

General Catalog



Arad Energy Ersas

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Sometimes numbers say more than a thousand words

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knowledge-based HVAC
company in Iran

550,000

m² air conditioned space

200

number of project

10

Sales
Agency

45,000

Ton production unit

Complete range of products

1 to 1,000 Ton



Sustainable Comfort

Eco-Friendly , Specific solutions for each project.

Lowest cost of ownership in two words:



Sustainable Comfort

Arad Energy Ersa: as subset of Energy Arta Eurasia Company is experienced in the field of consultation, design and manufacturing of residential and industrial HVAC equipment, which has established in 2013.

This company with 'Arad Energy Ersa' trade mark is proud of using high technology equipment and good servicing to customers.

Our experienced designing team is continuously searching the recent knowledge which leads us to provide high quality products.

Providing consultancy, expertise and design of HVAC systems including projects that range from official, retail, industrial, high residential buildings to clean room and hospitals are the another services of the company.

Our team are dedicated to delivering outstanding solutions and services to our customers to reach their satisfaction.



Eco-Friendly

Decreasing energy consumption, cutting carbon emissions and making the most extensive use of renewable sources.



Specific Solutions for each project

With wide range of products there are solutions for every project.



Lowest cost of ownership

Thanks to cutting-edge solution designed around technological innovation and sustainability in order to initial smart investment, running costs and maintenance , and to increase the total lifetime cycle of the product.



Sustainable Comfort

High quality of production guarantee.

Air cooled screw chiller



- Cooling capacity : 50 to 300 (USR Ton)
- Refrigerant: R134a
- Low noise
- High efficiency



Please Scan Here

Water cooled screw chiller



- Cooling capacity : 100 to 300 (USR) Ton
- Refrigerant: R134a
- High efficiency



Please Scan Here

Hygienic Air Handling Unit:



- Air Flow: 2,000- 60,000 m³/h
- Standard: Gmp



Please Scan Here

Air Handling Unit with Wheel Dehumidifier



- Air Flow: 2,000- 20,000 m³/h
- Control RH: 15-20 %
- Standard: Gmp



Please Scan Here

Air Handling Unit



Air Flow: 3,000-60,000 m³/h

Optional accessories

- Electric heater
- Heating coil
- Medium filter
- Humidifier
- Inverter
- Electrical protector



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Roof Top Package Unit



- Cooling capacity: 5 to 50 (USR Ton)
- Low noise



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Mini chiller (Air cooled)



- Cooling capacity : 2 to 10 (USR Ton)
- Hermetic scroll compressor
- Intelligent defrosting and anti-freezing
- Fully automatic control



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Concealed Fan coil



- Air Flow: 600 to 2,000 (CFM)
- Low noise
- Flexible dimension



Please Scan Here

Ducted Fan coil



- Air Flow: 200 to 1,000 (CFM)
- Low noise
- High quality



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R-134a

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1. Air Cooled Chiller



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

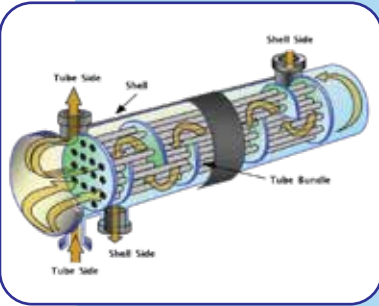
- Increasingly popular among designers because of low maintenance Requirements, low vibration and noise levels
- Used predominantly in the 530-1055 kW cooling capacity range
- Market growth expected at the expense of reciprocating chillers due to energy efficiency, accurate control and reduced noise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

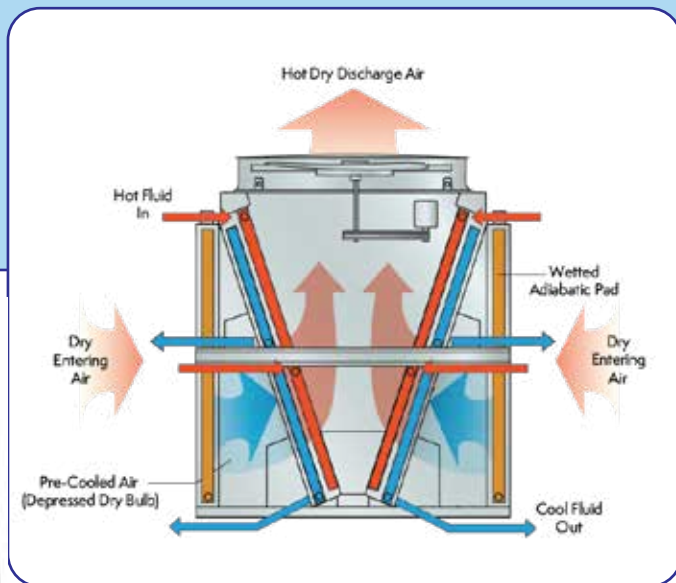


Condensers

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.

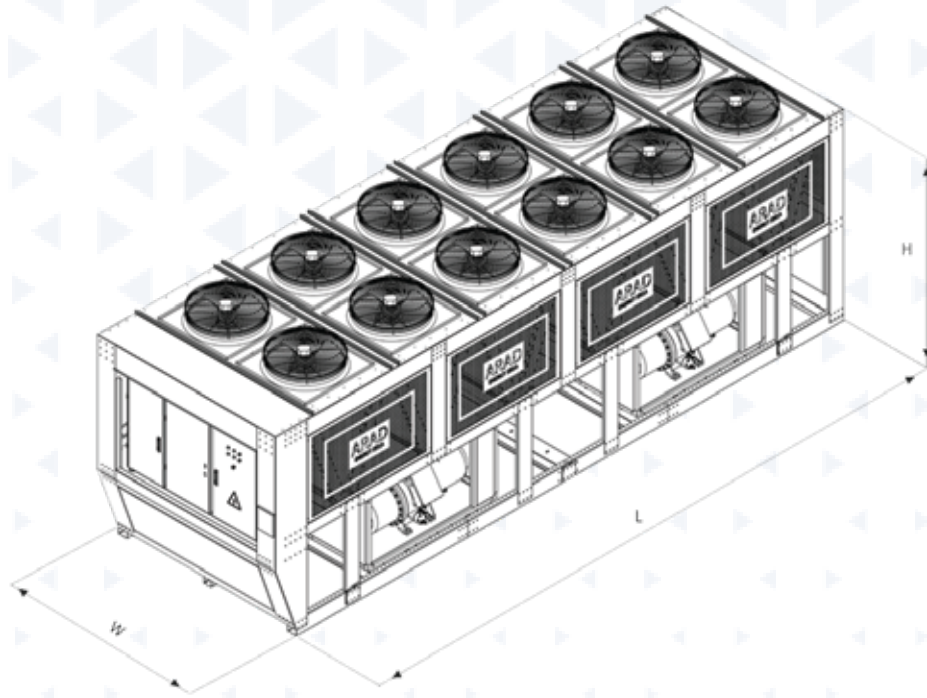
The changes in design, design standards, manufacturing standards, materials and components has raised a re-estimate amongst industry that believes air cooled chillers now have a longevity of 10 to 15 years, with cooled chillers between 10 and 20 years.

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

Range Of Chiller Efficiencies

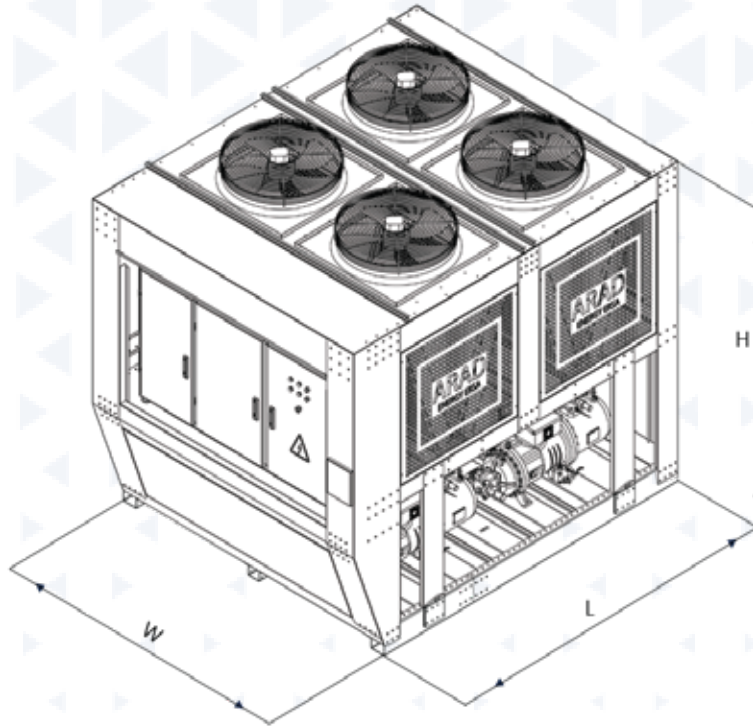
Chiller efficiency is measured as Coefficient of Performance (COP). COP is defined as “the ratio of the rate of heat removal to the rate of energy input”. This measurement is usually quoted at full load capacity of the chiller or at Part Load conditions. The development of the Integrated Part Load Value (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
Cooling Capacity	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
Dimension	Length (mm)	3100	3860	5550	6550	7650	8720	10200	11500	12700	14000
	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	13200

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 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	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
	Energy Steps	25-50-75-100%										
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
	Air Flow (m³/h)	32000	48000	48000	48000	72000	92000	138000	138000	184000	230000	276000
Evaporator	Type	Shell & Tube										
	Water Flow (GPM)	36	45	61	75	114	140	190	230	280	340	410
	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

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2. Water Cooled Chillers



AEE

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

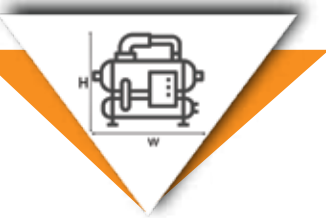
The high-efficiency Semi-hermetic compressors used on the **ARAD ENERGY ERSA** chillers have the best reliability in the industry. The compressors are equipped with suction and discharge service valves, a crankcase heater, an oil sight glass, The compressors have thermal protection that utilizes thermostats 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:

