

EWAQ-F

Air cooled scroll
chillers

Product manual

SS (Standard Efficiency - Standard Noise) - Cooling Capacity from 207 to 612 kW
SL (Standard Efficiency - Low Noise) - Cooling Capacity from 207 to 612 kW
SR (Standard Efficiency - Reduced Noise) - Cooling Capacity from 199 to 582 kW
XS (High Efficiency - Standard Noise) - Cooling Capacity from 171 to 675 kW
XL (High Efficiency - Low Noise) - Cooling Capacity from 171 to 675 kW
XR (High Efficiency - Reduced Noise) - Cooling Capacity from 166 to 648 kW

Performance according to EN14511
Eurovent certified
Refrigerant: R410A

CODE	
Date	
Supersedes	

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Low operating cost and extended operating life This chiller range is the result of careful design, aimed to optimize the energy efficiency of the chillers, with the objective of bringing down operating costs and improving installation profitability, effectiveness and economical management.

The chillers feature a high efficiency scroll compressors, large condenser coil surface area for maximum heat transfer and low discharge pressure, advanced technology condenser fans and a 'plate to plate' evaporator with low refrigerant pressure drops.

Low operating sound levels Very low sound levels both at full load and part load conditions are achieved by the latest compressor design and by a unique new fan that moves large volume of air at exceptionally low sound levels and by the virtually vibration-free operation.

Outstanding reliability The chillers have two truly independent refrigerant circuits, in order to assure maximum safety for any maintenance, whether planned or not. They are equipped with hermetic orbiting scroll compressor complete with motor over-temperature and over-current devices and protection against excessive gas discharge temperature, a proactive control logic and are full factory-run-tested to optimized 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.

Code requirements – Safety and observant of laws/directives Units are designed and manufactured in accordance with applicable selections of the following:

Construction of pressure vessel	97/23/EC (PED)
Machinery Directive	2006/42/EC
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 9001:2004

Certifications Units 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.).

Versions This range is available in two different versions:

STANDARD EFFICIENCY

12 sizes to cover a range from 207 up to 612 Kw with an EER up to 2.85 and an ESEER up to 4.26 (data referred to Standard Noise).

HIGH EFFICIENCY

14 sizes to cover a range from 171 up to 675 Kw with an EER up to 3.17 and an ESEER up to 4.48 (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.

$$ESEER = A \times EER100\% + B \times EER75\% + C \times EER50\% + D \times EER25\%$$

	A	B	C	D
K	0.03 (3%)	0.33 (33%)	0.41 (41%)	0.23 (23%)
T	35°C	30°C	25°C	20°C

K = Coefficient; T = Air inlet condenser temperature.

Sound configurations Standard, low and reduced sound configurations available as follows:

STANDARD SOUND

Condenser fan rotating at 900 rpm, rubber antivibration under compressor

LOW SOUND

Condenser fan rotating at 900 rpm, rubber antivibration under compressor, compressor sound enclosure.

REDUCED SOUND

Condenser fan rotating at 705 rpm, rubber antivibration under compressor, compressor sound enclosure.

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) (\pm RAL7044). The base frame has an eye-hook to lift 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.

Compressor The compressor is hermetic orbiting scroll compressor complete with motor over-temperature and over-current devices. An oil heater, which starts automatically, keeps the oil from being diluted by the refrigerant when the compressor stops. The compressors are connected in Tandem or Trio on a single refrigerating circuit and are fitted on rubber antivibration mounts and complete with oil charge.

Refrigerant Units have been optimized to operate with R-410A, refrigerant with zero ODP (Ozone Depletion Potential). R-410A has been the logical choice for our multiple scroll chiller because today it is one of the most promising refrigerants in terms of efficiency, stability and environmental impact. R-410A offers a small swept volume, a good heat exchange capacity and leads to reduced component sizes of items such as heat exchangers and tubing.

Evaporator (Plate Heat Exchanger) The unit is equipped with a direct expansion plate to plate type evaporator. This heat exchanger is made of stainless steel brazed plates and is covered with a 20mm closed cell insulation material. The exchanger is equipped with an electric heater for protection against freezing down to -28°C and evaporator water connections are provided with victaulic kit (as standard). The evaporator is manufactured in accordance to PED approval. Flow switch on evaporator standard factory mounted. Water filter is standard (depending on the unit model it can be shipped loose or unit mounted).

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

Condenser fans (\varnothing 800) 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 motors are internally protected from overtemperature and 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 valves possess unique features: 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.

Refrigerant circuit Each unit has 2 independent refrigerant circuits and each one includes:

- Compressors
- Refrigerant
- Evaporator
- Air Cooled Condenser
- Electronic expansion valve
- Liquid line shut off valve
- Sight glass with moisture indicator
- Filter drier
- Charging valves
- High pressure switch
- High pressure transducers
- Low pressure transducers
- Suction temperature sensor

Electrical control panel Power and control are located in 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 against possible accidental contact with live parts. The main panel is fitted with a main switch interlocked door that shuts off power supply when opening.

Power Section

The power section includes compressors and fans protection devices, compressors and fans starters and control circuit power supply.

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.

MicroTech III is able to protect critical components based on external signals from its system (such as motor temperatures, refrigerant gas, correct phase sequence (option), 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 Pressure / Temperature conversions.

Control section - main features

Control Section has the following feature.

- Management of the refrigerant circuit capacity and fans modulation.
- Chiller 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 superheat for each circuit.
- Leaving water evaporator temperature regulation.
- Compressor and evaporator pumps hours counter.
- Display of Status Safety Devices.
- Number of starts and compressor working hours.
- Optimized management of circuit load.
- Fan management according to condensing pressure.
- Re-start in case of power failure (automatic / manual).
- 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

The following devices / logics are available.

- High pressure (pressure switch).
- High pressure (transducer).
- Low pressure (transducer).
- High motor winding temperature.
- Low pressure ratio.
- No pressure change at start.

System security

The following securities are available.

- Low Ambient temperature lock-out.
- Freeze protection.

Regulation type

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

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.
- 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 communication**

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 certified over IP and MS/TP (class 4) (Native).
- Ethernet TCP/IP.

Additional information related to F-GAS Regulation (EU) No 517/2014 OF THE European Parliament and of the Council of 16 April 2014 on fluorinated greenhouse gases and repealing Regulation (EC) No 842/2006

Unit model	Refrigerant type	Refrigerant GWP	No. of circuits	Refrigerant charge circuit 1 (kg)	Refrigerant charge circuit 1 (TCO2Eq)	Refrigerant charge circuit 2 (kg)	Refrigerant charge circuit 2 (TCO2Eq)
EWAQ210F-SS	R410A	2087,5	2	14,0	29,2	14,0	31,3
EWAQ230F-SS	R410A	2087,5	2	14,0	29,2	14,0	32,3
EWAQ250F-SS	R410A	2087,5	2	16,0	33,4	16,0	33,3
EWAQ280F-SS	R410A	2087,5	2	16,5	34,4	16,5	34,3
EWAQ320F-SS	R410A	2087,5	2	20,0	41,8	20,0	35,3
EWAQ350F-SS	R410A	2087,5	2	23,0	48,0	23,0	36,3
EWAQ400F-SS	R410A	2087,5	2	23,0	48,0	23,0	37,3
EWAQ360F-SS	R410A	2087,5	2	27,0	56,4	27,0	38,3
EWAQ410F-SS	R410A	2087,5	2	27,0	56,4	27,0	39,3
EWAQ480F-SS	R410A	2087,5	2	28,0	58,5	28,0	40,3
EWAQ550F-SS	R410A	2087,5	2	33,0	68,9	33,0	41,3
EWAQ610F-SS	R410A	2087,5	2	40,0	83,5	40,0	42,3

Unit model	Refrigerant type	Refrigerant GWP	No. of circuits	Refrigerant charge circuit 1 (kg)	Refrigerant charge circuit 1 (TCO2Eq)	Refrigerant charge circuit 2 (kg)	Refrigerant charge circuit 2 (TCO2Eq)
EWAQ210F-SL	R410A	2087,5	2	14,0	29,2	14,0	31,3
EWAQ230F-SL	R410A	2087,5	2	14,0	29,2	14,0	32,3
EWAQ250F-SL	R410A	2087,5	2	16,0	33,4	16,0	33,3
EWAQ280F-SL	R410A	2087,5	2	16,5	34,4	16,5	34,3
EWAQ320F-SL	R410A	2087,5	2	20,0	41,8	20,0	35,3
EWAQ350F-SL	R410A	2087,5	2	23,0	48,0	23,0	36,3
EWAQ400F-SL	R410A	2087,5	2	23,0	48,0	23,0	37,3
EWAQ360F-SL	R410A	2087,5	2	27,0	56,4	27,0	38,3
EWAQ410F-SL	R410A	2087,5	2	27,0	56,4	27,0	39,3
EWAQ480F-SL	R410A	2087,5	2	28,0	58,5	28,0	40,3
EWAQ550F-SL	R410A	2087,5	2	33,0	68,9	33,0	41,3
EWAQ610F-SL	R410A	2087,5	2	40,0	83,5	40,0	42,3

Unit model	Refrigerant type	Refrigerant GWP	No. of circuits	Refrigerant charge circuit 1 (kg)	Refrigerant charge circuit 1 (TCO2Eq)	Refrigerant charge circuit 2 (kg)	Refrigerant charge circuit 2 (TCO2Eq)
EWAQ200F-SR	R410A	2087,5	2	14,0	29,2	14,0	31,3
EWAQ220F-SR	R410A	2087,5	2	14,0	29,2	14,0	32,3
EWAQ240F-SR	R410A	2087,5	2	16,0	33,4	16,0	33,3
EWAQ270F-SR	R410A	2087,5	2	16,5	34,4	16,5	34,3
EWAQ300F-SR	R410A	2087,5	2	20,0	41,8	20,0	35,3
EWAQ330F-SR	R410A	2087,5	2	23,0	48,0	23,0	36,3
EWAQ370F-SR	R410A	2087,5	2	23,0	48,0	23,0	37,3
EWAQ340F-SR	R410A	2087,5	2	27,0	56,4	27,0	38,3
EWAQ380F-SR	R410A	2087,5	2	27,0	56,4	27,0	39,3
EWAQ460F-SR	R410A	2087,5	2	28,0	58,5	28,0	40,3
EWAQ530F-SR	R410A	2087,5	2	33,0	68,9	33,0	41,3
EWAQ580F-SR	R410A	2087,5	2	40,0	83,5	40,0	42,3

Unit model	Refrigerant type	Refrigerant GWP	No. of circuits	Refrigerant charge circuit 1 (kg)	Refrigerant charge circuit 1 (TCO2Eq)	Refrigerant charge circuit 2 (kg)	Refrigerant charge circuit 2 (TCO2Eq)
EWAQ170F-XS	R410A	2087,5	2	14,0	29,2	14,0	29,2
EWAQ200F-XS	R410A	2087,5	2	16,0	33,4	16,0	33,4
EWAQ220F-XS	R410A	2087,5	2	17,0	35,5	17,0	35,5
EWAQ250F-XS	R410A	2087,5	2	20,0	41,8	20,0	41,8
EWAQ310F-XS	R410A	2087,5	2	26,0	54,3	26,0	54,3
EWAQ350F-XS	R410A	2087,5	2	33,0	68,9	33,0	68,9
EWAQ320F-XS	R410A	2087,5	2	33,0	68,9	33,0	68,9
EWAQ360F-XS	R410A	2087,5	2	33,0	68,9	33,0	68,9
EWAQ400F-XS	R410A	2087,5	2	31,0	64,7	31,0	64,7
EWAQ430F-XS	R410A	2087,5	2	31,0	64,7	31,0	64,7
EWAQ450F-XS	R410A	2087,5	2	31,0	64,7	31,0	64,7
EWAQ520F-XS	R410A	2087,5	2	37,0	77,2	37,0	77,2
EWAQ610F-XS	R410A	2087,5	2	36,0	75,2	36,0	75,2
EWAQ680F-XS	R410A	2087,5	2	41,5	86,6	41,5	86,6

Unit model	Refrigerant type	Refrigerant GWP	No. of circuits	Refrigerant charge circuit 1 (kg)	Refrigerant charge circuit 1 (TCO2Eq)	Refrigerant charge circuit 2 (kg)	Refrigerant charge circuit 2 (TCO2Eq)
EWAQ170F-XL	R410A	2087,5	2	14,0	29,2	14,0	29,2
EWAQ200F-XL	R410A	2087,5	2	16,0	33,4	16,0	33,4
EWAQ220F-XL	R410A	2087,5	2	17,0	35,5	17,0	35,5
EWAQ250F-XL	R410A	2087,5	2	20,0	41,8	20,0	41,8
EWAQ310F-XL	R410A	2087,5	2	26,0	54,3	26,0	54,3
EWAQ350F-XL	R410A	2087,5	2	33,0	68,9	33,0	68,9
EWAQ320F-XL	R410A	2087,5	2	33,0	68,9	33,0	68,9
EWAQ360F-XL	R410A	2087,5	2	33,0	68,9	33,0	68,9
EWAQ400F-XL	R410A	2087,5	2	31,0	64,7	31,0	64,7
EWAQ430F-XL	R410A	2087,5	2	31,0	64,7	31,0	64,7
EWAQ450F-XL	R410A	2087,5	2	31,0	64,7	31,0	64,7
EWAQ520F-XL	R410A	2087,5	2	37,0	77,2	37,0	77,2
EWAQ610F-XL	R410A	2087,5	2	36,0	75,2	36,0	75,2
EWAQ680F-XL	R410A	2087,5	2	41,5	86,6	41,5	86,6

Unit model	Refrigerant type	Refrigerant GWP	No. of circuits	Refrigerant charge circuit 1 (kg)	Refrigerant charge circuit 1 (TCO2Eq)	Refrigerant charge circuit 2 (kg)	Refrigerant charge circuit 2 (TCO2Eq)
EWAQ170F-XR	R410A	2087,5	2	14,0	29,2	14,0	29,2
EWAQ190F-XR	R410A	2087,5	2	16,0	33,4	16,0	33,4
EWAQ210F-XR	R410A	2087,5	2	17,0	35,5	17,0	35,5
EWAQ240F-XR	R410A	2087,5	2	20,0	41,8	20,0	41,8
EWAQ300F-XR	R410A	2087,5	2	26,0	54,3	26,0	54,3
EWAQ330F-XR	R410A	2087,5	2	33,0	68,9	33,0	68,9
EWAQ310F-XR	R410A	2087,5	2	33,0	68,9	33,0	68,9
EWAQ340F-XR	R410A	2087,5	2	33,0	68,9	33,0	68,9
EWAQ390F-XR	R410A	2087,5	2	31,0	64,7	31,0	64,7
EWAQ410F-XR	R410A	2087,5	2	31,0	64,7	31,0	64,7
EWAQ430F-XR	R410A	2087,5	2	31,0	64,7	31,0	64,7
EWAQ500F-XR	R410A	2087,5	2	37,0	77,2	37,0	77,2
EWAQ580F-XR	R410A	2087,5	2	36,0	75,2	36,0	75,2
EWAQ650F-XR	R410A	2087,5	2	41,5	86,6	41,5	86,6

Note: Equipment contains fluorinated greenhouse gases. Actual refrigerant charge depends on the final unit construction, details can be found on the unit labels.

Standard Options (supplied on basic unit)

Direct on line starter (DOL)

Double setpoint - Dual leaving water temperature setpoints.

Evaporator victaulic kit - Hydraulic joint with gasket for an easy and quick water connection.

20mm evaporator insulation - The external shell is covered with a 20mm closed cell insulation material.

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.

Evaporator flow switch - Supplied separately to be wired and installed on the evaporator water piping (by the customer).

Electronic expansion valve

Ambient outside temperature sensor and setpoint reset

Hour run meter

General fault contactor

Main switch interlock door

Water filter - The water filter removes impurities from water by means of a fine physical barrier.

Options (on request)

MECHANICAL

Partial heat recovery - Plate to plate heat exchangers for hot water production.

Brine version - Allows the unit to operate down to -8°C leaving liquid temperature (antifreeze required). Recommended below +4°C

Axial fans (250 Pa lift)

Condenser coil guards

Evaporator area guards

Cu-Cu condenser coil - To give better protection against corrosion by aggressive environments.

Cu-Cu-Sn condenser coil - To give better protection against corrosion in aggressive environments and by salty air.

Alucoat fins coil - Fins are protected by a special acrylic paint with a high resistance to corrosion.

Discharge line shut-off valve - Installed on the discharge port of the compressor to facilitate maintenance operation.

Suction line shut-off valve - Installed on the suction port of the compressor to facilitate maintenance operation.

High pressure side manometers

Low pressure side manometers

One centrifugal pump (low lift- 100 kPa available static pressure) - 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.

One centrifugal pump (high lift- 200 kPa available static pressure) 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.

Two centrifugal pump (low lift) - 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.

Two centrifugal pump (high lift) 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.

Double pressure relief valve with diverter

ELECTRICAL / CONTROL

Compressor thermal overload relays - Safety electronic devices that, added to the standard protection devices, protect compressor motors against overload and current unbalance.

Phase monitor - Device that monitors input voltage and stops the chiller in case of phase loss or wrong phase sequence.

Under / Over voltage control - Electronic device that monitors and displays input voltage, and stops the chiller in case of phase loss, wrong phase sequence, or voltage exceeding minimum and maximum allowed values.

Energy meter - Device installed inside the control box that displays all chiller electrical power parameters at line input such as line voltage and phase current, input active and reactive power, active and reactive energy. An integrated RS485 module allows a Modbus communication to an external BMS.

Capacitors for power factor correction - Devices that increase the power factor of the unit. The capacitors are "dry" self-regenerating type with over pressure disconnecting safety device insulated with a no toxic dielectric mix without PCB or PCT.

Speedtrol (fan speed control device - ON/OFF - up to -18°C) - Continuous fan speed regulation on the first fan (VFD driven) of each circuit. It allows unit operation down to -18°C.

Setpoint reset, Demand limit and Alarm from external device - Setpoint Reset: The leaving water temperature set-point can be overwritten with an external 4-20mA, through the ambient temperature, or through the evaporator water temperature ΔT . Demand Limit: Chiller capacity can be limited through an external 4-20mA signal or via network. Alarm from external device: The unit controller is able to receive an external alarm signal. The user can decide whether this alarm signal will stop the unit or not.

Compressors circuit breakers Safety devices that include in a single device all safety functions otherwise provided by standard fuses and optional thermal relays, such as protection against overcurrent, overload, current unbalance.

Fans circuit breakers - Safety devices that, added to the standard protection devices, protect fan motors against overload and overcurrent.

Fans speed regulation (+ fan silent mode) - Continuous fan speed regulation of all fans (VFD driven) for improved sound level of the unit during low ambient temperature operation. At very low temperatures, all fans except the first are switched off thus allowing unit operation down to -18°C.

INSTALLATION

Rubber anti vibration 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 anti vibration 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.

External tank without cabinet (500 L)

External tank without cabinet (1000 L)

External tank with cabinet (500 L)

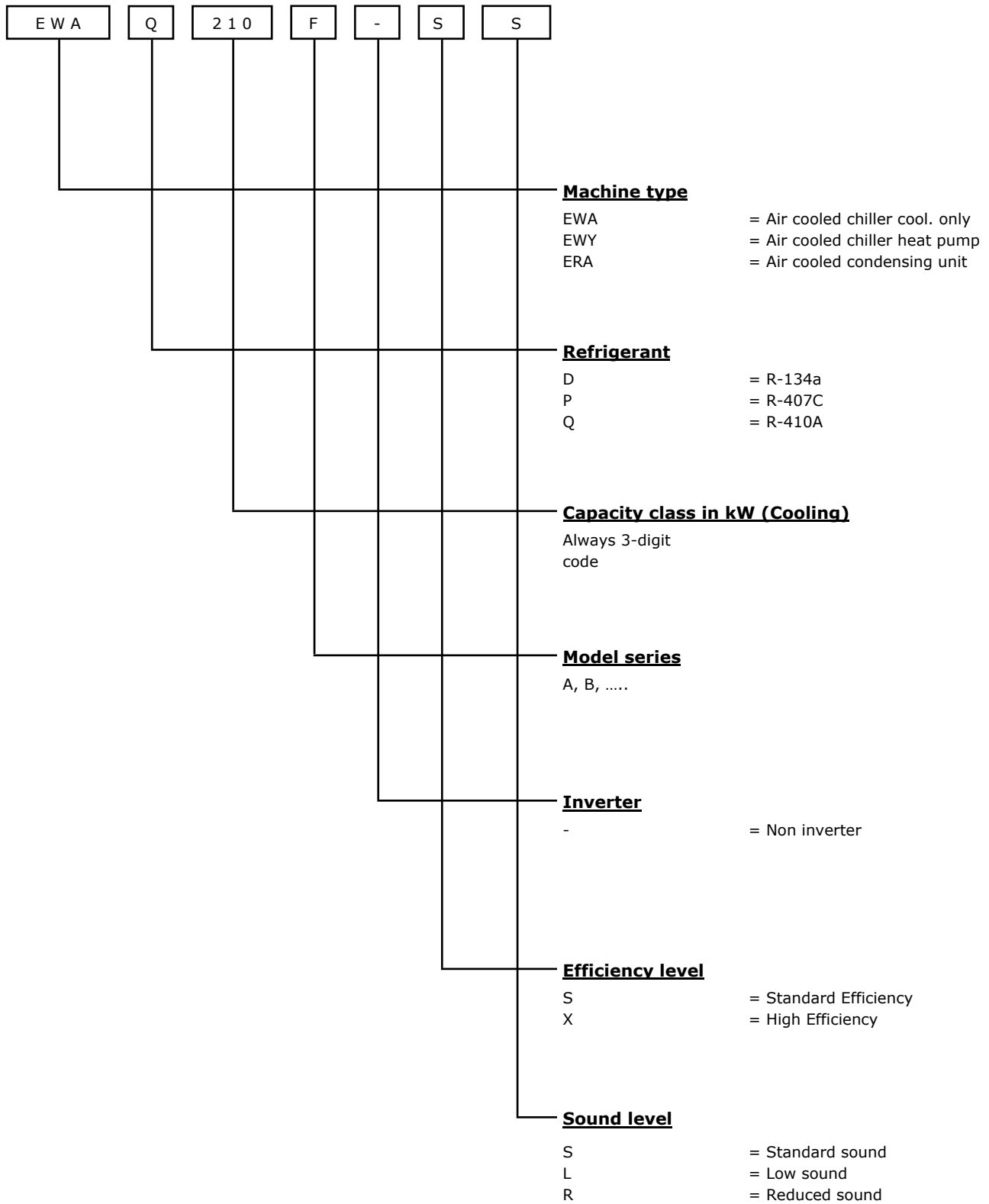
External tank with cabinet (1000 L)

OTHER

Container Kit

Witness test

Acoustic test



EWAQ F-SS

MODEL		210	230	250	280	320	350	400	360
Capacity - Cooling *	kW	206	224	247	283	313	359	423	359
Capacity control - Type	---	Step	Step	Step	Step	Step	Step	Step	Step
Capacity control - Minimum capacity	%	25.0	22.0	25.0	23.0	25.0	21.0	25.0	21.0
Unit power input - Cooling *	kW	73.3	84.9	93.6	109	122	141	154	141
EER *	---	2.81	2.64	2.64	2.60	2.58	2.55	2.75	2.55
ESEER	---	3.79	3.77	3.81	3.74	3.78	3.73	3.85	4.02
IPLV	---	4.50	4.45	4.50	4.44	4.53	4.29	4.38	4.41
CASING									
Colour **	---	IW	IW	IW	IW	IW	IW	IW	IW
Material **	---	GPSS	GPSS	GPSS	GPSS	GPSS	GPSS	GPSS	GPSS
DIMENSIONS									
Height	mm	2271	2271	2271	2271	2271	2271	2447	2221
Width	mm	1224	1224	1224	1224	1224	1224	1224	2258
Length	mm	4413	4413	4413	5313	5313	6213	6213	3210
WEIGHT									
Unit Weight	kg	2058	2058	2130	2202	2284	2409	2659	2509
Operating Weight	kg	2070	2070	2142	2216	2298	2424	2699	2524
WATER HEAT EXCHANGER									
Type **	---	PHE	PHE	PHE	PHE	PHE	PHE	PHE	PHE
Water Volume	l	12	12	12	14	14	14	40	14
Nominal water flow rate - Cooling	l/s	9.9	10.7	11.8	13.6	15.0	17.2	20.3	17.2
Nominal Water pressure drop - Cooling ***	kPa	37	43	53	56	69	30	27	30
Insulation material **		CC	CC	CC	CC	CC	CC	CC	CC
AIR HEAT EXCHANGER									
Type **	---	HFP	HFP	HFP	HFP	HFP	HFP	HFP	HFP
FAN									
Type **	---	DPT	DPT	DPT	DPT	DPT	DPT	DPT	DPT
Drive **	---	DOL	DOL	DOL	DOL	DOL	DOL	DOL	DOL
Diameter	mm	800	800	800	800	800	800	800	800
Nominal air flow	l/s	21845	21845	21148	27306	26435	32767	36265	32767
Quantity	No.	4	4	4	5	5	6	6	6
Speed	rpm	900	900	900	900	900	900	980	900
Motor input	kW	7.0	7.0	7.0	8.8	8.8	10.5	13.3	10.5
COMPRESSOR									
Type	---	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll
Oil charge	l	19	23	27	26	25	25	25	25
Quantity	No.	4	4	4	4	4	4	4	4
SOUND LEVEL ****									
Sound Power - Cooling	dB(A)	93	94	95	95	95	97	97	97
Sound Pressure - Cooling	dB(A)	75	75	76	76	76	77	78	78
REFRIGERANT CIRCUIT									
Refrigerant type	---	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A
Refrigerant charge	kg	28	28	32	33	40	46	60	46
N. of circuits	No.	2	2	2	2	2	2	2	2
PIPING CONNECTIONS									
Evaporator water inlet/outlet		3"	3"	3"	3"	3"	3"	3"	3"

* Cooling capacity, unit power input in cooling and EER are based on the following conditions: evaporator 12.0/7.0°C; ambient 35.0°C, unit at full load operation;

** IW: Ivory White - GPSS: Galvanized and Painted Steel Sheet - PHE: Plate Heat Exchanger - S&T: Single Pass Shell & Tube.

**CC: Closed Cell - HFP: High efficiency fin and tube type - DPT: Direct Propeller Type - DOL: Direct On Line - VFD: Inverter - BRS: Brushless.

*** If red contact factory. **** Details on measurement methods in the Sound Data section

Unit performances are referred to ideal running conditions that are reproducible in laboratory test environment in accordance to recognized industry standards (i.e. EN14511). Weights and dimensions are indicative -For specific values refer to certified drawing issued by factory.

Data are referred to unit with standard options only. For specific information about additional options refer to databook specific section.

EWAQ F-SS

MODEL		410	480	550	610				
Capacity - Cooling *	kW	407	480	551	609				
Capacity control - Type	---	Step	Step	Step	Step				
Capacity control - Minimum capacity	%	25.0	17.0	14.0	17.0				
Unit power input - Cooling *	kW	154	187	207	229				
EER *	---	2.64	2.57	2.67	2.66				
ESEER	---	4.04	4.13	4.05	4.08				
IPLV	---	4.46	4.55	4.63	4.72				
CASING									
Colour **	---	IW	IW	IW	IW				
Material **	---	GPSS	GPSS	GPSS	GPSS				
DIMENSIONS									
Height	mm	2397	2221	2221	2221				
Width	mm	2258	2258	2258	2258				
Length	mm	3210	4110	5010	5010				
WEIGHT									
Unit Weight	kg	2759	2990	3336	3558				
Operating Weight	kg	2799	3036	3382	3604				
WATER HEAT EXCHANGER									
Type **	---	PHE	PHE	PHE	PHE				
Water Volume	l	40	46	46	46				
Nominal water flow rate - Cooling	l/s	19.5	23.0	26.4	29.2				
Nominal Water pressure drop - Cooling ***	kPa	32	35	46	56				
Insulation material **		CC	CC	CC	CC				
AIR HEAT EXCHANGER									
Type **	---	HFP	HFP	HFP	HFP				
FAN									
Type **	---	DPT	DPT	DPT	DPT				
Drive **	---	DOL	DOL	DOL	DOL				
Diameter	mm	800	800	800	800				
Nominal air flow	l/s	32513	43690	54612	52870				
Quantity	No.	6	8	10	10				
Speed	rpm	900	900	900	900				
Motor input	kW	10.5	14.0	17.5	17.5				
COMPRESSOR									
Type	---	Scroll	Scroll	Scroll	Scroll				
Oil charge	l	25	38	38	38				
Quantity	No.	4	6	6	6				
SOUND LEVEL ****									
Sound Power - Cooling	dB(A)	97	97	99	99				
Sound Pressure - Cooling	dB(A)	78	78	79	79				
REFRIGERANT CIRCUIT									
Refrigerant type	---	R410A	R410A	R410A	R410A				
Refrigerant charge	kg	54	58	66	80				
N. of circuits	No.	2	2	2	2				
PIPING CONNECTIONS									
Evaporator water inlet/outlet		3"	3"	3"	3"				

* Cooling capacity, unit power input in cooling and EER are based on the following conditions: evaporator 12.0/7.0°C; ambient 35.0°C, unit at full load operation;

** IW: Ivory White - GPSS: Galvanized and Painted Steel Sheet - PHE: Plate Heat Exchanger - S&T: Single Pass Shell & Tube.

**CC: Closed Cell - HFP: High efficiency fin and tube type - DPT: Direct Propeller Type - DOL: Direct On Line - VFD: Inverter - BRS: Brushless.

*** If red contact factory. **** Details on measurement methods in the Sound Data section

Unit performances are referred to ideal running conditions that are reproducible in laboratory test environment in accordance to recognized industry standards (i.e. EN14511). Weights and dimensions are indicative -For specific values refer to certified drawing issued by factory.

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EWAQ F-SL

MODEL		210	230	250	280	320	350	400	360
Capacity - Cooling *	kW	206	224	247	283	313	359	407	359
Capacity control - Type	---	Step	Step	Step	Step	Step	Step	Step	Step
Capacity control - Minimum capacity	%	25.0	22.0	25.0	23.0	25.0	21.0	25.0	21.0
Unit power input - Cooling *	kW	73.3	84.9	93.6	109	122	141	154	141
EER *	---	2.81	2.64	2.64	2.60	2.58	2.55	2.64	2.55
ESEER	---	3.79	3.77	3.81	3.74	3.78	3.73	3.78	4.02
IPLV	---	4.50	4.45	4.50	4.44	4.53	4.29	4.32	4.41
CASING									
Colour **	---	IW	IW	IW	IW	IW	IW	IW	IW
Material **	---	GPSS	GPSS	GPSS	GPSS	GPSS	GPSS	GPSS	GPSS
DIMENSIONS									
Height	mm	2271	2271	2271	2271	2271	2271	2447	2221
Width	mm	1224	1224	1224	1224	1224	1224	1224	2258
Length	mm	4413	4413	4413	5313	5313	6213	6213	3210
WEIGHT									
Unit Weight	kg	2297	2297	2373	2449	2535	2666	2968	2766
Operating Weight	kg	2309	2309	2385	2463	2549	2681	3008	2781
WATER HEAT EXCHANGER									
Type **	---	PHE	PHE	PHE	PHE	PHE	PHE	PHE	PHE
Water Volume	l	12	12	12	14	14	14	40	14
Nominal water flow rate - Cooling	l/s	9.9	10.7	11.8	13.6	15.0	17.2	19.5	17.2
Nominal Water pressure drop - Cooling ***	kPa	37	43	53	56	69	30	32	30
Insulation material **		CC	CC	CC	CC	CC	CC	CC	CC
AIR HEAT EXCHANGER									
Type **	---	HFP	HFP	HFP	HFP	HFP	HFP	HFP	HFP
FAN									
Type **	---	DPT	DPT	DPT	DPT	DPT	DPT	DPT	DPT
Drive **	---	DOL	DOL	DOL	DOL	DOL	DOL	DOL	DOL
Diameter	mm	800	800	800	800	800	800	800	800
Nominal air flow	l/s	21845	21845	21148	27306	26435	32767	32513	32767
Quantity	No.	4	4	4	5	5	6	6	6
Speed	rpm	900	900	900	900	900	900	900	900
Motor input	kW	7.0	7.0	7.0	8.8	8.8	10.5	10.5	10.5
COMPRESSOR									
Type	---	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll
Oil charge	l	19	23	27	26	25	25	25	25
Quantity	No.	4	4	4	4	4	4	4	4
SOUND LEVEL ****									
Sound Power - Cooling	dB(A)	91	92	92	93	93	94	94	94
Sound Pressure - Cooling	dB(A)	73	73	73	73	73	74	74	75
REFRIGERANT CIRCUIT									
Refrigerant type	---	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A
Refrigerant charge	kg	28	28	32	33	40	46	54	46
N. of circuits	No.	2	2	2	2	2	2	2	2
PIPING CONNECTIONS									
Evaporator water inlet/outlet		3"	3"	3"	3"	3"	3"	3"	3"

* Cooling capacity, unit power input in cooling and EER are based on the following conditions: evaporator 12.0/7.0°C; ambient 35.0°C, unit at full load operation;

** IW: Ivory White - GPSS: Galvanized and Painted Steel Sheet - PHE: Plate Heat Exchanger - S&T: Single Pass Shell & Tube.

**CC: Closed Cell - HFP: High efficiency fin and tube type - DPT: Direct Propeller Type - DOL: Direct On Line - VFD: Inverter - BRS: Brushless.

*** If red contact factory. **** Details on measurement methods in the Sound Data section

Unit performances are referred to ideal running conditions that are reproducible in laboratory test environment in accordance to recognized industry standards (i.e. EN14511). Weights and dimensions are indicative -For specific values refer to certified drawing issued by factory.

Data are referred to unit with standard options only. For specific information about additional options refer to databook specific section.

