

EWAT-B-C

Air cooled chiller with scroll compressors

Product Manual



Nominal capacity range 250 - 1010 kW
2 efficiency levels
3 sound configurations
Refrigerant - R32

R-32

Code	Chiller - 1.0
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1. General Characteristics

Low operating cost

Daikin BLUEEVOLUTION chiller series (EWAT-B-) is the result of careful design aimed to optimize the energy efficiency and thus the total life cycle cost of the chiller, with reduced operating cost thanks to outstanding performances and reliability. The chillers feature high efficiency scroll compressor arranged in tandem, trio or quad configuration on each refrigerant circuit, optimized condensing section with advanced technology condensing fans and plates evaporator with low refrigerant content and reduced pressure drops. New Vintage C fully compliant with Ecodesign Lot 21 Tier 2 (Regulation 2016/2281).

Low environmental impact

F-GAS regulation, entered into force in 2015, set up a phase down program for traditional HFC’s refrigerants. In 2018 first significant reduction step has been introduced (37%) and in 2030 the reduction (calculated in equivalent CO2 tons) will need to achieve almost 80%.

Daikin BLUEEVOLUTION chillers uses R-32 refrigerant to reduce drastically the carbon footprint of the unit. The selection of R-32 (chemical name difluoromethane) minimizes the global warming impact of scroll compressor chillers thanks to the lower Global Warming Potential in combination with high-energy efficiency. The Global Warming Potential of R-32 is 675, which is only one third of HFC R-410A. Thanks to the lower flammability classification (R-32 refrigerant is classified A2L in ISO817), it can be safely used in many applications including chilled water systems. Being a single component refrigerant, R-32 is also easier to recycle and reuse, that is another environmental plus in its favor.

Daikin has a long history of continuous reduction of the environmental impact of cooling, heating, and refrigeration, having a unique expertise that comes from manufacturing both refrigerants and equipment. This position is one of the results of company’s corporate philosophy to "Be a Company that Leads in Applying Environmentally Friendly Practices".

Regarding refrigerant choice, Daikin has expertise in using fluorinated (HFC, HFO) as well as non-fluorinated gases (ammonia, carbon dioxide, hydrocarbons) because the company believes in diversity of refrigerant choice to allow the best suited solution to be used in each application.

Compared to other low GWP alternatives to R410A available on the market, R32 provides the best combination of direct and indirect emissions. Other alternative available on the market is R454B, but despite a lower GWP the sum of direct and indirect emission result higher.

	Reference R410A	R32	R454B
Global Warming Potential (GWP)	2088	675	466
Composition	R32 50% R125 50%	R32 100%	R32 68,9% R1234yf 31,1%
Blend	YES	NO	YES
Refrigerant Safety Classification	A1	A2L	A2L
Temperature Glide	< 0,1	0	≈ 1,3
Capacity	100	110 (10% more than 410A)	97 (3% less than 410A)
Efficiency	100	107 (7% more than 410A)	102 (2% more than 410A)
Refrigerant Charge	100	60 (40% less than 410A)	90 (10% less than 410A)
Direct Emissions kg CO₂ – eq.	1879	496	346
Indirect Emissions kg CO₂ – eq.	15384	14419	14662
Total Emissions kg CO₂ – eq.	17263	14916 (best!)	15008

Thanks to lower refrigerant charge required and higher efficiency (lower power consumption) of R32, the total equivalent emission of CO₂ is lower than R454B even if GWP is higher.

Range overview

EWAT-B- C is available in two efficiency tiers:

- Silver (avg. EER =2,9; avg. SEER =4,5)
- Gold (avg. EER = 3,2; avg. SEER = 4,8)

three sound configurations:

- Standard Noise
- Standard Sound + option 76-b (compressor enclosure)
- Reduced Sound

Outstanding reliability

The chillers have one or two truly independent refrigerant circuits with two, three or four compressors, to assure maximum safety for any maintenance, whether planned or not.

Fan silent mode

Units equipped with EC motor fan provides fan silent mode. This feature allows the user to set up detailed time bands to reduced fan rotation speed and therefore sound emission in those areas where night quietness is a mandatory requirement (approximately -4dB(A) depending on unit model and operating conditions)

Superior control logic

The MicroTech 4 controller provides an easy-to-use control environment. The control logic is designed to provide maximum efficiency, to continue operation in unusual operating conditions and to provide history of unit operation. Easy interface with, BACnet, Ethernet TCP/IP or Modbus communications. Master/Slave operation is provided as standard allowing to connect 4 units working as single system.

Code requirements – Safety and observant of laws/directives

All units are designed and manufactured in accordance with the following directives and harmonized standards:

Low voltage directive	DIRECTIVE 2014/35/EU
Electromagnetic compatibility (EMC)	DIRECTIVE 2014/30/EU
Machinery directive	DIRECTIVE 2006/42/EC
Pressure equipment design	DIRECTIVE 2014/68/EU
Ecodesign	DIRECTIVE 2009/125/EC
Safety of machinery	EN 60204-1
EMC - Part 6-2	EN 61000-6-2
EMC - Part 6-4	EN 61000-6-4
Safety and environmental requirements	EN 378-1; EN 378-2; EN 378-4
Methods for calculation pressure relief devices.	EN 13136

Certifications

Units are CE marked, complying with European directives in force, concerning manufacturing and safety.

Compressors

Hermetic orbiting scroll type optimized for R-32 operation and complete with motor over-temperature and over-current protection devices. Each compressor is equipped with an oil heater that keeps the oil from being diluted with the refrigerant when the chiller is not running. The compressors are connected in Tandem, Trio or Quad configuration on each refrigerant circuit. Each compressor is mounted on rubber antivibration mounts for a quiet operation. Unit is delivered with complete oil charge.

Evaporator

The unit is equipped with a direct expansion plate-to-plate type evaporator optimized for R-32 refrigerant operation. This heat exchanger is made of stainless-steel brazed plates and is covered with 10mm closed cell insulation material. The exchanger is equipped with an electric heater for protection against freezing and evaporator water connections are provided with Victaulic kit (as standard). The evaporator is manufactured in accordance to 2014/68/EU. The evaporator flow switch and the evaporator water filter are available as option. Note the installation of an evaporator flow switch and an evaporator water filter is mandatory.

Condenser

The condenser is made entirely of aluminum, and it is optimized for R-32 refrigerant operation. Full-depth louvered aluminum fins are inserted between the aluminum tubes maximizing the heat exchange. The Microchannel technology ensures the highest performance with the minimum surface for the exchanger. This technology reduces unit refrigerant charge compared to traditional copper tubes and aluminum condenser.

Special treatment ensure resistance to the corrosion by atmospheric agents extending the lifetime.

Note: applications in industrial, coastal, highly polluted urban environment or combinations of them, require proper evaluation to understand if additional measures are needed to protect the condenser coil from the aggressive environment.

Condenser fans

Condenser fans are propeller type with high efficiency design blades developed by Daikin to maximize performances. Fan is rated IP55. Standard units are equipped with AC motor fans, EC motors are available as option to enhance efficiency at part load, reduce sound and extend operating range towards negative ambient temperatures.

Electronic expansion valve

The unit is equipped with electronic expansion valves to achieve precise control of R-32 refrigerant mass flow. As today's systems require improved energy efficiency, accurate temperature control, wide range of operating conditions, the application of electronic expansion valves becomes mandatory.

Electronic expansion valves have 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. If compared to traditional thermostatic valves, electronic expansion valves allow the system to work with low condenser pressure (wintertime) without any refrigerant flow problems and the perfect control of the chilled water temperature.

Refrigerant circuit

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

- Compressor
- Refrigerant
- Evaporator
- Air Cooled Condenser
- Electronic expansion valve
- Sight glass with moisture indicator
- Filter drier
- Charging valves
- High pressure switch
- High pressure transducers
- Low pressure transducers
- Oil pressure transducer
- Suction temperature sensor

Electrical panel

Power and control are 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.

MicroTech 4 controller

The new MicroTech 4 controller is installed as standard in all Daikin units.

It gives the possibility to check the most relevant control parameters and modify unit set-points. Additionally, temperatures and pressures of water, refrigerant and air, programmable values, set points can be accessed based on a preset list of user profiles. A sophisticated software with adaptive logic, selects the most energy efficient combination of compressors, EEXV and fans to keep stable operating conditions to maximize unit energy efficiency and reliability.

MicroTech 4 protects critical components based on external signals from onboard sub-system (such as motor temperatures, refrigerant and oil pressures and temperatures, correctness of phase sequence, pressure switches and freezing of heat exchanger). The input coming from high-pressure switches cuts all digital output from the controller in less than 50ms, as an additional security for the equipment. Floating point calculations supported for increased accuracy in Pressure / Temperature conversions.

Control main features

- Control system has the following features:
- Management of compressors and fans modulation
- Control of cooling or heating leaving water temperatures
- Management of cooling and heating capacities according to the load
- Switch of operating modes in less than 1 minute
- Return reset (set point reset based on return water temperature)
- Set point reset (optional)
- Unit operation in partial failure condition
- Managed operations during critical conditions:

- High ambient temperature
- High thermal load
- Startup with high and low differential operating conditions
- Startup with high entering water temperature in cooling mode
- Startup with low entering water temperature in heating mode
- Optimized management of compressor load
- Optimized fan management according to condensing pressure
- General faults alarm relay
- Automatic re-start in case of power failure
- Rapid Restart to recover full load in the shortest possible time for Data Centre application
- ICM Standard control for multiple units' management (optional)
- Soft load (optimized management of the compressor load during the start-up)
- Start at high cold heat exchanger water temperature

Visualization of:

- cooling and heating entering/leaving water temperature of heat exchangers
- outdoor ambient temperature
- condensing-evaporating temperature and pressure, suction and discharge superheat for each circuit
- hours and starts counter for compressors and pumps
- status safety devices

Control additional features

- System upgrade with commercial SD cards
- Save/Restore of configuration parameters with a commercial SD card
- Ethernet port for remote or local servicing using standard web browsers.
- Daikin on Site connectivity for cloud based

Safety device / logic for each refrigerant circuit.

The following devices / logics are available:

- high pressure (pressure switch)
- high pressure (transducer)
- low pressure (transducer)
- fans circuit breakers
- high compressor discharge temperature
- high motor winding temperature

- phase monitor
- low pressure ratio
- high oil pressure drops
- low oil pressure
- no pressure changes at start

System security

The following securities are available:

- phase monitor (available as option)
- low ambient temperature lock-out
- freeze protection.

Regulation type

Proportional integral derivative regulation on the cold heat exchanger leaving water output probe.

Supervising systems MicroTech 4 remote communication (on request)

MicroTech 4 can communicate to BMS (Building Management System) based on the most common protocols as:

- Modbus RTU (Native)
- BACnet BTP certified over IP and MS/TP (class 4) (Native)
- Ethernet TCP/IP (Native)

1.1 Unit configuration

The EWAT B- C chiller series is available in multiple configurations to offer maximum flexibility on efficiency, sound, footprint.

Silver efficiency, Standard Sound

Base version, fixed air flow AC fans @ 950 rpm.

Silver efficiency, Standard Sound with compressor enclosure (OPT 76-B)

Unit equipped with acoustic insulated compressor enclosure to reduce noise emission from compressors, fixed air flow AC fans @ 950 rpm.

Silver efficiency, Reduced Sound

Unit equipped with acoustic insulated compressor enclosure to reduce noise emission from compressors. Reduced noise emission of the condensing section with variable air flow EC fans max speed 810 rpm.

Gold efficiency, Standard Sound

Enhanced condensing section, fixed air flow fans AC fans @ 950 rpm.

Gold efficiency, Standard Sound with compressor enclosure (OPT 76-B)

Enhanced condensing section, acoustic insulated compressor enclosure to reduce noise emission from compressors, fixed air flow fans AC fans @ 950 rpm.

Gold efficiency, Reduced Sound

Enhanced condensing section, unit equipped with acoustic insulated compressor enclosure to reduce compressor noise emission. Reduced noise emission of the condensing section with fixed air flow AC fans @ 720 rpm.

NOTW: Unit equipped with variable air flow fans can enable the low sound operation based on time schedule or external command.

An extensive list of options and accessories are available to meet a customer needs.

2. F-Gas Information

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

Model	Ref. type	Ref. GWP	N° of circuits	Ref. charge circuit #1 [kg] ⁽¹⁾	Ref. charge circuit #1 (TCO2Eq)	Ref. charge circuit #2 [kg] ⁽¹⁾	Ref. charge circuit #2 (TCO2Eq)
EWAT310B-SSC1	R32	675	1	22	15	-	-
EWAT320B-SSC2	R32	675	2	12,5	8	12,5	8
EWAT350B-SSC1	R32	675	1	30	20	-	-
EWAT380B-SSC2	R32	675	2	15,5	10	15,5	10
EWAT430B-SSC2	R32	675	2	17,5	12	17,5	12
EWAT480B-SSC2	R32	675	2	19,5	13	19,5	13
EWAT570B-SSC2	R32	675	2	22,5	15	22,5	15
EWAT620B-SSC2	R32	675	2	25	17	25	17
EWAT670B-SSC2	R32	675	2	26,5	18	26,5	18
EWAT730B-SSC2	R32	675	2	29,5	20	29,5	20
EWAT790B-SSC2	R32	675	2	31,5	21	31,5	21
EWAT860B-SSC2	R32	675	2	34	23	34	23
EWAT960B-SSC2	R32	675	2	38,5	26	38,5	26

i) The above data are referred to the unit without additional optional.

ii) All the data are subject to change without notice. For updated information on project base refer to Chiller Selection Software and unit's certified drawing Refrigerant charge values are for indication only and not considered binding. Refer to unit nameplate for specific unit refrigerant charge

Model	Ref. type	Ref. GWP	N° of circuits	Ref. charge circuit #1 [kg] ⁽¹⁾	Ref. charge circuit #1 (TCO2Eq)	Ref. charge circuit #2 [kg] ⁽¹⁾	Ref. charge circuit #2 (TCO2Eq)
EWAT310B-SRC1	R32	675	1	22	15	-	-
EWAT320B-SRC2	R32	675	2	12,5	8	12,5	8
EWAT350B-SRC1	R32	675	1	30	20	-	-
EWAT380B-SRC2	R32	675	2	15,5	10	15,5	10
EWAT430B-SRC2	R32	675	2	17,5	12	17,5	12
EWAT480B-SRC2	R32	675	2	19,5	13	19,5	13
EWAT570B-SRC2	R32	675	2	22,5	15	22,5	15
EWAT620B-SRC2	R32	675	2	25	17	25	17
EWAT670B-SRC2	R32	675	2	26,5	18	26,5	18
EWAT730B-SRC2	R32	675	2	29,5	20	29,5	20
EWAT790B-SRC2	R32	675	2	31,5	21	31,5	21
EWAT860B-SRC2	R32	675	2	34	23	34	23
EWAT960B-SRC2	R32	675	2	38,5	26	38,5	26

i) The above data are referred to the unit without additional optional.

ii) All the data are subject to change without notice. For updated information on project base refer to Chiller Selection Software and unit's certified drawing Refrigerant charge values are for indication only and not considered binding. Refer to unit nameplate for specific unit refrigerant charge

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Model	Ref. type	Ref. GWP	N° of circuits	Ref. charge circuit #1 [kg] ⁽¹⁾	Ref. charge circuit #1 (TCO2Eq)	Ref. charge circuit #2 [kg] ⁽¹⁾	Ref. charge circuit #2 (TCO2Eq)
EWAT250B-XSC1	R32	675	1	26	18	-	-
EWAT320B-XSC1	R32	675	1	30	20	-	-
EWAT370B-XSC1	R32	675	1	33	22	-	-
EWAT390B-XSC2	R32	675	2	18,5	12	18,5	12
EWAT450B-XSC2	R32	675	2	21	14	21	14
EWAT510B-XSC2	R32	675	2	23,5	16	23,5	16
EWAT540B-XSC2	R32	675	2	25	17	25	17
EWAT590B-XSC2	R32	675	2	27	18	27	18
EWAT630B-XSC2	R32	675	2	29	20	29	20
EWAT720B-XSC2	R32	675	2	33	22	33	22
EWAT760B-XSC2	R32	675	2	34,5	23	34,5	23
EWAT830B-XSC2	R32	675	2	37,5	25	37,5	25
EWAT880B-XSC2	R32	675	2	40	27	40	27
EWATC10B-XSC2	R32	675	2	45	30	45	30

i) The above data are referred to the unit without additional optional.

