Chillers

Air-cooled R-134a

- Wide capacity range (620 kW - 1860 kW)
- Multiple efficiency and sound versions
- Unique single screw compressor
- Best-in-class energy efficiency (EER up to 3.70 and ESEER up to 4.63)
- Large operation range (-18°C up to +52°C ambient temperature)

www.daikin.eu

EWAD-C-
620~1860 kW

Daikin Europe N.V.

About Daikin

Daikin has a worldwide reputation based on over 80 years' experience in the successful manufacture of high quality air conditioning equipment for industrial, commercial and residential use. Daikin's much envied quality quite simply stems from the close attention paid to design, production and testing as well as aftersales support. To this end, every component is carefully selected and rigorously tested to verify its contribution to product quality and reliability.

The EWAD-C- series offers top efficiency, low sound levels and flexible solutions for a wide range of comfort and process applications

Daikin Europe's new air-cooled series has been engineered for flexibility and designed to exceed HVAC industry standards for operating efficiency, making it an ideal match for a wide range of building applications.

The EWAD-C- range, available in multiple efficiency and sound versions, incorporates unique single screw compressors and fans that result in maximum efficiency, both in partial and full load conditions, and ensure a low total cost of ownership over the life of the chiller. Further, the wide operating range makes the series suitable for comfort and process cooling applications in all climates.

The most commonly serviced parts are easily accessible, simplifying maintenance and service. Moreover, the new chillers allow flexible integration into a wide range of control and building management systems.

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The new air-cooled chiller features

Application flexibility

The EWAD-C- series is available in a wide range of capacities (620 kW to 1,860 kW), for ambient operating temperatures of -18°C up to 52°C, making the new chiller models suitable for comfort and process cooling applications in all climates.

The units' small footprint also makes this series the perfect choice for retrofit projects. The most commonly serviced parts are easily accessible, simplifying maintenance and service. Moreover, the new chillers allow flexible integration into a wide range of control and building management systems.

Low operating cost

Daikin equipped the new air-cooled series with a unique single-screw compressor (with asymmetric loading system) that results in maximum efficiency, both in partial and full load conditions, and ensures a low total cost of ownership over the life of the chiller.

With three levels of operating efficiency — standard, high and premium — the chiller allows building owners to specify an HVAC system that exactly meets their requirements. The unique premium version obtains the highest efficiency values in the industry: EER's up to 3.70, ESEER's up to 4.63.

Low operating sound levels

Very low sound levels - both at full load and part load conditions - are achieved by the latest compressor design that uses a single main rotor with two adjacent rotating composite gaterotors, making gas flow velocities and subsequent sound levels among the lowest available. Further, the unique new fan moves large volume of air at exceptionally low sound levels.

Outstanding reliability

The EWAD-C- chillers have two or three truly independant refrigerant circuits (depending on the size) in order to assure maximum safety for any maintenance. Equipped with a rugged compressor design with advanced composite compressor gaterotors and a proactive control logic, the units are full factory-run-tested to optimize trouble-free operation.

Superior control logic

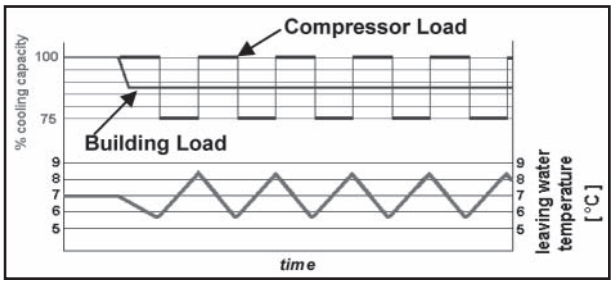
The new MicroTech III controller provides an easy to use control environmental. The control logic is designed to provide maximum efficiency, to continue operation in unusual operating conditions and to provide a history of unit operation. One of the greatest benefits is the easy interface with LonWorks, BACnet, Ethernet TCP/IP or Modbus communications.

1 Features and advantages

Features and advantages

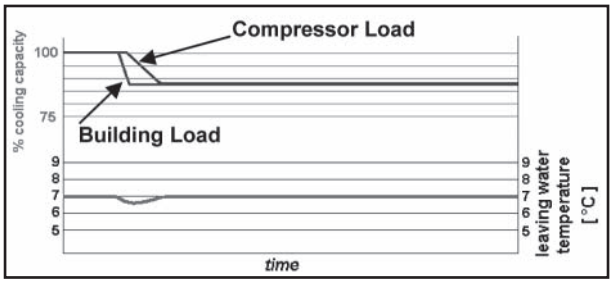
Infinite capacity control

Cooling capacity control is infinitely variable by means of a single screw asymmetric compressor controlled by microprocessor system. Each unit has infinitely variable capacity control from 100% down to 12.5% (two compressor unit), down to 7% (three compressors units). This modulation allows the compressor capacity to exactly match the building cooling load without any leaving evaporator water temperature fluctuation. This chilled water temperature fluctuation is avoided only with a stepless control.



ELWT fluctuation with steps capacity control (4 steps)

With a compressor load step control in fact, the compressor capacity, at partial loads, will be too high or too low compared to the building cooling load. The result is an increase in chiller energy costs, particularly at the part-load conditions at which the chiller operates most of the time.



ELWT fluctuation with steps capacity control (4 steps)

Units with stepless regulation offer benefits that the units with step regulation are unable to match. The ability to follow the system energy demand at any time and the possibility to provide steady outlet water temperature without deviations from the set-point, are the two points that allow you to understand how the optimum operating conditions of a system can be met only through the use of a unit with step-less regulation.

Code requirements – Safety and observant of laws/directives

All EWAD~C- units are designed and manufactured in accordance with applicable selections of the following:

Rating of chillers	EN 12055
Construction of pressure vessel	97/23/EC (PED)
Machinery Directive	98/37/EC as modified
Low Voltage	2006/95/EC
Electromagnetic Compatibility	2004/108/EC
Electrical & Safety codes	EN 60204–1 / EN 60335-2-40
Manufacturing Quality Stds	UNI – EN ISO 9001:2000

Certifications

All units manufactured by Daikin are CE marked, complying with European directives in force, concerning manufacturing and safety. On request units can be produced complying with laws in force in non European countries (ASME, GOST, etc.), and with other applications, such as naval (RINA, etc.).

1 Features and advantages

Versions

EWAD~C- is available in three different Efficiency Versions:

S: Standard Efficiency
11 sizes to cover a range from 647 up to 1714 kW with an EER up to 2.93 and an ESEER up to 3.96 (data referred to Standard Noise)

X: High Efficiency
14 sizes to cover a range from 756 up to 1858 kW with an EER up to 3.29 and an ESEER up to 4.23 (data referred to Standard Noise)

P: Premium Efficiency
7 sizes to cover a range from 821 up to 1390 kW with an EER up to 3.64 and an ESEER up to 4.53 (data referred to Standard Noise)

The EER (Energy Efficiency Ratio) is the ratio of the Cooling Capacity to the Power Input of the unit. The Power Input includes: the power input for operation of the compressor, the power input of all control and safety devices, the power input for fans.
The ESEER (European Seasonal Energy Efficiency Ratio) is a weighed formula enabling to take into account the variation of EER with the load rate and the variation of air inlet condenser temperature.
$ESEER = A \times EER_{100\%} + B \times EER_{75\%} + C \times EER_{50\%} + D \times EER_{25\%}$

	A	B	C	D
Coefficient	0.03 (3%)	0.33 (33%)	0.41 (41%)	0.23 (23%)
Air inlet condenser temperature	35°C	30°C	25°C	20°C

Sound Configuration

EWAD~C- is available in many different Sound level configurations:

S: Standard Noise
Condenser fan rotating at 920 rpm, rubber antivibration on compressor

L: Low Noise
Condenser fan rotating at 920 rpm, rubber antivibration on compressor, compressor sound enclosure.

R: Reduced Noise
Condenser fan rotating at 715 rpm, rubber antivibration on compressor, compressor sound enclosure.

2 General characteristics

General characteristics

Cabinet and structure

The cabinet is made of galvanized steel sheet and painted to provide a high resistance to corrosion. Colour Ivory White (Munsell code 5Y7.5/1) (±RAL7044). The base frame has eye-hook for lifting the unit with ropes for an easy installation. The weight is uniformly distributed along the profiles of the base and this facilitates the arrangement of the unit.

Screw compressors with integrated oil separator

The compressors are semi-hermetic, single-screw type with gate-rotor (with the latest high-strength fibre reinforced star material). Each compressor has an asymmetric slide regulation managed by the unit controller for infinitely modulating capacity. An integrated high efficiency oil separator maximizes the oil separation.
Standard Start is Wye-delta (Y-Δ) type.

Ecological HFC 134a refrigerant

The compressors have been designed to operate with R-134a, ecological refrigerant with zero ODP (Ozone Depletion Potential) and very low GWP (Global Warming Potential) that means low TEWI (Total Equivalent Warming Impact).

Evaporator

The units are equipped with a Direct Expansion shell&tube evaporator with copper tubes rolled into steel tubesheets. The evaporators are single-pass on both the refrigerant and water sides for pure counter-flow heat exchange and low refrigerant pressure drops. Both attributes contribute to the heat exchanger effectiveness and total unit's outstanding efficiency.
The external shell is covered with a 20mm closed cell insulation material. Each evaporator has 2 or 3 circuits, one for each compressor and is manufactured in accordance to PED approval. The evaporator water outlet connections are provided with Victaulic Kit (as standard).

Condenser coils

The condenser is manufactured with internally enhanced seamless copper tubes arranged in a staggered row pattern and mechanically expanded into lanced and rippled aluminium condenser fins with full fin collars. An integral sub-cooler circuit provides sub-cooling to effectively eliminate liquid flashing and increase in cooling capacity without increasing the power input.

Condenser coil fans

The condenser fans are propeller type with high efficiency design blades to maximize performances. The material of the blades is glass reinforced resin and each fan is protected by a guard. Fan motor is thermally protected (as standard) by internal thermal motor and protected by circuit breaker installed inside the electrical panel as a standard. The motors are IP54.

Electronic expansion valve

The unit is equipped with the most advanced electronic expansion valves to achieve precise control of refrigerant mass flow. As today's system requires improved energy efficiency, tighter temperature control, wider range of operating conditions and incorporate features like remote monitoring and diagnostics, the application of electronic expansion valves becomes mandatory. Electronic expansion valve proposes features that makes it unique: short opening and closing time, high resolution, positive shut-off function to eliminate use of additional solenoid valve, continuous modulation of mass flow without stress in the refrigerant circuit and corrosion resistance stainless steel body.
Electronic Expansion Valves are typically working with lower ΔP between high and low pressure side, than a thermostatic expansion valve. The electronic expansion valve allows the system to work with low condenser pressure (winter time) without any refrigerant flow problems and with a perfect chilled water leaving temperature control.

2 General characteristics

Refrigerant Circuit

Each unit has 2 or 3 independent refrigerant circuits and each one includes:

- Compressor with integrated oil separator
- Air Cooled Condenser
- Electronic expansion valve
- Evaporator
- Discharge line shut off valve
- Liquid line shut off valve
- Suction line shut off valve (optional)
- Sight glass with moisture indicator
- Filter drier
- Charging valves
- High pressure switch
- High and low pressure transducers

Electrical control panel

Power and control are located in two sections of the main panel that is manufactured to ensure protection against all weather conditions. The electrical panel is IP54 and (when opening the doors) internally protected with Plexiglas panel against possible accidental contact with electrical components (IP20). The main panel is fitted with a main switch interlocked door.

Power Section

The power section includes compressors fuses, fan circuit breaker, fan contactors and control circuit transformer.

MicroTech III controller

MicroTech III controller is installed as standard; it can be used to modify unit set-points and check control parameters. A built-in display shows chiller operating status plus temperatures and pressures of water, refrigerant and air, programmable values, set-points. A sophisticated software with predictive logic, selects the most energy efficient combination of compressors, EEXV and condenser fans to keep stable operating conditions to maximise chiller energy efficiency and reliability. The compressors are automatically sequenced to ensure equal operating hours and number of starts.
MicroTech III is able to protect critical components based on external signs from its system (such as motor temperatures, refrigerant gas and oil pressures, correct phase sequence, pressure switches and evaporator). The input coming from the high pressure switch cuts all digital output from the controller in less than 50ms, this is an additional security for the equipment.
Fast program cycle (200ms) for a precise monitoring of the system. Floating point calculations supported for increased accuracy in P/T conversions.

Control section - main features

- Management of the compressor stepless capacity and fans modulation.
- Chillers enabled to work in partial failure condition.
- Full routine operation at condition of:
  - high ambient temperature value
  - high thermal load
  - high evaporator entering water temperature (start-up)
- Display of evaporator entering/leaving water temperature.
- Display of Outdoor Ambient Temperature.
- Display of condensing-evaporating temperature and pressure, suction and discharge superheat for each circuit.
- Leaving water evaporator temperature regulation. Temperature tolerance = 0,1°C.
- Compressors and evaporator pumps hours counter.
- Display of Status Safety Devices.
- Number of starts and compressors working hours.

2 General characteristics

- Optimized management of compressors load.
- Fan management according to condensing pressure.
- Re-start in case of power failure (automatic / manual).
- Soft Load (optimized management of the compressors load during the start-up).
- Start at high evaporator water temperature.
- Return Reset (Set Point Reset based on return water temperature).
- OAT (Outside Ambient temperature) Reset.
- Set point Reset (optional).
- Application and system upgrade with commercial SD cards.
- Ethernet port for remote or local servicing using standard web browsers.
- Two different sets of default parameters could be stored for easy restore.

Safety device / logic for each refrigerant circuit
- High pressure (pressure switch).
- High pressure (transducer).
- Low pressure (transducer).
- Fans circuit breaker.
- High compressor discharge temperature.
- High motor winding temperature.
- Phase Monitor.
- Low pressure ratio.
- High oil pressure drop.
- Low oil pressure.
- No pressure change at start.

System security
- Phase monitor.
- Low Ambient temperature lock-out.
- Freeze protection.

Regulation type

Proportional + integral + derivative regulation on the leaving water evaporator output probe.

Condensing pressure

Condensing pressure can be controlled in according to the entering air temperature to the condenser coil. The fans can be managed either with steps, or with a 0/10 V modulating signal or with a mixed 0/10V + Steps strategy to cover all possible operational conditions.

MicroTech III

MicroTech III built-in terminal has the following features.
- 164x44 dots liquid crystal display with white back lighting. Supports Unicode fonts for multi-lingual.
- Key-pad consisting of 3 keys.
- Push’n’Roll control for an increased usability.
- Memory to protect the data.
- General faults alarm relays.
- Password access to modify the setting.

2 General characteristics

- Application security to prevent application tampering or hardware usability with third party applications.
- Service report displaying all running hours and general conditions.
- Alarm history memory to allow an easy fault analysis.

Supervising systems (on request)

MicroTech III remote control
MicroTech III is able to communicate to BMS (Building Management System) based on the most common protocols as:

- ModbusRTU
- LonWorks, now also based on the international 8040 Standard Chiller Profile and LonMark Technology
- BacNet BTP certifief over IP and MS/TP (class 4) (Native)
- Ethernet TCP/IP.

Standard accessories (supplied on basic unit)

Wye-Delta Compressors starter (Y-D) – For low inrush current and reduced starting torque.
Double set-point – Dual leaving water temperature set-points.
Fans thermal overload relays – Safety devices against fan motor overloading in addition to the normal protection envisaged by the electrical windings.
Phase monitor – The phase monitor controls that phases sequence is correct and controls phase loss.
Evaporator Victaulic kit on water connection – Hydraulic joint with gasket for an easy and quick water connection.
20mm evaporator insulation.
Evaporator electric heater – Electric heater controlled by a thermostat to protect the evaporator from freezing down to -28°C ambient temperature, providing the power supply is on.
Electronic Expansion Valve.
Discharge line shut off valves – Installed on the discharge port of the compressor to facilitate maintenance operation.
Outside ambient temperature sensor and reset of leaving water temperature set-point.
Compressor hour run meter.
General fault – Alarm relay.
Set-point reset – The leaving water temperature set-point can be overwritten with the following options: 4-20mA from external source (by user); outside ambient temperature; evaporator water temperature Δt.
Demand limit – User can limit the load of the unit by 4-20mA signal or by network system
Alarm from external device – Microprocessor is able to receive an alarm signal from an external device (pump etc…). User can decide if this alarm signal will stop or not the unit.
Main switch interlock door
Emergency stop
Fans circuit breakers – Safety device against motor overloading and short circuit

2 General characteristics

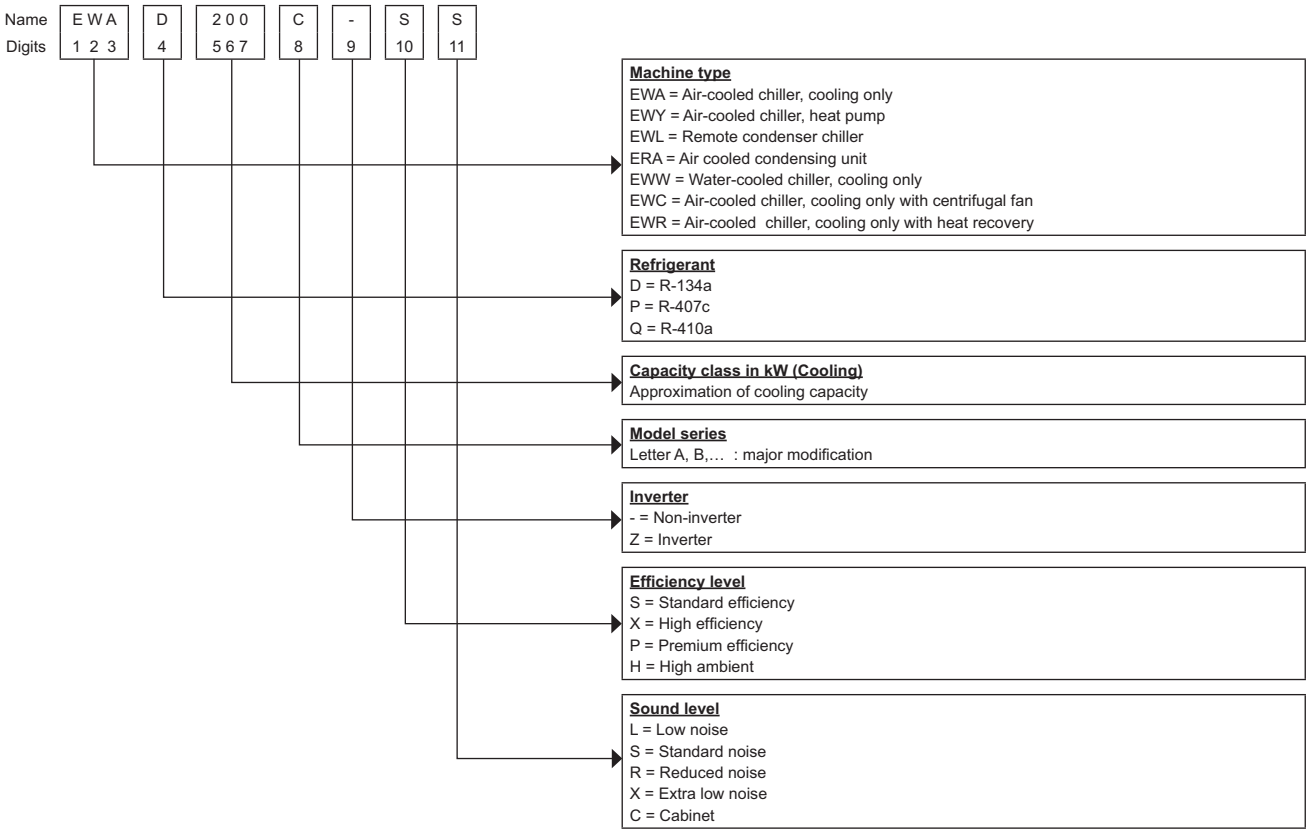
Options (on request)

Total heat recovery – Produced with plate to plate heat exchangers to produce hot water.
Partial heat recovery – Produced with plate to plate heat exchangers installed between the compressor discharge and the condenser coil, allowing to produce hot water.
Soft starter – Electronic starting device to reduce the mechanical stress during compressor start-up.
Brine version – Allows the unit to operate down to -8°C leaving liquid temperature (antifreeze required).
Compressor thermal overload relays – Safety devices against compressor motor overloading. This device together with internal motor protection (standard) guarantee the best safety system for compressor motor.
Under/Over Voltage – This device control the voltage value of power supply and stop the chiller if the value exceeds the allowed operating limits.
Ampere / Volt meter – Device installed inside the control box showing ampere and volt values
Capacitors for power factor correction – To increase the operating power factor of the unit at nominal operating conditions. The capacitors are “dry” self-regenerating type with over pressure disconnectiong safety device insulated with a no toxic dielectric mix with no PCB or PCT.
Current limit – To limit maximum absorbed current of the unit whenever is required
Fan speed regulation – To control the fan speed revolution for smooth operating control of the unit. This option improves the sound level of the unit during low ambient temperature operation.
Speedtrol – Continuous fan speed modulation on the first fan of each circuit. It allows the unit working with air temperature down to –18°C.
Condenser coil guards.
Compressor and evaporator area guards.
Cu-Cu condensing coils – To give better protection against corrosion by aggressive environments.
Cu-Cu-Sn condensing coils – To give better protection against corrosion in aggressive environments and by salty air.
Alucoat condensing coils – Fins are protected by a special acrylic paint with a high resistance to corrosion.
Evaporator Flow switch – Supplied separately to be wired and installed on the evaporator water piping (by the customer).
Suction line shut off valves – Installed on the suction port of the compressor to facilitate maintenance operation.
High pressure gauges.
Kit container.
Rubber type antivibration mounts – Supplied separately, these are positioned under the base of the unit during installation. Ideal to reduce the vibrations when the unit is floor mounted.
Spring type antivibration mounts – Supplied separately, these are positioned under the base of the unit during installation. Ideal for dampening vibrations for installation on roofs and metallic structures.
Hydronic Kit (single water pump) (available only on chiller with 2 compressors) – Hydronic kit consists of: single direct driven centrifugal pump, water filling system with pressure gauge, safety valve, drain valve. The motor pump is protected by a circuit breaker installed in control panel. The kit is assembled and wired to the control panel. The pipe and pump are protected from freezing with an additional electrical heater.
Hydronic Kit (twin water pumps) (available only on chiller with 2 compressors) – Hydronic kit consists of: twin direct driven centrifugal pumps, water filling system with pressure gauge, safety valve, drain valve. The motor pump is protected by a circuit breaker installed in control panel. The kit is assembled and wired to the control panel. The pipe and pumps are protected from freezing with an additional electrical heater.
Witness test – Every unit is always tested at the test bench prior to the shipment. On request, a second test can be carried out, at customer’s presence, in accordance with the procedures indicated on the test form. (Not available for units with glycol mixtures).

Acoustic test – On request, a test can be carried out, at customer’s presence (Not available for units with glycol mixtures).
Evaporator right water connections (available only on 2 compressor sizes).
Evaporator flanged connections.
Refrigerant recovery tank– This option allows to stock refrigerant charge of 1 circuit for maintenance operation. Liquid receiver includes in/out shut-off valve and reliefe valve.
Compressors circuit breakers.
Ground fault protection – To shut down the entire unit if a ground fault condition is detected.

3 Nomenclature

Nomenclature



4 Specifications

4-1 Technical Specifications		EWAD~C-SS		650	740	830	910	970	C11	C12	C14	C15	C16	C17
Capacity (1)	Cooling		kW	647	744	832	912	967	1064	1152	1419	1538	1622	1714
Capacity control	Type		---	Stepless										
	Minimum capacity		%	12.5	12.5	12.5	12.5	12.5	12.5	12.5	7	7	7	7
Unit power input (1)	Cooling		kW	221	262	299	318	351	378	402	500	551	580	618
EER (1)			---	2.93	2.84	2.78	2.87	2.76	2.82	2.86	2.84	2.79	2.8	2.77
ESEER			---	3.95	3.87	3.89	3.84	3.8	3.88	3.84	3.88	3.9	3.87	3.78
IPLV			---	4.30	4.17	4.16	4.23	4.14	4.17	4.19	4.19	4.22	4.18	4.13
Casing	Colour		---	Ivory White										
	Material		---	Galvanized and painted steel sheet										
Dimensions	Unit	Height	mm	2540	2540	2540	2540	2540	2540	2540	2540	2540	2540	2540
		Width	mm	2285	2285	2285	2285	2285	2285	2285	2285	2285	2285	2285
		Length	mm	6185	6185	6185	6185	6185	7085	7985	10185	10185	11085	11085
Weight	Unit		kg	5630	5740	5760	6280	6560	7010	7280	10310	10320	10710	10770
	Operating Weight		kg	5910	5990	6010	6530	6810	7250	7520	10730	10730	11110	11260
Water heat exchanger	Type		---	Single Pass Shell&Tube										
	Water volume		l	266	266	251	251	251	243	243	421	408	408	474
	Nominal water flow rate	Cooling	l/s	30.9	35.56	39.74	43.6	46.21	50.85	55.04	67.78	73.5	77.51	81.89
	Nominal Water pressure drop	Cooling	kPa	73	59	52	61	68	63	72	47	59	65	73
	Insulation material			Closed cell										
Air heat exchanger	Type		---	High efficiency fin and tube type with integral subcooler										
Fan	Type		---	Direct propeller type										
	Drive		---	DOL										
	Diameter		mm	800										
	Nominal air flow		l/s	53444	53444	53444	64133	64133	74822	85510	106888	106888	117577	117577
	Model	Quantity	No.	10	10	10	12	12	14	16	20	20	22	22
		Speed	rpm	920	920	920	920	920	920	920	920	920	920	920
		Motor input	W	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75
Compressor	Type		---	Semi-hermetic single screw compressor										
	Oil charge		l	38	38	38	44	50	50	50	75	75	75	75
	Quantity		No.	2	2	2	2	2	2	2	3	3	3	3
Sound level	Sound Power	Cooling	dB(A)	99.5	100.0	100.0	100.9	101.1	101.5	101.7	102.9	103.0	103.2	103.3
	Sound Pressure (2)	Cooling	dB(A)	79.0	79.5	79.5	80.4	80.6	80.6	80.6	81.0	81.1	81.1	81.2
Refrigerant circuit	Refrigerant type		---	R-134a										
	Refrigerant charge		kg.	128	128	128	146	144	162	178	260	260	261	261
	N. of circuits		No.	2	2	2	2	2	2	2	3	3	3	3
Piping connections	Evaporator water inlet/outlet		mm	168.3	168.3	168.3	168.3	168.3	168.3	168.3	219.1	219.1	219.1	219.1
Safety devices	High discharge pressure (pressure switch)													
	High discharge pressure (pressure transducer)													
	Low suction pressure (pressure transducer)													
	Compressor motor protection													
	High discharge temperature													
	Low oil pressure													
	Low pressure ratio													
	High oil filter pressure drop													
	Phase monitor													
	Emergency stop button													
	Water freeze protection controller													
Notes (1)	Cooling capacity, unit power input in cooling and EER are based on the following conditions: evaporator 12/7°C; ambient 35°C, unit at full load operation.													
Notes (2)	The values are according to ISO 3744 and are referred to: evaporator 12/7°C, ambient 35°C, full load operation.													
Notes (3)	For the best cost effective cooling capacity between 1152 (EWADC12C-SS/SL) and 1419 (EWADC14C-SS & EWADC14C-SL) please refer to EWAD~C-X version.													