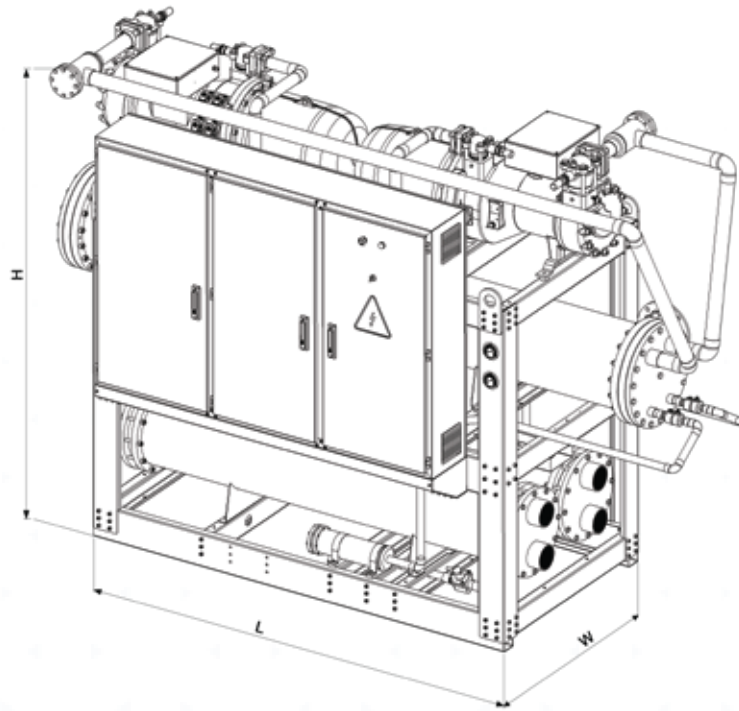
- Control circuit switches
- Active pump down control
- Compressor oil safety
- Compressor high discharge pressure safety
- Low pressure freeze protection
- Return water operating temperature control
- Control circuit protection fuses
- Power and control circuit terminal blocks
- Individual compressor 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 ₂ 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 ₂ 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

3. Hygienic Air Handling Unit



Hygienic Air Handling Unit

There are many factors which affect air quality, comfort conditions and the efficient operation of Hygienic Air Handling Units such as: Mechanical Performance, Thermal Transmission through the Air Handling Unit Casing, Air leakage , Noise Transmission, Bacteria and Fungi Protection, Air Cleanliness and Filter Efficiency, Fan and Motor Efficiency, Fan and Motor Type , Dehumidification and Humidification.

Hygienic Air Handling Units for Pharmaceutical and Bio-Pharm HVAC systems made by **Arad Energy Ers** are equipped with the main following features which provides high confidence for the clients used these AHU's in their projects till now.

- Smooth Internal Surfaces
- Anti Bacterial Sealing Materials
- Stainless Steel Drain Pans
- High Efficiency and Anti Corrosion Coils
- High Efficiency Fans
- Tight Service Door System
- Anti Vibration Fan Chassis
- Low Noise Dynamic Elements
- Effective Filtration Philosophy

Arad Energy Ers tried to take care of all Hygiene and Performance issues in manufacturing of the AHU's for pharmaceutical production by design and construct of different elements in those machines described below.



Structure & Frame

Doubled-walled Hygienic Air Handling Units in modular construction for air conditioning, horizontal or vertical mounting, completely detachable structure of housing without welding & rivet joints is the benefit of **AEE** products in this area. Each module consists of a strong self-supporting frame construction & doubled wall which makes each module suitable for horizontal or vertical mounting. The supports are made of extruded & anodized aluminum profiles. Inside of the wall of the Air handling units is so smooth and glossy and easy to dismantling and if required it could be covered with plastic outside and stainless steel of aluminum inside.

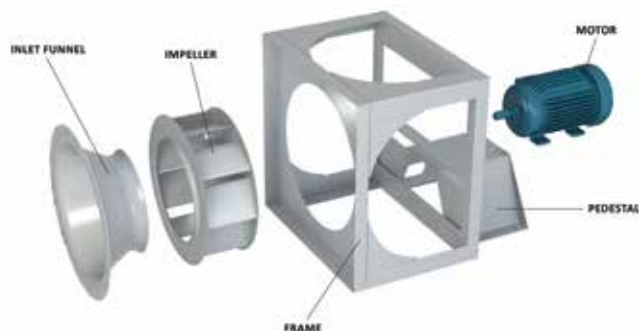
Service access doors are made in a similar construction as the panels with a strong locking handle and adjustable metal hinges to ensure an airtight door seal over the whole life span of the Air Handling Unit. All Air Handling Unit can be supplied of a galvanized steel sub-frame if requested. For large units there is an lifting eye for easy handling as standards. The individual units could be easily connected to each other by using the supplied sealing strip, connection brackets and screw.

Fans

High performance Plenum (Plug) fans with forward or backward curved blades by using direct drive connections are used in **AEE** AHU's. The rotors also are statically and dynamically balanced, low noise with at least 20,000 hours operating lifetime.

The fan and motor mounted on the base frame and the vibration damper under the frame prevent extra or unwanted vibration.

It could be single speed, two speed or steeples motor if requested.



Heating and Cooling coils

Quality heat exchangers with copper tubes and aluminum fins are used to provide maximum thermal transmission. Heating and cooling coils are made of galvanized steel and they were pressure tested to 30 bar.

The coil connection spigots are treated and an airtight rubber seal is provided where the pass through the Air handling Unit panel.

The heat exchangers can easily be withdraw from the AHU unit for servicing via service panel and the guide rail.

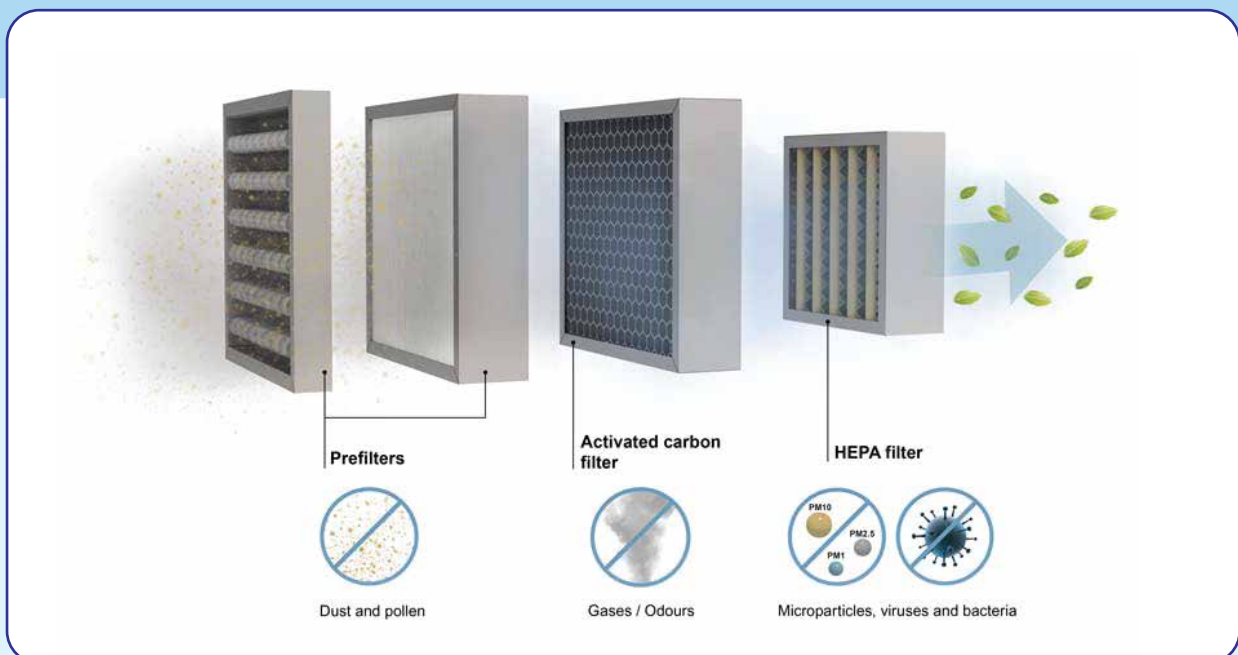
In cooling coils, In addition there is a condensate stainless steel drain pan and a 1inch spigot on the service side.

If required droplet eliminators with plastic separator blade will be fitted .



Filters

According to design, different types of filters with different efficiencies are using in **AEE** AHU's. to provide an increased surface area for high dust storing, particle capturing and separation capacity for easy maintenance, the filter cells can be withdrawn on the service side of AHU by the means of removable service panel or access door. High quality bag filters which have temperature resistance of up to 90 C, are self-supporting are also using. The bag filter are held in the place by galvanize steel frame. Installation of high flow HEPA filters also is possible in the last stage of AHU considering all required accessories like leakage free frame, integrity test points etc. Required test reports and certificates are available on client request.



Dampers

Opposite acting and aerodynamically shaped blades mounted in a anodized extruded aluminum profile frame with 30 mm flange with lip seal are used as dampers in **AEE AHU's**. The plastic gear wheels are housed in a hollow frame profile and are completely protected from dirt and dust that carried by the air stream provide long life performance and easy acting dampers for **AEE AHU's**.



Options

Several options are available on request:

- Dehumidifier section
- Heat exchanger for energy saving process
- Extra dampers for Air mixing
- Sound attenuator
- Diffusion section
- Humidifier
- Self-falling dampers
- Filter pressure test point
- Filter pressure gauges
- Inspection opening
- Maintenance switch for fan



Assurance of The Best Price

The high technical knowledge of the experienced designers and engineers of the company has made it possible to produce different products with the best fragments considering the standard of the world and optimized usage of time and materials. It has also made it possible to produce products with an appropriate price compared to similar products for our honorable customers.