EWAQ F-SL

MODEL		410	480	550	610				
Capacity - Cooling *	kW	407	480	551	609				
Capacity control - Type	---	Step	Step	Step	Step				
Capacity control - Minimum capacity	%	25.0	17.0	14.0	17.0				
Unit power input - Cooling *	kW	154	187	207	229				
EER *	---	2.64	2.57	2.67	2.66				
ESEER	---	4.04	4.13	4.05	4.08				
IPLV	---	4.46	4.55	4.63	4.72				
CASING									
Colour **	---	IW	IW	IW	IW				
Material **	---	GPSS	GPSS	GPSS	GPSS				
DIMENSIONS									
Height	mm	2397	2221	2221	2221				
Width	mm	2258	2258	2258	2258				
Length	mm	3210	4110	5010	5010				
WEIGHT									
Unit Weight	kg	3068	3315	3679	3912				
Operating Weight	kg	3108	3362	3725	3958				
WATER HEAT EXCHANGER									
Type **	---	PHE	PHE	PHE	PHE				
Water Volume	l	40	46	46	46				
Nominal water flow rate - Cooling	l/s	19.5	23.0	26.4	29.2				
Nominal Water pressure drop - Cooling ***	kPa	32	35	46	56				
Insulation material **		CC	CC	CC	CC				
AIR HEAT EXCHANGER									
Type **	---	HFP	HFP	HFP	HFP				
FAN									
Type **	---	DPT	DPT	DPT	DPT				
Drive **	---	DOL	DOL	DOL	DOL				
Diameter	mm	800	800	800	800				
Nominal air flow	l/s	32513	43690	54612	52870				
Quantity	No.	6	8	10	10				
Speed	rpm	900	900	900	900				
Motor input	kW	10.5	14.0	17.5	17.5				
COMPRESSOR									
Type	---	Scroll	Scroll	Scroll	Scroll				
Oil charge	l	25	38	38	38				
Quantity	No.	4	6	6	6				
SOUND LEVEL ****									
Sound Power - Cooling	dB(A)	94	95	96	96				
Sound Pressure - Cooling	dB(A)	75	75	76	76				
REFRIGERANT CIRCUIT									
Refrigerant type	---	R410A	R410A	R410A	R410A				
Refrigerant charge	kg	54	58	66	80				
N. of circuits	No.	2	2	2	2				
PIPING CONNECTIONS									
Evaporator water inlet/outlet		3"	3"	3"	3"				

* Cooling capacity, unit power input in cooling and EER are based on the following conditions: evaporator 12.0/7.0°C; ambient 35.0°C, unit at full load operation;

** IW: Ivory White - GPSS: Galvanized and Painted Steel Sheet - PHE: Plate Heat Exchanger - S&T: Single Pass Shell & Tube.

**CC: Closed Cell - HFP: High efficiency fin and tube type - DPT: Direct Propeller Type - DOL: Direct On Line - VFD: Inverter - BRS: Brushless.

*** If red contact factory. **** Details on measurement methods in the Sound Data section

Unit performances are referred to ideal running conditions that are reproducible in laboratory test environment in accordance to recognized industry standards (i.e. EN14511). Weights and dimensions are indicative -For specific values refer to certified drawing issued by factory.

Data are referred to unit with standard options only. For specific information about additional options refer to databook specific section.

EWAQ F-SR

MODEL		200	220	240	270	300	330	370	340
Capacity - Cooling *	kW	198	214	235	270	298	341	383	341
Capacity control - Type	---	Step	Step	Step	Step	Step	Step	Step	Step
Capacity control - Minimum capacity	%	25.0	22.0	25.0	23.0	25.0	21.0	25.0	21.0
Unit power input - Cooling *	kW	73.4	86.0	95.6	110	125	144	159	144
EER *	---	2.70	2.49	2.46	2.45	2.38	2.37	2.41	2.37
ESEER	---	4.27	4.20	4.13	4.16	4.08	4.10	4.03	4.27
IPLV	---	4.96	4.89	4.82	4.92	4.85	4.71	4.61	4.86
CASING									
Colour **	---	IW	IW	IW	IW	IW	IW	IW	IW
Material **	---	GPSS	GPSS	GPSS	GPSS	GPSS	GPSS	GPSS	GPSS
DIMENSIONS									
Height	mm	2271	2271	2271	2271	2271	2271	2447	2221
Width	mm	1224	1224	1224	1224	1224	1224	1224	2258
Length	mm	4413	4413	4413	5313	5313	6213	6213	3210
WEIGHT									
Unit Weight	kg	2412	2412	2491	2571	2661	2799	3116	2899
Operating Weight	kg	2424	2424	2504	2585	2676	2814	3156	2914
WATER HEAT EXCHANGER									
Type **	---	PHE	PHE	PHE	PHE	PHE	PHE	PHE	PHE
Water Volume	l	12	12	12	14	14	14	40	14
Nominal water flow rate - Cooling	l/s	9.5	10.2	11.3	13.0	14.3	16.3	18.3	16.3
Nominal Water pressure drop - Cooling ***	kPa	34	40	48	51	63	27	29	27
Insulation material **		CC	CC	CC	CC	CC	CC	CC	CC
AIR HEAT EXCHANGER									
Type **	---	HFP	HFP	HFP	HFP	HFP	HFP	HFP	HFP
FAN									
Type **	---	DPT	DPT	DPT	DPT	DPT	DPT	DPT	DPT
Drive **	---	DOL	DOL	DOL	DOL	DOL	DOL	DOL	DOL
Diameter	mm	800	800	800	800	800	800	800	800
Nominal air flow	l/s	16743	16743	16285	20929	20356	25115	24922	25115
Quantity	No.	4	4	4	5	5	6	6	6
Speed	rpm	705	705	705	705	705	705	705	705
Motor input	kW	3.0	3.0	3.0	3.8	3.8	4.5	4.5	4.5
COMPRESSOR									
Type	---	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll
Oil charge	l	19	23	27	26	25	25	25	25
Quantity	No.	4	4	4	4	4	4	4	4
SOUND LEVEL ****									
Sound Power - Cooling	dB(A)	85	86	87	87	87	89	90	89
Sound Pressure - Cooling	dB(A)	66	67	68	68	68	69	70	70
REFRIGERANT CIRCUIT									
Refrigerant type	---	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A
Refrigerant charge	kg	32	32	36	38	40	46	54	46
N. of circuits	No.	2	2	2	2	2	2	2	2
PIPING CONNECTIONS									
Evaporator water inlet/outlet		3"	3"	3"	3"	3"	3"	3"	3"

* Cooling capacity, unit power input in cooling and EER are based on the following conditions: evaporator 12.0/7.0°C; ambient 35.0°C, unit at full load operation;

** IW: Ivory White - GPSS: Galvanized and Painted Steel Sheet - PHE: Plate Heat Exchanger - S&T: Single Pass Shell & Tube.

**CC: Closed Cell - HFP: High efficiency fin and tube type - DPT: Direct Propeller Type - DOL: Direct On Line - VFD: Inverter - BRS: Brushless.

*** If red contact factory. **** Details on measurement methods in the Sound Data section

Unit performances are referred to ideal running conditions that are reproducible in laboratory test environment in accordance to recognized industry standards (i.e. EN14511). Weights and dimensions are indicative -For specific values refer to certified drawing issued by factory.

Data are referred to unit with standard options only. For specific information about additional options refer to databook specific section.

EWAQ F-SR

MODEL		380	460	530	580				
Capacity - Cooling *	kW	383	456	527	580				
Capacity control - Type	---	Step	Step	Step	Step				
Capacity control - Minimum capacity	%	25.0	17.0	14.0	17.0				
Unit power input - Cooling *	kW	159	191	208	233				
EER *	---	2.41	2.39	2.53	2.49				
ESEER	---	4.16	4.53	4.49	4.43				
IPLV	---	4.73	5.09	5.00	4.93				
CASING									
Colour **	---	IW	IW	IW	IW				
Material **	---	GPSS	GPSS	GPSS	GPSS				
DIMENSIONS									
Height	mm	2397	2221	2221	2221				
Width	mm	2258	2258	2258	2258				
Length	mm	3210	4110	5010	5010				
WEIGHT									
Unit Weight	kg	3216	3481	3863	4108				
Operating Weight	kg	3256	3527	3909	4154				
WATER HEAT EXCHANGER									
Type **	---	PHE	PHE	PHE	PHE				
Water Volume	l	40	46	46	46				
Nominal water flow rate - Cooling	l/s	18.3	21.8	25.2	27.8				
Nominal Water pressure drop - Cooling ***	kPa	29	31	42	51				
Insulation material **		CC	CC	CC	CC				
AIR HEAT EXCHANGER									
Type **	---	HFP	HFP	HFP	HFP				
FAN									
Type **	---	DPT	DPT	DPT	DPT				
Drive **	---	DOL	DOL	DOL	DOL				
Diameter	mm	800	800	800	800				
Nominal air flow	l/s	24922	33487	41858	40713				
Quantity	No.	6	8	10	10				
Speed	rpm	705	705	705	705				
Motor input	kW	4.5	6.0	7.5	7.5				
COMPRESSOR									
Type	---	Scroll	Scroll	Scroll	Scroll				
Oil charge	l	25	38	38	38				
Quantity	No.	4	6	6	6				
SOUND LEVEL ****									
Sound Power - Cooling	dB(A)	90	89	91	92				
Sound Pressure - Cooling	dB(A)	71	70	71	72				
REFRIGERANT CIRCUIT									
Refrigerant type	---	R410A	R410A	R410A	R410A				
Refrigerant charge	kg	54	56	65	80				
N. of circuits	No.	2	2	2	2				
PIPING CONNECTIONS									
Evaporator water inlet/outlet		3"	3"	3"	3"				

* Cooling capacity, unit power input in cooling and EER are based on the following conditions: evaporator 12.0/7.0°C; ambient 35.0°C, unit at full load operation;

** IW: Ivory White - GPSS: Galvanized and Painted Steel Sheet - PHE: Plate Heat Exchanger - S&T: Single Pass Shell & Tube.

**CC: Closed Cell - HFP: High efficiency fin and tube type - DPT: Direct Propeller Type - DOL: Direct On Line - VFD: Inverter - BRS: Brushless.

*** If red contact factory. **** Details on measurement methods in the Sound Data section

Unit performances are referred to ideal running conditions that are reproducible in laboratory test environment in accordance to recognized industry standards (i.e. EN14511). Weights and dimensions are indicative -For specific values refer to certified drawing issued by factory.

Data are referred to unit with standard options only. For specific information about additional options refer to databook specific section.

EWAQ F-XS

MODEL		170	200	220	250	310	350	320	360
Capacity - Cooling *	kW	170	194	220	244	316	356	316	356
Capacity control - Type	---	Step	Step	Step	Step	Step	Step	Step	Step
Capacity control - Minimum capacity	%	25.0	21.0	25.0	22.0	23.0	25.0	23.0	25.0
Unit power input - Cooling *	kW	54.8	62.2	70.6	78.3	102	115	102	115
EER *	---	3.11	3.13	3.12	3.12	3.09	3.09	3.09	3.09
ESEER	---	3.90	4.10	3.95	4.08	4.04	4.05	4.30	4.33
IPLV	---	4.56	4.76	4.67	4.70	4.67	4.64	4.60	4.80
CASING									
Colour **	---	IW	IW	IW	IW	IW	IW	IW	IW
Material **	---	GPSS	GPSS	GPSS	GPSS	GPSS	GPSS	GPSS	GPSS
DIMENSIONS									
Height	mm	2271	2271	2271	2271	2271	2271	2221	2221
Width	mm	1224	1224	1224	1224	1224	1224	2258	2258
Length	mm	4413	4413	5313	5313	6213	6213	3210	3210
WEIGHT									
Unit Weight	kg	1688	1958	2210	2339	2500	2632	2600	2732
Operating Weight	kg	1700	1973	2225	2353	2514	2672	2514	2772
WATER HEAT EXCHANGER									
Type **	---	PHE	PHE	PHE	PHE	PHE	PHE	PHE	PHE
Water Volume	l	12	14	14	14	14	40	14	40
Nominal water flow rate - Cooling	l/s	8.2	9.3	10.5	11.7	15.1	17.0	15.1	17.0
Nominal Water pressure drop - Cooling ***	kPa	25	27	34	42	22	23	22	23
Insulation material **		CC	CC	CC	CC	CC	CC	CC	CC
AIR HEAT EXCHANGER									
Type **	---	HFP	HFP	HFP	HFP	HFP	HFP	HFP	HFP
FAN									
Type **	---	DPT	DPT	DPT	DPT	DPT	DPT	DPT	DPT
Drive **	---	DOL	DOL	DOL	DOL	DOL	DOL	DOL	DOL
Diameter	mm	800	800	800	800	800	800	800	800
Nominal air flow	l/s	21845	21148	26874	25204	31722	30245	31722	30245
Quantity	No.	4	4	5	5	6	6	6	6
Speed	rpm	900	900	900	900	900	900	900	900
Motor input	kW	7.0	7.0	8.8	8.8	10.5	10.5	10.5	10.5
COMPRESSOR									
Type	---	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll
Oil charge	l	13	16	19	23	26	25	26	25
Quantity	No.	4	4	4	4	4	4	4	4
SOUND LEVEL ****									
Sound Power - Cooling	dB(A)	91	93	94	95	96	96	96	96
Sound Pressure - Cooling	dB(A)	72	74	75	76	76	76	77	77
REFRIGERANT CIRCUIT									
Refrigerant type	---	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A
Refrigerant charge	kg	28	32	34	40	52	66	66	52
N. of circuits	No.	2	2	2	2	2	2	2	2
PIPING CONNECTIONS									
Evaporator water inlet/outlet		3"	3"	3"	3"	3"	3"	3"	3"

* Cooling capacity, unit power input in cooling and EER are based on the following conditions: evaporator 12.0/7.0°C; ambient 35.0°C, unit at full load operation;

** IW: Ivory White - GPSS: Galvanized and Painted Steel Sheet - PHE: Plate Heat Exchanger - S&T: Single Pass Shell & Tube.

**CC: Closed Cell - HFP: High efficiency fin and tube type - DPT: Direct Propeller Type - DOL: Direct On Line - VFD: Inverter - BRS: Brushless.

*** If red contact factory. **** Details on measurement methods in the Sound Data section

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Data are referred to unit with standard options only. For specific information about additional options refer to databook specific section.

EWAQ F-XS

MODEL		400	430	450	520	610	680		
Capacity - Cooling *	kW	403	428	457	528	607	672		
Capacity control - Type	---	Step	Step	Step	Step	Step	Step		
Capacity control - Minimum capacity	%	21.0	20.0	25.0	17.0	14.0	17.0		
Unit power input - Cooling *	kW	130	137	146	170	198	219		
EER *	---	3.10	3.12	3.12	3.10	3.07	3.07		
ESEER	---	4.24	4.27	4.23	4.35	4.30	4.23		
IPLV	---	4.72	4.65	4.61	4.95	4.82	4.68		
CASING									
Colour **	---	IW	IW	IW	IW	IW	IW		
Material **	---	GPSS	GPSS	GPSS	GPSS	GPSS	GPSS		
DIMENSIONS									
Height	mm	2221	2221	2221	2221	2221	2221		
Width	mm	2258	2258	2258	2258	2258	2258		
Length	mm	4110	4110	4110	5010	5010	5910		
WEIGHT									
Unit Weight	kg	2744	2845	2861	3569	3667	4054		
Operating Weight	kg	2784	2891	2907	3615	3727	4115		
WATER HEAT EXCHANGER									
Type **	---	PHE	PHE	PHE	PHE	PHE	PHE		
Water Volume	l	40	46	46	46	60	60		
Nominal water flow rate - Cooling	l/s	19.3	20.5	21.8	25.3	29.0	32.2		
Nominal Water pressure drop - Cooling ***	kPa	31	29	30	41	44	55		
Insulation material **		CC	CC	CC	CC	CC	CC		
AIR HEAT EXCHANGER									
Type **	---	HFP	HFP	HFP	HFP	HFP	HFP		
FAN									
Type **	---	DPT	DPT	DPT	DPT	DPT	DPT		
Drive **	---	DOL	DOL	DOL	DOL	DOL	DOL		
Diameter	mm	800	800	800	800	800	800		
Nominal air flow	l/s	42296	40326	40326	50408	50408	60489		
Quantity	No.	8	8	8	10	10	12		
Speed	rpm	900	900	900	900	900	900		
Motor input	kW	14.0	14.0	14.0	17.5	17.5	21.0		
COMPRESSOR									
Type	---	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll		
Oil charge	l	25	25	25	38	38	38		
Quantity	No.	4	4	4	6	6	6		
SOUND LEVEL ****									
Sound Power - Cooling	dB(A)	97	98	98	98	99	100		
Sound Pressure - Cooling	dB(A)	78	78	79	78	79	79		
REFRIGERANT CIRCUIT									
Refrigerant type	---	R410A	R410A	R410A	R410A	R410A	R410A		
Refrigerant charge	kg	62	62	72	74	72	92		
N. of circuits	No.	2	2	2	2	2	2		
PIPING CONNECTIONS									
Evaporator water inlet/outlet		3"	3"	3"	3"	3"	3"		

* Cooling capacity, unit power input in cooling and EER are based on the following conditions: evaporator 12.0/7.0°C; ambient 35.0°C, unit at full load operation;

** IW: Ivory White - GPSS: Galvanized and Painted Steel Sheet - PHE: Plate Heat Exchanger - S&T: Single Pass Shell & Tube.

**CC: Closed Cell - HFP: High efficiency fin and tube type - DPT: Direct Propeller Type - DOL: Direct On Line - VFD: Inverter - BRS: Brushless.

*** If red contact factory. **** Details on measurement methods in the Sound Data section

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EWAQ F-XL

MODEL		170	200	220	250	310	350	320	360
Capacity - Cooling *	kW	170	194	220	244	316	356	316	356
Capacity control - Type	---	Step	Step	Step	Step	Step	Step	Step	Step
Capacity control - Minimum capacity	%	25.0	21.0	25.0	22.0	23.0	25.0	23.0	25.0
Unit power input - Cooling *	kW	54.8	62.2	70.6	78.3	102	115	102	115
EER *	---	3.11	3.13	3.12	3.12	3.09	3.09	3.09	3.09
ESEER	---	3.86	4.06	3.90	4.04	4.00	4.01	4.30	4.33
IPLV	---	4.51	4.71	4.60	4.66	4.61	4.58	4.60	4.80
CASING									
Colour **	---	IW	IW	IW	IW	IW	IW	IW	IW
Material **	---	GPSS	GPSS	GPSS	GPSS	GPSS	GPSS	GPSS	GPSS
DIMENSIONS									
Height	mm	2271	2271	2271	2271	2271	2271	2221	2221
Width	mm	1224	1224	1224	1224	1224	1224	2258	2258
Length	mm	4413	4413	5313	5313	6213	6213	3210	3210
WEIGHT									
Unit Weight	kg	1909	2193	2457	2592	2761	2900	2861	3000
Operating Weight	kg	1921	2207	2472	2607	2776	2940	2876	3040
WATER HEAT EXCHANGER									
Type **	---	PHE	PHE	PHE	PHE	PHE	PHE	PHE	PHE
Water Volume	l	12	14	14	14	14	40	14	40
Nominal water flow rate - Cooling	l/s	8.2	9.3	10.5	11.7	15.1	17.0	15.1	17.0
Nominal Water pressure drop - Cooling ***	kPa	25	27	34	42	22	23	22	23
Insulation material **		CC	CC	CC	CC	CC	CC	CC	CC
AIR HEAT EXCHANGER									
Type **	---	HFP	HFP	HFP	HFP	HFP	HFP	HFP	HFP
FAN									
Type **	---	DPT	DPT	DPT	DPT	DPT	DPT	DPT	DPT
Drive **	---	DOL	DOL	DOL	DOL	DOL	DOL	DOL	DOL
Diameter	mm	800	800	800	800	800	800	800	800
Nominal air flow	l/s	21845	21148	26874	25204	31722	30245	31722	30245
Quantity	No.	4	4	5	5	6	6	6	6
Speed	rpm	900	900	900	900	900	900	900	900
Motor input	kW	7.0	7.0	8.8	8.8	10.5	10.5	10.5	10.5
COMPRESSOR									
Type	---	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll
Oil charge	l	13	16	19	23	26	25	26	25
Quantity	No.	4	4	4	4	4	4	4	4
SOUND LEVEL ****									
Sound Power - Cooling	dB(A)	90	91	92	92	93	93	93	93
Sound Pressure - Cooling	dB(A)	71	73	73	73	74	74	74	74
REFRIGERANT CIRCUIT									
Refrigerant type	---	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A
Refrigerant charge	kg	28	32	34	40	52	66	66	52
N. of circuits	No.	2	2	2	2	2	2	2	2
PIPING CONNECTIONS									
Evaporator water inlet/outlet		3"	3"	3"	3"	3"	3"	3"	3"

* Cooling capacity, unit power input in cooling and EER are based on the following conditions: evaporator 12.0/7.0°C; ambient 35.0°C, unit at full load operation;

** IW: Ivory White - GPSS: Galvanized and Painted Steel Sheet - PHE: Plate Heat Exchanger - S&T: Single Pass Shell & Tube.

**CC: Closed Cell - HFP: High efficiency fin and tube type - DPT: Direct Propeller Type - DOL: Direct On Line - VFD: Inverter - BRS: Brushless.

*** If red contact factory. **** Details on measurement methods in the Sound Data section

Unit performances are referred to ideal running conditions that are reproducible in laboratory test environment in accordance to recognized industry standards (i.e. EN14511). Weights and dimensions are indicative -For specific values refer to certified drawing issued by factory.

Data are referred to unit with standard options only. For specific information about additional options refer to databook specific section.

EWAQ F-XL

MODEL		400	430	450	520	610	680		
Capacity - Cooling *	kW	403	428	457	528	607	672		
Capacity control - Type	---	Step	Step	Step	Step	Step	Step		
Capacity control - Minimum capacity	%	21.0	20.0	25.0	17.0	14.0	17.0		
Unit power input - Cooling *	kW	130	137	146	170	198	219		
EER *	---	3.10	3.12	3.12	3.10	3.07	3.07		
ESEER	---	4.19	4.22	4.18	4.30	4.25	4.18		
IPLV	---	4.66	4.60	4.55	4.90	4.77	4.62		
CASING									
Colour **	---	IW	IW	IW	IW	IW	IW		
Material **	---	GPSS	GPSS	GPSS	GPSS	GPSS	GPSS		
DIMENSIONS									
Height	mm	2221	2221	2221	2221	2221	2221		
Width	mm	2258	2258	2258	2258	2258	2258		
Length	mm	4110	4110	4110	5010	5010	5910		
WEIGHT									
Unit Weight	kg	3017	3124	3141	3923	4026	4434		
Operating Weight	kg	3057	3170	3187	3970	4087	4494		
WATER HEAT EXCHANGER									
Type **	---	PHE	PHE	PHE	PHE	PHE	PHE		
Water Volume	l	40	46	46	46	60	60		
Nominal water flow rate - Cooling	l/s	19.3	20.5	21.8	25.3	29.0	32.2		
Nominal Water pressure drop - Cooling ***	kPa	31	29	30	41	44	55		
Insulation material **		CC	CC	CC	CC	CC	CC		
AIR HEAT EXCHANGER									
Type **	---	HFP	HFP	HFP	HFP	HFP	HFP		
FAN									
Type **	---	DPT	DPT	DPT	DPT	DPT	DPT		
Drive **	---	DOL	DOL	DOL	DOL	DOL	DOL		
Diameter	mm	800	800	800	800	800	800		
Nominal air flow	l/s	42296	40326	40326	50408	50408	60489		
Quantity	No.	8	8	8	10	10	12		
Speed	rpm	900	900	900	900	900	900		
Motor input	kW	14.0	14.0	14.0	17.5	17.5	21.0		
COMPRESSOR									
Type	---	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll		
Oil charge	l	25	25	25	38	38	38		
Quantity	No.	4	4	4	6	6	6		
SOUND LEVEL ****									
Sound Power - Cooling	dB(A)	95	95	95	95	96	97		
Sound Pressure - Cooling	dB(A)	75	75	75	75	76	76		
REFRIGERANT CIRCUIT									
Refrigerant type	---	R410A	R410A	R410A	R410A	R410A	R410A		
Refrigerant charge	kg	62	62	72	74	72	88		
N. of circuits	No.	2	2	2	2	2	2		
PIPING CONNECTIONS									
Evaporator water inlet/outlet		3"	3"	3"	3"	3"	3"		

* Cooling capacity, unit power input in cooling and EER are based on the following conditions: evaporator 12.0/7.0°C; ambient 35.0°C, unit at full load operation;

** IW: Ivory White - GPSS: Galvanized and Painted Steel Sheet - PHE: Plate Heat Exchanger - S&T: Single Pass Shell & Tube.

**CC: Closed Cell - HFP: High efficiency fin and tube type - DPT: Direct Propeller Type - DOL: Direct On Line - VFD: Inverter - BRS: Brushless.

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Unit performances are referred to ideal running conditions that are reproducible in laboratory test environment in accordance to recognized industry standards (i.e. EN14511). Weights and dimensions are indicative -For specific values refer to certified drawing issued by factory.

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EWAQ F-XR

MODEL		170	190	210	240	300	330	310	340
Capacity - Cooling *	kW	165	188	211	236	304	340	304	340
Capacity control - Type	---	Step	Step	Step	Step	Step	Step	Step	Step
Capacity control - Minimum capacity	%	25.0	21.0	25.0	22.0	23.0	25.0	23.0	25.0
Unit power input - Cooling *	kW	53.0	61.2	68.7	77.3	101	117	101	117
EER *	---	3.12	3.07	3.08	3.05	3.00	2.92	3.00	2.92
ESEER	---	4.53	4.64	4.51	4.60	4.53	4.44	4.68	4.63
IPLV	---	5.25	5.04	5.19	5.27	5.04	5.01	5.16	4.89
CASING									
Colour **	---	IW	IW	IW	IW	IW	IW	IW	IW
Material **	---	GPSS	GPSS	GPSS	GPSS	GPSS	GPSS	GPSS	GPSS
DIMENSIONS									
Height	mm	2271	2271	2271	2271	2271	2271	2221	2221
Width	mm	1224	1224	1224	1224	1224	1224	2258	2258
Length	mm	4413	4413	5313	5313	6213	6213	3210	3210
WEIGHT									
Unit Weight	kg	2004	2303	2580	2722	2900	3045	3000	3145
Operating Weight	kg	2017	2317	2594	2736	2914	3085	3014	3185
WATER HEAT EXCHANGER									
Type **	---	PHE	PHE	PHE	PHE	PHE	PHE	PHE	PHE
Water Volume	l	12	14	14	14	14	40	14	40
Nominal water flow rate - Cooling	l/s	7.9	9.0	10.1	11.3	14.5	16.3	14.5	16.3
Nominal Water pressure drop - Cooling ***	kPa	24	25	31	39	21	21	21	21
Insulation material **		CC	CC	CC	CC	CC	CC	CC	CC
AIR HEAT EXCHANGER									
Type **	---	HFP	HFP	HFP	HFP	HFP	HFP	HFP	HFP
FAN									
Type **	---	DPT	DPT	DPT	DPT	DPT	DPT	DPT	DPT
Drive **	---	DOL	DOL	DOL	DOL	DOL	DOL	DOL	DOL
Diameter	mm	800	800	800	800	800	800	800	800
Nominal air flow	l/s	16743	16285	20618	19522	24428	23426	24428	23426
Quantity	No.	4	4	5	5	6	6	6	6
Speed	rpm	705	705	705	705	705	705	705	705
Motor input	kW	3.0	3.0	3.8	3.8	4.5	4.5	4.5	4.5
COMPRESSOR									
Type	---	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll
Oil charge	l	13	16	19	23	26	25	26	25
Quantity	No.	4	4	4	4	4	4	4	4
SOUND LEVEL ****									
Sound Power - Cooling	dB(A)	83	84	85	86	87	87	87	87
Sound Pressure - Cooling	dB(A)	64	65	66	67	67	67	68	68
REFRIGERANT CIRCUIT									
Refrigerant type	---	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A
Refrigerant charge	kg	48	32	34	40	48	52	52	52
N. of circuits	No.	2	2	2	2	2	2	2	2
PIPING CONNECTIONS									
Evaporator water inlet/outlet		3"	3"	3"	3"	3"	3"	3"	3"

* Cooling capacity, unit power input in cooling and EER are based on the following conditions: evaporator 12.0/7.0°C; ambient 35.0°C, unit at full load operation;

** IW: Ivory White - GPSS: Galvanized and Painted Steel Sheet - PHE: Plate Heat Exchanger - S&T: Single Pass Shell & Tube.

**CC: Closed Cell - HFP: High efficiency fin and tube type - DPT: Direct Propeller Type - DOL: Direct On Line - VFD: Inverter - BRS: Brushless.

*** If red contact factory. **** Details on measurement methods in the Sound Data section

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EWAQ F-XR

MODEL		390	410	430	500	580	650		
Capacity - Cooling *	kW	385	407	433	502	579	645		
Capacity control - Type	---	Step	Step	Step	Step	Step	Step		
Capacity control - Minimum capacity	%	21.0	20.0	25.0	17.0	14.0	17.0		
Unit power input - Cooling *	kW	128	136	146	170	200	219		
EER *	---	3.01	2.99	2.96	2.96	2.90	2.95		
ESEER	---	4.68	4.64	4.54	4.82	4.69	4.65		
IPLV	---	5.04	4.90	4.99	5.13	5.15	5.18		
CASING									
Colour **	---	IW	IW	IW	IW	IW	IW		
Material **	---	GPSS	GPSS	GPSS	GPSS	GPSS	GPSS		
DIMENSIONS									
Height	mm	2221	2221	2221	2221	2221	2221		
Width	mm	2258	2258	2258	2258	2258	2258		
Length	mm	4110	4110	4110	5010	5010	5910		
WEIGHT									
Unit Weight	kg	3168	3280	3298	4120	4228	4655		
Operating Weight	kg	3208	3326	3344	4166	4288	4716		
WATER HEAT EXCHANGER									
Type **	---	PHE	PHE	PHE	PHE	PHE	PHE		
Water Volume	l	40	46	46	46	60	60		
Nominal water flow rate - Cooling	l/s	18.4	19.5	20.7	24.0	27.7	30.9		
Nominal Water pressure drop - Cooling ***	kPa	28	26	27	38	40	51		
Insulation material **		CC	CC	CC	CC	CC	CC		
AIR HEAT EXCHANGER									
Type **	---	HFP	HFP	HFP	HFP	HFP	HFP		
FAN									
Type **	---	DPT	DPT	DPT	DPT	DPT	DPT		
Drive **	---	DOL	DOL	DOL	DOL	DOL	DOL		
Diameter	mm	800	800	800	800	800	800		
Nominal air flow	l/s	32570	31235	31235	39044	39044	46852		
Quantity	No.	8	8	8	10	10	12		
Speed	rpm	705	705	705	705	705	705		
Motor input	kW	6.0	6.0	6.0	7.5	7.5	9.0		
COMPRESSOR									
Type	---	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll		
Oil charge	l	25	25	25	38	38	38		
Quantity	No.	4	4	4	6	6	6		
SOUND LEVEL ****									
Sound Power - Cooling	dB(A)	89	89	90	89	90	92		
Sound Pressure - Cooling	dB(A)	69	70	70	69	70	71		
REFRIGERANT CIRCUIT									
Refrigerant type	---	R410A	R410A	R410A	R410A	R410A	R410A		
Refrigerant charge	kg	62	62	62	70	72	84		
N. of circuits	No.	2	2	2	2	2	2		
PIPING CONNECTIONS									
Evaporator water inlet/outlet		3"	3"	3"	3"	3"	3"		

* Cooling capacity, unit power input in cooling and EER are based on the following conditions: evaporator 12.0/7.0°C; ambient 35.0°C, unit at full load operation;

** IW: Ivory White - GPSS: Galvanized and Painted Steel Sheet - PHE: Plate Heat Exchanger - S&T: Single Pass Shell & Tube.

**CC: Closed Cell - HFP: High efficiency fin and tube type - DPT: Direct Propeller Type - DOL: Direct On Line - VFD: Inverter - BRS: Brushless.

*** If red contact factory. **** Details on measurement methods in the Sound Data section

Unit performances are referred to ideal running conditions that are reproducible in laboratory test environment in accordance to recognized industry standards (i.e. EN14511). Weights and dimensions are indicative -For specific values refer to certified drawing issued by factory.

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EWAQ F-SS

MODEL		210	230	250	280	320	350	400	360
POWER SUPPLY									
Phases	Nr	3	3	3	3	3	3	3	3
Frequency	Hz	50	50	50	50	50	50	50	50
Voltage	V	400	400	400	400	400	400	400	400
Voltage tolerance Minimum	%	-10%	-10%	-10%	-10%	-10%	-10%	-10%	-10%
Voltage tolerance Maximum	%	+10%	+10%	+10%	+10%	+10%	+10%	+10%	+10%
UNIT									
Maximum starting current	A	387	450	466	538	568	698	728	728
Nominal running current cooling	A	130	147	161	187	208	242	259	242
Mximum running current	A	165	182	198	231	261	294	323	294
Maximum current for wires sizing	A	182	200	218	254	287	323	355	323
FANS									
Nominal running current cooling	A	16	16	16	20	20	24	24	24
COMPRESSORS									
Phases	Nr	3	3	3	3	3	3	3	3
Voltage	V	400	400	400	400	400	400	400	400
Voltage tolerance Minimum	%	-10%	-10%	-10%	-10%	-10%	-10%	-10%	-10%
Voltage tolerance Maximum	%	+10%	+10%	+10%	+10%	+10%	+10%	+10%	+10%
Maximum running current	A	73	81	89	104	119	133	148	133
Starting method	---	DOL	DOL	DOL	DOL	DOL	DOL	DOL	DOL

EWAQ F-SS

MODEL		410	480	550	610				
POWER SUPPLY									
Phases	Nr	3	3	3	3				
Frequency	Hz	50	50	50	50				
Voltage	V	400	400	400	400				
Voltage tolerance Minimum	%	-10%	-10%	-10%	-10%				
Voltage tolerance Maximum	%	+10%	+10%	+10%	+10%				
UNIT									
Maximum starting current	A	728	728	847	890				
Nominal running current cooling	A	262	322	356	391				
Mximum running current	A	323	391	443	486				
Maximum current for wires sizing	A	355	430	487	535				
FANS									
Nominal running current cooling	A	24	32	40	40				
COMPRESSORS									
Phases	Nr	3	3	3	3				
Voltage	V	400	400	400	400				
Voltage tolerance Minimum	%	-10%	-10%	-10%	-10%				
Voltage tolerance Maximum	%	+10%	+10%	+10%	+10%				
Maximum running current	A	148	178	192	221				
Starting method	---	DOL	DOL	DOL	DOL				

Fluid: Water

Allowed voltage tolerance $\pm 10\%$. Voltage unbalance between phases must be within $\pm 3\%$.