4 Specifications

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ESEER			---	3.95	3.87	3.89	3.84	3.8	3.88	3.84	3.88	3.9	3.87	3.78
IPLV			---	4.30	4.17	4.16	4.23	4.14	4.17	4.19	4.19	4.22	4.18	4.13
Casing	Colour		---	Ivory White										
	Material		---	Galvanized and painted steel sheet										
Dimensions	Unit	Height	mm	2540	2540	2540	2540	2540	2540	2540	2540	2540	2540	2540
		Width	mm	2285	2285	2285	2285	2285	2285	2285	2285	2285	2285	2285
		Length	mm	6185	6185	6185	6185	6185	7085	7985	10185	10185	11085	11085
Weight	Unit		kg	5920	6030	6050	6570	6850	7300	7570	10750	10770	11150	11210
	Operating Weight		kg	6200	6280	6300	6820	7100	7540	7810	11170	11170	11550	11700
Water heat exchanger	Type		---	Single Pass Shell&Tube										
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Air heat exchanger	Type		---	High efficiency fin and tube type with integral subcooler										
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	Diameter		mm	800										
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	Model	Quantity	No.	10	10	10	12	12	14	16	20	20	22	22
		Speed	rpm	920	920	920	920	920	920	920	920	920	920	920
		Motor input	W	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75
Compressor	Type		---	Semi-hermetic single screw compressor										
	Oil charge		l	38	38	38	44	50	50	50	75	75	75	75
	Quantity		No.	2	2	2	2	2	2	2	3	3	3	3
Sound level	Sound Power	Cooling	dB(A)	96.0	96.1	96.1	97.5	97.1	97.6	98.1	99.1	99.1	99.5	99.5
	Sound Pressure (2)	Cooling	dB(A)	75.5	75.6	75.6	76.5	76.6	76.8	76.9	77.2	77.2	77.3	77.4
Refrigerant circuit	Refrigerant type		---	R-134a										
	Refrigerant charge		kg.	128	128	128	146	144	162	178	260	260	261	261
	N. of circuits		No.	2	2	2	2	2	2	2	3	3	3	3
Piping connections	Evaporator water inlet/outlet		mm	168.3	168.3	168.3	168.3	168.3	168.3	168.3	219.1	219.1	219.1	219.1
Safety devices	High discharge pressure (pressure switch)													
	High discharge pressure (pressure transducer)													
	Low suction pressure (pressure transducer)													
	Compressor motor protection													
	High discharge temperature													
	Low oil pressure													
	Low pressure ratio													
	High oil filter pressure drop													
	Phase monitor													
	Emergency stop button													
	Water freeze protection controller													
Notes (1)	Cooling capacity, unit power input in cooling and EER are based on the following conditions: evaporator 12/7°C; ambient 35°C, unit at full load operation.													
Notes (2)	The values are according to ISO 3744 and are referred to: evaporator 12/7°C, ambient 35°C, full load operation.													
Notes (3)	For the best cost effective cooling capacity between 1152 (EWADC12C-SS/SL) and 1419 (EWADC14C-SS & EWADC14C-SL)please refer to EWAD~C-X version.													

4 Specifications

4-1 Technical Specifications			EWAD~C-SR	620	720	790	880	920	C10	C11	C13	C14	C15	C16
Capacity (1)	Cooling		kW	619	715	789	876	922	1020	1112	1367	1471	1556	1623
Capacity control	Type		---	Stepless										
	Minimum capacity		%	12.5	12.5	12.5	12.5	12.5	12.5	12.5	7	7	7	7
Unit power input (1)	Cooling		kW	223	272	315	331	369	395	417	517	576	603	647
EER (1)			---	2.77	2.62	2.51	2.65	2.5	2.59	2.67	2.64	2.55	2.58	2.51
ESEER			---	4.08	3.96	3.98	3.99	4	3.96	3.96	3.9	3.87	3.9	3.83
IPLV			---	4.37	4.23	4.19	4.29	4.21	4.20	4.29	4.24	4.22	4.24	4.18
Casing	Colour		---	Ivory White										
	Material		---	Galvanized and painted steel sheet										
Dimensions	Unit	Height	mm	2540	2540	2540	2540	2540	2540	2540	2540	2540	2540	2540
		Width	mm	2285	2285	2285	2285	2285	2285	2285	2285	2285	2285	2285
		Length	mm	6185	6185	6185	6185	6185	7085	7985	10185	10185	11085	11085
Weight	Unit		kg	5920	6030	6050	6570	6850	7300	7570	10750	10770	11150	11210
	Operating Weight		kg	6200	6280	6300	6820	7100	7540	7810	11170	11170	11550	11700
Water heat exchanger	Type		---	Single Pass Shell&Tube										
	Water volume		l	266	266	251	251	251	243	243	421	408	408	474
	Nominal water flow rate	Cooling	l/s	29.57	34.15	37.71	41.83	44.05	48.75	53.11	65.32	70.28	74.32	77.57
	Nominal Water pressure drop	Cooling	kPa	67	55	47	57	62	58	68	44	54	60	66
	Insulation material			Closed cell										
Air heat exchanger	Type		---	High efficiency fin and tube type with integral subcooler										
Fan	Type		---	Direct propeller type										
	Drive		---	DOL										
	Diameter		mm	800										
	Nominal air flow		l/s	41006	41006	41006	49207	49207	57408	65610	82012	82012	90213	90213
	Model	Quantity	No.	10	10	10	12	12	14	16	20	20	22	22
		Speed	rpm	715	715	715	715	715	715	715	715	715	715	715
		Motor input	W	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Compressor	Type		---	Semi-hermetic single screw compressor										
	Oil charge		l	38	38	38	44	50	50	50	75	75	75	75
	Quantity		No.	2	2	2	2	2	2	2	3	3	3	3
Sound level	Sound Power	Cooling	dB(A)	91.5	92.0	92.0	92.5	93.0	93.5	93.8	94.8	94.9	95.1	95.2
	Sound Pressure (2)	Cooling	dB(A)	71.0	71.5	71.5	72	72.5	72.6	72.7	72.9	73.0	73	73.1
Refrigerant circuit	Refrigerant type		---	R-134a										
	Refrigerant charge		kg.	128	128	128	146	144	162	178	260	260	261	261
	N. of circuits		No.	2	2	2	2	2	2	2	3	3	3	3
Piping connections	Evaporator water inlet/outlet		mm	168.3	168.3	168.3	168.3	168.3	168.3	168.3	219.1	219.1	219.1	219.1
Safety devices	High discharge pressure (pressure switch)													
	High discharge pressure (pressure transducer)													
	Low suction pressure (pressure transducer)													
	Compressor motor protection													
	High discharge temperature													
	Low oil pressure													
	Low pressure ratio													
	High oil filter pressure drop													
	Phase monitor													
	Emergency stop button													
	Water freeze protection controller													
Notes (1)	Cooling capacity, unit power input in cooling and EER are based on the following conditions: evaporator 12/7°C; ambient 35°C, unit at full load operation.													
Notes (2)	The values are according to ISO 3744 and are referred to: evaporator 12/7°C, ambient 35°C, full load operation.													
Notes (3)	For the best cost effective cooling capacity between 1112 (EWADC12C-SR) and 1367 (EWADC14C-SR) please refer to EWAD~C-X version.													

4 Specifications

4-2 Electrical Specifications			EWAD~C-SS	650	740	830	910	970	C11	C12	C14	C15	C16	C17
Power Supply	Phase		---	3										
	Frequency		Hz	50										
	Voltage		V	400										
	Voltage Tolerance	Minimum	%	-10%										
		Maximum	%	+10%										
Unit	Maximum starting current		A	628.4	665.2	665.2	904.2	949.8	1009	1017	1242.6	1293.8	1353	1353
	Nominal running current cooling		A	365	432	492	523	574	624	668	823	908	959	1023
	Maximum running current		A	486	532	578	643	700	772	844	1058	1122	1194	1258
	Maximum current for wires sizing		A	535	585	636	707	770	849	928	1164	1234	1313	1384
Fans	Nominal running current in cooling		A	40	40	40	48	48	56	64	80	80	88	88
Compressor	Phase		No.	3										
	Voltage		V	400										
	Voltage Tolerance	Minimum	%	-10%										
		Maximum	%	+10%										
	Maximum running current		A	223+223	223+269	269+269	269+326	326+326	326+390	390+390	326+326 +326	390+326 +326	390+390 +326	390+390 +390
	Starting method		---	Wye – Delta type (Y –Δ)										

4-2 Electrical Specifications			EWAD~C-SL	650	740	830	910	970	C11	C12	C14	C15	C16	C17
Power Supply	Phase		---	3										
	Frequency		Hz	50										
	Voltage		V	400										
	Voltage Tolerance	Minimum	%	-10%										
		Maximum	%	+10%										
Unit	Maximum starting current		A	628.4	665.2	665.2	904.2	949.8	1009	1017	1242.6	1293.8	1353	1353
	Nominal running current cooling		A	365	432	492	523	574	624	668	823	908	959	1023
	Maximum running current		A	486	532	578	643	700	772	844	1058	1122	1194	1258
	Maximum current for wires sizing		A	535	585	636	707	770	849	928	1164	1234	1313	1384
Fans	Nominal running current in cooling		A	40	40	40	48	48	56	64	80	80	88	88
Compressor	Phase		No.	3										
	Voltage		V	400										
	Voltage Tolerance	Minimum	%	-10%										
		Maximum	%	+10%										
	Maximum running current		A	223+223	223+269	269+269	269+326	326+326	326+390	390+390	326+326 +326	390+326 +326	390+390 +326	390+390 +390
	Starting method		---	Wye – Delta type (Y –Δ)										

4-2 Electrical Specifications			EWAD~C-SR	620	720	790	880	920	C10	C11	C13	C14	C15	C16
Power Supply	Phase		---	3										
	Frequency		Hz	50										
	Voltage		V	400										
	Voltage Tolerance	Minimum	%	-10%										
		Maximum	%	+10%										
Unit	Maximum starting current		A	614.4	651.2	651.2	887.4	933	989.4	994.6	1214.6	1265.8	1322.2	1322.2
	Nominal running current cooling		A	370	449	518	546	606	653	694	853	951	1001	1074
	Maximum running current		A	472	518	564	626	683	752	822	1030	1094	1163	1227
	Maximum current for wires sizing		A	519	570	620	689	752	828	904	1133	1203	1280	1350
Fans	Nominal running current in cooling		A	26	26	26	31	31	36	42	52	52	57	57
Compressor	Phase		No.	3										
	Voltage		V	400										
	Voltage Tolerance	Minimum	%	-10%										
		Maximum	%	+10%										
	Maximum running current		A	223+223	223+269	269+269	269+326	326+326	326+390	390+390	326+326 +326	390+326 +326	390+390 +326	390+390 +390
	Starting method		---	Wye – Delta type (Y –Δ)										

4 Specifications

4-2 Electrical Specifications EWAD-C-SS EWAD-C-SL EWAD-C-SR	
Notes	Allowed voltage tolerance ± 10%. Voltage unbalance between phases must be within ± 3%.
	Maximum starting current: starting current of biggest compressor + current of the compressor at 75% maximum load + fans current for the circuit at 75%.
	Nominal current in cooling mode is referred to the following conditions: evaporator 12°C/7°C; ambient 35°C; compressors + fans current.
	Maximum running current is based on max compressor absorbed current in its envelope and max fans absorbed current.
	Maximum unit current for wires sizing is based on minimum allowed voltage.
	Maximum current for wires sizing: (compressors full load ampere + fans current) x 1,1.

4 Specifications

4-3 Technical Specifications			EWAD~C-XS	760	830	890	990	C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
Capacity (1)	Cooling		kW	756	830	889	1001	1074	1196	1280	1349	1409	1526	1596	1685	1768	1858
Capacity control	Type		---	Stepless													
	Minimum capacity		%	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	7	7	7	7	7	7
Unit power input (1)	Cooling		kW	233	253	278	307	338	364	400	411	437	474	504	533	561	590
EER (1)			---	3.25	3.28	3.2	3.26	3.18	3.29	3.2	3.29	3.23	3.22	3.17	3.16	3.15	3.15
ESEER			---	4.02	4.11	4.02	4.11	4.05	4.14	4.02	4.28	4.23	4.19	4.17	4.16	4.13	4.13
IPLV			---	4.48	4.48	4.44	4.48	4.44	4.51	4.47	4.59	4.56	4.54	4.52	4.52	4.47	4.47
Casing	Colour		---	Ivory White													
	Material		---	Galvanized and painted steel sheet													
Dimensions	Unit	Height	mm	2540	2540	2540	2540	2540	2540	2540	2540	2540	2540	2540	2540	2540	2540
		Width	mm	2285	2285	2285	2285	2285	2285	2285	2285	2285	2285	2285	2285	2285	2285
		Length	mm	6185	7085	7085	7985	7985	9785	9785	9785	11985	11985	11985	12885	13785	14685
Weight	Unit		kg	5990	6340	6360	7190	7470	8220	8240	8900	10560	11310	11570	11900	12260	12600
	Operating Weight		kg	6240	6580	6600	7600	7870	8610	8630	9890	11040	12170	12430	12760	13140	13470
Water heat exchanger	Type		---	Single Pass Shell&Tube													
	Water volume		l	251	243	243	403	403	386	386	979	491	850	850	850	871	850
	Nominal water flow rate	Cooling	l/s	36.1	39.67	42.49	47.82	51.32	57.13	61.18	64.45	67.34	72.9	76.24	80.48	84.47	88.79
	Nominal Water pressure drop	Cooling	kPa	80	56	64	61	69	45	51	71	77	57	62	68	64	37
	Insulation material			Closed cell													
Air heat exchanger	Type		---	High efficiency fin and tube type with integral subcooler													
Fan	Type		---	Direct propeller type													
	Drive		---	DOL													
	Diameter		mm	800													
	Nominal air flow		l/s	64133	74822	74822	85510	85510	106888	106888	106888	128266	128266	128266	138954	149643	160332
	Model	Quantity	No.	12	14	14	16	16	20	20	20	24	24	24	26	28	30
		Speed	rpm	920	920	920	920	920	920	920	920	920	920	920	920	920	920
		Motor input	W	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75
Compressor	Type		---	Semi-hermetic single screw compressor													
	Oil charge		l	38	38	38	44	50	50	50	50	63	69	75	75	75	75
	Quantity		No.	2	2	2	2	2	2	2	2	3	3	3	3	3	3
Sound level	Sound Power	Cooling	dB(A)	100.2	100.5	100.5	101.4	101.9	102.4	102.5	102.5	102.9	103.1	103.2	103.5	103.7	103.9
	Sound Pressure (2)	Cooling	dB(A)	79.7	79.7	79.7	80.2	80.7	80.3	80.4	80.4	80.5	80.7	80.9	80.8	81	81
Refrigerant circuit	Refrigerant type		---	R-134a													
	Refrigerant charge		kg.	146	162	162	182	182	214	214	225	291	297	297	312	328	343
	N. of circuits		No.	2	2	2	2	2	2	2	2	3	3	3	3	3	3
Piping connections	Evaporator water inlet/outlet		mm	168.3	168.3	168.3	219.1	219.1	219.1	219.1	273	219.1	273	273	273	273	273
Safety devices	High discharge pressure (pressure switch)																
	High discharge pressure (pressure transducer)																
	Low suction pressure (pressure transducer)																
	Compressor motor protection																
	High discharge temperature																
	Low oil pressure																
	Low pressure ratio																
	High oil filter pressure drop																
	Phase monitor																
	Emergency stop button																
	Water freeze protection controller																
Notes (1)	Cooling capacity, unit power input in cooling and EER are based on the following conditions: evaporator 12/7°C; ambient 35°C, unit at full load operation.																
Notes (2)	The values are according to ISO 3744 and are referred to: evaporator 12/7°C, ambient 35°C, full load operation.																

4-3 Technical Specifications		EWAD~C-XL	760	830	890	990	C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
Capacity (1)	Cooling	kW	756	830	889	1001	1074	1196	1280	1349	1409	1526	1596	1685	1768	1858
Capacity control	Type	---	Stepless													
	Minimum capacity	%	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	7	7	7	7	7	7
Unit power input (1)	Cooling	kW	233	253	278	307	338	364	400	411	437	474	504	533	561	590
EER (1)		---	3.25	3.28	3.2	3.26	3.18	3.29	3.2	3.29	3.23	3.22	3.17	3.16	3.15	3.15
ESEER		---	4.02	4.11	4.02	4.11	4.05	4.14	4.02	4.28	4.23	4.19	4.17	4.16	4.13	4.13
IPLV		---	4.48	4.48	4.44	4.48	4.44	4.51	4.47	4.59	4.56	4.54	4.52	4.52	4.47	4.47

4 Specifications

4-3 Technical Specifications			EWAD~C-XL	760	830	890	990	C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
Casing	Colour		---	Ivory White													
	Material		---	Galvanized and painted steel sheet													
Dimensions	Unit	Height	mm	2540	2540	2540	2540	2540	2540	2540	2540	2540	2540	2540	2540	2540	2540
		Width	mm	2285	2285	2285	2285	2285	2285	2285	2285	2285	2285	2285	2285	2285	2285
		Length	mm	6185	7085	7085	7985	7985	9785	9785	9785	11985	11985	11985	12885	13785	14685
Weight	Unit		kg	6280	6630	6650	7480	7760	8510	8530	9190	11000	11760	12010	12350	12700	13040
	Operating Weight		kg	6520	6870	6890	7880	8160	8900	8920	10180	11490	12610	12870	13200	13580	13910
Water heat exchanger	Type		---	Single Pass Shell&Tube													
	Water volume		l	251	243	243	403	403	386	386	979	491	850	850	850	871	850
	Nominal water flow rate	Cooling	l/s	36.1	39.67	42.49	47.82	51.32	57.13	61.18	64.45	67.34	72.9	76.24	80.48	84.47	88.79
	Nominal Water pressure drop	Cooling	kPa	80	56	64	61	69	45	51	71	77	57	62	68	64	37
	Insulation material			Closed cell													
Air heat exchanger	Type		---	High efficiency fin and tube type with integral subcooler													
Fan	Type		---	Direct propeller type													
	Drive		---	DOL													
	Diameter		mm	800													
	Nominal air flow		l/s	64133	74822	74822	85510	85510	106888	106888	106888	128266	128266	128266	138954	149643	160332
	Model	Quantity	No.	12	14	14	16	16	20	20	20	24	24	24	26	28	30
		Speed	rpm	920	920	920	920	920	920	920	920	920	920	920	920	920	920
		Motor input	W	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75
Compressor	Type		---	Semi-hermetic single screw compressor													
	Oil charge		l	38	38	38	44	50	50	50	50	63	69	75	75	75	75
	Quantity		No.	2	2	2	2	2	2	2	2	3	3	3	3	3	3
Sound level	Sound Power	Cooling	dB(A)	96.8	97.4	97.4	98	98.2	98.8	98.9	98.9	99.6	99.6	99.6	100	100.2	100.4
	Sound Pressure (2)	Cooling	dB(A)	76.3	76.5	76.5	76.9	77.1	76.7	76.8	76.8	77.1	77.2	77.3	77.4	77.5	77.5
Refrigerant circuit	Refrigerant type		---	R-134a													
	Refrigerant charge		kg.	146	162	162	182	182	214	214	225	291	297	297	312	328	343
	N. of circuits		No.	2	2	2	2	2	2	2	2	3	3	3	3	3	3
Piping connections	Evaporator water inlet/outlet		mm	168.3	168.3	168.3	219.1	219.1	219.1	219.1	273	219.1	273	273	273	273	273
Safety devices	High discharge pressure (pressure switch)																
	High discharge pressure (pressure transducer)																
	Low suction pressure (pressure transducer)																
	Compressor motor protection																
	High discharge temperature																
	Low oil pressure																
	Low pressure ratio																
	High oil filter pressure drop																
	Phase monitor																
	Emergency stop button																
	Water freeze protection controller																
Notes (1)	Cooling capacity, unit power input in cooling and EER are based on the following conditions: evaporator 12/7°C; ambient 35°C, unit at full load operation.																
Notes (2)	The values are according to ISO 3744 and are referred to: evaporator 12/7°C, ambient 35°C, full load operation.																

4-3 Technical Specifications			EWAD~C-XR	740	810	870	970	C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
Capacity (1)	Cooling		kW	736	811	866	974	1041	1168	1247	1302	1378	1486	1550	1639	1722	1813
Capacity control	Type		---	Stepless													
	Minimum capacity		%	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	7	7	7	7	7	7
Unit power input (1)	Cooling		kW	235	254	281	309	343	365	404	415	438	479	513	541	567	595
EER (1)			---	3.14	3.2	3.08	3.15	3.03	3.2	3.08	3.14	3.15	3.1	3.03	3.03	3.04	3.04
ESEER			---	4.29	4.36	4.23	4.34	4.24	4.38	4.25	4.33	4.34	4.26	4.26	4.2	4.21	4.2
IPLV			---	4.55	4.62	4.51	4.63	4.54	4.65	4.54	4.58	4.72	4.65	4.60	4.59	4.59	4.57
Casing	Colour		---	Ivory White													
	Material		---	Galvanized and painted steel sheet													
Dimensions	Unit	Height	mm	2540	2540	2540	2540	2540	2540	2540	2540	2540	2540	2540	2540	2540	2540
		Width	mm	2285	2285	2285	2285	2285	2285	2285	2285	2285	2285	2285	2285	2285	2285
		Length	mm	6185	7085	7085	7985	7985	9785	9785	9785	11985	11985	11985	12885	13785	14685
Weight	Unit		kg	6280	6630	6650	7480	7760	8510	8530	9190	11000	11760	12010	12350	12700	13040
	Operating Weight		kg	6520	6870	6890	7880	8160	8900	8920	10180	11490	12610	12870	13200	13580	13910

4 Specifications

4-3 Technical Specifications			EWAD~C-XR	740	810	870	970	C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
Water heat exchanger	Type		---	Single Pass Shell&Tube													
	Water volume		l	251	243	243	403	403	386	386	979	491	850	850	850	871	850
	Nominal water flow rate	Cooling	l/s	35.17	38.74	41.36	46.54	49.76	55.78	59.56	62.21	65.85	70.98	74.07	78.32	82.3	86.61
	Nominal Water pressure drop	Cooling	kPa	76	54	61	58	65	43	49	67	74	54	59	65	61	35
	Insulation material			Closed cell													
Air heat exchanger	Type		---	High efficiency fin and tube type with integral subcooler													
Fan	Type		---	Direct propeller type													
	Drive		---	DOL													
	Diameter		mm	800													
	Nominal air flow		l/s	49207	57408	57408	65610	65610	82012	82012	82012	98414	98414	98414	106616	114817	123018
	Model	Quantity	No.	12	14	14	16	16	20	20	20	24	24	24	26	28	30
		Speed	rpm	715													
		Motor input	W	0.78													
Compressor	Type		---	Semi-hermetic single screw compressor													
	Oil charge		l	38	38	38	44	50	50	50	50	63	69	75	75	75	75
	Quantity		No.	2	2	2	2	2	2	2	2	3	3	3	3	3	3
Sound level	Sound Power	Cooling	dB(A)	92	92.3	92.3	93.5	93.7	94.3	94.5	94.4	95.1	95.2	95.3	95.6	95.7	95.9
	Sound Pressure (2)	Cooling	dB(A)	71.5	71.5	71.5	72.3	72.5	72.2	72.3	72.3	72.6	72.8	72.9	72.9	73	73
Refrigerant circuit	Refrigerant type		---	R-134a													
	Refrigerant charge		kg.	146	162	162	182	182	214	214	225	291	297	297	312	328	343
	N. of circuits		No.	2	2	2	2	2	2	2	2	3	3	3	3	3	3
Piping connections	Evaporator water inlet/outlet		mm	168.3	168.3	168.3	219.1	219.1	219.1	219.1	273	219.1	273	273	273	273	273
Safety devices	High discharge pressure (pressure switch)																
	High discharge pressure (pressure transducer)																
	Low suction pressure (pressure transducer)																
	Compressor motor protection																
	High discharge temperature																
	Low oil pressure																
	Low pressure ratio																
	High oil filter pressure drop																
	Phase monitor																
	Emergency stop button																
	Water freeze protection controller																
Notes (1)	Cooling capacity, unit power input in cooling and EER are based on the following conditions: evaporator 12/7°C; ambient 35°C, unit at full load operation.																
Notes (2)	The values are according to ISO 3744 and are referred to: evaporator 12/7°C, ambient 35°C, full load operation.																

4-4 Electrical Specifications			EWAD~C-XS	760	830	890	990	C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
Power Supply	Phase		---	3													
	Frequency		Hz	50													
	Voltage		V	400													
	Voltage Tolerance	Minimum	%	-10%													
		Maximum	%	+10%													
Unit	Maximum starting current		A	636.4	681.2	681.2	920.2	965.8	1033	1033	1033	1167.4	1213	1258.6	1317.8	1377	1385
	Nominal running current cooling		A	386	423	463	511	559	608	668	686	729	787	834	885	934	985
	Maximum running current		A	494	548	594	659	716	796	860	860	960	1017	1074	1146	1218	1290
	Maximum current for wires sizing		A	543	603	653	725	788	876	946	946	1056	1119	1181	1261	1340	1419
Fans	Nominal running current in cooling		A	48	56	56	64	64	80	80	80	96	96	96	104	112	120
Compressor	Phase		No.	3													
	Voltage		V	400													
	Voltage Tolerance	Minimum	%	-10%													
		Maximum	%	+10%													
	Maximum running current		A	223 +223	223 +269	269 +269	269 +326	326 +326	326 +390	390 +390	326+326 +326	390+326 +326	390+390 +326	390+390 +390	326+326 +390	390+390 +326	390+390 +390
	Starting method		---	Wye – Delta type (Y –Δ)													

4 Specifications

4-4 Electrical Specifications			EWAD~C-XL	760	830	890	990	C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
Power Supply	Phase		---	3													
	Frequency		Hz	50													
	Voltage		V	400													
	Voltage Tolerance	Minimum	%	-10%													
		Maximum	%	+10%													
Unit	Maximum starting current		A	636.4	681.2	681.2	920.2	965.8	1033	1033	1033	1167.4	1213	1258.6	1317.8	1377	1385
	Nominal running current cooling		A	386	423	463	511	559	608	668	686	729	787	834	885	934	985
	Maximum running current		A	494	548	594	659	716	796	860	860	960	1017	1074	1146	1218	1290
	Maximum current for wires sizing		A	543	603	653	725	788	876	946	946	1056	1119	1181	1261	1340	1419
Fans	Nominal running current in cooling		A	48	56	56	64	64	80	80	80	96	96	96	104	112	120
Compressor	Phase		No.	3													
	Voltage		V	400													
	Voltage Tolerance	Minimum	%	-10%													
		Maximum	%	+10%													
	Maximum running current		A	223 +223	223 +269	269 +269	269 +326	326 +326	326 +390	390 +390	390 +390	269+269 +326	326+326 +269	326+326 +326	326+326 +390	390+390 +326	390+390 +390
	Starting method		---	Wye – Delta type (Y –Δ)													

4-4 Electrical Specifications			EWAD~C-XR	740	810	870	970	C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
Power Supply	Phase		---	3													
	Frequency		Hz	50													
	Voltage		V	400													
	Voltage Tolerance	Minimum	%	-10%													
		Maximum	%	+10%													
Unit	Maximum starting current		A	619.6	661.6	661.6	897.8	943.4	1005	1005	1005	1133.8	1179.4	1225	1281.4	1337.8	1343
	Nominal running current cooling		A	391	425	470	517	570	613	679	697	734	799	851	901	950	1001
	Maximum running current		A	477	528	574	637	694	768	832	832	926	983	1040	1110	1179	1248
	Maximum current for wires sizing		A	525	581	632	700	763	845	915	915	1019	1082	1144	1221	1297	1373
Fans	Nominal running current in cooling		A	31	36	36	42	42	52	52	52	62	62	62	68	73	78
Compressor	Phase		No.	3													
	Voltage		V	400													
	Voltage Tolerance	Minimum	%	-10%													
		Maximum	%	+10%													
	Maximum running current		A	223 +223	223 +269	269 +269	269 +326	326 +326	326 +390	390 +390	390 +390	269+269 +326	326+326 +269	326+326 +326	326+326 +390	390+390 +326	390+390 +390
	Starting method		---	Wye – Delta type (Y –Δ)													

4-4 Electrical Specifications EWAD-C-XS EWAD-C-XL EWAD-C-XR	
Notes	Allowed voltage tolerance ± 10%. Voltage unbalance between phases must be within ± 3%.
	Maximum starting current: starting current of biggest compressor + current of the compressor at 75% maximum load + fans current for the circuit at 75%.
	Nominal current in cooling mode is referred to the following conditions: evaporator 12°C/7°C; ambient 35°C; compressors + fans current.
	Maximum running current is based on max compressor absorbed current in its envelope and max fans absorbed current.
	Maximum unit current for wires sizing is based on minimum allowed voltage.
	Maximum current for wires sizing: (compressors full load ampere + fans current) x 1,1.

