

AQUA COOLER

**PROCESS WATER CHILLERS BUILT FOR THE
AUSTRALIAN ENVIRONMENT**



Aqua Cooler Pty Limited

Our company is a prominent Australian chiller manufacturer supplying the Australian and international markets. We are also Australia's largest drinking water cooler manufacturer.

With a proud heritage that started in 1946, Aqua Cooler has established a reputation for manufacturing packaged water chiller units. The current company structure was formed in 1994 by the amalgamation of three original companies specialising in chilled water and refrigeration technology.

Aqua Cooler offers a complete range of products, installation, and a comprehensive after-sales service including; sanitisation, repair and a broad range of accessories designed to cater for all your needs.

Since 1998 Aqua Cooler has exported to New Zealand, Taiwan, Singapore, New Caledonia, Solomon Islands, Mauritius, United Arab Emirates, Thailand, UK, Holland and Qatar. We have built an enviable reputation for the design and development of "world class" water chilling appliances. By closely monitoring the needs of the market and developing new product innovations we continue to pave the way for future growth and development.

Employing a full time staff of more than 40 people with our new state-of-the-art facilities in Sydney, Aqua Cooler is able to manufacture 30 000 products each year.

Aqua Cooler is a long-time member of the Australian Bottled Water Institute Inc. (ABWI), the peak industry council and certifying organisation for water bottlers in Australia.



Features of all Aqua Cooler Chillers

- Rated at 45°C ambient
- Robust construction
- Environmentally friendly R407 refrigerants
- Efficient scroll compressors
- Insulated food grade polyethylene tank
- Integral stainless steel multi-stage pump
- Australian Made
- Backed by 24 hour nationwide service (NZ also)
- Phase Failure Protection

Chiller Applications

- Medical: MRI, CT, Linear Accelerators
- Scientific: x-ray, ICP-MS, Electron Microscope
- Building Services: Computer Rooms, Data Centres
- Mining: Cooling fan shafts, providing chilled drinking water and pre-chilled water for ice machines
- Pharmaceutical: Cooling product tanks, blistering machines
- Manufacturing: Plastic moulding, laser cutting
- Food: potable chilled water for cooling offal, chilling and washing fruits and vegetables, providing chilled water as an ingredient in dough for bakeries

Other Products

- RDX Remote water cooled condensers – 10kW to 40kW
- Remote monitoring either at the application, over the internet or both
- Remote air cooled condensers
- Water filtering

R Series Chillers

Aqua Cooler has built a reputation for building reliable chillers suited to high ambient temperatures and operation in remote location. The R-series chillers epitomise Aqua Cooler's philosophy of creating a fully packaged robust unit you can plug in and forget about. All R-series chillers have their own buffer tank and circulating pump enclosed in a powder-coated casing.

Based on a lifetime of experience, the R-Series chiller has been engineered to handle the toughest conditions from mines supplying chilled drinking water to a whole shift, to the precision requirements of a laboratory or hospital servicing critical equipment.

TECHNICAL DATA - R SERIES I

		R150A	R180A	R230A	R300A	R330A
Compressor horsepower	hp	1.5	1.8	2.3	3	3.3
Cooling Capacity at 5°C Supply ¹	Watts	1700	2450	3600	4900	5700
Cooling Capacity at 10°C Supply	Watts	2100	3100	4600	5900	6900
Cooling Capacity at 15°C Supply	Watts	2650	3800	5500	7000	8300
Cooling Capacity at 20°C Supply	Watts	3300	4600	6500	8200	9750
Tank Holding Capacity	L	80				
Dry Weight	Kg	160		170	180	
Overall Size (Length x Width x Height)	mm	975L x 590W x 1060H				
Power Requirements – Single Phase		240V 50Hz Single Phase			Not Readily Available In Single Phase	
Maximum Current Draw ² - Single Phase	A	15	17.1	22.1		
Power Requirements – Three Phase		415V 50Hz 3 Phase plus Neutral (4A Max)				
Maximum Current Draw - Three Phase	A/phase	8.2	8.9	10.5	12.2	12.9
Pump Option 1 – 0.45kW						
Water Flow Rate at Maximum Pressure	L/hr (kPa)				1200L/hr at 170kPa	
Water Flow Rate at Minimum Pressure	L/hr (kPa)				4200L/hr at 60kPa	
Pump Option 2 – 0.75kW						
Water Flow Rate at Maximum Pressure	L/hr (kPa)				1200L/hr at 440kPa	
Water Flow Rate at Minimum Pressure	L/hr (kPa)				4200L/hr at 170kPa	
Pump Option 3 – 0.75kW						
Water Flow Rate at Maximum Pressure	L/hr (kPa)				1200L/hr at 530kPa	
Water Flow Rate at Minimum Pressure	L/hr (kPa)				4200L/hr at 250kPa	

