercial hot water heat pumps.

The Solahart Story

Solahart commenced manufacturing solar hot water systems in 1953. In the 1980s, we developed and introduced the revolutionary closed-circuit water heater into our range. This indirect form of water heating prevents pipes from freezing in very cold conditions, and in poor water quality areas keeps the collectors free from scaling, which prolongs the performance over the life of the system. This technology made solar water heating a real option for a much wider variety of residential and commercial applications across the world.

In 2011, we launched a new range of collectors, making Solahart systems even more durable, reliable, and easier to install.

From the beginning to today, with well over 1 million Solahart hot water systems installed around the world, we've had a global focus and a reputation as a world-leader in solar innovation and technology with significant ongoing investment in Research and Development, and Manufacturing.

Over the years, our renewable products have continued to develop, and we are at the forefront of solar and heat pump technology for use in commercial applications. Our technical support teams work closely with architects and consultants throughout the specification process to custom design heating systems for a wide range of commercial applications. Our water heaters are reducing power consumption and infrastructure costs for large-scale businesses across Europe, the Middle East, Africa, and Asia.

As the renewables arm of Rheem Australia and being part of a global organisation, Solahart has the resources to provide innovative and sustainable hot water solutions around the world.

Solahart® HOT WATER Free FROM THE SUN®

A GREATER DEGREE OF GOOD™

A Greater Degree of Good represents a global commitment to sustainability and our dedication to ensuring access to affordable, reliable, sustainable, and modern energy for all.







Certified Product™ Australian Standard AS/NZS 2712 Lic SMK 0767 Lic SMK 1048 Lic SMKP 21548 SAI Global

Certified System™ Quality ISO 9001

WaterMark™ AS 3498 Lic WMKA 00153 Lic WMKA 00177 Lic WMKA 00299 Lic WMKA 00500 Lic WMKA 21434 Lic WMKA 21549 Lic WMKA 21766 SAI Global

The Australian Gas Association

WHY CHOOSE SOLAHART?

There are many critically important reasons as to why you should choose Solahart to assist you with your water heating needs.

An unrivalled commitment to quality
Since 1953 we have been setting the standard for solar in Australia. Our systems are designed for some of the harshest conditions found in Australia and the world. Quality is ingrained in everything we do, and we are passionate renewable energy advocates.

Rigorous testing
Replacing conventional gas or electric water heating with Solahart Heat Pump systems could substantially reduce your hot water energy use.

Greater performance for greater savings
Replacing conventional gas or electric water heating with Solahart Heat Pump systems could substantially reduce your hot water energy use.

Renewable energy experts
Solahart systems are only available through Authorised Solahart Distribution and Dealership channels around the world, all trained and qualified to ensure you get the best solution to suit your project and budget. Our team will come to your home/office or project site to discuss and understand your needs, assess the site conditions and energy requirements, and will provide you with the best solar solution.

Future-proof your investment
Adding renewable energy solutions helps future-proof your business by reducing the dependence on grid-energy supply, protects you from rising energy costs, and adds to your environmental credentials. Sustainability has now taken centre stage and consumers are looking for companies that are committed to sustainable energy practices. Installing solar will ensure your green footprint is noticed, which in turn, may generate a positive response from customers.

Reduce your carbon footprint
By switching to an energy source that's clean and green, like solar and heat pumps, you'll reduce your carbon emissions and create a more sustainable future. Many government's world-wide provide generous incentives to promote renewable energy and your Solahart Dealer will work with you to evaluate if any rebates are applicable.



New York University, Saddiyat Island, Abu Dhabi

Solahart®



Sun City - South Africa

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Saddiyat Island, Abu Dhabi

THE SOLAHART COMMERCIAL HEAT PUMP

Operating Principles:

Heat pumps capture and then transfer energy stored in the form of heat from air, water or the ground into heating energy. Naturally created energy in the surrounding air is captured by an evaporator and then boosted by a compressor to a high temperature, at which point it is transferred via a condenser to heat water in a storage tank. This process is highly efficient, meaning that up to five to six units of heating energy is gained for only one unit of electrical input energy.

The Solahart Commercial Heat Pump is manufactured for each of the following differing heat source options:

Air-to-Water Heat Pumps:

In Air-to-Water design, the Solahart Heat Pump transfers heat from the air, providing the advantages of a solar water heater without the need for direct solar gain to a collector.

The technology is perfectly suited to temperate climates where the warm temperatures and high humidity translate to highly-efficient water heating. However, while the rate of transfer is highest on warm days, the Solahart Heat Pump design is versatile and heat gain is made even in sub-zero temperatures providing the potential for year round heating across a range of climates.

Water-to-Water Heat Pumps:

The Solahart Water-to-Water Heat Pump is a compact and quiet option where a water source is available. The choice of water source can vary, from groundwater to the ocean, to the condensing loop of a building or the outlet water from a cooling plant. A regular, consistent water source produces a stable high efficiency output, with the potential benefit of providing the dual function of hot water and chilled water supply.

Ground-Source Heat Pumps:

The ground absorbs nearly half the sun's thermal energy that reaches the earth. The Solahart Heat Pump can harness this energy for both heating and cooling by a ground loop.

Major Areas of Market Application are:

Domestic Hot Water:

Water heating is a significant user of energy and can account for 25% of total household energy consumption giving a clear incentive to convert to a renewable heating technology.

Mechanical and Process Water Heating and Chilling:

The highly efficient Solahart Heat Pump is used to provide electrically-generated low cost hot water in many specialist applications, ranging from hospitals, large office buildings and supermarkets to more diverse uses in manufacturing, mining and primary industry. Mechanical hot and chilled water is typically supplied to fan coils for space heating and cooling while process needs are more often direct water uses.

High-Temperature Hot Water:

The specialist focus and research capability of our manufacturing base means that the heat pump can provide high efficiency hot water up to 70°C leaving water temperature.

Hot Water to Chilled Water:

When coupled to a building's chilled water ring main, this Water-to-Water heat pump provides energy efficient water heating whilst simultaneously providing the by-product of a chilled water supply.

Hydronic Heating:

Typically providing hot water at mid-range temperatures for home and building comfort, heating via either a hydronic loop or radiators, this range of high-efficiency heat pumps have also been used in primary industry applications such as piggeries, poultry farming and greenhouses.