4 Specifications

4-5 Technical Specifications			EWAD~C-PS	820	890	980	C11	C12	C13	C14
Capacity (1)	Cooling		kW	821	890	975	1074	1158	1279	1390
Capacity control	Type		---	Stepless						
	Minimum capacity		%	12.5						
Unit power input (1)	Cooling		kW	225	249	274	301	330	363	396
EER (1)			---	3.64	3.58	3.56	3.56	3.51	3.52	3.51
ESEER			---	4.44	4.5	4.41	4.53	4.39	4.44	4.31
IPLV			---	4.78	4.67	4.71	4.69	4.73	4.65	4.73
Casing	Colour		---	Ivory White						
	Material		---	Galvanized and painted steel sheet						
Dimensions	Unit	Height	mm	2540						
		Width	mm	2285						
		Length	mm	8885	8885	8885	9785	9785	11085	11985
Weight	Unit		kg	7530	7530	7660	8290	8550	9390	9730
	Operating Weight		kg	8130	8130	8700	9330	9590	10380	10720
Water heat exchanger	Type		---	Single Pass Shell&Tube						
	Water volume		l	599	599	1043	1027	1027	995	979
	Nominal water flow rate	Cooling	l/s	39.22	42.53	46.6	51.3	55.31	61.12	66.41
	Nominal Water pressure drop	Cooling	kPa	57	65	30	61	69	60	73
	Insulation material			Closed cell						
Air heat exchanger	Type		---	High efficiency fin and tube type with integral subcooler						
Fan	Type		---	Direct propeller type						
	Drive		---	DOL						
	Diameter		mm	800						
	Nominal air flow		l/s	96199	96199	96199	106888	106888	117577	128266
	Model	Quantity	No.	18	18	18	20	20	22	24
		Speed	rpm	920						
		Motor input	W	1.75						
Compressor	Type		---	Semi-hermetic single screw compressor						
	Oil charge		l	38	38	38	44	50	50	50
	Quantity		No.	2						
Sound level	Sound Power	Cooling	dB(A)	101	101.0	101.0	101.8	102.3	102.6	102.9
	Sound Pressure (2)	Cooling	dB(A)	79.5	79.5	79.5	80	80.5	80.4	80.5
Refrigerant circuit	Refrigerant type		---	R-134a						
	Refrigerant charge		kg.	204	202	204	220	220	252	254
	N. of circuits		No.	2						
Piping connections	Evaporator water inlet/outlet		mm	219.1	219.1	273	273	273	273	273
Safety devices	High discharge pressure (pressure switch)									
	High discharge pressure (pressure transducer)									
	Low suction pressure (pressure transducer)									
	Compressor motor protection									
	High discharge temperature									
	Low oil pressure									
	Low pressure ratio									
	High oil filter pressure drop									
	Phase monitor									
	Emergency stop button									
	Water freeze protection controller									
Notes (1)	Cooling capacity, unit power input in cooling and EER are based on the following conditions: evaporator 12/7°C; ambient 35°C, unit at full load operation.									
Notes (2)	The values are according to ISO 3744 and are referred to: evaporator 12/7°C, ambient 35°C, full load operation.									

4-5 Technical Specifications		EWAD~C-PL	820	890	980	C11	C12	C13	C14
Capacity (1)	Cooling	kW	821	890	975	1074	1158	1279	1390
Capacity control	Type	---	Stepless						
	Minimum capacity	%	12.5						
Unit power input (1)	Cooling	kW	225	249	274	301	330	363	396
EER (1)		---	3.64	3.58	3.56	3.56	3.51	3.52	3.51
ESEER		---	4.44	4.5	4.41	4.53	4.39	4.44	4.31
IPLV		---	4.78	4.67	4.71	4.69	4.73	4.65	4.73

4 Specifications

4-5 Technical Specifications			EWAD~C-PL	820	890	980	C11	C12	C13	C14
Casing	Colour		---	Ivory White						
	Material		---	Galvanized and painted steel sheet						
Dimensions	Unit	Height	mm	2540						
		Width	mm	2285						
		Length	mm	8885	8885	8885	9785	9785	11085	11985
Weight	Unit		kg	7820	7820	7950	8580	8840	10380	10720
	Operating Weight		kg	8420	8420	8990	9620	9880	10670	11010
Water heat exchanger	Type		---	Single Pass Shell&Tube						
	Water volume		l	599	599	1043	1027	1027	995	979
	Nominal water flow rate	Cooling	l/s	39.22	42.53	46.6	51.3	55.31	61.12	66.41
	Nominal Water pressure drop	Cooling	kPa	57	65	30	61	69	60	73
	Insulation material			Closed cell						
Air heat exchanger	Type		---	High efficiency fin and tube type with integral subcooler						
Fan	Type		---	Direct propeller type						
	Drive		---	DOL						
	Diameter		mm	800						
	Nominal air flow		l/s	96199	96199	96199	106888	106888	117577	128266
	Model	Quantity	No.	18	18	18	20	20	22	24
		Speed	rpm	920						
		Motor input	W	1.75						
Compressor	Type		---	Semi-hermetic single screw compressor						
	Oil charge		l	38	38	38	44	50	50	50
	Quantity		No.	2						
Sound level	Sound Power	Cooling	dB(A)	98.4	98.4	98.4	98.8	99.9	99.3	99.6
	Sound Pressure (2)	Cooling	dB(A)	76.9	76.9	76.9	77	77.1	77.1	77.2
Refrigerant circuit	Refrigerant type		---	R-134a						
	Refrigerant charge		kg.	204	202	204	220	220	252	254
	N. of circuits		No.	2						
Piping connections	Evaporator water inlet/outlet		mm	219.1	219.1	273	273	273	273	273
Safety devices	High discharge pressure (pressure switch)									
	High discharge pressure (pressure transducer)									
	Low suction pressure (pressure transducer)									
	Compressor motor protection									
	High discharge temperature									
	Low oil pressure									
	Low pressure ratio									
	High oil filter pressure drop									
	Phase monitor									
	Emergency stop button									
	Water freeze protection controller									
Notes (1)	Cooling capacity, unit power input in cooling and EER are based on the following conditions: evaporator 12/7°C; ambient 35°C, unit at full load operation.									
Notes (2)	The values are according to ISO 3744 and are referred to: evaporator 12/7°C, ambient 35°C, full load operation.									

4-5 Technical Specifications			EWAD~C-PR	810	880	960	C10	C11	C13	C14
Capacity (1)	Cooling		kW	809	875	956	1053	1132	1251	1359
Capacity control	Type		---	Stepless						
	Minimum capacity		%	12.5						
Unit power input (1)	Cooling		kW	219	244	272	299	330	364	396
EER (1)			---	3.7	3.58	3.51	3.52	3.43	3.44	3.43
ESEER			---	4.63	4.59	4.54	4.59	4.5	4.53	4.51
IPLV			---	5.04	4.89	4.89	4.86	4.82	4.81	4.82
Casing	Colour		---	Ivory White						
	Material		---	Galvanized and painted steel sheet						
Dimensions	Unit	Height	mm	2540						
		Width	mm	2285						
		Length	mm	8885	8885	8885	9785	9785	11085	11985
Weight	Unit		kg	7820	7820	7950	8580	8840	10380	10720
	Operating Weight		kg	8420	8420	8990	9620	9880	10670	11010

4 Specifications

4-5 Technical Specifications			EWAD~C-PR	810	880	960	C10	C11	C13	C14
Water heat exchanger	Type		---	Single Pass Shell&Tube						
	Water volume		l	599	599	1043	1027	1027	995	979
	Nominal water flow rate	Cooling	l/s	38.65	41.81	45.69	50.3	54.11	59.76	64.95
	Nominal Water pressure drop	Cooling	kPa	56	63	29	59	66	58	70
	Insulation material			Closed cell						
Air heat exchanger	Type		---	High efficiency fin and tube type with integral subcooler						
Fan	Type		---	Direct propeller type						
	Drive		---	DOL						
	Diameter		mm	800						
	Nominal air flow		l/s	73811	73811	73811	82012	82012	90213	98414
	Model	Quantity	No.	18	18	18	20	20	22	24
		Speed	rpm	715						
		Motor input	W	0.78						
Compressor	Type		---	Semi-hermetic single screw compressor						
	Oil charge		l	38	38	38	44	50	50	50
	Quantity		No.	2						
Sound level	Sound Power	Cooling	dB(A)	92.7	92.7	92.7	93.4	93.8	94.1	94.4
	Sound Pressure (2)	Cooling	dB(A)	71.2	71.2	71.2	71.7	72.0	72.0	72.0
Refrigerant circuit	Refrigerant type		---	R-134a						
	Refrigerant charge		kg.	204	202	204	220	220	252	254
	N. of circuits		No.	2						
Piping connections	Evaporator water inlet/outlet		mm	219.1	219.1	273	273	273	273	273
Safety devices	High discharge pressure (pressure switch)									
	High discharge pressure (pressure transducer)									
	Low suction pressure (pressure transducer)									
	Compressor motor protection									
	High discharge temperature									
	Low oil pressure									
	Low pressure ratio									
	High oil filter pressure drop									
	Phase monitor									
	Emergency stop button									
	Water freeze protection controller									
Notes (1)	Cooling capacity, unit power input in cooling and EER are based on the following conditions: evaporator 12/7°C; ambient 35°C, unit at full load operation.									
Notes (2)	The values are according to ISO 3744 and are referred to: evaporator 12/7°C, ambient 35°C, full load operation.									

4-6 Electrical Specifications			EWAD~C-PS	820	890	980	C11	C12	C13	C14
Power Supply	Phase		---	3						
	Frequency		Hz	50						
	Voltage		V	400						
	Voltage Tolerance	Minimum	%	-10%						
		Maximum	%	+10%						
Unit	Maximum starting current		A	660.4	697.2	697.2	936.2	981.8	1041	1049
	Nominal running current cooling		A	384	420	461	506	551	609	665
	Maximum running current		A	518	564	610	675	732	804	876
	Maximum current for wires sizing		A	570	620	671	743	805	884	964
Fans	Nominal running current in cooling		A	72	72	72	80	80	88	96
Compressor	Phase		No.	3						
	Voltage		V	400						
	Voltage Tolerance	Minimum	%	-10%						
		Maximum	%	+10%						
	Maximum running current		A	223+223	223+269	269+269	269+326	326+326	390+326	390+390
	Starting method		---	Wye – Delta type (Y –Δ)						

4 Specifications

4-6 Electrical Specifications		EWAD~C-PL		820	890	980	C11	C12	C13	C14
Power Supply	Phase		---	3						
	Frequency		Hz	50						
	Voltage		V	400						
	Voltage Tolerance	Minimum	%	-10%						
		Maximum	%	+10%						
Unit	Maximum starting current		A	660.4	697.2	697.2	936.2	981.8	1041	1049
	Nominal running current cooling		A	384	420	461	506	551	609	665
	Maximum running current		A	518	564	610	675	732	804	876
	Maximum current for wires sizing		A	570	620	671	743	805	884	964
Fans	Nominal running current in cooling		A	72	72	72	80	80	88	96
Compressor	Phase		No.	3						
	Voltage		V	400						
	Voltage Tolerance	Minimum	%	-10%						
		Maximum	%	+10%						
	Maximum running current		A	223+223	223+269	269+269	269+326	326+326	390+326	390+390
	Starting method		---	Wye – Delta type (Y –Δ)						

4-6 Electrical Specifications		EWAD~C-PR		810	880	960	C10	C11	C12	C13
Power Supply	Phase		---	3						
	Frequency		Hz	50						
	Voltage		V	400						
	Voltage Tolerance	Minimum	%	-10%						
		Maximum	%	+10%						
Unit	Maximum starting current		A	635.2	672	672	908.2	953.8	1010.2	1015.4
	Nominal running current cooling		A	376	416	461	505	554	614	671
	Maximum running current		A	493	539	585	647	704	773	842
	Maximum current for wires sizing		A	542	593	643	712	774	851	927
Fans	Nominal running current in cooling		A	47	47	47	52	52	57	62
Compressor	Phase		No.	3						
	Voltage		V	400						
	Voltage Tolerance	Minimum	%	-10%						
		Maximum	%	+10%						
	Maximum running current		A	223+223	223+269	269+269	269+326	326+326	390+326	390+390
	Starting method		---	Wye – Delta type (Y –Δ)						

4-6 Electrical Specifications EWAD-C-PS EWAD-C-PL EWAD-C-PR	
Notes	Allowed voltage tolerance ± 10%. Voltage unbalance between phases must be within ± 3%.
	Maximum starting current: starting current of biggest compressor + current of the compressor at 75% maximum load + fans current for the circuit at 75%.
	Nominal current in cooling mode is referred to the following conditions: evaporator 12°C/7°C; ambient 35°C; compressors + fans current.
	Maximum running current is based on max compressor absorbed current in its envelope and max fans absorbed current.
	Maximum unit current for wires sizing is based on minimum allowed voltage.
	Maximum current for wires sizing: (compressors full load ampere + fans current) x 1,1.

5 Sound data

5 - 1 Sound level data

Noise Level

EWAD~C-SS

Unit size	Sound pressure level at 1 m from the unit in semispheric free field (rif. 2 x 10^{-5} Pa)									Power
	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	dB(A)	dB(A)
650	73.9	76.0	78.8	78.0	73.9	69.4	59.8	50.7	79.0	99.5
740	74.4	76.5	79.3	78.5	74.4	69.9	60.3	51.2	79.5	100.0
830	74.4	76.5	79.3	78.5	74.4	69.9	60.3	51.2	79.5	100.0
910	75.3	77.4	80.2	79.4	75.3	70.8	61.2	52.1	80.4	100.9
970	75.5	77.6	80.4	79.6	75.5	71.0	61.4	52.3	80.6	101.1
C11	75.5	77.6	80.4	79.6	75.5	71.0	61.4	52.3	80.6	101.5
C12	75.5	77.6	80.4	79.6	75.5	71.0	61.4	52.3	80.6	101.7
C14	75.9	78.0	80.8	80.0	75.9	71.4	61.8	52.7	81.0	102.9
C15	76.0	78.1	80.9	80.1	76.0	71.5	61.9	52.8	81.1	103.0
C16	76.0	78.1	80.9	80.1	76.0	71.5	61.9	52.8	81.1	103.2
C17	76.1	78.2	81.0	80.2	76.1	71.6	62.0	52.9	81.2	103.3

EWAD~C-SL

Unit size	Sound pressure level at 1 m from the unit in semispheric free field (rif. 2 x 10^{-5} Pa)									Power
	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	dB(A)	dB(A)
650	70.4	72.5	75.3	74.5	70.4	65.9	56.3	47.2	75.5	96.0
740	70.5	72.6	75.4	74.6	70.5	66.0	56.4	47.3	75.6	96.1
830	70.5	72.6	75.4	74.6	70.5	66.0	56.4	47.3	75.6	96.1
910	71.4	73.5	76.3	75.5	71.4	66.9	57.3	48.2	76.5	97.5
970	71.5	73.6	76.4	75.6	71.5	67.0	57.4	48.3	76.6	97.1
C11	71.7	73.8	76.6	75.8	71.7	67.2	57.6	48.5	76.8	97.6
C12	71.8	73.9	76.7	75.9	71.8	67.3	57.7	48.6	76.9	98.1
C14	72.1	74.2	77.0	76.2	72.1	67.6	58.0	48.9	77.2	99.1
C15	72.1	74.2	77.0	76.2	72.1	67.6	58.0	48.9	77.2	99.1
C16	72.2	74.3	77.1	76.3	72.2	67.7	58.1	49.0	77.3	99.5
C17	72.3	74.4	77.2	76.4	72.3	67.8	58.2	49.1	77.4	99.5

EWAD~C-SR

Unit size	Sound pressure level at 1 m from the unit in semispheric free field (rif. 2 x 10^{-5} Pa)									Power
	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	dB(A)	dB(A)
620	67.6	60.8	67.9	73.1	60.5	56.9	48.6	36.0	71.0	91.5
720	68.1	61.3	68.4	73.6	61.0	57.4	49.1	36.5	71.5	92.0
790	68.1	61.3	68.4	73.6	61.0	57.4	49.1	36.5	71.5	92.0
880	68.6	61.8	68.9	74.1	61.5	57.9	49.6	37.0	72.0	92.5
920	69.1	62.3	69.4	74.6	62.0	58.4	50.1	37.5	72.5	93
C10	69.2	62.4	69.5	74.7	62.1	58.5	50.2	37.6	72.6	93.5
C11	69.3	62.5	69.6	74.8	62.2	58.6	50.3	37.7	72.7	93.8
C13	69.5	62.7	69.8	75.0	62.4	58.8	50.5	37.9	72.9	94.8
C14	69.6	62.8	69.9	75.1	62.5	58.9	50.6	38.0	73.0	94.9
C15	69.6	62.8	69.9	75.1	62.5	58.9	50.6	38.0	73.0	95.1
C16	69.7	62.9	70.0	75.2	62.6	59.0	50.7	38.1	73.1	95.2

NOTES

The values are according to ISO 3744 and are referred to: evaporator 12/7° C, air ambient 35° C, full load operation

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5 Sound data

5 - 1 Sound level data

Noise Level

EWAD~C-XS

Unit size	Sound pressure level at 1 m from the unit in semispheric free field (rif. 2 x 10^{-5} Pa)									Power
	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	dB(A)	dB(A)
760	74.6	76.7	79.5	78.7	74.6	70.1	60.5	51.4	79.7	100.2
830	74.6	76.7	79.5	78.7	74.6	70.1	60.5	51.4	79.7	100.5
890	74.6	76.7	79.5	78.7	74.6	70.1	60.5	51.4	79.7	100.5
990	75.1	77.2	80.0	79.2	75.1	70.6	61.0	51.9	80.2	101.4
C10	75.6	77.7	80.5	79.7	75.6	71.1	61.5	52.4	80.7	101.9
C11	75.2	77.3	80.1	79.3	75.2	70.7	61.1	52.0	80.3	102.4
C12	75.3	77.4	80.2	79.4	75.3	70.8	61.2	52.1	80.4	102.5
C13	75.3	77.4	80.2	79.4	75.3	70.8	61.2	52.1	80.4	102.5
C14	75.4	77.5	80.3	79.5	75.4	70.9	61.3	52.2	80.5	102.9
C15	75.6	77.7	80.5	79.7	75.6	71.1	61.5	52.4	80.7	103.1
C16	75.8	77.9	80.7	79.9	75.8	71.3	61.7	52.6	80.9	103.2
C17	75.7	77.8	80.6	79.8	75.7	71.2	61.6	52.5	80.8	103.5
C18	75.9	78.0	80.8	80.0	75.9	71.4	61.8	52.7	81.0	103.7
C19	75.9	78.0	80.8	80.0	75.9	71.4	61.8	52.7	81.0	103.9

EWAD~C-XL

Unit size	Sound pressure level at 1 m from the unit in semispheric free field (rif. 2 x 10^{-5} Pa)									Power
	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	dB(A)	dB(A)
760	71.2	73.3	76.1	75.3	71.2	66.7	57.1	48.0	76.3	96.8
830	71.4	73.5	76.3	75.5	71.4	66.9	57.3	48.2	76.5	97.4
890	71.4	73.5	76.3	75.5	71.4	66.9	57.3	48.2	76.5	97.4
990	71.8	73.9	76.7	75.9	71.8	67.3	57.7	48.6	76.9	98.0
C10	72.0	74.1	76.9	76.1	72.0	67.5	57.9	48.8	77.1	98.2
C11	71.6	73.7	76.5	75.7	71.6	67.1	57.5	48.4	76.7	98.8
C12	71.7	73.8	76.6	75.8	71.7	67.2	57.6	48.5	76.8	98.9
C13	71.7	73.8	76.6	75.8	71.7	67.2	57.6	48.5	76.8	98.9
C14	72.0	74.1	76.9	76.1	72.0	67.5	57.9	48.8	77.1	99.6
C15	72.1	74.2	77.0	76.2	72.1	67.6	58.0	48.9	77.2	99.6
C16	72.2	74.3	77.1	76.3	72.2	67.7	58.1	49.0	77.3	99.6
C17	72.3	74.4	77.2	76.4	72.3	67.8	58.2	49.1	77.4	100.0
C18	72.4	74.5	77.3	76.5	72.4	67.9	58.3	49.2	77.5	100.2
C19	72.4	74.5	77.3	76.5	72.4	67.9	58.3	49.2	77.5	100.4

EWAD~C-XR

Unit size	Sound pressure level at 1 m from the unit in semispheric free field (rif. 2 x 10^{-5} Pa)									Power
	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	dB(A)	dB(A)
740	68.1	61.3	68.4	73.6	61.0	57.4	49.1	36.5	71.5	92.0
810	68.1	61.3	68.4	73.6	61.0	57.4	49.1	36.5	71.5	92.3
870	68.1	61.3	68.4	73.6	61.0	57.4	49.1	36.5	71.5	92.3
970	68.9	62.1	69.2	74.4	61.8	58.2	49.9	37.3	72.3	93.5
C10	69.1	62.3	69.4	74.6	62.0	58.4	50.1	37.5	72.5	93.7
C11	68.8	62.0	69.1	74.3	61.7	58.1	49.8	37.2	72.2	94.3
C12	68.9	62.1	69.2	74.4	61.8	58.2	49.9	37.3	72.3	94.5
C13	68.9	62.1	69.2	74.4	61.8	58.2	49.9	37.3	72.3	94.5
C14	69.2	62.4	69.5	74.7	62.1	58.5	50.2	37.6	72.6	95.1
C15	69.4	62.6	69.7	74.9	62.3	58.7	50.4	37.8	72.8	95.2
C16	69.5	62.7	69.8	75.0	62.4	58.8	50.5	37.9	72.9	95.3
C17	69.5	62.7	69.8	75.0	62.4	58.8	50.5	37.9	72.9	95.6
C18	69.6	62.8	69.9	75.1	62.5	58.9	50.6	38.0	73.0	95.7
C19	69.6	62.8	69.9	75.1	62.5	58.9	50.6	38.0	73.0	95.9

NOTES

The values are according to ISO 3744 and are referred to: evaporator 12/7° C, air ambient 35° C, full load operation

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5 Sound data

5 - 1 Sound level data

Noise Level

EWAD~C-PS

Unit size	Sound pressure level at 1 m from the unit in semispheric free field (rif. 2 x 10^{-5} Pa)									Power
	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	dB(A)	dB(A)
820	74.4	76.5	79.3	78.5	74.4	69.9	60.3	51.2	79.5	101.0
890	74.4	76.5	79.3	78.5	74.4	69.9	60.3	51.2	79.5	101.0
980	74.4	76.5	79.3	78.5	74.4	69.9	60.3	51.2	79.5	101.0
C11	74.9	77.0	79.8	79.0	74.9	70.4	60.8	51.7	80.0	101.8
C12	75.4	77.5	80.3	79.5	75.4	70.9	61.3	52.2	80.5	102.3
C13	75.3	77.4	80.2	79.4	75.3	70.8	61.2	52.1	80.4	102.6
C14	75.4	77.5	80.3	79.5	75.4	70.9	61.3	52.2	80.5	102.9

EWAD~C-PL

Unit size	Sound pressure level at 1 m from the unit in semispheric free field (rif. 2 x 10^{-5} Pa)									Power
	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	dB(A)	dB(A)
820	71.8	73.9	76.7	75.9	71.8	67.3	57.7	48.6	76.9	98.4
890	71.8	73.9	76.7	75.9	71.8	67.3	57.7	48.6	76.9	98.4
980	71.8	73.9	76.7	75.9	71.8	67.3	57.7	48.6	76.9	98.4
C11	71.9	74.0	76.8	76.0	71.9	67.4	57.8	48.7	77.0	98.8
C12	72.0	74.1	76.9	76.1	72.0	67.5	57.9	48.8	77.1	99.9
C13	72.0	74.1	76.9	76.1	72.0	67.5	57.9	48.8	77.1	99.3
C14	72.1	74.2	77.0	76.2	72.1	67.6	58.0	48.9	77.2	99.6

EWAD~C-PR

Unit size	Sound pressure level at 1 m from the unit in semispheric free field (rif. 2 x 10^{-5} Pa)									Power
	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	dB(A)	dB(A)
810	67.8	61.0	68.1	73.3	60.7	57.1	48.8	36.2	71.2	92.7
880	67.8	61.0	68.1	73.3	60.7	57.1	48.8	36.2	71.2	92.7
960	67.8	61.0	68.1	73.3	60.7	57.1	48.8	36.2	71.2	92.7
C10	68.3	61.5	68.6	73.8	61.2	57.6	49.3	36.7	71.7	93.4
C11	68.6	61.8	68.9	74.1	61.5	57.9	49.6	37.0	72.0	93.8
C13	68.6	61.8	68.9	74.1	61.5	57.9	49.6	37.0	72.0	94.1
C14	68.6	61.8	68.9	74.1	61.5	57.9	49.6	37.0	72.0	94.4

NOTES

The values are according to ISO 3744 and are referred to: evaporator 12/7° C, air ambient 35° C, full load operation

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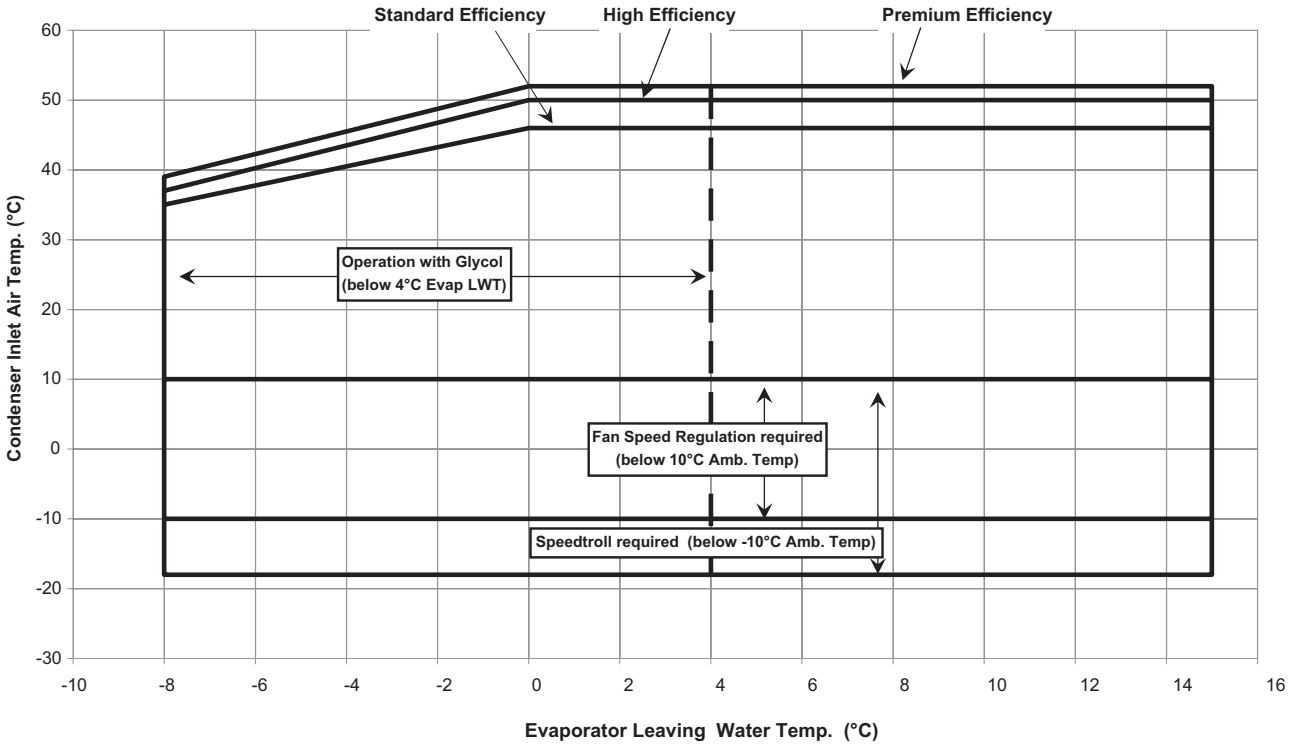
6 Operating limits

EWAD~C-



Evaporator minimum and maximum water Δt

Max evaporator water Δt	°C	8
Min evaporator water Δt	°C	4

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6 Operating limits

6 - 1 Capacity correction factor

EWAD~C-

Evaporator fouling factors

Fouling factors m2 °C / kW	Cooling capacity correction factor	Power input correction factor	EER correction factor
0.0176	1.000	1.000	1.000
0.0440	0.978	0.986	0.992
0.0880	0.957	0.974	0.983
0.1320	0.938	0.962	0.975

Altitude correction factors

Elevation above sea level (m)	0	300	600	900	1200	1500	1800
Barometric pressure (mbar)	1013	977	942	908	875	843	812
Cooling capacity correction factor	1.000	0.993	0.986	0.979	0.973	0.967	0.960
Power input correction factor	1.000	1.005	1.009	1.015	1.021	1.026	1.031

Minimum glycol percentage for low water temperature

Evaporator Leaving Water Temperature (°C)	2	0	-2	-4	-6	-8
Ethylene glycol (%)	10	20	20	20	30	30
Propylene glycol (%)	10	20	20	30	30	30

Note: Minimum glycol percentage to be used with evaporator leaving water temperature below 4°C to prevent freezing of water circuit.