ii) All the data are subject to change without notice. For updated information on project base refer to Chiller Selection Software and unit's certified drawing Refrigerant charge values are for indication only and not considered binding. Refer to unit nameplate for specific unit refrigerant charge

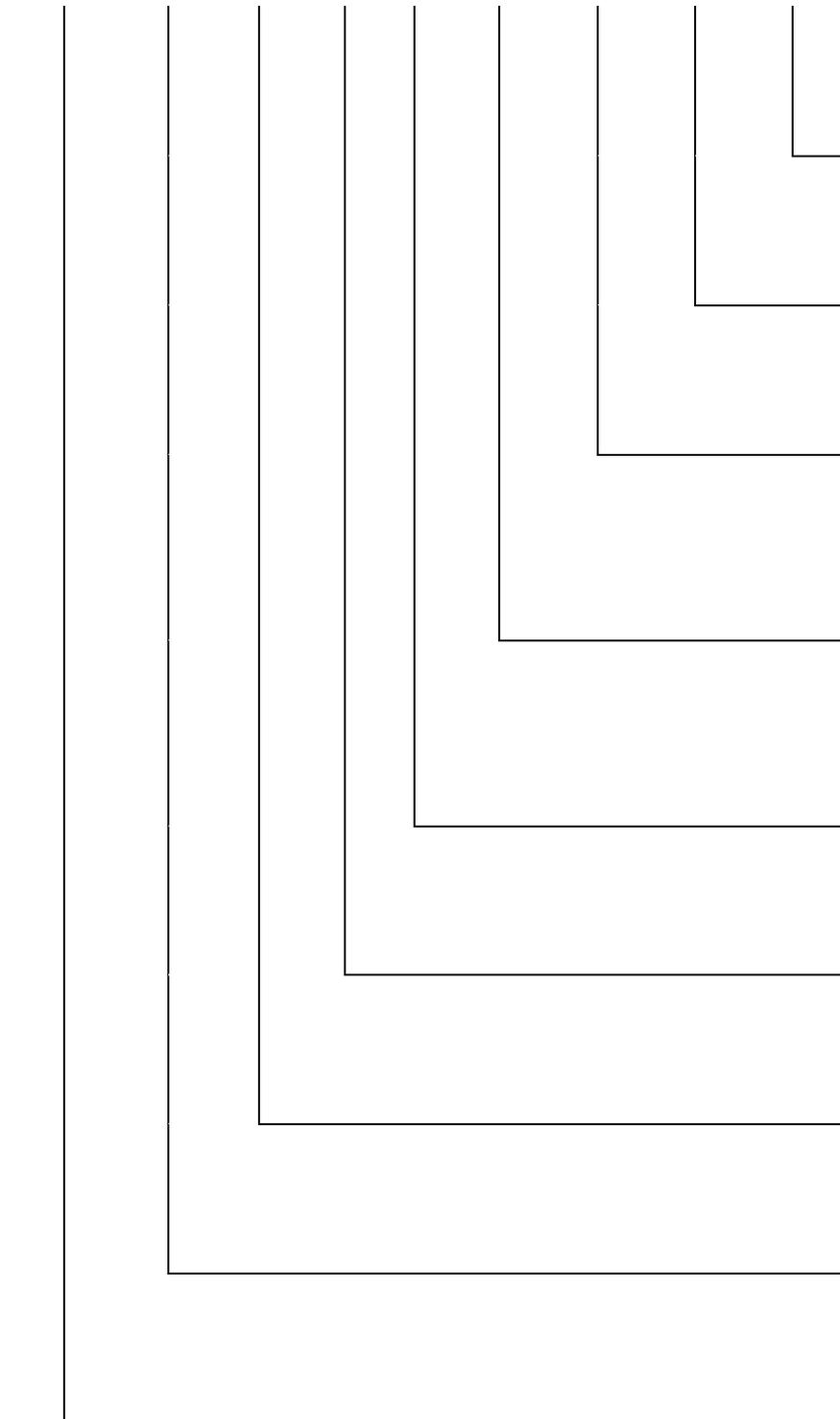
Model	Ref. type	Ref. GWP	N° of circuits	Ref. charge circuit #1 [kg] ⁽¹⁾	Ref. charge circuit #1 (TCO2Eq)	Ref. charge circuit #2 [kg] ⁽¹⁾	Ref. charge circuit #2 (TCO2Eq)
EWAT250B-XRC1	R32	675	1	26	18	-	-
EWAT320B-XRC1	R32	675	1	30	20	-	-
EWAT370B-XRC1	R32	675	1	33	22	-	-
EWAT390B-XRC2	R32	675	2	18,5	12	18,5	12
EWAT450B-XRC2	R32	675	2	21	14	21	14
EWAT510B-XRC2	R32	675	2	23,5	16	23,5	16
EWAT540B-XRC2	R32	675	2	25	17	25	17
EWAT590B-XRC2	R32	675	2	27	18	27	18
EWAT630B-XRC2	R32	675	2	29	20	29	20
EWAT720B-XRC2	R32	675	2	33	22	33	22
EWAT760B-XRC2	R32	675	2	34,5	23	34,5	23
EWAT830B-XRC2	R32	675	2	37,5	25	37,5	25
EWAT880B-XRC2	R32	675	2	40	27	40	27
EWATC10B-XRC2	R32	675	2	45	30	45	30

i) The above data are referred to the unit without additional optional.

ii) All the data are subject to change without notice. For updated information on project base refer to Chiller Selection Software and unit's certified drawing Refrigerant charge values are for indication only and not considered binding. Refer to unit nameplate for specific unit refrigerant charge

3. Nomenclature

EWA T 500 B - X S C 2



Digit 13: Number of independent refrigerant circuit
1 or 2

Digit 12: series revision
C = third revision

Digit 11: Sound Configuration
S = Standard Sound
R = Reduced Sound

Digit 10: Efficiency tier
S = Silver
X = Gold

Digit 9: Compressor control
- = without VFD

Digit 8: Range
B = Air to Water Multi-Scroll

Digit 5 -7: capacity in kW at standard conditions
if Capacity > 1000 → C10, H10, C11, H11...

Digit 4: Refrigerant
T = R32

Digit 1 – 3: Unit type
EWA = Air Cooled Chiller

4. Options

Features provided as standard

- 20mm evaporator insulation
- Victaulic connections
- Double set-point
- Evaporator electric heater
- Evaporator flow switch
- Electronic expansion valve
- Set point reset
- Hour run meter
- General fault contactor
- Alarm from external device
- Fans circuit breakers
- Main switch interlock door
- Time scheduler
- Quiet mode Scheduling (standard for units equipped with EC fans)
- Set point reset
- Demand limit and alarm from external device
- Master / Slave (up to 4 units)

Options on demand

OPT 01 – Total Heat recovery

Unit is equipped with one additional condenser per circuit for production of hot water.

Heating available only when cooling is required at same time.

OPT 03a – Partial Heat recovery

Unit is equipped with one desuperheater per circuit for production of hot water.

Heating available only when cooling is required at same time.

OPT 08 – Brine version

Unit suitable for operation with negative supply temperature. Glycol mixture required.

OPT 21 – Evaporator flange kit

OPT 62 – Discharge line shut-off valve

OPT 63 – High Pressure side manometers

OPT 64 – Low Pressure side manometers

OPT 76-B – Soundproof system (compressor)

Enclosure on compressor to reduce unit sound emission. Provided as standard on Reduced Sound Configuration units (indicated with “R” in digit 13 of code string).

OPT 78 – One centrifugal pump (Low lift)

See Hydronic Options section for details

OPT 79 – One centrifugal pump (High lift)

See Hydronic Options section for details

OPT 80 – Two centrifugal pump (Low lift)

See Hydronic Options section for details

OPT 81 – Two centrifugal pump (High lift)

See Hydronic Options section for details

OPT 91 – Double pressure relief valve with diverter

OPT 115 – Water filter

OPT 121 – Refrigerant Leak detection

Requires compressor enclosure (OPT 76-b)

OPT 134 – One centrifugal pump (Low lift) + tank

See Hydronic Options section for details

OPT 135 – One centrifugal pump (High lift) + tank

See Hydronic Options section for details

OPT 136 – Two centrifugal pump (Low lift) + tank

See Hydronic Options section for details

OPT 137 – Two centrifugal pump (High lift) + tank

See Hydronic Options section for details

OPT 139 – E-coating microchannel coils

Provides additional resistance to corrosion in aggressive environment. See details in Installation and Operation manual

OPT 225 - Blue coat microchannel coils

Provides additional resistance to corrosion in mildly aggressive environment. See details in Installation and Operation manual

OPT 223 - Finned tubes Cu/Al blue fins condenser

Unit provided with copper tubes – Aluminum fins condenser. The fins are covered by a layer of acrylic material to provide mild protection to corrosion

OPT 224 - Finned tubes Cu/Al e-coated condenser

Unit provided with copper tubes – Aluminum fins condenser with enhanced resistance to corrosion in aggressive environment. See details in Installation and Operation manual

OPT 140 – Unit Guards (to cover unit access)

Wire mesh around the unit

OPT 141 – Side panels on coils end

Enhanced esthetics and protection of piping

OPT 187 – High evaporator leaving temperature (above 18°C)

Unit suitable for operation with supply temperature above 18°C

OPT 06 – Soft starter

Each compressor equipped with Solid State Starter

OPT 15 – Under / Over voltage control

OPT 16 – Energy meter

OPT 17 – Capacitors for power factor correction

OPT 42 – Speedtrol

One for per circuit with variable speed control to extend chiller operation down to -20°C

OPT 95 – Compressor circuit breakers

OPT 102 – Ground fault relay

OPT 120e – Inverter kit for 1 centrifugal pump low lift

to be selected with related pump option

OPT 120f – Inverter kit for 1 centrifugal pump high lift

to be selected with related pump option

OPT 120g – Inverter kit for 2 centrifugal pump low lift

to be selected with related pump option

OPT 120h – Inverter kit for 2 centrifugal pump high lift

to be selected with related pump option

OPT 142 – High Ambient kit

Unit suitable for operation continuous operation above 46°C air entering the unit

OPT 143 – Variable Primary Flow

Unit suitable for operation in primary only system with variable flow. Requires selection of pump and related inverter kit. Requires selection of an integrated pump and related Inverter kit

OPT 144 – Differential pressure transducer (shipped loose)

Requires selection of OPT 143 – Variable primary Flow.

OPT 229 – Brushless fan (+ silent mode)

Unit equipped with EC motor fans. Benefits are enhanced part load performances and enable silent mode functionality to reduce noise emission based on defined time schedule or external signal.

OPT 184 – iCM standard

Control functionality to manage systems including up to 8 units, not necessarily of the same model. The master unit can manage the slaves connected in series on the hydraulic plant with the aim of optimize the running hours of each compressor and to control pumps also in variable flow systems. iCM is compatible with Heat recovery, free-cooling and variable primary flow options to optimized operation of multiple units

OPT 180 – Modbus RTU MSTP

OPT 181 – BACnet MSTP

OPT 182 – BACnet IP

**OPT155 – Daikin on Site modem (with antenna) +
Mobile App HMI**

OPT 160C – 100 Pa ESP (Brushless fans)

Unit equipped with EC motor fans at higher rotational speed to win additional pressure resistance.

OPT 110 – Rapid restart

Restore full capacity within 180 seconds from power restoration.

OPT 186 – Performance monitoring

Unit performance information's available from controller.

OPT 75 – Rubber anti vibration mounts

OPT 77 – Spring Anti vibration mounts

OPT 83 – Ext. tank w/out cabinet (500 lt)

OPT 84 – Ext. tank w/out cabinet (1000 lt)

OPT 87 – Ext. tank with cabinet (500 lt)

OPT 88 – Ext. tank with cabinet (1000 lt)

OPT 71 – Container kit

OPT 112 – Transport kit

5. Technical data

EWAT B- SS | Silver Efficiency, Standard Sound | 400 V / 3ph / 50 Hz

Model		310	350	320	380	430	480
Cooling Capacity ⁽¹⁾	kW	305,9	345,6	318	381,4	426,6	477,6
Power input ⁽¹⁾	kW	106,6	130	115	125,2	148,6	175,9
Cooling Efficiency – EER ⁽¹⁾	kW/kW	2,870	2,658	2,765	3,046	2,871	2,715
Seasonal Energy Efficiency Ratio - SEER ⁽¹⁾⁽²⁾	kW/kW	4,689	4,590	4,517	4,649	4,698	4,649
$\eta_{s,c}$ ⁽³⁾	%	185	181	178	183	185	183
Seasonal Energy Performance Ratio - SEPR ⁽¹⁾⁽²⁾	kW/kW	5,842	5,692	5,482	5,604	5,757	5,686
IPLV ⁽⁵⁾	kW/kW	4,948	4,948	4,794	4,849	4,907	4,940
Minimum capacity turndown ⁽¹¹⁾	%	22%	19%	21%	18%	16%	14%
Flow rate ⁽¹⁾	l/s	14,6	16,5	15,2	18,2	20,3	22,8
Evaporator Pressure Drop ⁽¹⁾⁽⁶⁾	kPa	49,3	55,3	47,0	66,9	73,3	91,4
Sound Power ⁽¹⁾⁽⁷⁾ – Lw	dB(a)	94	95	94	95	96	96
Sound Power ⁽¹⁾⁽⁷⁾ – Lw with + OP76b	dB(a)	90	91	90	92	92	92
Number of circuits / Compressors	#	1 / 3	1 / 3	2 / 4	2 / 4	2 / 4	2 / 5
Water volume	Lt	22,95	27,27	27,27	27,27	35,37	35,37
Minimum water flow rate ⁽¹⁰⁾	l/s	5,6	6	6	6	6,5	6,5
Length	mm	2514	2514	2514	3594	3594	3594
Width	mm	2238	2238	2238	2238	2238	2238
Height	mm	2535	2535	2535	2535	2535	2535
Shipping weight ⁽⁸⁾	kg	2076	2200	2118	2618	2801	2924
Operating weight ⁽⁸⁾	kg	2099	2228	2146	2646	2837	2960
Water Connection Size	Ø mm	88,9	88,9	88,9	88,9	88,9	88,9
Running Current ⁽¹⁾⁽⁸⁾⁽¹²⁾	A	186	224	200	222	260	304
Max Running Current ⁽⁷⁾⁽⁸⁾⁽¹²⁾	A	242	285	246	298	341	386
Current for Wiring Sizing ⁽⁸⁾	A	267	314	271	328	375	425
Max Inrush Current ⁽⁸⁾⁽⁹⁾⁽¹²⁾	A	690	733	694	746	789	834

i) The above data are referred to the unit without additional optional.

ii) The above data are referred the unit installed in compliancy with installation prescription.

iii) All the data are subject to change without notice. For updated information on project base refer to Chiller Selection Software and unit's certified drawing

- (1) Standard Rating Conditions for Air to water chillers according to EN14511:2 Outdoor Heat exchanger inlet dry bulb temperature 35°C at sea level; Indoor heat exchanger inlet water temperature 12°C, outlet water temperature 7°C. Fluid: water, Fouling factor = 0
- (2) Seasonal Energy Efficiency Ratio as defined in EN14825, part load condition in cooling for Air to Water units, fan coil application, variable outlet, variable flow.
- (3) The seasonal space cooling energy efficiency $\eta_{s,c}$ is calculated as defined in Regulation (EU) 2016/2281 the seasonal energy efficiency ratio SEER divided by the conversion coefficient CC (2.5), corrected by contributions accounting for temperature control (0.03).
- (4) Seasonal Energy Performance Ratio as defined in EN14825, part load condition in cooling for Air to Water units, high temperature application
- (5) Based on AHRI conditions
- (6) Fluid: water, not including filter pressure drop. The installation of the filter is mandatory
- (7) Sound power level measured in accordance with ISO9614, referred to unit operating at Standard Rating Conditions for Air to water chillers according to EN14511:2 Outdoor Heat exchanger inlet dry bulb temperature 35°C; Indoor heat exchanger inlet water temperature 12°C, outlet water temperature 7°C
- (8) This are intended as guideline only and referred for unit without options. Refer to dedicated wiring diagram and unit nameplate for specific values.
- (9) Determined as follow: LRA of largest compressor + FLA of remaining compressors + FLA of the fans.
Value intended as guideline. Refer to unit nameplate for specific value.
- (10) Minimum flow rate in variable flow application in correspondence of minimum chiller capacity, supply temperature 7°C, fluid: water
- (11) Indicative value of minimum capacity expressed as percentage of the total capacity available based on the operating conditions (ambient temperature, fluid in/out temperature and fluid type)
- (12) ±10% tolerance on Voltage, Voltage unbalance between phases must be within ± 3%.