Capability of Manufacturing Based on Consumer's Desired Dimension

Arad Energy Ers Company with the help of its professional and experienced designers, is ready to customize and produce the product based on consumers' needs.



Easy Cleaning Capability

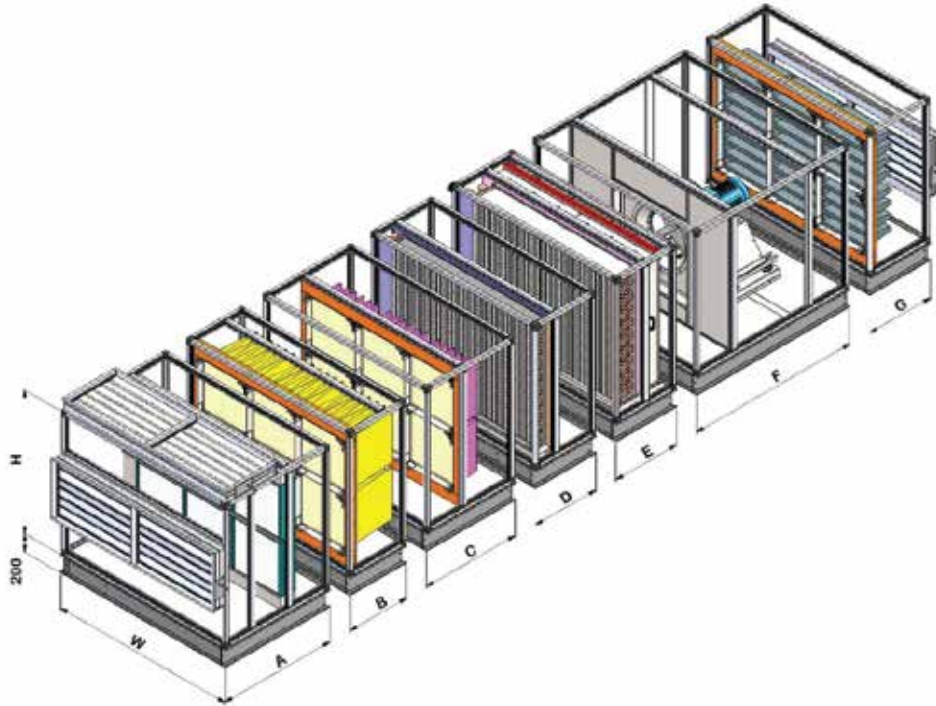
The body and internal surface of hygienic ventilation are made of stainless steel. In addition to this feature, the design of this device has another important features as all of different fragments and parts can be easily accessed, washed and cleaned.



Removing overhung particles in the air up to 99.99%

By using various filters which include different sorts of filters such as plated, bag, Hepa, Olpa and active carbon filter. This machine is able to filter hovering particles in ambient air up to 99.99%.

Hygienic Air Handling Unit



Hygienic Air Handling Unit Dimension

MODEL	L (mm)							W (mm)	H (mm)
	A	B	C	D	E	F	G		
AHU-AEE-1500-H	1000	700	850	600	600	1400	600	820	850
AHU-AEE-2000-H	1000	700	850	600	600	1400	600	920	950
AHU-AEE-2500-H	1050	700	900	700	700	1600	600	920	950
AHU-AEE-3000-H	1050	700	900	700	700	1700	600	1220	950
AHU-AEE-4000-H	1050	700	900	700	700	1800	600	1480	1000
AHU-AEE-5000-H	1200	700	900	700	700	1900	600	1480	1220
AHU-AEE-6000-H	1200	700	900	700	700	1900	600	1480	1220
AHU-AEE-8000-H	1300	700	900	700	700	2000	750	1480	1480
AHU-AEE-9000-H	1300	700	900	700	700	2000	750	1980	1220
AHU-AEE-10000-H	1300	700	900	700	700	2000	750	1980	1480
AHU-AEE-12000-H	1300	700	900	700	700	2000	750	1980	1570
AHU-AEE-14000-H	1300	700	900	700	700	2000	750	1980	1800
AHU-AEE-18000-H	1300	700	900	750	750	2000	900	1980	1980
AHU-AEE-20000-H	1300	700	900	750	750	2100	900	2350	1980
AHU-AEE-22000-H	1300	700	900	750	750	2100	1000	2350	1980

Hygienic Air Handling unit Specification													
NO	Model	Air flow (Cfm)	Cooling Coil				Heating coil				Fan		Filter
			Rows	Cooling capacity (Btu)	Air friction (in.wg)	Water pressure drop (ft.wg)	Rows	Heating capacity (Btu)	Air friction (in.wg)	Water pressure drop (ft.wg)	Model	Power (Hp)	
1	AHU-AEE-1.5(H)	1500	4	26924.4	0.33	0.41	2	75082	0.12	0.31	PFN315	2	G2 + G4 + F7 + F9 + H13
			6	34872	0.48	0.47							
2	AHU-AEE-2(H)	2000	4	36137	0.32	0.57	2	101715	0.12	0.7	PFN315	3	
			6	59189	0.47	0.87							
3	AHU-AEE-2.5(H)	2500	4	47874	0.37	0.48	2	125710	0.14	0.68	PFN315	3	
			6	74137	0.54	1.28							
4	AHU-AEE-3(H)	3000	4	61712	0.33	0.69	2	158001	0.13	0.54	PFN355	4	
			6	91812	0.49	1.59							
5	AHU-AEE-4(H)	4000	4	82518	0.37	1.09	2	211399	0.14	0.98	PFN450	5	
			6	127080	0.55	1.97							
6	AHU-AEE-5(H)	5000	4	123553	0.29	1.38	2	282419	0.11	1.08	PFN500	7.5	
			6	183540	0.42	2.34							
7	AHU-AEE-6(H)	6000	4	136068	0.32	1.32	2	333966	0.12	1.45	PFN500	10	
			6	221245	0.47	2.8							
8	AHU-AEE-8(H)	8000	4	202079	0.34	2.4	2	441172	0.13	1.1	PFN630	15	
			6	294046	0.5	2.6							
9	AHU-AEE-9(H)	9000	4	254809	0.32	2.13	2	507319	0.12	1.44	PFN630	15	
			6	357813	0.48	4.23							
10	AHU-AEE-10(H)	10000	4	278754	0.35	2.23	2	565971	0.13	1.75	PFN630	15	
			6	393199	0.51	4.48							
11	AHU-AEE-12(H)	12000	4	333554	0.35	2.4	2	678402	0.13	2.03	PFN710	20	
			6	471110	0.51	4.75							
12	AHU-AEE-14(H)	14000	4	388271	0.35	2.62	2	790828	0.13	2.38	PFN710	20	
			6	549453	0.51	4.31							
13	AHU-AEE-18(H)	18000	4	503394	0.36	2.52	2	1016842	0.14	1.98	PFN800	25	
			6	708646	0.53	5.2							
14	AHU-AEE-20(H)	20000	4	588155	0.34	3.21	2	1151313	0.13	2.3	PFN900	30	
			6	815696	0.5	6.93							
15	AHU-AEE-22(H)	22000	4	642075	0.35	3.37	2	1258598	0.13	2.3	PFN900	40	
			6	89335	0.52	7.3							

This data based on:

1. Coil features: 8 Fins/in and tube size 5/8", full circuit

2. Cooling standard condition:

I Entering air: Tdb = 80.6 °F, Twb= 68°F

II Leaving air: Tdb = 65.8 °F

III Entering fluid: T = 44 °F

3. Heating standard air condition

I Entering air: Tdb = 57.2 °F, Twb= 52°F

II Leaving air: Tdb = 105 °F

III Entering fluid: T = 180 °F

4. 70% of the air should be returned. (30% fresh air)

5. Fan static pressure: 5in.wg

4. Air Handling Units



Air Handling Units

AEE Series Air Handling Units are designed to provide a comfortable environment for factories, warehouses and office and stores. The coils can be used to provide heating in winters using hot water and cooling in summers using chilled water. There are altogether several horizontal unit models and several vertical unit models. The units can meet a number of external pressure requirements, with options such as evaporative humidifier. They support both direct air return and ducted air return, as well as top air outlet and front air outlet.

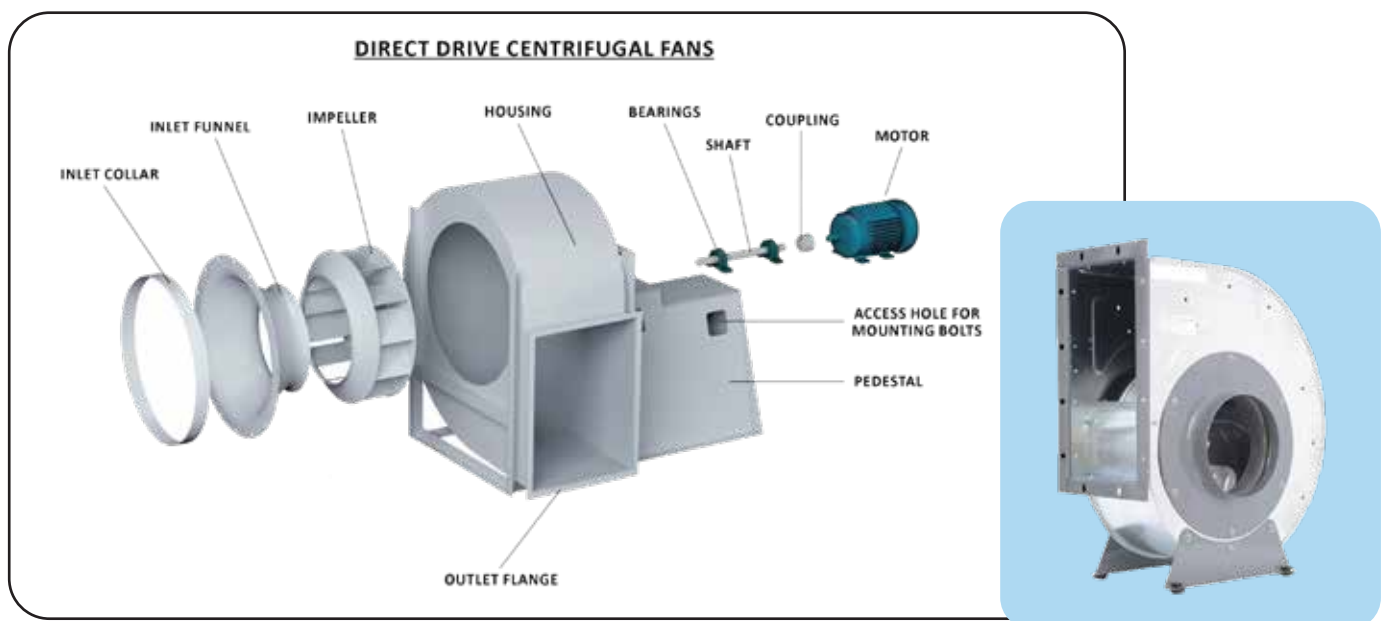
Features of AEE Series Air Handling Units

- **Elegant Design**

All panels are made of high quality galvanized steel to ensure a smooth surface and attractive profile.