Maximum starting current: starting current of biggest compressor + current of the other compressors at maximum load + fans current at maximum load. In case of inverter driven units, no inrush current at start up is experienced.

Nominal current in cooling mode is referred to the following conditions: evaporator 12/7°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) $\times 1,1$.

Electrical data are subject to modification without notice. Please refer to unit nameplate data

EWAQ F-SL

MODEL		210	230	250	280	320	350	400	360
POWER SUPPLY									
Phases	Nr	3	3	3	3	3	3	3	3
Frequency	Hz	50	50	50	50	50	50	50	50
Voltage	V	400	400	400	400	400	400	400	400
Voltage tolerance Minimum	%	-10%	-10%	-10%	-10%	-10%	-10%	-10%	-10%
Voltage tolerance Maximum	%	+10%	+10%	+10%	+10%	+10%	+10%	+10%	+10%
UNIT									
Maximum starting current	A	387	450	466	538	568	698	728	728
Nominal running current cooling	A	130	147	161	187	208	242	262	242
Mximum running current	A	165	182	198	231	261	294	323	294
Maximum current for wires sizing	A	182	200	218	254	287	323	355	323
FANS									
Nominal running current cooling	A	16	16	16	20	20	24	24	24
COMPRESSORS									
Phases	Nr	3	3	3	3	3	3	3	3
Voltage	V	400	400	400	400	400	400	400	400
Voltage tolerance Minimum	%	-10%	-10%	-10%	-10%	-10%	-10%	-10%	-10%
Voltage tolerance Maximum	%	+10%	+10%	+10%	+10%	+10%	+10%	+10%	+10%
Maximum running current	A	73	81	89	104	119	133	148	133
		73	81	89	104	119	133	148	133
Starting method	---	DOL	DOL	DOL	DOL	DOL	DOL	DOL	DOL

EWAQ F-SL

MODEL		410	480	550	610				
POWER SUPPLY									
Phases	Nr	3	3	3	3				
Frequency	Hz	50	50	50	50				
Voltage	V	400	400	400	400				
Voltage tolerance Minimum	%	-10%	-10%	-10%	-10%				
Voltage tolerance Maximum	%	+10%	+10%	+10%	+10%				
UNIT									
Maximum starting current	A	728	728	847	890				
Nominal running current cooling	A	262	322	356	391				
Mximum running current	A	323	391	443	486				
Maximum current for wires sizing	A	355	430	487	535				
FANS									
Nominal running current cooling	A	24	32	40	40				
COMPRESSORS									
Phases	Nr	3	3	3	3				
Voltage	V	400	400	400	400				
Voltage tolerance Minimum	%	-10%	-10%	-10%	-10%				
Voltage tolerance Maximum	%	+10%	+10%	+10%	+10%				
Maximum running current	A	148	178	192	221				
		148	178	207	221				
Starting method	---	DOL	DOL	DOL	DOL				

Fluid: Water

Allowed voltage tolerance $\pm 10\%$. Voltage unbalance between phases must be within $\pm 3\%$.

Maximum starting current: starting current of biggest compressor + current of the other compressors at maximum load + fans current at maximum load. In case of inverter driven units, no inrush current at start up is experienced.

Nominal current in cooling mode is referred to the following conditions: evaporator 12/7°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) $\times 1,1$.

Electrical data are subject to modification without notice. Please refer to unit nameplate data

EWAQ F-SR

MODEL		200	220	240	270	300	330	370	340
POWER SUPPLY									
Phases	Nr	3	3	3	3	3	3	3	3
Frequency	Hz	50	50	50	50	50	50	50	50
Voltage	V	400	400	400	400	400	400	400	400
Voltage tolerance Minimum	%	-10%	-10%	-10%	-10%	-10%	-10%	-10%	-10%
Voltage tolerance Maximum	%	+10%	+10%	+10%	+10%	+10%	+10%	+10%	+10%
UNIT									
Maximum starting current	A	381	444	460	531	561	689	719	719
Nominal running current cooling	A	129	148	163	189	213	246	270	246
Mximum running current	A	159	176	192	224	253	285	314	285
Maximum current for wires sizing	A	175	194	211	246	278	314	345	314
FANS									
Nominal running current cooling	A	10	10	10	13	13	15	15	15
COMPRESSORS									
Phases	Nr	3	3	3	3	3	3	3	3
Voltage	V	400	400	400	400	400	400	400	400
Voltage tolerance Minimum	%	-10%	-10%	-10%	-10%	-10%	-10%	-10%	-10%
Voltage tolerance Maximum	%	+10%	+10%	+10%	+10%	+10%	+10%	+10%	+10%
Maximum running current	A	73	81	89	104	119	133	148	133
		73	81	89	104	119	133	148	133
Starting method	---	DOL	DOL	DOL	DOL	DOL	DOL	DOL	DOL

EWAQ F-SR

MODEL		380	460	530	580				
POWER SUPPLY									
Phases	Nr	3	3	3	3				
Frequency	Hz	50	50	50	50				
Voltage	V	400	400	400	400				
Voltage tolerance Minimum	%	-10%	-10%	-10%	-10%				
Voltage tolerance Maximum	%	+10%	+10%	+10%	+10%				
UNIT									
Maximum starting current	A	719	719	832	875				
Nominal running current cooling	A	270	328	358	397				
Mximum running current	A	314	379	428	471				
Maximum current for wires sizing	A	345	417	471	518				
FANS									
Nominal running current cooling	A	15	20	25	25				
COMPRESSORS									
Phases	Nr	3	3	3	3				
Voltage	V	400	400	400	400				
Voltage tolerance Minimum	%	-10%	-10%	-10%	-10%				
Voltage tolerance Maximum	%	+10%	+10%	+10%	+10%				
Maximum running current	A	148	178	192	221				
		148	178	207	221				
Starting method	---	DOL	DOL	DOL	DOL				

Fluid: Water

Allowed voltage tolerance $\pm 10\%$. Voltage unbalance between phases must be within $\pm 3\%$.

Maximum starting current: starting current of biggest compressor + current of the other compressors at maximum load + fans current at maximum load. In case of inverter driven units, no inrush current at start up is experienced.

Nominal current in cooling mode is referred to the following conditions: evaporator 12/7°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) $\times 1,1$.

Electrical data are subject to modification without notice. Please refer to unit nameplate data

EWAQ F-XS

MODEL		170	200	220	250	310	350	320	360
POWER SUPPLY									
Phases	Nr	3	3	3	3	3	3	3	3
Frequency	Hz	50	50	50	50	50	50	50	50
Voltage	V	400	400	400	400	400	400	400	400
Voltage tolerance Minimum	%	-10%	-10%	-10%	-10%	-10%	-10%	-10%	-10%
Voltage tolerance Maximum	%	+10%	+10%	+10%	+10%	+10%	+10%	+10%	+10%
UNIT									
Maximum starting current	A	314	375	391	454	542	572	572	572
Nominal running current cooling	A	110	117	128	141	181	202	181	202
Mximum running current	A	143	154	169	186	235	265	235	265
Maximum current for wires sizing	A	157	169	186	205	259	292	259	292
FANS									
Nominal running current cooling	A	16	16	20	20	24	24	24	24
COMPRESSORS									
Phases	Nr	3	3	3	3	3	3	3	3
Voltage	V	400	400	400	400	400	400	400	400
Voltage tolerance Minimum	%	-10%	-10%	-10%	-10%	-10%	-10%	-10%	-10%
Voltage tolerance Maximum	%	+10%	+10%	+10%	+10%	+10%	+10%	+10%	+10%
Maximum running current	A	62	67	73	81	104	119	104	119
Starting method	---	DOL	DOL	DOL	DOL	DOL	DOL	DOL	DOL

EWAQ F-XS

MODEL		400	430	450	520	610	680		
POWER SUPPLY									
Phases	Nr	3	3	3	3	3	3		
Frequency	Hz	50	50	50	50	50	50		
Voltage	V	400	400	400	400	400	400		
Voltage tolerance Minimum	%	-10%	-10%	-10%	-10%	-10%	-10%		
Voltage tolerance Maximum	%	+10%	+10%	+10%	+10%	+10%	+10%		
UNIT									
Maximum starting current	A	706	721	736	736	847	898		
Nominal running current cooling	A	229	240	254	300	343	379		
Mximum running current	A	302	316	331	399	443	494		
Maximum current for wires sizing	A	332	348	364	439	487	543		
FANS									
Nominal running current cooling	A	32	32	32	40	40	48		
COMPRESSORS									
Phases	Nr	3	3	3	3	3	3		
Voltage	V	400	400	400	400	400	400		
Voltage tolerance Minimum	%	-10%	-10%	-10%	-10%	-10%	-10%		
Voltage tolerance Maximum	%	+10%	+10%	+10%	+10%	+10%	+10%		
Maximum running current	A	133	133	148	178	192	221		
Starting method	---	DOL	DOL	DOL	DOL	DOL	DOL		

Fluid: Water

Allowed voltage tolerance $\pm 10\%$. Voltage unbalance between phases must be within $\pm 3\%$.

Maximum starting current: starting current of biggest compressor + current of the other compressors at maximum load + fans current at maximum load. In case of inverter driven units, no inrush current at start up is experienced.

Nominal current in cooling mode is referred to the following conditions: evaporator 12/7°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) $\times 1,1$.

Electrical data are subject to modification without notice. Please refer to unit nameplate data

EWAQ F-XL

MODEL		170	200	220	250	310	350	320	360
POWER SUPPLY									
Phases	Nr	3	3	3	3	3	3	3	3
Frequency	Hz	50	50	50	50	50	50	50	50
Voltage	V	400	400	400	400	400	400	400	400
Voltage tolerance Minimum	%	-10%	-10%	-10%	-10%	-10%	-10%	-10%	-10%
Voltage tolerance Maximum	%	+10%	+10%	+10%	+10%	+10%	+10%	+10%	+10%
UNIT									
Maximum starting current	A	314	375	391	454	542	572	572	572
Nominal running current cooling	A	110	117	128	141	181	202	181	202
Mximum running current	A	143	154	169	186	235	265	235	265
Maximum current for wires sizing	A	157	169	186	205	259	292	259	292
FANS									
Nominal running current cooling	A	16	16	20	20	24	24	24	24
COMPRESSORS									
Phases	Nr	3	3	3	3	3	3	3	3
Voltage	V	400	400	400	400	400	400	400	400
Voltage tolerance Minimum	%	-10%	-10%	-10%	-10%	-10%	-10%	-10%	-10%
Voltage tolerance Maximum	%	+10%	+10%	+10%	+10%	+10%	+10%	+10%	+10%
Maximum running current	A	62	67	73	81	104	119	104	119
		62	67	73	81	104	119	104	119
Starting method	---	DOL	DOL	DOL	DOL	DOL	DOL	DOL	DOL

EWAQ F-XL

MODEL		400	430	450	520	610	680		
POWER SUPPLY									
Phases	Nr	3	3	3	3	3	3		
Frequency	Hz	50	50	50	50	50	50		
Voltage	V	400	400	400	400	400	400		
Voltage tolerance Minimum	%	-10%	-10%	-10%	-10%	-10%	-10%		
Voltage tolerance Maximum	%	+10%	+10%	+10%	+10%	+10%	+10%		
UNIT									
Maximum starting current	A	706	721	736	736	847	898		
Nominal running current cooling	A	229	240	254	300	343	379		
Mximum running current	A	302	316	331	399	443	494		
Maximum current for wires sizing	A	332	348	364	439	487	543		
FANS									
Nominal running current cooling	A	32	32	32	40	40	48		
COMPRESSORS									
Phases	Nr	3	3	3	3	3	3		
Voltage	V	400	400	400	400	400	400		
Voltage tolerance Minimum	%	-10%	-10%	-10%	-10%	-10%	-10%		
Voltage tolerance Maximum	%	+10%	+10%	+10%	+10%	+10%	+10%		
Maximum running current	A	133	133	148	178	192	221		
		133	148	148	178	207	221		
Starting method	---	DOL	DOL	DOL	DOL	DOL	DOL		

Fluid: Water

Allowed voltage tolerance $\pm 10\%$. Voltage unbalance between phases must be within $\pm 3\%$.

Maximum starting current: starting current of biggest compressor + current of the other compressors at maximum load + fans current at maximum load. In case of inverter driven units, no inrush current at start up is experienced.

Nominal current in cooling mode is referred to the following conditions: evaporator 12/7°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) $\times 1,1$.

Electrical data are subject to modification without notice. Please refer to unit nameplate data

EWAQ F-XR

MODEL		170	190	210	240	300	330	310	340
POWER SUPPLY									
Phases	Nr	3	3	3	3	3	3	3	3
Frequency	Hz	50	50	50	50	50	50	50	50
Voltage	V	400	400	400	400	400	400	400	400
Voltage tolerance Minimum	%	-10%	-10%	-10%	-10%	-10%	-10%	-10%	-10%
Voltage tolerance Maximum	%	+10%	+10%	+10%	+10%	+10%	+10%	+10%	+10%
UNIT									
Maximum starting current	A	308	369	384	447	533	563	563	563
Nominal running current cooling	A	107	115	124	138	179	204	179	204
Mximum running current	A	137	148	162	178	226	256	226	256
Maximum current for wires sizing	A	151	163	178	196	249	282	249	282
FANS									
Nominal running current cooling	A	10	10	13	13	15	15	15	15
COMPRESSORS									
Phases	Nr	3	3	3	3	3	3	3	3
Voltage	V	400	400	400	400	400	400	400	400
Voltage tolerance Minimum	%	-10%	-10%	-10%	-10%	-10%	-10%	-10%	-10%
Voltage tolerance Maximum	%	+10%	+10%	+10%	+10%	+10%	+10%	+10%	+10%
Maximum running current	A	62	67	73	81	104	119	104	119
Starting method	---	DOL	DOL	DOL	DOL	DOL	DOL	DOL	DOL

EWAQ F-XR

MODEL		390	410	430	500	580	650		
POWER SUPPLY									
Phases	Nr	3	3	3	3	3	3		
Frequency	Hz	50	50	50	50	50	50		
Voltage	V	400	400	400	400	400	400		
Voltage tolerance Minimum	%	-10%	-10%	-10%	-10%	-10%	-10%		
Voltage tolerance Maximum	%	+10%	+10%	+10%	+10%	+10%	+10%		
UNIT									
Maximum starting current	A	694	709	724	724	832	880		
Nominal running current cooling	A	225	238	254	299	346	379		
Mximum running current	A	290	304	319	384	428	476		
Maximum current for wires sizing	A	319	334	351	422	471	524		
FANS									
Nominal running current cooling	A	20	20	20	25	25	30		
COMPRESSORS									
Phases	Nr	3	3	3	3	3	3		
Voltage	V	400	400	400	400	400	400		
Voltage tolerance Minimum	%	-10%	-10%	-10%	-10%	-10%	-10%		
Voltage tolerance Maximum	%	+10%	+10%	+10%	+10%	+10%	+10%		
Maximum running current	A	133	133	148	178	192	221		
Starting method	---	DOL	DOL	DOL	DOL	DOL	DOL		

Fluid: Water

Allowed voltage tolerance $\pm 10\%$. Voltage unbalance between phases must be within $\pm 3\%$.

Maximum starting current: starting current of biggest compressor + current of the other compressors at maximum load + fans current at maximum load. In case of inverter driven units, no inrush current at start up is experienced.

Nominal current in cooling mode is referred to the following conditions: evaporator 12/7°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.

Electrical data are subject to modification without notice. Please refer to unit nameplate data

EWAQ F-SL

MODEL	Sound pressure level at 1 m from the unit (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)
210	77.7	71.1	70.8	67.8	68.8	66.0	58.4	46.8	72.7	91.4
230	77.9	71.3	71.0	68.0	69.0	66.2	58.6	47.0	72.9	91.5
250	78.0	71.4	71.1	68.1	69.1	66.3	58.7	47.1	73.0	91.7
280	78.3	71.7	71.4	68.4	69.4	66.6	59.0	47.4	73.3	92.5
320	78.3	71.7	71.4	68.4	69.4	66.6	59.0	47.4	73.3	92.5
350	78.8	72.2	71.9	68.9	69.9	67.1	59.5	47.9	73.9	93.5
400	79.0	72.4	72.1	69.1	70.1	67.3	59.7	48.1	74.0	93.8
360	79.7	73.1	72.8	69.8	70.8	68.0	60.4	48.8	74.7	93.5
410	79.7	73.1	72.8	69.8	70.8	68.0	60.4	48.8	74.8	93.8
480	80.1	73.5	73.2	70.2	71.2	68.4	60.8	49.2	75.1	94.5
550	80.7	74.1	73.8	70.8	71.8	69.0	61.4	49.8	75.7	95.7
610	80.9	74.3	74.0	71.0	72.0	69.2	61.6	50.0	76.0	95.9

EWAQ F-SS

MODEL	Sound pressure level at 1 m from the unit (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)
210	79.8	73.2	72.9	69.9	70.9	68.1	60.5	48.9	74.9	93.5
230	80.4	73.8	73.5	70.5	71.5	68.7	61.1	49.5	75.4	94.1
250	80.9	74.3	74.0	71.0	72.0	69.2	61.6	50.0	75.9	94.6
280	80.9	74.3	74.0	71.0	72.0	69.2	61.6	50.0	76.0	95.1
320	80.9	74.3	74.0	71.0	72.0	69.2	61.6	50.0	76.0	95.1
350	81.9	75.3	75.0	72.0	73.0	70.2	62.6	51.0	77.0	96.6
400	81.9	75.3	75.0	72.0	73.0	70.2	62.6	51.0	77.6	97.5
360	82.8	76.2	75.9	72.9	73.9	71.1	63.5	51.9	77.8	96.6
410	82.8	76.2	75.9	72.9	73.9	71.1	63.5	51.9	78.5	97.5
480	82.6	76.0	75.7	72.7	73.7	70.9	63.3	51.7	77.7	97.1
550	83.7	77.1	76.8	73.8	74.8	72.0	64.4	52.8	78.7	98.6
610	84.4	77.8	77.5	74.5	75.5	72.7	65.1	53.5	79.5	99.4

EWAQ F-SR

MODEL	Sound pressure level at 1 m from the unit (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)
200	71.4	64.8	64.5	61.5	62.5	59.7	52.1	40.5	66.4	85.0
220	72.3	65.7	65.4	62.4	63.4	60.6	53.0	41.4	67.4	86.0
240	73.1	66.5	66.2	63.2	64.2	61.4	53.8	42.2	68.2	86.8
270	72.9	66.3	66.0	63.0	64.0	61.2	53.6	42.0	68.0	87.1
300	72.9	66.3	66.0	63.0	64.0	61.2	53.6	42.0	68.0	87.1
330	74.3	67.7	67.4	64.4	65.4	62.6	55.0	43.4	69.3	89.0
370	75.3	68.7	68.4	65.4	66.4	63.6	56.0	44.4	70.3	90.2
340	75.2	68.6	68.3	65.3	66.3	63.5	55.9	44.3	70.2	89.0
380	75.3	68.7	68.4	65.4	66.4	63.6	56.0	44.4	71.2	90.2
460	74.6	68.0	67.7	64.7	65.7	62.9	55.3	43.7	69.6	89.0
530	75.9	69.3	69.0	66.0	67.0	64.2	56.6	45.0	71.0	90.9
580	77.0	70.4	70.1	67.1	68.1	65.3	57.7	46.1	72.1	92.0

EWAQ F-XL

MODEL	Sound pressure level at 1 m from the unit (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)
170	76.4	69.8	69.5	66.5	67.5	64.7	57.1	45.5	71.4	90.0
200	77.6	71.0	70.7	67.7	68.7	65.9	58.3	46.7	72.6	91.2
220	78.1	71.5	71.2	68.2	69.2	66.4	58.8	47.2	73.1	92.3
250	78.2	71.6	71.3	68.3	69.3	66.5	58.9	47.3	73.2	92.4

EWAQ F-XL

MODEL	Sound pressure level at 1 m from the unit (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)
310	78.5	71.9	71.6	68.6	69.6	66.8	59.2	47.6	73.6	93.2
350	78.5	71.9	71.6	68.6	69.6	66.8	59.2	47.6	73.6	93.2
320	79.4	72.8	72.5	69.5	70.5	67.7	60.1	48.5	74.4	93.2
360	79.4	72.8	72.5	69.5	70.5	67.7	60.1	48.5	74.4	93.2
400	80.2	73.6	73.3	70.3	71.3	68.5	60.9	49.3	75.2	94.6
430	80.3	73.7	73.4	70.4	71.4	68.6	61.0	49.4	75.3	94.7
450	80.4	73.8	73.5	70.5	71.5	68.7	61.1	49.5	75.4	94.8
520	80.4	73.8	73.5	70.5	71.5	68.7	61.1	49.5	75.4	95.4
610	80.7	74.1	73.8	70.8	71.8	69.0	61.4	49.8	75.7	95.7
680	81.1	74.5	74.2	71.2	72.2	69.4	61.8	50.2	76.1	96.6

EWAQ F-XS

MODEL	Sound pressure level at 1 m from the unit (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)
170	77.4	70.8	70.5	67.5	68.5	65.7	58.1	46.5	72.4	91.0
200	79.4	72.8	72.5	69.5	70.5	67.7	60.1	48.5	74.4	93.0
220	80.0	73.4	73.1	70.1	71.1	68.3	60.7	49.1	75.0	94.2
250	80.5	73.9	73.6	70.6	71.6	68.8	61.2	49.6	75.5	94.7
310	80.9	74.3	74.0	71.0	72.0	69.2	61.6	50.0	76.0	95.6
350	80.9	74.3	74.0	71.0	72.0	69.2	61.6	50.0	76.0	95.6
320	81.8	75.2	74.9	71.9	72.9	70.1	62.5	50.9	76.8	95.6
360	81.8	75.2	74.9	71.9	72.9	70.1	62.5	50.9	76.8	95.6
400	82.9	76.3	76.0	73.0	74.0	71.2	63.6	52.0	77.9	97.3
430	83.3	76.7	76.4	73.4	74.4	71.6	64.0	52.4	78.3	97.7
450	83.6	77.0	76.7	73.7	74.7	71.9	64.3	52.7	78.6	98.0
520	82.7	76.1	75.8	72.8	73.8	71.0	63.4	51.8	77.7	97.7
610	83.7	77.1	76.8	73.8	74.8	72.0	64.4	52.8	78.7	98.6
680	84.3	77.7	77.4	74.4	75.4	72.6	65.0	53.4	79.4	99.8

EWAQ F-XR

MODEL	Sound pressure level at 1 m from the unit (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)
170	69.0	62.4	62.1	59.1	60.1	57.3	49.7	38.1	64.0	82.6
190	70.2	63.6	63.3	60.3	61.3	58.5	50.9	39.3	65.2	83.8
210	70.9	64.3	64.0	61.0	62.0	59.2	51.6	40.0	66.0	85.1
240	71.7	65.1	64.8	61.8	62.8	60.0	52.4	40.8	66.7	85.9
300	72.2	65.6	65.3	62.3	63.3	60.5	52.9	41.3	67.2	86.9
330	72.2	65.6	65.3	62.3	63.3	60.5	52.9	41.3	67.2	86.9
310	73.1	66.5	66.2	63.2	64.2	61.4	53.8	42.2	68.1	86.9
340	73.1	66.5	66.2	63.2	64.2	61.4	53.8	42.2	68.1	86.9
390	74.4	67.8	67.5	64.5	65.5	62.7	55.1	43.5	69.4	88.8
410	74.9	68.3	68.0	65.0	66.0	63.2	55.6	44.0	69.9	89.3
430	75.4	68.8	68.5	65.5	66.5	63.7	56.1	44.5	70.4	89.8
500	73.9	67.3	67.0	64.0	65.0	62.2	54.6	43.0	68.9	88.9
580	75.3	68.7	68.4	65.4	66.4	63.6	56.0	44.4	70.3	90.3
650	76.1	69.5	69.2	66.2	67.2	64.4	56.8	45.2	71.1	91.5

EWAQ F-SL

SOUND PRESSURE LEVEL FOR DIFFERENT DISTANCES (dB(A))							
MODEL	1 m	5 m	10 m	15 m	20 m	25 m	50 m
210	72.7	64.7	59.8	56.7	54.4	52.6	46.9
230	72.9	64.8	60.0	56.9	54.6	52.8	47.1
250	73.0	65.0	60.1	57.0	54.7	52.9	47.2
280	73.3	65.5	60.7	57.7	55.4	53.6	47.9
320	73.3	65.5	60.7	57.7	55.4	53.6	47.9
350	73.9	66.3	61.6	58.5	56.3	54.5	48.8
400	74.0	66.5	61.8	58.8	56.6	54.8	49.1
360	74.7	66.7	61.8	58.7	56.4	54.6	48.9
410	74.8	66.9	62.0	58.9	56.7	54.9	49.1
480	75.1	67.4	62.6	59.5	57.2	55.4	49.7
550	75.7	68.2	63.5	60.4	58.2	56.4	50.7
610	76.0	68.5	63.7	60.7	58.5	56.7	51.0

EWAQ F-SS

SOUND PRESSURE LEVEL FOR DIFFERENT DISTANCES (dB(A))							
MODEL	1 m	5 m	10 m	15 m	20 m	25 m	50 m
210	74.9	66.8	61.9	58.8	56.6	54.8	49.0
230	75.4	67.4	62.5	59.4	57.1	55.3	49.6
250	75.9	67.9	63.0	59.9	57.6	55.8	50.1
280	76.0	68.1	63.4	60.3	58.0	56.2	50.5
320	76.0	68.1	63.4	60.3	58.0	56.2	50.5
350	77.0	69.4	64.7	61.6	59.4	57.6	51.9
400	77.6	70.2	65.5	62.4	60.2	58.4	52.7
360	77.8	69.8	64.9	61.8	59.5	57.7	52.0
410	78.5	70.5	65.7	62.6	60.3	58.5	52.8
480	77.7	69.9	65.1	62.0	59.8	58.0	52.2
550	78.7	71.2	66.5	63.4	61.2	59.4	53.7
610	79.5	72.0	67.2	64.2	61.9	60.2	54.5

EWAQ F-SR

SOUND PRESSURE LEVEL FOR DIFFERENT DISTANCES (dB(A))							
MODEL	1 m	5 m	10 m	15 m	20 m	25 m	50 m
200	66.4	58.4	53.5	50.4	48.1	46.3	40.6
220	67.4	59.3	54.5	51.4	49.1	47.3	41.5
240	68.2	60.1	55.2	52.2	49.9	48.1	42.3
270	68.0	60.2	55.4	52.3	50.0	48.3	42.5
300	68.0	60.2	55.4	52.3	50.0	48.3	42.5
330	69.3	61.8	57.0	54.0	51.8	50.0	44.3
370	70.3	62.9	58.2	55.1	52.9	51.1	45.4
340	70.2	62.2	57.3	54.2	51.9	50.1	44.4
380	71.2	63.3	58.4	55.3	53.0	51.2	45.5
460	69.6	61.8	57.0	54.0	51.7	49.9	44.2
530	71.0	63.4	58.7	55.7	53.4	51.7	46.0
580	72.1	64.6	59.8	56.8	54.6	52.8	47.1

EWAQ F-XL

SOUND PRESSURE LEVEL FOR DIFFERENT DISTANCES (dB(A))							
MODEL	1 m	5 m	10 m	15 m	20 m	25 m	50 m
170	71.4	63.3	58.5	55.4	53.1	51.3	45.6

EWAQ F-XL

SOUND PRESSURE LEVEL FOR DIFFERENT DISTANCES (dB(A))							
MODEL	1 m	5 m	10 m	15 m	20 m	25 m	50 m
200	72.6	64.6	59.7	56.6	54.3	52.5	46.8
220	73.1	65.3	60.5	57.4	55.2	53.4	47.7
250	73.2	65.4	60.6	57.6	55.3	53.5	47.8
310	73.6	66.0	61.3	58.2	56.0	54.2	48.5
350	73.6	66.0	61.3	58.2	56.0	54.2	48.5
320	74.4	66.4	61.5	58.4	56.1	54.3	48.6
360	74.4	66.4	61.5	58.4	56.1	54.3	48.6
400	75.2	67.4	62.6	59.6	57.3	55.5	49.8
430	75.3	67.5	62.7	59.7	57.4	55.6	49.9
450	75.4	67.7	62.9	59.8	57.5	55.7	50.0
520	75.4	67.9	63.2	60.2	57.9	56.1	50.4
610	75.7	68.2	63.5	60.4	58.2	56.4	50.7
680	76.1	68.8	64.2	61.2	59.0	57.2	51.5

EWAQ F-XS

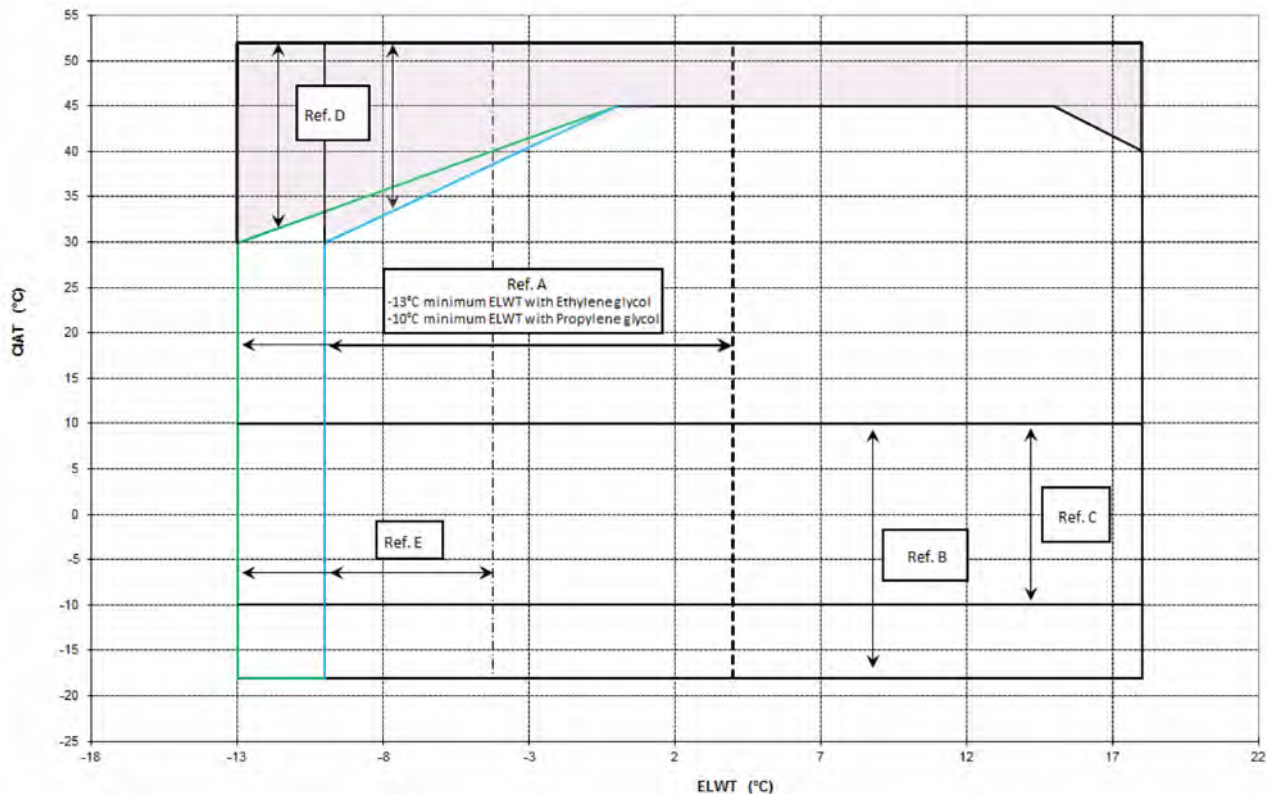
SOUND PRESSURE LEVEL FOR DIFFERENT DISTANCES (dB(A))							
MODEL	1 m	5 m	10 m	15 m	20 m	25 m	50 m
170	72.4	64.3	59.5	56.4	54.1	52.3	46.6
200	74.4	66.4	61.5	58.4	56.1	54.3	48.6
220	75.0	67.2	62.4	59.4	57.1	55.3	49.6
250	75.5	67.7	62.9	59.9	57.6	55.8	50.1
310	76.0	68.4	63.7	60.6	58.4	56.6	50.9
350	76.0	68.4	63.7	60.6	58.4	56.6	50.9
320	76.8	68.8	63.9	60.8	58.5	56.7	51.0
360	76.8	68.8	63.9	60.8	58.5	56.7	51.0
400	77.9	70.2	65.4	62.3	60.0	58.2	52.5
430	78.3	70.5	65.7	62.7	60.4	58.6	52.9
450	78.6	70.9	66.1	63.0	60.7	58.9	53.2
520	77.7	70.2	65.5	62.5	60.2	58.4	52.7
610	78.7	71.2	66.5	63.4	61.2	59.4	53.7
680	79.4	72.1	67.4	64.4	62.2	60.4	54.7

EWAQ F-XR

SOUND PRESSURE LEVEL FOR DIFFERENT DISTANCES (dB(A))							
MODEL	1 m	5 m	10 m	15 m	20 m	25 m	50 m
170	64.0	55.9	51.1	48.0	45.7	43.9	38.2
190	65.2	57.2	52.3	49.2	46.9	45.1	39.4
210	66.0	58.1	53.4	50.3	48.0	46.2	40.5
240	66.7	58.9	54.1	51.1	48.8	47.0	41.3
300	67.2	59.7	54.9	51.9	49.7	47.9	42.2
330	67.2	59.7	54.9	51.9	49.7	47.9	42.2
310	68.1	60.1	55.2	52.1	49.8	48.0	42.3
340	68.1	60.1	55.2	52.1	49.8	48.0	42.3
390	69.4	61.7	56.9	53.8	51.5	49.7	44.0
410	69.9	62.2	57.4	54.3	52.0	50.2	44.5
430	70.4	62.6	57.8	54.8	52.5	50.7	45.0
500	68.9	61.4	56.7	53.7	51.4	49.7	43.9
580	70.3	62.8	58.1	55.0	52.8	51.0	45.3
650	71.1	63.8	59.2	56.2	53.9	52.2	46.5

****** Value are referred to:evaporator 12/7°C, air ambient 35°C, full load operation. For aircooled Eurovent certified units,sound power level is measured in accordance with ISO9614 and Eurovent 8/1 and certified by Eurovent.Sound pressure level is calculated from sound power level. Eurovent certification refers to the overall sound power level only.Sound pressure in frequency bands is for information only and not considered binding. For other units,sound pressure level is measured in accordance with ISO3744.Sound power level is calculated from sound pressure level.**

Operating Limits



Note

The above graphic represents a guideline about the operating limits of the range. Please refer to Chiller Selection Software (CSS) for real operating limits working conditions for each size.