Eurovent certified data

EWAT B- SS | Silver Efficiency, Standard Sound | 400 V / 3ph / 50 Hz

Model		570	620	670	730	790	860
Cooling Capacity ⁽¹⁾	kW	567,3	622,3	668,9	735	791,2	857,2
Power input ⁽¹⁾	kW	185,5	213,1	237	248,6	273,8	285,6
Cooling Efficiency – EER ⁽¹⁾	kW/kW	3,058	2,920	2,822	2,956	2,890	3,001
Seasonal Energy Efficiency Ratio - SEER ⁽¹⁾⁽²⁾	kW/kW	4,834	4,797	4,778	4,834	4,844	4,889
$\eta_{s,c}$ ⁽³⁾	%	190	189	188	190	191	193
Seasonal Energy Performance Ratio - SEPR ⁽¹⁾⁽²⁾	kW/kW	5,833	5,808	5,877	6,011	5,935	5,992
IPLV ⁽⁵⁾	kW/kW	5,062	5,073	5,088	5,120	5,092	5,122
Minimum capacity turndown ⁽¹¹⁾	%	22%	20%	18%	17%	15%	14%
Flow rate ⁽¹⁾	l/s	27,0	29,7	31,9	35,0	37,7	40,9
Evaporator Pressure Drop ⁽¹⁾⁽⁶⁾	kPa	21,5	25,5	19,7	23,5	27,1	31,6
Sound Power ⁽¹⁾⁽⁷⁾ – Lw	dB(a)	97	97	97	98	98	99
Sound Power ⁽¹⁾⁽⁷⁾ – Lw with + OP76b	dB(a)	93	93	93	94	94	95
Number of circuits / Compressors	#	2 / 5	2 / 6	2 / 6	2 / 6	2 / 7	2 / 7
Water volume	Lt	58,8	58,8	75,6	75,6	75,6	75,6
Minimum water flow rate ⁽¹⁰⁾	l/s	16,2	16,2	20	20	20	20
Length	mm	4674	4674	4674	5754	5848	6928
Width	mm	2238	2238	2238	2238	2238	2238
Height	mm	2535	2535	2535	2535	2535	2535
Shipping weight ⁽⁸⁾	kg	3495	3670	3779	4308	4666	5119
Operating weight ⁽⁸⁾	kg	3555	3747	3856	4385	4743	5196
Water Connection Size	Ø mm	139,7	139,7	139,7	139,7	139,7	139,7
Running Current ⁽¹⁾⁽⁸⁾⁽¹²⁾	A	329	374	413	438	479	505
Max Running Current ⁽⁷⁾⁽⁸⁾⁽¹²⁾	A	438	498	526	578	625	677
Current for Wiring Sizing ⁽⁸⁾	A	482	532	579	636	688	745
Max Inrush Current ⁽⁸⁾⁽⁹⁾⁽¹²⁾	A	886	932	974	1026	1073	1125

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iii) All the data are subject to change without notice. For updated information on project base refer to Chiller Selection Software and unit's certified drawing

- (1) Standard Rating Conditions for Air to water chillers according to EN14511:2 Outdoor Heat exchanger inlet dry bulb temperature 35°C at sea level; Indoor heat exchanger inlet water temperature 12°C, outlet water temperature 7°C. Fluid: water, Fouling factor = 0
- (2) Seasonal Energy Efficiency Ratio as defined in EN14825, part load condition in cooling for Air to Water units, fan coil application, variable outlet, variable flow.
- (3) The seasonal space cooling energy efficiency $\eta_{s,c}$ is calculated as defined in Regulation (EU) 2016/2281 the seasonal energy efficiency ratio SEER divided by the conversion coefficient CC (2.5), corrected by contributions accounting for temperature control (0.03).
- (4) Seasonal Energy Performance Ratio as defined in EN14825, part load condition in cooling for Air to Water units, high temperature application
- (5) Based on AHRI conditions
- (6) Fluid: water, not including filter pressure drop. The installation of the filter is mandatory
- (7) Sound power level measured in accordance with ISO9614, referred to unit operating at Standard Rating Conditions for Air to water chillers according to EN14511:2 Outdoor Heat exchanger inlet dry bulb temperature 35°C; Indoor heat exchanger inlet water temperature 12°C, outlet water temperature 7°C
- (8) This are intended as guideline only and referred for unit without options. Refer to dedicated wiring diagram and unit nameplate for specific values.
- (9) Determined as follow: LRA of largest compressor + FLA of remaining compressors + FLA of the fans.
Value intended as guideline. Refer to unit nameplate for specific value.
- (10) Minimum flow rate in variable flow application in correspondence of minimum chiller capacity, supply temperature 7°C, fluid: water
- (11) Indicative value of minimum capacity expressed as percentage of the total capacity available based on the operating conditions (ambient temperature, fluid in/out temperature and fluid type)
- (12) ±10% tolerance on Voltage, Voltage unbalance between phases must be within ± 3%.

Eurovent certified data

EWAT B- SS | Silver Efficiency, Standard Sound | 400 V / 3ph / 50 Hz

Model		960
Cooling Capacity ⁽¹⁾	kW	963,7
Power input ⁽¹⁾	kW	334,6
Cooling Efficiency – EER ⁽¹⁾	kW/kW	2,880
Seasonal Energy Efficiency Ratio - SEER ⁽¹⁾⁽²⁾	kW/kW	4,801
$\eta_{s,c}$ ⁽³⁾	%	
Seasonal Energy Performance Ratio - SEPR ⁽¹⁾⁽²⁾	kW/kW	5,948
IPLV ⁽⁵⁾	kW/kW	5,079
Minimum capacity turndown ⁽¹¹⁾	%	25%
Flow rate ⁽¹⁾	l/s	45,9
Evaporator Pressure Drop ⁽¹⁾⁽⁶⁾	kPa	31,4
Sound Power ⁽¹⁾⁽⁷⁾ – Lw	dB(a)	99
Sound Power ⁽¹⁾⁽⁷⁾ – Lw with + OP76b	dB(a)	95
Number of circuits / Compressors	#	2 / 8
Water volume	Lt	92,4
Minimum water flow rate ⁽¹⁰⁾	l/s	22,6
Length	mm	6928
Width	mm	2238
Height	mm	2535
Shipping weight ⁽⁸⁾	kg	5313
Operating weight ⁽⁸⁾	kg	5412
Water Connection Size	Ø mm	139,7
Running Current ⁽¹⁾⁽⁸⁾⁽¹²⁾	A	585
Max Running Current ⁽⁷⁾⁽⁸⁾⁽¹²⁾	A	765
Current for Wiring Sizing ⁽⁸⁾	A	841
Max Inrush Current ⁽⁸⁾⁽⁹⁾⁽¹²⁾	A	1213

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- (1) Standard Rating Conditions for Air to water chillers according to EN14511:2 Outdoor Heat exchanger inlet dry bulb temperature 35°C at sea level; Indoor heat exchanger inlet water temperature 12°C, outlet water temperature 7°C. Fluid: water, Fouling factor = 0
- (2) Seasonal Energy Efficiency Ratio as defined in EN14825, part load condition in cooling for Air to Water units, fan coil application, variable outlet, variable flow.
- (3) The seasonal space cooling energy efficiency $\eta_{s,c}$ is calculated as defined in Regulation (EU) 2016/2281 the seasonal energy efficiency ratio SEER divided by the conversion coefficient CC (2.5), corrected by contributions accounting for temperature control (0.03).
- (4) Seasonal Energy Performance Ratio as defined in EN14825, part load condition in cooling for Air to Water units, high temperature application
- (5) Based on AHRI conditions
- (6) Fluid: water, not including filter pressure drop. The installation of the filter is mandatory
- (7) Sound power level measured in accordance with ISO9614, referred to unit operating at Standard Rating Conditions for Air to water chillers according to EN14511:2 Outdoor Heat exchanger inlet dry bulb temperature 35°C; Indoor heat exchanger inlet water temperature 12°C, outlet water temperature 7°C
- (8) This are intended as guideline only and referred for unit without options. Refer to dedicated wiring diagram and unit nameplate for specific values.
- (9) Determined as follow: LRA of largest compressor + FLA of remaining compressors + FLA of the fans.
Value intended as guideline. Refer to unit nameplate for specific value.
- (10) Minimum flow rate in variable flow application in correspondence of minimum chiller capacity, supply temperature 7°C, fluid: water
- (11) Indicative value of minimum capacity expressed as percentage of the total capacity available based on the operating conditions (ambient temperature, fluid in/out temperature and fluid type)
- (12) ±10% tolerance on Voltage, Voltage unbalance between phases must be within ± 3%.

Eurovent certified data

EWAT B- SR | Silver Efficiency, Reduced Sound | 400 V / 3ph / 50 Hz

Model		310	350	320	380	430	480
Cooling Capacity ⁽¹⁾	kW	297,6	334,1	308,4	373,6	415,3	463,3
Power input ⁽¹⁾	kW	108,2	133,7	117,3	125,0	151,5	179,6
Cooling Efficiency – EER ⁽¹⁾	kW/kW	2,750	2,500	2,630	2,990	2,760	2,580
Seasonal Energy Efficiency Ratio - SEER ⁽¹⁾⁽²⁾	kW/kW	5,013	4,806	4,700	4,895	4,913	4,902
$\eta_{s,c}$ ⁽³⁾	%	198	189	185	193	194	193
Seasonal Energy Performance Ratio - SEPR ⁽¹⁾⁽²⁾	kW/kW	6,104	5,811	5,807	6,005	5,957	5,869
IPLV ⁽⁵⁾	kW/kW	5,485	5,319	4,999	5,324	5,339	5,382
Minimum capacity turndown ⁽¹¹⁾	%	22%	19%	21%	18%	16%	14%
Flow rate ⁽¹⁾	l/s	14,19	15,93	14,7	17,81	19,79	22,08
Evaporator Pressure Drop ⁽¹⁾⁽⁶⁾	kPa	46,76	51,77	44,33	64,25	69,54	86,14
Sound Power ⁽¹⁾⁽⁷⁾ – Lw	dB(a)	88	88	88	90	90	90
Number of circuits / Compressors	#	1 / 3	1 / 3	2 / 4	2 / 4	2 / 4	2 / 5
Water volume	Lt	22,95	27,27	27,27	27,27	35,37	35,37
Minimum water flow rate ⁽¹⁰⁾	l/s	5,6	6	6	6	6,5	6,5
Length	mm	2514	2514	2514	3594	3594	3594
Width	mm	2238	2238	2238	2238	2238	2238
Height	mm	2535	2535	2535	2535	2535	2535
Shipping weight ⁽⁸⁾	kg	2076	2200	2118	2618	2801	2924
Operating weight ⁽⁸⁾	kg	2099	2228	2146	2646	2837	2960
Water Connection Size	Ø mm	Ø88,9	Ø88,9	Ø88,9	Ø88,9	Ø88,9	Ø88,9
Running Current ⁽¹⁾⁽⁸⁾⁽¹²⁾	A	195	236	69	232	272	319
Max Running Current ⁽⁷⁾⁽⁸⁾⁽¹²⁾	A	245	287	249	302	344	390
Current for Wiring Sizing ⁽⁸⁾	A	269	316	273	332	379	428
Max Inrush Current ⁽⁸⁾⁽⁹⁾⁽¹²⁾	A	693	735	697	750	792	838

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- (13) Standard Rating Conditions for Air to water chillers according to EN14511:2 Outdoor Heat exchanger inlet dry bulb temperature 35°C at sea level; Indoor heat exchanger inlet water temperature 12°C, outlet water temperature 7°C. Fluid: water, Fouling factor = 0
- (14) Seasonal Energy Efficiency Ratio as defined in EN14825, part load condition in cooling for Air to Water units, fan coil application, variable outlet, variable flow.
- (15) The seasonal space cooling energy efficiency $\eta_{s,c}$ is calculated as defined in Regulation (EU) 2016/2281 the seasonal energy efficiency ratio SEER divided by the conversion coefficient CC (2.5), corrected by contributions accounting for temperature control (0.03).
- (16) Seasonal Energy Performance Ratio as defined in EN14825, part load condition in cooling for Air to Water units, high temperature application
- (17) Based on AHRI conditions
- (18) Fluid: water, not including filter pressure drop. The installation of the filter is mandatory
- (19) Sound power level measured in accordance with ISO9614, referred to unit operating at Standard Rating Conditions for Air to water chillers according to EN14511:2 Outdoor Heat exchanger inlet dry bulb temperature 35°; Indoor heat exchanger inlet water temperature 12°C, outlet water temperature 7°C
- (20) This are intended as guideline only and referred for unit without options. Refer to dedicated wiring diagram and unit nameplate for specific values.
- (21) Determined as follow: LRA of largest compressor + FLA of remaining compressors + FLA of the fans.
Value intended as guideline. Refer to unit nameplate for specific value.
- (22) Minimum flow rate in variable flow application in correspondence of minimum chiller capacity, supply temperature 7°C, fluid: water
- (23) Indicative value of minimum capacity expressed as percentage of the total capacity available based on the operating conditions (ambient temperature, fluid in/out temperature and fluid type)
- (24) ±10% tolerance on Voltage, Voltage unbalance between phases must be within ± 3%.

Eurovent certified data

EWAT B- SR | Silver Efficiency, Reduced Sound | 400 V / 3ph / 50 Hz

Model		570	620	670	730	790	860
Cooling Capacity ⁽¹⁾	kW	553,4	605	647,7	715	768,5	835,8
Power input ⁽¹⁾	kW	186,9	216,9	242,6	251,7	278,4	288,2
Cooling Efficiency – EER ⁽¹⁾	kW/kW	2,960	2,790	2,670	2,840	2,760	2,900
Seasonal Energy Efficiency Ratio - SEER ⁽¹⁾⁽²⁾	kW/kW	5,124	5,083	5,022	5,206	5,232	5,284
$\eta_{s,c}$ ⁽³⁾	%	202	200	198	205	206	208
Seasonal Energy Performance Ratio - SEPR ⁽¹⁾⁽²⁾	kW/kW	6,379	6,243	6,194	6,309	6,209	6,277
IPLV ⁽⁵⁾	kW/kW	5,557	5,557	5,525	5,650	5,484	5,630
Minimum capacity turndown ⁽¹¹⁾	%	22%	20%	18%	17%	15%	14%
Flow rate ⁽¹⁾	l/s	26,38	28,84	30,87	34,08	36,63	39,84
Evaporator Pressure Drop ⁽¹⁾⁽⁶⁾	kPa	20,47	24,22	18,52	22,34	25,63	30,07
Sound Power ⁽¹⁾⁽⁷⁾ – Lw	dB(a)	91	91	91	92	92	93
Number of circuits / Compressors	#	2 / 5	2 / 6	2 / 6	2 / 6	2 / 7	2 / 7
Water volume	Lt	58,8	58,8	75,6	75,6	75,6	75,6
Minimum water flow rate ⁽¹⁰⁾	l/s	16,2	16,2	20	20	20	20
Length	mm	4674	4674	4674	5754	5848	6928
Width	mm	2238	2238	2238	2238	2238	2238
Height	mm	2535	2535	2535	2535	2535	2535
Shipping weight ⁽⁸⁾	kg	3495	3670	3779	4308	4666	5119
Operating weight ⁽⁸⁾	kg	3555	3747	3856	4385	4743	5196
Water Connection Size	Ø mm	139,7	139,7	139,7	139,7	139,7	139,7
Running Current ⁽¹⁾⁽⁸⁾⁽¹²⁾	A	344	392	434	459	503	529
Max Running Current ⁽⁷⁾⁽⁸⁾⁽¹²⁾	A	443	488	531	584	630	683
Current for Wiring Sizing ⁽⁸⁾	A	487	537	584	642	693	752
Max Inrush Current ⁽⁸⁾⁽⁹⁾⁽¹²⁾	A	891	936	979	1032	1078	1131

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- (13) Standard Rating Conditions for Air to water chillers according to EN14511:2 Outdoor Heat exchanger inlet dry bulb temperature 35°C at sea level; Indoor heat exchanger inlet water temperature 12°C, outlet water temperature 7°C. Fluid: water, Fouling factor = 0
- (14) Seasonal Energy Efficiency Ratio as defined in EN14825, part load condition in cooling for Air to Water units, fan coil application, variable outlet, variable flow.
- (15) The seasonal space cooling energy efficiency $\eta_{s,c}$ is calculated as defined in Regulation (EU) 2016/2281 the seasonal energy efficiency ratio SEER divided by the conversion coefficient CC (2.5), corrected by contributions accounting for temperature control (0.03).
- (16) Seasonal Energy Performance Ratio as defined in EN14825, part load condition in cooling for Air to Water units, high temperature application
- (17) Based on AHRI conditions
- (18) Fluid: water, not including filter pressure drop. The installation of the filter is mandatory
- (19) Sound power level measured in accordance with ISO9614, referred to unit operating at Standard Rating Conditions for Air to water chillers according to EN14511:2 Outdoor Heat exchanger inlet dry bulb temperature 35°; Indoor heat exchanger inlet water temperature 12°C, outlet water temperature 7°C
- (20) This are intended as guideline only and referred for unit without options. Refer to dedicated wiring diagram and unit nameplate for specific values.
- (21) Determined as follow: LRA of largest compressor + FLA of remaining compressors + FLA of the fans.
Value intended as guideline. Refer to unit nameplate for specific value.
- (22) Minimum flow rate in variable flow application in correspondence of minimum chiller capacity, supply temperature 7°C, fluid: water
- (23) Indicative value of minimum capacity expressed as percentage of the total capacity available based on the operating conditions (ambient temperature, fluid in/out temperature and fluid type)
- (24) ±10% tolerance on Voltage, Voltage unbalance between phases must be within ± 3%.