Aquaculture Water Heating and Chilling:

The client base using our technology includes market leading commercial operators, Australian and international government research facilities, and a range of seafood processing industries (e.g. kingfish, lobster, barramundi and abalone).

Residential, Commercial and Aquatic Centre Pool Heating:

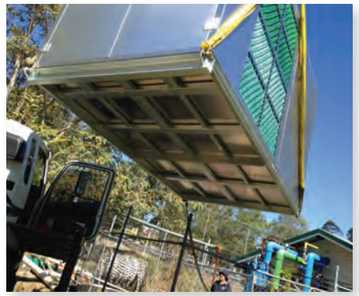
The Solahart technology platform is internationally recognised in this field. The region's most prestigious projects are included in a proud history including heating and cooling for the Pan Pacs, Commonwealth Games, Asian Games and Pacific Games.

Elite Sports:

The Solahart Heat Pump is a feature of many major sports' stadiums, providing heating and chilling of water for elite athlete training and recovery. In water-to-water design, these units simultaneously provide heating and chilling to separate recovery ice baths and hot spas.

Project Driven:

In addition to standard products, Solahart has the ability to supply custom-designed heat pumps to meet specific project needs. The Group's manufacturing flexibility, range of design options and skilled design team allow us to work with consultants and end clients in application evaluation and design, to produce project-driven configurations with energy efficient outcomes.



Solahart Heat Pump Modes:

Heating Only Units:

The heating only heat pump provides high efficiency water heating, maximising the reduction in operating costs and improving reliability.

Heating & Cooling:

The reverse cycle heat pump provides water heating and cooling. This unique ability is used in a variety of applications but most commonly for space conditioning and comfort control in buildings and homes via the provision of cooled or heated water to fan coils or floor coils. This design is also commonly used in aquaculture and for pool heating and cooling.

Chilling Only:

As a chiller, the unit provides cold water for applications as diverse as pond temperature maintenance for aquaculture through to chilled water coils for air conditioning systems.

Simultaneous Hot and Chilled Water:

The Solahart Water-to-Water Heat Pump can uniquely provide cooling to one application while rejecting heat to another. In the setting of a commercial building, this type of unit would most commonly be connected to the condenser water ring main, with the primary function of water heating. But with heat transfer to a storage tank, the by-product is chilled water which lowers the load to the building chiller. In the context of resorts, day spas and sports training centres, this design may be utilised to provide hot and cold plunge pools.

Engineered Solutions for every Application

The Solahart Commercial Heat Pump range is as versatile as it is extensive. Besides the base selection of heat source (air, water or ground) and of mode (heating, heating and cooling or chilling), Solahart offers various options in design to ensure the achievement of maximum efficiency and suitability for each application. Solahart Dealers are expertly trained to provide design advice and guidance.

Refrigerants:

The Solahart range includes plant manufactured to operate using Non-Ozone Depleting Refrigerants R407c, R410a and R134, and for connection to 50Hz and 60Hz electricity supply systems.

R407c is a HFC blend and the base refrigerant used in the Solahart range for both hot water and pool heating.

R410a is another HFC blend which operates at higher pressure than many refrigerants, with low glide making it suitable for low temperatures applications.

R134a is one of the most common refrigerants world-wide and used in a broad range of refrigeration and air conditioning applications. R134a is used for high-temperature applications.

Heat Exchangers:

The Solahart range represents bespoke engineered solutions and its product flexibility extends to the material, type and design of the internal heat exchangers used for heat capture (evaporator) and transfer (condenser).

The base construction material for the condensers is copper and these can be of shell-and-tube, single or double-wall design. However, plant will be manufactured with shell-and-tube of titanium construction or plate heat exchangers (stainless steel or titanium) as required to achieve high efficiency, safety and longevity as suits varying applications.

Unit Construction:

Marine grade aluminium or stainless steel powder coated cabinets are available.

Horizontal discharge fans are available on models up to 100kW output. Horizontal discharge models can be stacked to reduce plant footprint or enable installation in low head height building overhang areas.

Units can also be made to connect to ducting for internal installations by the use of high static fans. Ducted models are designed to discharge the cold air outside of the plant room.

Specialist Treatments for Noise Sensitive Environments:

Solahart offers various options in fan selection making the unit the quietest heat pump available. This includes the use of larger blade fans at low speed or wall plate EC fans. Other specific acoustic treatments are available such as compressor jackets, added case lining and hoods. Specialist acoustic louvres on air intake and pods for air discharge are also used where required on larger capacity systems.

All Weather Performance:

Automatic defrost either by hot gas by-pass or reverse cycle de-ice is standard on every Solahart Heat Pump. Solahart's advanced de-ice control allows the heat pump to continue performing in low ambient temperature conditions.

Specialist Treatments for Corrosive Environments/ Anti-Corrosion Evaporator Treatments:

The evaporator (coil) is treated with Solar Cote® anti-corrosion treatment. This is a total immersion coating that has been tested to, and exceeded, the salt spray standard AS 2331.32 – 1980. This process can be repeated to provide a double dipped coil. Copper Fins on Copper Coil: In corrosive environments the aluminium fins will show the first sign of corrosion to the evaporator. The use of copper fins provides ultimate protection.

Extracting heat from air to produce hot water for high-volume users

The Solahart Air-to-Water Heat Pump transfers heat from the air with very high-energy efficiency. The design of the heat pump is characterised by fans that move air across a large collector area (the evaporator). The ability of the technology to absorb and transfer the energy from the surrounding air means that the Solahart Heat Pump provides the advantages of a solar water heater without the need for direct sunshine, lowering electrical usage compared with conventional hot water plants. The technology in this way is perfectly suited to temperate climates and will perform strongest in high-ambient temperature/ high-humidity conditions, although this does not preclude installation in colder zones.

Capability

The Solahart range includes two series of heat pumps: units using R407c for hot water heating up to 65°C and R134a for heating up to 70°C. The operating conditions are from -5°C to 45°C, with the standard design including deice by hot gas bypass to protect against frosting of the evaporator at the lower temperatures of this range. In locations where the ambient temperature may be below -5°C or where low temperatures can be experienced throughout the day, the deice approach would be upgraded to reverse-cycle. In extremely cold climates, the use of Air-to-Water design may not be viable and the design focus would shift to Water-to-Water, if feasible. Understanding of how ambient temperature impacts on the heating performance of the heat pump and achievable temperature range is critical and will be taken into account by the Solahart Distributor in model and capacity selection and in storage volume, where applicable.