Minimum glycol percentage for low air temperature

Air Ambient Temperature (°C) (2)	-3	-8	-15	-23	-35
Ethylene glycol (%) (1)	10%	20%	30%	40%	50%
Air Ambient Temperature (°C) (2)	-3	-7	-12	-20	-32
Propylene glycol (%) (1)	10%	20%	30%	40%	50%

Note (1): Minimum glycol percentage to prevent freezing of water circuit at indicated air ambient temperature.

Note (2): Air ambient temperature do exceed the operating limits of the unit. as protection of water circuit may be needed in winter season at non-working conditions.

Correction factors for low evaporator leaving water temperature

Evaporator Leaving Water Temperature (°C)	2	0	-2	-4	-6	-8
Cooling Capacity	0.842	0.785	0.725	0.670	0.613	0.562
Compressor Power Input	0.950	0.940	0.920	0.890	0.870	0.840

Note: Correction factors have to be applied at working conditions: evaporator leaving water temperature 7°C.

Correction factors for water and glycol mixture

	Ethylene Glycol (%)	10%	20%	30%	40%	50%
Ethylene Glycol	Cooling Capacity	0.991	0.982	0.972	0.961	0.946
	Compressor Power Input	0.996	0.992	0.986	0.976	0.966
	Flow Rate (Δt)	1.013	1.04	1.074	1.121	1.178
	Evaporator Pressure Drop	1.070	1.129	1.181	1.263	1.308
Propylene Glycol	Cooling Capacity	0.985	0.964	0.932	0.889	0.846
	Compressor Power Input	0.993	0.983	0.969	0.948	0.929
	Flow Rate (Δt)	1.017	1.032	1.056	1.092	1.139
	Evaporator Pressure Drop	1.120	1.272	1.496	1.792	2.128

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6 Operating limits

6 - 1 Capacity correction factor

How to use the Correction factors proposed in the previous tables

A) Mixture Water and Glycol --- Evaporator leaving water temperature > 4°C
- depending from the type and percentage (%) of glycol filled in the circuit (see table 4.2 and 6)
- multiply the Cooling Capacity, the Compressor Power Input by the Correction factor of Table 6
- starting from this new value of Cooling Capacity, calculate the Flow Rate (l/s) and the Evaporatore Pressure Drop (kPa)
- now multiply the new Flow Rate and the new Evaporator Pressure Drop by the Correction Factors of Table 6

Example

Unit Size:	**EWAD650C-SS**
Mixture:	Water
Working condition:	ELWT 12/7°C – Condenser inlet air temperature 35°C
- Cooling capacity:	647 kW
- Power input:	221 kW
- Flow rate (Δt 5°C):	30.90 l/s
- Evaporator pressure drop:	79 kPa
Mixture:	Water + Ethylene Glycol 30% (for a winter air temperature up to -15°C)
Working condition:	ELWT 12/7°C – Condenser inlet air temperature 35°C
- Cooling capacity:	647 x 0.972 = 629 kW
- Power input:	221 x 0.986 = 218 kW
- Flow rate (Δt 5°C):	30.05 (referred to 629 kW) x 1.074 = 32.27 l/s
- Evaporator pressure drop:	85 (referred to 32.27 l/s) x 1.181 = 100 kPa

B) Mixture Water and Glycol --- Evaporator leaving water temperature < 4°C
- depending from the type and percentage (%) of glycol filled in the circuit (see table 4.1 and 4.2 and table 6)
- depending from the evaporator leaving water temperature (see table 5)
- multiply the Cooling Capacity, the Compressor Power Input by the Correction factor of Table 5 and Table 6
- starting from this new value of Cooling Capacity, calculate the Flow Rate (l/s) and the Evaporatore Pressure Drop (kPa)
- now multiply the new Flow Rate and the new Evaporator Pressure Drop by the Correction Factors of Table 6

Example

Unit Size:	**EWAD650C-SS**
Mixture:	Water
Working condition:	ELWT 12/7°C – Condenser inlet air temperature 30°C
- Cooling capacity:	681 kW
- Power input:	205 kW
- Flow rate (Δt 5°C):	32.54 l/s
- Evaporator pressure drop:	87 kPa
Mixture:	Water + Glycol 30% (for a low evaporator leaving temperature of -1/-6°C)
Working condition:	ELWT -1/-6°C – Condenser inlet air temperature 30°C
- Cooling capacity:	681 x 0.613 x 0.972 = 406 kW
- Power input:	205 x 0.870 x 0.986 = 176 kW
- Flow rate (Δt 5°C):	19.40 l/s (referred to 406 kW) x 1.074 = 20.83 l/s
- Evaporator pressure drop:	39 kPa (referred to 20.83 l/s) x 1.181 = 46 kPa

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6 Operating limits

6 - 1 Capacity correction factor

Available fan static pressure correction factors

	EWAD~C-SS / EWAD~C-SL			EWAD~C-XS / EWAD~C-XL			EWAD~C-PR		EWAD~C-PS / EWAD~C-PL	
External Static Pressure (Pa)	0	10	20	30	40	50	60	70	80	90	100
Cooling Capacity (kW) Correction factor	1.000	0.998	0.996	0.995	0.993	0.992	0.991	0.989	0.986	0.985	0.982
Compr. Power Input (kW) Correction factor	1.000	1.004	1.009	1.012	1.018	1.021	1.024	1.027	1.034	1.039	1.045
Reduction of Max CIAT (°C)	1.000	-0.3	-0.5	-0.7	-1.0	-1.1	-1.3	-1.6	-1.8	2.1	-2.4

CIAT: Condenser Inlet Air Temperature

	EWAD~C-SR			EWAD~C-XR			EWAD~C-PR	
External Static Pressure (Pa)	0	10	20	30	40	50	60	70
Cooling Capacity (kW) Correction factor	1.000	0.996	0.991	0.985	0.978	0.97	0.954	0.927
Compr. Power Input (kW) Correction factor	1.000	1.005	1.012	1.02	1.028	1.039	1.058	1.092
Reduction of Max CIAT (°C)	1.000	-0.3	-0.7	-1.1	-1.6	-2.2	-3.3	-5.1

CIAT: Condenser Inlet Air Temperature

How to use the Correction factors proposed in the previous tables

Example

Unit Size: **EWAD650C-SS**

- External static pressure **0 Pa**
- Working condition: ELWT 12/7°C – Condenser inlet air temperature 35°C
- Cooling capacity: 647 kW
- Power input: 221 kW
- Maximum CIAT 46°C (see graphic operating limit)

- External static pressure **40 Pa**
- Working condition: ELWT 12/7°C – Condenser inlet air temperature 35°C
- Cooling capacity: 647 x 0.993 = 642 kW
- Power input: 221 x 1.018= 225 kW
- Maximum CIAT 46 - 1.0 = 45°C

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6 Operating limits

6 - 1 Capacity correction factor

Water charge, flow and quality

Items (1) (5)			Cooling Water			Cooled Water		Heated water (2)				Tendency if out of criteria
			Circulating System		Once Flow			Low temperature		High temperature		
			Circulating water	Supply water (4)	Flowing water	Circulating water [Below 20°C]	Supply water (4)	Circulating water [20°C ~ 60°C]	Supply water (4)	Circulating water [20°C ~ 60°C]	Supply water (4)	
Items to be controlled:	pH	at 25°C	6.5 ~ 8.2	6.0 ~ 8.0	6.0 ~ 8.0	6.0 ~ 8.0	6.0 ~ 8.0	7.0 ~ 8.0	7.0 ~ 8.0	7.0 ~ 8.0	7.0 ~ 8.0	Corrosion + Scale
	Electrical conductivity	[mS/m] at 25°C	Below 80	Below 30	Below 40	Below 40	Below 30	Below 30	Below 30	Below 30	Below 30	Corrosion + Scale
		(µS/cm) at 25°C	(Below 800)	(Below 300)	(Below 400)	(Below 400)	(Below 300)	(Below 300)	(Below 300)	(Below 300)	(Below 300)	Corrosion + Scale
	Chloride ion	[mgCl2-/l]	Below 200	Below 50	Below 50	Below 50	Below 50	Below 50	Below 50	Below 30	Below 30	Corrosion
	Sulfate ion	[mgSO2-4/l]	Below 200	Below 50	Below 50	Below 50	Below 50	Below 50	Below 50	Below 30	Below 30	Corrosion
	M-alkalinity (pH4.8)	[mgCaCO3/l]	Below 100	Below 50	Below 50	Below 50	Below 50	Below 50	Below 50	Below 50	Below 50	Scale
	Total hardness	[mgCaCO3/l]	Below 200	Below 70	Below 70	Below 70	Below 70	Below 70	Below 70	Below 70	Below 70	Scale
	Calcium harness	[mgCaCO3/l]	Below 150	Below 50	Below 50	Below 50	Below 50	Below 50	Below 50	Below 50	Below 50	Scale
Items to be referred to	Silca ion	[mgSiO2/l]	Below 50	Below 30	Below 30	Below 30	Below 30	Below 30	Below 30	Below 30	Below 30	Scale
	Iron	[mgFe/l]	Below 1.0	Below 0.3	Below 1.0	Below 1.0	Below 0.3	Below 1.0	Below 0.3	Below 1.0	Below 0.3	Corrosion + Scale
	Copper	[mgCu/l]	Below 0.3	Below 0.1	Below 1.0	Below 1.0	Below 1.0	Below 1.0	Below 0.1	Below 1.0	Below 0.1	Corrosion
	Sulfite ion	[mgS2-/l]	Not detectable	Not detectable	Not detectable	Not detectable	Not detectable	Not detectable	Not detectable	Not detectable	Not detectable	Corrosion
	Ammonium ion	[mgNH+4/l]	Below 1.0	Below 0.1	Below 1.0	Below 1.0	Below 0.1	Below 0.3	Below 0.1	Below 0.1	Below 0.1	Corrosion
	Remaining chloride	[mgCL/l]	Below 0.3	Below 0.3	Below 0.3	Below 0.3	Below 0.3	Below 0.25	Below 0.3	Below 0.1	Below 0.3	Corrosion
	Free carbide	[mgCO2/l]	Below 4.0	Below 4.0	Below 4.0	Below 4.0	Below 4.0	Below 0.4	Below 4.0	Below 0.4	Below 4.0	Corrosion
	Stability index		6.0 ~ 7.0	---	---	---	---	---	---	---	---	Corrosion + Scale

1 Names, definitions and units are according to JIS K 0101. Units and figures between brackets are old units published as reference only.
2 In case of using heated water (more than 40°C), corrosion is generally noticeable.
Especially when the iron materials is in direct contact with water without any protection shields, it is desireable to give the valid measure for corrosion. E.g. chemical measure
3 In the cooling water using hermetic cooling tower, close circuit water is according to heated water standard, and scattered water is according to cooling water standard.
4 Supply water is considered drink water, industrial water and ground water except for genuine water, neutral water and soft water.
5 The above mentioned items are representable items in corrosion and scale cases.

Water content in cooling circuits

The cooled water distribution circuits should have minimum water content to avoid excessive compressors start and stop.
In fact, each time the compressor starts up, an excessive quantity of oil goes from the compressor sump and simultaneously there is a rise in the temperature of the compressor motor's stator due to the inrush current during the start-up.

To prevent damage to the compressors, we have envisaged the application of a device to limit frequent stops and restarts.

During the span of one hour there will be no more than 6 starts of the compressor. The plant side should therefore ensure that the overall water content allows a more constant functioning of the unit and consequently greater environmental comfort.

The minimum water content per unit should be calculated using this simplified formula:

For 2 compressors unit
M (liters) = (0.1595 x ΔT(°C) + 3.0825) x P(kW)

For 2 compressors unit
M (liters) = (0.1595 x ΔT(°C) + 3.0825) x P(kW)

where:

M minimum water content per unit expressed in litres
P Cooling Capacity of the unit expressed in kW
ΔT evaporator entering / leaving water temperature difference expressed in °C

This formula is valid for:
- standard microprocessor parameters

For more accurate determination of quantity of water, it is advisable to contact the designer of the plant.

7 Standard rating

7 - 1 Cooling capacity tables

EWAD~C-SS
EWAD~C-SL

Size	ELWT (°C)	Condenser Inlet Air Temperature (°C)													
		25		30		35		40		42		44		46	
		Cc (kW)	Pi (kW)	Cc (kW)	Pi (kW)	Cc (kW)	Pi (kW)	Cc (kW)	Pi (kW)	Cc (kW)	Pi (kW)	Cc (kW)	Pi (kW)	Cc (kW)	Pi (kW)
650	4	653	182	624	196	592	211	554	227	538	233	521	240	502	247
	5	673	185	643	199	610	214	572	230	555	237	538	244	519	251
	6	693	188	662	202	628	218	590	234	573	241	555	248	536	255
	7	713	191	681	205	647	221	608	238	591	245	573	252	553	259
	8	733	194	701	209	666	224	626	241	609	248	590	256	570	263
	9	753	197	721	212	685	228	644	245	626	252	607	260	588	268
	10	774	200	741	215	704	231	662	249	644	256	625	264	605	272
	11	794	203	761	218	723	235	681	253	662	260	643	268	622	276
	12	815	206	781	222	743	238	700	257	681	264	660	272	639	280
	13	836	209	801	225	762	242	719	261	699	268	679	276	657	284
	14	857	212	821	228	782	246	737	264	718	272	697	280	663	284
	15	879	216	842	232	801	249	756	268	736	276	715	285	664	281
740	4	732	212	713	231	689	251	657	273	642	283	625	293	597	299
	5	752	215	732	234	707	254	675	277	659	287	642	297	605	299
	6	772	218	751	237	726	258	692	281	676	291	659	302	615	300
	7	792	222	771	241	744	262	710	285	693	295	673	305	624	301
	8	812	225	790	245	763	266	728	289	711	300	682	305	633	301
	9	833	228	810	248	782	270	746	294	729	304	692	306	642	302
	10	854	232	830	252	801	274	764	298	746	309	702	307	645	299
	11	875	235	851	256	821	278	782	303	762	312	712	308	647	297
	12	896	239	871	260	840	282	801	307	770	312	721	308	650	295
	13	918	243	892	264	860	286	819	312	781	313	730	309	653	292
	14	939	246	913	268	880	291	838	316	791	314	735	307	653	288
	15	961	250	934	272	900	295	852	319	801	315	736	304	654	285
830	4	825	241	801	262	770	285	729	310	710	321	688	333	621	323
	5	847	245	822	267	790	290	749	315	729	326	706	338	625	321
	6	869	249	844	271	811	295	768	321	748	332	707	335	623	316
	7	892	253	865	275	832	299	788	326	767	337	711	333	630	316
	8	914	258	887	280	852	304	807	331	786	342	710	329	631	312
	9	937	262	909	284	873	309	827	336	800	345	712	326	631	308
	10	960	266	931	289	894	314	847	342	800	342	720	326	637	306
	11	984	270	953	294	915	319	866	347	803	340	721	322	641	304
	12	1,007	275	976	298	936	324	886	352	806	338	721	318	639	298
	13	1,031	279	998	303	957	329	890	351	808	335	727	317	643	295
	14	1,055	284	1,021	308	979	335	894	349	809	331	726	312	646	292
	15	1,079	289	1,044	313	1,000	340	896	346	815	330	730	310	648	289
910	4	899	257	875	279	845	304	806	331	787	342	766	355	723	358
	5	923	261	898	284	867	308	827	336	808	348	786	360	735	359
	6	947	265	921	288	890	313	849	341	829	353	807	365	747	360
	7	971	268	945	292	912	318	870	346	850	358	817	366	759	361
	8	996	273	969	297	935	322	892	351	871	363	830	367	770	362
	9	1,021	277	993	301	958	327	914	356	892	369	839	367	773	359
	10	1,046	281	1,017	306	981	332	936	361	914	374	851	368	778	357
	11	1,071	285	1,042	310	1,005	337	958	367	924	374	866	370	776	352
	12	1,097	289	1,066	315	1,028	342	980	372	937	375	877	370	780	349
	13	1,123	294	1,091	320	1,052	347	1,002	378	949	377	882	368	786	347
	14	1,149	298	1,117	324	1,076	352	1,022	382	961	377	887	366	789	344
	15	1,175	303	1,142	329	1,100	358	1,035	383	973	378	891	364	790	340
970	4	957	283	931	308	898	335	853	365	832	379	808	392	743	388
	5	983	287	955	312	921	340	875	371	853	384	829	398	748	386
	6	1,008	291	980	317	944	345	897	377	874	390	850	404	751	383
	7	1,033	296	1,004	322	967	351	919	382	896	396	850	400	754	380
	8	1,059	301	1,029	327	991	356	941	388	918	402	855	399	757	376
	9	1,085	305	1,054	332	1,014	361	963	394	939	408	853	394	758	371
	10	1,111	310	1,079	337	1,038	367	986	400	961	414	856	390	764	369
	11	1,138	315	1,105	342	1,062	373	1,008	406	961	410	865	390	764	363
	12	1,164	320	1,130	348	1,087	378	1,031	412	965	407	866	385	769	361
	13	1,191	325	1,156	353	1,111	384	1,054	418	968	405	867	380	774	358
	14	1,218	330	1,182	359	1,136	390	1,071	422	971	401	873	378	778	354
	15	1,246	335	1,208	364	1,160	396	1,076	420	972	397	879	376	781	350
C11	4	1,049	305	1,021	332	986	362	941	394	918	408	894	423	842	426
	5	1,077	310	1,048	337	1,012	367	965	400	942	414	917	429	853	426
	6	1,105	314	1,075	342	1,038	373	990	406	966	420	938	434	867	427
	7	1,133	319	1,103	347	1,064	378	1,014	412	990	427	950	435	879	428
	8	1,162	324	1,130	353	1,091	384	1,039	418	1,015	433	964	436	892	429
	9	1,191	329	1,158	358	1,117	389	1,065	424	1,039	439	978	438	896	425
	10	1,220	334	1,187	363	1,144	395	1,090	430	1,061	444	992	439	899	422
	11	1,250	339	1,215	369	1,172	401	1,116	437	1,073	444	1,005	439	900	417
	12	1,279	344	1,244	374	1,199	407	1,141	443	1,088	446	1,018	440	904	413
	13	1,310	349	1,273	380	1,226	413	1,167	450	1,102	447	1,025	438	911	411
	14	1,340	355	1,302	386	1,254	419	1,187	453	1,116	448	1,026	433	914	407
	15	1,371	360	1,331	392	1,282	426	1,202	455	1130	448	1032	430	915	402

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7 Standard rating

7 - 1 Cooling capacity tables

EWAD~C-SS
EWAD~C-SL

Size	ELWT (°C)	Condenser Inlet Air Temperature (°C)													
		25		30		35		40		42		44		46	
		Cc (kW)	Pi (kW)	Cc (kW)	Pi (kW)	Cc (kW)	Pi (kW)	Cc (kW)	Pi (kW)	Cc (kW)	Pi (kW)	Cc (kW)	Pi (kW)	Cc (kW)	Pi (kW)
C12	4	1,131	326	1,102	355	1,067	386	1,022	420	1,000	435	975	451	947	468
	5	1,160	330	1,131	360	1,095	391	1,048	426	1,026	442	1,000	458	972	474
	6	1,190	335	1,161	365	1,124	397	1,075	432	1,052	448	1,026	464	997	481
	7	1,221	340	1,190	370	1,152	402	1,102	438	1,078	454	1,052	470	1,022	488
	8	1,252	344	1,220	375	1,181	408	1,130	445	1,105	460	1,078	477	1,023	483
	9	1,283	349	1,250	380	1,210	414	1,157	451	1,132	467	1,104	484	1,029	481
	10	1,314	354	1,281	386	1,239	420	1,185	457	1,159	473	1,131	490	1,033	478
	11	1,346	359	1,311	391	1,268	426	1,213	464	1,186	480	1,157	497	1,037	474
	12	1,378	365	1,343	397	1,298	432	1,241	470	1,214	487	1,170	498	1,040	470
	13	1,410	370	1,374	403	1,328	438	1,270	477	1,242	494	1,176	496	1,041	465
	14	1,443	375	1,405	408	1,358	444	1,298	484	1,270	500	1,180	493	1,050	463
	15	1,476	381	1,437	414	1,389	451	1,327	490	1,298	507	1,184	489	1,050	457
C14	4	1,391	404	1,355	440	1,311	479	1,253	522	1,225	540	1,194	560	1,155	578
	5	1,429	410	1,392	447	1,347	486	1,287	529	1,258	548	1,226	568	1,177	582
	6	1,468	416	1,429	453	1,382	493	1,321	537	1,291	556	1,258	576	1,201	586
	7	1,506	422	1,467	460	1,419	500	1,355	545	1,325	564	1,291	584	1,222	589
	8	1,546	429	1,505	467	1,455	507	1,390	552	1,359	572	1,319	590	1,246	593
	9	1,585	435	1,544	473	1,492	515	1,425	560	1,393	580	1,345	595	1,269	597
	10	1,626	441	1,583	480	1,529	522	1,461	569	1,428	588	1,367	598	1,290	599
	11	1,666	448	1,622	488	1,567	530	1,496	577	1,462	597	1,392	602	1,296	595
	12	1,708	455	1,662	495	1,605	538	1,532	585	1,492	603	1,417	606	1,297	589
	13	1,749	461	1,702	502	1,643	546	1,568	594	1,519	608	1,445	611	1,300	584
	14	1,791	468	1,743	509	1,682	554	1,605	602	1,542	611	1,469	615	1,305	579
	15	1,834	475	1,783	517	1,721	562	1,642	611	1,568	615	1,474	610	1,309	573
C15	4	1,517	445	1,475	484	1,423	527	1,354	574	1,321	594	1,284	616	1,205	619
	5	1,558	452	1,515	492	1,461	535	1,390	583	1,356	603	1,318	625	1,221	620
	6	1,600	459	1,556	499	1,499	543	1,426	591	1,391	612	1,353	634	1,237	620
	7	1,642	466	1,596	507	1,538	551	1,463	600	1,427	622	1,371	636	1,252	619
	8	1,685	473	1,637	515	1,577	560	1,500	610	1,463	631	1,382	634	1,266	618
	9	1,728	481	1,679	523	1,617	568	1,537	619	1,499	641	1,399	634	1,271	612
	10	1,772	488	1,721	531	1,657	577	1,574	628	1,536	650	1,414	634	1,277	607
	11	1,816	496	1,763	539	1,697	586	1,612	638	1,548	648	1,429	633	1,282	602
	12	1,860	504	1,806	548	1,738	595	1,650	648	1,565	649	1,443	631	1,290	597
	13	1,905	512	1,849	556	1,778	604	1,689	657	1,581	649	1,453	628	1,296	592
	14	1,951	520	1,893	565	1,820	614	1,718	663	1,597	648	1,460	623	1,298	585
	15	1,997	528	1,936	574	1,861	623	1,732	662	1,612	647	1,468	620	1,305	580
C16	4	1,598	468	1,554	509	1,501	554	1,431	604	1,397	625	1,359	648	1,275	650
	5	1,641	475	1,596	517	1,541	562	1,469	613	1,434	635	1,395	658	1,292	650
	6	1,685	482	1,639	525	1,581	571	1,507	622	1,471	644	1,432	667	1,308	650
	7	1,729	489	1,682	533	1,622	580	1,546	631	1,509	654	1,451	668	1,324	648
	8	1,774	497	1,725	541	1,664	588	1,585	641	1,547	663	1,463	666	1,339	646
	9	1,819	504	1,769	549	1,705	597	1,624	650	1,585	673	1,481	666	1,353	643
	10	1,865	512	1,813	557	1,747	606	1,664	660	1,624	683	1,498	665	1,373	644
	11	1,911	520	1,857	566	1,790	615	1,704	670	1,637	680	1,513	664	1,385	640
	12	1,958	528	1,902	574	1,833	625	1,744	680	1,655	681	1,529	661	1,404	639
	13	2,005	536	1,948	583	1,876	634	1,784	690	1,673	680	1,542	658	1,423	638
	14	2,053	544	1,993	592	1,919	644	1,818	696	1,690	679	1,564	659	1,440	637
	15	2,101	553	2,039	601	1,963	653	1,830	694	1,706	677	1,584	659	1,444	631
C17	4	1,676	499	1,631	543	1,574	591	1,499	645	1,462	668	1,422	693	1,329	694
	5	1,720	506	1,674	551	1,615	600	1,537	654	1,500	678	1,459	703	1,347	694
	6	1,765	514	1,717	559	1,656	609	1,576	664	1,538	688	1,490	710	1,363	694
	7	1,810	521	1,760	568	1,714	618	1,615	674	1,576	698	1,509	712	1,379	693
	8	1,855	529	1,804	576	1,739	627	1,655	684	1,615	708	1,522	710	1,385	688
	9	1,901	537	1,849	585	1,781	637	1,694	694	1,653	719	1,540	711	1,397	685
	10	1,948	546	1,893	594	1,824	646	1,735	704	1,686	726	1,557	710	1,396	676
	11	1,995	554	1,938	603	1,867	656	1,775	715	1,706	728	1,573	709	1,405	671
	12	2,042	562	1,984	612	1,910	666	1,816	726	1,718	725	1,585	706	1,405	661
	13	2,090	571	2,030	621	1,954	676	1,856	736	1,736	725	1,593	701	1,414	657
	14	2,138	580	2,076	631	1,997	686	1,884	741	1,753	725	1,595	693	1,419	650
	15	2,187	589	2,123	641	2,041	697	1,903	742	1,777	727	1,603	689	1,427	644

