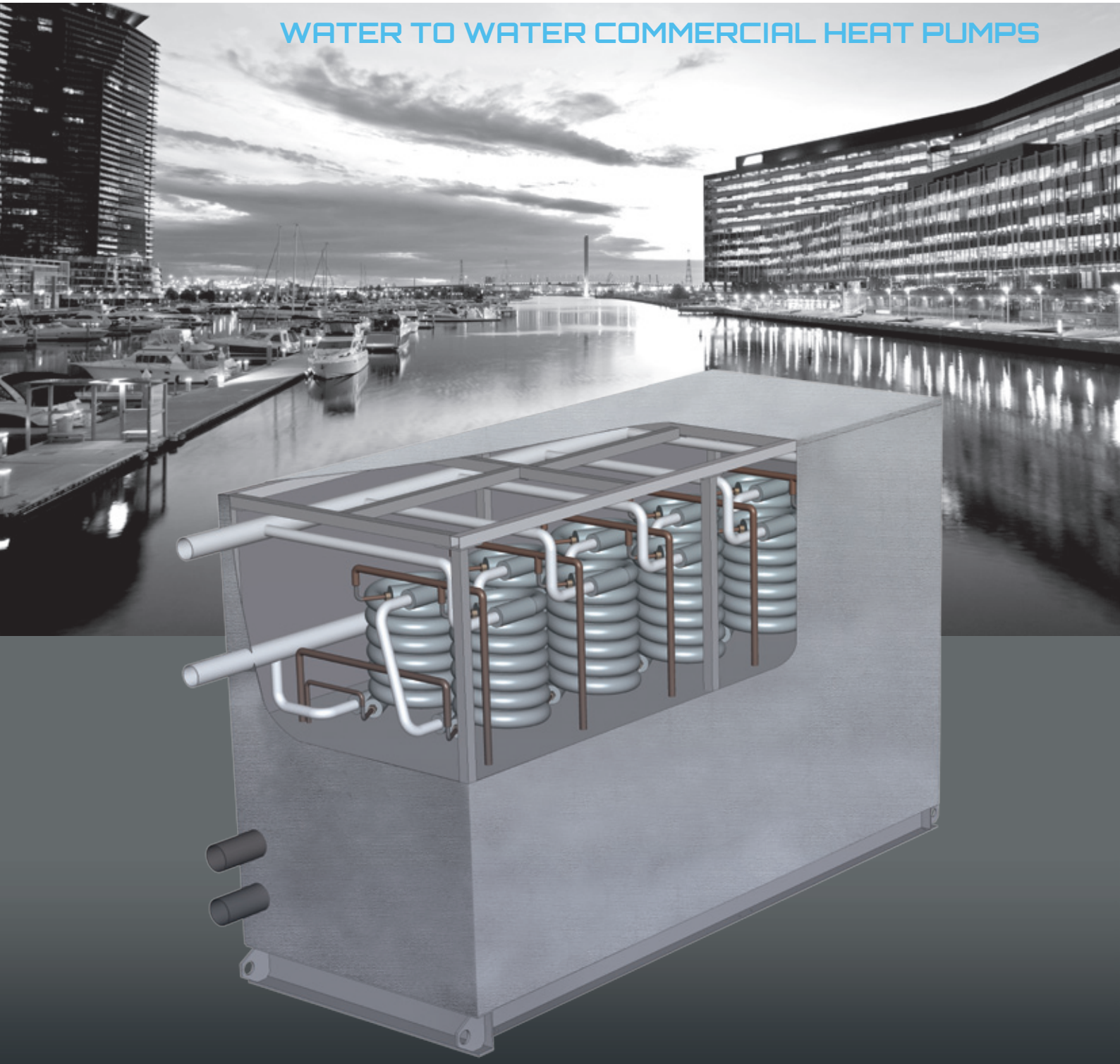
ACCENT AIR

WATER TO WATER COMMERCIAL HEAT PUMPS



ACCENT AIR
A RHEEM COMPANY

CONTENTS

Overview

Part of the Rheem Australia Group; Accent Air is internationally recognised as expert in the field of high efficiency electric heat pumps for hot water and pool heating applications. Accent is the preferred Heat Pump manufacturer to the aquatic industry in Australia with large scale projects for indoor and outdoor Olympic pool venues around Australia and overseas. The company's expertise is reflected in the extensive and diverse range of heat pumps it brings to the market.