Efficiency

Dedicated product development for a broad range of climates, with conditions replicated in a world class psychrometric test facility has led to coefficients of performance of up to 5.2, with higher efficiencies leading directly to reduced energy consumption, lowered demand and improved recovery rates.

Range

The Solahart range has been specifically designed to provide hot water for large volume users. The range is extensive and diverse and varies from single compressor models at 10kW nominal output (heating) to four compressor models up to 554kW. Technical data for a cross-section of the range is given on the following page. Contact us for any other capacity and design configuration options.

Extra Features

Purpose designed refrigeration system for high-ambient temperature locations. Full commercial construction with marine grade aluminium case and Solar Cote® anti-corrosion treatment of evaporators. Digital controls and upgradeable to the exclusive Solahart LC Controller® including BMS connectivity. All models include deice (hot gas injection), upgradeable to reverse cycle.





SHW Series - Hot Water Air-to-Water type, R407C, 50Hz / 1 Phase

Model	Power			FLA (Full Load Amps)	Rated Load Amps 12°C SST / 51°SCT	Max.Leaving Water temp.°C	Min CB size	Heating kW	Power	COP	Water Flowrate L/S	Dimensions (mm) Length x Width x Height
	Voltage	Phase	Hertz									
SHW010K#	220-240	1	50	14.2	10.1	65	16	10.3	2.1	4.8	0.4	1007 x 590 x 834
SHW015K#	220-240	1	50	19.9	14.6	65	25	15.0	3.0	5.0	0.6	1007 x 590 x 834
SHW025K#	220-240	1	50	27.3	20.7	65	32	24.8	5.2	4.8	1.0	1155 x 565 x 985
SHW026K#	220-240	1	50	27.3	20.8	65	32	25.5	5.2	4.9	1.0	1487 x 615 x 990

SHW Series - Hot Water Air-to-Water type, R407C, 50Hz / 3 Phase

Model	Power			FLA (Full Load Amps)	Rated Load Amps 12°C SST / 51°SCT	Max.Leaving Water temp.°C	Min CB size	Heating kW	Power	COP	Water Flowrate L/S	Dimensions (mm) Length x Width x Height
	Voltage	Phase	Hertz									
SHW020K#	380-415	3	50	10.5	8.6	65	16	19.9	4.0	4.9	0.8	1007 x 650 x 1090
SHW025K#	380-415	3	50	12.5	9.6	65	20	25.0	4.8	5.2	1.0	1155 x 565 x 985
SHW026K#	380-415	3	50	12.5	9.7	65	20	25.8	5.0	5.2	1.0	1487 x 615 x 990
SHW031K#	380-415	3	50	14.9	11.8	65	20	30.0	5.8	5.2	1.2	1487 x 639 x 957
SHW040K#	380-415	3	50	19.0	15.5	65	25	39.3	7.6	5.2	1.6	1755 x 807 x 994
SHW050K#	380-415	3	50	24.2	19.0	65	32	52.7	10.6	5.0	2.1	1805 x 807 x 1355
SHW065K#	380-415	3	50	33.6	27.7	65	50	68.0	13.9	4.9	2.7	1805 x 807 x 1355
SHW080K#	380-415	3	50	35.6	28.6	65	50	78.6	15.3	5.1	3.1	1905 x 1005 x 1103
SHW087K#	380-415	3	50	40.9	31.9	65	50	90.1	18.8	4.8	3.6	2200 x 1130 x 1180
SHW105K#	380-415	3	50	47.0	36.6	65	63	105.3	20.7	5.1	4.2	2130 x 1135 x 1375
SHW135K#	380-415	3	50	65.8	54.0	65	80	136.0	27.3	5.0	5.4	2130 x 1135 x 1375
SHW183K#	380-415	3	50	80.4	62.4	65	100	180.2	37.5	5.0	7.2	2800 x 1134 x 2036
SHW204K#	380-415	3	50	100.8	83.1	65	120	203.9	41.8	4.9	8.1	3462 x 1962 x 2270
SHW270K#	380-415	3	50	134.4	110.8	65	150	271.9	55.7	4.9	10.8	3462 x 1962 x 2270
SHW365K#	380-415	3	50	163.8	127.5	65	200	360.2	75.2	4.8	14.4	3462 x 1962 x 2270
SHW446K#	380-415	3	50	202.2	159.8	65	250	450.5	90.6	5.0	18.0	4500 x 2262 x 2605
SHW540K#	380-415	3	50	246.2	191.1	65	300	554.8	106.2	5.2	22.1	4500 x 2262 x 2605

SHW Series - Hot Water Air-to-Water type, R134a, 50HZ, 1 & 3 Phase

Model	Power			FLA (Full Load Amps)	Rated Load Amps 12°C SST / 51°SCT	Max.Leaving Water temp.°C	Min CB size	Heating kW	Power	COP	Water Flowrate L/S	Dimensions (mm) Length x Width x Height
	Voltage	Phase	Hertz									
SHW007D#	220-240	1	50	9.8	7.6	70	16	7.3	1.6	4.7	0.3	1007 x 650 x 1090
SHW020D#	380-415	3	50	12.8	10.7	70	20	20.4	5.0	4.1	0.8	1007 x 650 x 1090
SHW027D#	380-415	3	50	13.2	11.3	70	20	27.0	5.4	5.0	1.1	1155 x 565 x 985
SHW035D#	380-415	3	50	20.2	16.5	70	25	35.0	7.7	4.5	1.4	1755 x 807 x 994
SHW048D#	380-415	3	50	29.2	25.7	70	40	47.6	10.1	4.7	1.9	1805 x 807 x 1355
SHW062D#	380-415	3	50	33.3	27.3	70	40	60.9	12.8	4.8	2.4	2005 x 807 x 1355
SHW070D#	380-415	3	50	38.0	30.7	70	50	69.9	14.2	4.9	2.8	1905 x 1005 x 1103
SHW096D#	380-415	3	50	57.0	50.0	70	63	94.9	19.6	4.8	3.8	2130 x 1135 x 1375
SHW124D#	380-415	3	50	65.2	46.8	70	80	121.9	25.0	4.9	4.9	2380 x 1134 x 1373
SHW153D#	380-415	3	50	74.4	61.5	70	100	151.4	30.8	4.9	6.1	2800 x 1134 x 2036
SHW186D#	380-415	3	50	99.9	72.3	70	120	182.8	38.3	4.8	7.3	3462 x 1962 x 2270
SHW248D#	380-415	3	50	133.0	96.4	70	150	243.7	51.1	4.8	9.7	3462 x 1962 x 2270
SHW308D#	380-415	3	50	174.4	125.9	70	200	302.8	64.5	4.7	12.1	3462 x 1962 x 2270
SHW380D#	380-415	3	50	200.7	142.2	70	250	373.5	76.5	4.9	14.9	4500 x 2262 x 2605