NOTES

Cc (cooling capacity) - Pi (unit power input) – ELWT (evaporator leaving water temperature – Δt 5°C).
Data are referred to 0,0176 m2 °C/kW evaporator fouling factor

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7 Standard rating

7 - 1 Cooling capacity tables

EWAD~C-SR

Size	ELWT (°C)	Condenser Inlet Air Temperature (°C)													
		25		30		35		40		42		44		46	
		Cc (kW)	Pi (kW)	Cc (kW)	Pi (kW)	Cc (kW)	Pi (kW)	Cc (kW)	Pi (kW)	Cc (kW)	Pi (kW)	Cc (kW)	Pi (kW)	Cc (kW)	Pi (kW)
620	4	632	182	602	197	567	212	543	221	527	228	500	238	472	249
	5	651	186	619	200	584	216	560	225	543	232	516	243	487	254
	6	670	189	637	204	602	219	577	230	560	236	532	247	502	258
	7	689	192	656	207	619	223	594	234	577	241	548	251	508	258
	8	709	196	674	211	636	227	611	238	593	245	564	256	510	256
	9	727	199	693	215	654	231	628	242	610	249	581	261	511	254
	10	747	203	712	219	672	235	645	246	626	254	597	265	515	252
	11	766	206	730	222	690	240	662	250	643	258	613	270	515	249
	12	785	210	749	226	708	244	680	255	660	262	629	274	518	246
	13	805	213	767	230	725	248	697	259	677	267	646	279	520	244
	14	825	217	786	234	743	252	715	264	695	272	662	284	526	243
	15	845	221	805	238	761	257	732	268	712	276	671	285	528	239
720	4	716	217	693	237	664	259	642	273	625	283	597	299	495	271
	5	735	221	711	241	681	263	658	278	641	288	605	299	496	268
	6	754	225	730	245	698	268	674	283	655	292	615	300	499	266
	7	773	229	748	250	715	272	691	287	665	293	625	300	502	263
	8	793	233	766	254	732	277	707	292	673	294	635	300	506	261
	9	812	237	785	258	749	282	724	297	682	295	644	300	507	258
	10	832	241	803	263	767	287	734	299	692	296	655	301	511	255
	11	852	245	822	267	784	292	744	300	701	296	660	298	511	251
	12	871	250	841	272	802	297	752	300	712	298	665	295	516	250
	13	892	254	860	277	820	302	762	301	716	297	667	289	518	246
	14	912	259	879	282	835	305	773	303	715	293	671	286	523	245
	15	932	263	898	287	846	307	782	304	719	291	675	281	523	241
790	4	803	251	773	274	733	298	705	314	683	325	629	329	487	280
	5	824	256	793	279	752	304	723	320	688	324	634	326	491	277
	6	845	261	812	284	771	309	740	326	688	321	635	319	490	272
	7	866	266	832	289	789	315	758	332	692	319	643	317	494	269
	8	887	270	852	295	808	321	763	331	695	317	646	312	496	265
	9	908	276	872	300	827	327	767	329	697	314	649	306	499	262
	10	929	281	892	306	845	333	765	325	699	311	656	303	506	262
	11	950	286	912	311	864	339	768	322	705	310	657	296	508	258
	12	972	291	932	317	873	340	770	319	705	305	663	293	508	253
	13	994	297	952	323	876	338	776	318	710	303	668	289	515	253
	14	1,015	302	972	329	879	336	776	314	709	298	673	285	515	248
	15	1,037	308	992	335	881	333	782	313	713	296	677	281	521	247
880	4	879	264	850	288	813	314	786	332	765	344	723	358	597	324
	5	902	269	872	293	834	320	806	337	784	349	736	359	598	320
	6	925	273	894	298	855	325	826	343	795	350	748	360	602	317
	7	948	278	916	303	876	331	846	349	807	352	760	360	605	314
	8	971	283	938	309	896	337	866	355	818	354	772	359	607	310
	9	995	288	961	314	917	342	881	358	830	355	783	359	611	307
	10	1,018	293	983	319	938	348	891	358	841	356	792	358	612	302
	11	1,042	298	1,006	325	959	354	902	360	852	356	795	352	619	301
	12	1,066	303	1,028	330	980	360	914	361	857	354	801	348	621	297
	13	1,090	309	1,051	336	1,002	366	925	362	862	352	805	343	623	293
	14	1,115	314	1,074	342	1,015	368	936	362	866	350	812	340	628	291
	15	1,139	320	1,097	348	1,027	370	950	365	866	346	816	335	629	286
920	4	934	293	902	320	859	350	828	369	804	383	751	396	585	336
	5	958	299	924	326	880	356	848	376	823	390	758	392	585	330
	6	982	304	947	332	901	362	868	382	824	386	763	388	589	327
	7	1,006	309	969	338	922	369	888	389	829	384	768	383	593	324
	8	1,030	315	992	344	943	375	908	396	833	382	773	377	597	320
	9	1,054	321	1,015	350	964	382	918	397	837	379	776	370	600	316
	10	1,078	326	1,038	356	986	388	918	392	839	376	784	367	602	311
	11	1,103	332	1,061	362	1,007	395	922	390	841	372	786	359	611	311
	12	1,128	338	1,084	369	1,028	402	925	387	842	367	793	355	612	306
	13	1,152	344	1,107	375	1,050	409	927	383	848	365	800	351	612	300
	14	1,177	350	1,130	382	1,055	407	928	379	854	363	806	346	620	299
	15	1,202	357	1,153	389	1,059	405	935	378	852	356	811	341	619	293
C10	4	1,026	315	992	343	949	375	917	396	892	411	842	427	689	382
	5	1,052	320	1,018	349	973	382	939	403	912	416	856	428	693	379
	6	1,079	326	1,043	355	996	388	962	409	923	417	870	428	697	375
	7	1,106	331	1,069	361	1,020	395	985	416	937	419	884	428	701	371
	8	1,133	337	1,094	368	1,044	401	1,008	423	951	421	897	428	706	368
	9	1,160	343	1,120	374	1,069	408	1,023	425	964	422	909	427	708	362
	10	1,188	349	1,146	380	1,093	415	1,034	426	976	423	917	423	712	358
	11	1,216	355	1,172	387	1,117	422	1,048	428	989	423	921	416	715	354
	12	1,243	361	1,199	394	1,142	429	1,061	429	995	422	927	411	722	352
	13	1,271	367	1,225	401	1,163	435	1,074	430	997	417	936	408	724	347
	14	1,300	374	1,252	407	1,178	437	1,091	433	1,002	415	941	402	730	344
	15	1,328	381	1,278	415	1,193	439	1,100	431	1,007	411	945	395	730	338

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7 Standard rating

7 - 1 Cooling capacity tables

EWAD~C-SR

Size	ELWT (°C)	Condenser Inlet Air Temperature (°C)													
		25		30		35		38		40		43		46	
		Cc (kW)	Pi (kW)	Cc (kW)	Pi (kW)	Cc (kW)	Pi (kW)	Cc (kW)	Pi (kW)	Cc (kW)	Pi (kW)	Cc (kW)	Pi (kW)	Cc (kW)	Pi (kW)
C11	4	1,109	333	1,076	363	1,033	397	1,001	419	977	435	935	460	792	431
	5	1,137	338	1,103	369	1,059	403	1,026	426	1,001	442	959	467	795	427
	6	1,166	344	1,131	375	1,085	410	1,051	433	1,026	449	982	474	803	425
	7	1,195	350	1,159	382	1,112	417	1,077	440	1,050	456	1,005	482	805	419
	8	1,225	355	1,187	388	1,138	423	1,102	447	1,075	463	1,029	489	812	417
	9	1,254	361	1,215	394	1,165	430	1,128	454	1,100	471	1,042	490	811	409
	10	1,284	367	1,244	401	1,192	437	1,153	461	1,125	478	1,049	485	817	406
	11	1,314	373	1,272	407	1,219	445	1,179	469	1,137	479	1,055	480	822	402
	12	1,345	380	1,301	414	1,246	452	1,205	476	1,143	477	1,060	473	826	397
	13	1,375	386	1,330	421	1,273	459	1,231	484	1,148	474	1,065	466	829	392
	14	1,406	392	1,360	428	1,300	467	1,258	492	1,151	471	1,075	462	832	387
	15	1,437	399	1,389	435	1,328	474	1,263	489	1,154	467	1,077	453	843	387
C13	4	1,363	413	1,322	451	1,268	492	1,227	519	1,197	539	1,144	569	989	543
	5	1,400	420	1,357	458	1,300	500	1,259	528	1,227	547	1,172	577	994	538
	6	1,437	427	1,392	466	1,334	509	1,291	537	1,258	556	1,196	582	1,000	534
	7	1,474	434	1,427	474	1,367	517	1,323	546	1,287	564	1,217	584	1,006	529
	8	1,511	442	1,463	482	1,401	526	1,355	555	1,309	568	1,240	588	1,010	524
	9	1,549	449	1,499	490	1,435	535	1,388	564	1,333	573	1,263	591	1,013	517
	10	1,587	457	1,536	498	1,469	544	1,421	573	1,355	577	1,289	596	1,021	513
	11	1,626	465	1,572	507	1,503	553	1,443	577	1,378	581	1,311	599	1,028	509
	12	1,665	473	1,609	516	1,538	562	1,468	582	1,404	587	1,321	595	1,028	500
	13	1,704	481	1,646	524	1,573	572	1,493	587	1,427	591	1,328	586	1,033	495
	14	1,743	489	1,683	533	1,608	581	1,518	592	1,433	587	1,335	579	1,041	491
	15	1,783	498	1,721	542	1,637	588	1,542	596	1,440	584	1,343	571	1,044	484
C14	4	1,482	459	1,431	501	1,366	547	1,318	577	1,281	598	1,211	626	977	551
	5	1,521	467	1,469	510	1,401	556	1,351	587	1,313	608	1,226	623	985	547
	6	1,561	476	1,506	519	1,436	566	1,384	597	1,331	610	1,244	622	992	542
	7	1,600	484	1,544	528	1,471	576	1,418	607	1,345	610	1,260	619	997	535
	8	1,641	493	1,582	537	1,506	586	1,452	618	1,358	610	1,276	616	1005	531
	9	1,681	502	1,620	547	1,542	596	1,475	622	1,373	610	1,291	612	1,008	524
	10	1,722	511	1,658	557	1,578	607	1,489	622	1,388	609	1,305	609	1,014	518
	11	1,763	520	1,697	567	1,614	618	1,502	622	1,404	610	1,313	601	1,018	511
	12	1,804	530	1,736	577	1,650	628	1,518	622	1,418	608	1,324	594	1,022	504
	13	1,846	539	1,775	587	1,686	640	1,532	621	1,417	600	1,330	585	1,033	502
	14	1,888	549	1,814	598	1,701	639	1,549	621	1,426	597	1,339	577	1,034	494
	15	1,930	559	1,853	609	1,714	638	1,566	622	1,429	590	1,346	568	1,043	490
C15	4	1,562	481	1,511	525	1,444	573	1,395	605	1,358	627	1,286	657	1,071	590
	5	1,604	489	1,550	534	1,481	583	1,430	615	1,392	638	1,300	651	1,088	590
	6	1,645	498	1,589	543	1,518	593	1,466	626	1,411	639	1,319	649	1,102	588
	7	1,687	507	1,629	553	1,556	603	1,502	636	1,423	637	1,336	646	1,101	578
	8	1,729	515	1,670	562	1,593	614	1,537	647	1,440	638	1,353	642	1,114	577
	9	1,772	525	1,710	572	1,631	624	1,562	651	1,457	637	1,369	637	1,120	571
	10	1,815	534	1,751	582	1,669	635	1,574	649	1,472	636	1,391	636	1,124	564
	11	1,858	543	1,792	592	1,707	646	1,592	649	1,487	634	1,405	630	1,127	556
	12	1,902	553	1,833	603	1,745	657	1,609	649	1,508	636	1,425	628	1,129	548
	13	1,946	563	1,874	613	1,784	668	1,625	648	1,521	632	1,445	626	1,138	544
	14	1,990	573	1,916	624	1,803	669	1,639	645	1,541	633	1,464	624	1,141	536
	15	2,034	583	1,957	635	1,815	666	1,661	647	1,552	628	1,483	622	1,152	534
C16	4	1,638	515	1,583	563	1,511	615	1,458	649	1,418	674	1,336	702	1,070	613
	5	1,680	524	1,623	572	1,548	626	1,494	660	1,452	685	1,351	697	1,077	607
	6	1,722	533	1,663	582	1,586	636	1,529	672	1,466	684	1,369	696	1,084	601
	7	1,764	543	1,703	592	1,623	647	1,565	683	1,484	686	1,387	693	1,093	596
	8	1,807	552	1,744	603	1,661	658	1,601	695	1,496	684	1,404	690	1,097	588
	9	1,851	562	1,784	613	1,699	670	1,621	697	1,512	684	1,423	689	1,103	581
	10	1,894	572	1,826	624	1,738	681	1,639	698	1,528	684	1,427	676	1,109	574
	11	1,938	582	1,867	635	1,776	693	1,657	699	1,546	684	1,439	669	1,117	569
	12	1,982	592	1,908	646	1,815	705	1,674	700	1,547	676	1,443	655	1,120	560
	13	2,026	603	1,950	657	1,853	717	1,690	699	1,549	668	1,456	649	1,127	554
	14	2,071	613	1,992	669	1,866	715	1,705	698	1,558	664	1,465	639	1,137	550
	15	2,115	624	2,033	680	1,884	716	1,709	691	1,566	658	1,472	629	1,136	540

NOTES

Cc (cooling capacity) - Pi (unit power input) – ELWT (evaporator leaving water temperature – Δt 5°C).
Data are referred to 0,0176 m2 °C/kW evaporator fouling factor

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7 Standard rating

7 - 1 Cooling capacity tables

EWAD~C-XS
EWAD~C-XL

Size	ELWT (°C)	Condenser Inlet Air Temperature (°C)													
		25		30		35		40		46		48		50	
		Cc (kW)	Pi (kW)	Cc (kW)	Pi (kW)	Cc (kW)	Pi (kW)	Cc (kW)	Pi (kW)	Cc (kW)	Pi (kW)	Cc (kW)	Pi (kW)	Cc (kW)	Pi (kW)
760	4	734	189	715	206	694	223	667	242	624	267	606	276	587	285
	5	755	192	736	209	714	226	687	245	643	270	625	280	605	289
	6	777	194	757	212	735	230	707	249	662	274	643	284	623	293
	7	799	197	779	215	756	233	727	252	681	278	662	287	641	297
	8	820	200	800	218	777	236	747	256	700	282	681	291	660	301
	9	842	203	822	221	798	239	768	259	719	286	700	295	678	305
	10	864	206	843	224	819	243	788	263	739	290	719	300	692	308
	11	886	208	865	227	840	246	809	267	759	294	738	304	697	306
	12	908	211	887	230	861	249	829	270	778	298	758	308	700	305
	13	931	214	908	233	883	253	850	274	798	302	777	312	697	301
	14	953	217	931	236	904	256	871	278	818	306	797	316	705	300
	15	976	220	953	240	925	260	891	281	838	310	806	317	706	297
830	4	805	206	784	224	762	243	734	264	690	291	671	301	651	311
	5	829	209	808	227	784	247	756	267	710	295	691	305	671	315
	6	853	212	831	231	807	250	778	271	731	299	712	309	691	319
	7	877	214	855	234	830	253	800	274	752	303	732	313	711	323
	8	900	217	879	237	854	257	823	278	773	307	753	317	731	328
	9	923	220	902	240	877	260	845	282	795	311	774	321	751	332
	10	947	223	925	243	900	264	868	286	816	315	795	325	764	333
	11	971	226	948	246	923	267	891	290	838	319	817	330	777	334
	12	995	229	972	249	946	271	913	293	861	323	839	334	789	335
	13	1,018	232	996	253	969	274	935	297	883	328	861	339	800	336
	14	1,041	234	1,019	256	992	278	958	301	905	332	880	342	812	336
	15	1,064	237	1,041	259	1,015	281	981	305	926	336	893	343	823	336
890	4	864	226	842	246	817	267	786	289	736	320	715	331	692	342
	5	889	229	866	250	841	271	809	293	757	324	736	335	712	347
	6	915	233	891	253	865	274	832	297	779	329	757	340	733	352
	7	941	236	917	257	889	278	855	302	801	333	779	345	754	357
	8	964	239	942	260	914	282	879	306	823	338	800	349	775	361
	9	986	242	965	264	939	286	903	310	845	342	822	354	797	366
	10	1,009	245	987	267	962	290	927	315	868	347	844	359	796	362
	11	1,033	248	1,010	270	984	294	951	319	891	352	866	364	801	361
	12	1,056	251	1,033	274	1,006	297	972	323	914	357	889	369	804	358
	13	1,080	254	1,056	277	1,029	301	994	327	938	362	912	374	807	355
	14	1,103	257	1,080	280	1,051	305	1,015	331	959	366	923	374	808	352
	15	1,127	261	1,103	284	1,074	308	1,038	335	980	371	927	372	809	348
990	4	972	249	946	271	917	294	881	319	824	351	801	363	775	376
	5	1,001	253	974	275	944	298	908	323	849	356	825	368	799	381
	6	1,031	257	1,003	279	972	303	935	328	874	361	850	374	823	386
	7	1,060	260	1,032	283	1,001	307	962	333	900	366	874	379	847	392
	8	1,090	264	1,062	288	1,030	312	989	337	925	372	900	384	859	392
	9	1,121	268	1,092	292	1,059	316	1,017	342	952	377	925	389	874	393
	10	1,151	272	1,122	296	1,088	321	1,046	347	978	382	951	395	885	393
	11	1,182	276	1,152	300	1,117	325	1,074	352	1,005	388	977	400	899	394
	12	1,214	280	1,183	304	1,147	330	1,102	357	1,032	393	993	402	916	396
	13	1,245	284	1,214	309	1,177	335	1,131	362	1,060	399	1,009	403	929	396
	14	1,276	288	1,244	313	1,207	339	1,160	367	1,087	404	1,024	404	932	392
	15	1,308	292	1,275	318	1,237	344	1,189	373	1,115	410	1,039	405	938	390
C10	4	1,045	274	1,017	298	985	323	945	350	879	387	853	400	824	414
	5	1,076	278	1,048	302	1,014	328	973	355	905	392	878	406	848	420
	6	1,108	282	1,078	307	1,044	333	1,001	361	932	398	904	411	873	426
	7	1,139	286	1,109	311	1,074	338	1,029	366	959	404	930	417	899	432
	8	1,170	290	1,141	316	1,104	343	1,058	371	986	410	956	423	906	430
	9	1,202	295	1,171	321	1,135	348	1,088	377	1,013	415	983	429	905	425
	10	1,234	299	1,202	325	1,165	353	1,117	383	1,041	421	1,010	436	909	423
	11	1,266	303	1,234	330	1,195	358	1,147	388	1,069	428	1,038	442	913	419
	12	1,297	308	1,265	335	1,226	363	1,176	394	1,097	434	1,051	442	916	416
	13	1,330	312	1,296	340	1,256	368	1,205	399	1,126	440	1,056	440	925	414
	14	1,362	317	1,328	344	1,287	374	1,235	405	1,153	446	1,060	438	926	409
	15	1,396	321	1,360	349	1,318	379	1,264	411	1,182	453	1,064	434	925	404
C11	4	1,160	295	1,130	322	1,097	349	1,057	378	991	417	964	431	934	446
	5	1,194	299	1,163	326	1,130	354	1,088	384	1,021	423	994	437	963	452
	6	1,228	303	1,197	331	1,163	359	1,120	389	1,051	429	1,023	443	992	458
	7	1,263	307	1,231	335	1,196	364	1,152	394	1,082	435	1,053	449	1,021	464
	8	1,298	312	1,266	340	1,229	369	1,184	400	1,113	440	1,083	455	1,051	471
	9	1,333	316	1,300	344	1,263	374	1,217	405	1,144	446	1,114	461	1,077	475
	10	1,368	320	1,335	349	1,297	379	1,250	410	1,175	452	1,145	467	1,091	475
	11	1,404	324	1,370	354	1,331	384	1,283	416	1,207	458	1,176	474	1,109	477
	12	1,441	329	1,406	359	1,366	389	1,316	422	1,238	465	1,207	480	1,126	478
	13	1,478	333	1,442	363	1,401	394	1,350	427	1,271	471	1,238	486	1,143	478
	14	1,515	338	1,478	368	1,436	400	1,384	433	1,303	477	1,262	489	1,159	479
	15	1,552	342	1,515	373	1,472	405	1,418	439	1,335	483	1,276	489	1,180	481
C12	4	1,245	324	1,214	353	1,177	383	1,132	416	1,058	459	1,028	475	994	492
	5	1,281	329	1,248	358	1,212	389	1,165	422	1,090	466	1,059	482	1,024	498
	6	1,317	333	1,284	363	1,246	394	1,198	428	1,121	472	1,089	488	1,054	505
	7	1,353	338	1,319	368	1,280	400	1,232	434	1,152	479	1,120	495	1,085	512
	8	1,389	343	1,355	374	1,316	405	1,265	440	1,185	485	1,152	502	1,115	519
	9	1,426	347	1,391	379	1,351	411	1,299	446	1,217	492	1,183	509	1,139	523
	10	1,463	352	1,427	384	1,386	417	1,333	452	1,249	499	1,215	516	1,138	518
	11	1,501	357	1,464	389	1,421	422	1,368	458	1,282	505	1,247	523	1,144	515
	12	1,539	362	1,501	395	1,457	428	1,402	464	1,315	512	1,279	530	1,148	511
	13	1,577	367	1,539	400	1,493	434	1,437	471	1,348	519	1,312	537	1,152	507
	14	1,616	372	1,577	406	1,530	440	1,471	477	1,381	526	1,327	537	1,154	502
	15	1,655	378	1,615	411	1,567	446	1,507	484	1,414	533	1,324	531	1,165	500