Eurovent certified data

EWAT B- SR | Silver Efficiency, Reduced Sound | 400 V / 3ph / 50 Hz

Model		960
Cooling Capacity ⁽¹⁾	kW	935,5
Power input ⁽¹⁾	kW	341,4
Cooling Efficiency – EER ⁽¹⁾	kW/kW	2,740
Seasonal Energy Efficiency Ratio - SEER ⁽¹⁾⁽²⁾	kW/kW	5,121
$\eta_{s,c}$ ⁽³⁾	%	202
Seasonal Energy Performance Ratio - SEPR ⁽¹⁾⁽²⁾	kW/kW	6,131
IPLV ⁽⁵⁾	kW/kW	5,550
Minimum capacity turndown ⁽¹¹⁾	%	25%
Flow rate ⁽¹⁾	l/s	44,59
Evaporator Pressure Drop ⁽¹⁾⁽⁶⁾	kPa	29,62
Sound Power ⁽¹⁾⁽⁷⁾ – Lw	dB(a)	93
Number of circuits / Compressors	#	2 / 8
Water volume	Lt	92,4
Minimum water flow rate ⁽¹⁰⁾	l/s	22,6
Length	mm	6928
Width	mm	2238
Height	mm	2535
Shipping weight ⁽⁸⁾	kg	5313
Operating weight ⁽⁸⁾	kg	5412
Water Connection Size	Ø mm	Ø139,7
Running Current ⁽¹⁾⁽⁸⁾⁽¹²⁾	A	615
Max Running Current ⁽⁷⁾⁽⁸⁾⁽¹²⁾	A	771
Current for Wiring Sizing ⁽⁸⁾	A	849
Max Inrush Current ⁽⁸⁾⁽⁹⁾⁽¹²⁾	A	1219

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- (1) Standard Rating Conditions for Air to water chillers according to EN14511:2 Outdoor Heat exchanger inlet dry bulb temperature 35°C at sea level; Indoor heat exchanger inlet water temperature 12°C, outlet water temperature 7°C. Fluid: water, Fouling factor = 0
- (2) Seasonal Energy Efficiency Ratio as defined in EN14825, part load condition in cooling for Air to Water units, fan coil application, variable outlet, variable flow.
- (3) The seasonal space cooling energy efficiency $\eta_{s,c}$ is calculated as defined in Regulation (EU) 2016/2281 the seasonal energy efficiency ratio SEER divided by the conversion coefficient CC (2.5), corrected by contributions accounting for temperature control (0.03).
- (4) Seasonal Energy Performance Ratio as defined in EN14825, part load condition in cooling for Air to Water units, high temperature application
- (5) Based on AHRI conditions
- (6) Fluid: water, not including filter pressure drop. The installation of the filter is mandatory
- (7) Sound power level measured in accordance with ISO9614, referred to unit operating at Standard Rating Conditions for Air to water chillers according to EN14511:2 Outdoor Heat exchanger inlet dry bulb temperature 35°; Indoor heat exchanger inlet water temperature 12°C, outlet water temperature 7°C
- (8) This are intended as guideline only and referred for unit without options. Refer to dedicated wiring diagram and unit nameplate for specific values.
- (9) Determined as follow: LRA of largest compressor + FLA of remaining compressors + FLA of the fans.
Value intended as guideline. Refer to unit nameplate for specific value.
- (10) Minimum flow rate in variable flow application in correspondence of minimum chiller capacity, supply temperature 7°C, fluid: water
- (11) Indicative value of minimum capacity expressed as percentage of the total capacity available based on the operating conditions (ambient temperature, fluid in/out temperature and fluid type)
- (12) ±10% tolerance on Voltage, Voltage unbalance between phases must be within ± 3%.

Eurovent certified data

EWAT B- XS | Gold Efficiency, Standard Sound | 400 V / 3ph / 50 Hz

Model		250	320	370	390	450	510
Cooling Capacity ⁽¹⁾	kW	252,4	324,4	371,3	387,9	448	512,3
Power input ⁽¹⁾	kW	79,1	100,0	118,8	125,6	140,5	158,0
Cooling Efficiency – EER ⁽¹⁾	kW/kW	3,191	3,244	3,126	3,088	3,189	3,242
Seasonal Energy Efficiency Ratio - SEER ⁽¹⁾⁽²⁾	kW/kW	4,620	4,789	4,759	4,697	4,760	4,810
$\eta_{s,c}$ ⁽³⁾	%	182	189	187	185	187	189
Seasonal Energy Performance Ratio - SEPR ⁽¹⁾⁽²⁾	kW/kW	5,905	5,916	5,886	5,685	5,769	6,010
IPLV ⁽⁵⁾	kW/kW	4,907	5,002	5,051	4,895	4,977	5,068
Minimum capacity turndown ⁽¹¹⁾	%	50%	22%	19%	18%	16%	25%
Flow rate ⁽¹⁾	l/s	12,03	15,47	17,7	18,49	21,36	24,42
Evaporator Pressure Drop ⁽¹⁾⁽⁶⁾	kPa	34,03	55,26	63,5	60,86	80,68	17,71
Sound Power ⁽¹⁾⁽⁷⁾ – Lw	dB(a)	94	95	95	95	96	97
Sound Power ⁽¹⁾⁽⁷⁾ – Lw with + OP76b	dB(a)	90	92	92	92	93	93
Number of circuits / Compressors	#	1 / 2	1 / 3	1 / 3	2 / 4	2 / 4	2 / 4
Water volume	Lt	22,95	22,95	27,27	35,37	35,37	58,8
Minimum water flow rate ⁽¹⁰⁾	l/s	5,6	5,6	6	6,2	6,5	16,2
Length	mm	2514	3594	3594	3594	4674	4674
Width	mm	2238	2238	2238	2238	2238	2238
Height	mm	2535	2535	2535	2535	2535	2535
Shipping weight ⁽⁸⁾	kg	1963	2466	2585	2657	3169	3359
Operating weight ⁽⁸⁾	kg	1986	2489	2610	2693	3205	3419
Water Connection Size	Ø mm	88,9	88,9	88,9	88,9	88,9	139,7
Running Current ⁽¹⁾⁽⁸⁾⁽¹²⁾	A	142	181	212	223	252	284
Max Running Current ⁽⁷⁾⁽⁸⁾⁽¹²⁾	A	197	252	294	298	350	393
Current for Wiring Sizing ⁽⁸⁾	A	217	277	324	328	385	432
Max Inrush Current ⁽⁸⁾⁽⁹⁾⁽¹²⁾	A	645	700	742	746	798	853

i) The above data are referred to the unit without additional optional.

ii) The above data are referred the unit installed in compliancy with installation prescription.

iii) All the data are subject to change without notice. For updated information on project base refer to Chiller Selection Software and unit's certified drawing

- (1) Standard Rating Conditions for Air to water chillers according to EN14511:2 Outdoor Heat exchanger inlet dry bulb temperature 35°C at sea level; Indoor heat exchanger inlet water temperature 12°C, outlet water temperature 7°C. Fluid: water, Fouling factor = 0
- (2) Seasonal Energy Efficiency Ratio as defined in EN14825, part load condition in cooling for Air to Water units, fan coil application, variable outlet, variable flow.
- (3) The seasonal space cooling energy efficiency $\eta_{s,c}$ is calculated as defined in Regulation (EU) 2016/2281 the seasonal energy efficiency ratio SEER divided by the conversion coefficient CC (2.5), corrected by contributions accounting for temperature control (0.03).
- (4) Seasonal Energy Performance Ratio as defined in EN14825, part load condition in cooling for Air to Water units, high temperature application
- (5) Based on AHRI conditions
- (6) Fluid: water, not including filter pressure drop. The installation of the filter is mandatory
- (7) Sound power level measured in accordance with ISO9614, referred to unit operating at Standard Rating Conditions for Air to water chillers according to EN14511:2 Outdoor Heat exchanger inlet dry bulb temperature 35°C; Indoor heat exchanger inlet water temperature 12°C, outlet water temperature 7°C
- (8) This are intended as guideline only and referred for unit without options. Refer to dedicated wiring diagram and unit nameplate for specific values.
- (9) Determined as follow: LRA of largest compressor + FLA of remaining compressors + FLA of the fans.
Value intended as guideline. Refer to unit nameplate for specific value.
- (10) Minimum flow rate in variable flow application in correspondence of minimum chiller capacity, supply temperature 7°C, fluid: water
- (11) Indicative value of minimum capacity expressed as percentage of the total capacity available based on the operating conditions (ambient temperature, fluid in/out temperature and fluid type)
- (12) ±10% tolerance on Voltage, Voltage unbalance between phases must be within ± 3%.

Eurovent certified data

EWAT B- XS | Gold Efficiency, Standard Sound | 400 V / 3ph / 50 Hz

Model		540	590	630	720	760	830
Cooling Capacity ⁽¹⁾	kW	539,4	586,7	631,4	716,6	762,5	834,5
Power input ⁽¹⁾	kW	160,2	178,6	197,1	218,1	236,8	257,3
Cooling Efficiency – EER ⁽¹⁾	kW/kW	3,367	3,285	3,204	3,285	3,22	3,243
Seasonal Energy Efficiency Ratio - SEER ⁽¹⁾⁽²⁾	kW/kW	4,887	4,884	4,890	4,923	4,930	4,920
$\eta_{s,c}$ ⁽³⁾	%	192	192	193	194	194	194
Seasonal Energy Performance Ratio - SEPR ⁽¹⁾⁽²⁾	kW/kW	6,001	5,970	5,961	6,063	6,054	6,047
IPLV ⁽⁵⁾	kW/kW	5,091	5,117	5,109	5,141	5,165	5,130
Minimum capacity turndown ⁽¹¹⁾	%	14%	22%	20%	18%	17%	15%
Flow rate ⁽¹⁾	l/s	25,71	27,97	30,1	34,16	36,35	39,78
Evaporator Pressure Drop ⁽¹⁾⁽⁶⁾	kPa	19,51	22,85	26,25	22,43	25,25	29,98
Sound Power ⁽¹⁾⁽⁷⁾ – Lw	dB(a)	97	97	98	98	98	99
Sound Power ⁽¹⁾⁽⁷⁾ – Lw with + OP76b	dB(a)	94	94	94	95	95	96
Number of circuits / Compressors	#	2 / 5	2 / 5	2 / 5	2 / 6	2 / 6	2 / 7
Water volume	Lt	58,8	58,8	58,8	75,6	75,6	75,6
Minimum water flow rate ⁽¹⁰⁾	l/s	16,2	16,2	16,2	20	20	20
Length	mm	5754	5754	5754	6834	6834	8008
Width	mm	2238	2238	2238	2238	2238	2238
Height	mm	2535	2535	2535	2535	2535	2535
Shipping weight ⁽⁸⁾	kg	3804	3916	4024	4565	4673	5442
Operating weight ⁽⁸⁾	kg	3864	3976	4084	4642	4750	5519
Water Connection Size	Ø mm	139,7	139,7	139,7	139,7	139,7	139,7
Running Current ⁽¹⁾⁽⁸⁾⁽¹²⁾	A	292	323	354	394	425	464
Max Running Current ⁽⁷⁾⁽⁸⁾⁽¹²⁾	A	405	448	490	545	587	686
Current for Wiring Sizing ⁽⁸⁾	A	445	492	539	599	646	755
Max Inrush Current ⁽⁸⁾⁽⁹⁾⁽¹²⁾	A	853	896	938	993	1035	1134

i) The above data are referred to the unit without additional optional.

ii) The above data are referred the unit installed in compliancy with installation prescription.

iii) All the data are subject to change without notice. For updated information on project base refer to Chiller Selection Software and unit's certified drawing

- (1) Standard Rating Conditions for Air to water chillers according to EN14511:2 Outdoor Heat exchanger inlet dry bulb temperature 35°C at sea level; Indoor heat exchanger inlet water temperature 12°C, outlet water temperature 7°C. Fluid: water, Fouling factor = 0
- (2) Seasonal Energy Efficiency Ratio as defined in EN14825, part load condition in cooling for Air to Water units, fan coil application, variable outlet, variable flow.
- (3) The seasonal space cooling energy efficiency $\eta_{s,c}$ is calculated as defined in Regulation (EU) 2016/2281 the seasonal energy efficiency ratio SEER divided by the conversion coefficient CC (2.5), corrected by contributions accounting for temperature control (0.03).
- (4) Seasonal Energy Performance Ratio as defined in EN14825, part load condition in cooling for Air to Water units, high temperature application
- (5) Based on AHRI conditions
- (6) Fluid: water, not including filter pressure drop. The installation of the filter is mandatory
- (7) Sound power level measured in accordance with ISO9614, referred to unit operating at Standard Rating Conditions for Air to water chillers according to EN14511:2 Outdoor Heat exchanger inlet dry bulb temperature 35°C; Indoor heat exchanger inlet water temperature 12°C, outlet water temperature 7°C
- (8) This are intended as guideline only and referred for unit without options. Refer to dedicated wiring diagram and unit nameplate for specific values.
- (9) Determined as follow: LRA of largest compressor + FLA of remaining compressors + FLA of the fans.
Value intended as guideline. Refer to unit nameplate for specific value.
- (10) Minimum flow rate in variable flow application in correspondence of minimum chiller capacity, supply temperature 7°C, fluid: water
- (11) Indicative value of minimum capacity expressed as percentage of the total capacity available based on the operating conditions (ambient temperature, fluid in/out temperature and fluid type)
- (12) ±10% tolerance on Voltage, Voltage unbalance between phases must be within ± 3%.