- **High Heat Exchange Efficiency**

The high quality coil of the **AEE** unit is made of expanded copper tubes and rippled aluminum fins, with high efficiency heat exchange. Equipped with a high air flow fan, the unit can reach maximum efficiency for heat transfer.



•Stability

All internal components of the air handling units are firmly placed inside the high-strength frame.

•Quiet Operation

The unit uses a low noise belt driven motor for quiet operation. The fan, which is the latest low speed and high volume model, emits very little noise.

•Dry Pan

The dry pan allows quick and easy drainage of condensation.

•Easy Clean Filter





The filtering of the duct type **AEE** air handling units comprises nylon plate pre-filters which can be pulled out easily from the left or the right and is convenient to clean.

•Flexible and Low cost Installation

The internal structure has been designed using computer aided design software, giving the units a small installation footprint. This allows the unit to be installed within a limited space and ensures the installation cost is kept to a minimum. Each unit provides two installation options. Type, together with two air outlet configurations - top outlet or front outlet for better space usage.

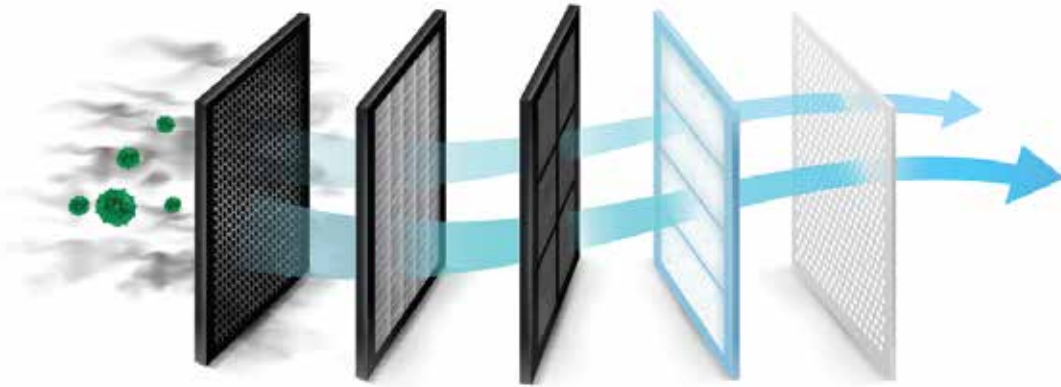
•Options

- 1- or 2-Row Heating Coil
- Evaporative Humidifier

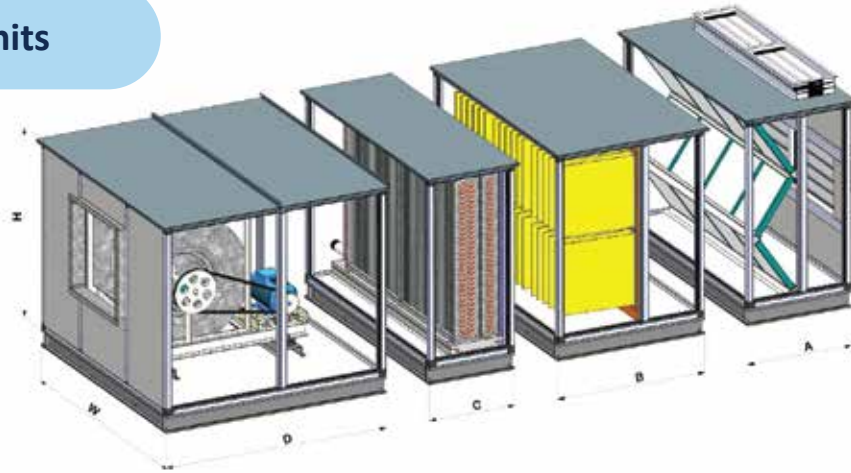
			
<p>Assurance of The Best Price The high technical knowledge of the experienced designers and engineers of the company has made it possible to produce different products with the best fragments considering the standard of the world and optimized usage of time and materials. It has also made it possible to produce products with an appropriate price compared to similar products for our honorable customers.</p>	<p>High Air Quality By using different filters, capability of filtering the overhung prticles has been created in the level of international standards.</p>	<p>Capability of Manufacturing Based on Consumer's Desired Dimension Arad Energy Ers Company with the help of its professional and experienced designers, is ready to customize and produce the product based on consumers' needs.</p>	<p>Low Noise By using modern fans and up-to-date world's brands, it is possible to control the fan's speed by means of inventor and device's sound has been reached to the lowest level.</p>

Industrial leading technology healthy air sterilizer (optional)

AEE is committed to providing comfortable and healthy living and working environment for all our customers. Whilst caring and safeguarding the natural environment outside. With indoor air quality becoming a crucial global health concern, it can help remove almost all air borne germs and pathogens, ensuring healthy and fresh indoor air supplies.



Air Handling Units



Standard Air Handling Unit Dimension							
MODEL	AIR FLOW (CFM)	L(mm)				W(mm)	H(mm)
		A	B	C	D		
AHU-AEE-2(S)	2000	600	1200	600	1100	920	920
AHU-AEE-4(S)	4000	650	1200	600	1250	1480	1100
AHU-AEE-6(S)	6000	700	1200	700	1600	1480	1220
AHU-AEE-8(S)	8000	700	1200	700	1600	1480	1480
AHU-AEE-10(S)	10000	850	1200	700	1750	1980	1480
AHU-AEE-12(S)	12000	850	1200	700	1750	1980	1480
AHU-AEE-14(S)	14000	850	1200	750	1900	1980	1850
AHU-AEE-18(S)	18000	950	1200	800	1950	2350	1980
AHU-AEE-20(S)	20000	950	1200	800	1950	2400	1980

Standard Air Handling Unit Specification												
NO	Model	Air flow (Cfm)	Cooling Coil			Heating coil			Fan		Filter	
			Rows	Cooling capacity (Btu)	Air friction (in.wg)	Water pressure drop (ft.wg)	Rows	Heating capacity (Btu)	Air friction (in.wg)	Water pressure drop (ft.wg)		Model
1	AHU-AEE-2(S)	2000	4	36137	0.32	0.57	2	101715	0.12	0.7	AT 16-16-SC	3
			6	59189	0.47	0.87						
2	AHU-AEE-4(S)	4000	4	82518	0.37	1.09	2	211399	0.14	0.98	AT 20-15-TIC	3
			6	127080	0.55	1.97						
3	AHU-AEE-6(S)	6000	4	136068	0.32	1.32	2	333966	0.12	1.45	AT 20-20-TIC	5.5
			6	221245	0.47	2.8						
4	AHU-AEE-8(S)	8000	4	202079	0.34	2.4	2	441172	0.13	1.1	AT 20-20-TIC	7.5
			6	294046	0.5	2.6						
5	AHU-AEE-10(S)	10000	4	278754	0.35	2.23	2	565971	0.13	1.75	AT 20-20-TIC	7.5
			6	393199	0.51	4.48						
6	AHU-AEE-12(S)	12000	4	333554	0.35	2.4	2	678402	0.13	2.03	AT 22-15-TIC	15
			6	471110	0.51	4.75						
7	AHU-AEE-14(S)	14000	4	388271	0.35	2.62	2	790828	0.13	2.38	AT 22-15-TIC	15
			6	549453	0.51	4.31						
8	AHU-AEE-18(S)	18000	4	503394	0.36	2.52	2	1016842	0.14	1.98	AT 22-22-TIC	20
			6	708646	0.53	5.2						
9	AHU-AEE-20(S)	20000	4	588155	0.34	3.21	2	1151313	0.13	2.3	AT 22-22-TIC	25
			6	815696	0.5	6.93						

This data based on;

1. Coil features: 8 Fins/in and tube size 5/8" , full circuit

2. Cooling standard condition:

I Entering air: Tdb = 80.6 F, Twb= 68F

II Leaving air: Tdb = 65.8 F

III Entering fluid: T = 44 F

3. Heating standard air condition

I Entering air: Tdb = 57.2 F, Twb= 52F

II Leaving air: Tdb = 105 F

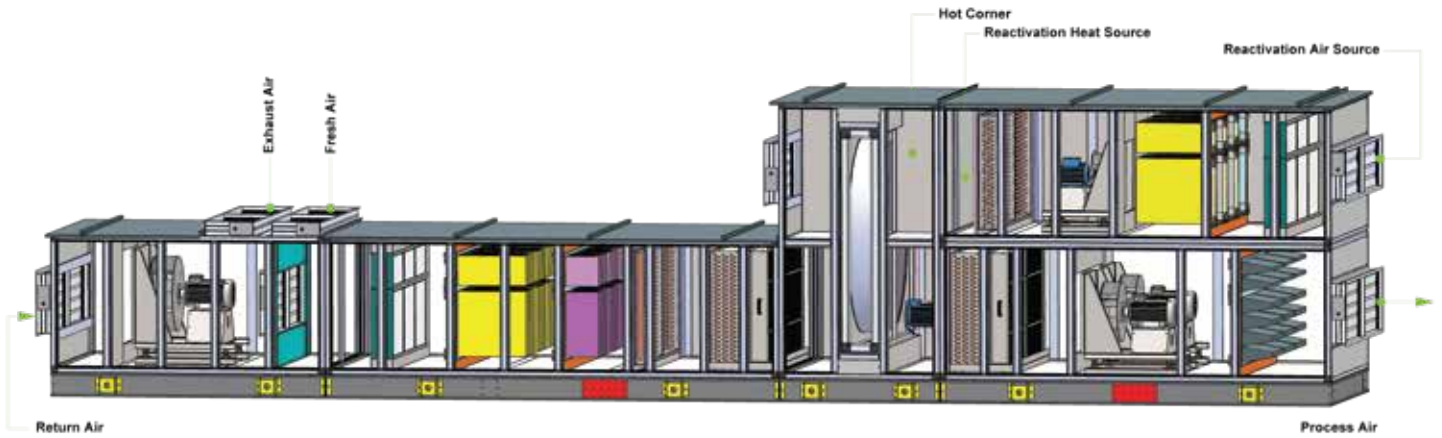
III Entering fluid: T = 180 F

4. 70% of the air should be returned. (30% fresh air)