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7 Standard rating

7 - 1 Cooling capacity tables

EWAD~C-XS
EWAD~C-XL

Size	ELWT (°C)	Condenser Inlet Air Temperature (°C)													
		25		30		35		40		46		48		50	
		Cc (kW)	Pi (kW)	Cc (kW)	Pi (kW)	Cc (kW)	Pi (kW)	Cc (kW)	Pi (kW)	Cc (kW)	Pi (kW)	Cc (kW)	Pi (kW)	Cc (kW)	Pi (kW)
C13	4	1,311	333	1,275	362	1,233	392	1,182	425	1,100	468	1,066	483	999	487
	5	1,352	338	1,314	368	1,271	398	1,218	431	1,133	475	1,099	490	1,007	482
	6	1,393	343	1,354	373	1,310	404	1,255	438	1,168	482	1,133	498	1,013	476
	7	1,434	348	1,395	379	1,349	411	1,292	444	1,202	489	1,166	505	1,018	470
	8	1,476	354	1,435	385	1,389	417	1,330	451	1,237	496	1,183	506	1,022	462
	9	1,518	359	1,477	391	1,428	423	1,368	458	1,273	504	1,190	501	1,034	459
	10	1,562	365	1,519	397	1,469	430	1,406	465	1,309	511	1,196	495	1,035	451
	11	1,606	371	1,561	403	1,509	437	1,445	472	1,346	519	1,201	489	1,046	447
	12	1,650	377	1,605	410	1,551	443	1,484	479	1,363	519	1,204	481	1,055	442
	13	1,694	383	1,648	416	1,593	450	1,524	487	1,369	514	1,217	478	1,052	432
	14	1,739	389	1,692	423	1,636	457	1,564	494	1,374	508	1,217	469	1,059	426
	15	1,784	395	1,735	429	1,677	465	1,605	502	1,388	505	1,228	465	1,065	420
C14	4	1,369	355	1,335	387	1,299	420	1,253	456	1,179	504	1,148	521	1,113	540
	5	1,407	360	1,373	392	1,335	426	1,289	462	1,213	510	1,182	528	1,146	546
	6	1,445	364	1,410	397	1,372	431	1,325	468	1,247	517	1,215	535	1,180	554
	7	1,484	369	1,449	403	1,409	437	1,361	474	1,282	524	1,249	542	1,213	561
	8	1,523	374	1,487	408	1,447	443	1,397	480	1,316	530	1,284	549	1,247	568
	9	1,562	379	1,526	413	1,485	448	1,434	486	1,351	537	1,318	556	1,275	572
	10	1,602	384	1,565	418	1,523	454	1,470	492	1,387	544	1,352	563	1,297	575
	11	1,643	389	1,605	424	1,561	460	1,508	499	1,422	551	1,387	570	1,322	578
	12	1,684	394	1,645	429	1,601	466	1,545	505	1,458	558	1,423	577	1,346	581
	13	1,726	399	1,686	435	1,640	472	1,583	512	1,494	565	1,458	584	1,371	584
	14	1,768	404	1,727	440	1,680	478	1,622	518	1,530	572	1,484	587	1,394	586
	15	1,810	409	1,769	446	1,720	484	1,660	525	1,567	579	1,509	591	1,415	587
C15	4	1,484	385	1,446	419	1,403	455	1,349	493	1,262	544	1,226	563	1,186	583
	5	1,526	390	1,488	425	1,443	461	1,388	500	1,299	552	1,262	571	1,221	591
	6	1,569	395	1,530	431	1,485	468	1,428	507	1,336	559	1,299	579	1,257	599
	7	1,612	401	1,572	437	1,526	474	1,468	514	1,374	567	1,336	587	1,293	607
	8	1,655	406	1,614	443	1,567	481	1,508	521	1,412	575	1,373	595	1,312	606
	9	1,699	412	1,657	449	1,609	487	1,548	528	1,450	583	1,411	603	1,324	601
	10	1,744	418	1,701	455	1,651	494	1,588	535	1,489	591	1,449	611	1,340	598
	11	1,789	424	1,745	462	1,694	501	1,629	543	1,528	599	1,487	619	1,363	598
	12	1,834	430	1,789	468	1,737	508	1,671	550	1,567	607	1,512	622	1,378	594
	13	1,880	436	1,834	474	1,780	515	1,712	558	1,606	615	1,530	620	1,393	590
	14	1,926	442	1,879	481	1,824	522	1,754	566	1,646	624	1,548	617	1,407	586
	15	1,973	448	1,925	488	1,867	529	1,796	573	1,686	632	1,571	617	1,410	576
C16	4	1,555	409	1,515	445	1,469	483	1,410	524	1,316	579	1,278	600	1,235	621
	5	1,599	415	1,558	452	1,511	490	1,451	532	1,354	587	1,314	608	1,271	629
	6	1,642	420	1,601	458	1,553	497	1,491	539	1,392	596	1,352	616	1,307	638
	7	1,686	426	1,644	464	1,596	504	1,533	547	1,431	604	1,390	625	1,344	647
	8	1,731	432	1,688	471	1,638	511	1,574	555	1,470	612	1,428	633	1,345	640
	9	1,776	438	1,732	477	1,680	518	1,615	562	1,510	621	1,466	642	1,353	637
	10	1,821	444	1,776	484	1,723	525	1,656	570	1,550	630	1,505	651	1,360	633
	11	1,868	451	1,822	491	1,767	533	1,698	578	1,589	638	1,545	660	1,365	628
	12	1,915	457	1,867	498	1,811	540	1,740	586	1,629	647	1,564	661	1,369	622
	13	1,962	463	1,913	505	1,855	548	1,782	594	1,668	656	1,572	658	1,371	615
	14	2,010	470	1,960	512	1,900	555	1,825	602	1,708	665	1,578	654	1,383	613
	15	2,058	477	2,007	519	1,945	563	1,868	611	1,749	674	1,583	648	1,382	604
C17	4	1,641	432	1,599	471	1,552	511	1,493	555	1,397	614	1,357	635	1,313	658
	5	1,686	438	1,644	478	1,596	518	1,535	563	1,436	622	1,396	644	1,351	667
	6	1,732	444	1,689	484	1,640	526	1,577	570	1,476	631	1,435	653	1,389	676
	7	1,778	450	1,734	491	1,685	533	1,620	578	1,517	639	1,474	661	1,428	685
	8	1,824	456	1,780	497	1,729	540	1,664	586	1,557	648	1,514	670	1,442	684
	9	1,872	463	1,826	504	1,773	547	1,707	594	1,599	657	1,554	679	1,462	685
	10	1,919	469	1,873	511	1,819	555	1,750	602	1,640	665	1,595	688	1,474	682
	11	1,968	475	1,920	518	1,864	562	1,793	610	1,682	674	1,636	698	1,481	678
	12	2,017	482	1,968	525	1,910	570	1,838	618	1,723	683	1,664	701	1,486	673
	13	2,067	489	2,017	532	1,957	578	1,882	627	1,765	692	1,684	703	1,489	666
	14	2,117	495	2,065	540	2,004	586	1,927	635	1,807	702	1,704	703	1,499	662
	15	2,168	502	2,115	547	2,052	594	1,973	644	1,850	711	1,718	701	1,499	654
C18	4	1,720	455	1,677	496	1,629	538	1,567	584	1,468	646	1,427	669	1,380	693
	5	1,768	461	1,724	503	1,675	546	1,612	592	1,509	655	1,468	678	1,421	702
	6	1,817	467	1,772	510	1,721	553	1,657	600	1,552	664	1,509	687	1,462	711
	7	1,866	474	1,820	516	1,768	561	1,702	608	1,594	673	1,551	696	1,502	721
	8	1,916	480	1,869	523	1,815	568	1,747	617	1,638	682	1,593	705	1,534	726
	9	1,967	487	1,919	531	1,863	576	1,793	625	1,681	691	1,636	715	1,566	732
	10	2,018	494	1,969	538	1,912	584	1,839	634	1,725	700	1,679	724	1,591	734
	11	2,070	500	2,020	545	1,961	592	1,886	642	1,769	709	1,722	734	1,592	728
	12	2,123	507	2,071	553	2,010	600	1,934	651	1,814	719	1,762	742	1,599	723
	13	2,176	514	2,123	560	2,061	608	1,982	660	1,859	728	1,796	748	1,604	717
	14	2,230	522	2,176	568	2,111	617	2,030	669	1,904	738	1,829	753	1,608	710
	15	2,285	529	2,229	576	2,162	625	2,079	678	1,950	748	1,854	755	1,614	704
C19	4	1,807	479	1,763	522	1,713	567	1,651	615	1,549	681	1,507	705	1,458	730
	5	1,857	485	1,812	529	1,761	574	1,697	623	1,592	690	1,550	714	1,502	740
	6	1,908	492	1,862	536	1,809	582	1,743	632	1,636	699	1,592	724	1,544	749
	7	1,960	498	1,912	543	1,858	590	1,790	640	1,681	708	1,636	733	1,586	759
	8	2,012	505	1,963	550	1,908	598	1,838	649	1,726	717	1,680	742	1,629	769
	9	2,065	512	2,015	558	1,958	606	1,886	657	1,771	727	1,724	752	1,673	779
	10	2,119	519	2,068	565	2,009	614	1,935	666	1,817	736	1,769	762	1,706	784
	11	2,173	526	2,121	573	2,061	622	1,984	675	1,863	746	1,815	772	1,705	776
	12	2,228	533	2,175	581	2,112	630	2,034	684	1,910	756	1,861	782	1,713	772
	13	2,284	540	2,229	588	2,165	639	2,084	693	1,958	766	1,907	792	1,720	766
	14	2,340	547	2,284	596	2,218	647	2,135	702	2,006	776	1,954	802	1,725	759
	15	2,397	555	2,340	605	2,272	656	2,187	712	2,054	786	1,989	807	1,728	752

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7 Standard rating

7 - 1 Cooling capacity tables

EWAD~C-XR

Size	ELWT (°C)	Condenser Inlet Air Temperature (°C)													
		25		30		35		40		46		48		50	
		Cc (kW)	Pi (kW)	Cc (kW)	Pi (kW)	Cc (kW)	Pi (kW)	Cc (kW)	Pi (kW)	Cc (kW)	Pi (kW)	Cc (kW)	Pi (kW)	Cc (kW)	Pi (kW)
740	4	722	189	701	206	677	224	646	243	595	270	551	269	474	253
	5	742	192	722	209	697	227	664	247	613	274	555	268	475	250
	6	763	195	742	212	716	231	683	251	630	278	558	266	475	246
	7	785	198	763	216	736	235	702	255	643	281	560	264	480	245
	8	806	201	784	219	756	239	721	259	643	278	562	261	484	243
	9	827	205	804	223	776	242	740	263	646	276	563	258	483	239
	10	848	208	825	227	796	246	759	268	649	274	568	257	486	236
	11	870	211	846	230	816	250	779	272	651	272	568	253	489	234
	12	891	215	867	234	837	254	798	276	652	269	572	252	491	231
	13	913	218	888	238	857	258	817	281	652	266	576	250	492	228
	14	934	222	909	241	877	262	837	285	657	265	573	245	500	228
	15	956	225	930	245	897	266	856	289	656	261	576	243	500	225
810	4	792	204	771	223	746	242	713	263	661	292	622	295	558	286
	5	815	207	793	226	767	246	734	268	681	297	633	296	564	285
	6	839	211	816	230	789	250	754	272	700	301	641	295	563	281
	7	862	214	839	233	811	254	775	276	709	301	654	297	567	279
	8	886	217	862	237	833	258	796	280	721	303	664	298	567	275
	9	908	221	885	241	856	262	818	285	732	304	664	294	570	272
	10	931	224	907	244	878	266	839	289	743	305	669	293	574	270
	11	954	227	930	248	900	270	861	294	754	305	670	289	576	267
	12	978	231	953	252	922	274	883	298	765	305	673	287	579	264
	13	1,001	234	975	256	944	278	905	303	773	305	675	284	585	263
	14	1,024	238	999	260	966	282	926	307	774	302	680	282	585	259
	15	1,046	241	1,020	263	989	287	947	312	778	300	682	279	586	256
870	4	849	226	826	246	798	268	761	292	701	324	641	320	546	297
	5	874	230	849	250	820	272	782	297	721	329	645	318	552	296
	6	898	234	873	254	842	277	803	301	741	334	643	314	553	292
	7	924	237	898	259	866	281	825	306	741	331	650	313	558	290
	8	948	241	922	263	889	286	847	311	746	330	652	310	556	284
	9	970	245	946	267	913	291	869	316	749	328	653	306	560	282
	10	993	248	968	271	937	295	892	321	752	325	659	304	563	279
	11	1,015	252	990	275	959	300	915	326	754	322	658	299	566	275
	12	1,038	256	1,012	279	980	304	938	332	754	318	662	297	568	272
	13	1,061	259	1,034	283	1,001	308	958	336	761	317	666	294	576	272
	14	1,084	263	1,056	287	1,022	313	979	341	760	313	670	292	577	268
	15	1,107	267	1,079	291	1,044	317	999	346	766	311	673	289	577	263
970	4	955	248	927	271	895	294	853	320	786	355	721	350	632	333
	5	983	253	955	275	921	299	877	325	798	356	734	351	637	330
	6	1,012	257	982	280	947	304	903	331	812	357	746	351	641	328
	7	1,041	261	1,011	285	974	309	928	336	825	359	749	348	641	323
	8	1,070	266	1,039	290	1,001	315	954	342	838	360	752	346	644	320
	9	1,099	270	1,068	294	1,029	320	980	347	851	361	753	342	646	316
	10	1,129	275	1,096	299	1,057	325	1,006	353	864	361	758	339	650	313
	11	1,159	279	1,125	304	1,084	331	1,032	359	867	358	761	336	658	311
	12	1,189	284	1,155	309	1,112	336	1,059	365	872	356	764	333	657	306
	13	1,219	289	1,184	315	1,140	342	1,086	371	873	352	769	330	660	303
	14	1,249	294	1,213	320	1,169	347	1,112	377	877	349	770	326	666	301
	15	1,280	299	1,243	325	1,197	353	1,136	381	880	346	774	323	667	296
C10	4	1,026	275	995	300	958	326	910	355	833	394	726	372	617	344
	5	1,056	280	1,024	305	986	332	936	361	834	390	729	369	623	342
	6	1,086	285	1,053	310	1,013	338	962	367	840	389	732	365	629	339
	7	1,117	290	1,083	316	1,041	343	988	373	844	386	733	361	627	332
	8	1,147	295	1,113	321	1,070	349	1,015	380	848	384	740	359	631	329
	9	1,177	300	1,143	327	1,099	355	1,042	386	851	380	740	353	635	325
	10	1,208	305	1,172	332	1,128	361	1,069	392	852	376	746	351	637	321
	11	1,239	310	1,202	338	1,156	367	1,096	399	853	371	751	348	648	321
	12	1,270	316	1,232	344	1,184	373	1,124	406	860	369	756	344	649	316
	13	1,300	321	1,262	349	1,213	380	1,151	412	859	363	759	341	650	311
	14	1,332	326	1,292	355	1,241	386	1,178	419	864	361	762	337	659	310
	15	1,363	332	1,321	361	1,270	392	1,198	423	869	358	764	333	658	305
C11	4	1,141	293	1,110	320	1,073	348	1,026	378	949	420	888	421	798	410
	5	1,174	297	1,142	325	1,104	353	1,055	384	977	426	904	423	799	405
	6	1,208	302	1,175	330	1,136	359	1,085	390	1,002	431	920	424	805	403
	7	1,241	307	1,208	335	1,168	365	1,116	397	1,016	432	935	425	811	400
	8	1,276	312	1,241	340	1,199	370	1,147	403	1,032	433	946	424	812	394
	9	1,310	317	1,275	346	1,232	376	1,177	409	1,049	435	954	422	815	390
	10	1,344	322	1,308	351	1,264	382	1,208	415	1,065	436	952	417	822	387
	11	1,379	327	1,342	357	1,297	388	1,239	422	1,080	437	958	414	824	383
	12	1,414	332	1,376	362	1,329	394	1,271	429	1,095	437	957	408	829	379
	13	1,450	338	1,410	368	1,362	400	1,302	435	1,103	435	965	406	828	373
	14	1,486	343	1,445	374	1,396	407	1,334	442	1,104	430	968	401	837	371
	15	1,522	348	1,480	380	1,429	413	1,365	449	1,109	427	969	396	840	367
C12	4	1,224	325	1,190	354	1,148	385	1,095	420	1,008	466	921	454	798	415
	5	1,259	330	1,224	360	1,181	392	1,125	426	1,036	473	927	448	801	407
	6	1,294	335	1,258	366	1,214	398	1,156	433	1,059	477	932	442	810	402
	7	1,329	341	1,292	372	1,247	404	1,188	440	1,066	474	936	435	810	393
	8	1,364	346	1,327	378	1,280	411	1,220	447	1,065	465	939	427	817	388
	9	1,400	352	1,361	384	1,313	418	1,251	454	1,071	459	949	423	824	382
	10	1,436	358	1,396	390	1,347	424	1,283	462	1,083	456	958	419	830	376
	11	1,472	363	1,431	396	1,380	431	1,315	469	1,086	449	958	409	835	370
	12	1,508	369	1,466	402	1,414	438	1,347	476	1,088	440	965	404	839	364
	13	1,545	375	1,502	409	1,447	445	1,379	484	1,098	436	972	398	852	362
	14	1,583	381	1,537	415	1,482	452	1,411	491	1,107	432	978	392	854	355
	15	1,620	388	1,574	422	1,516	459	1,444	499	1,105	422	982	386	856	348

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7 Standard rating

7 - 1 Cooling capacity tables

EWAD~C-XR

Size	ELWT (°C)	Condenser Inlet Air Temperature (°C)													
		25		30		35		40		46		48		50	
		Cc (kW)	Pi (kW)	Cc (kW)	Pi (kW)	Cc (kW)	Pi (kW)	Cc (kW)	Pi (kW)	Cc (kW)	Pi (kW)	Cc (kW)	Pi (kW)	Cc (kW)	Pi (kW)
C13	4	1,281	333	1,242	363	1,194	394	1,134	428	1,043	475	927	448	798	406
	5	1,319	339	1,279	369	1,230	401	1,168	436	1,058	476	933	442	807	402
	6	1,358	345	1,317	376	1,266	408	1,201	443	1,066	472	937	435	816	397
	7	1,398	352	1,355	383	1,302	415	1,236	451	1,073	466	940	427	815	387
	8	1,438	358	1,394	390	1,339	423	1,270	459	1,078	460	950	423	822	382
	9	1,479	365	1,433	396	1,376	430	1,305	467	1,083	453	951	414	828	376
	10	1,521	371	1,472	404	1,414	438	1,340	475	1,086	446	960	409	833	370
	11	1,563	378	1,513	411	1,451	446	1,375	483	1,097	442	967	404	837	363
	12	1,604	385	1,553	418	1,490	453	1,411	491	1,097	433	974	399	851	362
	13	1,646	392	1,593	426	1,528	462	1,447	500	1,107	429	980	393	853	355
	14	1,688	399	1,634	433	1,567	470	1,484	508	1,115	424	986	387	854	348
	15	1,731	406	1,675	441	1,606	478	1,510	513	1,123	418	990	380	867	346
C14	4	1,348	352	1,313	385	1,272	419	1,218	456	1,131	507	1,064	511	955	497
	5	1,385	357	1,350	390	1,307	425	1,252	463	1,163	515	1,087	514	959	492
	6	1,423	363	1,386	396	1,343	432	1,287	470	1,185	517	1,109	517	961	487
	7	1,461	368	1,423	402	1,378	438	1,321	477	1,208	521	1,126	518	966	482
	8	1,499	374	1,460	408	1,414	445	1,355	484	1,232	525	1,131	515	975	480
	9	1,537	379	1,498	414	1,450	451	1,390	491	1,252	527	1,133	510	975	473
	10	1,576	385	1,536	421	1,487	458	1,425	499	1,278	531	1,139	506	980	468
	11	1,615	391	1,574	427	1,523	465	1,460	506	1,300	534	1,140	500	987	464
	12	1,655	397	1,612	433	1,561	472	1,495	513	1,311	532	1,151	498	993	460
	13	1,695	403	1,652	440	1,598	479	1,530	521	1,318	529	1,153	493	990	452
	14	1,736	409	1,691	446	1,636	486	1,566	529	1,314	522	1,155	487	998	449
	15	1,777	416	1,731	453	1,674	493	1,602	536	1,319	518	1,162	483	1001	443
C15	4	1,459	385	1,418	420	1,368	457	1,304	497	1,202	552	1,083	535	944	507
	5	1,500	391	1,458	426	1,407	464	1,341	505	1,220	553	1,097	535	946	501
	6	1,541	397	1,499	433	1,446	472	1,378	513	1,231	551	1,110	533	953	497
	7	1,583	404	1,539	440	1,486	479	1,416	521	1,246	552	1,114	528	960	492
	8	1,625	410	1,580	447	1,525	487	1,453	530	1,261	551	1,121	525	965	487
	9	1,668	417	1,621	455	1,564	495	1,491	538	1,275	550	1,122	518	972	483
	10	1,711	424	1,663	462	1,604	502	1,529	547	1,288	549	1,130	514	975	477
	11	1,754	431	1,705	469	1,644	510	1,567	555	1,294	544	1,136	510	980	471
	12	1,798	438	1,747	477	1,685	519	1,605	564	1,300	540	1,144	506	984	466
	13	1,842	445	1,790	485	1,725	527	1,644	573	1,308	537	1,148	501	982	458
	14	1,886	452	1,832	492	1,766	535	1,683	582	1,307	529	1,151	494	993	456
	15	1,931	460	1,876	500	1,807	544	1,721	591	1,316	526	1,155	489	993	448
C16	4	1,527	411	1,483	448	1,430	488	1,360	532	1,249	591	1,088	558	933	520
	5	1,570	418	1,525	456	1,469	496	1,398	540	1,259	589	1,093	553	933	512
	6	1,612	425	1,567	463	1,510	504	1,435	549	1,258	583	1,096	547	941	508
	7	1,655	432	1,609	471	1,550	513	1,474	558	1,265	579	1,098	541	949	504
	8	1,698	439	1,650	478	1,591	521	1,512	567	1,271	575	1,110	538	956	499
	9	1,741	446	1,692	486	1,631	529	1,551	576	1,275	570	1,109	530	962	493
	10	1,785	453	1,734	494	1,671	538	1,590	585	1,277	563	1,118	526	966	487
	11	1,830	461	1,777	502	1,711	546	1,628	595	1,278	556	1,125	521	970	481
	12	1,875	468	1,820	510	1,752	555	1,667	604	1,288	553	1,132	517	972	474
	13	1,920	476	1,864	518	1,794	564	1,705	613	1,298	550	1,138	511	972	466
	14	1,966	484	1,908	527	1,835	573	1,744	623	1,295	541	1,143	505	986	465
	15	2,012	492	1,952	535	1,877	582	1,784	633	1,302	536	1,146	499	985	457
C17	4	1,612	434	1,568	473	1,514	515	1,443	562	1,329	625	1,182	602	1,013	561
	5	1,657	441	1,611	481	1,555	524	1,482	571	1,349	627	1,185	596	1,014	553
	6	1,701	448	1,655	489	1,597	532	1,522	580	1,362	626	1,190	590	1,020	547
	7	1,746	455	1,699	496	1,639	541	1,562	589	1,374	625	1,193	584	1,029	543
	8	1,791	462	1,742	504	1,682	549	1,602	598	1,377	619	1,202	580	1,037	538
	9	1,837	469	1,786	512	1,724	558	1,643	607	1,382	614	1,206	573	1,044	532
	10	1,883	477	1,831	520	1,766	566	1,683	617	1,386	609	1,212	567	1,045	524
	11	1,930	485	1,876	528	1,809	575	1,724	626	1,388	602	1,221	563	1,049	517
	12	1,977	492	1,921	537	1,852	584	1,764	636	1,396	597	1,229	558	1,057	513
	13	2,025	500	1,967	545	1,896	593	1,805	646	1,407	594	1,231	551	1,059	505
	14	2,073	509	2,013	554	1,940	603	1,847	656	1,404	585	1,237	545	1,068	501
	15	2,121	517	2,060	563	1,984	612	1,888	666	1,413	580	1,241	538	1,067	493
C18	4	1,692	455	1,646	497	1,590	541	1,517	590	1,399	656	1,278	647	1,085	600
	5	1,738	463	1,692	505	1,634	550	1,558	599	1,433	664	1,279	641	1,097	597
	6	1,786	470	1,737	513	1,678	559	1,600	609	1,460	669	1,285	636	1,098	588
	7	1,833	477	1,784	521	1,722	567	1,643	618	1,483	672	1,290	630	1,108	584
	8	1,882	485	1,831	529	1,767	576	1,686	628	1,485	666	1,293	623	1,109	575
	9	1,931	493	1,878	538	1,812	585	1,728	638	1,492	662	1,298	616	1,117	569
	10	1,980	501	1,926	546	1,858	594	1,771	647	1,497	657	1,310	613	1,123	563
	11	2,031	509	1,974	555	1,904	604	1,815	657	1,501	650	1,308	603	1,128	557
	12	2,081	517	2,023	564	1,951	613	1,859	668	1,507	645	1,317	598	1,132	550
	13	2,133	525	2,072	573	1,998	623	1,903	678	1,507	636	1,325	593	1,139	544
	14	2,185	534	2,122	582	2,045	633	1,948	688	1,519	633	1,332	587	1,152	541
	15	2,237	543	2,172	591	2,093	643	1,993	699	1,520	625	1,338	581	1,157	534
C19	4	1,778	478	1,731	522	1,674	569	1,600	620	1,479	690	1,372	691	1,165	641
	5	1,827	485	1,779	530	1,720	578	1,644	630	1,521	701	1,371	683	1,178	638
	6	1,877	493	1,827	538	1,766	586	1,687	639	1,561	711	1,379	679	1,180	629
	7	1,927	501	1,876	547	1,813	595	1,731	649	1,592	717	1,385	673	1,191	625
	8	1,977	509	1,925	555	1,860	605	1,776	659	1,592	710	1,389	666	1,189	614
	9	2,029	517	1,974	564	1,907	614	1,821	669	1,600	707	1,391	658	1,198	608
	10	2,081	525	2,025	573	1,955	623	1,866	679	1,607	702	1,404	655	1,205	602
	11	2,133	533	2,075	581	2,004	633	1,912	690	1,612	696	1,403	645	1,211	595
	12	2,186	542	2,127	591	2,053	643	1,958	700	1,615	689	1,414	640	1,216	588
	13	2,240	550	2,178	600	2,102	653	2,005	711	1,617	681	1,423	635	1,220	580
	14	2,294	559	2,231	609	2,152	663	2,052	722	1,630	677	1,431	629	1,238	579
	15	2,349	568	2,284	619	2,202	673	2,099	733	1,628	667	1,438	623	1,239	570

NOTES

Cc (cooling capacity) - Pi (unit power input) – ELWT (evaporator leaving water temperature – Δt 5°C).
Data are referred to 0,0176 m2 °C/kW evaporator fouling factor