Design conditions - 39°C EWT, 45°C LWT @51°SCT, 30°C Ambient, 60% RH @ 10°C SST

Dimensions shown are for vertical fan type only. Dimensions are different between H and V types and physical sizing by model should be confirmed from the full unit specification.

WATER-TO-WATER DESIGN

Simultaneously producing hot and chilled water

The Solahart Water-to-Water Heat Pump design achieves unparalleled levels of energy efficiency by simultaneously providing high efficiency hot water and chilling. The heat source is water, not air so the plant is more compact and includes two dedicated sets of heat exchangers (acting on the water source side as the evaporator and on the application side, acting as the condenser to transfer heat). The water source can vary from groundwater to the ocean, through to the condensing loop of a building or where heat is removed from water cooled plant.

Capability

The Solahart Hot Water to Chilled Water (SWW) range includes units using R407c for hot water heating up to 61°C, with a minimum entering water temperature on the building loop of 12°C, giving a return water temperature of 7°C. Warmer temperatures to the ring main or water source see the heat transfer and efficiencies improve. The ambient temperature of the installation location has no impact on the performance of this type of plant, with the units being compact and suitable for indoor or external installation.

Range

The range is extensive and covers single compressor models between 23kW nominal output (heating) to quad compressor models up to 519kW. Technical data for a cross-section of the range is given on the following page. Contact us for any other capacity and design configuration options.

Integration with HVAC

Integration with HVAC provides the potential for the heat pump to provide a quick return on investment to building owners by providing simultaneous efficiency gains in water heating and chilling. In a building setting, the Solahart Water-to-Water Heat Pump is most commonly connected either to the condenser water loop of a building or to the chilled water circuit.

Efficiency

The ability of these units to provide a dual efficiency sees combined COPs of up to 9.4. The efficiency in hot water production is in the range of 4.8 to 5.3 and this leads to substantial savings in energy use and heating cost. The savings are magnified where the cooling by-product lessens a building's chilling load. COPs in cooling are in the range of 3.8 to 4.2.

Extra Features

Copper heat exchanger either side, single-wall but with optional vented design. Flow switch protection. Multiple safeties including low temperature freeze protection on the chilled water side. Full commercial construction with marine grade aluminium case. Digital controls and upgradeable to the Solahart LC Controller® including BMS connectivity.





SWW Series - Water-to-Water type, R407C

Model	Power			FLA (Full Load Amps)	Rated Load Amps 12°C SST / 51°SCT	Max. Outlet Water Temp °C	Min CB size	Heating Capacity kW	Cooling Capacity kW	Power	COP	Water Flowrate L/S	Dimensions (mm) Length x Width x Height
	Voltage	Phase	Hertz										
SWW023SK#	220-240	1	50	26.1	19.4	61	32	23.4	18.5	4.8	3.8	0.9	900 x 700 x 625
SWW023SK#	380-415	3	50	11.2	8.40	61	20	23.6	18.9	4.7	4.1	0.9	900 x 700 x 625
SWW027SK#	380-415	3	50	13.6	10.40	61	20	27.3	21.8	5.5	4.0	1.1	1400 x 700 x 775
SWW037SK#	380-415	3	50	16.6	13.1	61	25	37.0	29.9	7.0	4.3	1.5	1400 x 700 x 775
SWW049SK#	380-415	3	50	21.8	16.6	61	40	49.6	40.3	9.4	4.3	2.0	1845 x 800 x 825
SWW064SK#	380-415	3	50	31.2	25.3	61	40	64.0	51.3	12.7	4.0	2.6	1845 x 800 x 825
SWW085SK#	380-415	3	50	37.6	28.4	61	50	84.8	68.0	16.9	4.0	3.4	2135 x 800 x 825
SWW098SK#	380-415	3	50	43.6	33.2	61	63	99.3	80.5	18.7	4.3	4.0	2135 x 800 x 825
SWW128SK#	380-415	3	50	62.4	50.6	61	80	128.0	102.6	25.4	4.0	5.1	2135 x 800 x 825
SWW170SK#	380-415	3	50	75.1	56.8	61	100	170.5	137.6	32.9	4.2	6.8	2270 x 1150 x 1200
SWW192SK#	380-415	3	50	93.6	75.9	61	100	192.0	153.9	38.1	4.0	7.6	2200 x 2400 x 1200
SWW212SK#	380-415	3	50	93.4	71.7	61	120	212.8	172.0	40.8	4.2	8.5	2315 x 800 x 825
SWW256SK#	380-415	3	50	124.8	101.2	61	150	256.0	205.3	50.8	4.0	10.2	2400 x 2200 x 1200
SWW340SK#	380-415	3	50	150.4	113.5	61	200	339.2	271.8	67.4	4.0	13.5	2400 x 2200 x 1200
SWW424SK#	380-415	3	50	186	143.4	61	200	422.7	339.3	83.4	4.1	16.9	3450 x 2250 x 1200
SWW520SK#	380-415	3	50	230	174.5	61	250	519.2	418.5	100.7	4.2	20.7	3450 x 2250 x 1200