Accent Commercial Heat Pumps are designed with the commercial user in mind. With a capacity of up to 400kW for Water to Water models and 250kW for Air to Water models Accent is able to meet your every need.

The Accent range of heat pumps includes Water to Water, Air to Water, and Ground to Water models. These heat pumps are used in a variety of applications including Hot Water, Pool Heating, Pool Chilling and mechanical heating and cooling.

FEATURES & BENEFITS

Water to Water Heat Pumps

Water to Water heat pumps are designed to extract energy from a variety of water sources. Like the ground, water provides a relatively constant heat source. Water sources can vary from ground water to lakes, streams and the ocean.

Energy can even be harnessed from a building's chilling system. In this application, apart from its primary purpose to heat water, energy is drawn from the chilled water circuit by the heat pump, returning cooler water back to the chiller plant.

As the heat pump has effectively pre-cooled the water entering the chiller, the chiller's energy requirement is substantially reduced. In fact up to 80% of the heating output capacity can be returned back to the chiller plant in the form of pre-chilled cooling capacity.

High Efficiency

So what does this all mean in terms of performance? For example a Water to Water heat pump that has a heating output of 80kW under certain conditions will have a cooling output of approximately 80% of this (64kW), giving the heat pump a total energy output of 144kW.

The electrical input to a unit of this capacity would be approximately 20kW. The Coefficient of Performance (COP) is therefore is 7.2. This equates to a 720% efficiency factor. For every 1kW input we are getting a return of 7.2kW output. This compares very favourably to a typical Air to Water heat pump which generally have a range of between 3 - 5.0 COP.

Ground to Water Heat Pumps

The ground absorbs nearly half the thermal energy reaching the earth from the sun. The Accent heat pump can harness this energy for both heating and cooling by a ground loop. As the ground remains at a relatively constant temperature throughout the year, the heat pump operates at stable high efficiency.

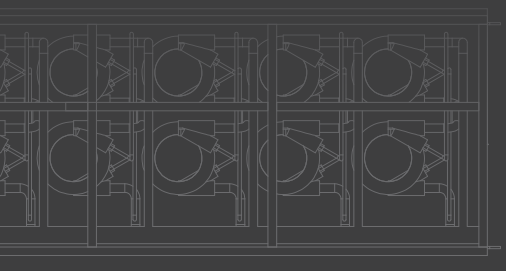
Ground sourced heat pumps are generally used in colder climates where ambient air temperatures in winter drop well below 0 °C. In winter the heat pump will extract heat from the ground for building and hot water heating, and in summer the heat pump works in reverse by extracting the heat from the building and dissipating it to the ground.

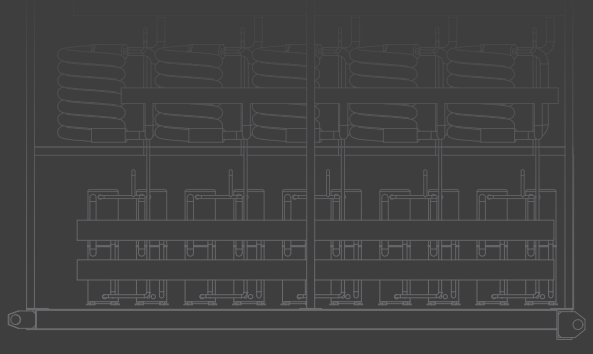
Ground sourced heat pumps can be designed to connect to either ducted air-conditioning heating / cooling systems or underfloor heating / cooling systems. Ground loops can be of two types, horizontal or vertical, and commonly utilise a heat exchange medium such as glycol.