Eurovent certified data

EWAT B- XS | Gold Efficiency, Standard Sound | 400 V / 3ph / 50 Hz

Model		880	C10
Cooling Capacity ⁽¹⁾	kW	880,4	1012
Power input ⁽¹⁾	kW	276,0	315,2
Cooling Efficiency – EER ⁽¹⁾	kW/kW	3,190	3,210
Seasonal Energy Efficiency Ratio - SEER ⁽¹⁾⁽²⁾	kW/kW	4,913	4,910
$\eta_{s,c}$ ⁽³⁾	%	194	193
Seasonal Energy Performance Ratio - SEPR ⁽¹⁾⁽²⁾	kW/kW	6,039	5,965
IPLV ⁽⁵⁾	kW/kW	5,146	5,126
Minimum capacity turndown ⁽¹¹⁾	%	14%	25%
Flow rate ⁽¹⁾	l/s	41,97	48,22
Evaporator Pressure Drop ⁽¹⁾⁽⁶⁾	kPa	33,22	34,42
Sound Power ⁽¹⁾⁽⁷⁾ – Lw	dB(a)	99	100
Sound Power ⁽¹⁾⁽⁷⁾ – Lw with + OP76b	dB(a)	96	96
Number of circuits / Compressors	#	2 / 7	2 / 8
Water volume	Lt	75,6	92,4
Minimum water flow rate ⁽¹⁰⁾	l/s	20,0	22,6
Length	mm	8008	9088
Width	mm	2238	2238
Height	mm	2535	2535
Shipping weight ⁽⁸⁾	kg	5551	6251
Operating weight ⁽⁸⁾	kg	5628	6350
Water Connection Size	Ø mm	139,7	139,7
Running Current ⁽¹⁾⁽⁸⁾⁽¹²⁾	A	495	567
Max Running Current ⁽⁷⁾⁽⁸⁾⁽¹²⁾	A	686	784
Current for Wiring Sizing ⁽⁸⁾	A	755	862
Max Inrush Current ⁽⁸⁾⁽⁹⁾⁽¹²⁾	A	1134	1232

i) The above data are referred to the unit without additional optional.

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- (1) Standard Rating Conditions for Air to water chillers according to EN14511:2 Outdoor Heat exchanger inlet dry bulb temperature 35°C at sea level; Indoor heat exchanger inlet water temperature 12°C, outlet water temperature 7°C. Fluid: water, Fouling factor = 0
- (2) Seasonal Energy Efficiency Ratio as defined in EN14825, part load condition in cooling for Air to Water units, fan coil application, variable outlet, variable flow.
- (3) The seasonal space cooling energy efficiency $\eta_{s,c}$ is calculated as defined in Regulation (EU) 2016/2281 the seasonal energy efficiency ratio SEER divided by the conversion coefficient CC (2.5), corrected by contributions accounting for temperature control (0.03).
- (4) Seasonal Energy Performance Ratio as defined in EN14825, part load condition in cooling for Air to Water units, high temperature application
- (5) Based on AHRI conditions
- (6) Fluid: water, not including filter pressure drop. The installation of the filter is mandatory
- (7) Sound power level measured in accordance with ISO9614, referred to unit operating at Standard Rating Conditions for Air to water chillers according to EN14511:2 Outdoor Heat exchanger inlet dry bulb temperature 35°; Indoor heat exchanger inlet water temperature 12°C, outlet water temperature 7°C
- (8) This are intended as guideline only and referred for unit without options. Refer to dedicated wiring diagram and unit nameplate for specific values.
- (9) Determined as follow: LRA of largest compressor + FLA of remaining compressors + FLA of the fans.
Value intended as guideline. Refer to unit nameplate for specific value.
- (10) Minimum flow rate in variable flow application in correspondence of minimum chiller capacity, supply temperature 7°C, fluid: water
- (11) Indicative value of minimum capacity expressed as percentage of the total capacity available based on the operating conditions (ambient temperature, fluid in/out temperature and fluid type)
- (12) ±10% tolerance on Voltage, Voltage unbalance between phases must be within ± 3%.

Eurovent certified data

EWAT B- XR | Gold Efficiency, Reduced Sound | 400 V / 3ph / 50 Hz

Model		250	320	370	390	450	510
Cooling Capacity ⁽¹⁾	kW	241,4	313,2	355,7	370,3	431,4	489,5
Power input ⁽¹⁾	kW	81,09	100,1	121,4	129,1	131,4	162,1
Cooling Efficiency – EER ⁽¹⁾	kW/kW	2,977	3,130	2,929	2,868	3,051	3,020
Seasonal Energy Efficiency Ratio - SEER ⁽¹⁾⁽²⁾	kW/kW	4,965	5,186	5,140	4,979	5,158	5,108
$\eta_{s,c}$ ⁽³⁾	%	196	204	203	196	203	201
Seasonal Energy Performance Ratio - SEPR ⁽¹⁾⁽²⁾	kW/kW	6,047	6,219	6,130	5,823	6,138	6,191
IPLV ⁽⁵⁾	kW/kW	5,340	5,525	5,487	5,317	5,446	5,528
Minimum capacity turndown ⁽¹¹⁾	%	50%	22%	19%	18%	16%	25%
Flow rate ⁽¹⁾	l/s	11,51	14,93	16,95	17,65	20,56	23,33
Evaporator Pressure Drop ⁽¹⁾⁽⁶⁾	kPa	31,24	51,6	58,41	55,59	74,92	16,26
Sound Power ⁽¹⁾⁽⁷⁾ – Lw	dB(a)	84	85	86	86	87	87
Number of circuits / Compressors	#	1 / 2	1 / 3	1 / 3	2 / 4	2 / 4	2 / 4
Water volume	Lt	22,95	22,95	27,27	35,37	35,37	58,8
Minimum water flow rate ⁽¹⁰⁾	l/s	5,6	5,6	6	6,5	6,5	16,2
Length	mm	2514	3594	3594	3594	4674	4674
Width	mm	2238	2238	2238	2238	2238	2238
Height	mm	2535	2535	2535	2535	2535	2535
Shipping weight ⁽⁸⁾	kg	1963	2466	2585	2657	3169	3359
Operating weight ⁽⁸⁾	kg	1986	2489	2610	2693	3205	3419
Water Connection Size	∅ mm	88,9	88,9	88,9	88,9	88,9	139,7
Running Current ⁽¹⁾⁽⁸⁾⁽¹²⁾	A	143	178	213	225	249	286
Max Running Current ⁽⁷⁾⁽⁸⁾⁽¹²⁾	A	189	240	283	287	335	377
Current for Wiring Sizing ⁽⁸⁾	A	208	264	311	315	368	415
Max Inrush Current ⁽⁸⁾⁽⁹⁾⁽¹²⁾	A	637	688	731	735	783	825

i) The above data are referred to the unit without additional optional.

ii) The above data are referred the unit installed in compliancy with installation prescription.

iii) All the data are subject to change without notice. For updated information on project base refer to Chiller Selection Software and unit's certified drawing

- (1) Standard Rating Conditions for Air to water chillers according to EN14511:2 Outdoor Heat exchanger inlet dry bulb temperature 35°C at sea level; Indoor heat exchanger inlet water temperature 12°C, outlet water temperature 7°C. Fluid: water, Fouling factor = 0
- (2) Seasonal Energy Efficiency Ratio as defined in EN14825, part load condition in cooling for Air to Water units, fan coil application, variable outlet, variable flow.
- (3) The seasonal space cooling energy efficiency $\eta_{s,c}$ is calculated as defined in Regulation (EU) 2016/2281 the seasonal energy efficiency ratio SEER divided by the conversion coefficient CC (2.5), corrected by contributions accounting for temperature control (0.03).
- (4) Seasonal Energy Performance Ratio as defined in EN14825, part load condition in cooling for Air to Water units, high temperature application
- (5) Based on AHRI conditions
- (6) Fluid: water, not including filter pressure drop. The installation of the filter is mandatory
- (7) Sound power level measured in accordance with ISO9614, referred to unit operating at Standard Rating Conditions for Air to water chillers according to EN14511:2 Outdoor Heat exchanger inlet dry bulb temperature 35°; Indoor heat exchanger inlet water temperature 12°C, outlet water temperature 7°C
- (8) This are intended as guideline only and referred for unit without options. Refer to dedicated wiring diagram and unit nameplate for specific values.
- (9) Determined as follow: LRA of largest compressor + FLA of remaining compressors + FLA of the fans.
Value intended as guideline. Refer to unit nameplate for specific value.
- (10) Minimum flow rate in variable flow application in correspondence of minimum chiller capacity, supply temperature 7°C, fluid: water
- (11) Indicative value of minimum capacity expressed as percentage of the total capacity available based on the operating conditions (ambient temperature, fluid in/out temperature and fluid type)
- (12) ±10% tolerance on Voltage, Voltage unbalance between phases must be within ± 3%.

Eurovent certified data

EWAT B- XR | Gold Efficiency, Reduced Sound | 400 V / 3ph / 50 Hz

Model		540	590	630	720	760	830
Cooling Capacity ⁽¹⁾	kW	520,8	563,4	603,8	687,5	728,9	800,9
Power input ⁽¹⁾	kW	159,7	180,6	201,9	221,1	243	260,9
Cooling Efficiency – EER ⁽¹⁾	kW/kW	3,260	3,120	2,990	3,110	3,000	3,070
Seasonal Energy Efficiency Ratio - SEER ⁽¹⁾⁽²⁾	kW/kW	5,279	5,270	5,083	5,291	5,249	5,324
$\eta_{s,c}$ ⁽³⁾	%	208	208	200	209	207	210
Seasonal Energy Performance Ratio - SEPR ⁽¹⁾⁽²⁾	kW/kW	6,526	6,309	6,243	6,406	6,358	6,371
IPLV ⁽⁵⁾	kW/kW	5,630	5,620	5,557	5,649	5,605	5,613
Minimum capacity turndown ⁽¹¹⁾	%	14%	22%	20%	18%	17%	15%
Flow rate ⁽¹⁾	l/s	24,82	26,85	28,78	32,77	34,74	38,18
Evaporator Pressure Drop ⁽¹⁾⁽⁶⁾	kPa	18,26	21,17	24,12	20,74	23,17	27,72
Sound Power ⁽¹⁾⁽⁷⁾ – Lw	dB(a)	88	88	88	89	89	89
Number of circuits / Compressors	#	2 / 5	2 / 5	2 / 5	2 / 6	2 / 6	2 / 7
Water volume	Lt	58,8	58,8	58,8	75,6	75,6	75,6
Minimum water flow rate ⁽¹⁰⁾	l/s	16,2	16,2	16,2	20	20	20
Length	mm	5754	5754	5754	6834	6834	8008
Width	mm	2238	2238	2238	2238	2238	2238
Height	mm	2535	2535	2535	2535	2535	2535
Shipping weight ⁽⁸⁾	kg	3804	3916	4024	4565	4673	5442
Operating weight ⁽⁸⁾	kg	3864	3976	4084	4642	4750	5519
Water Connection Size	Ø mm	139,7	139,7	139,7	139,7	139,7	139,7
Running Current ⁽¹⁾⁽⁸⁾⁽¹²⁾	A	287	322	356	393	428	463
Max Running Current ⁽⁷⁾⁽⁸⁾⁽¹²⁾	A	386	428	471	522	564	659
Current for Wiring Sizing ⁽⁸⁾	A	424	471	518	574	621	725
Max Inrush Current ⁽⁸⁾⁽⁹⁾⁽¹²⁾	A	834	876	919	970	1012	1107

i) The above data are referred to the unit without additional optional.

ii) The above data are referred the unit installed in compliancy with installation prescription.

iii) All the data are subject to change without notice. For updated information on project base refer to Chiller Selection Software and unit's certified drawing

- (1) Standard Rating Conditions for Air to water chillers according to EN14511:2 Outdoor Heat exchanger inlet dry bulb temperature 35°C at sea level; Indoor heat exchanger inlet water temperature 12°C, outlet water temperature 7°C. Fluid: water, Fouling factor = 0
- (2) Seasonal Energy Efficiency Ratio as defined in EN14825, part load condition in cooling for Air to Water units, fan coil application, variable outlet, variable flow.
- (3) The seasonal space cooling energy efficiency $\eta_{s,c}$ is calculated as defined in Regulation (EU) 2016/2281 the seasonal energy efficiency ratio SEER divided by the conversion coefficient CC (2.5), corrected by contributions accounting for temperature control (0.03).
- (4) Seasonal Energy Performance Ratio as defined in EN14825, part load condition in cooling for Air to Water units, high temperature application
- (5) Based on AHRI conditions
- (6) Fluid: water, not including filter pressure drop. The installation of the filter is mandatory
- (7) Sound power level measured in accordance with ISO9614, referred to unit operating at Standard Rating Conditions for Air to water chillers according to EN14511:2 Outdoor Heat exchanger inlet dry bulb temperature 35°; Indoor heat exchanger inlet water temperature 12°C, outlet water temperature 7°C
- (8) This are intended as guideline only and referred for unit without options. Refer to dedicated wiring diagram and unit nameplate for specific values.
- (9) Determined as follow: LRA of largest compressor + FLA of remaining compressors + FLA of the fans.
Value intended as guideline. Refer to unit nameplate for specific value.
- (10) Minimum flow rate in variable flow application in correspondence of minimum chiller capacity, supply temperature 7°C, fluid: water
- (11) Indicative value of minimum capacity expressed as percentage of the total capacity available based on the operating conditions (ambient temperature, fluid in/out temperature and fluid type)
- (12) ±10% tolerance on Voltage, Voltage unbalance between phases must be within ± 3%.

Eurovent certified data

EWAT B- XR | Gold Efficiency, Reduced Sound | 400 V / 3ph / 50 Hz

Model		880	C10
Cooling Capacity ⁽¹⁾	kW	842,7	967,6
Power input ⁽¹⁾	kW	282,8	323,6
Cooling Efficiency – EER ⁽¹⁾	kW/kW	2,980	2,990
Seasonal Energy Efficiency Ratio - SEER ⁽¹⁾⁽²⁾	kW/kW	5,294	5,229
$\eta_{s,c}$ ⁽³⁾	%	209	206
Seasonal Energy Performance Ratio - SEPR ⁽¹⁾⁽²⁾	kW/kW	6,319	6,366
IPLV ⁽⁵⁾	kW/kW	5,605	5,576
Minimum capacity turndown ⁽¹¹⁾	%	14%	25%
Flow rate ⁽¹⁾	l/s	40,17	46,12
Evaporator Pressure Drop ⁽¹⁾⁽⁶⁾	kPa	30,55	31,59
Sound Power ⁽¹⁾⁽⁷⁾ – Lw	dB(a)	89	90
Number of circuits / Compressors	#	2 / 7	2 / 8
Water volume	Lt	75,6	92,4
Minimum water flow rate ⁽¹⁰⁾	l/s	20 ,0	22,6
Length	mm	8008	9088
Width	mm	2238	2238
Height	mm	2535	2535
Shipping weight ⁽⁸⁾	kg	5551	6251
Operating weight ⁽⁸⁾	kg	5628	6350
Water Connection Size	∅ mm	139,7	139,7
Running Current ⁽¹⁾⁽⁸⁾⁽¹²⁾	A	498	570
Max Running Current ⁽⁷⁾⁽⁸⁾⁽¹²⁾	A	659	753
Current for Wiring Sizing ⁽⁸⁾	A	725	828
Max Inrush Current ⁽⁸⁾⁽⁹⁾⁽¹²⁾	A	1107	1201

i) The above data are referred to the unit without additional optional.

ii) The above data are referred the unit installed in compliancy with installation prescription.

iii) All the data are subject to change without notice. For updated information on project base refer to Chiller Selection Software and unit’s certified drawing

- (1) Standard Rating Conditions for Air to water chillers according to EN14511:2 Outdoor Heat exchanger inlet dry bulb temperature 35°C at sea level; Indoor heat exchanger inlet water temperature 12°C, outlet water temperature 7°C. Fluid: water, Fouling factor = 0
- (2) Seasonal Energy Efficiency Ratio as defined in EN14825, part load condition in cooling for Air to Water units, fan coil application, variable outlet, variable flow.
- (3) The seasonal space cooling energy efficiency $\eta_{s,c}$ is calculated as defined in Regulation (EU) 2016/2281 the seasonal energy efficiency ratio SEER divided by the conversion coefficient CC (2.5), corrected by contributions accounting for temperature control (0.03).
- (4) Seasonal Energy Performance Ratio as defined in EN14825, part load condition in cooling for Air to Water units, high temperature application
- (5) Based on AHRI conditions
- (6) Fluid: water, not including filter pressure drop. The installation of the filter is mandatory
- (7) Sound power level measured in accordance with ISO9614, referred to unit operating at Standard Rating Conditions for Air to water chillers according to EN14511:2 Outdoor Heat exchanger inlet dry bulb temperature 35°; Indoor heat exchanger inlet water temperature 12°C, outlet water temperature 7°C
- (8) This are intended as guideline only and referred for unit without options. Refer to dedicated wiring diagram and unit nameplate for specific values.
- (9) Determined as follow: LRA of largest compressor + FLA of remaining compressors + FLA of the fans.
Value intended as guideline. Refer to unit nameplate for specific value.
- (10) Minimum flow rate in variable flow application in correspondence of minimum chiller capacity, supply temperature 7°C, fluid: water
- (11) Indicative value of minimum capacity expressed as percentage of the total capacity available based on the operating conditions (ambient temperature, fluid in/out temperature and fluid type)
- (12) ±10% tolerance on Voltage, Voltage unbalance between phases must be within ± 3%.