SWW Series - Water-to-Water type, R134a

Model	Power			FLA (Full Load Amps)	Rated Load Amps 12°C SST / 51°SCT	Max. Outlet Water Temp °C	Min CB size	Heating Capacity kW	Cooling Capacity kW	Power	COP	Water Flowrate L/S	Dimensions (mm) Length x Width x Height
	Voltage	Phase	Hertz										
SWW033SD#	380-415	3	50	17.8	12.10	70	25	33.2	26.7	6.5	4.1	1.3	1845 x 800 x 825
SWW045SD#	380-415	3	50	26.8	21.50	70	32	44.6	35.8	8.8	4.0	1.8	1845 x 800 x 825
SWW058SD#	380-415	3	50	30.9	21.6	70	40	57.3	45.7	11.5	4.0	2.3	2120 x 805 x 825
SWW071SD#	380-415	3	50	40.2	28.1	70	50	71.2	57.0	14.2	4.0	2.8	2120 x 805 x 1000
SWW088SD#	380-415	3	50	46.1	31.4	70	63	87.8	70.5	17.3	4.1	3.5	2120 x 805 x 1000
SWW116SD#	380-415	3	50	61.8	43.3	70	80	114.5	91.5	23.0	4.0	4.6	2370 x 1150 x 1200
SWW142SD#	380-415	3	50	80.4	56.1	70	100	142.3	113.9	28.4	4.0	5.7	2370 x 1150 x 1200
SWW176SD#	380-415	3	50	92.2	62.8	70	120	175.6	140.9	34.6	4.1	7.0	2370 x 1150 x 1200
SWW213SD#	380-415	3	50	120.6	84.2	70	150	213.5	170.9	42.6	4.0	8.5	2200 x 2400 x 1200
SWW264SD#	380-415	3	50	138.3	94.1	70	150	263.4	211.4	52.0	4.1	10.5	2200 x 2400 x 1200
SWW352SD#	380-415	3	50	184.4	125.5	70	200	351.2	281.9	69.3	4.1	14.0	2400 x 2300 x 1200

Design conditions Hot side 39°C water inlet, 45°C water outlet and 51°C SCT, Cold side 12°C water inlet, 7°C water outlet and 2°C SST.





Sydney Opera House



North Sydney Olympic Pool

Trust, Experience and Commitment

The Solahart Heat Pump has been used for over 35 years in the heating of residential, commercial and large aquatic centre pools and spas. This experience is reflected in a broad product range, built to perform under all conditions, with unparalleled expertise in design and application which can be trusted to find the right solution for each individual project.

Capability

Solahart's capability in pool heating is virtually endless with a reputation which is built on a trust developed with specifiers, installers and users. Heater capacity is carefully matched to a pool's heat load to ensure constant temperature maintenance and the range is truly international with an installation spread from the United Arab Emirates, South Africa and India through to most countries of South East Asia.

Efficiency

The unit design stands at the forefront of the industry and reflects an ongoing commitment to true and verifiable high efficiency performance. COPs measured at full load are in the range of 5.4 to 5.9 with ratings at the common market standard of 27°C ambient temperature. But, most importantly Solahart's design focuses on maintaining efficiency at colder air-on temperatures and is evident in the large total evaporator area which characterises the design.

Range

The Solahart Heat Pump is available at single and three phase power from 24kW heating and extends to the four compressor Solahart Model SHP540, at a massive 540.3kW heating capacity, suitable for an Olympic 50m competition or large resort pool. The standard design is the Air-to-Water heat pump, but the Water-to-Water system is also available.

Technical data for a cross-section of the range is given on the following page. Contact us for any other capacity and design configuration options.

Extra Features

The Solahart Heat Pump includes a full commercial construction with marine grade aluminium case, Solar Cote® anti-corrosion treatment of the evaporator, and titanium heat exchangers. All pool units include the Solahart LC Controller®, with full onboard diagnostics and is upgradable with BMS connectivity.







POOL AND SPA HEAT PUMPS, R407C

Model	Electrical Ø / Volt. / Hz.	Heating Capacity	Power input	COP	FLA (Full Load Amps)	RLA (Rated Load Amps)	Minimum circuit breaker size	Water Flow L/S	Design TD	Water Connection Size (mm)	Weight (kg)	Dimensions (mm) Length x Width x Height
SHP024KT#	1/240/50	24.3	4.4	5.6	27.3	18.6	32	2.8	2.1	40	110	1200 x 565 x 985
SHP024KT#	3/415/50	24.3	4.4	5.6	13.4	8.7	20	2.8	2.1	40	110	1200 x 565 x 985
SHP026KT#	1/240/50	25.8	4.4	5.9	27.3	17.4	32	2.8	2.2	40	145	1536 x 617x 983
SHP026KT#	3/415/50	25.8	4.4	5.9	13.4	8.7	20	2.8	2.2	40	145	1536 x 617 x 983
SHP030KT#	3/415/50	28.3	5.1	5.6	14.9	10.8	20	2.8	2.4	40	160	1536 x 617 x 983
SHP041KT#	3/415/50	38.3	6.7	5.7	19.0	14.4	25	3.5	2.6	40	196	1810 x 807 x 994
SHP052KT#	3/415/50	51.3	9.4	5.5	24.2	17.4	32	3.5	3.5	40	300	1860 x 807 x 1355
SHP066KT#	3/415/50	66.2	12.4	5.4	33.6	25.9	40	3.5	4.5	40	300	1860 x 807 x 1355
SHP087KT#	3/415/50	87.5	16.6	5.3	40.9	28.9	50	5.3	4.0	80	500	2180 x 1134 x 1205
SHP102KT#	3/415/50	102.6	18.2	5.6	47.0	36.6	63	7.0	3.5	80	600	2180 x 1134 x 1373
SHP132KT#	3/415/50	132.5	24.2	5.5	65.8	50.4	80	7.0	4.5	80	650	2180 x 1134 x 1373
SHP175KT#	3/415/50	175.0	33.1	5.3	81.9	63.8	100	10.5	4.0	80	1180	2217 x 1967 x 2282
SHP199KT#	3/415/50	199.0	37.1	5.4	100.8	86.1	120	10.5	4.5	80	1350	3463 x 1963 x 2288
SHP265KT#	3/415/50	264.9	49.5	5.4	132.0	103.6	150	14	4.5	80	1900	3463 x 1963 x 2288
SHP350KT#	3/415/50	349.9	66.2	5.3	163.6	115.8	200	21	4.0	100	1900	3463 x 1963 x 2348
SHP440KT#	3/415/50	441.0	80.3	5.5	202.2	146.8	250	28	3.8	150	2400	4500 x 2262 x 2605
SHP540KT#	3/415/50	540.3	95.7	5.7	246.2	173.6	300	28	4.6	150	2400	4500 x 2262 x 2605





Taurama Aquatic Centre, Papua New Guinea

The choice of champions

The supply of chilled and hot water to ice baths and hot recovery pools is now integral to major sports and remedial medicine and rehabilitation facilities. This is an established niche market for the Solahart Heat Pump, with the Group's base technology being installed for virtually every landmark training venue or sporting arena in Australia. The installation list covers a who's who of Australian sport and covers iconic stadiums such as the Sydney Cricket Ground, Ballymore Stadium, Blundstone Arena and the redeveloped Adelaide Oval to Olympic-focused facilities such as the Australian Institute of Sport.