5. Fan static pressure: 2in.wg

5. Air Handling Unit with Wheel Dehumidifier

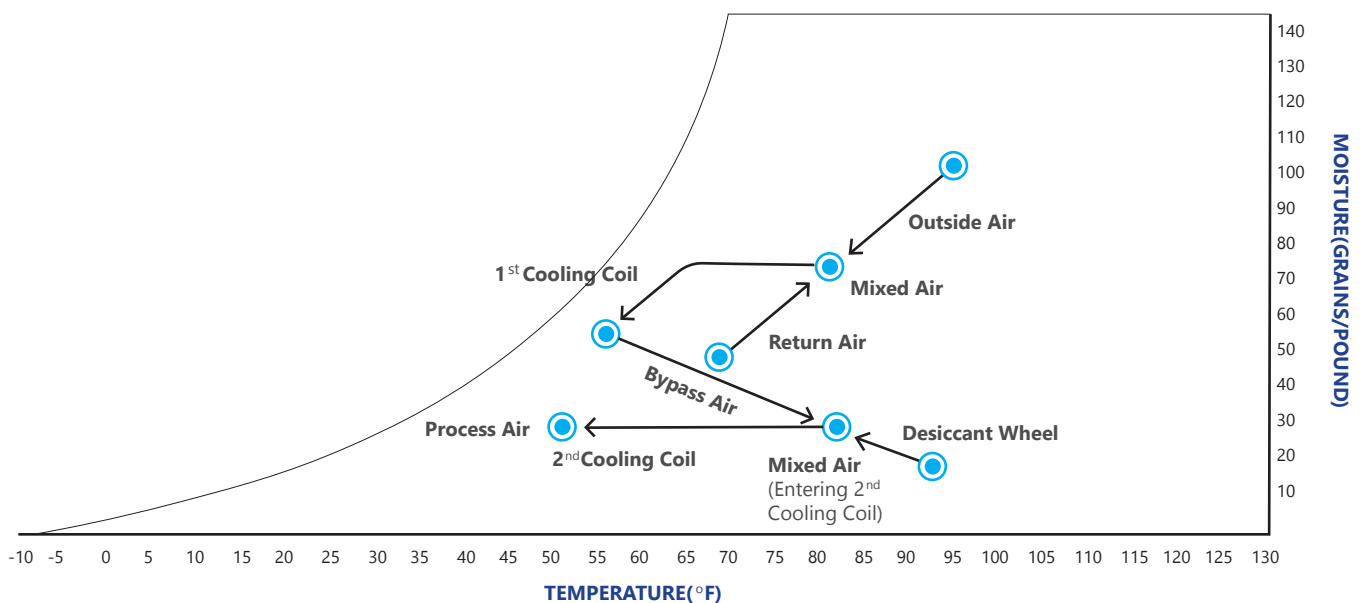




Sample Application:

Advanced Manufacturing & Battery Production

Return air mixes with outside air and passes through the cooling coil, which removes moisture and sensible heat. The cool air then passes through the desiccant wheel, which removes additional moisture and adds sensible heat to the air. The post-cooling coil removes sensible heat to maintain the correct air temperature. Processes that require extreme dew point depression, cool supply air, or both, commonly use this combination.



Air Handling Unit with Wheel Dehumidifier

For applications requiring precise humidity levels such as advanced manufacturing, pharmaceuticals or archival storage, **Arad Energy Ersas**' active desiccant wheel technology maximizes efficiency and removes more moisture than traditional cooling coils.

Active desiccant technology incorporates a desiccant wheel and a heated drying cycle to remove moisture from the air.

Traditional cooling coils are then used to reduce the temperature of the air to the desired levels.

How it works

- 1st Cooling Coil**

Cools air and removes moisture

- Desiccant Wheel**

Acts as a dry sponge absorbing moisture - air gets warmer

- Bypass**

During dry conditions, air can bypass desiccant wheel

- 2nd Cooling Coil**

Cools air to comfortable temperature

- Process Heating Source**

Heats air during colder seasons



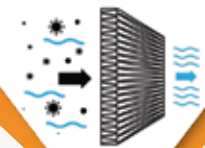
Adjusting the environment temperature humidity

The device has the ability of control the air (18 to 22 °C) and the humidity (with RH below %15) at the same time by using a moisture absorbent wheel.



Based on Advanced Technology

Air handling unit wheel dehumidifier is a knowledge-based product of Arad Energy Ersas Company and it has been made as a technological product according to the best modern methods of designing and manufacturing air conditioning products. It has been also manufactured based on the latest advanced technologies.



Complete Air Filtration

By using various filters which include different sorts of filters such as plated, bag, Hepa, Olpa and active carbon filter. This machine is able to filter hovering particles in ambient air up to %99.99.

Popular Options & Standard Features

- Double-wall insulated & rugged outdoor construction 1,000 hour salt-spray tested finish
- 2-inch or 4-inch panel filters, 6-inch or 12-inch cartridge filters
- Epoxy coatings (coils and unit exterior)
- Factory tested hydrologic system
- Multiple independent water circuits
- LonWorks, BACnet, N2 or Modbus communications
- Gas, electric, steam or hot water heat
- Wheel reactivation: Natural gas or electric

Benefits

A full face air seal separates the process and reactivation air streams, and comes with a minimum 25,000 hour operational life expectancy

- Seamless integration with standard models
- Low operating costs and high energy efficiency
- Consistent dehumidification without over-cooling
- Backed by **Arad Energy Ersa** warranty over 10,000 service providers



Industries

- **Advanced Manufacturing**

Due to the energy-intensive nature of producing many modern electronics, it's vital to capture and redirect that energy from a cost standpoint. Our custom HVAC solutions .

Utilize energy recovery devices like enthalpy wheels and plate heat exchangers to reduce run times and maximize energy efficiency.

- **Pharmaceutical & Healthcare**

Our highly efficient dehumidification systems offer precise humidity control to meet air quality standards for pharmaceutical manufacturing environments and surgical suites.

- **Archival Storage**

Desiccant wheel technology is extremely effective for applications that require low dew-point depression and cooler supply air levels, like archival storage.

Unit Performance	AEE Product	2	4	8	16	46	55	70
	Process Air Range	to 2,000 CFM	to 4,000 CFM	to 8,000 CFM	to 16,000 CFM	to 46,000 CFM	to 55,000 CFM	to 70,000 CFM
	Cooling Type	DX,CHW	DX,CHW	DX,CHW	DX,CHW	DX,CHW	DX,CHW	DX,CHW

6. Rooftop Packaged Unit



ROOFTOP PACKAGED UNIT

AEE's range of Rooftop Packaged Units has been developed specifically to suit commercial applications and are designed for flexible and easy installation. Along with the light cream colour, the flat top and compact design gives an aesthetic and neat appearance when installed in the line of sight. The durable powder coated sheet metal and corrosion resistant fixings make this unit ideal for all different climates.

MAJOR COMPONENTS

COMPRESSOR

Compressor's used in the Rooftop Pakage series packaged units are hermetically sealed scroll type. All compressors are provided with an internal overload protection.



EXPANSION VALVE

For precise control of refrigerant flow, the Rooftop Pakage Series is equipped with an Electric Expansion Valve (EEV).



Capability of Installation in Small Spaces

The experienced engineering team with the help of latest world's technology and by using the latest design and modeling software, has made it possible to design different devices and various dimensions according to available space in every project.



High Efficiency

By using advanced controllers, precise and principled designs and modern equipments including high-tech fans and compressors, high quality of devices has been guaranteed.



Using of Original Fragments

All used parts and fragments in manufactured devices in Arad Energy Ersa company are authenticated by legal and original sources and have customs green sheet which confirms originality and authenticity of fragments.



CONDENSER AND EVAPORATOR

The condenser and evaporator coils are manufactured from seamless inner grooved copper tubes mechanically bonded to aluminium fins to ensure optimum heat transfer. All coils are pressure tested to 4.2 MPa through the use of Nitrogen and are further leak tested with Helium gas at 1.6 MPa. To improve corrosion resistance, a hydrophilic Gold Fin is provided as standard.

INSULATION

To prevent the likelihood of condensation occurring the unit is equipped with 50mm Polyethylene panel insulation throughout.



CONDENSER FAN AND MOTOR

The base beams are fixed and provide a rigid foundation for the entire unit. The beam has forklift slots and rigging holes for easy handling. It is also designed to allow mounting on a roof curb, the dimension of the roof curb should be followed strictly in accordance with the installation manual.

CASING / STRUCTURE

The AEE series casing is made of zinc coated galvanised steel sheets. It is further treated with an electrostatic powder coat then over baked to provide a weather resistant finish to suit the all different climates. The screws are also zinc plated to improved product durability.



EVAPORATOR FAN AND DRIVE

A belt driven, double width double inlet (DWDI) centrifugal forward curved fan is used as the evaporator fan. This configuration with the factory fitted Variable Pitch Pulley (VPP) allows the unit to meet a wide range of air flows and external static pressures.