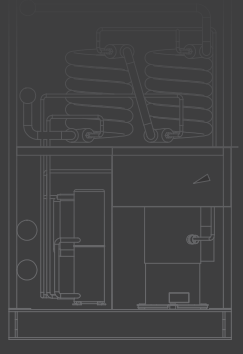
Custom Designed

While Accent is Australia's leading manufacturer of commercial heat pumps, it retains the ability to custom manufacture to project specific design criteria, ensuring that maximum heating performance and control is provided to the building or pool owner.

In fact all Water to Water and Ground to Water heat pumps are designed to the specific site conditions they will be installed into.







PERFORMANCE

Options

Accent Water to Water Heat Pumps are available with a wide range of options in both heat pump design and component selection. As standard all Accent heat pumps use Copeland Scroll compressors. The superior scroll compressor technology of Copeland is employed to provide a quieter unit with the reliability and efficiency expected of a superior commercial product.

Component Options include:

Single wall or double wall vented type Heat Exchangers in Shell in Tube or Coaxial tube in tube design. The Heat Exchanger is constructed from copper when used for hotwater heating, and titanium for pool heating. Accent offer a 10 year warranty on Titanium Heat exchangers.*

Heat Pump cabinets can be of Marine Grade Aluminium, stainless steel or zinc annealed powder coat.

Heating Only Units

The heating only heat pump provides high efficiency water heating, giving maximum operating cost reduction and reliability.

Heating & Cooling

The reverse cycle heat pump provides water heating and cooling. This unique ability is often used at resorts in tropical locations for maintaining pool water at a comfortable swimming temperature all year round. In the cooler months of the year the heat pump will be in heating mode and the warmer months the unit will revert to reverse cycle model and chill the pool.

This reverse cycle capability is also typically used in Ground to Water heat pumps providing space heating and cooling to the home.

Twin Heat Exchanger

The twin heat exchanger model provides automated heating between two separate tasks from the single unit. Most commonly, this approach provides efficient split temperature heating between pool and spa.