SRC_1-2-3-4-5-6_Rev.00_4

7 Standard rating

7 - 1 Cooling capacity tables

EWAD~C-PS
EWAD~C-PL

Size	ELWT (°C)	Condenser Inlet Air Temperature (°C)													
		25		30		35		40		46		49		52	
		Cc (kW)	Pi (kW)	Cc (kW)	Pi (kW)	Cc (kW)	Pi (kW)	Cc (kW)	Pi (kW)	Cc (kW)	Pi (kW)	Cc (kW)	Pi (kW)	Cc (kW)	Pi (kW)
820	4	792	183	770	201	749	217	725	235	688	257	665	269	637	283
	5	817	186	794	203	772	220	748	238	710	260	686	273	659	286
	6	842	188	819	205	796	223	771	240	733	264	709	276	680	289
	7	868	190	844	208	821	225	795	243	756	267	731	279	702	293
	8	894	192	870	210	846	228	820	246	779	270	754	283	724	297
	9	920	195	896	213	871	231	844	249	803	273	777	286	747	300
	10	947	197	922	216	897	234	869	253	827	277	800	290	770	304
	11	975	199	949	218	924	237	895	256	851	280	824	293	793	307
	12	1,002	202	977	221	951	240	921	259	876	284	848	297	816	311
	13	1,030	204	1,004	224	978	243	947	262	901	287	873	300	840	315
	14	1,058	207	1,032	227	1,005	246	974	266	927	291	898	304	864	319
	15	1,086	209	1,060	229	1,032	249	1,000	269	953	294	923	308	889	322
890	4	860	202	836	221	813	240	786	259	744	284	718	298	686	313
	5	886	205	862	224	838	243	811	262	768	288	740	302	709	317
	6	913	207	888	227	864	246	836	265	792	291	764	305	732	321
	7	940	210	915	230	890	249	861	269	816	295	788	309	755	325
	8	968	213	942	232	917	252	887	272	841	299	812	313	768	326
	9	996	215	970	235	944	255	913	276	866	302	836	317	782	327
	10	1024	218	998	238	971	259	940	279	891	306	861	321	795	327
	11	1053	221	1026	241	999	262	966	283	917	310	886	325	808	328
	12	1082	224	1055	245	1027	265	994	287	943	314	911	329	821	328
	13	1111	227	1084	248	1055	269	1021	290	969	318	937	333	833	328
	14	1141	230	1113	251	1083	272	1049	294	996	322	963	338	841	327
	15	1171	232	1143	254	1112	276	1077	298	1023	326	989	342	843	325
980	4	942	223	916	243	889	263	858	285	810	312	779	328	743	344
	5	971	226	945	246	917	267	886	288	836	317	804	332	767	349
	6	1,002	229	974	250	946	271	913	292	862	321	829	337	792	353
	7	1,032	232	1,004	253	975	274	941	296	888	325	855	341	810	356
	8	1,064	235	1,035	257	1,005	278	970	300	915	329	881	346	816	354
	9	1,095	239	1,066	260	1,036	282	999	304	943	334	908	350	813	351
	10	1,128	242	1,098	264	1,066	286	1,029	309	971	338	935	355	816	348
	11	1,161	245	1,130	268	1,098	290	1,059	313	999	343	963	359	818	345
	12	1,195	249	1,163	271	1,130	294	1,090	317	1,028	348	990	364	827	345
	13	1,229	253	1,197	275	1,162	298	1,121	322	1,057	353	1,019	369	827	341
	14	1,264	256	1,231	279	1,195	302	1,152	326	1,087	357	1,048	374	826	337
	15	1,299	260	1,266	283	1,228	307	1,184	331	1,117	362	1,060	375	833	335
C11	4	1,037	245	1,008	267	979	289	945	313	892	343	859	360	820	379
	5	1,070	248	1,040	271	1,010	293	975	317	921	348	886	365	836	379
	6	1,103	251	1,073	274	1,042	297	1,006	321	949	353	914	370	851	380
	7	1,136	254	1,105	278	1,074	301	1,036	325	978	357	942	375	867	380
	8	1,170	258	1,139	282	1,106	305	1,068	330	1,008	362	971	380	882	379
	9	1,205	262	1,173	285	1,139	309	1,100	334	1,038	367	1,000	385	897	379
	10	1,241	265	1,208	289	1,173	314	1,132	339	1,069	372	1,030	390	912	378
	11	1,277	269	1,243	293	1,207	318	1,165	343	1,100	377	1,060	395	923	376
	12	1,314	273	1,279	298	1,242	322	1,198	348	1,131	382	1,086	399	929	372
	13	1,351	276	1,316	302	1,278	327	1,233	353	1,164	387	1,103	399	930	366
	14	1,388	280	1,352	306	1,314	332	1,267	358	1,196	392	1,120	399	935	362
	15	1,426	284	1,389	310	1,350	336	1,302	363	1,229	398	1,137	398	939	357
C12	4	1,120	267	1,089	292	1,057	316	1,019	342	958	376	919	395	874	415
	5	1,154	271	1,123	296	1,090	321	1,050	347	988	381	949	400	882	412
	6	1,189	275	1,158	300	1,124	325	1,083	352	1,019	386	978	405	888	409
	7	1,225	279	1,192	304	1,158	330	1,116	356	1,050	392	1,008	411	894	404
	8	1,261	283	1,228	308	1,192	334	1,149	361	1,081	397	1,039	417	898	399
	9	1,298	286	1,264	313	1,227	339	1,183	366	1,113	402	1,070	422	901	393
	10	1,335	291	1,301	317	1,262	344	1,217	372	1,145	408	1,101	428	912	390
	11	1,374	295	1,338	321	1,299	348	1,251	377	1,178	414	1,133	434	913	384
	12	1,411	299	1,376	326	1,335	353	1,286	382	1,211	419	1,156	437	922	380
	13	1,449	303	1,413	331	1,372	358	1,322	387	1,244	425	1,162	433	920	372
	14	1,488	307	1,451	335	1,409	363	1,358	393	1,278	431	1,166	428	927	368
	15	1,528	312	1,489	340	1,446	368	1,394	398	1,313	437	1,179	426	934	363
C13	4	1,237	295	1,203	321	1,167	348	1,124	377	1,057	414	1,014	435	964	457
	5	1,275	299	1,241	326	1,204	353	1,160	382	1,090	420	1,046	441	973	455
	6	1,315	303	1,279	331	1,241	358	1,196	387	1,124	426	1,079	447	976	452
	7	1,354	307	1,318	335	1,279	363	1,232	393	1,158	432	1,112	453	976	448
	8	1,395	312	1,358	340	1,318	368	1,269	398	1,194	437	1,146	459	980	445
	9	1,436	316	1,398	345	1,357	374	1,307	404	1,229	444	1,181	465	983	441
	10	1,478	321	1,439	350	1,397	379	1,345	410	1,265	450	1,216	472	990	438
	11	1,521	325	1,481	355	1,437	384	1,384	415	1,302	456	1,251	478	990	433
	12	1,564	330	1,523	360	1,478	390	1,423	421	1,338	462	1,273	480	993	429
	13	1,607	335	1,565	365	1,519	395	1,463	427	1,376	469	1,278	478	1,001	427
	14	1,651	340	1,608	370	1,561	401	1,503	433	1,414	475	1,282	475	1,003	422
	15	1,695	345	1,652	375	1,603	407	1,544	440	1,452	482	1,285	471	1,009	419
C14	4	1,344	321	1,307	350	1,268	379	1,222	410	1,149	451	1,103	474	1,049	498
	5	1,386	325	1,348	355	1,308	385	1,261	416	1,185	457	1,138	480	1,058	496
	6	1,428	330	1,390	360	1,349	390	1,300	422	1,222	464	1,174	487	1,065	494
	7	1,470	334	1,432	365	1,390	396	1,339	428	1,260	470	1,210	493	1,062	488
	8	1,514	339	1,474	370	1,431	401	1,380	434	1,298	477	1,247	500	1,067	485
	9	1,558	344	1,517	375	1,473	407	1,420	440	1,336	483	1,284	507	1,070	481
	10	1,603	349	1,561	380	1,516	412	1,461	446	1,375	490	1,322	514	1,082	479
	11	1,649	354	1,606	386	1,559	418	1,502	452	1,414	496	1,360	521	1,082	474
	12	1,694	359	1,652	391	1,603	424	1,544	458	1,454	503	1,388	524	1,081	468
	13	1,740	364	1,697	397	1,648	430	1,587	465	1,494	510	1,394	522	1,090	465
	14	1,787	369	1,742	402	1,692	436	1,630	471	1,535	517	1,399	519	1,097	462
	15	1,834	374	1,788	408	1,736	442	1,674	478	1,576	524	1,402	515	1,104	458

NOTES

Cc (cooling capacity) - Pi (unit power input) – ELWT (evaporator leaving water temperature – Δt 5°C).
Data are referred to 0,0176 m2 °C/kW evaporator fouling factor

SRC_1-2-3-4-5-6_Rev.00_5

7 Standard rating

7 - 1 Cooling capacity tables

EWAD~C-PR

Size	ELWT (°C)	Condenser Inlet Air Temperature (°C)													
		25		30		35		40		46		49		52	
		Cc (kW)	Pi (kW)	Cc (kW)	Pi (kW)	Cc (kW)	Pi (kW)	Cc (kW)	Pi (kW)	Cc (kW)	Pi (kW)	Cc (kW)	Pi (kW)	Cc (kW)	Pi (kW)
810	4	782	176	760	193	738	210	712	228	671	251	645	264	615	278
	5	806	178	784	195	761	213	735	231	693	255	666	268	635	282
	6	830	181	808	198	785	216	758	234	714	258	687	271	656	286
	7	856	183	833	201	809	219	781	238	737	262	709	275	676	290
	8	881	186	858	204	833	222	804	241	759	266	730	279	697	293
	9	907	189	883	207	858	225	828	244	781	269	753	283	719	297
	10	934	192	909	210	883	229	852	248	804	273	775	287	741	302
	11	961	194	935	213	909	232	877	251	827	277	797	291	762	306
	12	987	197	962	216	935	235	902	255	851	281	820	295	773	306
	13	1,015	200	989	219	961	239	927	259	875	285	843	299	771	300
	14	1,042	203	1,016	223	987	242	953	263	899	289	866	303	780	299
	15	1,070	206	1,043	226	1,014	246	978	266	924	293	890	307	782	295
880	4	847	196	824	215	800	234	770	254	723	281	693	295	623	298
	5	873	199	850	218	825	237	794	258	745	285	715	299	635	299
	6	900	202	876	221	850	241	818	261	768	289	737	304	646	299
	7	926	205	902	225	875	244	843	265	791	293	759	308	652	297
	8	953	208	928	228	901	248	867	269	815	297	779	311	651	294
	9	981	212	955	232	927	252	893	273	839	301	789	311	656	292
	10	1,009	215	982	235	953	256	918	277	863	306	802	312	660	290
	11	1,037	218	1,010	239	980	259	944	281	887	310	815	313	659	286
	12	1,065	221	1,038	242	1,007	263	970	286	912	315	827	314	661	283
	13	1,094	225	1,066	246	1,035	267	996	290	937	319	839	314	666	281
	14	1,123	228	1,094	250	1,062	271	1,023	294	962	324	855	316	667	278
	15	1,152	232	1,123	253	1,090	275	1,049	298	980	326	856	313	670	275
960	4	927	219	902	239	873	260	839	282	783	312	749	328	632	317
	5	956	222	930	243	901	264	864	286	807	316	772	333	635	314
	6	986	226	958	247	928	268	891	291	832	321	796	338	637	311
	7	1,016	230	988	251	956	272	918	295	857	326	820	343	638	307
	8	1,046	233	1,017	255	985	277	945	300	882	331	825	341	644	306
	9	1,077	237	1,047	259	1,014	281	972	305	908	336	830	340	643	301
	10	1,109	241	1,078	263	1,043	286	1,000	309	934	341	833	338	648	299
	11	1,141	245	1,109	267	1,073	290	1,029	314	961	346	836	335	653	296
	12	1,173	249	1,141	272	1,104	295	1,058	319	988	352	837	332	657	294
	13	1,207	254	1,173	276	1,134	300	1,087	325	1,015	357	838	328	660	291
	14	1,240	258	1,206	281	1,166	305	1,117	330	1,035	360	846	327	662	287
	15	1,275	263	1,239	286	1,197	310	1,147	335	1,039	358	844	322	664	284
C10	4	1,021	240	993	262	962	285	924	310	863	342	825	360	711	342
	5	1,053	244	1,024	266	992	290	952	314	890	347	847	364	715	338
	6	1,085	248	1,055	271	1,022	294	981	319	917	353	860	363	718	333
	7	1,118	252	1,087	275	1,053	299	1,010	324	944	358	875	364	723	329
	8	1,151	256	1,120	279	1,084	304	1,040	329	972	363	890	363	728	324
	9	1,185	260	1,153	284	1,116	308	1,070	334	1,000	369	905	363	735	321
	10	1,220	264	1,186	288	1,148	313	1,101	340	1,029	374	923	364	738	315
	11	1,255	268	1,220	293	1,181	318	1,132	345	1,058	380	937	363	744	311
	12	1,290	273	1,255	298	1,214	323	1,164	350	1,075	381	941	359	745	305
	13	1,327	278	1,290	303	1,248	329	1,196	356	1,091	381	942	353	750	301
	14	1,363	282	1,326	308	1,282	334	1,228	362	1,108	381	951	350	753	296
	15	1,399	287	1,361	313	1,316	339	1,261	367	1,124	381	955	345	761	293
C11	4	1,101	265	1,071	290	1,036	315	992	342	922	378	878	398	704	353
	5	1,135	269	1,104	294	1,067	320	1,022	347	950	384	899	401	706	346
	6	1,169	274	1,137	299	1,100	325	1,053	353	979	390	906	398	714	343
	7	1,204	278	1,171	304	1,132	330	1,084	358	1,008	396	904	390	714	335
	8	1,239	283	1,205	309	1,165	336	1,116	364	1,037	402	909	385	721	331
	9	1,275	288	1,240	314	1,199	341	1,147	370	1,067	408	920	384	727	326
	10	1,311	292	1,275	319	1,232	346	1,179	376	1,097	414	923	377	732	321
	11	1,348	297	1,311	324	1,267	352	1,212	382	1,127	421	925	370	736	316
	12	1,385	302	1,347	330	1,301	358	1,244	388	1,133	418	934	367	740	311
	13	1,422	307	1,383	335	1,336	364	1,278	394	1,138	413	933	359	742	305
	14	1,460	312	1,419	340	1,372	370	1,311	400	1,142	408	940	355	754	304
	15	1,498	318	1,456	346	1,407	376	1,345	407	1,144	401	947	351	755	298
C13	4	1,216	292	1,182	319	1,143	347	1,094	377	1,017	416	969	438	758	398
	5	1,254	297	1,219	324	1,178	352	1,128	383	1,048	423	988	440	764	395
	6	1,292	302	1,256	330	1,214	358	1,162	389	1,080	429	991	438	768	391
	7	1,331	307	1,294	335	1,251	364	1,197	395	1,112	436	993	434	771	386
	8	1,371	312	1,332	341	1,288	370	1,232	401	1,144	443	997	431	773	381
	9	1,411	317	1,371	346	1,325	376	1,267	408	1,177	450	1,000	427	779	378
	10	1,451	323	1,410	352	1,362	382	1,303	414	1,211	457	1,002	423	783	374
	11	1,493	328	1,450	358	1,401	388	1,339	421	1,241	462	1,007	420	787	370
	12	1,534	334	1,491	364	1,439	395	1,376	428	1,247	460	1,012	416	790	365
	13	1,576	339	1,532	370	1,479	401	1,413	435	1,246	456	1,015	412	792	360
	14	1,618	345	1,573	376	1,518	408	1,451	442	1,249	452	1,022	409	799	358
	15	1,661	351	1,614	382	1,558	415	1,489	449	1,251	448	1,024	404	804	354
C14	4	1,322	318	1,285	347	1,243	378	1,190	410	1,106	453	1,054	477	826	434
	5	1,363	323	1,325	353	1,281	384	1,226	417	1,140	460	1,079	481	836	432
	6	1,404	329	1,365	359	1,320	390	1,263	423	1,174	468	1,078	477	836	426
	7	1,446	334	1,406	365	1,359	396	1,301	430	1,209	475	1,084	474	844	423
	8	1,488	339	1,447	371	1,399	403	1,339	437	1,244	482	1,089	471	842	416
	9	1,531	345	1,488	377	1,439	409	1,377	444	1,280	490	1,093	467	848	412
	10	1,574	351	1,531	383	1,480	416	1,416	451	1,317	497	1,095	463	853	408
	11	1,619	357	1,574	389	1,521	423	1,455	458	1,353	505	1,096	457	857	403
	12	1,663	363	1,617	396	1,562	429	1,494	466	1,360	503	1,106	455	860	398
	13	1,708	369	1,661	402	1,604	436	1,534	473	1,355	496	1,104	449	862	393
	14	1,753	375	1,705	409	1,647	444	1,574	481	1,358	492	1,113	446	876	392
	15	1,798	381	1,749	415	1,689	451	1,615	488	1,361	488	1,120	442	876	386

NOTES

Cc (cooling capacity) - Pi (unit power input) – ELWT (evaporator leaving water temperature – Δt 5°C).
Data are referred to 0,0176 m2 °C/kW evaporator fouling factor

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8 Evaporator pressure drop

EWAD~C-SS EWAD~C-SL	650	740	830	910	970	C11	C12	C14	C15	C16	C17
Cooling Capacity (kW)	647	744	832	912	967	1064	1152	1419	1538	1622	1714
Water Flow (l/s)	30.90	35.56	39.74	43.60	46.21	50.85	55.04	67.78	73.5	77.51	81.89
Pressure Drops (kPa)	73	59	52	61	68	63	72	47	59	65	73

Water flow and pressure drop referred to nominal codition: evaporator water in/out: 12/7°C – condenser air inlet: 35°C

EWAD~C-SR	650	740	830	910	970	C11	C12	C14	C15	C16	C17
Cooling Capacity (kW)	619	715	789	876	922	1020	1112	1367	1471	1556	1623
Water Flow (l/s)	29.57	34.15	37.71	41.83	44.05	48.75	53.11	65.32	70.28	74.32	77.57
Pressure Drops (kPa)	67	55	47	57	62	58	68	44	54	60	66

Water flow and pressure drop referred to nominal codition: evaporator water in/out: 12/7°C – condenser air inlet: 35°C

EWAD~C-XS EWAD~C-XL	760	830	890	990	C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
Cooling Capacity (kW)	756	830	889	1001	1074	1196	1280	1349	1409	1526	1596	1685	1768	1858
Water Flow (l/s)	36.10	39.67	42.49	47.82	51.32	57.13	61.18	64.45	67.34	72.90	76.24	80.48	84.47	88.79
Pressure Drops (kPa)	80	56	64	61	69	45	51	71	77	57	62	68	64	37

Water flow and pressure drop referred to nominal codition: evaporator water in/out: 12/7°C – condenser air inlet: 35°C

EWAD~C-XR	760	830	890	990	C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
Cooling Capacity (kW)	736	811	866	974	1041	1168	1247	1302	1378	1486	1550	1639	1722	1813
Water Flow (l/s)	35.17	38.74	41.36	46.54	49.76	55.78	59.56	62.21	65.85	70.98	74.07	78.32	82.3	86.61
Pressure Drops (kPa)	76	54	61	58	65	43	49	67	74	54	59	65	61	35

Water flow and pressure drop referred to nominal codition: evaporator water in/out: 12/7°C – condenser air inlet: 35°C

EWAD~C-PS EWAD~C-PL	820	890	980	C11	C12	C13	C14
Cooling Capacity (kW)	821	890	975	1074	1158	1279	1390
Water Flow (l/s)	39.22	42.53	46.6	51.30	55.31	61.12	66.41
Pressure Drops (kPa)	57	65	30	61	69	60	73

Water flow and pressure drop referred to nominal codition: evaporator water in/out: 12/7°C – condenser air inlet: 35°C

EWAD~C-PR	820	890	980	C11	C12	C13	C14
Cooling Capacity (kW)	809	875	956	1053	1132	1251	1359
Water Flow (l/s)	38.65	41.81	45.69	50.30	54.11	59.76	64.95
Pressure Drops (kPa)	56	63	29	59	66	58	70

Water flow and pressure drop referred to nominal codition: evaporator water in/out: 12/7°C – condenser air inlet: 35°C

Evaporating Pressure Drops

To determinate the pressure drop for different versions or at different working conditions. please refer to the following formula:

$$PD_2\ (kPa) = PD_1\ (kPa) \times \left(\frac{Q_2\ (l/s)}{Q_1\ (l/s)} \right)^{1.8}$$

where:

PD_2 Pressure drop to be determinate (kPa)
PD_1 Pressure drop at nominal condition (kPa)
Q_2 water flow at new working condition (l/s)
Q_1 water flow at nominal condition (l/s)

How to use the formula: Example

The unit EWAD650C-SS has been selected for working at the following conditions:
- evaporator water in/out : 11/6°C
- condenser air inlet: 46°C
The cooling capacity at these working conditions is: 536 kW
The water flow at these working conditions is: 25.61 l/s

The unit EWAD650C-SS at nominal working conditions has the following data:
- evaporator water in/out : 12/7°C
- condenser air inlet: 35°C
The cooling capacity at these working conditions is: 647 kW
The water flow at these working conditions is: 30.90 l/s
The pressure drop at these working conditions is: 73 kPa

The pressure drop at the selected working condition will be:

$$PD_2\ (kPa) = 73\ (kPa) \times \left(\frac{25.61\ (l/s)}{30.90\ (l/s)} \right)^{1.8}$$

$$PD_2\ (kPa) = 52\ (kPa)$$

NOTES
If the calculated evaporator water pressure drop is below 10 kPa or above 100 kPa please contact the factory for dedicated evaporator.

EPD_1-2-3-4_Rev.00_1-4

9 Options

9 - 1 Partial heat recovery

EWAD~C-

Version		Size	1Partial Heat Recovery Leaving Water Temperature (°C) 45 (Δt=5°C) Hc (kW)	50 (Δt=5°C) Hc (kW)	55 (Δt=5°C) Hc (kW)	Partial Heat Rrecovery LWT 45°C Water Flow l/s	Pressure Drops kPa
EWAD~C-SS EWAD~C-SL EWAD~C-SR	Evaporator Leaving Temperature 7°C - Δt 5°C Condenser Inlet Air 35°C	650	122	103	83.5	5.83	28
		740	140	118	95.8	6.69	43
		830	158	133	108	7.55	43
		910	171	144	117	8.17	43
		970	184	155	126	8.79	40
		C11	201	169	138	9.60	55
		C12	218	184	149	10.42	55
		C14	276	232	189	13.19	40
		C15	293	247	200	14.00	55
		C16	310	261	212	14.81	55
		C17	327	275	224	15.62	55
EWAD~C-XS EWAD~C-XL EWAD~C-XR	Evaporator Leaving Temperature 7°C - Δt 5°C Condenser Inlet Air 35°C	760	122	103	83.5	5.83	28
		830	140	118	96	6.69	43
		890	158	133	108	7.55	43
		990	158	133	108	7.55	43
		C10	184	155	126	8.79	40
		C11	201	169	138	9.60	55
		C12	218	184	149	10.42	55
		C13	218	184	149	10.42	55
		C14	237	200	162	11.32	43
		C15	250	211	171	11.94	43
		C16	263	221	180	12.57	43
		C17	276	232	189	13.19	40
		C18	293	247	200	14.00	55
		C19	310	261	212	14.81	55
EWAD~C-PS EWAD~C-PL EWAD~C-PR	Evaporator Leaving Temperature 7°C - Δt 5°C Condenser Inlet Air 35°C	820	122	103	83.5	5.83	28
		890	140	118	96	6.69	43
		980	158	133	108	7.55	43
		C11	171	144	117	8.17	43
		C12	184	155	126	8.79	40
		C13	201	169	138	9.60	55
		C14	218	184	149	10.42	55

OPT_1-2-3-4-5_Rev.00_1

Partial Heat Recovery Pressure Drops

To determinate the pressure drop for different versions or at different working condition, please refer to the following formula:

$$PD2\ (kPa) = PD1\ (kPa) \times \left(\frac{Q_2\ (l/s)}{Q_1\ (l/s)} \right)^{1.87}$$

where:

PD_2 Pressure drop to be determinate (kPa)
PD_1 Pressure drop at nominal condition (kPa)
Q_2 water flow at new working condition (l/s)
Q_1 water flow at nominal condition (l/s)

How to use the formula: Example

The unit EWAD650C-SS has been selected for working at the following conditions:
Partial heat recovery leaving water temperature 50/55°C
The heating capacity at these working conditions is: 83.5 kW
The water flow at these working conditions is: 3.99 l/s

The unit EWAD650C-SS at nominal working conditions has the following data:
- Partial heat recovery leaving water temperature 40/45°C
- condenser air inlet: 35°C
The heating capacity at these working conditions is: 122 kW
The water flow at these working conditions is: 5.83 l/s
The pressure drop at these working conditions is: 28 kPa

The pressure drop at the selected working condition will be::

$$PD2\ (kPa) = 28\ (kPa) \times \left(\frac{3.99\ (l/s)}{5.83\ (l/s)} \right)^{1.87}$$

PD2 (kPa) = 14 (kPa)

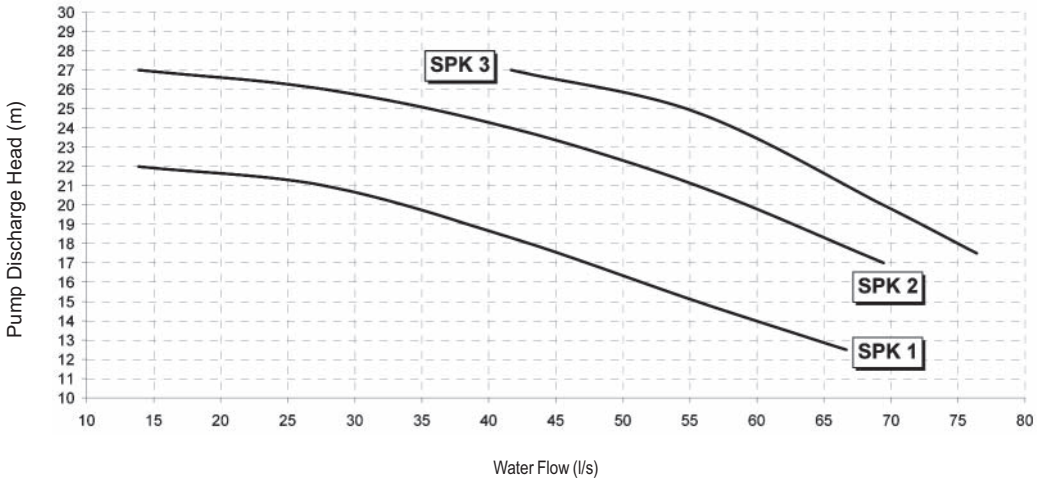
OPT_1-2-3-4-5_Rev.00_2

9 Options

9 - 2 Water pump kit

EWAD~C-
Water Pump Kit - Discharge Head

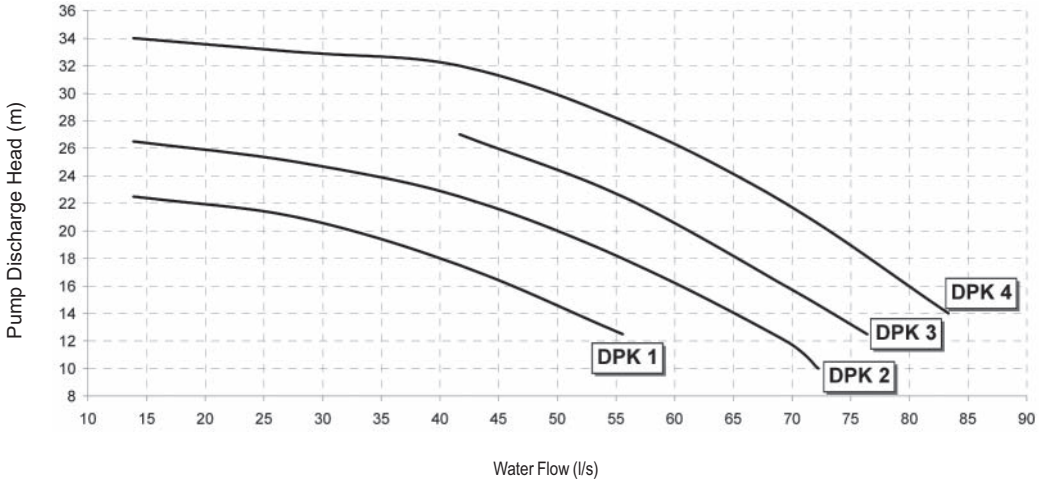
Single Pump (2 poles) - Discharge Head



NOTES

- the above curves are referred to the discharge head of the pump only
- when selecting the pump you have to consider the installation and evaporator pressure drops
- when using mixture of water and glycol please contact the factory as above specification can change

Twin Pump (2 poles) - Discharge Head



NOTES

- the above curves are referred to the discharge head of the pump only
- when selecting the pump you have to consider the installation and evaporator pressure drops
- when using mixture of water and glycol please contact the factory as above specification can change

OPT_1-2-3-4-5_Rev.00_3

9 Options

9 - 2 Water pump kit

Water Pump Kit - Combination Matrix

Version	Size	Single Pump			Double Pump			
		SPK 1	SPK 2	SPK 3	DPK 1	DPK 2	DPK 3	DPK 4
EWAD~C-SS EWAD~C-SL EWAD~C-SR	650	X	X		X	X		X
	740	X	X		X	X		X
	830	X	X		X	X		X
	910	X	X		X	X		X
	970	X	X	X	X	X	X	X
	C11	X	X	X	X	X	X	X
	C12	X	X	X	X	X	X	X
EWAD~C-XS EWAD~C-XL EWAD~C-XR	760	X	X		X	X		X
	830	X	X		X	X		X
	890	X	X		X	X		X
	990	X	X	X	X	X	X	X
	C10	X	X	X	X	X	X	X
	C11	X	X	X		X	X	X
	C12	X	X	X		X	X	X
	C13	X	X	X		X	X	X
EWAD~C-PS EWAD~C-PL EWAD~C-PR	820	X	X		X	X		X
	890	X	X		X	X		X
	980	X	X	X	X	X	X	X
	C11	X	X	X	X	X	X	X
	C12	X	X	X		X	X	X
	C13	X	X	X		X	X	X
	C14		X	X		X	X	X

Water Pump Kit - Technical Information

		Pump Motor Power (kW)	Pump Motor Current (A)	Power supply (V-ph-Hz)	PN	Motor Protection	Insulation (Class)	Working Temp. (°C)
Single Pump	SPK 1	11.0	20.0	400V-3ph-50hz	16	IP55	class F	-20 +140
	SPK 2	15.0	26.5	400V-3ph-50hz	16	IP55	class F	-20 +140
	SPK 3	18.5	32.5	400V-3ph-50hz	16	IP55	class F	-20 +140
Double Pump	DPK 1	11.0	20.0	400V-3ph-50hz	16	IP55	class F	-20 +140
	DPK 2	15.0	26.5	400V-3ph-50hz	16	IP55	class F	-20 +140
	DPK 3	18.5	32.5	400V-3ph-50hz	16	IP55	class F	-20 +140
	DPK 4	22.0	39.0	400V-3ph-50hz	16	IP55	class F	-20 +140