TECHNICAL DATA - R SERIES II

		R420A	R540A	R670A	R830A	R1000A	R1200A	R1330A
Compressor horsepower	hp	4.2	5.4	6.7	8.3	10	12	13.3
Cooling Capacity at 5°C Supply ¹	Watts	6100	8100	10300	11700	15600	17500	19200
Cooling Capacity at 10°C Supply	Watts	7500	9700	12500	14200	18800	21200	24400
Cooling Capacity at 15°C Supply	Watts	8900	11600	14900	17100	22300	25200	28400
Cooling Capacity at 20°C Supply	Watts	10600	13800	17900	20800	26400	29500	35600
Tank Holding Capacity	L				180			
Dry Weight	Kg	270			310			
Overall Size	mm	1295L x 790W x 1340H				1495L x 790W x 1340H		
Power Requirements		415V 50Hz 3 Phase plus Neutral (4A Max)						
Maximum Current Draw ²	A/phase	13.3	15.7	20.2	22.9	27.5	33.2	34.1
Power Cable (5m supplied)		2.5mm ² 4 Core + Earth Flexible V75 O/C			4.0mm ² 4 Core + Earth V75 O/C		6.0mm ² 4 Core + Earth V75 O/C	
Pump Option 4 – 0.70kW								
Water Flow Rate at Maximum Pressure	L/hr (kPa)				1200L/hr at (240)			
Water Flow Rate at Minimum Pressure	L/hr (kPa)				7000L/hr at (90)			
Pump Option 5 – 1.10kW								
Water Flow Rate at Maximum Pressure	L/hr (kPa)				1200L/hr at (400)			
Water Flow Rate at Minimum Pressure	L/hr (kPa)				7000L/hr at (180)			
Pump Option 6 – 1.40kW								
Water Flow Rate at Maximum Pressure	L/hr (kPa)				1200L/hr at (530)			
Water Flow Rate at Minimum Pressure	L/hr (kPa)				7000L/hr at (240)			

TECHNICAL DATA - R SERIES III

		R1500A	R2000A	R2500A
Compressor horsepower	hp	15	20	25
Cooling Capacity at 5°C Supply ¹	Watts	25,000	36,000	45,000
Cooling Capacity at 10°C Supply	Watts	29,000	40,000	51,000
Cooling Capacity at 15°C Supply	Watts	36,000	49,000	62,000
Cooling Capacity at 20°C Supply	Watts	43,000	54,000	67,000
Tank Holding Capacity	L	500		
Dry Weight	Kg	500	600	650
Overall Size	mm	2015L x 860W x 1545H		
Power Requirements		415V 50Hz 3 Phase plus Neutral (4A Max)		
Maximum Current Draw ²	A/phase	37	41	49
Power Cable (5m supplied)		6mm ² 4 Core + Earth V75 O/C		10mm ² 4 Core + Earth V75 O/C
Pump Option 7 – 1.50kW				
Water Flow Rate at Maximum Pressure	L/hr (kPa)			3,000L/hr at (400)
Water Flow Rate at Minimum Pressure	L/hr (kPa)			14,000L/hr at (200)
Pump Option 8 – 2.20kW				
Water Flow Rate at Maximum Pressure	L/hr (kPa)			3,000L/hr at (500)
Water Flow Rate at Minimum Pressure	L/hr (kPa)			14,000L/hr at (250)
Pump Option 9 – 2.20kW				
Water Flow Rate at Maximum Pressure	L/hr (kPa)			3,000L/hr at (650)
Water Flow Rate at Minimum Pressure	L/hr (kPa)			14,000L/hr at (350)

Options

Remote Condenser, Water Cooled Condenser, Close Tolerance, Quiet, Floodback Protection, Remote Control, Web Enable, Potable Water, Redundancy Configuration, UPS, Low Tank Level Alarm and Castors.