Legend:

ELWT = Evaporator Leaving Water Temperature (°C)
 CIAT = Condenser Inlet Air Temperature (°C)

Ref.:

- A = Operation with Glycol (below 4°C Evap LWT)
- B = Fan speed modulation or Speedtroll required (below 10°C Condens. Air Temp.)
- C = Fan speed modulation or Speedtroll required (below 10°C and up to -10°C Condens. Air Temp.)*
- * Only referred to units with 4-5-6 fans
- D = In this area units can work at partial load
- E = In this area the unit minimum capacity might be higher than value shown in Technical Specification table

Table 1 - Water heat exchanger - Minimum and maximum water Δt

A - Δt	°C	8
B - Δt	°C	4

Legend:

A = Max evaporator water Δt
 B = Min evaporator water Δt

Table 2 - Water heat exchanger - Fouling factors

A	B	C	D
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

Legend:

- A = Fouling factors (m² °C / kW)
- B = Cooling capacity correction factor
- C = Power input correction factor
- D = EER correction factor

Table 3 - Air heat exchanger - Altitude correction factors

A	0	300	600	900	1200	1500	1800
B	1013	977	942	908	875	843	812
C	1.000	0.993	0.986	0.979	0.973	0.967	0.960
D	1.000	1.005	1.009	1.015	1.021	1.026	1.031

Legend:

- A = Elevation above sea level (m)
- B = Barometric pressure (mbar)
- C = Cooling capacity correction factor
- D = Power input correction factor

- Maximum operating altitude is 2000 m above sea level
- Contact factory in case the unit has to be installed at altitudes between 1000 and 2000 m above sea level

Table 4 - Minimum glycol percentage for low air ambient temperature

AAT (2)	-3	-8	-15	-20
A (1)	10%	20%	30%	40%
AAT (2)	-3	-7	-12	-20
B (1)	10%	20%	30%	40%

Legend:

- AAT = Air Ambient Temperature (°C) (2)
- A = Ethylene glycol (%) (1)
- B = Propylene glycol (%) (1)

- (1) Minimum glycol percentage to prevent freezing of water circuit at indicated air ambient temperature
- (2) Air ambient temperature do exceed the operating limits of the unit, a protection of water circuit may be needed in winter season at non-working conditions.

Table 5.1 - Available fan static pressure correction factors

A	0	10	20	30	40	50	60	70	80	90	100
B	1.000	0.998	0.996	0.995	0.993	0.992	0.991	0.989	0.986	0.985	0.982
C	1.000	1.004	1.009	1.012	1.018	1.021	1.024	1.027	1.034	1.039	1.045
D	1.0	-0.3	-0.5	-0.7	-1.0	-1.1	-1.3	-1.6	-1.8	2.1	-2.4

- The above data are referred to:
- Fan 800 mm diameter
- Fan speed 890 rpm or 900 rpm

Legend:

- A = External Static Pressure (Pa)
- B = Cooling Capacity (kW) Correction factor
- C = Compressor Power Input (kW) Correction factor
- D = Reduction of Maximum Condenser Inlet Air Temperature (°C)

Table 5.2 - Available fan static pressure correction factors

A	0	10	20	30	40	50	60	70
B	1.000	0.996	0.991	0.985	0.978	0.970	0.954	0.927
C	1.000	1.005	1.012	1.020	1.028	1.039	1.058	1.092
D	1.0	-0.3	-0.7	-1.1	-1.6	-2.2	-3.3	-5.1

The above data are referred to:

- Fan 800 mm diameter
- Fan speed 700 rpm or 705 rpm

Legend:

- A = External Static Pressure (Pa)
- B = Cooling Capacity (kW) Correction factor
- C = Compressor Power Input (kW) Correction factor
- D = Reduction of Maximum Condenser Inlet Air Temperature (°C)

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, have been 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 with a certain approximation using this simplified formula:

For 4 compressors unit

$$M \text{ (liters)} = (0.4349 \times \Delta T(^{\circ}\text{C}) + 2.6158) \times P(\text{kW})$$

For 6 compressors unit

$$M \text{ (liters)} = (0.5554) \times P(\text{kW})$$

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.

Water charge, flow and quality

Water charge, flow and quality

Items (1) (6)	Cooling System			Cooling Water		Once Flow		Cooled Water		Heated water (2)		Tendency if out of criteria	
	Circulating water		Supply water (4)	Circulating water	Supply water (4)	Flowing water	Circulating water	Supply water (4)	Circulating water	Supply water (4)	High temperature		
	Circulating water	Supply water (4)		[Below 20°C]	Supply water (4)		[Below 20°C]	Supply water (4)	[60°C ~ 80°C]	Supply water (4)			
Items to be controlled:	pH	6.5 ~ 8.2	6.0 ~ 8.0	6.0 ~ 8.0	6.0 ~ 8.0	6.0 ~ 8.0	6.8 ~ 8.0	6.0 ~ 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 80	Below 40	Below 80	Below 80	Below 30	Below 30	Below 30	Corrosion + Scale
		[µS/cm] at 25°C	(Below 800)	(Below 300)	(Below 400)	(Below 800)	(Below 400)	(Below 800)	(Below 800)	(Below 300)	(Below 300)	(Below 300)	Corrosion + Scale
	Chloride ion	[mgCl ⁻ /l]	Below 200	Below 50	Below 50	Below 200	Below 50	Below 200	Below 50	Below 50	Below 30	Below 30	Corrosion
	Sulfate ion	[mgSO ²⁻ 4/l]	Below 200	Below 50	Below 50	Below 200	Below 50	Below 200	Below 50	Below 50	Below 30	Below 30	Corrosion
	M-alkalinity (pH4.8)	[mgCaCO ₃ /l]	Below 100	Below 50	Below 50	Below 100	Below 50	Below 100	Below 50	Below 50	Below 50	Below 50	Scale
	Total hardness	[mgCaCO ₃ /l]	Below 200	Below 70	Below 70	Below 200	Below 70	Below 200	Below 70	Below 70	Below 70	Below 70	Scale
	Calcium hardness	[mgCaCO ₃ /l]	Below 150	Below 50	Below 50	Below 50	Below 50	Below 50	Below 50	Below 50	Below 50	Below 50	Scale
	Silica ion	[mgSiO ₂ /l]	Below 50	Below 30	Below 30	Below 30	Below 30	Below 30	Below 30	Below 30	Below 30	Below 30	Scale
	Oxygen	(mg O ₂ /l)	Below 1.0	Below 1.0	Below 1.0	Below 1.0	Below 1.0	Below 1.0	Below 1.0	Below 1.0	Below 1.0	Below 1.0	Corrosion
	Particle size	(mm)	Below 0.5	Below 0.5	Below 0.5	Below 0.5	Below 0.5	Below 0.5	Below 0.6	Below 0.5	Below 0.6	Below 0.6	Erosion
	Total dissolved solids	(mg / l)	Below 1000	Below 1000	Below 1000	Below 1000	Below 1000	Below 1000	Below 1001	Below 1000	Below 1001	Below 1001	Erosion
	Ethylene Glycol (weight conc.)		Below 60%	Below 60%	—	Below 60%	Below 60%	Below 60%	Below 60%	Below 60%	Below 60%	Below 60%	—
	Items to be referred to:	Nitrate ion	(mg NO ₃ ⁻ /l)	Below 100	Below 100	Below 100	Below 100	Below 100	Below 101	Below 100	Below 101	Below 101	Corrosion
		TOC Total organic carbon	(mg/l)	Below 1.0	Below 1.0	Below 1.0	Below 1.0	Below 1.0	Below 1.0	Below 1.0	Below 1.0	Below 1.0	Scale
Iron		[mgFe/l]	Below 1.0	Below 0.3	Below 1.0	Below 1.0	Below 1.0	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		[mgS ²⁻ /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 1.0	Below 1.0	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 0.3	Below 0.25	Below 0.3	Below 0.3	Corrosion	
Free carbide		[mgCO ₂ /l]	Below 4.0	Below 4.0	Below 4.0	Below 4.0	Below 4.0	Below 4.0	Below 0.4	Below 4.0	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 desirable 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.

6 The limits above have to be considered as a general prescription and can not totally assure the absence of corrosion and erosion.

Some particular combinations of elements or the presence of components not listed in the table or factors not considered may trigger corrosion phenomena.

EWAQ F-SS

		210						230					
Twout	Ta	25	30	35	40	43	46	25	30	35	40	43	46
5	CC kW	219	207	195	182	174	165	239	226	212	197	188	117
	PI kW	61	66	72	79	83.7	89	70.3	76.4	83.3	91.2	96.5	52.6
	qw l/s	10.5	9.9	9.3	8.7	8.3	7.9	11.4	10.8	10.1	9.4	9.0	5.6
	dpw kPa	41	37	33	29	26	24	49	44	39	34	31	12
7	CC kW	232	219	206	192	184	175	252	239	224	208	199	125
	PI kW	62.2	67.3	73.3	80.4	85.2	90.5	71.8	77.9	84.9	92.9	98.2	53.2
	qw l/s	11.1	10.5	9.9	9.2	8.8	8.4	12.1	11.4	10.7	10.0	9.5	6.0
	dpw kPa	46	42	37	32	29	26	55	49	43	38	34	13
9	CC kW	245	231	218	203	194	110	266	251	236	220	210	132
	PI kW	63.5	68.7	74.8	81.9	86.8	42.8	73.4	79.5	86.5	94.6	99.9	53.7
	qw l/s	11.7	11.1	10.4	9.7	9.3	5.3	12.8	12.1	11.3	10.5	10.0	6.3
	dpw kPa	52	46	41	36	33	11	61	55	48	42	38	15
11	CC kW	258	244	230	215	205	117	280	265	249	232	221	140
	PI kW	64.9	70.1	76.3	83.5	88.4	43.3	75	81.2	88.3	96.4	102	54.4
	qw l/s	12.4	11.7	11.0	10.3	9.8	5.6	13.4	12.7	11.9	11.1	10.6	6.7
	dpw kPa	58	52	46	40	37	12	68	61	54	47	42	17
13	CC kW	271	257	242	226	216	125	294	278	261	243	155	148
	PI kW	66.4	71.7	77.9	85.2	90.1	43.8	76.7	83	90.2	98.3	52.4	55
	qw l/s	13.1	12.4	11.6	10.9	10.4	6.0	14.1	13.4	12.6	11.7	7.4	7.1
	dpw kPa	64	58	51	44	41	13	75	67	59	52	21	19
15	CC kW	285	270	255	238	228	132	308	292	274	256	164	157
	PI kW	67.9	73.3	79.6	86.9	91.9	44.3	78.5	84.9	92.1	100	53	55.6
	qw l/s	13.7	13.0	12.2	11.4	10.9	6.3	14.8	14.0	13.2	12.3	7.9	7.5
	dpw kPa	71	64	56	49	45	15	83	74	66	57	23	21

		250						280					
Twout	Ta	25	30	35	40	43	46	25	30	35	40	43	46
5	CC kW	264	249	234	218	208	119	302	286	269	250	238	151
	PI kW	77.6	84.3	91.9	100	106	51.7	90.1	97.9	107	117	123	68.1
	qw l/s	12.6	11.9	11.2	10.4	9.9	5.7	14.5	13.7	12.9	12.0	11.4	7.2
	dpw kPa	60	54	47	41	37	12	64	57	50	44	39	16
7	CC kW	278	263	247	230	219	127	318	301	283	264	251	160
	PI kW	79.3	86	93.6	102	108	52.2	92	99.8	109	119	125	68.9
	qw l/s	13.3	12.6	11.8	11.0	10.5	6.1	15.3	14.4	13.6	12.6	12.0	7.7
	dpw kPa	67	60	53	46	42	14	71	63	56	49	44	18
9	CC kW	293	277	260	243	231	134	335	317	298	277	264	170
	PI kW	80.9	87.7	95.4	104	109	52.7	94	102	111	121	127	69.7
	qw l/s	14.1	13.3	12.5	11.6	11.1	6.4	16.1	15.2	14.3	13.3	12.7	8.1
	dpw kPa	75	67	59	51	46	16	79	70	62	54	49	20
11	CC kW	308	291	274	255	243	143	352	333	313	291	188	179
	PI kW	82.7	89.5	97.2	106	111	53.3	96.1	104	113	123	67.1	70.6
	qw l/s	14.8	14.0	13.2	12.3	11.7	6.8	16.9	16.0	15.0	14.0	9.0	8.6
	dpw kPa	83	74	65	57	51	18	87	78	69	60	25	23
13	CC kW	323	306	287	268	158	151	369	349	328	306	198	189
	PI kW	84.5	91.4	99.1	108	51.3	53.9	98.3	106	115	126	68	71.6
	qw l/s	15.5	14.7	13.8	12.9	7.6	7.2	17.8	16.8	15.8	14.7	9.5	9.1
	dpw kPa	91	82	72	63	22	20	96	86	76	66	27	25
15	CC kW	338	320	301	281	167	160	386	365	344	320	209	200
	PI kW	86.4	93.3	101	110	51.9	54.5	101	109	118	128	69.1	72.6
	qw l/s	16.3	15.4	14.5	13.5	8.0	7.7	18.6	17.6	16.6	15.4	10.0	9.6
	dpw kPa	100	90	79	69	24	22	105	94	83	72	31	28

EWAQ F-SS

		320						350					
Twout	Ta	25	30	35	40	43	46	25	30	35	40	43	46
5	CC kW	334	316	298	277	264	153	386	365	341	316	300	190
	PI kW	100	109	119	131	138	66.8	117	127	139	151	160	86.3
	qw l/s	16.0	15.2	14.3	13.3	12.6	7.3	18.5	17.4	16.3	15.1	14.3	9.1
	dpw kPa	79	71	62	54	49	16	34	31	27	23	21	8
7	CC kW	351	333	313	292	278	162	407	384	359	333	317	201
	PI kW	103	111	122	133	141	67.5	120	130	141	154	163	87.1
	qw l/s	16.9	16.0	15.0	14.0	13.3	7.8	19.5	18.4	17.2	15.9	15.1	9.6
	dpw kPa	87	78	69	60	55	19	38	34	30	26	23	9
9	CC kW	369	350	329	307	292	172	428	404	378	350	223	213
	PI kW	105	114	124	136	143	68.3	123	132	144	157	83.9	88.1
	qw l/s	17.8	16.8	15.8	14.7	14.0	8.2	20.5	19.3	18.1	16.8	10.7	10.2
	dpw kPa	97	87	77	67	60	21	43	38	33	28	12	11
11	CC kW	387	367	346	322	190	182	449	424	397	368	236	225
	PI kW	107	116	127	138	65.7	69.2	125	135	147	159	84.9	89
	qw l/s	18.7	17.7	16.6	15.5	9.1	8.7	21.6	20.3	19.0	17.6	11.3	10.8
	dpw kPa	107	96	85	74	26	23	47	42	37	31	13	12
13	CC kW	406	385	362	337	201	192	471	444	416	386	249	238
	PI kW	110	119	129	141	66.6	70.1	128	138	149	162	85.8	89.9
	qw l/s	19.6	18.5	17.4	16.2	9.6	9.2	22.6	21.3	20.0	18.5	12.0	11.4
	dpw kPa	118	105	93	81	29	26	52	46	40	35	14	13
15	CC kW	425	402	379	353	212	203	493	465	435	275	263	251
	PI kW	113	122	132	144	67.6	71	131	141	153	83.1	86.8	90.9
	qw l/s	20.5	19.4	18.3	17.0	10.2	9.7	23.7	22.4	20.9	13.2	12.6	12.0
	dpw kPa	129	116	102	89	32	29	57	51	44	18	16	15

		400						360					
Twout	Ta	25	30	35	40	43	46	25	30	35	40	43	46
5	CC kW	453	428	401	373	355	336	386	365	341	316	300	190
	PI kW	130	140	151	165	173	183	117	127	139	151	160	86.3
	qw l/s	21.7	20.5	19.2	17.8	17.0	16.1	18.5	17.4	16.3	15.1	14.3	9.1
	dpw kPa	31	28	24	21	19	17	34	31	27	23	21	8
7	CC kW	478	452	423	394	375	213	407	384	359	333	317	201
	PI kW	133	142	154	167	176	86.7	120	130	141	154	163	87.1
	qw l/s	22.9	21.6	20.3	18.8	17.9	10.2	19.5	18.4	17.2	15.9	15.1	9.6
	dpw kPa	34	31	27	23	21	7	38	34	30	26	23	9
9	CC kW	503	476	446	415	395	226	428	404	378	350	223	213
	PI kW	135	145	157	170	178	87.4	123	132	144	157	83.9	88.1
	qw l/s	24.1	22.8	21.4	19.8	18.9	10.8	20.5	19.3	18.1	16.8	10.7	10.2
	dpw kPa	38	34	30	26	23	8	43	38	33	28	12	11
11	CC kW	529	500	469	436	415	239	449	424	397	368	236	225
	PI kW	138	148	159	172	181	88.2	125	135	147	159	84.9	89
	qw l/s	25.4	24.0	22.5	20.9	19.9	11.5	21.6	20.3	19.0	17.6	11.3	10.8
	dpw kPa	42	38	33	29	26	9	47	42	37	31	13	12
13	CC kW	556	525	493	458	265	253	471	444	416	386	249	238
	PI kW	141	151	162	175	85.2	89.1	128	138	149	162	85.8	89.9
	qw l/s	26.7	25.2	23.6	22.0	12.7	12.1	22.6	21.3	20.0	18.5	12.0	11.4
	dpw kPa	47	42	37	32	11	10	52	46	40	35	14	13
15	CC kW	583	551	517	481	280	268	493	465	435	275	263	251
	PI kW	143	153	165	178	86.1	89.9	131	141	153	83.1	86.8	90.9
	qw l/s	28.0	26.5	24.8	23.1	13.4	12.9	23.7	22.4	20.9	13.2	12.6	12.0
	dpw kPa	52	46	40	35	12	11	57	51	44	18	16	15

EWAQ F-SS

		410						480					
Twout	Ta	25	30	35	40	43	46	25	30	35	40	43	46
5	CC kW	436	412	386	358	341	196	515	486	456	423	401	290
	PI kW	129	139	151	165	174	84	154	168	183	201	212	139
	qw l/s	20.9	19.7	18.5	17.1	16.3	9.3	24.6	23.2	21.8	20.2	19.2	13.8
	dpw kPa	37	33	29	25	23	7	40	36	31	27	24	13
7	CC kW	460	434	407	378	359	208	542	512	480	445	423	307
	PI kW	132	142	154	167	177	84.8	157	171	187	205	216	141
	qw l/s	22.0	20.8	19.5	18.1	17.2	9.9	26.0	24.5	23.0	21.3	20.2	14.7
	dpw kPa	41	37	32	28	25	8	44	40	35	30	27	14
9	CC kW	483	457	428	397	378	220	571	539	505	468	340	324
	PI kW	135	145	157	170	179	85.6	161	175	191	208	135	143
	qw l/s	23.2	21.9	20.5	19.0	18.1	10.5	27.3	25.8	24.2	22.4	16.3	15.5
	dpw kPa	46	41	36	31	28	10	49	44	38	33	17	16
11	CC kW	508	480	450	418	244	233	599	566	530	492	359	342
	PI kW	137	148	159	173	82.5	86.4	165	179	195	213	137	145
	qw l/s	24.4	23.0	21.6	20.0	11.7	11.2	28.8	27.1	25.4	23.6	17.2	16.4
	dpw kPa	51	45	40	34	12	11	54	48	42	37	19	18
13	CC kW	532	503	472	438	258	247	628	593	555	515	378	360
	PI kW	140	150	162	176	83.4	87.3	169	183	199	217	140	147
	qw l/s	25.6	24.2	22.6	21.0	12.4	11.8	30.2	28.5	26.7	24.7	18.1	17.3
	dpw kPa	56	50	44	38	13	12	60	53	47	40	22	20
15	CC kW	557	527	494	459	273	261	658	621	581	416	398	379
	PI kW	143	153	165	179	84.2	88.1	173	187	204	135	142	149
	qw l/s	26.8	25.3	23.7	22.1	13.1	12.5	31.6	29.8	27.9	20.0	19.1	18.2
	dpw kPa	61	55	48	42	15	13	66	58	51	26	24	22

		550						610					
Twout	Ta	25	30	35	40	43	46	25	30	35	40	43	46
5	CC kW	588	557	523	487	464	380	651	616	579	539	513	368
	PI kW	173	187	203	222	234	195	193	208	225	245	258	171
	qw l/s	28.1	26.6	25.0	23.3	22.2	18.2	31.2	29.5	27.7	25.8	24.5	17.6
	dpw kPa	52	47	41	36	32	22	64	57	50	44	40	20
7	CC kW	620	587	551	513	489	352	685	649	609	567	541	390
	PI kW	176	191	207	225	237	157	197	212	229	249	262	173
	qw l/s	29.7	28.1	26.4	24.6	23.4	16.8	32.8	31.1	29.2	27.2	25.9	18.6
	dpw kPa	58	52	46	40	36	19	71	64	56	49	44	23
9	CC kW	652	618	580	540	515	372	720	682	641	597	569	412
	PI kW	180	194	210	229	241	159	201	216	233	253	266	175
	qw l/s	31.3	29.6	27.8	25.9	24.7	17.8	34.6	32.7	30.7	28.6	27.3	19.7
	dpw kPa	64	58	51	44	40	21	79	70	62	54	49	26
11	CC kW	685	649	610	568	470	393	756	716	673	627	598	435
	PI kW	184	198	214	233	193	161	205	220	237	257	270	177
	qw l/s	32.9	31.2	29.3	27.2	22.5	18.8	36.3	34.4	32.3	30.1	28.7	20.9
	dpw kPa	71	64	56	49	33	23	87	78	69	60	54	29
13	CC kW	719	680	640	596	495	415	792	750	706	658	481	459
	PI kW	188	202	218	237	196	163	209	224	241	261	171	179
	qw l/s	34.6	32.7	30.7	28.6	23.7	19.9	38.1	36.1	33.9	31.6	23.1	22.0
	dpw kPa	78	70	62	54	37	26	96	86	76	66	35	32
15	CC kW	753	713	670	624	457	437	830	786	739	689	507	484
	PI kW	192	206	223	241	157	165	213	228	245	265	173	181
	qw l/s	36.3	34.3	32.2	30.0	22.0	21.0	40.0	37.9	35.6	33.2	24.3	23.2
	dpw kPa	86	77	68	59	32	29	105	94	83	72	39	35

Fluid: Water

Ta: Condenser inlet air temperature; Twout: Evaporator leaving water temperature (Δt 5°C)

CC: Cooling capacity; PI: Power input; qw: Fluid flow rate; dpw: Fluid pressure drop

* For working condition where dpw value is "Italic-Red Color" please contact factory

EWAQ F-SL

		210						230					
Twout	Ta	25	30	35	40	43	46	25	30	35	40	43	46
5	CC kW	219	207	195	182	174	165	239	226	212	197	188	117
	PI kW	61	66	72	79	83.7	89	70.3	76.4	83.3	91.2	96.5	52.6
	qw l/s	10.5	9.9	9.3	8.7	8.3	7.9	11.4	10.8	10.1	9.4	9.0	5.6
	dpw kPa	41	37	33	29	26	24	49	44	39	34	31	12
7	CC kW	232	219	206	192	184	175	252	239	224	208	199	125
	PI kW	62.2	67.3	73.3	80.4	85.2	90.5	71.8	77.9	84.9	92.9	98.2	53.2
	qw l/s	11.1	10.5	9.9	9.2	8.8	8.4	12.1	11.4	10.7	10.0	9.5	6.0
	dpw kPa	46	42	37	32	29	26	55	49	43	38	34	13
9	CC kW	245	231	218	203	194	110	266	251	236	220	210	132
	PI kW	63.5	68.7	74.8	81.9	86.8	42.8	73.4	79.5	86.5	94.6	99.9	53.7
	qw l/s	11.7	11.1	10.4	9.7	9.3	5.3	12.8	12.1	11.3	10.5	10.0	6.3
	dpw kPa	52	46	41	36	33	11	61	55	48	42	38	15
11	CC kW	258	244	230	215	205	117	280	265	249	232	221	140
	PI kW	64.9	70.1	76.3	83.5	88.4	43.3	75	81.2	88.3	96.4	102	54.4
	qw l/s	12.4	11.7	11.0	10.3	9.8	5.6	13.4	12.7	11.9	11.1	10.6	6.7
	dpw kPa	58	52	46	40	37	12	68	61	54	47	42	17
13	CC kW	271	257	242	226	216	125	294	278	261	243	155	148
	PI kW	66.4	71.7	77.9	85.2	90.1	43.8	76.7	83	90.2	98.3	52.4	55
	qw l/s	13.1	12.4	11.6	10.9	10.4	6.0	14.1	13.4	12.6	11.7	7.4	7.1
	dpw kPa	64	58	51	44	41	13	75	67	59	52	21	19
15	CC kW	285	270	255	238	228	132	308	292	274	256	164	157
	PI kW	67.9	73.3	79.6	86.9	91.9	44.3	78.5	84.9	92.1	100	53	55.6
	qw l/s	13.7	13.0	12.2	11.4	10.9	6.3	14.8	14.0	13.2	12.3	7.9	7.5
	dpw kPa	71	64	56	49	45	15	83	74	66	57	23	21

		250						280					
Twout	Ta	25	30	35	40	43	46	25	30	35	40	43	46
5	CC kW	264	249	234	218	208	119	302	286	269	250	238	151
	PI kW	77.6	84.3	91.9	100	106	51.7	90.1	97.9	107	117	123	68.1
	qw l/s	12.6	11.9	11.2	10.4	9.9	5.7	14.5	13.7	12.9	12.0	11.4	7.2
	dpw kPa	60	54	47	41	37	12	64	57	50	44	39	16
7	CC kW	278	263	247	230	219	127	318	301	283	264	251	160
	PI kW	79.3	86	93.6	102	108	52.2	92	99.8	109	119	125	68.9
	qw l/s	13.3	12.6	11.8	11.0	10.5	6.1	15.3	14.4	13.6	12.6	12.0	7.7
	dpw kPa	67	60	53	46	42	14	71	63	56	49	44	18
9	CC kW	293	277	260	243	231	134	335	317	298	277	264	170
	PI kW	80.9	87.7	95.4	104	109	52.7	94	102	111	121	127	69.7
	qw l/s	14.1	13.3	12.5	11.6	11.1	6.4	16.1	15.2	14.3	13.3	12.7	8.1
	dpw kPa	75	67	59	51	46	16	79	70	62	54	49	20
11	CC kW	308	291	274	255	243	143	352	333	313	291	188	179
	PI kW	82.7	89.5	97.2	106	111	53.3	96.1	104	113	123	67.1	70.6
	qw l/s	14.8	14.0	13.2	12.3	11.7	6.8	16.9	16.0	15.0	14.0	9.0	8.6
	dpw kPa	83	74	65	57	51	18	87	78	69	60	25	23
13	CC kW	323	306	287	268	158	151	369	349	328	306	198	189
	PI kW	84.5	91.4	99.1	108	51.3	53.9	98.3	106	115	126	68	71.6
	qw l/s	15.5	14.7	13.8	12.9	7.6	7.2	17.8	16.8	15.8	14.7	9.5	9.1
	dpw kPa	91	82	72	63	22	20	96	86	76	66	27	25
15	CC kW	338	320	301	281	167	160	386	365	344	320	209	200
	PI kW	86.4	93.3	101	110	51.9	54.5	101	109	118	128	69.1	72.6
	qw l/s	16.3	15.4	14.5	13.5	8.0	7.7	18.6	17.6	16.6	15.4	10.0	9.6
	dpw kPa	100	90	79	69	24	22	105	94	83	72	31	28

EWAQ F-SL

		320						350					
Twout	Ta	25	30	35	40	43	46	25	30	35	40	43	46
5	CC kW	334	316	298	277	264	153	386	365	341	316	300	190
	PI kW	100	109	119	131	138	66.8	117	127	139	151	160	86.3
	qw l/s	16.0	15.2	14.3	13.3	12.6	7.3	18.5	17.4	16.3	15.1	14.3	9.1
	dpw kPa	79	71	62	54	49	16	34	31	27	23	21	8
7	CC kW	351	333	313	292	278	162	407	384	359	333	317	201
	PI kW	103	111	122	133	141	67.5	120	130	141	154	163	87.1
	qw l/s	16.9	16.0	15.0	14.0	13.3	7.8	19.5	18.4	17.2	15.9	15.1	9.6
	dpw kPa	87	78	69	60	55	19	38	34	30	26	23	9
9	CC kW	369	350	329	307	292	172	428	404	378	350	223	213
	PI kW	105	114	124	136	143	68.3	123	132	144	157	83.9	88.1
	qw l/s	17.8	16.8	15.8	14.7	14.0	8.2	20.5	19.3	18.1	16.8	10.7	10.2
	dpw kPa	97	87	77	67	60	21	43	38	33	28	12	11
11	CC kW	387	367	346	322	190	182	449	424	397	368	236	225
	PI kW	107	116	127	138	65.7	69.2	125	135	147	159	84.9	89
	qw l/s	18.7	17.7	16.6	15.5	9.1	8.7	21.6	20.3	19.0	17.6	11.3	10.8
	dpw kPa	107	96	85	74	26	23	47	42	37	31	13	12
13	CC kW	406	385	362	337	201	192	471	444	416	386	249	238
	PI kW	110	119	129	141	66.6	70.1	128	138	149	162	85.8	89.9
	qw l/s	19.6	18.5	17.4	16.2	9.6	9.2	22.6	21.3	20.0	18.5	12.0	11.4
	dpw kPa	118	105	93	81	29	26	52	46	40	35	14	13
15	CC kW	425	402	379	353	212	203	493	465	435	275	263	251
	PI kW	113	122	132	144	67.6	71	131	141	153	83.1	86.8	90.9
	qw l/s	20.5	19.4	18.3	17.0	10.2	9.7	23.7	22.4	20.9	13.2	12.6	12.0
	dpw kPa	129	116	102	89	32	29	57	51	44	18	16	15

		400						360					
Twout	Ta	25	30	35	40	43	46	25	30	35	40	43	46
5	CC kW	436	412	386	358	341	196	386	365	341	316	300	190
	PI kW	129	139	151	165	174	84	117	127	139	151	160	86.3
	qw l/s	20.9	19.7	18.5	17.1	16.3	9.3	18.5	17.4	16.3	15.1	14.3	9.1
	dpw kPa	37	33	29	25	23	7	34	31	27	23	21	8
7	CC kW	460	434	407	378	359	208	407	384	359	333	317	201
	PI kW	132	142	154	167	177	84.8	120	130	141	154	163	87.1
	qw l/s	22.0	20.8	19.5	18.1	17.2	9.9	19.5	18.4	17.2	15.9	15.1	9.6
	dpw kPa	41	37	32	28	25	8	38	34	30	26	23	9
9	CC kW	483	457	428	397	378	220	428	404	378	350	223	213
	PI kW	135	145	157	170	179	85.6	123	132	144	157	83.9	88.1
	qw l/s	23.2	21.9	20.5	19.0	18.1	10.5	20.5	19.3	18.1	16.8	10.7	10.2
	dpw kPa	46	41	36	31	28	10	43	38	33	28	12	11
11	CC kW	508	480	450	418	244	233	449	424	397	368	236	225
	PI kW	137	148	159	173	82.5	86.4	125	135	147	159	84.9	89
	qw l/s	24.4	23.0	21.6	20.0	11.7	11.2	21.6	20.3	19.0	17.6	11.3	10.8
	dpw kPa	51	45	40	34	12	11	47	42	37	31	13	12
13	CC kW	532	503	472	438	258	247	471	444	416	386	249	238
	PI kW	140	150	162	176	83.4	87.3	128	138	149	162	85.8	89.9
	qw l/s	25.6	24.2	22.6	21.0	12.4	11.8	22.6	21.3	20.0	18.5	12.0	11.4
	dpw kPa	56	50	44	38	13	12	52	46	40	35	14	13
15	CC kW	557	527	494	459	273	261	493	465	435	275	263	251
	PI kW	143	153	165	179	84.2	88.1	131	141	153	83.1	86.8	90.9
	qw l/s	26.8	25.3	23.7	22.1	13.1	12.5	23.7	22.4	20.9	13.2	12.6	12.0
	dpw kPa	61	55	48	42	15	13	57	51	44	18	16	15