Capability

Solahart technology provides a capability to heat or chill "pool" water from 6°C to 40°C. The range is available in both Air-to-Water and Water-to-Water design and for direct or indirect connection. Air-to-Water type is suitable for most locations, with an ambient temperature operating range between 0°C to 40°C. The use of Water-to-Water design covers all operating conditions and allows the simultaneous heating of a hot pool as a by-product of the chilling of the cold pool, all from a single unit. The Solahart unit may be designed for heating only, reverse cycle heating and cooling or as chilling only.

Efficiency

Benchmark efficiency levels are maintained by the specialist design of the units supplied for elite sport heating and cooling, with the units featuring increased heat exchanger capacity, enlarged evaporators and specialist control.

Range

While the formal range of ice bath/cold recovery pool chillers extends to 68kW, Solahart has the capability to provide larger bespoke systems.

Technical data for a cross-section of the range is given on the following page. Contact us for any other capacity and design configuration options.

Breadth of use

Solahart chillers and heater options for ice baths and hot recovery pools are not limited to elite sports. Their use also extends to resorts, health clubs and homes.

Extra Features

Full commercial construction with marine grade aluminium case and Solar Cote® anti-corrosion treatment of the evaporator. Titanium heat exchangers. All models include the Solahart LC controller and are upgradable to BMS connectivity. Possible inclusion of remote condenser to plunge-pool design. Possible manufacture in split design where ventilation is an issue.



Sydney Cricket Ground - SCG

ELITE SPORTS CHILLERS

Model	Electrical Ø / Volt. / Hz.	FLA (Full Load Amps)	RLA (Rated Load Amps)	Min. Leaving Water temp.°C	Min CB size	Cooling kW	Power	COP	Water Flowrate Low L/S	Water Flowrate Standard L/S	Minimum Ambient °C	Dimensions (mm) Length x Width x Height
SCH006AT-JQV-1	1/240/50	10.6	7.6	10	15	10.3	1.6	3.7	2.8	1.7	10	1007 x 590 x 744
SCH007AT-JQV-1	1/240/50	15.2	10.2	10	20	7.3	2.1	3.5	2.8	1.7	10	1007 x 590 x 744
SCH012AT-JQV-1	1/240/50	22.1	14.7	10	32	12.1	3.1	3.9	3.5	2.8	10	1007 x 650 x 836
SCH015AT-JQV-1	1/240/50	28.1	19.1	10	40	14.6	4.1	3.6	3.5	2.8	10	1007 x 653 x 1061
SCH015AT-DQV-1	3/415/50	10.6	7.3	10	15	14.8	3.9	3.8	3.5	2.8	10	1007 x 653 x 1061
SCH022KT-DQV-1	3/415/50	14.9	10.4	10	20	21.9	5.0	4.4	3.5	2.8	10	1536 x 617 x 983
SCH030KT-DQV-1	3/415/50	19.0	13.2	10	25	30.0	6.7	4.5	7.0	3.5	10	1810 x 807 x 994
SCH040KT-DQV-1	3/415/50	24.2	16.1	10	32	40.2	9.3	4.3	7.0	3.5	10	1860 x 807 x 1355
SCH051KT-DQV-1	3/415/50	33.6	25.8	10	50	51.3	12.2	4.2	7.0	3.5	10	1860 x 807 x 1355
SCH068KT-DQV-1	3/415/50	41.1	26.4	10	50	67.9	16.4	4.1	10.5	5.3	10	2180 x 1134 x 1205



North Adelaide Football Club High Performance Centre plunge pools



Greater Western Sydney Giants AFL High Performance Centre plunge pools

LC CONTROLLER

The ultimate intelligent control

Solahart's commitment to expanding the reach of solar technology is based on ongoing product R&D. A key motivator in this work is the achievement of ever improving efficiency thresholds in the energy use of our products. But while improved energy efficiency has clear environmental benefits for the planet, it is also critical that efficiency gains translate to reductions in electricity usage and demand as these drive savings in energy costs. For the Solahart Commercial Heat Pump, the exclusive LC Controller is a critical part of this equation.

Perfect Temperature

The LC controller represents three years of dedicated specialist development. The programming of the LC controller is dedicated to providing maximum efficiency with versatility of operation across a broad range of hot water application. Temperature control can be as simple as a single set point differential which is common for swimming pool heating or as sophisticated as differing time-based differentials or dead band operation, with potential to link to compressor staging for variable loads in mechanical hot water heating.

Advanced Operational Control

The LC controller covers every facet of the operation of the heat pump and is designed to provide a user friendly interface that allows the building or facility manager to maintain operation within correct parameters, at maximum efficiency with the assurance of an array of inbuilt safeties. The controller is fed information on operation and performance for both the water and refrigeration aspects of the system. Sensors provide data on water inlet and outlet temperatures at the unit and potentially, at connected remote points such as tank or ring main temperature. Refrigeration pressure transducers and sensors constantly monitor suction and discharge pressures and temperatures. Evaporator coil sensors and ambient air temperature sensing allows specialist programming to optimize efficiency based on outside conditions.

Safety and Serviceability

The Home Screen of the LC controller provides a clear and easily understood visual representation of the performance of the Solahart Heat Pump. Compressor operation, entering and leaving water temperatures and alarm status are immediately visible. Quick access for alarm attention is made from the Home Screen when a fault or external control condition is detected by the array of sensors and probes. The dedicated Service Module within the LC Controller provides a unique and broad array of information to aid service and maintenance.