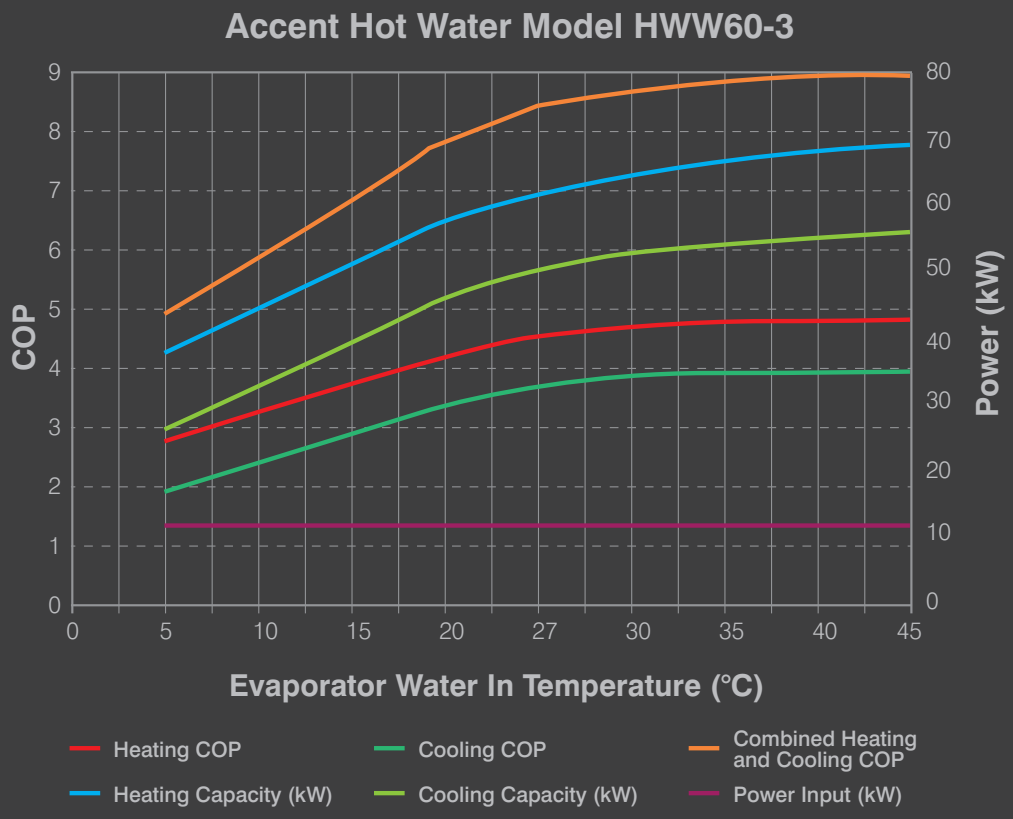
Plunge Pool

The Accent heat pump can uniquely provide cooling to one application while rejecting heat to another. This is most commonly used for resorts, day spas and sports training centres to provide hot and cold plunge pools.

Accent Back-Up

Accent products are supported by an Australian based technical support team ensuring correct sizing, specification and installation. Accent trades with the world through an international network of distributors and dealers.

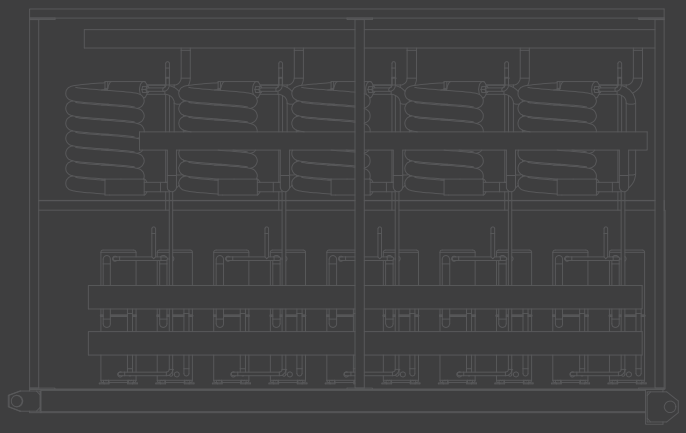
Accent distributors are commercial project specialists providing a comprehensive package of technical support, product, installation and after sales service for their local industry.



* Conditions apply. Refer to the warranty statement.