EWAQ F-SL

		410						480					
Twout	Ta	25	30	35	40	43	46	25	30	35	40	43	46
5	CC kW	436	412	386	358	341	196	515	486	456	423	401	290
	PI kW	129	139	151	165	174	84	154	168	183	201	212	139
	qw l/s	20.9	19.7	18.5	17.1	16.3	9.3	24.6	23.2	21.8	20.2	19.2	13.8
	dpw kPa	37	33	29	25	23	7	40	36	31	27	24	13
7	CC kW	460	434	407	378	359	208	542	512	480	445	423	307
	PI kW	132	142	154	167	177	84.8	157	171	187	205	216	141
	qw l/s	22.0	20.8	19.5	18.1	17.2	9.9	26.0	24.5	23.0	21.3	20.2	14.7
	dpw kPa	41	37	32	28	25	8	44	40	35	30	27	14
9	CC kW	483	457	428	397	378	220	571	539	505	468	340	324
	PI kW	135	145	157	170	179	85.6	161	175	191	208	135	143
	qw l/s	23.2	21.9	20.5	19.0	18.1	10.5	27.3	25.8	24.2	22.4	16.3	15.5
	dpw kPa	46	41	36	31	28	10	49	44	38	33	17	16
11	CC kW	508	480	450	418	244	233	599	566	530	492	359	342
	PI kW	137	148	159	173	82.5	86.4	165	179	195	213	137	145
	qw l/s	24.4	23.0	21.6	20.0	11.7	11.2	28.8	27.1	25.4	23.6	17.2	16.4
	dpw kPa	51	45	40	34	12	11	54	48	42	37	19	18
13	CC kW	532	503	472	438	258	247	628	593	555	515	378	360
	PI kW	140	150	162	176	83.4	87.3	169	183	199	217	140	147
	qw l/s	25.6	24.2	22.6	21.0	12.4	11.8	30.2	28.5	26.7	24.7	18.1	17.3
	dpw kPa	56	50	44	38	13	12	60	53	47	40	22	20
15	CC kW	557	527	494	459	273	261	658	621	581	416	398	379
	PI kW	143	153	165	179	84.2	88.1	173	187	204	135	142	149
	qw l/s	26.8	25.3	23.7	22.1	13.1	12.5	31.6	29.8	27.9	20.0	19.1	18.2
	dpw kPa	61	55	48	42	15	13	66	58	51	26	24	22

		550						610					
Twout	Ta	25	30	35	40	43	46	25	30	35	40	43	46
5	CC kW	588	557	523	487	464	380	651	616	579	539	513	368
	PI kW	173	187	203	222	234	195	193	208	225	245	258	171
	qw l/s	28.1	26.6	25.0	23.3	22.2	18.2	31.2	29.5	27.7	25.8	24.5	17.6
	dpw kPa	52	47	41	36	32	22	64	57	50	44	40	20
7	CC kW	620	587	551	513	489	352	685	649	609	567	541	390
	PI kW	176	191	207	225	237	157	197	212	229	249	262	173
	qw l/s	29.7	28.1	26.4	24.6	23.4	16.8	32.8	31.1	29.2	27.2	25.9	18.6
	dpw kPa	58	52	46	40	36	19	71	64	56	49	44	23
9	CC kW	652	618	580	540	515	372	720	682	641	597	569	412
	PI kW	180	194	210	229	241	159	201	216	233	253	266	175
	qw l/s	31.3	29.6	27.8	25.9	24.7	17.8	34.6	32.7	30.7	28.6	27.3	19.7
	dpw kPa	64	58	51	44	40	21	79	70	62	54	49	26
11	CC kW	685	649	610	568	470	393	756	716	673	627	598	435
	PI kW	184	198	214	233	193	161	205	220	237	257	270	177
	qw l/s	32.9	31.2	29.3	27.2	22.5	18.8	36.3	34.4	32.3	30.1	28.7	20.9
	dpw kPa	71	64	56	49	33	23	87	78	69	60	54	29
13	CC kW	719	680	640	596	495	415	792	750	706	658	481	459
	PI kW	188	202	218	237	196	163	209	224	241	261	171	179
	qw l/s	34.6	32.7	30.7	28.6	23.7	19.9	38.1	36.1	33.9	31.6	23.1	22.0
	dpw kPa	78	70	62	54	37	26	96	86	76	66	35	32
15	CC kW	753	713	670	624	457	437	830	786	739	689	507	484
	PI kW	192	206	223	241	157	165	213	228	245	265	173	181
	qw l/s	36.3	34.3	32.2	30.0	22.0	21.0	40.0	37.9	35.6	33.2	24.3	23.2
	dpw kPa	86	77	68	59	32	29	105	94	83	72	39	35

Fluid: Water

Ta: Condenser inlet air temperature; Twout: Evaporator leaving water temperature (Δt 5°C)

CC: Cooling capacity; PI: Power input; qw: Fluid flow rate; dpw: Fluid pressure drop

* For working condition where dpw value is "Italic-Red Color" please contact factory

EWAQ F-SR

		200						220					
Twout	Ta	25	30	35	40	43	46	25	30	35	40	43	46
5	CC kW	212	200	187	174	166	95.1	231	217	203	188	119	114
	PI kW	59.9	65.3	71.8	79.3	84.5	39	70.1	76.7	84.1	92.6	47.5	50.2
	qw l/s	10.1	9.6	9.0	8.3	7.9	4.5	11.0	10.4	9.7	9.0	5.7	5.4
	dpw kPa	39	35	30	26	24	8	46	41	36	31	12	11
7	CC kW	224	211	198	184	175	101	243	229	214	198	127	121
	PI kW	61.3	66.9	73.4	81	86.2	39.5	71.9	78.5	86	94.5	48.2	50.9
	qw l/s	10.7	10.1	9.5	8.8	8.4	4.8	11.6	11.0	10.2	9.5	6.1	5.8
	dpw kPa	43	39	34	29	27	9	51	45	40	34	14	13
9	CC kW	236	223	209	194	113	108	256	241	225	208	134	128
	PI kW	62.8	68.4	75	82.8	37.8	40	73.7	80.3	87.9	96.6	48.8	51.5
	qw l/s	11.3	10.7	10.0	9.3	5.4	5.2	12.3	11.6	10.8	10.0	6.4	6.1
	dpw kPa	48	43	38	33	11	10	57	50	44	38	16	14
11	CC kW	249	235	220	205	120	114	269	253	237	148	142	136
	PI kW	64.4	70.1	76.8	84.6	38.3	40.6	75.6	82.3	90	47	49.5	52.2
	qw l/s	11.9	11.3	10.6	9.8	5.7	5.5	12.9	12.1	11.4	7.1	6.8	6.5
	dpw kPa	54	48	42	36	12	11	63	56	49	19	18	16
13	CC kW	261	247	231	215	127	121	282	265	248	157	150	143
	PI kW	66.1	71.9	78.7	86.6	38.9	41.1	77.6	84.4	92.1	47.7	50.2	53
	qw l/s	12.6	11.9	11.1	10.3	6.1	5.8	13.5	12.8	11.9	7.5	7.2	6.9
	dpw kPa	59	53	47	40	14	13	69	61	54	21	20	18
15	CC kW	274	259	243	140	134	129	295	278	260	165	158	151
	PI kW	67.8	73.7	80.6	37.4	39.5	41.8	79.6	86.5	94.3	48.4	51	53.7
	qw l/s	13.2	12.5	11.7	6.7	6.4	6.2	14.2	13.4	12.5	7.9	7.6	7.3
	dpw kPa	66	58	51	17	16	14	76	67	59	24	22	20

		240						270					
Twout	Ta	25	30	35	40	43	46	25	30	35	40	43	46
5	CC kW	253	239	223	207	121	116	291	275	257	238	154	147
	PI kW	78.4	85.6	93.7	103	46.7	49.3	90.1	98.5	108	119	61.7	65.4
	qw l/s	12.1	11.4	10.7	9.9	5.8	5.5	14.0	13.2	12.3	11.4	7.4	7.0
	dpw kPa	56	49	43	37	13	12	59	53	46	39	16	15
7	CC kW	267	251	235	218	129	123	307	289	270	250	163	155
	PI kW	80.3	87.5	95.6	105	47.3	49.9	92.3	101	110	121	62.6	66.2
	qw l/s	12.8	12.0	11.3	10.4	6.2	5.9	14.7	13.9	13.0	12.0	7.8	7.4
	dpw kPa	62	55	48	41	14	13	66	58	51	44	19	17
9	CC kW	280	264	247	229	137	130	322	304	284	263	172	164
	PI kW	82.2	89.5	97.7	107	47.9	50.5	94.6	103	113	123	63.5	67.2
	qw l/s	13.5	12.7	11.9	11.0	6.5	6.2	15.5	14.6	13.6	12.6	8.3	7.9
	dpw kPa	68	61	53	45	16	15	73	65	56	48	21	19
11	CC kW	294	277	259	151	145	138	338	318	298	190	182	173
	PI kW	84.3	91.6	99.8	46	48.5	51.2	97	106	115	61.2	64.6	68.2
	qw l/s	14.1	13.3	12.5	7.2	6.9	6.6	16.2	15.3	14.3	9.1	8.7	8.3
	dpw kPa	75	67	58	20	18	17	80	71	62	25	23	21
13	CC kW	308	290	272	159	153	146	353	333	312	200	192	183
	PI kW	86.4	93.8	102	46.7	49.2	51.8	99.5	108	118	62.2	65.7	69.3
	qw l/s	14.8	14.0	13.1	7.6	7.3	7.0	17.0	16.0	15.0	9.6	9.2	8.8
	dpw kPa	83	74	64	22	20	19	88	78	68	28	26	23
15	CC kW	322	304	284	168	161	154	369	348	325	211	202	192
	PI kW	88.6	96	104	47.4	49.9	52.5	102	111	121	63.4	66.8	70.5
	qw l/s	15.5	14.6	13.7	8.1	7.7	7.4	17.8	16.8	15.7	10.1	9.7	9.2
	dpw kPa	91	81	71	25	23	21	96	85	75	31	29	26

EWAQ F-SR

		300						330					
Twout	Ta	25	30	35	40	43	46	25	30	35	40	43	46
5	CC kW	321	303	283	262	156	149	371	349	325	299	193	184
	PI kW	102	111	122	135	60.5	64.1	118	129	141	155	78.8	83.2
	qw l/s	15.4	14.5	13.6	12.5	7.4	7.1	17.7	16.7	15.5	14.3	9.2	8.8
	dpw kPa	73	65	56	48	17	15	32	28	24	21	9	8
7	CC kW	337	318	298	275	165	157	390	366	341	214	204	194
	PI kW	104	114	125	137	61.3	64.9	121	132	144	75.8	79.8	84.2
	qw l/s	16.2	15.3	14.3	13.2	7.9	7.5	18.7	17.5	16.3	10.2	9.8	9.3
	dpw kPa	80	72	63	53	19	17	35	31	27	11	10	9
9	CC kW	354	334	312	182	175	167	409	384	358	226	216	206
	PI kW	107	117	128	58.9	62.2	65.8	124	135	147	76.9	80.8	85.2
	qw l/s	17.0	16.0	15.0	8.7	8.4	8.0	19.6	18.4	17.1	10.8	10.3	9.8
	dpw kPa	89	79	69	23	21	20	39	34	30	12	11	10
11	CC kW	371	350	327	192	184	176	429	403	375	239	228	217
	PI kW	110	120	131	59.8	63.1	66.7	127	138	150	77.9	81.9	86.2
	qw l/s	17.8	16.8	15.7	9.2	8.8	8.4	20.6	19.3	18.0	11.4	10.9	10.4
	dpw kPa	98	87	76	26	24	22	43	38	33	13	12	11
13	CC kW	388	365	342	203	194	186	449	421	392	252	241	229
	PI kW	113	123	134	60.8	64.2	67.8	130	141	154	79.1	83	87.3
	qw l/s	18.7	17.6	16.4	9.7	9.3	8.9	21.5	20.2	18.8	12.1	11.5	11.0
	dpw kPa	107	95	83	29	27	24	47	41	36	15	13	12
15	CC kW	405	381	356	214	205	196	469	440	409	265	253	241
	PI kW	116	126	137	61.9	65.3	68.9	134	145	157	80.2	84.1	88.3
	qw l/s	19.5	18.4	17.2	10.3	9.8	9.4	22.5	21.1	19.7	12.7	12.2	11.6
	dpw kPa	117	104	90	32	30	27	51	45	39	16	15	14

		370						340					
Twout	Ta	25	30	35	40	43	46	25	30	35	40	43	46
5	CC kW	417	392	365	336	199	189	371	349	325	299	193	184
	PI kW	131	143	156	171	76.7	80.9	118	129	141	155	78.8	83.2
	qw l/s	19.9	18.7	17.4	16.1	9.5	9.0	17.7	16.7	15.5	14.3	9.2	8.8
	dpw kPa	34	30	26	22	8	7	32	28	24	21	9	8
7	CC kW	438	411	383	353	211	201	390	366	341	214	204	194
	PI kW	135	146	159	174	77.6	81.8	121	132	144	75.8	79.8	84.2
	qw l/s	21.0	19.7	18.3	16.9	10.1	9.6	18.7	17.5	16.3	10.2	9.8	9.3
	dpw kPa	38	33	29	24	9	8	35	31	27	11	10	9
9	CC kW	460	432	402	233	223	212	409	384	358	226	216	206
	PI kW	138	149	162	74.7	78.6	82.7	124	135	147	76.9	80.8	85.2
	qw l/s	22.0	20.7	19.3	11.1	10.7	10.2	19.6	18.4	17.1	10.8	10.3	9.8
	dpw kPa	41	37	32	11	10	9	39	34	30	12	11	10
11	CC kW	482	452	422	246	236	225	429	403	375	239	228	217
	PI kW	141	152	165	75.7	79.5	83.7	127	138	150	77.9	81.9	86.2
	qw l/s	23.1	21.7	20.2	11.8	11.3	10.8	20.6	19.3	18.0	11.4	10.9	10.4
	dpw kPa	46	40	35	12	11	10	43	38	33	13	12	11
13	CC kW	504	473	441	260	249	237	449	421	392	252	241	229
	PI kW	144	156	169	76.7	80.5	84.7	130	141	154	79.1	83	87.3
	qw l/s	24.2	22.7	21.2	12.5	11.9	11.4	21.5	20.2	18.8	12.1	11.5	11.0
	dpw kPa	50	44	38	13	12	11	47	41	36	15	13	12
15	CC kW	526	495	461	274	263	250	469	440	409	265	253	241
	PI kW	148	159	172	77.8	81.5	85.6	134	145	157	80.2	84.1	88.3
	qw l/s	25.3	23.8	22.1	13.2	12.6	12.0	22.5	21.1	19.7	12.7	12.2	11.6
	dpw kPa	55	48	42	15	14	12	51	45	39	16	15	14

EWAQ F-SR

		380						460					
Twout	Ta	25	30	35	40	43	46	25	30	35	40	43	46
5	CC kW	417	392	365	336	199	189	495	465	434	399	293	278
	PI kW	131	143	156	171	76.7	80.9	156	170	187	206	129	137
	qw l/s	19.9	18.7	17.4	16.1	9.5	9.0	23.7	22.2	20.7	19.1	14.0	13.3
	dpw kPa	34	30	26	22	8	7	37	33	28	24	13	12
7	CC kW	438	411	383	353	211	201	520	489	456	325	310	294
	PI kW	135	146	159	174	77.6	81.8	159	174	191	124	131	139
	qw l/s	21.0	19.7	18.3	16.9	10.1	9.6	24.9	23.4	21.8	15.5	14.8	14.1
	dpw kPa	38	33	29	24	9	8	41	36	31	16	14	13
9	CC kW	460	432	402	233	223	212	546	514	478	343	327	310
	PI kW	138	149	162	74.7	78.6	82.7	164	179	196	126	133	141
	qw l/s	22.0	20.7	19.3	11.1	10.7	10.2	26.2	24.6	22.9	16.4	15.6	14.9
	dpw kPa	41	37	32	11	10	9	45	40	35	18	16	15
11	CC kW	482	452	422	246	236	225	572	538	501	361	344	194
	PI kW	141	152	165	75.7	79.5	83.7	168	183	200	128	136	64.4
	qw l/s	23.1	21.7	20.2	11.8	11.3	10.8	27.5	25.8	24.0	17.3	16.5	9.3
	dpw kPa	46	40	35	12	11	10	50	44	38	20	18	6
13	CC kW	504	473	441	260	249	237	599	562	523	380	362	205
	PI kW	144	156	169	76.7	80.5	84.7	173	188	205	131	138	65.2
	qw l/s	24.2	22.7	21.2	12.5	11.9	11.4	28.8	27.0	25.1	18.2	17.4	9.8
	dpw kPa	50	44	38	13	12	11	54	48	41	22	20	6
15	CC kW	526	495	461	274	263	250	625	587	546	399	380	217
	PI kW	148	159	172	77.8	81.5	85.6	178	193	210	134	141	66.1
	qw l/s	25.3	23.8	22.1	13.2	12.6	12.0	30.1	28.2	26.2	19.1	18.2	10.4
	dpw kPa	55	48	42	15	14	12	59	52	45	24	22	7

		530						580					
Twout	Ta	25	30	35	40	43	46	25	30	35	40	43	46
5	CC kW	568	536	501	464	384	321	626	590	552	510	372	354
	PI kW	172	187	204	224	184	151	193	209	228	250	159	168
	qw l/s	27.2	25.6	24.0	22.2	18.3	15.3	30.0	28.2	26.4	24.4	17.8	16.9
	dpw kPa	49	43	38	32	22	15	59	52	46	39	21	19
7	CC kW	598	564	527	488	357	339	658	620	580	537	394	374
	PI kW	176	191	208	228	145	153	198	214	233	254	161	170
	qw l/s	28.6	27.0	25.2	23.3	17.0	16.2	31.5	29.7	27.8	25.7	18.8	17.9
	dpw kPa	54	48	42	36	19	17	65	58	51	43	23	21
9	CC kW	628	592	554	513	377	358	691	651	609	563	416	395
	PI kW	180	195	213	232	147	155	202	219	237	259	163	172
	qw l/s	30.1	28.4	26.5	24.6	18.0	17.1	33.1	31.2	29.2	27.0	19.9	18.9
	dpw kPa	60	53	46	40	21	19	72	64	56	48	26	24
11	CC kW	659	621	581	471	397	378	724	682	638	591	438	417
	PI kW	184	199	217	183	149	157	207	223	242	263	166	175
	qw l/s	31.6	29.8	27.9	22.6	19.0	18.1	34.8	32.8	30.6	28.3	21.0	20.0
	dpw kPa	66	58	51	33	24	22	79	71	62	53	29	26
13	CC kW	690	650	608	494	418	398	757	714	668	483	461	439
	PI kW	189	204	222	187	151	160	211	228	247	160	168	177
	qw l/s	33.2	31.3	29.2	23.7	20.0	19.1	36.4	34.3	32.1	23.2	22.1	21.1
	dpw kPa	72	64	56	37	26	24	87	77	68	35	32	29
15	CC kW	721	680	636	460	440	328	791	746	698	507	485	276
	PI kW	193	209	226	146	154	112	216	233	252	162	170	81.6
	qw l/s	34.7	32.7	30.6	22.1	21.1	15.7	38.1	35.9	33.6	24.4	23.3	13.2
	dpw kPa	79	70	61	32	29	16	95	85	74	39	36	12

Fluid: Water

Ta: Condenser inlet air temperature; Twout: Evaporator leaving water temperature (Δt 5°C)

CC: Cooling capacity; PI: Power input; qw: Fluid flow rate; dpw: Fluid pressure drop

* For working condition where dpw value is "Italic-Red Color" please contact factory

EWAQ F-XS

		170						200					
Twout	Ta	25	30	35	40	43	46	25	30	35	40	43	46
5	CC kW	179	170	161	151	144	137	205	195	184	172	164	157
	PI kW	46.2	49.9	54	58.7	61.8	65.2	52.3	56.4	61.3	66.8	70.6	74.7
	qw l/s	8.6	8.1	7.7	7.2	6.9	6.6	9.8	9.3	8.8	8.2	7.9	7.5
	dpw kPa	28	25	22	20	18	16	30	27	24	21	19	17
7	CC kW	190	180	170	160	153	146	217	206	194	182	174	166
	PI kW	46.9	50.6	54.8	59.5	62.6	66	53.2	57.4	62.2	67.8	71.6	75.7
	qw l/s	9.1	8.6	8.2	7.6	7.3	7.0	10.4	9.9	9.3	8.7	8.3	8.0
	dpw kPa	31	28	25	22	20	18	33	30	27	23	21	19
9	CC kW	201	191	180	169	162	154	230	218	206	193	185	176
	PI kW	47.7	51.5	55.6	60.3	63.5	66.8	54.1	58.4	63.3	68.9	72.7	76.8
	qw l/s	9.6	9.1	8.6	8.1	7.7	7.4	11.0	10.5	9.9	9.2	8.8	8.4
	dpw kPa	35	31	28	25	23	21	37	34	30	26	24	22
11	CC kW	212	201	190	178	170	163	243	230	217	204	195	186
	PI kW	48.5	52.3	56.5	61.2	64.3	67.7	55.1	59.4	64.3	70	73.8	77.9
	qw l/s	10.2	9.6	9.1	8.5	8.2	7.8	11.6	11.0	10.4	9.8	9.4	8.9
	dpw kPa	39	35	31	28	25	23	42	37	33	29	27	24
13	CC kW	223	212	200	188	180	171	256	243	229	215	206	197
	PI kW	49.4	53.2	57.4	62.1	65.2	68.6	56.2	60.5	65.4	71.1	74.9	79.1
	qw l/s	10.7	10.2	9.6	9.0	8.6	8.2	12.3	11.7	11.0	10.3	9.9	9.4
	dpw kPa	43	39	35	31	28	26	46	42	37	33	30	27
15	CC kW	235	223	211	197	189	180	270	256	242	226	217	207
	PI kW	50.3	54.1	58.3	63	66.2	69.5	57.3	61.6	66.6	72.3	76.2	80.3
	qw l/s	11.3	10.7	10.1	9.5	9.1	8.7	13.0	12.3	11.6	10.9	10.4	10.0
	dpw kPa	48	43	39	34	31	28	52	46	41	36	33	30

		220						250					
Twout	Ta	25	30	35	40	43	46	25	30	35	40	43	46
5	CC kW	233	220	208	195	186	178	257	244	231	216	207	198
	PI kW	59.5	64.1	69.5	75.9	80.2	85	65.8	71.1	77.2	84.1	88.8	93.9
	qw l/s	11.1	10.5	9.9	9.3	8.9	8.5	12.3	11.7	11.0	10.3	9.9	9.5
	dpw kPa	37	33	30	26	24	22	47	42	37	33	30	28
7	CC kW	247	234	220	207	198	189	273	259	244	229	220	210
	PI kW	60.5	65.2	70.6	77	81.4	86.2	66.9	72.2	78.3	85.3	90	95.1
	qw l/s	11.8	11.2	10.5	9.9	9.5	9.0	13.1	12.4	11.7	11.0	10.5	10.1
	dpw kPa	42	38	34	29	27	25	52	47	42	37	34	31
9	CC kW	261	247	233	219	210	200	288	274	259	243	233	222
	PI kW	61.6	66.3	71.8	78.3	82.7	87.5	68.1	73.4	79.5	86.6	91.3	96.4
	qw l/s	12.5	11.9	11.2	10.5	10.0	9.6	13.8	13.1	12.4	11.6	11.2	10.7
	dpw kPa	47	42	38	33	30	28	59	53	47	42	38	35
11	CC kW	275	261	247	231	222	212	304	289	273	257	246	235
	PI kW	62.8	67.5	73	79.5	84	88.8	69.3	74.7	80.8	87.9	92.6	97.8
	qw l/s	13.2	12.5	11.8	11.1	10.6	10.2	14.6	13.9	13.1	12.3	11.8	11.3
	dpw kPa	53	47	42	37	34	31	65	59	53	47	43	39
13	CC kW	291	276	260	244	235	224	320	305	288	271	260	248
	PI kW	64	68.8	74.3	80.9	85.4	90.2	70.7	76	82.2	89.3	94	99.1
	qw l/s	14.0	13.3	12.5	11.7	11.3	10.8	15.4	14.7	13.9	13.0	12.5	11.9
	dpw kPa	59	53	47	41	38	35	73	66	59	52	48	44
15	CC kW	306	291	275	258	247	237	337	321	303	285	274	262
	PI kW	65.3	70.1	75.7	82.3	86.8	91.7	72	77.4	83.6	90.7	95.5	101
	qw l/s	14.7	14.0	13.2	12.4	11.9	11.4	16.2	15.4	14.6	13.7	13.2	12.6
	dpw kPa	65	59	52	46	43	39	81	73	65	58	53	49

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		310						350					
Twout	Ta	25	30	35	40	43	46	25	30	35	40	43	46
5	CC kW	334	317	299	279	267	254	376	357	337	315	300	286
	PI kW	85.2	92.4	101	110	116	122	95.8	104	113	124	131	139
	qw l/s	15.9	15.1	14.3	13.3	12.7	12.1	18.0	17.1	16.1	15.0	14.3	13.6
	dpw kPa	25	22	20	17	16	14	26	23	21	18	17	15
7	CC kW	353	335	316	296	283	269	398	377	356	333	318	302
	PI kW	86.7	93.9	102	111	117	124	97.6	106	115	126	133	141
	qw l/s	16.9	16.0	15.1	14.1	13.5	12.9	19.0	18.1	17.0	15.9	15.2	14.4
	dpw kPa	28	25	22	19	18	16	29	26	23	20	19	17
9	CC kW	373	354	334	312	299	284	420	398	376	351	335	319
	PI kW	88.3	95.5	104	113	119	126	99.5	108	117	128	135	143
	qw l/s	17.9	16.9	16.0	14.9	14.3	13.6	20.1	19.1	18.0	16.8	16.1	15.3
	dpw kPa	31	28	25	22	20	18	33	29	26	23	21	19
11	CC kW	393	373	352	329	315	300	442	420	396	370	353	336
	PI kW	90	97.2	106	115	121	128	102	110	119	130	137	145
	qw l/s	18.9	17.9	16.9	15.8	15.1	14.4	21.2	20.1	19.0	17.7	16.9	16.1
	dpw kPa	35	31	28	24	22	20	36	33	29	25	23	21
13	CC kW	414	393	371	347	332	316	466	442	416	389	372	210
	PI kW	91.7	99.1	107	117	123	130	104	112	122	133	140	69
	qw l/s	19.9	18.9	17.8	16.6	15.9	15.2	22.3	21.2	20.0	18.7	17.8	10.1
	dpw kPa	38	35	31	27	25	22	40	36	32	28	26	8
15	CC kW	436	414	390	365	349	217	489	464	437	408	390	222
	PI kW	93.6	101	109	119	125	70.5	106	114	124	135	142	69.9
	qw l/s	20.9	19.9	18.7	17.5	16.8	10.4	23.5	22.3	21.0	19.6	18.7	10.7
	dpw kPa	43	38	34	30	27	11	45	40	36	31	28	9

		320						360					
Twout	Ta	25	30	35	40	43	46	25	30	35	40	43	46
5	CC kW	334	317	299	279	267	254	376	357	337	315	300	286
	PI kW	85.2	92.4	101	110	116	122	95.8	104	113	124	131	139
	qw l/s	15.9	15.1	14.3	13.3	12.7	12.1	18.0	17.1	16.1	15.0	14.3	13.6
	dpw kPa	25	22	20	17	16	14	26	23	21	18	17	15
7	CC kW	353	335	316	296	283	269	398	377	356	333	318	302
	PI kW	86.7	93.9	102	111	117	124	97.6	106	115	126	133	141
	qw l/s	16.9	16.0	15.1	14.1	13.5	12.9	19.0	18.1	17.0	15.9	15.2	14.4
	dpw kPa	28	25	22	19	18	16	29	26	23	20	19	17
9	CC kW	373	354	334	312	299	284	420	398	376	351	335	319
	PI kW	88.3	95.5	104	113	119	126	99.5	108	117	128	135	143
	qw l/s	17.9	16.9	16.0	14.9	14.3	13.6	20.1	19.1	18.0	16.8	16.1	15.3
	dpw kPa	31	28	25	22	20	18	33	29	26	23	21	19
11	CC kW	393	373	352	329	315	300	442	420	396	370	353	336
	PI kW	90	97.2	106	115	121	128	102	110	119	130	137	145
	qw l/s	18.9	17.9	16.9	15.8	15.1	14.4	21.2	20.1	19.0	17.7	16.9	16.1
	dpw kPa	35	31	28	24	22	20	36	33	29	25	23	21
13	CC kW	414	393	371	347	332	316	466	442	416	389	372	210
	PI kW	91.7	99.1	107	117	123	130	104	112	122	133	140	69
	qw l/s	19.9	18.9	17.8	16.6	15.9	15.2	22.3	21.2	20.0	18.7	17.8	10.1
	dpw kPa	38	35	31	27	25	22	40	36	32	28	26	8
15	CC kW	436	414	390	365	349	217	489	464	437	408	390	222
	PI kW	93.6	101	109	119	125	70.5	106	114	124	135	142	69.9
	qw l/s	20.9	19.9	18.7	17.5	16.8	10.4	23.5	22.3	21.0	19.6	18.7	10.7
	dpw kPa	43	38	34	30	27	11	45	40	36	31	28	9

EWAQ F-XS

		400						430					
Twout	Ta	25	30	35	40	43	46	25	30	35	40	43	46
5	CC kW	425	404	381	357	341	325	452	429	405	379	362	345
	PI kW	110	118	128	139	147	155	116	125	135	147	155	163
	qw l/s	20.3	19.3	18.2	17.0	16.3	15.5	21.6	20.5	19.3	18.1	17.3	16.5
	dpw kPa	34	31	27	24	22	20	32	29	26	22	20	19
7	CC kW	449	427	403	377	361	344	478	454	428	401	383	365
	PI kW	112	120	130	141	149	157	118	127	137	149	157	165
	qw l/s	21.5	20.4	19.3	18.0	17.3	16.4	22.9	21.7	20.5	19.2	18.3	17.5
	dpw kPa	38	34	31	27	24	22	36	32	29	25	23	21
9	CC kW	474	451	425	398	381	363	505	479	452	423	405	386
	PI kW	114	122	132	143	151	159	120	129	139	151	159	167
	qw l/s	22.7	21.6	20.4	19.1	18.3	17.4	24.2	23.0	21.6	20.3	19.4	18.5
	dpw kPa	42	38	34	30	27	25	40	36	32	28	26	23
11	CC kW	500	475	448	420	402	383	532	505	477	446	427	407
	PI kW	116	124	134	145	153	161	123	131	141	153	161	169
	qw l/s	24.0	22.8	21.5	20.1	19.3	18.4	25.5	24.2	22.9	21.4	20.5	19.5
	dpw kPa	47	43	38	33	30	28	44	40	36	31	29	26
13	CC kW	526	500	472	442	423	404	560	532	502	470	450	429
	PI kW	118	127	136	148	155	163	125	134	144	155	163	171
	qw l/s	25.3	24.0	22.7	21.2	20.3	19.4	26.9	25.5	24.1	22.5	21.6	20.6
	dpw kPa	52	47	42	37	34	31	49	44	40	35	32	29
15	CC kW	553	525	496	465	445	425	589	559	528	494	473	451
	PI kW	120	129	139	150	157	165	127	136	146	157	165	173
	qw l/s	26.6	25.2	23.8	22.3	21.4	20.4	28.3	26.9	25.3	23.7	22.7	21.7
	dpw kPa	58	52	47	41	37	34	55	49	44	38	35	32

		450						520					
Twout	Ta	25	30	35	40	43	46	25	30	35	40	43	46
5	CC kW	484	459	432	404	385	367	555	528	499	468	448	427
	PI kW	124	134	144	156	165	174	142	154	168	183	193	204
	qw l/s	23.1	21.9	20.6	19.3	18.4	17.5	26.5	25.2	23.8	22.4	21.4	20.4
	dpw kPa	33	30	26	23	21	19	45	41	37	32	30	27
7	CC kW	511	485	457	427	408	388	586	558	528	495	474	452
	PI kW	127	136	146	159	167	176	145	157	170	186	196	207
	qw l/s	24.5	23.2	21.8	20.4	19.5	18.5	28.1	26.7	25.3	23.7	22.7	21.6
	dpw kPa	37	33	30	26	24	21	51	46	41	36	33	30
9	CC kW	540	512	482	450	430	410	619	589	557	522	500	477
	PI kW	129	138	149	161	169	178	147	159	173	188	199	210
	qw l/s	25.8	24.5	23.1	21.6	20.6	19.6	29.7	28.2	26.7	25.0	24.0	22.8
	dpw kPa	41	37	33	29	26	24	57	51	46	40	37	34
11	CC kW	568	539	508	475	454	432	652	621	587	550	527	503
	PI kW	131	141	151	163	171	180	150	162	176	192	202	213
	qw l/s	27.3	25.9	24.4	22.8	21.7	20.7	31.3	29.8	28.2	26.4	25.3	24.1
	dpw kPa	46	41	37	32	29	27	63	57	51	45	41	37
13	CC kW	598	567	535	500	478	455	687	653	618	579	555	529
	PI kW	134	143	153	165	173	182	153	165	179	195	205	216
	qw l/s	28.7	27.2	25.7	24.0	22.9	21.8	33.0	31.4	29.7	27.8	26.6	25.4
	dpw kPa	51	46	41	36	33	30	70	63	57	50	46	42
15	CC kW	629	596	562	526	503	485	722	686	649	609	583	556
	PI kW	136	145	156	168	176	187.8	156	169	182	198	209	220
	qw l/s	30.2	28.7	27.0	25.2	24.1	23.7	34.7	33.0	31.2	29.3	28.0	26.7
	dpw kPa	57	51	45	39	36	33	78	70	63	55	51	46