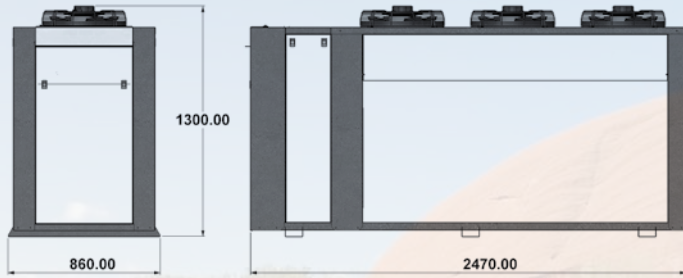
T Series Chillers

Giving a cost competitive option for large heat load applications, the T Series chiller units are designed to be easily ganged together to provide large capacities for high heat loads.

The tankless chillers provide a cost effective cooling solution for large heat load applications where flow and heat loads do not fluctuate appreciably. If heat loads fluctuate we recommend an external buffer tank be installed to absorb changes and give a consistent load for the chiller.

Features

- High efficiency fully hermetic scroll compressor
- Large surface area condenser coupled to variable speed fans
- Optimum performance
- Liquid refrigerant receiver ensures consistent operation over conditions
- Integral flow monitoring ensures trouble free evaporator
- Digital temperature control
- Easy access panels for quick maintenance
- Ability to gang chillers for redundancy operation



TECHNICAL DATA

		T1500A	T2000A	T2500A
Compressor nominal horsepower	hp	15	20	25
Cooling Capacity ¹ at 5°C Supply ² ($\Delta T^3 = 5K$)	Watts	27,000	37,500	47,000
Cooling Capacity at 10°C Supply	Watts	32,500	45,000	57,000
Cooling Capacity at 15°C Supply	Watts	39,500	54,000	68,000
Cooling Capacity at 20°C Supply	Watts	47,000	68,000	81000 ⁴
Dry Weight	Kg	600	700	750
Power Requirements		415V 3 Phase Plus Neutral (4A Max)		
Maximum Current Draw	A/phase	32	41	51
Power Cable (3m supplied)		6mm ² 4 Core + E V75 OC	10mm ² 4 Core + E V75 OC	
All T Series Chillers are supplied with a flow switch that prevets operation at flow rates less than 60L/min				
Pressure Drop Across Chiller at 100L/min	kPa	30	20	15
Pressure Drop Across Chiller at 150L/min		65	40	25
Pressure Drop Across Chiller at 200L/min		115	75	45
Pressure Drop Across Chiller at 250L/min		175	115	70
To calculate the nessesary flow requirements for a particular model/tempreture combination use the following formula: Cooling(kW) = Cp x ΔT x flow(kg/s) CP = Specific Heat Of Fluid Being Cooled in kj (~4.2kj/kg.K for water) ΔT = The difference between the inlet and outlet tempratures Flow Rate = Desired flow rate in kg/s (assume 1 kg/s = 1 L/s for water)				
¹ All cooling capacities based on operation with 45°C ambient tempratures. Add 15% for operation with 35°C ambient tempratures.				
² This is the temprature leaving the chiller °C				
³ ΔT is the temprature difference between the water entering and leaving the chiller and is dependent on the flow rate through the chiller.				
⁴ Exceeds operation in 45°C ambient tempratures, rated for 35°C maximum ambient.				

I Series Chillers

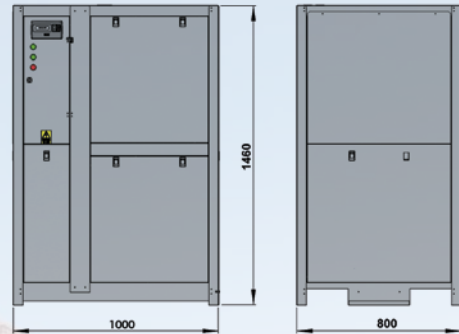
I Series chillers are designed to be close to the application and installed in an indoor environment like office buildings. Using the cooling tower water from the building to cool the condenser, they provide an efficient cooling solution for data centres and scientific equipment applications.