Saving Electricity Costs

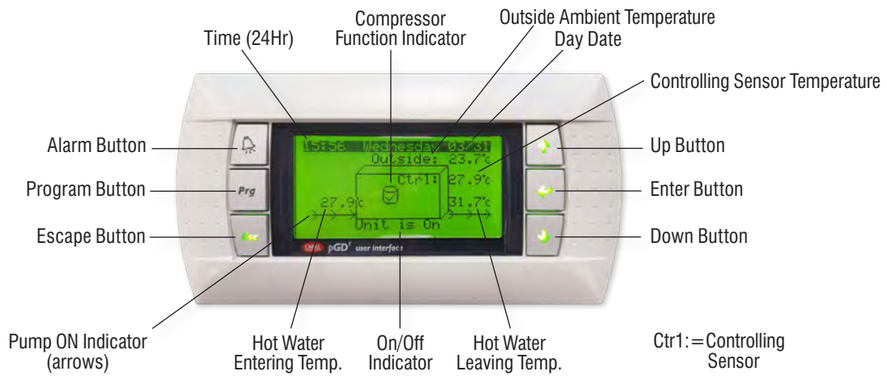
The development of the LC controller actually began with the intent to provide an intelligence to the heat pump to achieve the lowest possible heating cost. Electricity pricing is increasingly structured on a time-of-use and/or demand basis. This means that the electricity price per kWh changes potentially by time-of-day and day of the week and the variance in operating cost of electrical equipment between peak and off-peak times can be up to four times. The LC controller has exclusive programming logic to optimise lowered-priced times of operation by slight movements of the target water temperature.

Saving Pump Costs

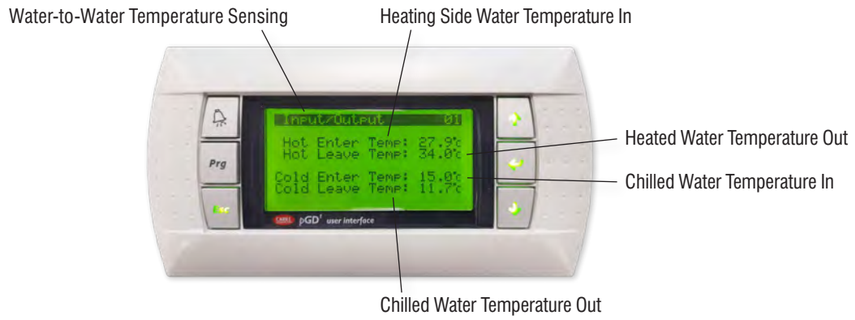
The potential for saving in heating costs is extended to the recirculating pump. The LC controller can control power to the water pump, so that the pump will operate only for those hours needed for heating and if appropriate, in line with the run profile determined by the intelligent controller to minimise heating costs.

User Integration Features

The LC controller is designed to integrate with Building Management Systems to allow the building or facility manager to monitor and control operation as part of an integrated approach to technical and services such as air conditioning, ventilation, lighting and hydraulics. The LC controller has BMS capability via BACnet on MS/TP on RS485, BACnet on TCP/IP via web server (via Ethernet LAN connection) or Modbus serial card allowing direct interrogation, status checking and performance data review.