Eurovent certified data

6. Sound data

6.1 Silver Efficiency – Standard Sound

EWAT B- SS Silver Efficiency, Standard Sound										
Model	Sound pressure level @ 1 m from the unit (rif. 2×10^{-5} Pa)								Sound pressure Lp @ 1 m	Sound power Lw
	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz		
	dB								dB(A)	dB(A)
310	81	71	71	71	70	69	61	53	75	94
350	81	71	71	71	71	69	62	54	76	95
320	81	71	71	71	69	69	62	54	75	94
380	82	72	72	72	71	69	62	54	75	95
430	82	72	72	72	72	70	62	54	76	96
480	82	72	72	72	72	70	63	55	76	96
570	83	73	73	72	72	70	63	55	77	97
620	83	73	73	72	72	71	63	55	77	97
670	83	73	73	72	73	71	64	55	77	97
730	83	74	73	73	73	71	64	56	77	98
790	83	74	73	73	73	71	64	56	77	98
860	84	74	73	73	73	71	64	56	78	99
960	84	74	73	73	74	72	64	56	78	99

i) The above data are referred to the unit without additional optional.
ii) The above data are referred the unit installed in compliancy with installation prescription.
iii) All the data are subject to change without notice. For updated information on project base refer to Chiller Selection Software and unit's certified drawing

Sound Performance referred to Standard Rating Conditions for Air to water chillers according to EN14511:2 Outdoor Heat exchanger inlet dry bulb temperature 35° at sea level; Indoor heat exchanger inlet water temperature 12°C, outlet water temperature 7°C. Fluid: water, Fouling factor = 0
Sound Power levels are measured in accordance with ISO 9614
Sound Pressure at levels 1 meter are measured in accordance with ISO 3744

*NOTE: The sound data in the Octave band spectrum is based on calculation, thus intended as general guideline, and not considered binding.
All data are subject to change without notice. For updated information on project base refer to specific selections.*

All above data are referred to base unit without options. Options may affect sound data, contact factory Daikin representative for additional information's

 **Eurovent certified data**

EWAT B- SS | Silver Efficiency, Standard Sound

model	Sound Power Lw [dB(a)]	Sound pressure - Lp [dB(a)] at									
		1 m	2 m	3 m	4 m	5 m	6 m	7m	8 m	9 m	10 m
310	94	74,9	72,1	69,9	68,2	66,8	65,6	64,5	63,5	62,7	61,9
350	95	75,4	72,6	70,4	68,7	67,3	66,1	65,0	64,0	63,2	62,4
320	94	74,7	71,9	69,7	68,0	66,6	65,4	64,3	63,3	62,5	61,7
380	95	75,4	72,7	70,7	69,0	67,7	66,5	65,4	64,5	63,6	62,9
430	96	75,9	73,2	71,2	69,5	68,2	67,0	65,9	65,0	64,1	63,4
480	96	76,2	73,5	71,5	69,8	68,5	67,3	66,2	65,3	64,4	63,7
570	97	76,5	73,9	72,0	70,4	69,0	67,9	66,8	65,9	65,1	64,3
620	97	76,8	74,2	72,3	70,7	69,3	68,2	67,1	66,2	65,4	64,6
670	97	77,1	74,5	72,6	71,0	69,6	68,5	67,4	66,5	65,7	64,9
730	98	77,2	74,8	72,9	71,3	70,0	68,9	67,9	67,0	66,2	65,4
790	98	77,4	74,9	73,0	71,5	70,2	69,1	68,1	67,2	66,3	65,6
860	99	77,4	75,1	73,3	71,8	70,5	69,4	68,4	67,5	66,7	66,0
960	99	77,8	75,5	73,7	72,2	70,9	69,8	68,8	67,9	67,1	66,4

- i) The above data are referred to the unit without additional optional.
- ii) The above data are referred the unit installed in compliancy with installation prescription.
- iii) All the data are subject to change without notice. For updated information on project base refer to Chiller Selection Software and unit's certified drawing

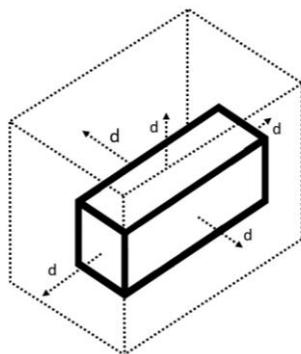
Sound Performance referred to Standard Rating Conditions for Air to water chillers according to EN14511:2 Outdoor Heat exchanger inlet dry bulb temperature 35° at sea level; Indoor heat exchanger inlet water temperature 12°C, outlet water temperature 7°C. Fluid: water, Fouling factor = 0

Sound Power levels are measured in accordance with ISO 9614

Sound Pressure levels at 1 meter are measured in accordance with ISO 3744

Sound pressure at distance > 1 meter is calculated from the sound power as follows:

$$L_p = L_w - 10 \times \text{Log}_{10}(A_d)$$



where A_d being the surface around the chiller calculated at the specific distance d

Eurovent certified data

6.2 Silver Efficiency – Standard Sound with compressor enclosure

EWAT B- SS +OPT76-B | Silver Efficiency, Standard Sound with compressor enclosure

Model	Sound pressure level @ 1 m from the unit (rif. 2×10^{-5} Pa)								Sound pressure Lp @ 1 m	Sound power Lw
	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz		
	dB								dB(A)	dB(A)
310	81	71	70	70	67	61	54	50	71	90
350	81	71	70	70	67	61	54	50	71	91
320	81	71	70	70	67	61	54	50	71	90
380	82	72	72	71	68	61	55	51	72	92
430	82	72	72	71	68	62	55	51	72	92
480	82	72	72	71	68	62	55	51	73	92
570	83	73	72	72	69	62	56	51	73	93
620	83	73	72	72	69	63	56	51	73	93
670	83	73	72	72	69	63	56	51	73	93
730	83	74	73	72	69	63	56	52	74	94
790	83	74	73	72	69	63	56	52	74	94
860	84	74	73	73	69	63	56	52	74	95
960	84	74	73	73	69	63	57	52	74	95

- i) The above data are referred to the unit without additional optional.
- ii) The above data are referred the unit installed in compliancy with installation prescription.
- iii) All the data are subject to change without notice. For updated information on project base refer to Chiller Selection Software and unit’s certified drawing

Sound Performance referred to Standard Rating Conditions for Air to water chillers according to EN14511:2 Outdoor Heat exchanger inlet dry bulb temperature 35° at sea level; Indoor heat exchanger inlet water temperature 12°C, outlet water temperature 7°C. Fluid: water, Fouling factor = 0

Sound Power levels are measured in accordance with ISO 9614

Sound Pressure at levels 1 meter are measured in accordance with ISO 3744

NOTE: The sound data in the Octave band spectrum is based on calculation, thus intended as general guideline, and not considered binding. All data are subject to change without notice. For updated information on project base refer to specific selections.

All above data are referred to base unit without options. Options may affect sound data, contact factory Daikin representative for additional information’s

 **Eurovent certified data**

EWAT B- SS + OPT76-B | Silver Efficiency, Standard Sound with compressor enclosure

model	Sound Power Lw [dB(a)]	Sound pressure - Lp [dB(a)] at									
		1 m	2 m	3 m	4 m	5 m	6 m	7m	8 m	9 m	10 m
310	90	71,3	68,5	66,3	64,6	63,2	62,0	60,9	59,9	59,1	58,3
350	91	71,4	68,6	66,4	64,7	63,3	62,1	61,0	60,0	59,2	58,4
320	90	71,3	68,5	66,3	64,6	63,2	62,0	60,9	59,9	59,1	58,3
380	92	72,4	69,7	67,7	66,0	64,7	63,5	62,4	61,5	60,6	59,9
430	92	72,4	69,7	67,7	66,0	64,7	63,5	62,4	61,5	60,6	59,9
480	92	72,5	69,8	67,8	66,1	64,8	63,6	62,5	61,6	60,7	60,0
570	93	73,2	70,6	68,7	67,1	65,7	64,6	63,5	62,6	61,8	61,0
620	93	73,2	70,6	68,7	67,1	65,7	64,6	63,5	62,6	61,8	61,0
670	93	73,2	70,6	68,7	67,1	65,7	64,6	63,5	62,6	61,8	61,0
730	94	73,7	71,3	69,4	67,8	66,5	65,4	64,4	63,5	62,7	61,9
790	94	73,7	71,2	69,3	67,8	66,5	65,4	64,4	63,5	62,6	61,9
860	95	74,0	71,7	69,9	68,4	67,1	66,0	65,0	64,1	63,3	62,6
960	95	74,0	71,7	69,9	68,4	67,1	66,0	65,0	64,1	63,3	62,6

- i) The above data are referred to the unit without additional optional.
- ii) The above data are referred the unit installed in compliancy with installation prescription.
- iii) All the data are subject to change without notice. For updated information on project base refer to Chiller Selection Software and unit's certified drawing

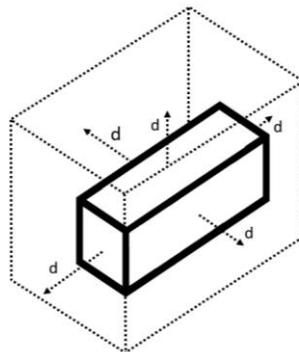
Sound Performance referred to Standard Rating Conditions for Air to water chillers according to EN14511:2 Outdoor Heat exchanger inlet dry bulb temperature 35° at sea level; Indoor heat exchanger inlet water temperature 12°C, outlet water temperature 7°C. Fluid: water, Fouling factor = 0

Sound Power levels are measured in accordance with ISO 9614

Sound Pressure levels at 1 meter are measured in accordance with ISO 3744

Sound pressure at distance > 1 meter is calculated from the sound power as follows:

$$L_p = L_w - 10 \times \text{Log}_{10}(A_d)$$



where Ad being the surface around the chiller calculated at the specific distance d

Eurovent certified data

6.3 Silver Efficiency – Reduced Sound

EWAT B- SR | Silver Efficiency, Reduced Sound

Model	Sound pressure level @ 1 m from the unit (rif. 2×10^{-5} Pa)								Sound pressure	Sound power
	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	Lp @ 1 m	Lw
	dB								dB(A)	dB(A)
310	71	67	67	67	65	59	52	45	69	88
350	71	67	67	67	65	60	52	45	69	88
250	71	67	67	67	64	60	52	45	69	88
270	72	69	68	68	65	60	53	46	70	90
320	72	69	68	68	66	60	53	46	70	90
380	72	69	68	68	66	61	53	46	70	90
430	73	69	69	69	66	61	54	46	71	91
480	73	69	69	69	66	61	54	47	71	91
570	73	69	69	69	67	61	54	47	71	91
620	73	70	70	70	67	62	54	47	71	92
670	73	70	70	70	67	62	54	47	71	92
730	73	70	70	70	67	62	54	47	72	93
790	73	70	70	70	67	62	55	47	72	93
860	71	67	67	67	65	59	52	45	69	88
960	71	67	67	67	65	60	52	45	69	88

i) The above data are referred to the unit without additional optional.

ii) The above data are referred the unit installed in compliancy with installation prescription.

iii) All the data are subject to change without notice. For updated information on project base refer to Chiller Selection Software and unit's certified drawing

Sound Performance referred to Standard Rating Conditions for Air to water chillers according to EN14511:2 Outdoor Heat exchanger inlet dry bulb temperature 35° at sea level; Indoor heat exchanger inlet water temperature 12°C, outlet water temperature 7°C. Fluid: water, Fouling factor = 0

Sound Power levels are measured in accordance with ISO 9614

Sound Pressure at levels 1 meter are measured in accordance with ISO 3744

NOTE: The sound data in the Octave band spectrum is based on calculation, thus intended as general guideline, and not considered binding.

All data are subject to change without notice. For updated information on project base refer to specific selections.

All above data are referred to base unit without options. Options may affect sound data, contact factory Daikin representative for additional information's

Eurovent certified data

EWAT B- SR | Silver Efficiency, Reduced Sound

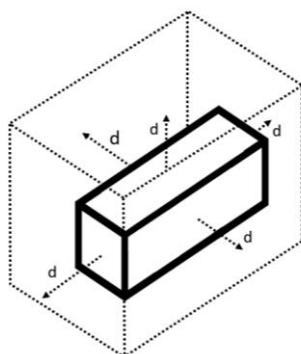
model	Sound Power Lw [dB(a)]	Sound pressure - Lp [dB(a)] at									
		1 m	2 m	3 m	4 m	5 m	6 m	7m	8 m	9 m	10 m
310	88	68,8	66,0	63,8	62,1	60,7	59,5	58,4	57,4	56,6	55,8
350	88	69,0	66,2	64,0	62,3	60,9	59,7	58,6	57,6	56,8	56,0
320	88	68,7	65,9	63,7	62,0	60,6	59,4	58,3	57,3	56,5	55,7
380	90	69,8	67,1	65,1	63,4	62,1	60,9	59,8	58,9	58,0	57,3
430	90	69,9	67,2	65,2	63,5	62,2	61,0	59,9	59,0	58,1	57,4
480	90	70,0	67,3	65,3	63,6	62,3	61,1	60,0	59,1	58,2	57,5
570	91	70,6	68,0	66,1	64,5	63,1	62,0	60,9	60,0	59,2	58,4
620	91	70,7	68,1	66,2	64,6	63,2	62,1	61,0	60,1	59,3	58,5
670	91	70,8	68,2	66,3	64,7	63,3	62,2	61,1	60,2	59,4	58,6
730	92	71,2	68,8	66,9	65,3	64,0	62,9	61,9	61,0	60,2	59,4
790	92	71,2	68,7	66,8	65,3	64,0	62,9	61,9	61,0	60,1	59,4
860	93	71,4	69,1	67,3	65,8	64,5	63,4	62,4	61,5	60,7	60,0
960	93	71,5	69,2	67,4	65,9	64,6	63,5	62,5	61,6	60,8	60,1

- i) The above data are referred to the unit without additional optional.
- ii) The above data are referred the unit installed in compliancy with installation prescription.
- iii) All the data are subject to change without notice. For updated information on project base refer to Chiller Selection Software and unit's certified drawing

Sound Performance referred to Standard Rating Conditions for Air to water chillers according to EN14511:2 Outdoor Heat exchanger inlet dry bulb temperature 35° at sea level; Indoor heat exchanger inlet water temperature 12°C, outlet water temperature 7°C. Fluid: water, Fouling factor = 0
 Sound Power levels are measured in accordance with ISO 9614
 Sound Pressure levels at 1 meter are measured in accordance with ISO 3744

Sound pressure at distance > 1 meter is calculated from the sound power as follows:

$$L_p = L_w - 10 \times \text{Log}_{10}(A_d)$$



where A_d being the surface around the chiller calculated at the specific distance d