The chillers have microprocessor controllers for reliable, accurate control and a high degree of user interface. Using a buffer tank and close tolerance control, the units are designed to provide a constant flow to precision systems servicing critical equipment.



Features

- Back flow prevention as standard
- Integrated 80 litre buffer tank
- Compressor noise jacket as standard for quiet operation
- 20 and 40 kW capacities
- Condenser water interruption safety cut out
- Visible flow rate reading
- Hot gas bypass control for prolonged compressor life
- Can be plumbed through a roof or through a false floor (must be specified at time of order)



Options

- Floor stand for mounting on raised floor
- Remote display and control panel
- Dual installation for redundancy

TECHNICAL DATA

		I20	I40
Compressor Horsepower	hp	12	24
Cooling Capacity at 8°C Supply*	Watts	24000	42000
Tank Capacity	Ltr	80	80
Dry Weight	Kg	300	400
Power Requirements		415V 3 Phase Plus Neutral (4A Max)	
Maximum Current Draw	AMPS	29	38
Power cable (Supplied)		6.0mm (I20) 10mm (I40) 4 Core Plus Earth V75 0/C	
Refrigerant Charge - R407	Kg	3	5
Chilled Water Flow	l/s	1.5	2.1
Pump Power Consumption	Amps	9.1	10.5
Compressor Power Consumption	AMPS	20.7	24.5
Pump - Option 6			
Water Flow Rate at Maximum Pressure	L/hr (kPa)	1200 (400)	
Water Flow Rate at Minimum Pressure	L/hr (kPa)	6000 (130)	
Pump - Option 7			
Water Flow Rate at Maximum Pressure	L/hr (kPa)		3000 (400)
Water Flow Rate at Minimum Pressure	L/hr (kPa)		14000 (200)

* Based on condensing water at 30°C

1. Maximum length of process water pipe between chiller and the data racks 30 m of 1" pipe for R1200UW.

2. Maximum length of process water pipe between chiller and the data racks 30 m of 1.5" pipe for R2400UW.

* Minimum water flow to the condenser 1.5 l/s at 350 kPa.

S Series Chillers Compact Re-Circulating Chillers

The S Series range of compact chillers delivers exceptional cooling performance within the laboratory industry. The refrigeration circuit has been designed to cope with high ambient temperatures so the unit can be installed in locations where air conditioning is not available. Integrated castors permits the unit to slide easily under desks. All panels are easily removable, ensuring easy cleaning and making service access a breeze.

Features

- Microprocessor controlled
- Variable speed fan maintains optimal performance with minimal noise
- Integral HDPE tank complete with moulded insulation
- Low liquid level protection
- Pressure indicator
- Refrigerant R134a



TECHNICAL DATA

		S150	S200	S275*	S360*
Cooling Capacity at 5°C Supply	Watts 20°C Ambient	600	900	1100	1400
	45°C Ambient	400	500	600	900
Cooling Capacity at 10°C Supply	Watts 20°C Ambient	900	1200	1600	2100
	45°C Ambient	600	800	1000	1300
Cooling Capacity at 15°C Supply	Watts 20°C Ambient	1100	1600	2100	2700
	45°C Ambient	800	1000	1400	1800
Cooling Capacity at 20°C Supply	Watts 20°C Ambient	1500	2100	2800	3600
	45°C Ambient	1000	1400	1800	2400
Cooling Capacity at 25°C Supply	Watts 20°C Ambient	1800	2500	3500	4400
	45°C Ambient	1200	1800	2300	2900
Tank Holding Capacity	L	16			
Dry Weight	Kg	40		45	
Power Requirements	240V 50Hz Single Phase				
Dimensions	Height	Width		Depth	
	575/675mm*	410mm		670mm	
Pump Option PC – Low Pressure High Flow Circulating Pump					
Pump Flow At Maximum Pressure	L/min (kPa)	1L/min at 50kPa			
Pump Maximum Flow (Pressure)	L/min (kPa)	50L/min at 14kPa			
Pump Option PT – Medium Pressure Medium Flow Turbine Pump					
Pump Flow At Maximum Pressure	L/hr (kPa)	5L/min at 350kPa			
Pump Maximum Flow (Pressure)	L/hr (kPa)	32L/min at 50kPa			
Pump Option PD – High Pressure Variable Speed Fixed Displacement Pump – Speed Selectable Via Control Panel					
Pump Flow At Maximum Pressure	L/hr (kPa)	Up to 7L/min at 800kPa			
Pump Maximum Flow (Pressure)	L/hr (kPa)	Up to 19L/min at 200kPa			

