



HFC
R-134a

Air Cooled Chiller



Eco-Friendly



Specific Solutions
for Every Project



Assurance of The Best
and The Lowest Price



Air Cooled Chiller

Introduction

Chillers produce water that is used by building space cooling equipment and many industrial processes. Chillers remove heat from a circulating cold water loop and release that heat to the outside through a condenser.

Compressors

The high-efficiency semi-hermetic compressors used at 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 and an oil sight glass. The compressors have thermal protection that utilizes thermostats embedded in the motor windings. The compressors have force feed lubrication system and are protected by an electronic oil pressure control.

Scroll 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.
- Scroll compressors appear to be more reliable than reciprocating chillers.



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

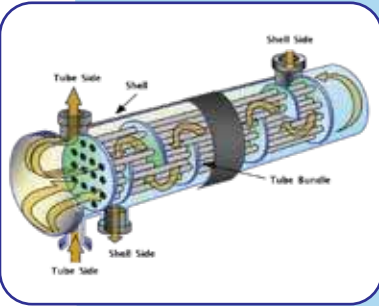


Evaporator

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.

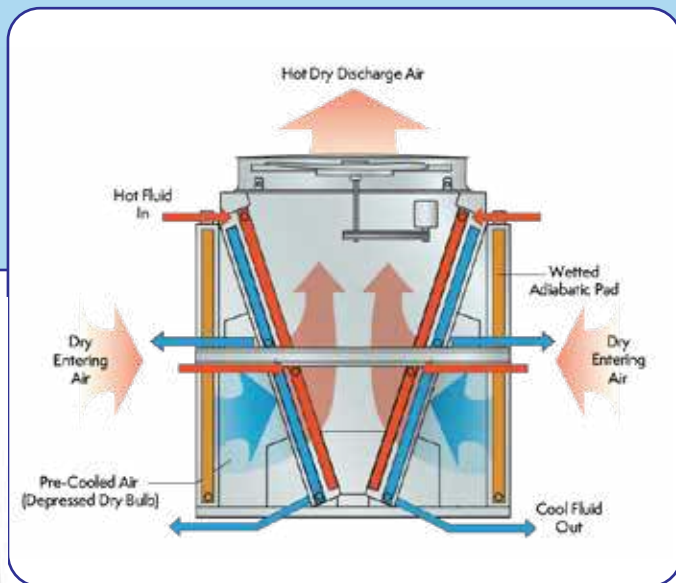


Condensers

ARAD ENERGY ERSA chillers use the series aircooled condenser.

In air-cooled condensers, condenser heat is rejected directly to the ambient air. Thus, the condensing temperature is a function of the ambient air dry-bulb temperature. The obvious advantage of air-cooled condensers relative to water-cooled condensers is that cooling water is not needed. The main disadvantage of air-cooled condensers relative to water-cooled condensers is typically higher capital cost; water is a better heat transfer medium than air, and so larger heat rejection equipment is typically needed for air-cooled power plants.

Since the condensing temperature is a function of the dry-bulb ambient air temperature, air-cooled plants perform poorly in hot summer weather. Wind velocity also plays a significant role. The distance between two parallel air-cooled condensers must be considered to avoid thermal influence, as hot discharge air from the windward air condenser may impact the intake air of the leeward air condenser.



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



Eco-Friendly

With the aim of protecting the environment, we use specific gases which do not harm ozone layer and environment in our products.



Specific Solutions for Every Project

Arad Energy Ersa Company relying on its abilities and many years of experience in design and consulting of air conditioning projects, this company is able to offer the best solutions based on projects' limitations. This company can also design and implement according to the consumers' desire and opinion.



Assurance of The Best and The Lowest Price

We manufacture our products with high quality fragments and optimized design . We provide you our products with the lowest and the most appropriate price compared to similar products.

Expected Chiller Service Life

Service lifetime is based around the time in which a particular system or component remains in its original service application. Estimated service lifetime of new equipment can be obtained from manufactures. For consistency the datum for chiller service longevity has traditionally been based on ASHRAE “Estimates of Service Lifetime” where chiller lifetime is between 20 to 23 years.