ACCENT POOL WATER TO WATER

MODEL	HWWP20-3		HWWP25-3		HWWP38-3		HWWP50-3		HWWP60		HWWP80-3		HWWP100-3	
ELECTRICAL INPUT	Three Phase		Three Phase		Three Phase		Three Phase		Three Phase		Three Phase		Three Phase	
Voltage	380-415 Volts / 50 Hz		380-415 Volts / 50 Hz		380-415 Volts / 50 Hz		380-415 Volts / 50 Hz		380-415 Volts / 50 Hz		380-415 Volts / 50 Hz		380-415 Volts / 50 Hz	
Amps Per Phase	12.0 Amps		12.0 Amps		20.0 Amps		25.0 Amps		30.0 Amps		38.0 Amps		45.0 Amps	
Min. Circuit Size	20.0 Amps		20.0 Amps		25.0 Amps		40.0 Amps		63.0 Amps		63.0 Amps		63.0 Amps	
Refrigerant	R407C		R407C		R407C		R407C		R407C		R407C		R407C	
	Heating	**Evap. Side**	**Heating**	**Evap. Side**	**Heating**	**Evap. Side**	**Heating**	**Evap. Side**	**Heating**	**Evap. Side**	**Heating**	**Evap. Side**	**Heating**	**Evap. Side**
Nominal Heating capacity	20.9 kW	17.5 kW	22.0 kW	18.4 kW	34.4 kW	28.8 kW	45.8 kW	38.3 kW	59.9 kW	49.9 kW	68.9 kW	57.6 kW	91.6 kW	76.5 kW
Power input	4.5 kW	4.5 kW	4.7 kW	4.7 kW	6.9 kW	6.9 kW	9.4 kW	9.4 kW	12 .1 kW	12.1 kW	13.9 kW	13.9 kW	18.8 kW	18.8 kW
COP	4.62	3.87	4.64	3.88	4.97	4.16	4.87	4.07	4.95	4.12	4.95	4.14	4.87	4.07
Noise Level	59 dBa @ 3 m		59 dBa @ 3 m		69 dBa @ 3 m		59 dBa @ 3 m		59 dBa @ 3 m		59 dBa @ 3 m		59 dBa @ 3 m	
TECHNICAL DATA														
	Compressor		**Compressor**		**Compressor**		**Compressor**		**Compressor**		**Compressor**		**Compressor**	
Make	Copeland		Copeland		Copeland		Copeland		Copeland Scroll		Copeland		Copeland	
Type	Scroll		Scroll		Scroll		Scroll		Scroll		Scroll		Scroll	
Number Per Unit	1		1		1		1		1		2		2	
FLA (Full Load Amp)	12.1 Amps		12.1 Amps		17.7 Amps		22.3 Amps		30 Amps		17.7 Amps (Each)		22.3 Amps (Each)	
Voltage / Phase	380-415 / 3		380-415 / 3		380-415 / 3		380-415 / 3		380-415 / 3		380-415 / 3		380-415 / 3	
Pole/RPM	2/2,900		2/2,900		2/2,900		2/2,900		2/2,900		2/2,900		2/2,900	
HEAT EXCHANGER (Water Side)														
	Condenser	**Evaporator**	**Condenser**	**Evaporator**	**Condenser**	**Evaporator**	**Condenser**	**Evaporator**	**Condenser**	**Evaporator**	**Condenser**	**Evaporator**	**Condenser**	**Evaporator**
Type of Water Tube	Titanium	Copper	Titanium	Copper	Titanium	Copper	Titanium	Copper	Titanium	Copper	Titanium	Copper	Titanium	Copper
Design	Co-Axial	Co-Axial	Co-Axial	Co-Axial	Co-Axial	Co-Axial	Co-Axial	Co-Axial	Co-Axial	Co-Axial	Co-Axial	Co-Axial	Co-Axial	Co-Axial
Flow Rate Excl. By Pass	2.8 L/s*	0.8 L/s	2.8 L/s*	1.0 L/s	2.8 L/s*	1.4 L/s	2.8 L/s*	1.8 L/s	2.8 L/s	2.4 L/s	2.8 L/s*	2.7 L/s	2.8 L/s*	3.6 L/s
Max. Outlet Water Temp	45°C	N/A	45°C	N/A	45°C	N/A	45°C	N/A	45°C	N/A	45°C	N/A	45°C	N/A
Design Pressure Drop	70 kPa	80 kPa	70 kPa	80 kPa	70 kPa	80 kPa	70 kPa	80 kPa	70 kPa	60 kPa	70 kPa	80 kPa	70 kPa	80 kPa
Max. Operating Pres.	300 kPa	2,450 kPa	300 kPa	2,450 kPa	300 kPa	2,450 kPa	300 kPa	2,450 kPa	300 kPa	2,450 kPa	300 kPa	2,450 kPa	300 kPa	2,450 kPa
GENERAL INFORMATION														
Water Connections	40mm PVC/32mm Copper		40mm PVC/32mm Copper		40mm PVC/50mm Copper		40mm PVC/50mm Copper		40mm PVC/50mm Copper		40mm PVC/65mm Copper		80mm PVC/65mm Copper	
Drain	20mm PVC		20mm PVC		20mm PVC		20mm PVC		20mm Aluminium		20mm PVC		20mm PVC	
Cabinet Construction	1.2mm Stucco Aluminium		1.2mm Stucco Aluminium		1.2mm Stucco Aluminium		1.2mm Stucco Aluminium		1.2mm Stucco Aluminium		1.2mm Stucco Aluminium		1.2mm Stucco Aluminium	
Approx. shipping weight	100 kg		120 kg		170 kg		230 kg		300 kg		400 kg		500 kg	
Size L x W x H	1450mm x 700mm x 680mm		1450mm x 700mm x 680mm		1450mm x 700mm x 680mm		1750mm x 800mm x 825mm		1750mm x 800mm x 825mm		1750mm x 800mm x 825mm		2200mm x 1610mm x 2020mm	