L Series Chillers

The L Series chillers are designed to operate in an outdoor environment, providing large volumes of chilled water for any application. They are easy to operate and with microprocessor as standard it can be tailored to run any application. Aqua Cooler uses only the highest quality components so you can be assured that the chillers will give trouble free operation. The chillers have plate heat exchangers in a 500 litre buffer tank to dampen the thermal shocks.

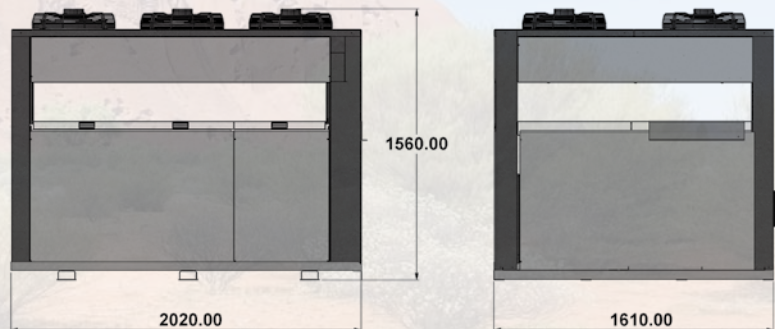
Features

- Robust weather proof construction
- Microcompressor control as standard
- Dual refrigeration for higher reliability
- Supply direct from 500L holding tank to minimize pumping requirements
- Separate water circuit(s) for chilling
- Tandem Plate Heat Exchanges
- HDPE insulated tank
- 110kW at 10 degrees supply
- Steel Fabricated frame
- Low flow, temperature & pressure alarms
- High temperature & pressure alarms
- Motor Circuit Breakers
- R407C refrigerant
- Braized copper pipework



Options

- Remote condenser
- Remote Control & Indicators
- LCD
- Various pumps
- Floodback prevention
- Compressor Soft Starter to reduce inrush current
- Tankless



TECHNICAL DATA

		L3500	L5000	L6000
Compressor Horsepower	hp	2 x 15	2 x 20	2 x 25
Cooling Capacity at 5°C Supply*	Watts	50000	72000	90000
Cooling Capacity at 10°C Supply	Watts	58000	80000	102000
Cooling Capacity at 15°C Supply	Watts	72000	98000	124000
Tank Capacity	Ltr	500	500	500
Dry Weight	Kg	1100	1200	1300
Power Requirements		415V 3 Phase Plus Neutral (4A Max)		
Maximum Current Draw	A/Ph	74	82	98
Power cable (Supplied)		6.0m 4 Core Plus Earth V75 0/C		
Refrigerant Charge - R407	Kg	50	58	62
Supply pump options		P8	P9	P10
Water Flow Rate at Maximum Pressure	L/min (kPa)	50 (500)	50 (650)	200 (210)
Water Flow Rate at Minimum Pressure	L/min (kPa)	230 (250)	230 (350)	30000 (140)

* Based on ambient temperature of 45°C. Increase cooling capacity by 20% in a 35°C environment.

