



HFC  
R-134a

# Water Cooled Chillers



Enviromental  
Respect



Specific Solution  
for each project



Lowest cost  
of ownership



# Water Cooled Chillers

Chillers are generally used in large commercial, residential, Hospital and buildings to provide chilled-water. Chillers usually located on the roof or basement of building. It cools water between 42 and 45°F. Chilled water is pumped throughout the building and connected to air handling unit as needed.

## Compressors

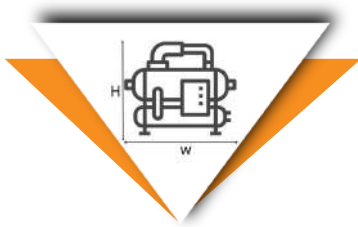
The high-efficiency Semi-hermetic compressors used on the **ARAD ENERGY ERSA** chillers have the best reliability in the industry. The compressors are equipped with suction and discharge service valves, a crankcase heater, an oil sight glass, The compressors have thermal protection that utilizes thermostats embedded in the motor windings. The compressors have a force feed lubrication system and are protected by an electronic oil pressure control.





### Low Electricity Consumption

The energy consumption of device has been optimized and controlled by using the world's modern technology, variable speed compressors and invertors.



### Customizable Dimensions

This company by relying on up-to-date engineering knowledge is able to customize and produce the chillers in various dimensions due to the limitations.



### Appropriate Price

This company by using modern software and optimized and standard methods, has made it possible to offer the products with a lower price than other similar products.

## Reciprocating Compressor

- Used mostly for less than 530 KWR range
- Has dominated market for many years due to their lower capital cost and ability to cover large ranges of capacity
- Reciprocating compressors usually requires more refrigerant than other compressor types and are not as energy efficient



## Screw Compressor

- Increasingly popular among designers because of low maintenance requirements, low vibration and noise levels
- Used predominantly in the 530 – 1055 kW cooling capacity range
- Market growth expected at the expense of reciprocating chillers due to energy efficiency, accurate control and reduced noise levels



## Evaporator.

**ARAD ENERGY ERSA** chiller has Shell-and tube evaporator .

Shell is constructed from carbon steel.

The copper tubes (INNER GROOVED) have enhanced heat transfer surfaces to improve efficiency. Tubes are roller expanded into carbon steel tube sheets.

The heads are constructed from steel and are removable to permit access to the tubes from either end.. The tube side design working pressure is 250 PSIG @ 100°F, and the shell side design working pressure is 190 PSIG @120°F.



## Condensers

**ARAD ENERGY ERSA** chillers use the series shell and tube condenser.

These condensers utilize the latest state of the art internally and externally enhanced copper refrigerant. The shell is constructed from carbon steel, and the copper tubes are roller expanded into the carbon steel tube sheets.

The cast iron heads are removable to allow mechanical cleaning of the tubes. The condensers have sufficient volume to store the complete refrigerant charge, and are complete with a relief valve. The condensers are constructed and inspected to comply with the current ASME code for unfired pressure is 150 PSIG@150°F, and the shell side design pressure is 350 PSIG@250°F.



## Control Center.

**ARAD ENERGY ERSA** chillers get complete with a fully enclosed steel control panel. Hinged full view doors and quarter-turn latches are provided for easy access and security. The following power and control features are standard on all models:

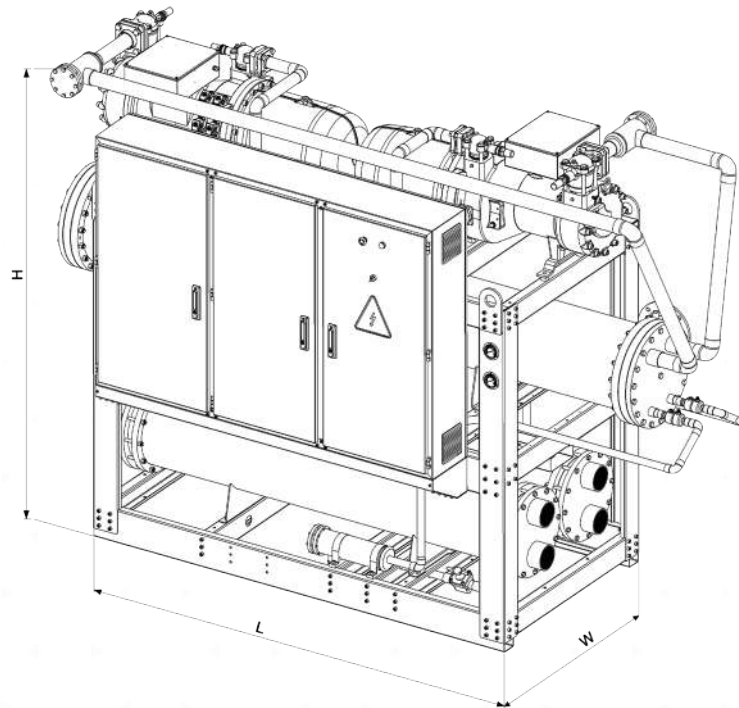
- Control circuit switches
- Active pump down control
- Compressor oil safety
- Compressor high discharge pressure safety
- Low pressure freeze protection
- Return water operating temperature control
- Control circuit protection fuses
- Power and control circuit terminal blocks
- Individual compressor contactors and fusing
- Discharge, suction, and oil pressure display
- Compressor run and cooling lights for each circuit



## Range Of Chiller Efficiencies

Chiller efficiency is measured as Coefficient of Performance (COP). COP is defined as “the ratio of the rate of heat removal to the rate of energy input”. This measurement is usually quoted at Full Load capacity of the chiller or at Part Load conditions. The development of the Integrated Part Load Value (IPLV) when assessing the performance and efficiency of chillers is significant especially considering that operation is usually at ‘off design(99%)’ rather than ‘design conditions (1%)’ for majority of its operating time.

# Water Cooled Chillers



Model		Water cooled screw chiller				
		AEE-SC-W-100/1	AEE-SC-W-150/2	AEE-SC-W-200/2	AEE-SC-W-250/2	AEE-SC-W-300/2
Cooling Capacity	Ton	100	150	200	250	300
Cooling Capacity	Kw	350	525	700	875	1050
Chilled Water	Type	Shell & Tube				
	Flow Rate (GPM)	240	360	480	600	720
	Inlet Temp	12°C				
	Outlet Temp	7°C				
	Pressure Drop (mH <sub>2</sub> O)	6.0	5.5	6.0	6.5	7.2
	Water Pipe Size(mm)	DN 100	DN 100	DN 125	DN 125	DN 125
Compressor	Type	Semi Hermetic Screw Chiller				
	Qty × Power (Kw)	1×72	1×105	2×72	2×87	2×105
	Energy Steps	25-50-75-100%				
Cooling Water	Type	Shell & Tube				
	Water Flow (GPM)	385	575	770	1020	1218
	Inlet Temp	32°C				
	Outlet Temp	37°C				
	Pressure Drop (mH <sub>2</sub> O)	5.5	5.5	5.5	6.0	6.5
Refrigerant	Type	R134a				
Expansion Valve		Electronic/Carel				
Controller		Fully Automatic/Carel				
Dimension	Length (mm)	3200	3500	3700	4300	4300
	Width (mm)	1200	1300	1300	1600	1600
	Height (mm)	1400	1600	1650	1950	2200
Operating Weight	kg	2600	3560	3950	4320	5600



Design to execution



24-hour support



High quality parts



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