Rating Conditions:
Heating: 27 °C Water in, Evaporator side: 20 °C Water in.
*Maximum flow Rate. Exceeding this flow rate will void warranty.

ACCENT HOT WATER WATER TO WATER

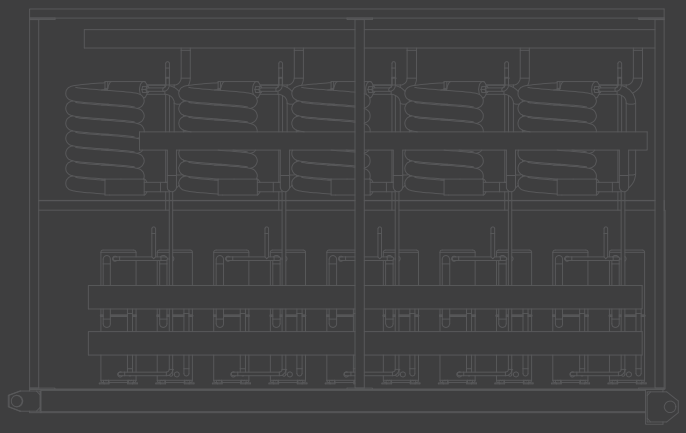
MODEL	HWW20-3		HWW25-3		HWW30-3		HWW38-3		HWW50-3		HWW60-3	
ELECTRICAL INPUT	Three Phase		Three Phase		Three Phase		Three Phase		Three Phase		Three Phase	
Voltage	380-415 Volts / 50 Hz		380-415 Volts / 50 Hz		380-415 Volts / 50 Hz		380-415 Volts / 50 Hz		380-415 Volts / 50 Hz		380-415 Volts / 50 Hz	
Amps Per Phase	12.0 Amps		12.0 Amps		20.0 Amps		20.0 Amps		25.0 Amps		30.0 Amps	
Min. Circuit Size	20.0 Amps		20.0 Amps		25.0 Amps		25.0 Amps		40.0 Amps		63.0 Amps	
Refrigerant	R407C		R407C		R407C		R407C		R407C		R407C	
	Heating	**Evap. Side**	**Heating**	**Evap. Side**	**Heating**	**Evap. Side**	**Heating**	**Evap. Side**	**Heating**	**Evap. Side**	**Heating**	**Evap. Side**
Nominal Heating capacity	20.5 kW	16.7 kW	21.4 kW	17.4 kW	25.3 kW	20.3 kW	33.7 kW	27.5 kW	44.8 kW	34.5 kW	58.4 kW	47.3 kW
Power input	5.0 kW	5.0 kW	5.2 kW	5.2 kW	6.1 kW	6.1 kW	7.6 kW	7.6 kW	10.3 kW	10.3 kW	13.4 kW	13.4 kW
COP	4.10	3.34	4.11	3.35	4.15	3.33	4.44	3.62	4.35	3.35	4.36	3.53
Noise Level	59 dBa @ 3 m		59 dBa @ 3 m		59 dBa @ 3 m		69 dBa @ 3 m		59 dBa @ 3 m		59 dBa @ 3 m	
TECHNICAL DATA												
	Compressor		**Compressor**		**Compressor**		**Compressor**		**Compressor**		**Compressor**	
Make	Copeland		Copeland		Copeland		Copeland		Copeland		Copeland	
Type	Scroll		Scroll		Scroll		Scroll		Scroll		Scroll	
Number Per Unit	1		1		1		1		1		1	
FLA (Full Load Amp)	12.1 Amps		12.1 Amps		15.0 Amps		17.7 Amps		22.3 Amps		30.0 Amps	