STANDARD FEATURES

•BASE BEAM

The base beams are fixed and provide a rigid foundation for the entire unit. The beam has forklift slots and rigging holes for easy handling. It is also designed to allow mounting on a roof curb, the dimension of the roof curb should be followed strictly in accordance with the installation manual.

•FLEXIBLE AIR SUPPLY

All units utilise a belt/pulley driven supply air fan, with a variable pitch pulley to enable a wide range of supply air volumes and external static pressures to be met. Furthermore, where required, the supply air fan motors, pulleys and belts can be upgraded easily on site.

•CONVERTIBLE RETURN AND AIR SUPPLY

Unit can be easily converted from horizontal to vertical (downward) supply and return air duct configuration by relocating the panels and supply air fan mounting.

•POWDER COATED CONDENSATE DRAIN PAN

The sheet metal condensate drain pan is powder coated for corrosion resistance.

•RETURN AIR FILTERS

A 50mm filter slot is provided as standard instances where a field supplied filter is required.

•ARAD ENERGY ERSA EXCEEDS MEPS ENERGY EFFICIENCY REQUIREMENTS

All air conditioners with a cooling capacity of up to 65kW sold in Iran must now comply with the Minimum Energy Performance Standards (MEPS), as set out in International Standards. **ARAD ENERGY ERSA** air conditioners exceed MEPS requirements, in line with **AEE's** commitment to providing energy efficient, quiet, simple to use and reliable air conditioning solutions.



OPTIONAL FEATURES

- **3rd PARTY INTERFACE**

For applications that require interface with a third party controller, there are control points on the main PCB that allow 2 stages of heating/cooling, OFF/ON and fan only operation.

- **BASIC BMS CONNECTION**

Unit's standard PCB board provides dry contact for basic BMS connection. Input signal will go to dry contact ON/OFF, COOL/HEAT, and 4 to 20mA temperature adjuster while output signal will come from ON/OFF, COOL/HEAT, ALARM and DEFROST dry contact.

EXTENSIVE CONTROLS CAPABILITY

This Unit is equipped with more than 27 functional and control capabilities.

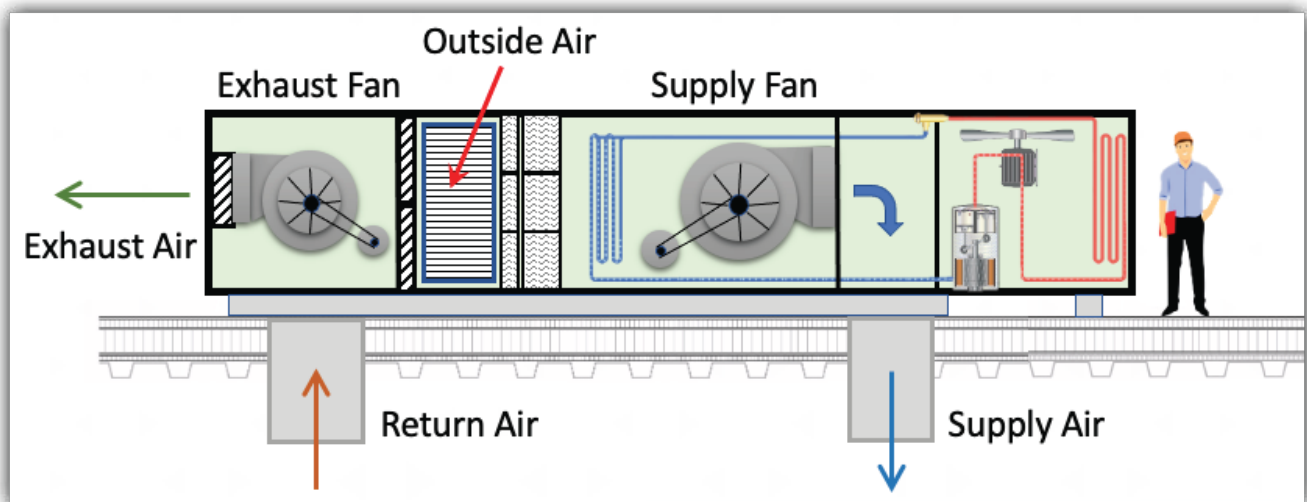
Key features include:

- Variable head pressure control for low ambient cooling
- Electronic expansion valves for precise refrigerant control
- Self diagnostic and error warning codes
- Standard 7days programmable timer and LCD thermostat
- Sequential compressor and load balancing operation
- Simple BMS and third party interface
- Ability to connect remote sensor with 25m cable
- Simple auxiliary booster with 3 adjustable differential settings
- Auto-changover (heat/cool) functionality can be configured on the controller

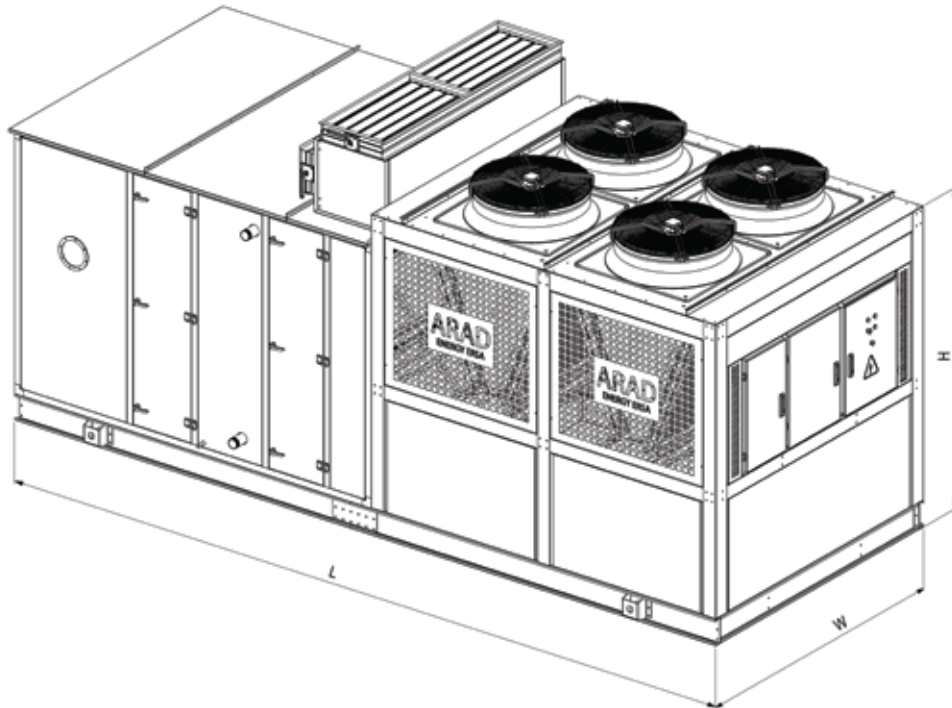
ROOFTOP PACKAGED UNIT

● ASSUMPTIONS

All representations made in **AEE** marketing and promotional material are based on the assumptions that the correct equipment has been selected, appropriately sized and installed in accordance with **AEE's** installation instructions and standard industry practises.



ROOFTOP PACKAGED UNIT



Model		Roof Top Package Unit							
		AEE-RP-05	AEE-RP-10	AEE-RP-15	AEE-RP-20	AEE-RP-25	AEE-RP-30	AEE-RP-40	AEE-RP-50
Cooling Capacity	Ton	5	10	15	20	25	30	40	50
Cooling Capacity	Kw	17.5	35	52.5	70	87.5	105	140	175
Circuit No		1	1	2	2	2	2	2	2
Power	V/Ph/Hz	380/3/50							
Refrigerant		R22/R407°C							
Compressor	Type	Hermetic Scroll Compressor							
Cond. Fan	Type	Axial							
	Drive	Direct							
Supply Fan	Type	Centrifugal							
Air Flow	CFM	2000	4000	6000	8000	10000	12000	16000	20000
Max ESP	(in H ₂ O)	0.8	0.8	1.0	1.0	1.2	1.2	1.3	1.3
Heating Coil	Type	Water							
	Model	1Row/8FPI	1Row/8FPI	1Row/8FPI	1Row/8FPI	1Row/8FPI	1Row/8FPI	1Row/8FPI	1Row/8FPI
Heating Capacity	MBH	45	87	135	170	225	270	350	410
Power Input	kW	8	15	23	30	35	50	60	70
Dimension(mm)	Length	3500	4000	4500	4500	5000	6000	6500	6700
	Width	2500	2500	2500	2500	2500	2500	2500	2500
	Height	2000	2000	2000	2500	2500	2500	2500	2500

HFC
R-134a

r

7. Mini Chiller



Mini Chiller

AEE small household air-cooled cold water units are a new generation of household air conditioners manufactured for the Iran market based on leading-edge European design concepts to fit well with various graceful upholsteries. Units of this series require no cooling tower or special equipment room.

All accessories of the water system are self contained and can be connected to various indoor terminals through the master unit. Equipped with a smart controller, units of this series can bring you all the comfort that a household central air conditioner could possibly provide.

AEE small household air-cooled cold water units feature various merits such as smart control, high efficiency, low operation sound, flexible structure, convenient operation, safe running and easy installation and maintenance. Units of this series can be widely used in houses, villas, stores, top-grade apartments, office buildings and other commercial areas which require separate air conditioning



High Efficiency

By using modern controllers, high-tech compressors and high quality fans, the efficiency of device has been increased as much as possible.



Low Noise

By using variable speed compressors, engine's noise insulation boxes and the fans which have inverters, the sound of device has been decreased in the level of the world's standards.



Customizable Dimensions

Arad Energy Ersa Company by relying on the knowledge of its engineering team, is able to produce mini chillers based on customers' needs and modify them in a way they want.

1

Comfortable and Stable Water System

Units of this series feature air conditioner design (chilled water) for precise temperature control. The units can provide you with a comfortable, healthy and graceful working/living environment. The units feature a heat sink mechanism using circulatory air and needs no cooling tower. This not only saves the cost of the cooling tower, but also saves precious building space. Units of this series feature various models and dimensions to meet different installation requirements.