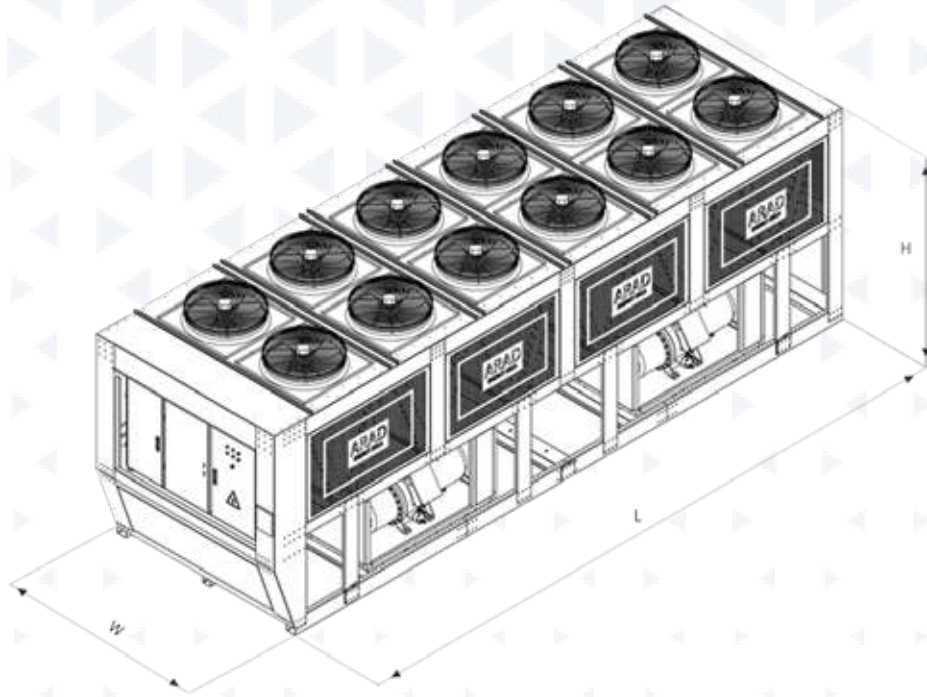
The changes in design, design standards, manufacturing standards, materials and components has raised a re-estimate amongst industry that believes air cooled chillers now have a longevity of 10 to 15 years, with cooled chillers between 10 and 20 years.

This modified approach to service lifetime expectancy significantly alters economic chiller analysis when considering replacements or new installations.

Range Of Chiller Efficiencies

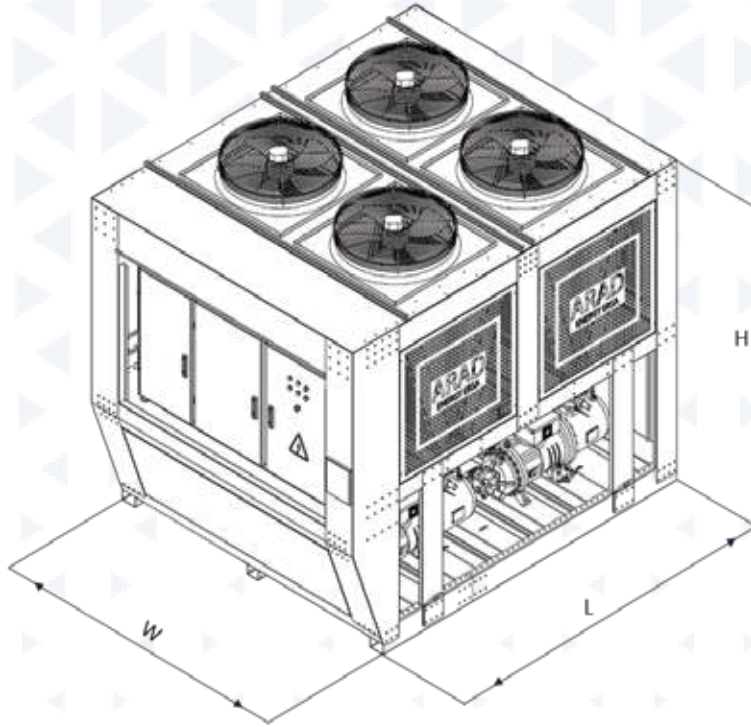
Chiller efficiency is measured as Coefficient of Performance (COP). COP is defined as “the ratio of the rate of heat removal to the rate of energy input”. This measurement is usually quoted at full load capacity of the chiller or at Part Load conditions. The development of the Integrated Part Load Value (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.