Voltage / Phase	380-415 / 3		380-415 / 3		380-415 / 3		380-415 / 3		380-415 / 3		380-415 / 3	
Pole/RPM	2/2,900		2/2,900		2/2,900		2/2,900		2/2,900		2/2,900	
HEAT EXCHANGER (Water Side)												
	Condenser	**Evaporator**	**Condenser**	**Evaporator**	**Condenser**	**Evaporator**	**Condenser**	**Evaporator**	**Condenser**	**Evaporator**	**Condenser**	**Evaporator**
Type of Water Tube	Copper	Copper	Copper	Copper	Copper	Copper	Copper	Copper	Copper	Copper	Copper	Copper
Design	Shell in Tube	Shell in Tube	Shell in Tube	Shell in Tube	Shell in Tube	Shell in Tube	Shell in Tube	Shell in Tube	Shell in Tube	Shell in Tube	Shell in Tube	Shell in Tube
Flow Rate Excl. By Pass	0.8 L/s	0.8 L/s	1.0 L/s	0.8 L/s	1.6 L/s	0.5 L/s	1.5 L/s	1.3 L/s	1.8 L/s	1.6 L/s	2.4 L/s	2.3 L/s
Max. Outlet Water Temp	61°C	N/A	61°C	N/A	61°C	N/A	61°C	N/A	61°C	N/A	61°C	N/A
Design Pressure Drop	80 kPa	80 kPa	80 kPa	80 kPa	80 kPa	80 kPa	80 kPa	80 kPa	80 kPa	80 kPa	80 kPa	80 kPa
Max. Operating Pres.	2,450 kPa	2,450 kPa	2,450 kPa	2,450 kPa	2,450 kPa	2,450 kPa	2,450 kPa	2,450 kPa	2,450 kPa	2,450 kPa	2,450 kPa	2,450 kPa
GENERAL INFORMATION												
Water Connections	32mm Copper		32mm Copper		32mm Copper		50mm Copper		50mm Copper		50mm Copper	
Drain	20mm PVC		20mm PVC		20mm PVC		20mm PVC		20mm PVC		20mm PVC	
Cabinet Construction	1.2mm Stucco Aluminium		1.2mm Stucco Aluminium		1.2mm Stucco Aluminium		1.2mm Stucco Aluminium		1.2mm Stucco Aluminium		1.2mm Stucco Aluminium	
Approx. shipping weight	100 kg		120 kg		120 kg		170 kg		230 kg		300 kg	
Size L x W x H	900mm x 700mm x 625mm		1450mm x 700mm x 680mm		1450mm x 700mm x 680mm		1450mm x 700mm x 680mm		1750mm x 800mm x 825mm		1750mm x 800mm x 825mm	