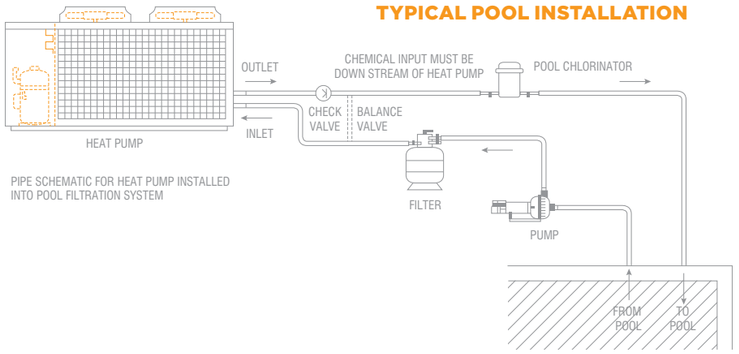






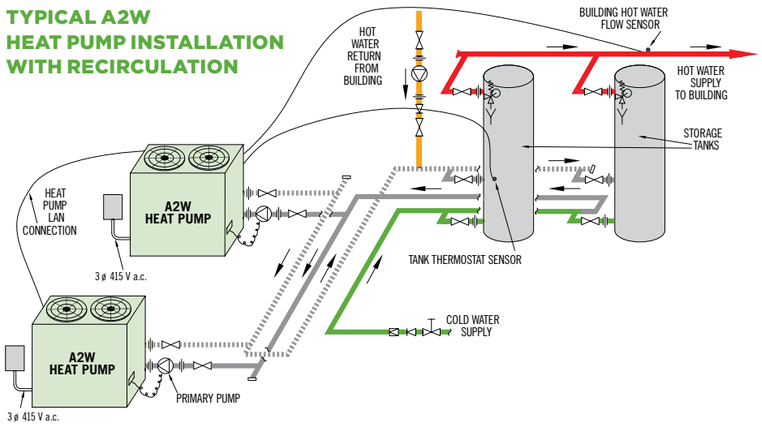
INSTALLATION SCHEMATICS

TYPICAL POOL INSTALLATION

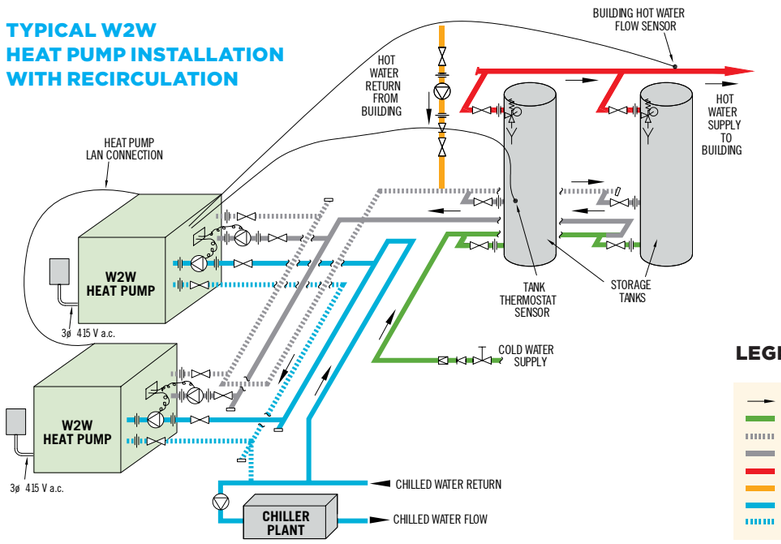


PIPE SCHEMATIC FOR HEAT PUMP INSTALLED INTO POOL FILTRATION SYSTEM

TYPICAL A2W HEAT PUMP INSTALLATION WITH RECIRCULATION



TYPICAL W2W HEAT PUMP INSTALLATION WITH RECIRCULATION



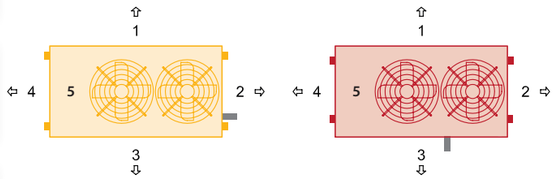
LEGEND

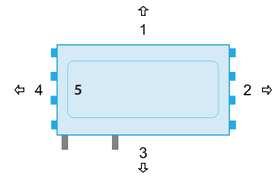
- DIRECTION OF FLOW
- COLD WATER SUPPLY
- DHW PRIMARY FLOW
- DHW PRIMARY RETURN
- HOT WATER FLOW
- HOT WATER RETURN
- CHILLED WATER FLOW
- CHILLED WATER RETURN
- STOP VALVE
- NON RETURN VALVE
- PRESSURE LIMITING VALVE
- EXPANSION CONTROL VALVE
- GATE OR BALL VALVE
- CIRCULATOR PUMP
- UNION
- TUNDISH

CLEARANCES

Model	Dimensions (mm) Length x Width x Height	Clearances 1	2	3	4	5
SHW010K#	1007 x 590 x 834	300	500	350	850	2500
SHW015K#	1007 x 590 x 834					
SHW020K#	1007 x 650 x 1090					
SHW007D#	1007 x 650 x 1090					
SHW020D#	1007 x 650 x 1090					
SHW025K#	1200 x 565 x 985	350	500	300	850	3500
SHW025K#	1155 x 565 x 985					
SHW027D#	1200 x 588 x 959					
SHW035D#	1810 x 807 x 993					
SHP024K#	1200 x 565 x 985					
SHP024K#	1200 x 565 x 985					
SHW040K#	1810 x 807 x 993	500	500	300	850	3500
SHW050K#	1860 x 807 x 1355					
SHW065K#	1860 x 807 x 1355					
SHW048D#	1860 x 807 x 1355					
SHP041K#	1810 x 807 x 994					
SHP052K#	1860 x 807 x 1355					
SHP066K#	1860 x 807 x 1355					
SHW080K#	1953 x 1004 x 1101	500	850	500	850	3500
SHW087K#	2180 X 1134 X 1205					
SHW105K#	2180 x 1134 x 1373					
SHW135K#	2180 x 1134 x 1373					
SHW062D#	2060 x 807 x 1355					
SHW070D#	1953 x 1004 x 1101					
SHW096D#	2180 x 1134 x 1373					
SHW124D#	2380 x 1134 x 1373					
SHP087K#	2180 x 1134 x 1205					
SHP102K#	2180 x 1134 x 1373					
SHW183K#	2540 x 1258 x 1933	1000	850	1000	850	3500
SHW204K#	3463 x 1963 x 2288					
SHP132K#	2180 x 1134 x 1373					
SHP175K#	2217 x 1967 x 2282					
SHP199K#	3463 x 1963 x 2288					
SHP265K#	3463 x 1963 x 2288					
SHP350K#	3463 x 1963 x 2348					
SHW153D#	2800 x 1134 x 2036	1000	850	1000	1000	3500
SHW186D#	3595 x 1965 x 2290					
SHW270K#	3463 x 1963 x 2288					
SHW365K#	4500 x 2262 x 2605					
SHW248D#	3463 x 1963 x 2288	1000	1000	1000	1000	3500
SHW308D#	3463 x 1963 x 2288					
SHW380D#	4500 x 2262 x 2605					
SHW446K#	4500 x 2262 x 2605	1000	850	1000	1200	3500
SHP440K#	4500 x 2262 x 2605					
SHW540K#	4500 x 2262 x 2605	1000	850	1000	1500	3500
SHP540K#	4500 x 2262 x 2605					

Model	Dimensions (mm) Length x Width x Height	Clearances 1	2	3	4	5
SHW026K#	1536 x 617 x 984	350	350	500	850	3500
SHW026K#	1536 x 617 x 984					
SHW031K#	1536 x 615 x 983					
SHP026K#	1536 x 617 x 983					
SHP026K#	1536 x 617 x 983					
SHP030K#	1536 x 617 x 983					
SWW023SK#	900 x 700 x 625	200	200	850	200	500
SWW023SK#	900 x 700 x 625					
SWW027SK#	1400 x 700 x 775					
SWW037SK#	1400 x 700 x 775					
SWW049SK#	1845 x 800 x 825					
SWW064SK#	1845 x 800 x 825					
SWW085SK#	2135 x 800 x 825					
SWW098SK#	2135 x 800 x 825					
SWW128SK#	2135 x 800 x 825					
SWW170SK#	2270 x 1150 x 1200					
SWW033SD#	1845 x 800 x 825					
SWW045SD#	1845 x 800 x 825					
SWW058SD#	2120 x 805 x 825					
SWW071SD#	2120 x 805 x 1000					
SWW088SD#	2120 x 805 x 1000					
SWW116SD#	2370 x 1150 x 1200					
SWW142SD#	2370 x 1150 x 1200					
SWW176SD#	2370 x 1150 x 1200					
SWW192SK#	2200 x 2400 x 1200	850	500	850	500	500
SWW212SK#	2315 x 800 x 825					
SWW256SK#	2400 x 2200 x 1200					
SWW340SK#	2400 x 2200 x 1200					
SWW424SK#	3450 x 2250 x 1200					
SWW520SK#	3450 x 2250 x 1200					
SWW213SD#	2200 x 2400 x 1200					
SWW264SD#-	2200 x 2400 x 1200					
SWW352SD#	2400 x 2300 x 1200					





NOTE: 1) The above clearances relate to vertical discharge units only. Contact Solahart for clearances for horizontal discharge or special built units.
2) When using multiple units allow 2000mm gap between the evaporator coils.

Solahart®
HOT WATER *Free* FROM THE SUN®

HEAD OFFICE

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Materials and data subject to change without notice due to ongoing product improvements.

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