2

Efficient and Energy Saving

Units of this series are equipped with fully hermetic compressors which are stable, advanced and reliable. All components have undergone strict integration and compatibility test to ensure optimized performance and efficient/energy-saving operation all year round. The **AEE** series integrated units perfectly unify the parallel compressor technology and electronic throttle technology to quickly modulate the cooling capacity to the set value, thereby making sure that the units are most energy efficient. The EER is even higher with partial workload. For example , for **AEE** series units, the EER is 6% higher with 75% of workload, 11% higher with 50% of workload, and 16% higher with 25% of workload.



3

Larger Operational Range, Safe and Reliable

Long and strict tests prove that units of this series can work reliably in an environment as hot as 48°C (cooling) or as cold as -10°C (heating). With a smart split design, all water pipes can be installed indoor to prevent freezing during cold winters. The units can work with boilers to meet heating requirements in areas which are extremely cold in winter. The units feature built-in high/low pressure protection, cooling freezing protection, winter freezing protection, compressor overload protection, water pressure-drop switch etc. to maximize reliability. In case of any failure, the micro-computer controller provides alarms using sound and indicators on a real-time basis.

4

Silent and Comfortable

The units feature a strengthened vibration isolation case and multi grade sound dampening. Thanks to a fully hermetic scroll compressor and a low-rev high-efficiency heat-sink fan, the operation sound and vibration of the units are brought down to an industry-leading level. With an innovative auto silence feature for night time, the **AEE** series units are more quiet at night



5

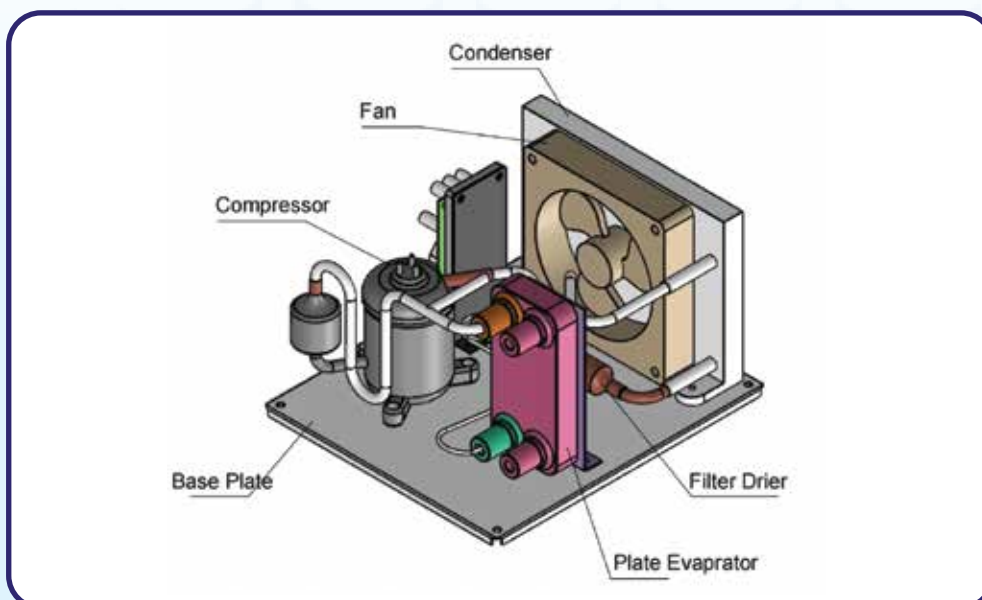
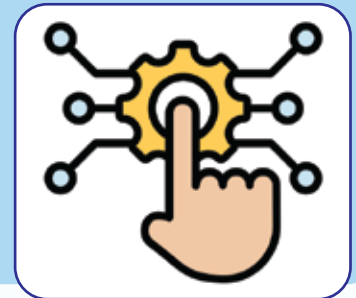
Mini Design, Fashionable and Graceful

The split series outdoor units feature a super-thin mini-design which occupies less area on the balcony and does not affect day lighting. The integrated series units feature top air supply, compact design, low height, small footprint and a fashionable and elegant exterior.

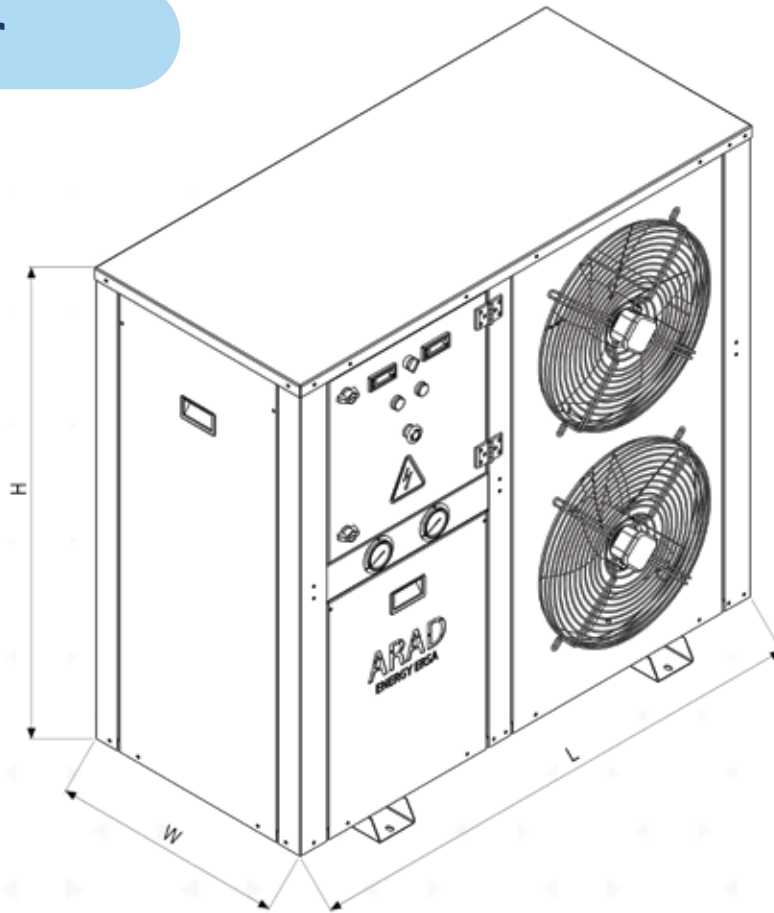
6

Flexible to Install and Space Saving

The units are small and easy to move, and can be flexibly installed on rooftops, balconies and other suitable outdoor places to save precious building space. There is no need to design or installed a cooling tower, boiler, cooling pump or relevant pipes. All ten major accessories of the water system are optional, including horizontal multi-grade pump, plate heat exchanger, water tank, hermetic expansion water tank, differential water pressure switch, pumpwater filter, relief valve, auto air discharge valve, auto water refill valve and sewage discharge valve. The whole central air conditioner is very easy to install as you just need to connect some water pipes.



Mini Chiller



Model		Mini Chiller Series					
		AEE-MC-A-2/1	AEE-MC-A-4/1	AEE-MC-A-5/1	AEE-MC-A-6/1	AEE-MC-A-8/1	AEE-MC-A-10/2
Cooling Capacity	Ton	2	4	5	6	8	10
Cooling Capacity	Kw	7	14	17.5	21	28	35
Water	Flow Rate (GPM)	4.8	9.6	12	14.4	19.2	24
	Inlet Temp	12°C					
	Outlet Temp	7°C					
	Water Pipe Size	$\frac{3}{4}$ "	1"	$1\frac{1}{4}$ "	$1\frac{1}{2}$ "	$1\frac{1}{2}$ "	2"
Compressor	Type	Hermetic Scroll Compressor					
	Power (Kw)	1.5	3.8	4.5	5.1	7.5	8.5
Fan	Type	Axial					
	Qty × Power (Kw)	1×0.37	1×0.55	1×0.55	1×0.55	1×0.75	2×0.55
Water Pump	Type	Grundfos					
	Power Input (kw)	0.37	0.37	0.5	0.5	0.7	1
	Head(mH ₂ O)	10	10	10	12	12	12
Refrigerant	Type	R22/R407c					
Total Power (Kw)	Kw	2.24	4.72	5.55	6.15	8.95	10.6
Length	mm	650	800	1100	1100	1400	1600
Width	mm	650	800	1100	1100	1100	1100
Height	mm	900	900	1000	1000	1000	1200

8. Fan coil



Fan coil

Introduction

A fan coil is an indoor unit of a heating and cooling system. It controls your home environment by moving air inside your home and can also affect your indoor humidity. As a complement to your air conditioner or heat pump, our variable-speed fan coil units can give you premium comfort and energy-saving performance. With an optional electric heat strip,

Key points of AEE fan coil units:

1. Function:

Fan coil units are designed to provide both heating and cooling to different zones or rooms within a building. They can be connected to a central HVAC system and are typically controlled by a thermostat or a building management system.

2. Installation:

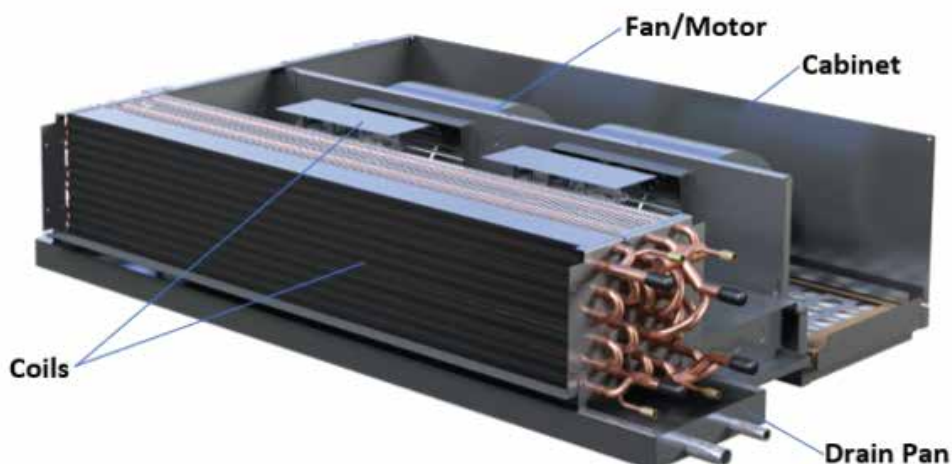
Fan coil units are installed in a dedicated space, such as a ceiling void or mechanical room, with access to the supply and return ductwork. They are connected to the ducts, which distribute the conditioned air to various areas of the building through diffusers or grilles.