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

ACCENT HOT WATER WATER TO WATER

MODEL	HWW80-3		HWW100-3		HWW150-3		HWW200-3		HWW250-3	
ELECTRICAL INPUT	Three Phase		Three Phase		Three Phase		Three Phase		Three Phase	
Voltage	380-415 Volts / 50 Hz		380-415 Volts / 50 Hz		380-415 Volts / 50 Hz		380-415 Volts / 50 Hz		380-415 Volts / 50 Hz	
Amps Per Phase	38.0 Amps		45.0 Amps		75.0 Amps		100.0 Amps		132.0 Amps	
Min. Circuit Size	63.0 Amps		63.0 Amps		100.0 Amps		133.0 Amps		150.0 Amps	
Refrigerant	R407C		R407C		R407C		R407C		R407C	
	Heating	**Evap. Side**	**Heating**	**Evap. Side**	**Heating**	**Evap. Side**	**Heating**	**Evap. Side**	**Heating**	**Evap. Side**
Nominal Heating capacity	67.3 kW	54.9 kW	89.6 kW	72.9 kW	134.4 kW	103.5 kW	179.2 kW	138 kW	233.6 kW	189.2 kW
Power input	15.2 kW	15.2 kW	20.5 kW	20.5 kW	30.9 kW	30.9 kW	41.2 kW	41.2 kW	53.6 kW	53.6 kW
COP	4.43	3.61	4.37	3.56	4.35	3.35	4.35	3.35	4.36	3.53
Noise Level	59 dBa @ 3 m		59 dBa @ 3 m		59 dBa @ 3 m		59 dBa @ 3 m		59 dBa @ 3 m	
TECHNICAL DATA										
	Compressor		**Compressor**		**Compressor**		**Compressor**		**Compressor**	
Make	Copeland		Copeland		Copeland Scroll		Copeland Scroll		Copeland Scroll	
Type	Scroll		Scroll		Scroll		Scroll		Scroll	
Number Per Unit	2		2		3		4		4	
FLA (Full Load Amp)	17.7 Amps (Each)		22.3 Amps (Each)		22.3 Amps (Each)		22.3 Amps (Each)		30.0 Amps (Each)	
Voltage / Phase	380-415 / 3		380-415 / 3		380-415 / 3		380-415 / 3		380-415 / 3	
Pole/RPM	2/2,900		2/2,900		2/2,900		2/2,900		2/2,900	
HEAT EXCHANGER (Water Side)										
	Condenser	**Evaporator**	**Condenser**	**Evaporator**	**Condenser**	**Evaporator**	**Condenser**	**Evaporator**	**Condenser**	**Evaporator**
Type of Water Tube	Copper	Copper	Copper	Copper	Copper	Copper	Copper	Copper	Copper	Copper
Design	Shell in Tube	Shell in Tube	Shell in Tube	Shell in Tube	Shell in Tube	Shell in Tube	Shell in Tube	Shell in Tube	Shell in Tube	Shell in Tube
Flow Rate Excl. By Pass	2.7 L/s	2.6 L/s	3.6 L/s	3.5 L/s	5.4 L/s	4.8 L/s	7.2 L/s	6.4 L/s	9.6 L/s	9.2 L/s
Max. Outlet Water Temp	61°C	N/A	61°C	N/A	61°C	N/A	61°C	N/A	61°C	N/A
Design Pressure Drop	80 kPa	80 kPa	80 kPa	80 kPa	70 kPa	70 kPa	80 kPa	70 kPa	80 kPa	70 kPa
Max. Operating Pres.	2,450 kPa	2,450 kPa	2,450 kPa	2,450 kPa	1,400 kPa	1,400 kPa	1,400 kPa	1,400 kPa	1,400 kPa	1,400 kPa
GENERAL INFORMATION										
Water Connections	65mm Copper		65mm Copper		100mm Copper		100mm Copper		100mm Copper	
Drain	20mm PVC		20mm PVC		20mm PVC		20mm PVC		20mm PVC	
Cabinet Construction	1.2mm Stucco Aluminium		1.2mm Stucco Aluminium		1.2mm Stucco Aluminium Steel Gal Frame		1.2mm Stucco Aluminium Steel Gal Frame		1.2mm Stucco Aluminium Steel Gal Frame	
Approx. shipping weight	400 kg		500 kg		750 kg		1000 kg		1200 kg	
Size L x W x H	1750mm x 800mm x 825mm		2350mm x 800mm x 825mm		1800 mm x 1910 mm x 1250 mm		1800 mm x 1910 mm x 1250 mm		1800 mm x 1910 mm x 1250 mm	

Accent Air Heat Pumps utilise a host of features to perform optimally in all weather conditions



Rating conditions:
Heating: 39 °C Water in. 45 °C Water out.
Evaporator Side: 20 °C water in.
Materials and data subject to change without notice due to ongoing product improvements.

Authorised Dealer

HEAD OFFICE

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