EWAQ F-XS

Twout	Ta	610						680					
		25	30	35	40	43	46	25	30	35	40	43	46
5	CC kW	642	610	575	537	513	488	710	675	637	597	571	544
	PI kW	166	179	194	212	224	236	186	200	216	234	246	260
	qw l/s	30.7	29.2	27.5	25.7	24.5	23.3	34.0	32.3	30.5	28.6	27.3	26.0
	dpw kPa	49	44	40	35	32	28	62	56	50	43	40	36
7	CC kW	677	643	607	567	542	516	749	712	672	630	603	575
	PI kW	169	182	198	215	227	239	190	203	219	237	250	263
	qw l/s	32.4	30.8	29.0	27.2	25.9	24.7	35.9	34.1	32.2	30.2	28.9	27.5
	dpw kPa	55	50	44	39	35	32	69	62	55	49	44	40
9	CC kW	713	677	639	598	572	544	788	750	708	664	636	606
	PI kW	172	186	201	218	230	243	193	207	223	241	253	266
	qw l/s	34.2	32.5	30.6	28.6	27.4	26.1	37.9	36.0	34.0	31.8	30.5	29.1
	dpw kPa	61	55	49	43	39	36	76	69	61	54	49	45
11	CC kW	750	712	672	629	602	494	829	788	745	698	669	638
	PI kW	176	189	204	222	233	195	197	210	226	244	256	269
	qw l/s	36.0	34.2	32.2	30.2	28.8	23.7	39.9	37.9	35.8	33.5	32.1	30.6
	dpw kPa	68	61	54	48	44	29	85	76	68	60	55	50
13	CC kW	788	748	706	660	632	521	871	828	783	734	703	671
	PI kW	179	193	208	225	237	198	200	214	230	248	260	273
	qw l/s	37.9	35.9	33.9	31.7	30.3	25.0	41.9	39.9	37.6	35.3	33.8	32.2
	dpw kPa	75	68	60	53	48	33	94	85	75	66	61	55
15	CC kW	826	785	740	693	663	479	914	869	822	770	738	705
	PI kW	183	196	212	229	241	159	204	218	233	251	263	276
	qw l/s	39.8	37.8	35.6	33.3	31.9	23.0	44.1	41.9	39.6	37.1	35.5	33.9
	dpw kPa	83	74	66	58	53	28	103	93	83	73	67	61

Fluid: Water

Ta: Condenser inlet air temperature; Twout: Evaporator leaving water temperature (Δt 5°C)

CC: Cooling capacity; PI: Power input; qw: Fluid flow rate; dpw: Fluid pressure drop

* For working condition where dpw value is "Italic-Red Color" please contact factory

EWAQ F-XL

		170						200					
Twout	Ta	25	30	35	40	43	46	25	30	35	40	43	46
5	CC kW	179	170	161	151	144	137	205	195	184	172	164	157
	PI kW	46.2	49.9	54	58.7	61.8	65.2	52.3	56.4	61.3	66.8	70.6	74.7
	qw l/s	8.6	8.1	7.7	7.2	6.9	6.6	9.8	9.3	8.8	8.2	7.9	7.5
	dpw kPa	28	25	22	20	18	16	30	27	24	21	19	17
7	CC kW	190	180	170	160	153	146	217	206	194	182	174	166
	PI kW	46.9	50.6	54.8	59.5	62.6	66	53.2	57.4	62.2	67.8	71.6	75.7
	qw l/s	9.1	8.6	8.2	7.6	7.3	7.0	10.4	9.9	9.3	8.7	8.3	8.0
	dpw kPa	31	28	25	22	20	18	33	30	27	23	21	19
9	CC kW	201	191	180	169	162	154	230	218	206	193	185	176
	PI kW	47.7	51.5	55.6	60.3	63.5	66.8	54.1	58.4	63.3	68.9	72.7	76.8
	qw l/s	9.6	9.1	8.6	8.1	7.7	7.4	11.0	10.5	9.9	9.2	8.8	8.4
	dpw kPa	35	31	28	25	23	21	37	34	30	26	24	22
11	CC kW	212	201	190	178	170	163	243	230	217	204	195	186
	PI kW	48.5	52.3	56.5	61.2	64.3	67.7	55.1	59.4	64.3	70	73.8	77.9
	qw l/s	10.2	9.6	9.1	8.5	8.2	7.8	11.6	11.0	10.4	9.8	9.4	8.9
	dpw kPa	39	35	31	28	25	23	42	37	33	29	27	24
13	CC kW	223	212	200	188	180	171	256	243	229	215	206	197
	PI kW	49.4	53.2	57.4	62.1	65.2	68.6	56.2	60.5	65.4	71.1	74.9	79.1
	qw l/s	10.7	10.2	9.6	9.0	8.6	8.2	12.3	11.7	11.0	10.3	9.9	9.4
	dpw kPa	43	39	35	31	28	26	46	42	37	33	30	27
15	CC kW	235	223	211	197	189	180	270	256	242	226	217	207
	PI kW	50.3	54.1	58.3	63	66.2	69.5	57.3	61.6	66.6	72.3	76.2	80.3
	qw l/s	11.3	10.7	10.1	9.5	9.1	8.7	13.0	12.3	11.6	10.9	10.4	10.0
	dpw kPa	48	43	39	34	31	28	52	46	41	36	33	30

		220						250					
Twout	Ta	25	30	35	40	43	46	25	30	35	40	43	46
5	CC kW	233	220	208	195	186	178	257	244	231	216	207	198
	PI kW	59.5	64.1	69.5	75.9	80.2	85	65.8	71.1	77.2	84.1	88.8	93.9
	qw l/s	11.1	10.5	9.9	9.3	8.9	8.5	12.3	11.7	11.0	10.3	9.9	9.5
	dpw kPa	37	33	30	26	24	22	47	42	37	33	30	28
7	CC kW	247	234	220	207	198	189	273	259	244	229	220	210
	PI kW	60.5	65.2	70.6	77	81.4	86.2	66.9	72.2	78.3	85.3	90	95.1
	qw l/s	11.8	11.2	10.5	9.9	9.5	9.0	13.1	12.4	11.7	11.0	10.5	10.1
	dpw kPa	42	38	34	29	27	25	52	47	42	37	34	31
9	CC kW	261	247	233	219	210	200	288	274	259	243	233	222
	PI kW	61.6	66.3	71.8	78.3	82.7	87.5	68.1	73.4	79.5	86.6	91.3	96.4
	qw l/s	12.5	11.9	11.2	10.5	10.0	9.6	13.8	13.1	12.4	11.6	11.2	10.7
	dpw kPa	47	42	38	33	30	28	59	53	47	42	38	35
11	CC kW	275	261	247	231	222	212	304	289	273	257	246	235
	PI kW	62.8	67.5	73	79.5	84	88.8	69.3	74.7	80.8	87.9	92.6	97.8
	qw l/s	13.2	12.5	11.8	11.1	10.6	10.2	14.6	13.9	13.1	12.3	11.8	11.3
	dpw kPa	53	47	42	37	34	31	65	59	53	47	43	39
13	CC kW	291	276	260	244	235	224	320	305	288	271	260	248
	PI kW	64	68.8	74.3	80.9	85.4	90.2	70.7	76	82.2	89.3	94	99.1
	qw l/s	14.0	13.3	12.5	11.7	11.3	10.8	15.4	14.7	13.9	13.0	12.5	11.9
	dpw kPa	59	53	47	41	38	35	73	66	59	52	48	44
15	CC kW	306	291	275	258	247	237	337	321	303	285	274	262
	PI kW	65.3	70.1	75.7	82.3	86.8	91.7	72	77.4	83.6	90.7	95.5	101
	qw l/s	14.7	14.0	13.2	12.4	11.9	11.4	16.2	15.4	14.6	13.7	13.2	12.6
	dpw kPa	65	59	52	46	43	39	81	73	65	58	53	49

EWAQ F-XL

		310						350					
Twout	Ta	25	30	35	40	43	46	25	30	35	40	43	46
5	CC kW	334	317	299	279	267	254	376	357	337	315	300	286
	PI kW	85.2	92.4	101	110	116	122	95.8	104	113	124	131	139
	qw l/s	15.9	15.1	14.3	13.3	12.7	12.1	18.0	17.1	16.1	15.0	14.3	13.6
	dpw kPa	25	22	20	17	16	14	26	23	21	18	17	15
7	CC kW	353	335	316	296	283	269	398	377	356	333	318	302
	PI kW	86.7	93.9	102	111	117	124	97.6	106	115	126	133	141
	qw l/s	16.9	16.0	15.1	14.1	13.5	12.9	19.0	18.1	17.0	15.9	15.2	14.4
	dpw kPa	28	25	22	19	18	16	29	26	23	20	19	17
9	CC kW	373	354	334	312	299	284	420	398	376	351	335	319
	PI kW	88.3	95.5	104	113	119	126	99.5	108	117	128	135	143
	qw l/s	17.9	16.9	16.0	14.9	14.3	13.6	20.1	19.1	18.0	16.8	16.1	15.3
	dpw kPa	31	28	25	22	20	18	33	29	26	23	21	19
11	CC kW	393	373	352	329	315	300	442	420	396	370	353	336
	PI kW	90	97.2	106	115	121	128	102	110	119	130	137	145
	qw l/s	18.9	17.9	16.9	15.8	15.1	14.4	21.2	20.1	19.0	17.7	16.9	16.1
	dpw kPa	35	31	28	24	22	20	36	33	29	25	23	21
13	CC kW	414	393	371	347	332	316	466	442	416	389	372	210
	PI kW	91.7	99.1	107	117	123	130	104	112	122	133	140	69
	qw l/s	19.9	18.9	17.8	16.6	15.9	15.2	22.3	21.2	20.0	18.7	17.8	10.1
	dpw kPa	38	35	31	27	25	22	40	36	32	28	26	8
15	CC kW	436	414	390	365	349	217	489	464	437	408	390	222
	PI kW	93.6	101	109	119	125	70.5	106	114	124	135	142	69.9
	qw l/s	20.9	19.9	18.7	17.5	16.8	10.4	23.5	22.3	21.0	19.6	18.7	10.7
	dpw kPa	43	38	34	30	27	11	45	40	36	31	28	9

		320						360					
Twout	Ta	25	30	35	40	43	46	25	30	35	40	43	46
5	CC kW	334	317	299	279	267	254	376	357	337	315	300	286
	PI kW	85.2	92.4	101	110	116	122	95.8	104	113	124	131	139
	qw l/s	15.9	15.1	14.3	13.3	12.7	12.1	18.0	17.1	16.1	15.0	14.3	13.6
	dpw kPa	25	22	20	17	16	14	26	23	21	18	17	15
7	CC kW	353	335	316	296	283	269	398	377	356	333	318	302
	PI kW	86.7	93.9	102	111	117	124	97.6	106	115	126	133	141
	qw l/s	16.9	16.0	15.1	14.1	13.5	12.9	19.0	18.1	17.0	15.9	15.2	14.4
	dpw kPa	28	25	22	19	18	16	29	26	23	20	19	17
9	CC kW	373	354	334	312	299	284	420	398	376	351	335	319
	PI kW	88.3	95.5	104	113	119	126	99.5	108	117	128	135	143
	qw l/s	17.9	16.9	16.0	14.9	14.3	13.6	20.1	19.1	18.0	16.8	16.1	15.3
	dpw kPa	31	28	25	22	20	18	33	29	26	23	21	19
11	CC kW	393	373	352	329	315	300	442	420	396	370	353	336
	PI kW	90	97.2	106	115	121	128	102	110	119	130	137	145
	qw l/s	18.9	17.9	16.9	15.8	15.1	14.4	21.2	20.1	19.0	17.7	16.9	16.1
	dpw kPa	35	31	28	24	22	20	36	33	29	25	23	21
13	CC kW	414	393	371	347	332	316	466	442	416	389	372	210
	PI kW	91.7	99.1	107	117	123	130	104	112	122	133	140	69
	qw l/s	19.9	18.9	17.8	16.6	15.9	15.2	22.3	21.2	20.0	18.7	17.8	10.1
	dpw kPa	38	35	31	27	25	22	40	36	32	28	26	8
15	CC kW	436	414	390	365	349	217	489	464	437	408	390	222
	PI kW	93.6	101	109	119	125	70.5	106	114	124	135	142	69.9
	qw l/s	20.9	19.9	18.7	17.5	16.8	10.4	23.5	22.3	21.0	19.6	18.7	10.7
	dpw kPa	43	38	34	30	27	11	45	40	36	31	28	9

EWAQ F-XL

		400						430					
Twout	Ta	25	30	35	40	43	46	25	30	35	40	43	46
5	CC kW	425	404	381	357	341	325	452	429	405	379	362	345
	PI kW	110	118	128	139	147	155	116	125	135	147	155	163
	qw l/s	20.3	19.3	18.2	17.0	16.3	15.5	21.6	20.5	19.3	18.1	17.3	16.5
	dpw kPa	34	31	27	24	22	20	32	29	26	22	20	19
7	CC kW	449	427	403	377	361	344	478	454	428	401	383	365
	PI kW	112	120	130	141	149	157	118	127	137	149	157	165
	qw l/s	21.5	20.4	19.3	18.0	17.3	16.4	22.9	21.7	20.5	19.2	18.3	17.5
	dpw kPa	38	34	31	27	24	22	36	32	29	25	23	21
9	CC kW	474	451	425	398	381	363	505	479	452	423	405	386
	PI kW	114	122	132	143	151	159	120	129	139	151	159	167
	qw l/s	22.7	21.6	20.4	19.1	18.3	17.4	24.2	23.0	21.6	20.3	19.4	18.5
	dpw kPa	42	38	34	30	27	25	40	36	32	28	26	23
11	CC kW	500	475	448	420	402	383	532	505	477	446	427	407
	PI kW	116	124	134	145	153	161	123	131	141	153	161	169
	qw l/s	24.0	22.8	21.5	20.1	19.3	18.4	25.5	24.2	22.9	21.4	20.5	19.5
	dpw kPa	47	43	38	33	30	28	44	40	36	31	29	26
13	CC kW	526	500	472	442	423	404	560	532	502	470	450	429
	PI kW	118	127	136	148	155	163	125	134	144	155	163	171
	qw l/s	25.3	24.0	22.7	21.2	20.3	19.4	26.9	25.5	24.1	22.5	21.6	20.6
	dpw kPa	52	47	42	37	34	31	49	44	40	35	32	29
15	CC kW	553	525	496	465	445	425	589	559	528	494	473	451
	PI kW	120	129	139	150	157	165	127	136	146	157	165	173
	qw l/s	26.6	25.2	23.8	22.3	21.4	20.4	28.3	26.9	25.3	23.7	22.7	21.7
	dpw kPa	58	52	47	41	37	34	55	49	44	38	35	32

		450						520					
Twout	Ta	25	30	35	40	43	46	25	30	35	40	43	46
5	CC kW	484	459	432	404	385	367	555	528	499	468	448	427
	PI kW	124	134	144	156	165	174	142	154	168	183	193	204
	qw l/s	23.1	21.9	20.6	19.3	18.4	17.5	26.5	25.2	23.8	22.4	21.4	20.4
	dpw kPa	33	30	26	23	21	19	45	41	37	32	30	27
7	CC kW	511	485	457	427	408	388	586	558	528	495	474	452
	PI kW	127	136	146	159	167	176	145	157	170	186	196	207
	qw l/s	24.5	23.2	21.8	20.4	19.5	18.5	28.1	26.7	25.3	23.7	22.7	21.6
	dpw kPa	37	33	30	26	24	21	51	46	41	36	33	30
9	CC kW	540	512	482	450	430	410	619	589	557	522	500	477
	PI kW	129	138	149	161	169	178	147	159	173	188	199	210
	qw l/s	25.8	24.5	23.1	21.6	20.6	19.6	29.7	28.2	26.7	25.0	24.0	22.8
	dpw kPa	41	37	33	29	26	24	57	51	46	40	37	34
11	CC kW	568	539	508	475	454	432	652	621	587	550	527	503
	PI kW	131	141	151	163	171	180	150	162	176	192	202	213
	qw l/s	27.3	25.9	24.4	22.8	21.7	20.7	31.3	29.8	28.2	26.4	25.3	24.1
	dpw kPa	46	41	37	32	29	27	63	57	51	45	41	37
13	CC kW	598	567	535	500	478	455	687	653	618	579	555	529
	PI kW	134	143	153	165	173	182	153	165	179	195	205	216
	qw l/s	28.7	27.2	25.7	24.0	22.9	21.8	33.0	31.4	29.7	27.8	26.6	25.4
	dpw kPa	51	46	41	36	33	30	70	63	57	50	46	42
15	CC kW	629	596	562	526	503	485	722	686	649	609	583	556
	PI kW	136	145	156	168	176	187.8	156	169	182	198	209	220
	qw l/s	30.2	28.7	27.0	25.2	24.1	23.7	34.7	33.0	31.2	29.3	28.0	26.7
	dpw kPa	57	51	45	39	36	32	78	70	63	55	51	46

EWAQ F-XL

Twout	Ta	610						680					
		25	30	35	40	43	46	25	30	35	40	43	46
5	CC kW	642	610	575	537	513	488	710	675	637	597	571	544
	PI kW	166	179	194	212	224	236	186	200	216	234	246	260
	qw l/s	30.7	29.2	27.5	25.7	24.5	23.3	34.0	32.3	30.5	28.6	27.3	26.0
	dpw kPa	49	44	40	35	32	28	62	56	50	43	40	36
7	CC kW	677	643	607	567	542	516	749	712	672	630	603	575
	PI kW	169	182	198	215	227	239	190	203	219	237	250	263
	qw l/s	32.4	30.8	29.0	27.2	25.9	24.7	35.9	34.1	32.2	30.2	28.9	27.5
	dpw kPa	55	50	44	39	35	32	69	62	55	49	44	40
9	CC kW	713	677	639	598	572	544	788	750	708	664	636	606
	PI kW	172	186	201	218	230	243	193	207	223	241	253	266
	qw l/s	34.2	32.5	30.6	28.6	27.4	26.1	37.9	36.0	34.0	31.8	30.5	29.1
	dpw kPa	61	55	49	43	39	36	76	69	61	54	49	45
11	CC kW	750	712	672	629	602	494	829	788	745	698	669	638
	PI kW	176	189	204	222	233	195	197	210	226	244	256	269
	qw l/s	36.0	34.2	32.2	30.2	28.8	23.7	39.9	37.9	35.8	33.5	32.1	30.6
	dpw kPa	68	61	54	48	44	29	85	76	68	60	55	50
13	CC kW	788	748	706	660	632	521	871	828	783	734	703	671
	PI kW	179	193	208	225	237	198	200	214	230	248	260	273
	qw l/s	37.9	35.9	33.9	31.7	30.3	25.0	41.9	39.9	37.6	35.3	33.8	32.2
	dpw kPa	75	68	60	53	48	33	94	85	75	66	61	55
15	CC kW	826	785	740	693	663	479	914	869	822	770	738	705
	PI kW	183	196	212	229	241	159	204	218	233	251	263	276
	qw l/s	39.8	37.8	35.6	33.3	31.9	23.0	44.1	41.9	39.6	37.1	35.5	33.9
	dpw kPa	83	74	66	58	53	28	103	93	83	73	67	61

Fluid: Water

Ta: Condenser inlet air temperature; Twout: Evaporator leaving water temperature (Δt 5°C)

CC: Cooling capacity; PI: Power input; qw: Fluid flow rate; dpw: Fluid pressure drop

* For working condition where dpw value is "Italic-Red Color" please contact factory

EWAQ F-XR

		170						190					
Twout	Ta	25	30	35	40	43	46	25	30	35	40	43	46
5	CC kW	175	166	157	146	139	132	200	189	178	166	158	150
	PI kW	43.9	47.7	52.1	57	60.3	63.8	50.5	54.9	60	66	70	74.3
	qw l/s	8.4	7.9	7.5	7.0	6.7	6.3	9.5	9.0	8.5	7.9	7.6	7.2
	dpw kPa	26	24	21	18	17	15	28	25	22	19	18	16
7	CC kW	185	176	165	154	147	140	211	200	188	175	167	159
	PI kW	44.7	48.6	53	57.9	61.2	64.7	51.5	56	61.2	67.1	71.1	75.5
	qw l/s	8.9	8.4	7.9	7.4	7.1	6.7	10.1	9.6	9.0	8.4	8.0	7.6
	dpw kPa	30	27	24	21	19	17	31	28	25	22	20	18
9	CC kW	195	185	175	163	156	148	223	211	198	185	177	168
	PI kW	45.6	49.5	53.9	58.8	62.1	65.6	52.6	57.1	62.4	68.4	72.4	76.8
	qw l/s	9.4	8.9	8.4	7.8	7.5	7.1	10.7	10.1	9.5	8.9	8.5	8.1
	dpw kPa	33	30	26	23	21	19	35	31	28	24	22	20
11	CC kW	206	195	184	172	164	156	235	222	209	195	187	117
	PI kW	46.5	50.5	54.9	59.8	63.1	66.6	53.7	58.3	63.6	69.6	73.7	39.9
	qw l/s	9.9	9.4	8.8	8.2	7.9	7.5	11.3	10.7	10.0	9.4	8.9	5.6
	dpw kPa	37	33	29	26	23	21	39	35	31	27	25	10
13	CC kW	217	205	193	181	173	97.4	247	234	220	206	197	124
	PI kW	47.5	51.5	55.9	60.8	64.1	30.6	54.9	59.6	64.9	71	75	40.4
	qw l/s	10.4	9.9	9.3	8.7	8.3	4.7	11.9	11.2	10.6	9.9	9.4	5.9
	dpw kPa	41	37	33	28	26	8	43	39	34	30	27	11
15	CC kW	228	216	203	190	181	103	260	246	232	217	207	131
	PI kW	48.5	52.5	56.9	61.9	65.1	31	56.2	60.9	66.2	72.3	76.4	41
	qw l/s	11.0	10.4	9.8	9.1	8.7	4.9	12.5	11.8	11.1	10.4	9.9	6.3
	dpw kPa	45	41	36	31	29	9	48	43	38	33	30	12

		210						240					
Twout	Ta	25	30	35	40	43	46	25	30	35	40	43	46
5	CC kW	224	212	200	186	178	170	250	237	223	208	199	190
	PI kW	56.7	61.7	67.4	74.2	78.8	83.9	63.8	69.4	75.9	83.3	88.3	93.7
	qw l/s	10.7	10.1	9.5	8.9	8.5	8.1	12.0	11.3	10.7	10.0	9.5	9.1
	dpw kPa	35	32	28	24	22	20	44	39	35	30	28	25
7	CC kW	237	225	211	198	189	180	264	250	236	220	211	201
	PI kW	57.9	62.9	68.7	75.6	80.2	85.3	65.1	70.7	77.3	84.8	89.8	95.1
	qw l/s	11.4	10.8	10.1	9.5	9.0	8.6	12.7	12.0	11.3	10.6	10.1	9.6
	dpw kPa	40	36	31	27	25	23	49	44	39	34	31	28
9	CC kW	251	237	224	209	200	191	279	264	249	233	223	212
	PI kW	59.1	64.2	70.1	77	81.7	86.8	66.4	72.1	78.7	86.2	91.3	96.7
	qw l/s	12.0	11.4	10.7	10.0	9.6	9.1	13.4	12.7	11.9	11.2	10.7	10.2
	dpw kPa	44	40	35	31	28	26	55	49	44	38	35	32
11	CC kW	265	251	236	221	211	201	294	279	263	246	235	224
	PI kW	60.4	65.5	71.5	78.5	83.2	88.4	67.8	73.6	80.2	87.8	92.8	98.3
	qw l/s	12.7	12.0	11.3	10.6	10.1	9.7	14.1	13.4	12.6	11.8	11.3	10.7
	dpw kPa	50	44	39	34	32	29	61	55	49	43	39	35
13	CC kW	279	264	249	233	223	127	309	293	277	259	248	154
	PI kW	61.8	67	73	80	84.8	40	69.4	75.2	81.8	89.4	94.5	50
	qw l/s	13.4	12.7	12.0	11.2	10.7	6.1	14.9	14.1	13.3	12.4	11.9	7.4
	dpw kPa	55	49	44	38	35	11	68	61	54	47	43	17
15	CC kW	293	278	262	245	235	134	325	308	291	272	261	163
	PI kW	63.2	68.5	74.5	81.7	86.5	40.6	70.9	76.8	83.5	91.1	96.2	50.5
	qw l/s	14.1	13.4	12.6	11.8	11.3	6.5	15.7	14.8	14.0	13.1	12.5	7.8
	dpw kPa	61	55	49	43	39	13	75	68	60	53	48	19

EWAQ F-XR

Twout	Ta	300						330					
		25	30	35	40	43	46	25	30	35	40	43	46
5	CC kW	324	306	288	268	256	242	363	343	322	299	285	161
	PI kW	83.3	90.9	99.5	109	116	122	95.4	104	114	126	133	62.2
	qw l/s	15.5	14.6	13.8	12.8	12.2	11.6	17.3	16.4	15.4	14.3	13.6	7.7
	dpw kPa	23	21	18	16	15	13	24	22	19	17	15	5
7	CC kW	342	324	304	283	270	168	383	362	340	316	300	172
	PI kW	85	92.6	101	111	118	63.3	97.5	106	117	128	136	62.9
	qw l/s	16.4	15.5	14.5	13.5	12.9	8.0	18.3	17.3	16.3	15.1	14.4	8.2
	dpw kPa	26	23	21	18	16	6	27	24	21	18	17	5
9	CC kW	361	341	321	299	285	179	404	382	358	333	316	182
	PI kW	86.8	94.5	103	113	120	64.1	99.7	109	119	130	138	63.7
	qw l/s	17.3	16.3	15.4	14.3	13.6	8.5	19.3	18.3	17.1	15.9	15.1	8.7
	dpw kPa	29	26	23	20	18	7	30	27	24	20	19	6
11	CC kW	380	360	338	315	300	189	425	401	376	350	202	193
	PI kW	88.7	96.5	105	115	122	65	102	111	121	133	61.1	64.5
	qw l/s	18.2	17.2	16.2	15.1	14.4	9.0	20.3	19.2	18.0	16.7	9.7	9.2
	dpw kPa	32	29	26	22	20	8	33	30	26	23	8	7
13	CC kW	400	378	355	331	315	200	446	421	395	367	213	204
	PI kW	90.7	98.6	107	117	124	65.9	105	114	124	136	62	65.4
	qw l/s	19.2	18.1	17.0	15.9	15.1	9.6	21.4	20.2	18.9	17.6	10.2	9.8
	dpw kPa	36	32	28	24	22	9	37	33	29	25	8	8
15	CC kW	420	397	373	347	221	211	467	441	414	384	225	215
	PI kW	92.9	101	110	120	63.4	66.9	107	117	127	139	62.9	66.4
	qw l/s	20.2	19.1	17.9	16.7	10.6	10.1	22.5	21.2	19.9	18.4	10.8	10.3
	dpw kPa	40	35	31	27	11	10	41	36	32	27	9	9

Twout	Ta	310						340					
		25	30	35	40	43	46	25	30	35	40	43	46
5	CC kW	324	306	288	268	256	242	363	343	322	299	285	161
	PI kW	83.3	90.9	99.5	109	116	122	95.4	104	114	126	133	62.2
	qw l/s	15.5	14.6	13.8	12.8	12.2	11.6	17.3	16.4	15.4	14.3	13.6	7.7
	dpw kPa	23	21	18	16	15	13	24	22	19	17	15	5
7	CC kW	342	324	304	283	270	168	383	362	340	316	300	172
	PI kW	85	92.6	101	111	118	63.3	97.5	106	117	128	136	62.9
	qw l/s	16.4	15.5	14.5	13.5	12.9	8.0	18.3	17.3	16.3	15.1	14.4	8.2
	dpw kPa	26	23	21	18	16	6	27	24	21	18	17	5
9	CC kW	361	341	321	299	285	179	404	382	358	333	316	182
	PI kW	86.8	94.5	103	113	120	64.1	99.7	109	119	130	138	63.7
	qw l/s	17.3	16.3	15.4	14.3	13.6	8.5	19.3	18.3	17.1	15.9	15.1	8.7
	dpw kPa	29	26	23	20	18	7	30	27	24	20	19	6
11	CC kW	380	360	338	315	300	189	425	401	376	350	202	193
	PI kW	88.7	96.5	105	115	122	65	102	111	121	133	61.1	64.5
	qw l/s	18.2	17.2	16.2	15.1	14.4	9.0	20.3	19.2	18.0	16.7	9.7	9.2
	dpw kPa	32	29	26	22	20	8	33	30	26	23	8	7
13	CC kW	400	378	355	331	315	200	446	421	395	367	213	204
	PI kW	90.7	98.6	107	117	124	65.9	105	114	124	136	62	65.4
	qw l/s	19.2	18.1	17.0	15.9	15.1	9.6	21.4	20.2	18.9	17.6	10.2	9.8
	dpw kPa	36	32	28	24	22	9	37	33	29	25	8	8
15	CC kW	420	397	373	347	221	211	467	441	414	384	225	215
	PI kW	92.9	101	110	120	63.4	66.9	107	117	127	139	62.9	66.4
	qw l/s	20.2	19.1	17.9	16.7	10.6	10.1	22.5	21.2	19.9	18.4	10.8	10.3
	dpw kPa	40	35	31	27	11	10	41	36	32	27	9	9

EWAQ F-XR

		390						410					
Twout	Ta	25	30	35	40	43	46	25	30	35	40	43	46
5	CC kW	409	388	365	340	324	308	434	410	386	359	342	325
	PI kW	106	116	126	138	146	154	114	123	134	146	155	164
	qw l/s	19.6	18.5	17.4	16.2	15.5	14.7	20.7	19.6	18.4	17.2	16.4	15.5
	dpw kPa	32	29	25	22	20	18	30	27	24	21	19	17
7	CC kW	432	409	385	359	343	325	458	433	407	379	362	272
	PI kW	109	118	128	140	148	157	116	125	136	149	157	117
	qw l/s	20.7	19.6	18.4	17.2	16.4	15.6	21.9	20.7	19.5	18.1	17.3	13.0
	dpw kPa	36	32	28	25	23	20	33	30	26	23	21	12
9	CC kW	455	431	406	379	361	343	482	457	429	400	381	288
	PI kW	111	120	130	142	150	159	118	128	139	151	159	119
	qw l/s	21.8	20.7	19.4	18.1	17.3	16.4	23.1	21.9	20.5	19.1	18.2	13.8
	dpw kPa	40	36	32	28	25	23	37	33	29	26	23	13
11	CC kW	479	454	427	398	380	237	508	480	451	421	401	240
	PI kW	113	122	133	145	153	81.3	121	130	141	154	162	80.8
	qw l/s	23.0	21.8	20.5	19.1	18.2	11.4	24.3	23.0	21.6	20.2	19.2	11.5
	dpw kPa	44	40	35	31	28	11	41	37	33	28	26	9
13	CC kW	504	477	449	419	400	251	533	505	474	442	422	254
	PI kW	116	125	135	147	155	82.1	123	133	144	156	164	81.6
	qw l/s	24.2	22.9	21.5	20.1	19.2	12.0	25.6	24.2	22.8	21.2	20.2	12.2
	dpw kPa	49	44	39	34	31	12	46	41	36	31	29	10
15	CC kW	528	501	471	439	419	265	560	530	498	464	354	269
	PI kW	118	127	138	150	158	82.9	126	135	146	159	117	82.4
	qw l/s	25.4	24.1	22.6	21.1	20.1	12.7	26.9	25.5	23.9	22.3	17.0	12.9
	dpw kPa	54	48	43	37	34	14	50	45	40	35	20	12

		430						500					
Twout	Ta	25	30	35	40	43	46	25	30	35	40	43	46
5	CC kW	463	437	410	381	363	344	533	505	476	444	424	402
	PI kW	122	132	144	157	166	175	139	152	166	183	194	206
	qw l/s	22.1	20.9	19.6	18.2	17.3	16.4	25.5	24.2	22.7	21.2	20.2	19.2
	dpw kPa	31	28	24	21	19	17	43	38	34	30	27	24
7	CC kW	488	461	433	402	383	217	562	533	502	469	447	425
	PI kW	125	135	146	159	168	79.3	142	155	170	186	197	209
	qw l/s	23.4	22.1	20.7	19.2	18.3	10.4	26.9	25.5	24.0	22.4	21.4	20.3
	dpw kPa	35	31	27	23	21	7	48	43	38	33	30	27
9	CC kW	514	486	456	424	404	231	593	562	529	494	471	337
	PI kW	128	138	149	162	171	80.1	145	158	173	189	200	130
	qw l/s	24.6	23.3	21.8	20.3	19.3	11.0	28.4	26.9	25.4	23.7	22.6	16.1
	dpw kPa	38	34	30	26	24	8	53	48	42	37	34	17
11	CC kW	541	511	479	446	425	244	624	591	557	520	496	356
	PI kW	130	140	152	165	173	80.9	149	162	176	193	204	132
	qw l/s	25.9	24.5	23.0	21.4	20.3	11.7	29.9	28.4	26.7	24.9	23.8	17.1
	dpw kPa	43	38	33	29	26	9	59	53	47	41	37	19
13	CC kW	568	537	504	468	446	259	655	621	585	546	521	376
	PI kW	133	143	154	167	176	81.7	152	165	180	197	208	134
	qw l/s	27.3	25.8	24.2	22.5	21.4	12.4	31.5	29.8	28.1	26.2	25.0	18.0
	dpw kPa	47	42	37	32	29	10	65	59	52	45	41	21
15	CC kW	596	563	528	492	286	274	687	651	613	572	546	396
	PI kW	136	146	157	170	78.7	82.5	156	169	184	201	212	136
	qw l/s	28.6	27.0	25.4	23.6	13.7	13.1	33.1	31.3	29.5	27.5	26.2	19.0
	dpw kPa	52	46	41	35	12	11	72	64	57	50	45	24

EWAQ F-XR

Twout	Ta	580						650					
		25	30	35	40	43	46	25	30	35	40	43	46
5	CC kW	619	586	550	511	486	349	687	651	613	571	544	517
	PI kW	165	180	196	215	227	147	183	198	215	235	248	262
	qw l/s	29.6	28.0	26.3	24.4	23.2	16.7	32.9	31.2	29.3	27.3	26.0	24.7
	dpw kPa	46	41	36	31	28	15	58	52	46	40	36	32
7	CC kW	652	617	579	539	513	370	724	686	645	602	574	412
	PI kW	169	183	200	218	231	148	187	202	219	238	252	164
	qw l/s	31.2	29.5	27.7	25.8	24.5	17.7	34.7	32.9	30.9	28.8	27.5	19.7
	dpw kPa	51	46	40	35	31	16	64	58	51	44	40	21
9	CC kW	686	649	609	567	469	391	761	721	678	633	604	436
	PI kW	172	187	203	222	183	150	191	205	223	242	255	165
	qw l/s	32.9	31.1	29.2	27.1	22.4	18.7	36.5	34.6	32.5	30.3	28.9	20.9
	dpw kPa	57	51	45	39	26	18	71	64	56	49	45	23
11	CC kW	720	681	639	595	493	413	799	757	712	665	634	461
	PI kW	176	191	207	226	186	152	195	209	227	246	259	167
	qw l/s	34.6	32.7	30.7	28.5	23.6	19.8	38.4	36.4	34.2	31.9	30.4	22.1
	dpw kPa	62	56	49	43	29	20	79	70	62	54	49	26
13	CC kW	754	714	670	624	457	435	838	794	747	697	666	486
	PI kW	180	195	212	230	147	155	199	214	231	250	263	169
	qw l/s	36.3	34.3	32.2	29.9	21.9	20.9	40.3	38.2	35.9	33.5	32.0	23.3
	dpw kPa	69	61	54	47	25	23	87	78	69	60	54	29
15	CC kW	790	747	701	653	481	458	878	832	783	730	536	512
	PI kW	185	199	216	235	149	157	203	218	235	254	163	171
	qw l/s	38.0	35.9	33.7	31.4	23.1	22.0	42.3	40.1	37.7	35.1	25.7	24.6
	dpw kPa	76	67	59	51	28	25	95	85	76	66	35	32