3. Air Distribution:

The system allows for the even distribution of conditioned air throughout the building. The air is drawn into the fan coil unit, where it passes over a heating or cooling coil, and then it is pushed into the ductwork for distribution. The conditioned air is released into individual rooms through adjustable vents or diffusers.

4. Energy Efficiency:

Fan coil units can be designed with energy-efficient features, such as variable speed fans and advanced control systems. These features help optimize energy consumption based on the specific cooling or heating requirements of different zones, resulting in energy savings.

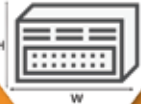


**High Efficiency**

By using modern controllers, high-tech compressors and high quality fans, the efficiency of device has been increased as much as possible.

**Low Noise**

The sound of device has been controlled as much as possible by using resistant body, standard and high quality fans and noise insulations.

**Customizable Dimensions**

It can be possible to change the dimensions of devices with maintaining the quality due to the limitations in small spaces in every project.

Components of AEE fan coil

Body:

Structure is high quality galvanized sheets which are joined to each other with screw.

**Filter:**

Filter in according to current world standards is made of propylene (PP). Its efficiency is more than aluminum filters and less pressure drop. It is washable and has long life.

**Pan:**

Pan is insulated on inside or outside surface to prevent condensation with 4mm thickness insulation.



Fan:

fan are centrifuge and made of galvanized. They are balanced statically and dynamically and have minimum noise level. **Arad Energy Ers**a Used High quality brand of fan like Yillida.

**Insulation:**

the EPS insulation is used to prevent loss of energy and reduce the noise. The thickness of elastomeric insulation is 4 mm in fan coil models HR, SV, SB and 10 mm thickness of EPS insulation in cassette types.

Coil:

Coil is made of copper tube 3/8" with aluminum fin and brass collector. the coil is 3 row with 14 fpi fin, it shall be rinsed with a special degreasing solution after manufacture and hydro tested in 190psig pressure.

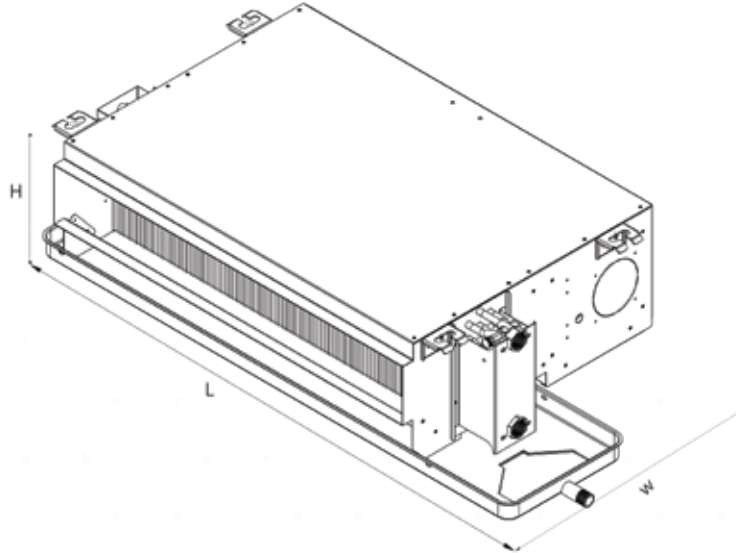


Electro Motor:

Electro Motor that is used in fan coils is single shaft or double shaft with three speeds (low, medium and high) with thermal Class B and IP 20. They have thermal protection, if the device is overheated; the fan is turned off and switched on after cooling. **Arad Energy Ers** Used high quality Italian brand of electromotor like SISME.

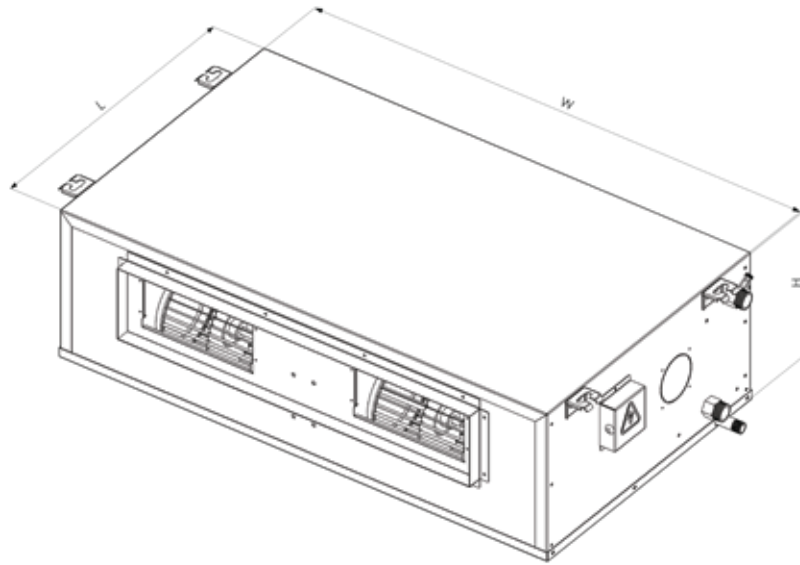


Concealed Fan coil



Model			Concealed Fan coil						
			AEE-CFC-200	AEE-CFC-300	AEE-CFC-400	AEE-CFC-500	AEE-CFC-600	AEE-CFC-800	AEE-CFC-1000
Air Flow	High	m ³ /h	428	619	813	988	1058	1560	1983
		CFM	252	364	478	581	622	918	1166
	Med	m ³ /h	364	526	691	840	899	1326	1686
		CFM	214	309.5	406.5	494	529	780	991.5
	Low	m ³ /h	278	402	528	642	688	1014	1298
		CFM	164	237	311	378	405	596	758
Cooling Capacity	High	kW	2.06	2.98	4.02	4.5	5.31	7.46	8.61
	Med		1.69	2.44	3.30	3.69	4.35	6.12	7.06
	Low		1.31	1.89	2.55	2.86	3.37	4.74	5.47
Heating Capacity	High	kW	3.403	5.299	6.372	7.812	9.211	12.112	15.587
	Med		2.81	4.37	5.26	6.44	7.60	9.99	12.86
	Low		2.13	3.31	3.98	4.88	5.76	7.57	9.74
Water Flow		l/h	365	520	699	760	930	1333	1500
Water Press Drop		kPa	12.3	9.3	16.8	21.6	32.5	20.5	28
Sound Level	Max.	dB(A)	34	36	39	43	44	46	47
	Med.		28	28	33	37	38	41	42
	Min.		23	24	27	29	30	32	32
Size	Length	mm	790	790	990	990	1200	1410	1525
	Width		505	505	505	505	505	505	505
	Height		215	215	215	215	215	215	215
Motor			220V/50HZ/60HZ/1PH						
Input(W)	H	215	215	215	215	215	215	215	215
	W	505	505	505	505	505	505	505	505
	L	480	550	700	750	840	1150	1300	

Ducted Fan coil



Model			Ducted Fancoil							
			AEE-DFC-6	AEE-DFC-8	AEE-DFC-10	AEE-DFC-12	AEE-DFC-14	AEE-DFC-16	AEE-DFC-18	AEE-DFC-20
Performance										
Nominal Air Flow	High	cu. m/h	1010	1335	1737	2134	2466	2786	3230	3560
		CFM	594	785	1022	1255	1451	1639	1900	2094
	Med	cu. m/h	869	1148	1494	1835	2121	2396	2778	3062
		CFM	511	675	879	1083	1248	1409	1634	1801
	Low	cu. m/h	677	894	1164	1430	1652	1867	2164	2385
		CFM	398	526	685	841	972	1098	1273	1403
Nominal Cooling Capacity	High	kW	4.40	5.91	7.88	9.05	10.90	12.68	14.22	16.49
	Med		3.83	5.14	6.85	7.87	9.49	11.03	12.37	14.35
	Low		3.13	4.20	5.59	6.42	7.74	9.00	10.09	11.71
Nominal Heating Capacity	High	kW	7.83	10.07	13.11	15.65	18.83	20.14	22.52	26.21
	Med		6.89	8.87	11.54	13.77	16.58	17.72	19.82	23.07
	Low		6.03	7.76	10.10	12.06	14.51	15.65	17.34	20.81
Water Flow Rate (High)	m ³ /h	0.42	0.56	0.75	0.86	1.04	1.21	1.36	1.58	
	GPM	1.85	2.49	3.31	3.80	4.58	5.33	5.98	6.93	
Water Press Drop	kPa	6.74	7.36	8.21	8.89	9.65	10.95	12.95	16.09	
	Ft.wg	2.21	2.41	2.69	2.92	3.16	3.59	4.25	5.27	
Coil										
Face Area	Sq.m	0.152	0.183	0.213	0.229	0.274	0.32	0.32	0.381	
Face Velocity	m/s	1.85	2.03	2.27	2.59	2.50	2.42	2.80	2.60	
Motor Type	3-Speed Permanent Split Capacitor Motor									
No. of Motor		1	1	1	1	1	2	2		
Class		B	B	B	B	B	B	B	B	
Total Rating Input	W	270	300	350	405	454	555	610	640	
Fan Type	Centrifugal fan (Forward Curve)									
No. of Fans		1	1	1	2	2	2	2	3	
Size	Length	mm	530	530	530	530	530	530	530	560
	Width	mm	780	780	930	1040	1040	1200	1330	1330
	Height	mm	260	310	310	310	360	360	360	410
Weight	kg	34	38	42	44	49	54	54	62	



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