Eurovent certified data

6.4 Gold Efficiency – Standard Sound

EWAT B- XS Gold Efficiency, Standard Sound										
Model	Sound pressure level @ 1 m from the unit (rif. 2×10^{-5} Pa)								Sound pressure Lp @ 1 m	Sound power Lw
	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz		
	dB								dB(A)	dB(A)
250	81,1	71,3	70,6	70,4	70,2	67,8	60,5	52,6	74	94
320	82,2	72,4	71,8	71,5	70,6	68,5	61	53,5	75	95
370	82,2	72,4	71,8	71,5	71,4	69	61,6	53,8	76	95
390	82,2	72,4	71,8	71,5	70,7	69,3	61,8	54	75	95
450	82,9	73,1	72,5	72,2	71,5	69,3	61,9	54,3	76	96
510	82,9	73,1	72,5	72,3	72,1	69,7	62,3	54,5	76	97
540	83,4	73,6	73	72,7	71,6	69,6	62,1	54,6	76	97
590	83,4	73,6	73	72,7	72,1	69,9	62,5	54,8	77	97
630	83,4	73,6	73	72,8	72,6	70,2	62,8	55	77	98
720	83,8	74	73,3	73,1	72,6	70,3	62,9	55,2	77	98
760	83,8	74	73,3	73,1	73	70,5	63,2	55,4	77	98
830	84	74,2	73,6	73,3	72,9	70,6	63,2	55,5	77	99
880	84	74,2	73,6	73,4	73,2	70,8	63,4	55,6	77	99
C10	84,2	74,5	73,8	73,6	73,4	71	63,7	55,8	78	100

i) The above data are referred to the unit without additional optional.
ii) The above data are referred the unit installed in compliancy with installation prescription.
iii) All the data are subject to change without notice. For updated information on project base refer to Chiller Selection Software and unit's certified drawing

Sound Performance referred to Standard Rating Conditions for Air to water chillers according to EN14511:2 Outdoor Heat exchanger inlet dry bulb temperature 35° at sea level; Indoor heat exchanger inlet water temperature 12°C, outlet water temperature 7°C. Fluid: water, Fouling factor = 0
Sound Power levels are measured in accordance with ISO 9614
Sound Pressure at levels 1 meter are measured in accordance with ISO 3744

*NOTE: The sound data in the Octave band spectrum is based on calculation, thus intended as general guideline, and not considered binding.
All data are subject to change without notice. For updated information on project base refer to specific selections.*

All above data are referred to base unit without options. Options may affect sound data, contact factory Daikin representative for additional information's

 **Eurovent certified data**

EWAT B- XS | Gold Efficiency, Standard Sound

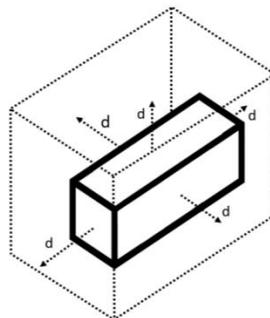
model	Sound Power Lw [dB(a)]	Sound pressure - Lp [dB(a)] at									
		1 m	2 m	3 m	4 m	5 m	6 m	7m	8 m	9 m	10 m
250	94	74,4	71,6	69,4	67,7	66,3	65,1	64,0	63,0	62,2	61,4
320	95	75,1	72,4	70,4	68,7	67,4	66,2	65,1	64,2	63,3	62,6
370	95	75,6	72,9	70,9	69,2	67,9	66,7	65,6	64,7	63,8	63,1
390	95	75,4	72,7	70,7	69,0	67,7	66,5	65,4	64,5	63,6	62,9
450	96	75,9	73,3	71,4	69,8	68,4	67,3	66,2	65,3	64,5	63,7
510	97	76,3	73,7	71,8	70,2	68,8	67,7	66,6	65,7	64,9	64,1
540	97	76,2	73,8	71,9	70,3	69,0	67,9	66,9	66,0	65,2	64,4
590	97	76,5	74,1	72,2	70,6	69,3	68,2	67,2	66,3	65,5	64,7
630	98	76,8	74,4	72,5	70,9	69,6	68,5	67,5	66,6	65,8	65,0
720	98	76,9	74,5	72,7	71,2	69,9	68,8	67,8	66,9	66,1	65,4
760	98	77,2	74,8	73,0	71,5	70,2	69,1	68,1	67,2	66,4	65,7
830	99	77,1	74,9	73,1	71,7	70,4	69,3	68,3	67,5	66,7	66,0
880	99	77,3	75,1	73,3	71,9	70,6	69,5	68,5	67,7	66,9	66,2
C10	100	77,6	75,4	73,7	72,2	71,0	69,9	69,0	68,1	67,4	66,6

- i) The above data are referred to the unit without additional optional.
- ii) The above data are referred the unit installed in compliancy with installation prescription.
- iii) All the data are subject to change without notice. For updated information on project base refer to Chiller Selection Software and unit's certified drawing

Sound Performance referred to Standard Rating Conditions for Air to water chillers according to EN14511:2 Outdoor Heat exchanger inlet dry bulb temperature 35° at sea level; Indoor heat exchanger inlet water temperature 12°C, outlet water temperature 7°C. Fluid: water, Fouling factor = 0
 Sound Power levels are measured in accordance with ISO 9614
 Sound Pressure levels at 1 meter are measured in accordance with ISO 3744

Sound pressure at distance > 1 meter is calculated from the sound power as follows:

$$L_p = L_w - 10 \times \text{Log}_{10}(A_d)$$



where Ad being the surface around the chiller calculated

Eurovent certified data

6.5 Gold Efficiency – Standard Sound with compressor enclosure

EWAT B- XS + OPT76-B | Gold Efficiency, Standard Sound with compressor enclosure

Model	Sound pressure level @ 1 m from the unit (rif. 2×10^{-5} Pa)								Sound pressure Lp @ 1 m	Sound power Lw
	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz		
	dB								dB(A)	dB(A)
250	81,1	71,2	70,4	70,1	66,6	60,2	53,4	49,4	71	90
320	82,2	72,4	71,6	71,2	67,7	61,1	54,4	50,5	72	92
370	82,2	72,4	71,6	71,2	67,8	61,3	54,6	50,5	72	92
390	82,2	72,4	71,6	71,2	67,7	61,4	54,7	50,5	72	92
450	82,9	73,1	72,3	71,9	68,4	61,9	55,2	51,2	73	93
510	82,9	73,1	72,3	71,9	68,5	62	55,3	51,2	73	93
540	83,4	73,6	72,8	72,4	68,9	62,3	55,6	51,7	74	94
590	83,4	73,6	72,8	72,4	68,9	62,4	55,7	51,7	74	94
630	83,4	73,6	72,8	72,4	69	62,5	55,8	51,7	74	94
720	83,8	74	73,2	72,8	69,3	62,8	56,1	52,1	74	95
760	83,8	74	73,2	72,8	69,3	62,9	56,2	52,1	74	95
830	84	74,2	73,4	73	69,5	63,1	56,3	52,3	74	96
880	84	74,2	73,4	73	69,6	63,1	56,4	52,3	74	96
C10	84,2	74,4	73,6	73,2	69,8	63,4	56,6	52,6	74	96

i) The above data are referred to the unit without additional optional.

ii) The above data are referred the unit installed in compliancy with installation prescription.

iii) All the data are subject to change without notice. For updated information on project base refer to Chiller Selection Software and unit's certified drawing

Sound Performance referred to Standard Rating Conditions for Air to water chillers according to EN14511:2 Outdoor Heat exchanger inlet dry bulb temperature 35° at sea level; Indoor heat exchanger inlet water temperature 12°C, outlet water temperature 7°C. Fluid: water, Fouling factor = 0

Sound Power levels are measured in accordance with ISO 9614

Sound Pressure at levels 1 meter are measured in accordance with ISO 3744

NOTE: The sound data in the Octave band spectrum is based on calculation, thus intended as general guideline, and not considered binding.

All data are subject to change without notice. For updated information on project base refer to specific selections.

All above data are referred to base unit without options. Options may affect sound data, contact factory Daikin representative for additional information's

 Eurovent certified data

EWAT B- XS + OPT76-B | Gold Efficiency, Standard Sound with compressor enclosure

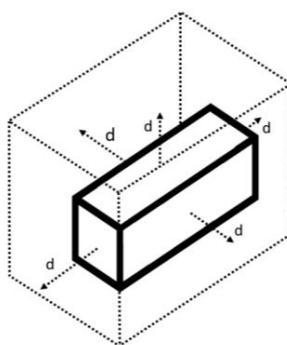
model	Sound Power Lw [dB(a)]	Sound pressure - Lp [dB(a)] at									
		1 m	2 m	3 m	4 m	5 m	6 m	7m	8 m	9 m	10 m
250	90	71,2	68,4	66,2	64,5	63,1	61,9	60,8	59,8	59,0	58,2
320	92	72,3	69,6	67,6	65,9	64,6	63,4	62,3	61,4	60,5	59,8
370	92	72,4	69,7	67,7	66,0	64,7	63,5	62,4	61,5	60,6	59,9
390	92	72,4	69,7	67,7	66,0	64,7	63,5	62,4	61,5	60,6	59,9
450	93	73,1	70,5	68,6	67,0	65,6	64,5	63,4	62,5	61,7	60,9
510	93	73,1	70,5	68,6	67,0	65,6	64,5	63,4	62,5	61,7	60,9
540	94	73,5	71,1	69,2	67,6	66,3	65,2	64,2	63,3	62,5	61,7
590	94	73,6	71,2	69,3	67,7	66,4	65,3	64,3	63,4	62,6	61,8
630	94	73,6	71,2	69,3	67,7	66,4	65,3	64,3	63,4	62,6	61,8
720	95	74,0	71,6	69,8	68,3	67,0	65,9	64,9	64,0	63,2	62,5
760	95	74,0	71,6	69,8	68,3	67,0	65,9	64,9	64,0	63,2	62,5
830	96	74,1	71,9	70,1	68,7	67,4	66,3	65,3	64,5	63,7	63,0
880	96	74,2	72,0	70,2	68,8	67,5	66,4	65,4	64,6	63,8	63,1
C10	96	74,4	72,2	70,5	69,0	67,8	66,7	65,8	64,9	64,2	63,4

- i) The above data are referred to the unit without additional optional.
- ii) The above data are referred the unit installed in compliancy with installation prescription.
- iii) All the data are subject to change without notice. For updated information on project base refer to Chiller Selection Software and unit's certified drawing

Sound Performance referred to Standard Rating Conditions for Air to water chillers according to EN14511:2 Outdoor Heat exchanger inlet dry bulb temperature 35° at sea level; Indoor heat exchanger inlet water temperature 12°C, outlet water temperature 7°C. Fluid: water, Fouling factor = 0
 Sound Power levels are measured in accordance with ISO 9614
 Sound Pressure levels at 1 meter are measured in accordance with ISO 3744

Sound pressure at distance > 1 meter is calculated from the sound power as follows:

$$L_p = L_w - 10 \times \text{Log}_{10}(A_d)$$



where Ad being the surface around the chiller calculated

Eurovent certified data

6.6 Gold Efficiency – Reduced Sound

EWAT B- XR Gold Efficiency, Reduced Sound										
Model	Sound pressure level @ 1 m from the unit (rif. 2×10^{-5} Pa)								Sound pressure Lp @ 1 m	Sound power Lw
	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz		
	dB								dB(A)	dB(A)
250	61,5	63,2	62,7	62,8	60,5	56,7	49,1	40,1	65	84
320	62,7	64,4	63,9	63,9	61,1	57,5	49,8	40,9	66	85
370	62,7	64,4	63,9	63,9	61,6	57,9	50,3	41,3	66	86
390	62,7	64,4	63,9	63,9	61,2	58,1	50,4	41,5	66	86
450	63,4	65,1	64,6	64,6	62	58,3	50,6	41,7	67	87
510	63,4	65,1	64,6	64,6	62,3	58,6	51	42	67	87
540	63,9	65,6	65,1	65,1	62,3	58,6	50,9	42,1	67	88
590	63,9	65,6	65,1	65,1	62,6	58,9	51,2	42,3	67	88
630	63,9	65,6	65,1	65,1	62,8	59,1	51,5	42,5	67	88
720	64,3	66	65,4	65,5	63	59,3	51,6	42,7	68	89
760	64,3	66	65,4	65,5	63,2	59,5	51,8	42,9	68	89
830	64,5	66,2	65,7	65,7	63,2	59,5	51,9	43	68	89
880	64,5	66,2	65,7	65,7	63,4	59,7	52,1	43,1	68	89
C10	64,7	66,4	65,9	66	63,7	59,9	52,3	43,3	68	90

i) The above data are referred to the unit without additional optional.
ii) The above data are referred the unit installed in compliancy with installation prescription.
iii) All the data are subject to change without notice. For updated information on project base refer to Chiller Selection Software and unit's certified drawing

Sound Performance referred to Standard Rating Conditions for Air to water chillers according to EN14511:2 Outdoor Heat exchanger inlet dry bulb temperature 35° at sea level; Indoor heat exchanger inlet water temperature 12°C, outlet water temperature 7°C. Fluid: water, Fouling factor = 0
Sound Power levels are measured in accordance with ISO 9614
Sound Pressure at levels 1 meter are measured in accordance with ISO 3744

*NOTE: The sound data in the Octave band spectrum is based on calculation, thus intended as general guideline, and not considered binding.
All data are subject to change without notice. For updated information on project base refer to specific selections.*

All above data are referred to base unit without options. Options may affect sound data, contact factory Daikin representative for additional information's

 Eurovent certified data

EWAT B- XR | Gold Efficiency, Reduced Sound

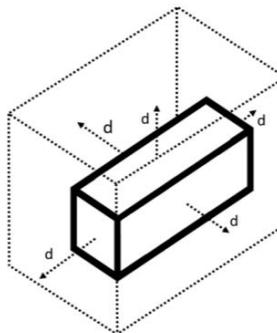
model	Sound Power Lw [dB(a)]	Sound pressure - Lp [dB(a)] at									
		1 m	2 m	3 m	4 m	5 m	6 m	7m	8 m	9 m	10 m
250	84	64,9	62,1	59,9	58,2	56,8	55,6	54,5	53,5	52,7	51,9
320	85	65,7	63,0	61,0	59,3	58,0	56,8	55,7	54,8	53,9	53,2
370	86	66,0	63,3	61,3	59,6	58,3	57,1	56,0	55,1	54,2	53,5
390	86	65,9	63,2	61,2	59,5	58,2	57,0	55,9	55,0	54,1	53,4
450	87	66,6	64,0	62,1	60,5	59,1	58,0	56,9	56,0	55,2	54,4
510	87	66,8	64,2	62,3	60,7	59,3	58,2	57,1	56,2	55,4	54,6
540	88	66,9	64,5	62,6	61,0	59,7	58,6	57,6	56,7	55,9	55,1
590	88	67,1	64,7	62,8	61,2	59,9	58,8	57,8	56,9	56,1	55,3
630	88	67,2	64,8	62,9	61,3	60,0	58,9	57,9	57,0	56,2	55,4
720	89	67,5	65,1	63,3	61,8	60,5	59,4	58,4	57,5	56,7	56,0
760	89	67,6	65,2	63,4	61,9	60,6	59,5	58,5	57,6	56,8	56,1
830	89	67,7	65,5	63,7	62,3	61,0	59,9	58,9	58,1	57,3	56,6
880	89	67,8	65,6	63,8	62,4	61,1	60,0	59,0	58,2	57,4	56,7
C10	90	68,1	65,9	64,2	62,7	61,5	60,4	59,5	58,6	57,9	57,1

- i) The above data are referred to the unit without additional optional.
- ii) The above data are referred the unit installed in compliancy with installation prescription.
- iii) All the data are subject to change without notice. For updated information on project base refer to Chiller Selection Software and unit's certified drawing

Sound Performance referred to Standard Rating Conditions for Air to water chillers according to EN14511:2 Outdoor Heat exchanger inlet dry bulb temperature 35° at sea level; Indoor heat exchanger inlet water temperature 12°C, outlet water temperature 7°C. Fluid: water, Fouling factor = 0
 Sound Power levels are measured in accordance with ISO 9614
 Sound Pressure levels at 1 meter are measured in accordance with ISO 3744