Fluid: Water

Ta: Condenser inlet air temperature; Twout: Evaporator leaving water temperature (Δt 5°C)

CC: Cooling capacity; PI: Power input; qw: Fluid flow rate; dpw: Fluid pressure drop

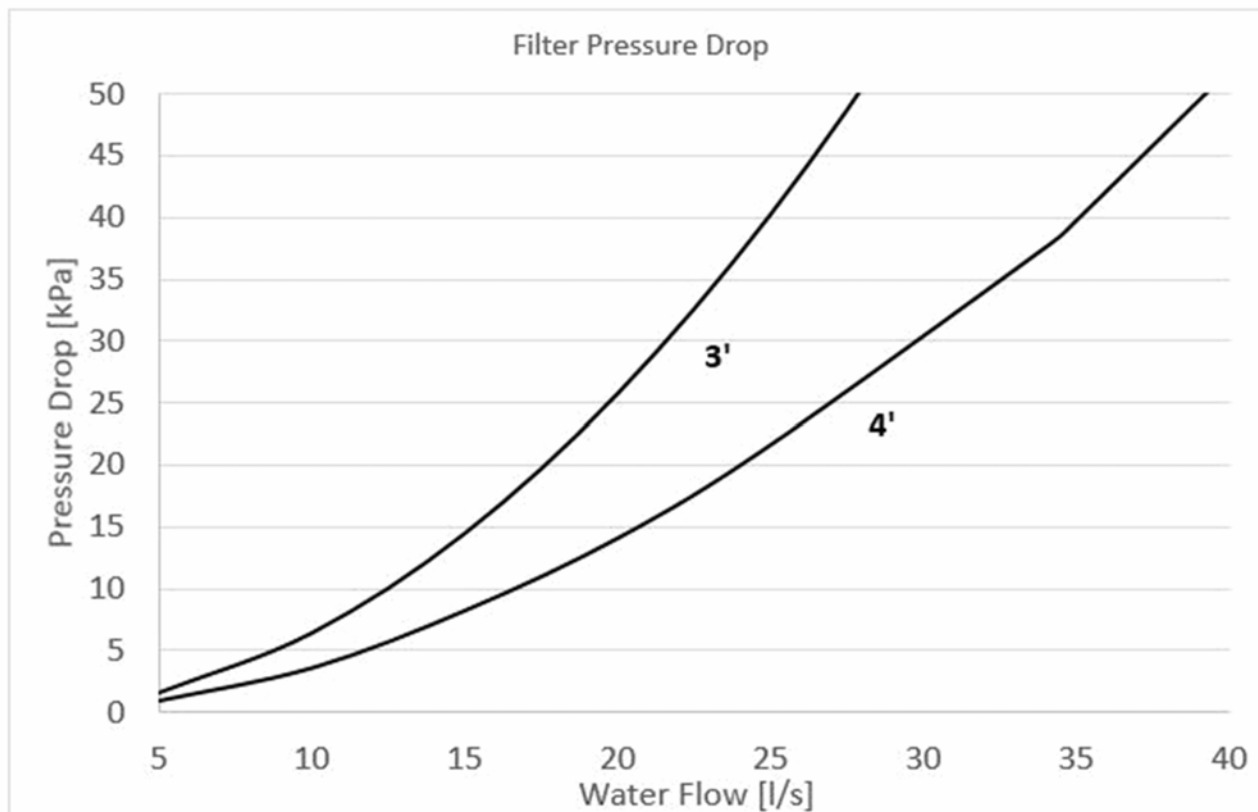
* For working condition where dpw value is "Italic-Red Color" please contact factory

Water filter and piping diameter - Combination matrix

STANDARD EFFICIENCY								
	Water filter size and piping diameter			Water filter size and piping diameter			Water filter size and piping diameter	
	3"	4"		3"	4"		3"	4"
EWAQ210F-SS	X		EWAQ210F-SL	X		EWAQ200F-SR	X	
EWAQ230F-SS	X		EWAQ230F-SL	X		EWAQ220F-SR	X	
EWAQ250F-SS	X		EWAQ250F-SL	X		EWAQ240F-SR	X	
EWAQ280F-SS	X		EWAQ280F-SL	X		EWAQ270F-SR	X	
EWAQ320F-SS	X		EWAQ320F-SL	X		EWAQ300F-SR	X	
EWAQ350F-SS	X		EWAQ350F-SL	X		EWAQ330F-SR	X	
EWAQ360F-SS	X		EWAQ360F-SL	X		EWAQ340F-SR	X	
EWAQ400F-SS		X	EWAQ400F-SL		X	EWAQ370F-SR		X
EWAQ410F-SS		X	EWAQ410F-SL		X	EWAQ380F-SR		X
EWAQ480F-SS		X	EWAQ480F-SL		X	EWAQ460F-SR		X
EWAQ550F-SS		X	EWAQ550F-SL		X	EWAQ530F-SR		X
EWAQ610F-SS		X	EWAQ610F-SL		X	EWAQ580F-SR		X

HIGH EFFICIENCY								
	Water filter size and piping diameter			Water filter size and piping diameter			Water filter size and piping diameter	
	3"	4"		3"	4"		3"	4"
EWAQ170F-XS	X		EWAQ170F-XL	X		EWAQ170F-XR	X	
EWAQ200F-XS	X		EWAQ200F-XL	X		EWAQ190F-XR	X	
EWAQ220F-XS	X		EWAQ220F-XL	X		EWAQ210F-XR	X	
EWAQ250F-XS	X		EWAQ250F-XL	X		EWAQ240F-XR	X	
EWAQ310F-XS	X		EWAQ310F-XL	X		EWAQ300F-XR	X	
EWAQ350F-XS	X		EWAQ350F-XL	X		EWAQ330F-XR	X	
EWAQ320F-XS	X		EWAQ320F-XL	X		EWAQ310F-XR	X	
EWAQ360F-XS	X		EWAQ350F-XL	X		EWAQ340F-XR	X	
EWAQ400F-XS		X	EWAQ400F-XL		X	EWAQ390F-XR		X
EWAQ430F-XS		X	EWAQ430F-XL		X	EWAQ410F-XR		X
EWAQ450F-XS		X	EWAQ450F-XL		X	EWAQ430F-XR		X
EWAQ520F-XS		X	EWAQ520F-XL		X	EWAQ500F-XR		X
EWAQ610F-XS		X	EWAQ610F-XL		X	EWAQ580F-XR		X
EWAQ680F-XS		X	EWAQ680F-XL		X	EWAQ650F-XR		X

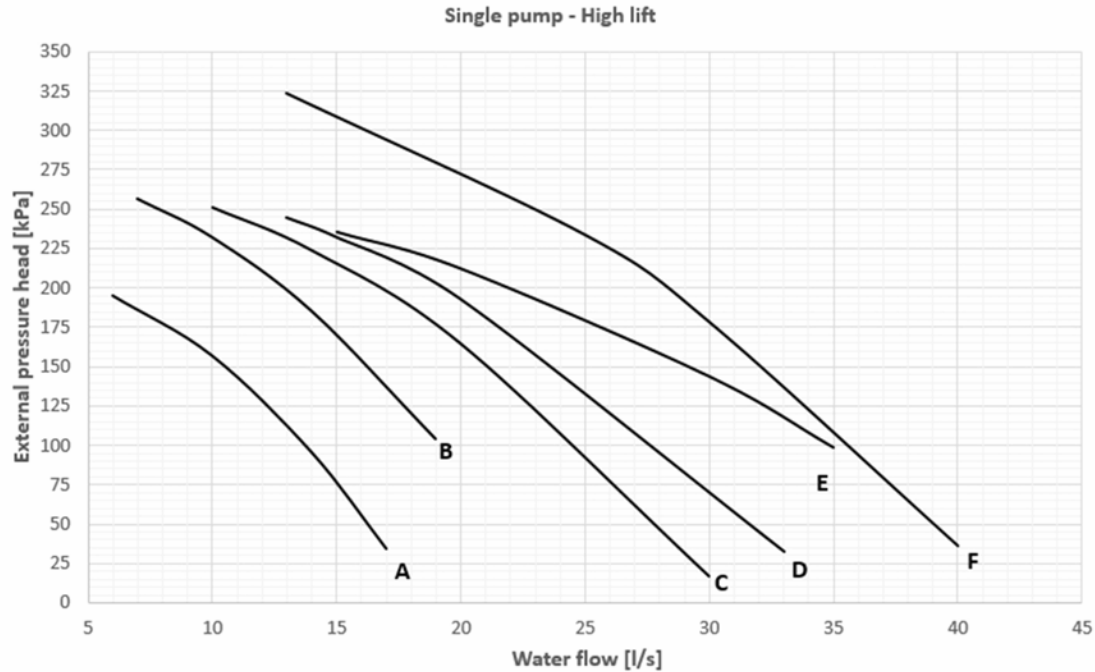
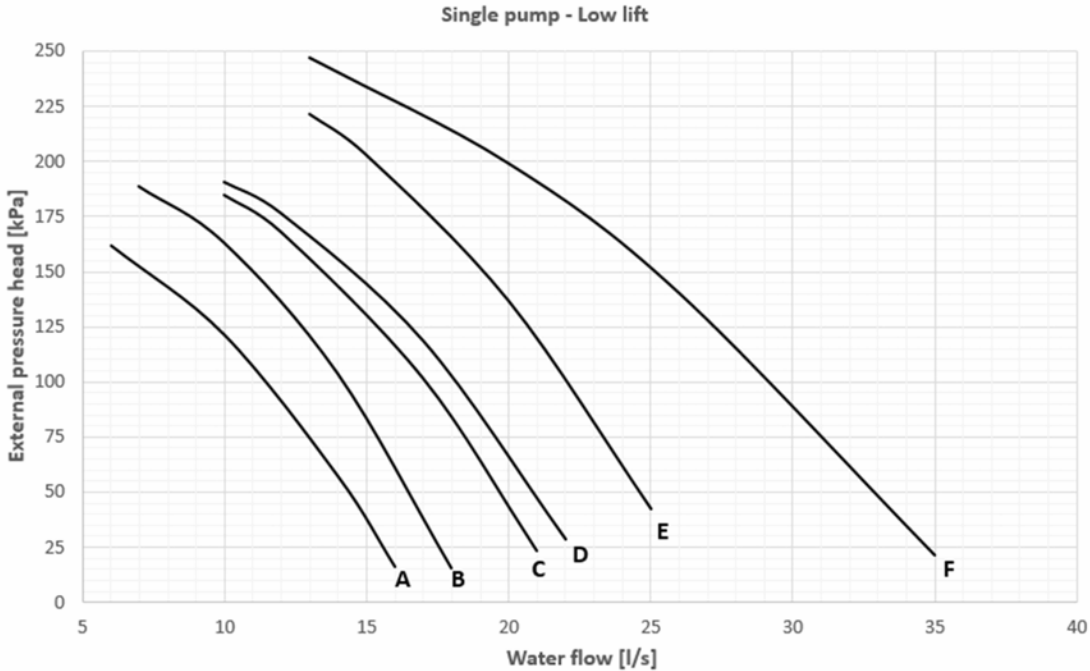
Filter pressure drops



Note:
to calculate the pressure drops values introduced by the water filter, refer to the above curves.

Single Pump (2 poles) - Standard efficiency units

External pressure head

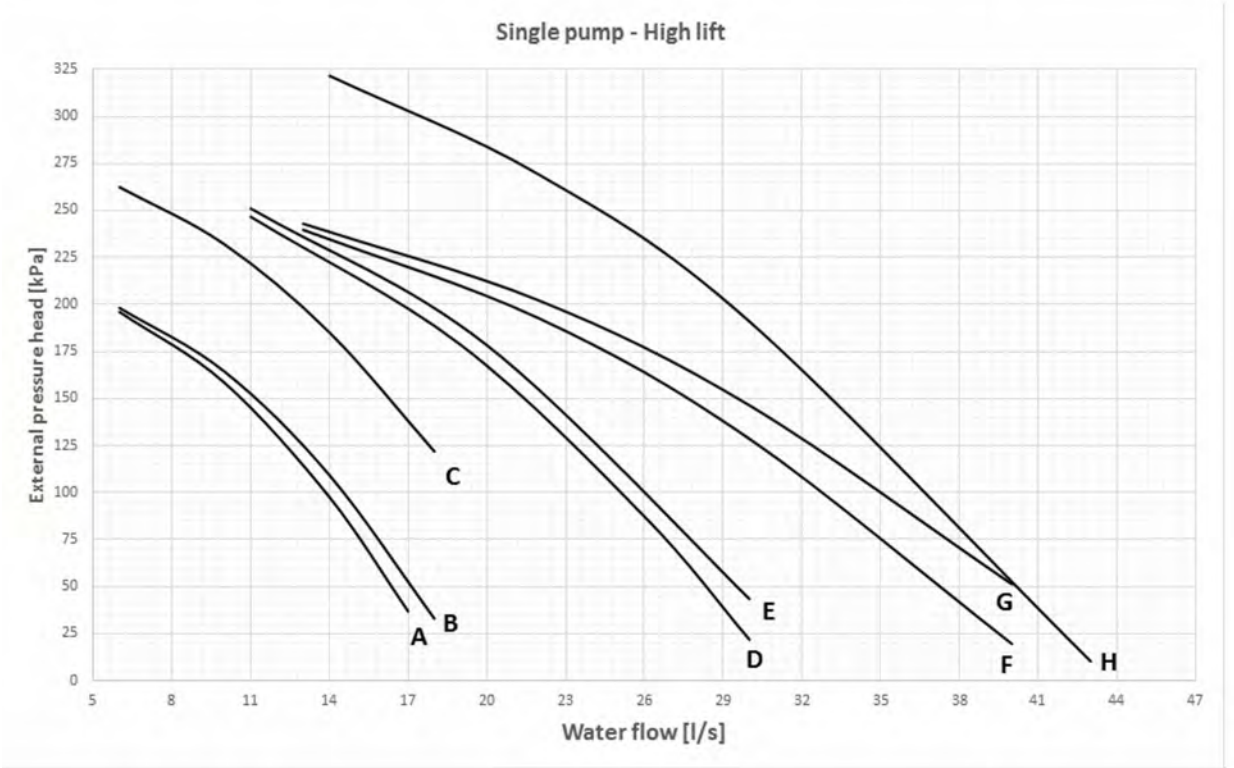
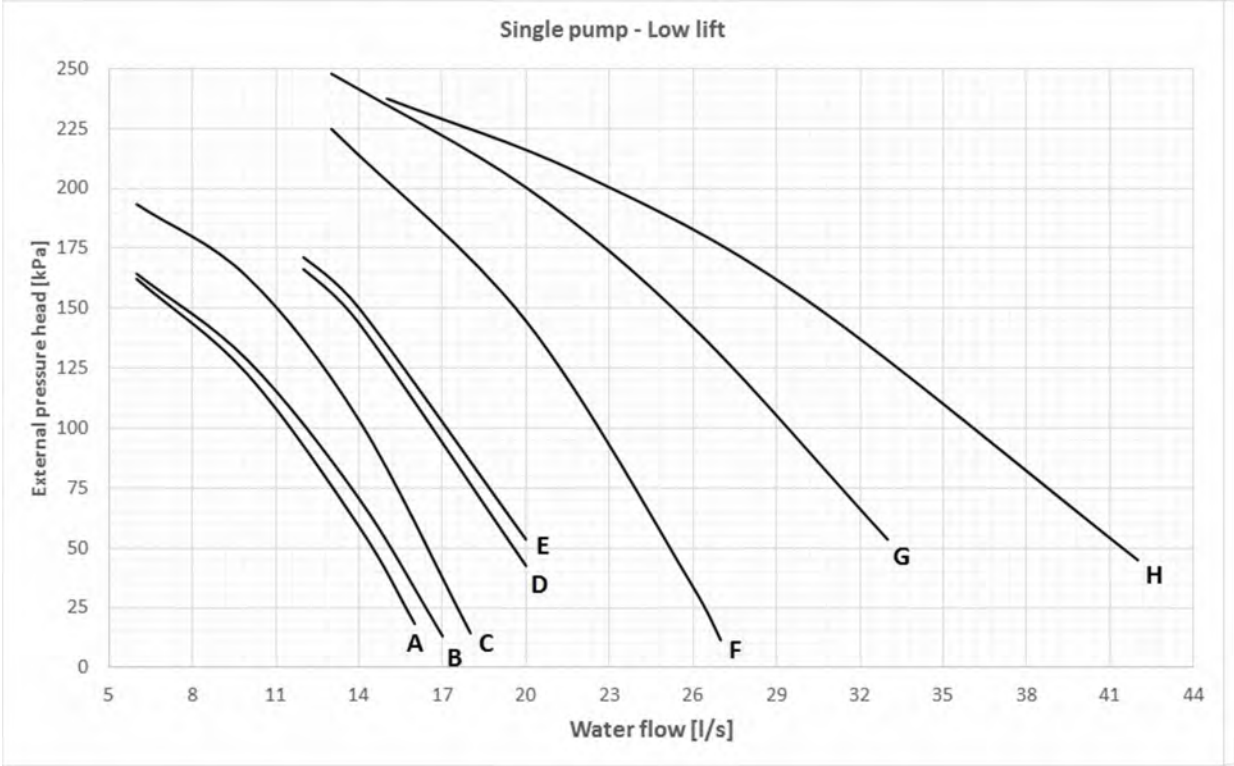


Note

- when using mixture of water and glycol please contact the factory as above specification can change
- External pressure head in the graphs above is net (already subtracted of evaporator and water filter pressure drop)

Single Pump (2 poles) - High efficiency units

External pressure head

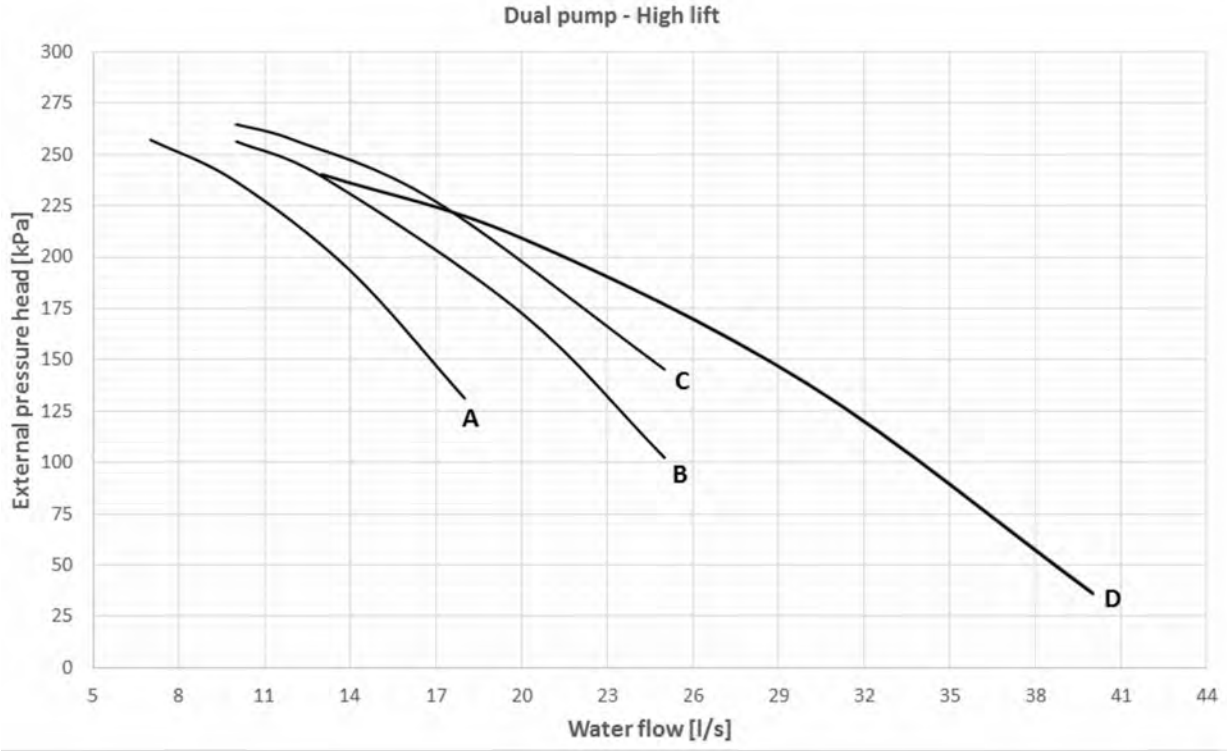


Note

- when using mixture of water and glycol please contact the factory as above specification can change
- External pressure head in the graphs above is net (already subtracted of evaporator and water filter pressure drop)

Twin Pump (2 poles) - Standard efficiency units

External pressure head

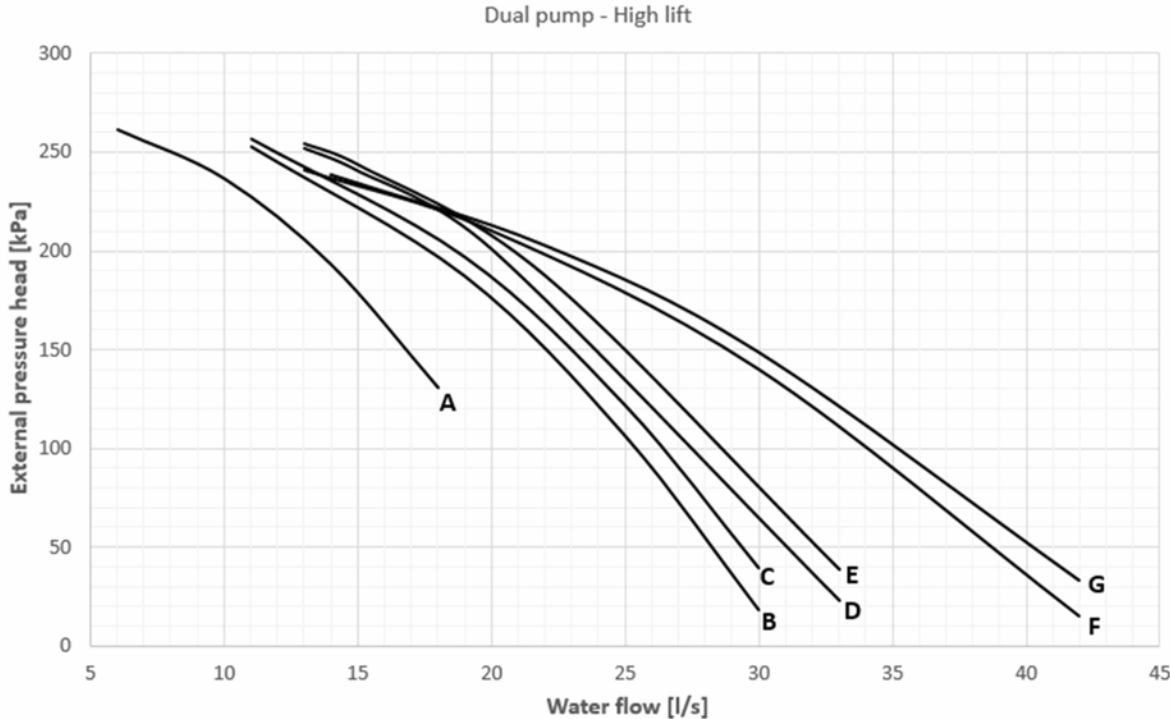
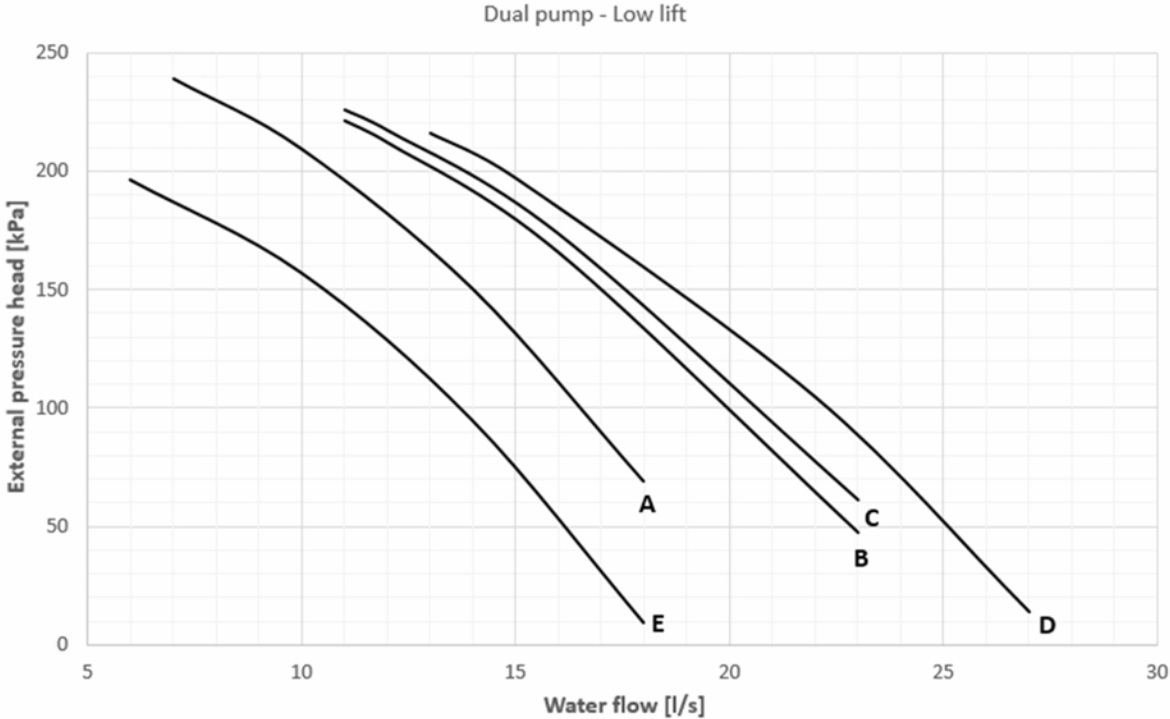


Note

- when using mixture of water and glycol please contact the factory as above specification can change
- External pressure head in the graphs above is net (already subtracted of evaporator and water filter pressure drop)

Twin Pump (2 poles)- High efficiency units

External pressure head



Note

- when using mixture of water and glycol please contact the factory as above specification can change
- External pressure head in the graphs above is net (already subtracted of evaporator and water filter pressure drop)

Water Pump Kit - Combination Matrix

Single Pump						
models			low lift		high lift	
			ref. curve	code	ref. curve	code
EWAQ210F-SS	EWAQ210F-SL	EWAQ200F-SR	A	SPK2	A	SPK4
EWAQ230F-SS	EWAQ230F-SL	EWAQ220F-SR	A	SPK2	A	SPK4
EWAQ250F-SS	EWAQ250F-SL	EWAQ240F-SR	A	SPK2	A	SPK4
EWAQ280F-SS	EWAQ280F-SL	EWAQ270F-SR	B	SPK6	B	SPK8
EWAQ320F-SS	EWAQ320F-SL	EWAQ300F-SR	B	SPK6	B	SPK8
EWAQ350F-SS	EWAQ350F-SL	EWAQ330F-SR	C	SPK6	C	SPK8
EWAQ400F-SS	EWAQ400F-SL	EWAQ370F-SR	D	SPK6	D	SPK8
EWAQ360F-SS	EWAQ360F-SL	EWAQ340F-SR	C	SPK6	C	SPK8
EWAQ410F-SS	EWAQ410F-SL	EWAQ380F-SR	E	SPK7	D	SPK8
EWAQ480F-SS	EWAQ480F-SL	EWAQ460F-SR	E	SPK7	E	SPK9
EWAQ550F-SS	EWAQ550F-SL	EWAQ530F-SR	F	SPK8	F	SPK10
EWAQ610F-SS	EWAQ610F-SL	EWAQ580F-SR	F	SPK8	F	SPK10

Dual Pump						
models			low lift		high lift	
			ref. curve	code	ref. curve	code
EWAQ210F-SS	EWAQ210F-SL	EWAQ200F-SR	NA	NA	NA	NA
EWAQ230F-SS	EWAQ230F-SL	EWAQ220F-SR	NA	NA	NA	NA
EWAQ250F-SS	EWAQ250F-SL	EWAQ240F-SR	NA	NA	NA	NA
EWAQ280F-SS	EWAQ280F-SL	EWAQ270F-SR	A	DPK2	A	DPK4
EWAQ320F-SS	EWAQ320F-SL	EWAQ300F-SR	B	DPK3	A	DPK4
EWAQ350F-SS	EWAQ350F-SL	EWAQ330F-SR	C	DPK3	B	DPK4
EWAQ400F-SS	EWAQ400F-SL	EWAQ370F-SR	D	DPK3	C	DPK4
EWAQ360F-SS	EWAQ360F-SL	EWAQ340F-SR	C	DPK3	B	DPK4
EWAQ410F-SS	EWAQ410F-SL	EWAQ380F-SR	D	DPK3	C	DPK4
EWAQ480F-SS	EWAQ480F-SL	EWAQ460F-SR	NA	NA	D	DPK5
EWAQ550F-SS	EWAQ550F-SL	EWAQ530F-SR	NA	NA	D	DPK5
EWAQ610F-SS	EWAQ610F-SL	EWAQ580F-SR	NA	NA	D	DPK5

Single Pump						
models			low lift		high lift	
			ref. curve	code	ref. curve	code
EWAQ170F-XS	EWAQ170F-XL	EWAQ170F-XR	A	SPK2	A	SPK4
EWAQ200F-XS	EWAQ200F-XL	EWAQ190F-XR	B	SPK2	B	SPK4
EWAQ220F-XS	EWAQ220F-XL	EWAQ210F-XR	C	SPK6	C	SPK8
EWAQ250F-XS	EWAQ250F-XL	EWAQ240F-XR	C	SPK6	C	SPK8
EWAQ310F-XS	EWAQ310F-XL	EWAQ300F-XR	D	SPK6	D	SPK8
EWAQ350F-XS	EWAQ350F-XL	EWAQ330F-XR	E	SPK6	E	SPK8
EWAQ320F-XS	EWAQ320F-XL	EWAQ310F-XR	D	SPK6	D	SPK8
EWAQ360F-XS	EWAQ360F-XL	EWAQ340F-XR	E	SPK6	E	SPK8
EWAQ400F-XS	EWAQ400F-XL	EWAQ390F-XR	F	SPK7	F	SPK9
EWAQ430F-XS	EWAQ430F-XL	EWAQ410F-XR	F	SPK7	G	SPK9
EWAQ450F-XS	EWAQ450F-XL	EWAQ430F-XR	F	SPK7	G	SPK9
EWAQ520F-XS	EWAQ520F-XL	EWAQ500F-XR	G	SPK8	H	SPK10
EWAQ610F-XS	EWAQ610F-XL	EWAQ580F-XR	G	SPK8	H	SPK10
EWAQ680F-XS	EWAQ680F-XL	EWAQ650F-XR	H	SPK9	H	SPK10

Dual Pump						
models			low lift		high lift	
			ref. curve	code	ref. curve	code
EWAQ170F-XS	EWAQ170F-XL	EWAQ170F-XR	NA	NA	NA	NA
EWAQ200F-XS	EWAQ200F-XL	EWAQ190F-XR	NA	NA	NA	NA
EWAQ220F-XS	EWAQ220F-XL	EWAQ210F-XR	E	DPK2	A	DPK4
EWAQ250F-XS	EWAQ250F-XL	EWAQ240F-XR	A	DPK3	A	DPK4
EWAQ310F-XS	EWAQ310F-XL	EWAQ300F-XR	B	DPK3	B	DPK4
EWAQ350F-XS	EWAQ350F-XL	EWAQ330F-XR	C	DPK3	C	DPK4
EWAQ320F-XS	EWAQ320F-XL	EWAQ310F-XR	B	DPK3	B	DPK4
EWAQ360F-XS	EWAQ360F-XL	EWAQ340F-XR	C	DPK3	C	DPK4
EWAQ400F-XS	EWAQ400F-XL	EWAQ390F-XR	D	DPK3	D	DPK4
EWAQ430F-XS	EWAQ430F-XL	EWAQ410F-XR	D	DPK3	E	DPK4
EWAQ450F-XS	EWAQ450F-XL	EWAQ430F-XR	NA	NA	E	DPK5
EWAQ520F-XS	EWAQ520F-XL	EWAQ500F-XR	NA	NA	F	DPK5
EWAQ610F-XS	EWAQ610F-XL	EWAQ580F-XR	NA	NA	G	DPK5
EWAQ680F-XS	EWAQ680F-XL	EWAQ650F-XR	NA	NA	G	DPK5

Legend:

SP = Single Pump; DP = Double Pump

Water Pump Kit - Technical Information

		Pump Motor Power[kW]	Pump Motor Current[A]	Power Supply[V-ph-Hz]	PN	Motor Protection	Insulation[Class]	Working Temperature[°C]
single pump	SPK1	2,2	5	400-3ph-50Hz	PN16	IP55	F	-25 + 120
	SPK2	3	6	400-3ph-50Hz	PN16	IP55	F	-25 + 120
	SPK4	4	8,1	400-3ph-50Hz	PN16	IP55	F	-25 + 120
	SPK5	3	6	400-3ph-50Hz	PN16	IP55	F	-25 + 120
	SPK6	4	8,1	400-3ph-50Hz	PN16	IP55	F	-25 + 120
	SPK7	5,5	10,1	400-3ph-50Hz	PN16	IP55	F	-25 + 120
	SPK8	7,5	13,7	400-3ph-50Hz	PN16	IP55	F	-25 + 120
	SPK9	11	20	400-3ph-50Hz	PN16	IP55	F	-25 + 120
	SPK10	11	20	400-3ph-50Hz	PN16	IP55	F	-25 + 120
	dual pump	DPK1	3	6	400-3ph-50Hz	PN16	IP55	F
DPK2		4	8,1	400-3ph-50Hz	PN16	IP55	F	-25 + 120
DPK3		5,5	10,1	400-3ph-50Hz	PN16	IP55	F	-25 + 120
DPK4		7,5	13,7	400-3ph-50Hz	PN16	IP55	F	-25 + 120
DPK5		11	20	400-3ph-50Hz	PN16	IP55	F	-25 + 120

Legend:

SP = Single Pump; DP = Double Pump

A = Pump Motor Power; B = Pump Motor Current; C = Power Supply; D = PN; E = Motor Protection; F = Insulation (Class); G = Working temperature

How to calculate the overall chiller water side pressure drops (pump by others)

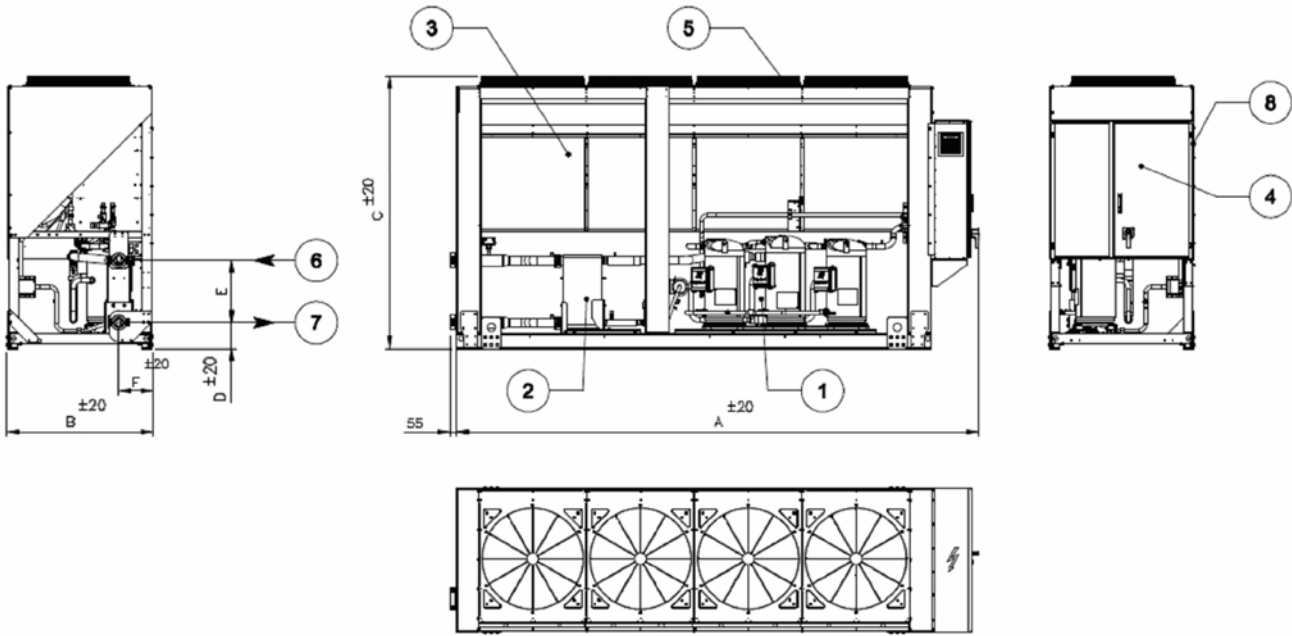
In order to calculate the overall pressure drops introduced by the chiller in an installation the following points have to be considered:

- The pressure drop value showed in CSS (Chiller Selection Software) are referred to chiller's evaporator only
- This multiscroll series is equipped as standard with water filter (factory supplied)

Overall chiller pressure drops = evaporator [kPa] + Filter pressure drop [kPa]

- a) Select the chiller with CSS tool, you get easily the design water flow rate and the corresponding 'evaporator pressure drops' value (in CSS tool kPa figures are referred to evaporator only).
- b) Refer to table "Water filter and piping diameter - Combination Matrix" to know what filter size and piping diameter correspond to the selected chiller.
- c) Considering the design flow rate and water filter size and piping diameter, from graph "Filter pressure drops" get the corresponding kPa value.
- d) By adding the values at point a and c, 'Overall chiller pressure drops' figure is got.