Air cooled Chiller Screw






Model		Air Cooled Screw Chiller									
		AEE-SC-A-80/1	AEE-SC-A-140/1	AEE-SC-A-160/2	AEE-SC-A-220/2	AEE-SC-A-250/2	AEE-SC-A-280/2	AEE-SC-A-360/2	AEE-SC-A-400/2	AEE-SC-A-420/2	AEE-SC-A-480/2
Cooling Capacity	Ton	52	75	96	127	145	175	210	236	255	298
	Kw	182	260	336	445	510	612	740	826	894	1040
Water	Flow Rate (GPM)	150	220	280	340	390	490	630	720	770	890
	Inlet Temp	12°C									
	Outlet Temp	7°C									
	Water Pipe Size(mm)	DN 100	DN 100	DN 125	DN 125	DN 160	DN 160	DN 200	DN 200	DN 200	DN 200
Compressor	Type	Semi Hermetic Screw Chiller									
	Qty x Power(Kw)	2x30.3	2x45	2x55	2x72	2x78	2x95	2x105	2x131	2x143	2x163
	Energy Steps	25-50-75-100%									
Fan	Type	Axial									
	Qty x Power(Kw)	4x1.8	6x1.8	8x1.8	10x1.8	12x1.8	14x1.8	16x1.8	18x1.8	20x1.8	22x1.8
	Air Flow (m³/h)	92000	138000	184000	230000	276000	322000	368000	414000	460000	506000
Evaporator	Type	Shell & Tube									
	Water Flow (GPM)	150	220	280	340	390	490	630	720	770	890
	Pressure Drop (mH ₂ O)	4.2	4.5	5.2	5.4	6	6.5	6.5	6.7	6.7	7
Refrigerant Type	R134a										
Expansion Valve	Electronic/Carel										
Controller	Fully Automatic/Carel										
Total Power Input	Kw	67.8	99	126	162	177	215	238	294	322	365
	Length (mm)	3100	3860	5550	6550	7650	8720	10200	11500	12700	14000
Dimension	Width (mm)	2495	2495	2495	2495	2495	2495	2495	2495	2495	2495
	Height (mm)	2365	2365	2564	2564	2564	2564	2700	2700	2700	2700
	Operating Weight	kg	3100	3750	4800	5750	7000	8250	9700	10900	12100


Air cooled Chiller Scroll




Model		Air Cooled Scroll Chiller										
		AEE-SL-A-15/2	AEE-SL-A-20/2	AEE-SL-A-27/2	AEE-SL-A-30/2	AEE-SL-A-50/2	AEE-SL-A-60/2	AEE-SL-A-80/2	AEE-SL-A-100/2	AEE-SL-A-120/2	AEE-SL-A-150/2	AEE-SL-A-180/2
Cooling Capacity	Ton	12	16	20	25	38	46	62	78	96	115	135
Cooling Capacity	Kw	42	56	70	88	133	161	217	263	336	405	513
Water	Flow Rate (GPM)	36	45	61	75	114	140	190	230	280	340	410
	Inlet Temp	12°C										
	Outlet Temp	7°C										
Water	Water Pipe Size(mm)	DN 63	DN 63	DN 75	DN 75	DN 100	DN 100	DN 100	DN 125	DN 125	DN 125	DN 160
	Compressor	Hermetic Scroll Chiller										
Compressor	Type	Hermetic Scroll Chiller										
	Qty xPower (Kw)	2x5.5	2x8.4	2x10.2	2x12.8	2x20.9	2x25.3	4x16.4	4x20.9	4x25.3	6x20.9	6x25.3
Compressor	Energy Steps	25-50-75-100%										
	Fan	Axial										
Fan	Type	Axial										
	Qty xPower (Kw)	2x1.3	2x1.8	2x1.8	2x1.8	3x1.8	4x1.8	6x1.8	6x1.8	8x1.8	10x1.8	12x1.8
Fan	Air Flow (m ³ /h)	32000	48000	48000	48000	72000	92000	138000	138000	184000	230000	276000
	Evaporator	Shell & Tube										
Evaporator	Type	Shell & Tube										
	Water Flow (GPM)	36	45	61	75	114	140	190	230	280	340	410
Evaporator	Pressure Drop (mH ₂ O)	3.7	4.1	4.5	4.5	4.5	4.5	4.5	4.5	5.2	5.4	6
	Refrigerant Type	R407c										
Expansion Valve	Electronic/Carel											
Controller	Fully Automatic/Carel											
Total Power Input	Kw	13.6	20.6	24	29	46	59	78	92	119	138	179
Dimension	Length (mm)	1900	2410	3000	3000	4250	3100	3860	3860	5550	6300	7230
	Width (mm)	1070	1109	1200	1200	1200	2495	2495	2495	2495	2495	2495
	Height (mm)	1720	1695	2000	2000	2300	2365	2365	2365	2564	2564	2564
Operating Weight	Kg	750	900	1300	1550	1950	2900	3400	3900	5230	6150	7000




 Design to Implementation  24-hour Support  Fragments' High Quality


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