NOTES

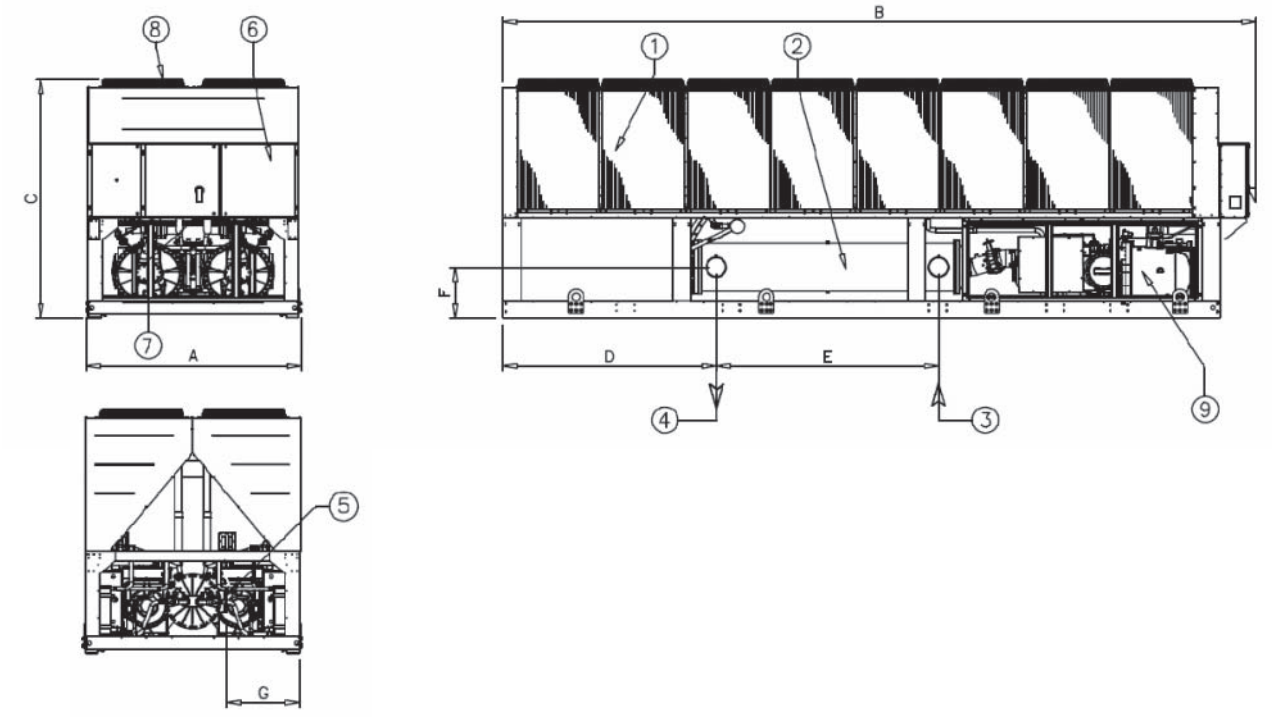
- when using mixture of water and glycol please contact the factory as above specification can change

OPT_1-2-3-4-5_Rev.00_4-5

10 Dimensions

10 - 1 Dimensional drawing

Dimensions EWAD~C– (2 circuits)



EWAD-C~		Dimensions							
Size	Size	A	B	C	D	E	F	G	Fans
650 ÷ 830 SS/SL	620 ÷ 720 SR	2285	6185	2540	450	2412	435	810	Nr 10
910÷ 970 SS/SL	880÷ 920 SR	2285	6185	2540	450	2412	435	810	Nr 12
C11 SS/SL	C10 SR	2285	7085	2540	1350	2412	435	810	Nr 14
C12 SS/SL	C11 SR	2285	7985	2540	2250	2412	435	810	Nr 16
760 XS/XL	740 XR	2285	6185	2540	470	2412	435	810	Nr 12
830 ÷ 800 XS/XL	810 ÷ 870 XR	2285	7085	2540	1370	2412	435	810	Nr 14
990 ÷ C10 XS/XL	970 ÷ C10 XR	2285	7985	2540	2270	2360	540	760	Nr 16
C11 ÷ C13 XS/XL	C11 ÷ C13 XR	2285	9785	2540	4070	2360	540	760	Nr 20
820 ÷ 890 PS/PL	810 ÷ 880 PR	2285	8885	2540	2020	3510	540	760	Nr 18
980 PS/PL	960 PR	2285	8885	2540	2020	3440	540	685	Nr 18
C11 ÷ C12 PS/PL	C10 ÷ C11 PR	2285	9785	2540	2920	3440	540	685	Nr 20
C13 PS/PL	C13 PR	2285	11085	2540	4205	3440	540	685	Nr 22
C14 PS/PL	C14 PR	2285	11985	2540	5105	3440	540	685	Nr 24

NOTES

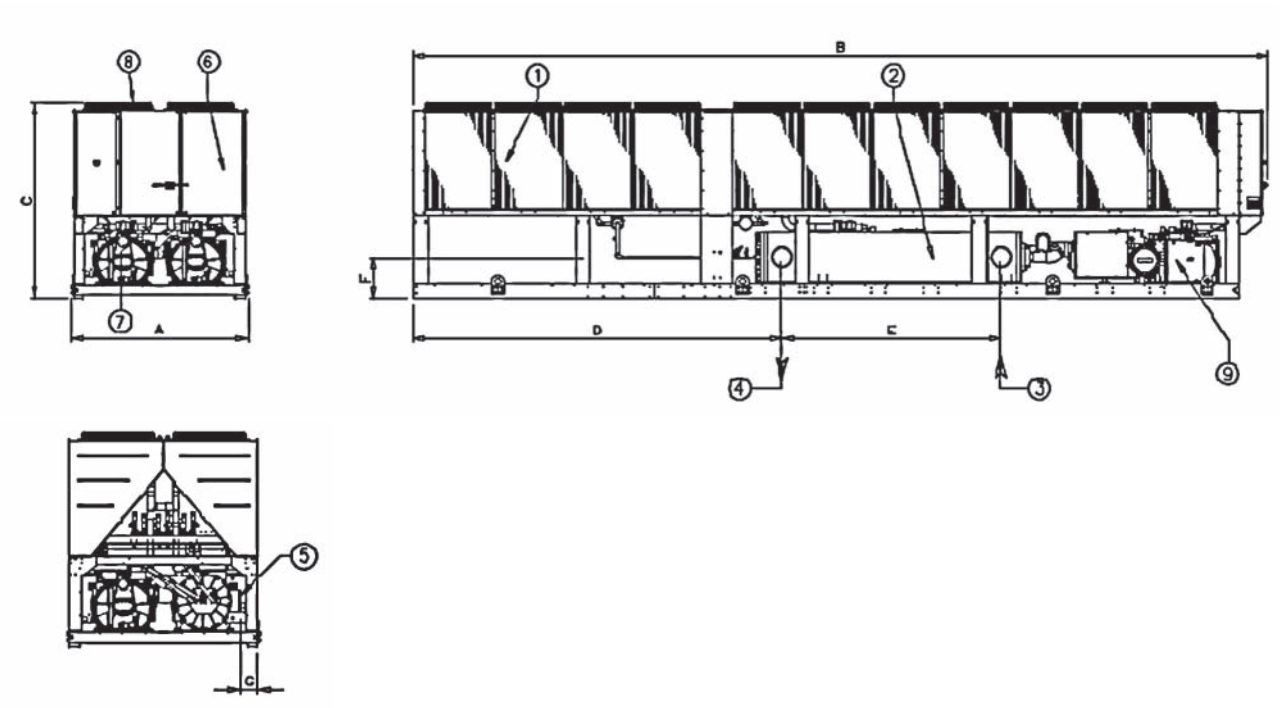
1 Condenser Coil
2 Water heat exchanger (evaporator)
3 Evaporator water inlet
4 Evaporator water outlet
5 Victaulic connection
6 Operating and control panel
7 Slot for power and control connection
8 Fan
9 Compressor

DMN_1b-2a_Rev.02_1

10 Dimensions

10 - 1 Dimensional drawing

Dimensions EWAD~C– (3 circuits)



EWAD-C~		Dimensions							
Size	Size	A	B	C	D	E	F	G	Fans
C14÷ C15 SS/SL	C13÷ C14 SR	2285	10185	2540	4440	2360	540	285	Nr 20
C16 ÷ C17 SS/SL	C15 ÷ C16 SR	2285	11085	2540	5340	2360	540	285	Nr 22
C14 XS/XL	C14 XR	2285	11985	2540	5680	2910	540	285	Nr 24
C15 ÷ C16 XS/XL	C15 ÷ C16 XR	2285	11985	2540	5680	2840	540	210	Nr 24
C17 XS/XL	C17 XR	2285	12885	2540	6580	2840	540	210	Nr 26
C18 XS/XL	C18 XR	2285	13785	2540	7480	2840	540	210	Nr 28
C19 XS/XL	C19 XR	2285	14685	2540	8380	2840	540	210	Nr 30

NOTES

1 Condenser Coil
2 Water heat exchanger (evaporator)
3 Evaporator water inlet
4 Evaporator water outlet
5 Victaulic connection
6 Operating and control panel
7 Slot for power and control connection
8 Fan
9 Compressor

DMN_1b-2a_Rev.02_2

11 Installation

11 - 1 Installation method

Installation notes

Warning
Installation and maintenance of the unit must to be performed only by qualified personnel who have knowledge with local codes and regulations, and experience with this type of equipment. Must be avoided the unit installation in places that could be considered dangerous for all the maintenance operations.

Handling
Care should be taken to avoid rough handling or shock due to dropping the unit. Do not push or pull the unit from anything other than the base frame. Never allow the unit to fall during unloading or moving as this may result in serious damage. To lift the unit, rings are provided in the base frame of the unit. Spreader bar and cables should be arranged to prevent damage to the condenser coil or unit cabinet.

Location
The units are produced for outside installation on roofs, floors or below ground level on condition that the area is free from obstacles for the passage of the condenser air. The unit should be positioned on solid foundations and perfectly level; in the case of installation on roofs or floors, it may be advisable to arrange the use of suitable weight distribution beams. When the units are installed on the ground, a concrete base at least 250 mm wider and longer than the unit's footprint should be laid. Furthermore, this base should withstand the unit weight mentioned in the technical data table.

Space requirements
The units are air-cooled, then it is important to respect the minimum distances which guarantee the best ventilation of the condenser coils. Limitations of space reducing the air flow could cause significant reductions in cooling capacity and an increase in electricity consumption.
To determinate unit placement, careful consideration must be given to assure a sufficient air flow across the condenser heat transfer surface. Two conditions must be avoided to achieve the best performance: warm air recirculation and coil starvation. Both these conditions cause an increase of condensing pressures that results in reductions in unit efficiency and capacity. Moreover the unique microprocessor has the ability to calculate the operating environment of the air cooled chiller and the capacity to optimize its performance staying on-line during abnormal conditions.
Each side of the unit must be accessible after installation for periodic service. Fig.1 shows you minimum recommended clearance requirements.
Vertical condenser air discharge must be unobstructed because the unit would have its capacity and efficiency significantly reduced.
If the units are positioned in places surrounded by walls or obstacles of the same height as the units, the units should be at least 2500 mm from obstacles (fig.2). In the event the obstacles are higher than the units, the units should be at least 3000 mm from the obstacle (fig.4). Units installed closer than the minimum recommended distance to a wall or other vertical riser may experience a combination of coil starvation and warm air recirculation, thus causing reduction in unit capacity and efficiency reductions. The microprocessor control is proactive in response "of design condition". In the case of single or compounded influences restricting airflow to the unit, the microprocessor will act to keep the compressor(s) running (at reduced capacity) rather than allowing a shut-off on high discharge pressure.
When two or more units are positioned side by side it is recommended that the condenser coils are at least 3600 mm distance from one another (fig.3); strong wind could be the cause of air warm recirculation.
For other installation solutions, consult our technicians.

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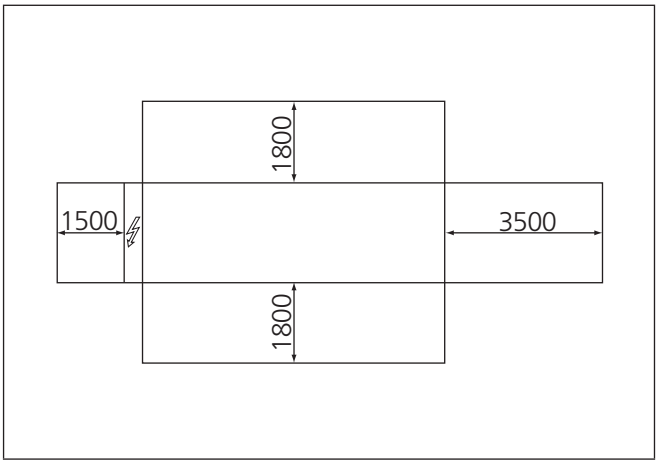
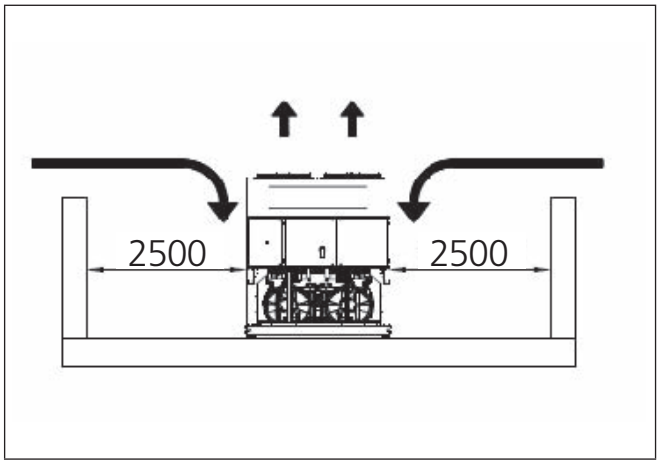
11 Installation

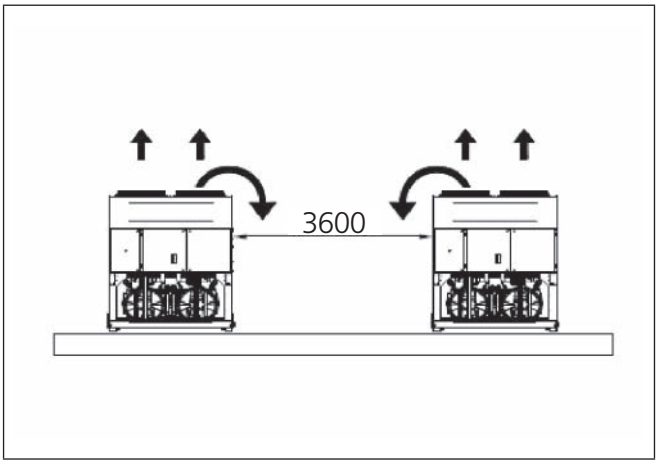
11 - 1 Installation method

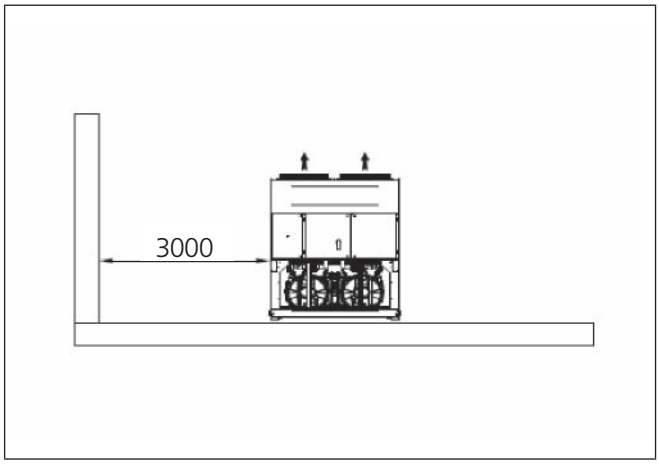
Warning

The above recommended information are representative of general installation. A specific evaluation should be done by contractor depending on the case.









Acoustic protection

When noise level must meet special requirements, it is necessary to pay the maximum attention to ensure the perfect insulation of the unit from the support base by applying appropriate vibration-dampening devices on the unit, on the water pipes and on the electrical connections.

Storage

The environment conditions have to be in the following limits:

Minimum ambient temperature:	-20°C
Maximum ambient temperature:	+57°C
Maximum R.H.:	95% not condensing

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12 Specification

Technical Specification for Air Cooled Screw Chiller

GENERAL

The air cooled screw chiller will be designed and manufactured in accordance with following European directives:

Rating of chillers	**EN 12055**
Construction of pressure vessel	**97/23/EC (PED)**
Machinery Directive	**98/37/EC as modified**
Low Voltage	**2006/95/EC**
Electromagnetic Compatibility	**2004/108/EC**
Electrical & Safety codes	**EN 60204–1 / EN 60335-2-40**
Manufacturing Quality Stds	**UNI – EN ISO 9001:2000**

The unit will be tested at full load in the factory at the nominal working conditions and water temperatures. Before shipment a full test will be held to avoid any losses.
Chiller will be delivered to the job site completely assembled and charged with right refrigerant and oil quantity.
Comply with the manufacturer instructions for rigging and handling equipment.

The unit will be able to start up and operate as standard at full load and outside air temperature from …. °C to …. °C with an evaporator leaving fluid temperature between …. °C and ….. °C

REFRIGERANT

Only HFC 134a will be accepted.

PERFORMANCE

- ✓ Number of air cooled screw chiller: .....
- ✓ Cooling capacity for single air cooled screw chiller: ..... kW
- ✓ Power input for single air cooled screw chiller in cooling mode: ..... kW
- ✓ Shell & tube heat exchanger entering water temperature in cooling mode: ..... °C
- ✓ Shell & tube heat exchanger leaving water temperature in cooling mode: ..... °C
- ✓ Shell & tube heat exchanger water flow: ..... l/s
- ✓ Nominal outside working ambient temperature in cooling mode: ..... °C
- ✓ Operating voltage range should be 400V ±10%, 3ph, 50Hz, voltage unbalance maximum 3%, without neutral conductor and shall only have one power connection point.

UNIT DESCRIPTION

Chiller shall include as standard not less than: two independent refrigerant circuits, semi-hermetic asymmetric type rotary single screw compressors, electronic expansion device (EEXV), refrigerant direct expansion shell & tube heat exchanger, air-cooled condenser section, R134a refrigerant, lubrication system, motor starting components, discharge line shut-off valve, control system and all components necessary for safe and stable unit operation.
Chiller will be factory assembled on a robust base-frame made of galvanized steel, protected by an epoxy paint.

NOISE LEVEL AND VIBRATIONS

Sound pressure level at 1 meter distance in free field, semispheric conditions, shall not exceed ……dB(A). The sound pressure levels must be rated in accordance to ISO 3744.
Other types of rating unacceptable. Vibration on the base frame should not exceed 2 mm/s..

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12 Specification

DIMENSIONS

Unit dimensions shall not exceed following indications:

- ✓ unit length ..... mm,
- ✓ unit width ..... mm,
- ✓ unit height ..... mm.

CHILLER COMPONENTS

Compressors

- ✓ Semi-hermetic, single-screw asymmetric type with one main helical rotor meshing with two diametrical opposed gaterotors. The gaterotors' contact elements shall be constructed of composite material designed for extended life. Electrical motor shall be 2-pole, semi-hermetic, squirrel-cage induction type and cooled by suction gas.
- ✓ The oil injection shall be used in order to get high EER (Energy Efficiency Ratio) also at high condensing pressure and low sound pressure levels in each load condition.
- ✓ The compressor shall be provided with a built in, high efficiency, mesh type oil separator and oil filter
- ✓ Refrigerant system differential pressure shall provide oil injection on all moving compressor parts to correctly lubricate them. Electrical oil pump lubricating system is not acceptable.
- ✓ Compressor cooling must be done by refrigerant liquid injection. External dedicated heat exchanger and additional piping to carry the oil from the compressor to heat exchanger and viceversa will be not accepted.
- ✓ The compressor shall be direct electrical driven, without gear transmission between the screw and the electrical motor.
- ✓ The compressor casing shall be provided with ports to realize economized refrigerant cycles.
- ✓ Compressor must be protected by temperature sensor for high discharge temperature and electrical motor thermistor for high winding temperature.
- ✓ The compressor shall be equipped with an electric oil heater.
- ✓ Compressor shall be fully field serviceable. Compressor that must be removed and returned to the factory for service shall be unacceptable.

Cooling capacity control system

- ✓ Each chiller will have a microprocessor for the control of compressor slide valve position.
- ✓ The unit capacity control shall be infinitely modulating, from 100% down to 25% for each circuit (from 100% down to 12,5% of full load for unit with 2 compressors and from 100% down to 7% of full load for unit with 3 compressors). The chiller shall be capable of stable operation to a minimum of 12,5% of full load without hot gas bypass.
- ✓ The system shall control the unit based on the leaving evaporator water temperature that shall be controlled by a PID (Proportional Integral Derivative) logic.
- ✓ Unit control logic shall manage the compressor slides to exactly match plant load request in order to keep constant the set point for delivered chilled water temperature.
- ✓ The microprocessor unit control shall detect conditions that approach protective limits and take self-corrective action prior to an alarm occurring. The system shall automatically reduce chiller capacity when any of the following parameters are outside their normal operating range:
    - o High condenser pressure
    - o Low evaporation refrigerant temperature

Evaporator

- ✓ The units shall be equipped with a Direct Expansion shell&tube evaporator with copper tubes rolled into steel tubesheets. The evaporator shall be single-pass on both the refrigerant and water sides for pure counter-flow heat exchange and low refrigerant pressure drops.
- ✓ The external shell shall be linked with an electrical heater to prevent freezing down to -28°C ambient temperature, controlled by a thermostat and shall be insulated with flexible, closed cell polyurethane insulation material (20-mm thick).

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12 Specification

- ✓ The evaporator will have 2 or 3 circuits, one for each compressor and shall be single refrigerant pass.
- ✓ The water connections shall be VICTAULIC type connections as standard to ensure quick mechanical disconnection between the unit and the hydronic network.
- ✓ Evaporator is manufactured in accordance to PED approval.

Condenser coil

- ✓ The condenser coils are constructed with internally finned seamless copper tubes having a “W” configuration and arranged in a staggered row pattern and mechanically expanded into lanced and rippled aluminium fins with full fin collars for higher efficiencies. The space between the fins are given by a collar that will increase the surface area in connection with the tubes, protecting them from ambient corrosion.
- ✓ The coils will have an integral subcooler circuit that provides sufficient subcooling to effectively eliminate the possibility of liquid flashing and increase the unit’s efficiency of 5-7% without increasing in energy consumption.
- ✓ The condenser coil shall be leak-tested and submitted to a pressure test with dry air.

Condenser fans

- ✓ The fans used in conjunction with the condenser coils, shall be propeller type with glass reinforced resin blades for higher efficiencies and lower noise. Each fan shall be protected by a fan guard.
- ✓ The air discharge shall be vertical and each fan must be coupled to the electrical motor, supplied as standard to IP54 and capable to work to ambient temperatures of - 20°C to + 65°C.
- ✓ They shall have as a standard a thermally protection by internal therma motor protection and protected by ciurcuit braker installed inside the electrical panel as a standard.

Refrigerant circuit

- ✓ The unit must have multiple independent refrigerant circuits.
- ✓ Each circuit shall include as standard: electronic expansion device piloted by unit’s microprocessor control, compressor discharge shut-off valve, replaceable core filter-drier, sight glass with moisture indicator and insulated suction line.

Condensation control

- ✓ The units will be provided with an automatic control for condensing pressure which ensures the working at low external temperatures down to - °C, to maintain condensing pressure.
- ✓ Compressor automatically unloads when abnormal high condensing pressure is detected to prevent the shutdown of the refrigerant circuit (shutdown of the unit) due to a high-pressure fault.

Low Noise unit options (on request)

- ✓ The unit compressors shall be connected with unit’s metal baseframe by rubber antivibration supports to prevent the transmission of vibrations to all metal unit structure and so to control the unit noise.
- ✓ The chiller shall be provided with an acoustically compressor enclosure. This enclosure shall be realized with a light, corrosion resisting aluminium structure and metal panels. The compressors sound-proof enclosure shall be internally fitted with flexible, multi layer, high density materials.

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12 Specification

Hydronic kit options (on request)

- ✓ The hydronic module shall be integrated in the chiller chassis without increasing its dimensions and include the following elements: centrifugal water pump with three-phase motor equipped with internal over-temperature protection, safety relief valve, filling kit.
- ✓ The water piping shall be protected against corrosion and equipped with drain and purge plugs. The customer connections shall be Victaulic connections. The piping shall be fully insulated to prevent condensation (pump insulation using polyurethane foam).
- ✓ A choice of two pump types shall be available on unit with 2 compressors:
  - o in-line single pump
  - o in-line twin pumps

Control panel

- ✓ Field power connection, control interlock terminals, and unit control system should be centrally located in an electric panel (IP 54). Power and starting controls should be separate from safety and operating controls in different compartments of the same panel.
- ✓ Starting will be Wye-Delta type (Y-Δ).
- ✓ Operating and safety controls should include energy saving control; emergency stop switch; overload protection for compressor motor; high and low pressure cut-out switch (for each refrigerant circuit); anti-freeze thermostat; cut-out switch for each compressor.
- ✓ All of the information regarding the unit will be reported on a display and with the internal built-in calendar and clock that will switch the unit ON/OFF during day time all year long.
- ✓ The following features and functions shall be included:

  - leaving water temperature reset by controlling the water temperature Δt, by a remote 4-20mA DC signal or by controlling the external ambient temperature;
  - soft load function to prevent the system from operating at full load during the chilled fluid pulldown period;
  - password protection of critical parameters of control;
  - start-to-start and stop-to-start timers to provide minimum compressor off-time with maximum motor protection;
  - communication capability with a PC or remote monitoring;
  - discharge pressure control through intelligent cycling of condenser fans;
  - lead-lag selection by manual or automatically by circuit run hours;
  - double set point for brine unit version;
  - scheduling via internal time clock to allow programming of a yearly start-stop schedule accommodating weekends and holidays.

Optional High Level Communications Interface

Chiller must be able to communicate to BMS (Building Management System) based on the most common protocols as:

- ModbusRTU
- LonWorks, now also based on the international 8040 Standard Chiller Profile and LonMark Technology
- BacNet BTP certifief over IP and MS/TP (class 4) (Native)
- Ethernet TCP/IP.

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In all of us, a green heart

Daikin's unique position as a manufacturer of air conditioning equipment, compressors and refrigerants has led to its close involvement in environmental issues. For several years Daikin has had the intention to become a leader in the provision of products that have limited impact on the environment. This challenge demands the eco design and development of a wide range of products and an energy management system, resulting in energy conservation and a reduction of waste.

Daikin Europe N.V. participates in the Eurovent Certification Programme for Air Conditioners (AC), Liquid Chilling Packages (LCP) and Fan Coil Units (FC); the certified data of certified models are listed in the Eurovent Directory. Multi units are Eurovent certified for combinations up to 2 indoor units.

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