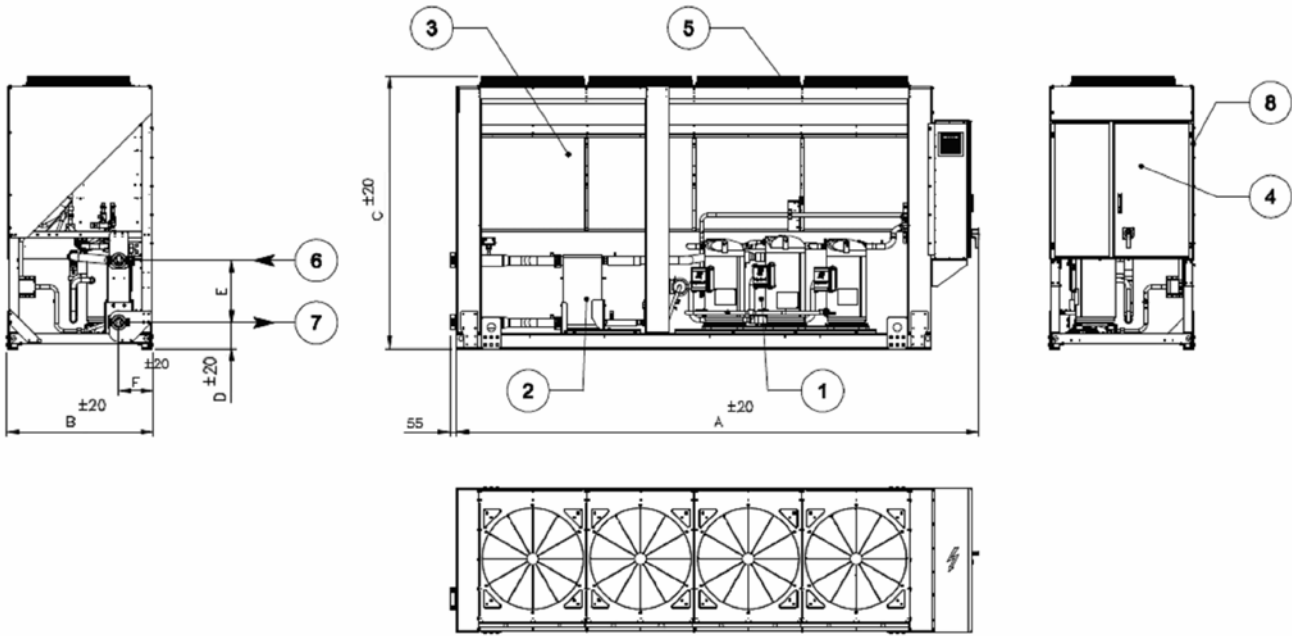
Note: when using mixture of water and glycol please contact the factory as above specification could change



LEGEND

- 1: Compressor
- 2: Evaporator
- 3: Condenser coil
- 4: Electrical panel
- 5: Fan
- 6: Evaporator water inlet
- 7: Evaporator water outlet
- 8: Slot for power and control panel connection

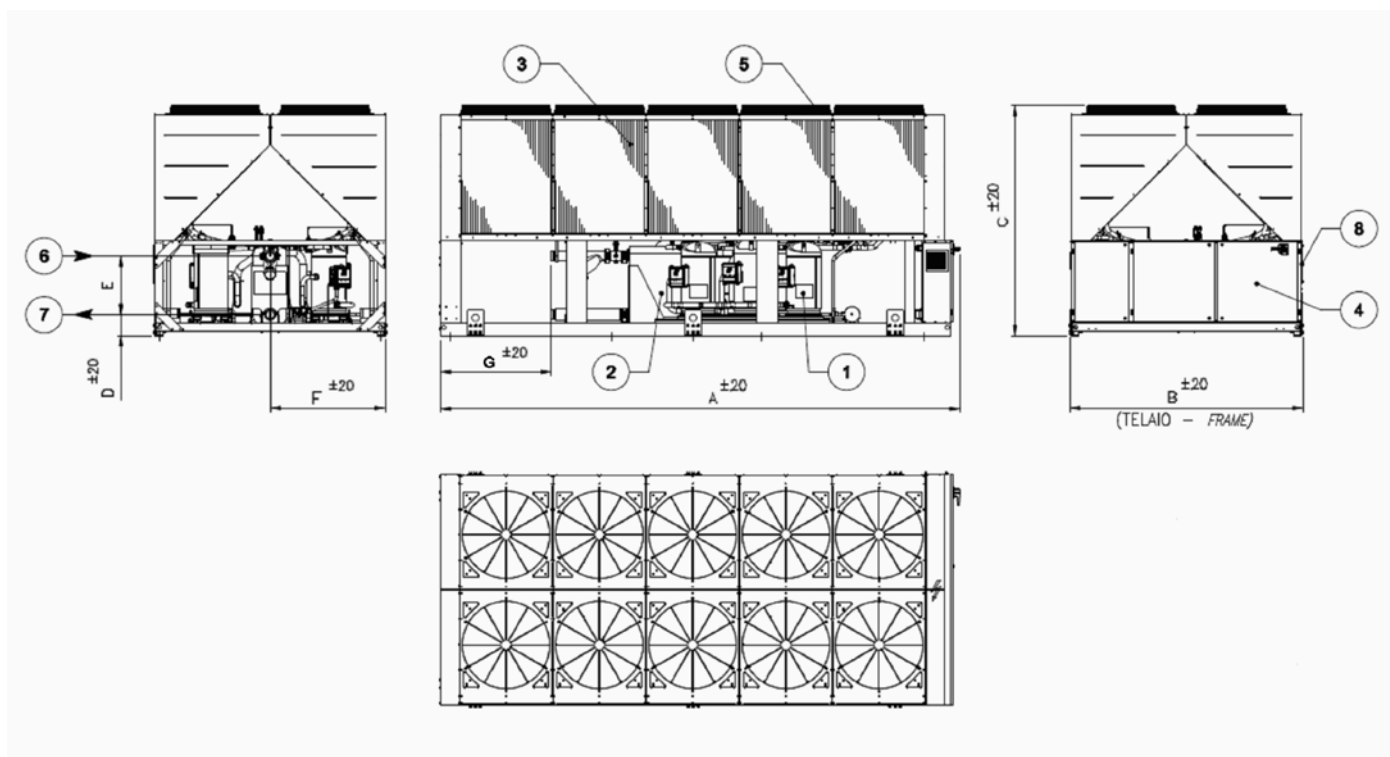
	A	B	C	D	E	F	G	H	I	L	M
EWAO210F-SS	4413	1224	2271	225	369	275					
EWAO230F-SS	4413	1224	2271	225	369	275					
EWAO250F-SS	4413	1224	2271	225	369	275					
EWAO280F-SS	5313	1224	2271	225	369	275					
EWAO320F-SS	5313	1224	2271	225	369	275					
EWAO350F-SS	6213	1224	2271	250	568	275					
EWAO400F-SS	6213	1224	2447	250	568	275					
EWAO210F-SL	4413	1224	2271	212	519	286					
EWAO230F-SL	4413	1224	2271	212	519	286					
EWAO250F-SL	4413	1224	2271	212	519	286					
EWAO280F-SL	5313	1224	2271	212	519	286					
EWAO320F-SL	5313	1224	2271	212	519	286					
EWAO350F-SL	6213	1224	2271	212	519	286					
EWAO400F-SL	6213	1224	2447	212	519	286					
EWAO200F-SR	4413	1224	2271	212	519	286					
EWAO220F-SR	4413	1224	2271	212	519	286					
EWAO240F-SR	4413	1224	2271	212	519	286					
EWAO270F-SR	5313	1224	2271	212	519	286					
EWAO300F-SR	5313	1224	2271	212	519	286					
EWAO330F-SR	6213	1224	2271	212	519	286					
EWAO370F-SR	6213	1224	2447	212	519	286					
EWAO170F-XS	4413	1224	2271	225	369	275					
EWAO200F-XS	4413	1224	2271	225	369	275					
EWAO220F-XS	5313	1224	2271	225	369	275					
EWAO250F-XS	5313	1224	2271	225	369	275					
EWAO310F-XS	6213	1224	2271	250	568	275					
EWAO350F-XS	6213	1224	2271	250	568	275					
EWAO170F-XL	4413	1224	2271	212	519	286					
EWAO200F-XL	4358	1224	2271	212	519	286					
EWAO220F-XL	5313	1224	2271	212	519	286					
EWAO250F-XL	5313	1224	2271	212	519	286					
EWAO310F-XL	6213	1224	2271	212	519	286					
EWAO350F-XL	6213	1224	2271	212	519	286					



LEGEND

- 1: Compressor
- 2: Evaporator
- 3: Condenser coil
- 4: Electrical panel
- 5: Fan
- 6: Evaporator water inlet
- 7: Evaporator water outlet
- 8: Slot for power and control panel connection

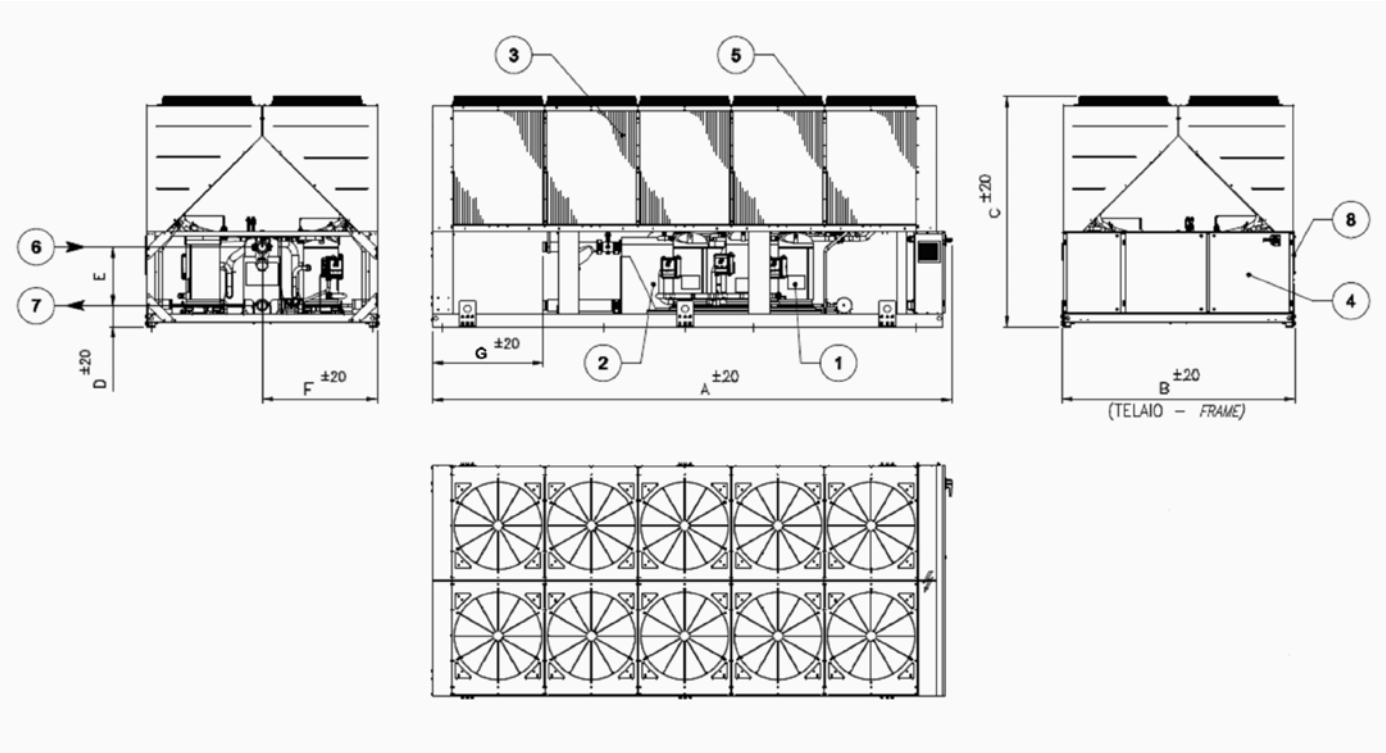
	A	B	C	D	E	F	G	H	I	L	M
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EWAQ190F-XR	4413	1224	2271	212	519	286					
EWAQ210F-XR	5313	1224	2271	212	519	286					
EWAQ240F-XR	5313	1224	2271	212	519	286					
EWAQ300F-XR	6213	1224	2271	212	519	286					
EWAQ330F-XR	6213	1224	2271	212	519	286					



LEGEND

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- 3: Condenser coil
- 4: Electrical panel
- 5: Fan
- 6: Evaporator water inlet
- 7: Evaporator water outlet
- 8: Slot for power and control panel connection

	A	B	C	D	E	F	G	H	I	L	M
EWAO360F-SS	3210	2258	2221	202	568	1129	65				
EWAO410F-SS	3210	2258	2397	202	568	1129	13				
EWAO480F-SS	4110	2258	2221	202	568	1129	240				
EWAO550F-SS	5010	2258	2221	202	568	1129	1140				
EWAO610F-SS	5010	2258	2221	202	568	1129	1140				
EWAO360F-SL	3210	2258	2221	202	568	1129	65				
EWAO410F-SL	3210	2258	2397	202	568	1129	13				
EWAO480F-SL	4110	2258	2221	202	568	1129	240				
EWAO550F-SL	5010	2258	2221	202	568	1129	1140				
EWAO610F-SL	5010	2258	2221	202	568	1129	1140				
EWAO340F-SR	3210	2258	2221	202	568	1129	65				
EWAO380F-SR	3210	2258	2397	202	568	1129	13				
EWAO460F-SR	4110	2258	2221	202	568	1129	240				
EWAO530F-SR	5010	2258	2221	202	568	1129	1140				
EWAO580F-SR	5010	2258	2221	202	568	1129	1140				
EWAO320F-XS	3210	2258	2221	250	568	275	65				
EWAO360F-XS	3210	2258	2221	202	568	1129	13				
EWAO400F-XS	4110	2258	2221	202	568	1129	407				
EWAO430F-XS	4110	2258	2221	202	568	1129	334				
EWAO450F-XS	4110	2258	2221	202	568	1129	240				
EWAO520F-XS	5010	2258	2221	202	568	1129	1140				
EWAO610F-XS	5010	2258	2221	202	568	1129	1067				
EWAO680F-XS	5910	2258	2221	202	568	1129	1967				
EWAO320F-XL	3210	2258	2221	202	568	1129	65				
EWAO360F-XL	3210	2258	2221	202	568	1129	13				
EWAO400F-XL	4110	2258	2221	202	568	1129	407				
EWAO430F-XL	4110	2258	2221	202	568	1129	334				
EWAO450F-XL	4110	2258	2221	202	568	1129	240				
EWAO520F-XL	5010	2258	2221	202	568	1129	1140				
EWAO610F-XL	5010	2258	2221	202	568	1129	1067				
EWAO680F-XL	5910	2258	2221	202	568	1129	1967				



LEGEND

- 1: Compressor
- 2: Evaporator
- 3: Condenser coil
- 4: Electrical panel
- 5: Fan
- 6: Evaporator water inlet
- 7: Evaporator water outlet
- 8: Slot for power and control panel connection

	A	B	C	D	E	F	G	H	I	L	M
EWA0310F-XR	3210	2258	2221	202	568	1129	65				
EWA0340F-XR	3210	2258	2221	202	568	1129	13				
EWA0390F-XR	4110	2258	2221	202	568	1129	407				
EWA0410F-XR	4110	2258	2221	202	568	1129	334				
EWA0430F-XR	4110	2258	2221	202	568	1129	240				
EWA0500F-XR	5010	2258	2221	202	568	1129	1140				
EWA0580F-XR	5010	2258	2221	202	568	1129	1067				
EWA0650F-XR	5910	2258	2221	202	568	1129	1967				

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 and Fig.2' shows you minimum recommended clearance requirements.

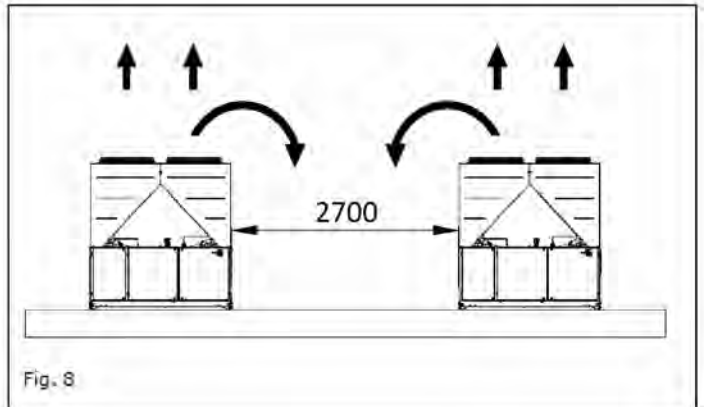
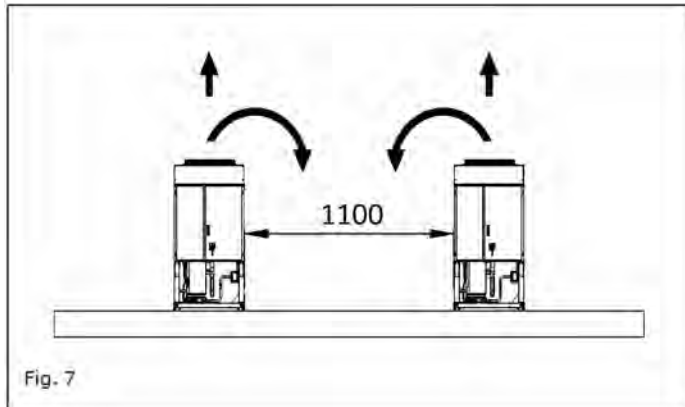
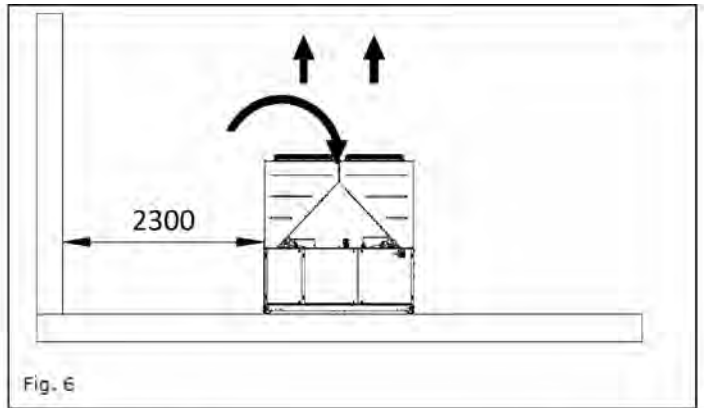
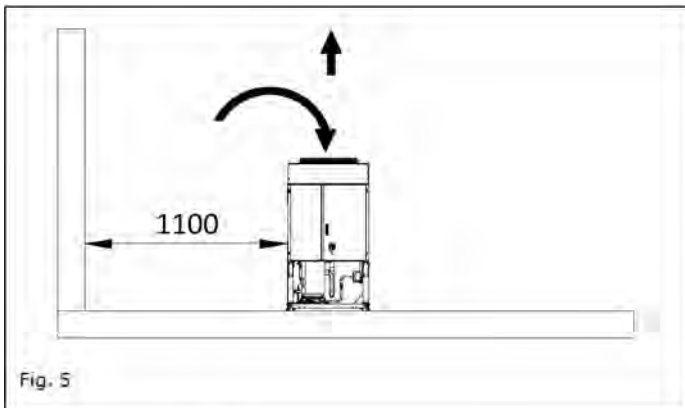
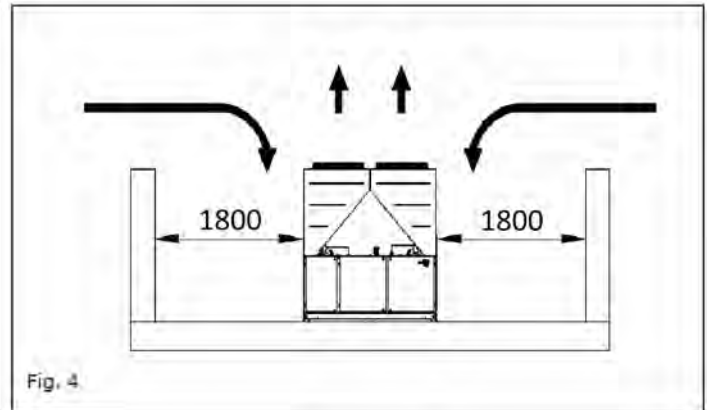
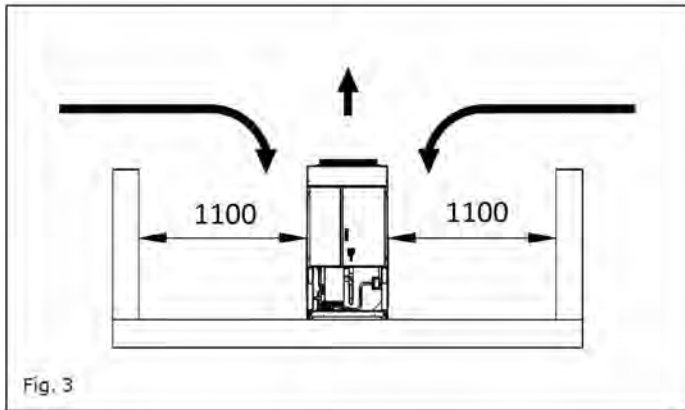
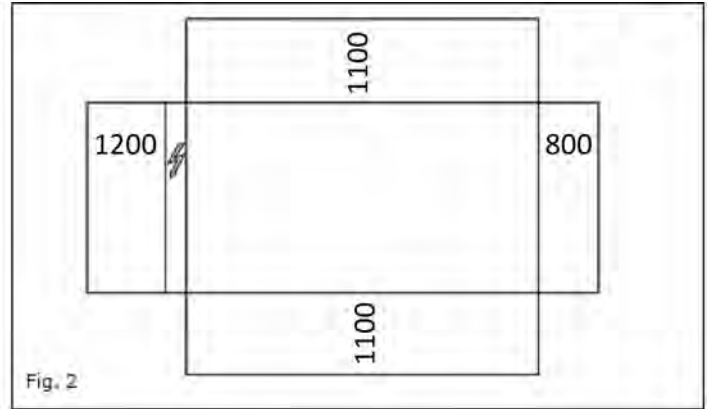
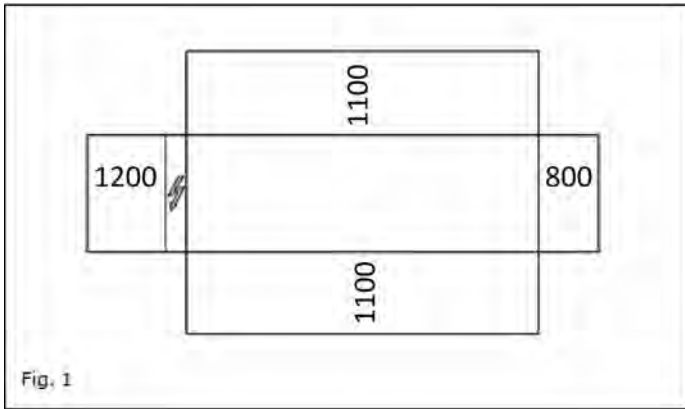
Vertical condenser air discharge must be unobstructed because the unit would have its capacity and efficiency significantly reduced.

If the units are positioned in places surrounded by walls or obstacles of the same height as the units, the units should follow the minimum recommended clearance requirements shown in 'Fig.3 and Fig.4'. In the event the obstacles are higher than the units, the minimum recommended clearance requirements are shown in 'Fig.5 and Fig.6'. 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 a minimum distance from one another as shown in 'Fig.7 and Fig.8'; strong wind could be the cause of air warm recirculation.

For other installation solutions, consult our technicians.

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:	+42°C
Maximum R.H.:	95% not condensing

General The chiller will be designed and manufactured in accordance with the following European directives:

- Construction of pressure vessel 97/23/EC (PED)
- Machinery Directive 2006/42/EC
- Low Voltage 2006/95/EC
- Electromagnetic Compatibility 2004/108/EC
- Electrical & Safety codes EN 60204-1 / EN 60335-2-40
- Manufacturing Quality Standards UNI – EN ISO 9001:2004

To avoid any losses, the unit will be tested at full load in the factory (at the nominal working conditions and water temperatures). The chiller will be delivered to the job site completely assembled and charged with refrigerant and oil. The installation of the chiller must comply with the manufacturer's instructions for rigging and handling equipment.

The unit will be able to start up and operate (as standard) at full load with:

- outside air temperature from °C to °C
- evaporator leaving fluid temperature between °C and °C

Refrigerant Only HFC 410A can be used.

Performance Chiller shall supply the following performances:

- Number of chiller(s) : unit(s)
- Cooling capacity for single chiller : kW
- Power input for single chiller in cooling mode : kW
- Heat exchanger entering water temperature in cooling mode : °C
- Heat exchanger leaving water temperature in cooling mode : °C
- 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, hermetic type rotary scroll compressors, electronic expansion device (EEXV), refrigerant direct expansion plate to plate heat exchanger, air-cooled condenser section, R-410A refrigerant, motor starting components, control system and all components necessary for a safe and stable unit operation.

The chiller will be factory assembled on a robust base frame made of galvanized steel, protected by an epoxy paint.

Sound level and vibrations Sound pressure level at 1 meter distance in free field, semispheric conditions, shall not exceeddB(A). The sound pressure levels must be rated in accordance to ISO 3744 (other types of rating can not be used).

Vibration on the base frame should not exceed 2 mm/s.

Dimensions Unit dimensions shall not exceed following indications:

- Unit length mm
- Unit width mm
- Unit height mm

Evaporator (PHE) The units shall be equipped with a direct expansion plate to plate type evaporator.

- The evaporator will be made of stainless steel brazed plates and 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).
- The evaporator will have 2 refrigerant circuits.
- The water connections shall be VICTAULIC type connections as standard to ensure quick mechanical disconnection between the unit and the hydronic network.
- The evaporator will be manufactured in accordance to PED approval.
- Flow switch will be standard factory mounted.
- Water filter will be standard (depending on the unit model it can be shipped loose or unit mounted).

Condenser coil The unit shall be equipped with condenser coils constructed with internally finned seamless copper tubes and arranged in a staggered row pattern and mechanically expanded into lanced and rippled aluminum fins with full fin collars for higher efficiencies. The space between the fins is given by a collar that will increase the surface area in connection with the tubes, protecting them from ambient corrosion.

- The condenser 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 with 5% to 7% without increasing in energy consumption.
- The condenser coils shall be leak-tested and submitted to a pressure test with dry air.

Condenser fans The condenser fans used in conjunction with the condenser coils, shall be propeller type with glass reinforced resin blades for higher efficiencies and lower sound. 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.
- The condenser fans shall have as a standard an internally protection from overtemperature.

Refrigerant circuit The unit shall have two refrigerant circuits.

- The circuit shall include as standard: electronic expansion device piloted by unit's microprocessor control, liquid line shut-off valve, sight glass with moisture indicator, replaceable filter drier, charging valves, high pressure switch, high and low pressure transducers 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.

- The unit automatically unloads when abnormal high condensing pressure is detected. This to prevent the shutdown of the refrigerant circuit (shutdown of the unit) due to a high-pressure fault.

Low sound unit configurations (on request) The unit compressor shall be connected with unit's metal base frame by rubber antivibration supports to prevent the transmission of vibrations to all metal unit structure, in order to control the unit sound.

- The chiller shall be provided with an acoustical compressor enclosure. This enclosure shall be realized with a light, corrosion resisting aluminum structure and metal panels. The compressor sound-proof enclosure shall be internally fitted with flexible, multi-layer, high density materials.

Hydronic kit options (on request) The hydronic module shall be integrated in the chiller chassis without increasing its dimensions and includes the following elements: centrifugal pump with motor protected by a circuit breaker installed in control panel, water filling system with pressure gauge, safety valve, drain valve.

- The hydronic module shall be assembled and wired to the control panel.
- The water piping shall be protected against corrosion and freezing and insulated to prevent condensation.
- A choice of two pump types shall be available:
 - in-line single pump
 - in-line twin pumps.

Electrical control panel Power and control shall be located in the main panel that will be manufactured to ensure protection against all weather conditions.

- The electrical panel shall be IP54 and (when opening the doors) internally protected against possible accidental contact with live parts.
- The main panel shall be fitted with a main switch interlocked door that shuts off power supply when opening.
- The power section will include compressors and fans protection devices, compressors and fans starters and control circuit power supply.

Controller The controller will be installed as standard and it will be used to modify unit set-points and check control parameters.

- A built-in display will shows chiller operating status plus temperatures and pressures of water, refrigerant and air, programmable values, set-points.
- A sophisticated software with predictive logic, will select the most energy efficient combination of compressors, EEXV and condenser fans to keep stable operating conditions to maximize chiller energy efficiency and reliability.
- The controller will be able to protect critical components based on external signals 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 will be 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.

Controller main features Controller shall be guarantee following minimu functions:

- Management of the compressor stepless capacity and fans modulation.
- Chiller 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).
- Compressor and evaporator pumps hours counter.
- Display of Status Safety Devices.
- Number of starts and compressor working hours.
- Optimized management of compressor load.
- Fan management according to condensing pressure.
- Re-start in case of power failure (automatic / manual).
- Soft Load (optimized management of the compressor 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.

High Level Communications Interface (on request) The chiller shall 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.

For more information email info@daikinapplied.uk or visit www.daikinapplied.uk

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