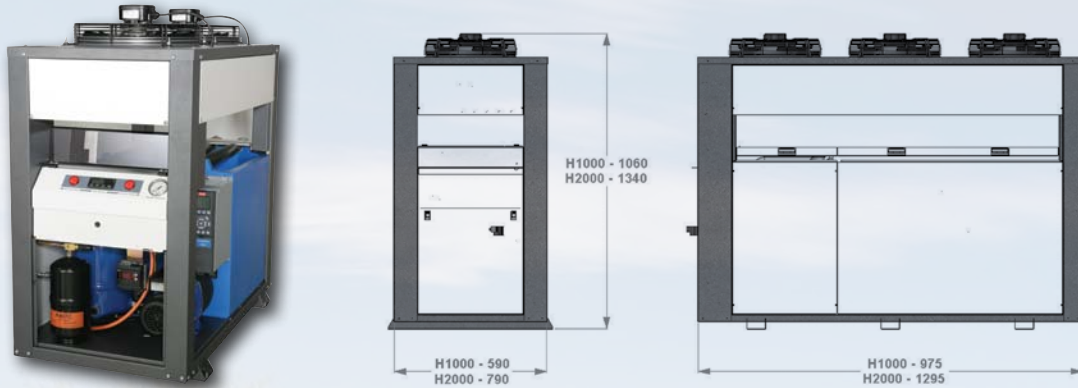
H Series Chillers

The H Series range of chillers is a highly developed, market leading water chiller. It is designed to provide maximum flexibility in a wide range of cooling applications.

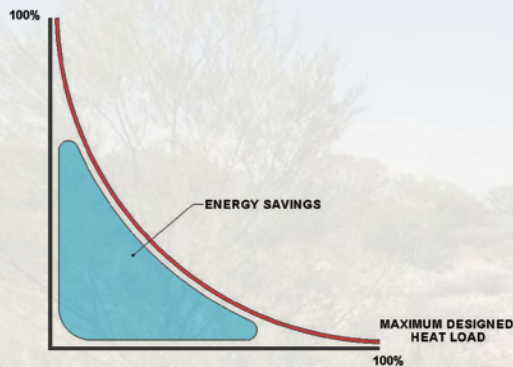
Features include an electronic TX valve, variable speed compressor and variable speed fan controllers to cater for a wide range of complex applications.

For applications with continuously varying heat loads the units can be up to 20% more efficient than standard chillers.

For applications where there is a constant heat load, the chillers run with a minimum of start ups giving long compressor life and efficient running costs in all but the highest heat loads.



EFFICIENCY SAVINGS



Industrial chillers are normally specified to correspond with maximum expected heat loads. Since these loads vary throughout the day and throughout the year, the chiller designed for maximum load will be oversized for long stretches (it has been estimated that, on average, systems are running partially loaded more than 65% of the time).

Speed reduction provides the opportunity, during typically long periods of reduced system load, to, in effect, reduce the capacity of the compressor, consequently reducing power consumption. Moreover, on/off cycling is significantly reduced or avoided altogether.

TECHNICAL DATA - H SERIES

H Model	Single Variable Speed Compressor Chillers				
		H1	H2	H3	H4
Compressor model		VTZ 038	VTZ 086	VTZ 171	VTZ 242
Compressor Horsepower	hp	1.3 to 3.4	4.2 to 13.3	5 to 15	7 to 21
Cooling Capacity for 10° supply @ Min Hz	kW	1.5	6	9	12.8
Cooling Capacity for 10° supply @ 50Hz	kW	3.1	7.5	14.2	21.2
Cooling Capacity for 10° supply @ Max Hz	kW	7	13.5	29	40
Optional Tank* Capacity	Ltr	80	180	180	180
Dry Weight	kg	190	320	334	352
Refrigerant Charge - R407C	kg	3.5	9	12	24
Max. Current Draw	A/Ph	12	20	34	48
Power Requirement	Star	415V 3ph + N	415V 3ph + N	415V 3ph + N	415V 3ph + N
External Dimensions	mm	975 x 590 x 1060	1495 x 790 x 1340	1495 x 790 x 1340	1495 x 790 x 1340

Please Note. Variable Speed Compressors can be coupled with Fixed Speed Scrolls or Reciprocating Compressors to produce a chiller with the advantages of a Variable Speed Drive at larger cooling capacities. These double type compressor chillers have external dimension similar to the L Series chillers.



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