Sound pressure at distance > 1 meter is calculated from the sound power as follows:

$$L_p = L_w - 10 \times \text{Log}_{10}(A_d)$$



where A_d being the surface around the chiller calculated

Eurovent certified data

7. Electrical data

EWAT B- SS/SR Silver Efficiency, Standard & Reduced Sound				
Models	Fans FLA	Auxiliary circuit	Entry cross section cable	SCC lcw 1 Sec.
	A	A	q.ty x mm ²	kA eff
EWAT310B-SSC1	18,64	2,38	3x240 mm ² PE 1x120mm ²	15
EWAT350B-SSC1	18,64	2,38	3x240 mm ² PE 1x120mm ²	15
EWAT320B-SSC2	18,64	3,5	3x240 mm ² PE 1x120mm ²	15
EWAT380B-SSC2	27,96	3,5	3x240 mm ² PE 1x120mm ²	15
EWAT430B-SSC2	27,96	3,5	3x2x185 mm ² PE 1x185mm ²	20
EWAT480B-SSC2	27,96	3,5	3x2x185 mm ² PE 1x185mm ²	20
EWAT570B-SSC2	37,28	3,5	3x2x185 mm ² PE 1x185mm ²	20
EWAT620B-SSC2	37,28	3,5	3x2x185 mm ² PE 1x185mm ²	20
EWAT670B-SSC2	37,28	3,5	3x2x240 mm ² PE 1x240mm ²	20
EWAT730B-SSC2	46,6	3,5	3x2x240 mm ² PE 1x240mm ²	20
EWAT790B-SSC2	46,6	5	3x2x300 mm ² PE 1x300mm ²	25
EWAT860B-SSC2	55,92	5	3x2x300 mm ² PE 1x300mm ²	25
EWAT960B-SSC2	55,92	5	3x2x400 mm ² PE 1x400mm ²	25
EWAT310B-SSC1 + OPT229	20,8	2,38	3x240 mm ² PE 1x120mm ²	15
EWAT350B-SSC1+ OPT229	20,8	2,38	3x240 mm ² PE 1x120mm ²	15
EWAT320B-SSC2+ OPT229	20,8	3,5	3x240 mm ² PE 1x120mm ²	15
EWAT380B-SSC2+ OPT229	31,2	3,5	3x240 mm ² PE 1x120mm ²	15
EWAT430B-SSC2+ OPT229	31,2	3,5	3x2x185 mm ² PE 1x185mm ²	20
EWAT480B-SSC2+ OPT229	31,2	3,5	3x2x185 mm ² PE 1x185mm ²	20
EWAT570B-SSC2+ OPT229	41,6	3,5	3x2x185 mm ² PE 1x185mm ²	20
EWAT620B-SSC2+ OPT229	41,6	3,5	3x2x185 mm ² PE 1x185mm ²	20
EWAT670B-SSC2+ OPT229	41,6	3,5	3x2x240 mm ² PE 1x240mm ²	20
EWAT730B-SSC2+ OPT229	52	3,5	3x2x240 mm ² PE 1x240mm ²	20
EWAT790B-SSC2+ OPT229	52	5	3x2x300 mm ² PE 1x300mm ²	25
EWAT860B-SSC2+ OPT229	62,4	5	3x2x300 mm ² PE 1x300mm ²	25
EWAT960B-SSC2+ OPT229	62,4	5	3x2x400 mm ² PE 1x400mm ²	25
EWAT310B-SRC1	20,8	2,38	3x240 mm ² PE 1x120mm ²	15
EWAT350B-SRC1	20,8	2,38	3x240 mm ² PE 1x120mm ²	15
EWAT320B-SRC2	20,8	3,5	3x240 mm ² PE 1x120mm ²	15
EWAT380B-SRC2	31,2	3,5	3x240 mm ² PE 1x120mm ²	15
EWAT430B-SRC2	31,2	3,5	3x2x185 mm ² PE 1x185mm ²	20
EWAT480B-SRC2	31,2	3,5	3x2x185 mm ² PE 1x185mm ²	20
EWAT570B-SRC2	41,6	3,5	3x2x185 mm ² PE 1x185mm ²	20
EWAT620B-SRC2	41,6	3,5	3x2x185 mm ² PE 1x185mm ²	20
EWAT670B-SRC2	41,6	3,5	3x2x240 mm ² PE 1x240mm ²	20
EWAT730B-SRC2	52	3,5	3x2x240 mm ² PE 1x240mm ²	20
EWAT790B-SRC2	52	5	3x2x300 mm ² PE 1x300mm ²	25
EWAT860B-SRC2	62,4	5	3x2x300 mm ² PE 1x300mm ²	25
EWAT960B-SRC2	62,4	5	3x2x400 mm ² PE 1x400mm ²	25

The above data are referred to the unit without additional optional.
All the data are intended as guideline and are subject to change without notice. For updated information on project base refer to dedicated wiring diagram

EWAT B- XS/XR Gold Efficiency, Standard & Reduced Sound				
Models	Fans FLA	Auxiliary circuit	Entry cross section cable	SCC lcw 1 Sec.
	A	A	q.ty x mm ²	kA eff
EWAT250B-XSC1	18,64	2,38	3x240 mm ² PE 1x120mm ²	15
EWAT320B-XSC1	27,96	2,38	3x240 mm ² PE 1x120mm ²	15
EWAT370B-XSC1	27,96	2,38	3x240 mm ² PE 1x120mm ²	15
EWAT390B-XSC2	27,96	3,5	3x240 mm ² PE 1x120mm ²	15
EWAT450B-XSC2	37,28	3,5	3x2x185 mm ² PE 1x185mm ²	20
EWAT510B-XSC2	37,28	3,5	3x2x185 mm ² PE 1x185mm ²	20
EWAT540B-XSC2	46,6	3,5	3x2x185 mm ² PE 1x185mm ²	20
EWAT590B-XSC2	46,6	3,5	3x2x185 mm ² PE 1x185mm ²	20
EWAT630B-XSC2	46,6	3,5	3x2x240 mm ² PE 1x240mm ²	20
EWAT720B-XSC2	55,92	3,5	3x2x240 mm ² PE 1x240mm ²	20
EWAT760B-XSC2	55,92	3,5	3x2x240 mm ² PE 1x240mm ²	20
EWAT830B-XSC2	65,24	5	3x2x300 mm ² PE 1x300mm ²	25
EWAT880B-XSC2	65,24	5	3x2x300 mm ² PE 1x300mm ²	25
EWATC10B-XSC2	74,56	5	3x2x400 mm ² PE 1x400mm ²	25
EWAT250B-XSC1	20,8	2,38	3x240 mm ² PE 1x120mm ²	15
EWAT320B-XSC1	31,3	2,38	3x240 mm ² PE 1x120mm ²	15
EWAT370B-XSC1	31,3	2,38	3x240 mm ² PE 1x120mm ²	15
EWAT390B-XSC2	31,3	3,5	3x240 mm ² PE 1x120mm ²	15
EWAT450B-XSC2	41,7	3,5	3x2x185 mm ² PE 1x185mm ²	20
EWAT510B-XSC2	41,7	3,5	3x2x185 mm ² PE 1x185mm ²	20
EWAT540B-XSC2	52,1	3,5	3x2x185 mm ² PE 1x185mm ²	20
EWAT590B-XSC2	52,1	3,5	3x2x185 mm ² PE 1x185mm ²	20
EWAT630B-XSC2	52,1	3,5	3x2x240 mm ² PE 1x240mm ²	20
EWAT720B-XSC2	62,5	3,5	3x2x240 mm ² PE 1x240mm ²	20
EWAT760B-XSC2	62,5	3,5	3x2x240 mm ² PE 1x240mm ²	20
EWAT830B-XSC2	72,9	5	3x2x300 mm ² PE 1x300mm ²	25
EWAT880B-XSC2	72,9	5	3x2x300 mm ² PE 1x300mm ²	25
EWATC10B-XSC2	83,4	5	3x2x400 mm ² PE 1x400mm ²	25
EWAT250B-XRC1	10,88	2,38	3x240 mm ² PE 1x120mm ²	15
EWAT320B-XRC1	16,32	2,38	3x240 mm ² PE 1x120mm ²	15
EWAT370B-XRC1	16,32	2,38	3x240 mm ² PE 1x120mm ²	15
EWAT390B-XRC2	16,32	3,5	3x240 mm ² PE 1x120mm ²	15
EWAT450B-XRC2	21,76	3,5	3x2x185 mm ² PE 1x185mm ²	20
EWAT510B-XRC2	21,76	3,5	3x2x185 mm ² PE 1x185mm ²	20
EWAT540B-XRC2	27,2	3,5	3x2x185 mm ² PE 1x185mm ²	20
EWAT590B-XRC2	27,2	3,5	3x2x185 mm ² PE 1x185mm ²	20
EWAT630B-XRC2	27,2	3,5	3x2x240 mm ² PE 1x240mm ²	20
EWAT720B-XRC2	32,64	3,5	3x2x240 mm ² PE 1x240mm ²	20
EWAT760B-XRC2	32,64	3,5	3x2x240 mm ² PE 1x240mm ²	20
EWAT830B-XRC2	38,08	5	3x2x300 mm ² PE 1x300mm ²	25
EWAT880B-XRC2	38,08	5	3x2x300 mm ² PE 1x300mm ²	25
EWATC10B-XRC2	43,52	5	3x2x400 mm ² PE 1x400mm ²	25

The above data are referred to the unit without additional optional.
All the data are intended as guideline and are subject to change without notice. For updated information on project base refer to dedicated wiring diagram

8. Operating Limits

At Evaporator – Brazed Plate Heat Exchanger	Unit configuration	Fluid	Min [°C]	Max [°C]
Leaving water temperature range	Standard unit	Water	4	18
	High LWT option	Water	4	30
	Brine option	Glycol Mix	-13	18
Entering water temperature range	Standard unit	Water	6.5	28
	High LWT option	Water	6.5	40
	Brine option	Glycol Mix	-10.5	28
Entering water temperature range at start up	Standard unit	Water	6.5	40
	High LWT option	Water	6.5	40
	Brine option	Glycol Mix	-10.5	40
Water Temperature difference across evaporator Entering - Leaving	Standard unit	Water	2.5	10
	High LWT option	Water	2.5	10
	Brine option	Glycol Mix	2.5	10

For operation below 4°C leaving from evaporator the use of glycol mixture is mandatory.

The values above are intended as guidelines, refer to unit selection on project base for actual values.

Transportation and Storage temperature	Min [°C]	Max [°C]
	-20	40

At Condenser – MCH/Tube and fin Exchanger	Unit configuration	Fluid	Min [°C]	Max [°C]
Operating Ambient Temperature	Standard unit with AC fans	Air	5	46
	Standard unit with EC fans	Air	-20	46
	Unit with High Ambient kit (OPT142)	Air	-20	52

The values above are intended as guidelines, refer to unit selection on project base for actual values.

At Partial Heat Recovery – BPHE	Unit configuration	Fluid	Min [°C]	Max [°C]
Leaving temperature range	With PHR	Water	33	60
Entering temperature range			30	57
Entering temperature range at start up			20	57

The values above are intended as guidelines, refer to unit selection on project base for actual values.

At Total Heat Recovery – BPHE	Unit configuration	Fluid	Min [°C]	Max [°C]
Leaving temperature range	With PHR	Water	33	60
Entering temperature range			30	57
Entering temperature range at start up			20	57

The values above are intended as guidelines, refer to unit selection on project base for actual values.

Condenser fans External Static pressure	Unit configuration	Pa
	Standard unit	0
	With option 160C	100

If additional pressure resistance is added on airflow e.g., louvers around the unit or ducts on condenser discharge, the airflow will be affected causing a deration of unit performance. The External Static Pressure where available is referred to the nominal airflow of the standard unit. Refer to chiller selection for airflow information.

Max Operating Pressure on water side	Heat Exchanger	bar
	STD unit - Evaporator	20
	Unit with Hydronic kit	10
	Partial Heat recovery	20
	Total Heat recovery	20

All above values are intended as guidelines which may change according to specific unit configurations.

NOTES

- All data are referred to installation of the unit at sea level. For information on operation of the unit at different altitudes refer to Chiller Selection Software.
- For installation where ambient can reach temperature below +4°C, freeze protection is mandatory.
- Installation of filter at chiller inlet is mandatory.
- Performance of the unit are available with Water, Ethylene glycol and Propylene glycol. In case different substance is required, contact factory to evaluate compatibility and performances.
- All data and information on unit operation are referred to the unit installed in compliance with Installation requirements (refer to Installation and Operation manual).
- Installation conditions may have impact on the above operating conditions, refer to Daikin representative for confirmation.
- Unit options and/or special execution may affect operating limit. Contact factory for specific information.
- All data and information are subject to change without notice. Always refer to latest information available from factory on project base.

9. Water Quality

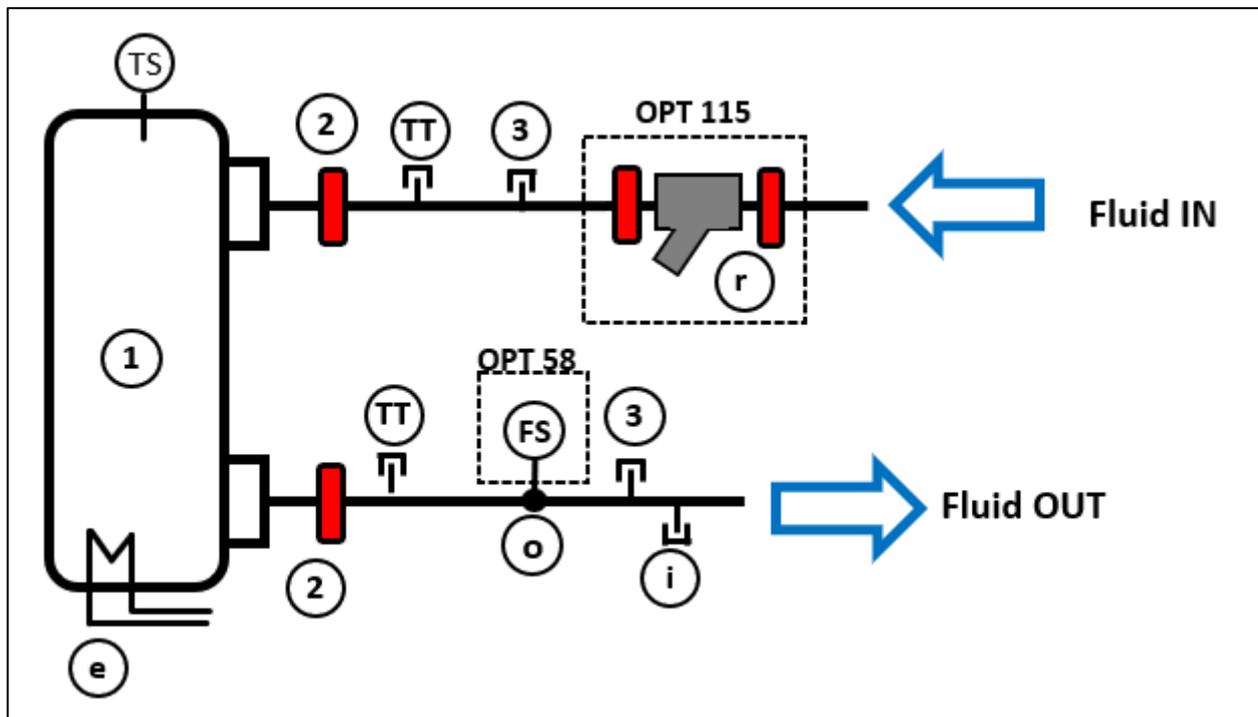
Water quality requirements	
Ph (25 °C)	7.5 – 9.0
Electrical conductivity [$\mu\text{S}/\text{cm}$] (25°C)	< 500
Chloride ion [$\text{mg Cl}^- / \text{l}$]	< 70 (HP ¹) < 300 (CO ²)
Sulphate ion [$\text{mg SO}_4^{2-} / \text{l}$]	< 100
Alkalinity [$\text{mg CaCO}_3 / \text{l}$]	< 200
Total Hardness [$\text{mg CaCO}_3 / \text{l}$]	75 ÷ 150
Iron [$\text{mg Fe} / \text{l}$]	< 0.2
Ammonium ion [$\text{mg NH}_4^+ / \text{l}$]	< 0.5
Silica [$\text{mg SiO}_2 / \text{l}$]	-
Chlorine molecular ($\text{mg Cl}_2/\text{l}$)	< 0.5

The values above are intended as guidelines and not exhaustive for a complete analysis on compatibility with unit component.

All data and information are subject to change without notice. Always refer to latest information available from factory on project base.

10. Hydronics

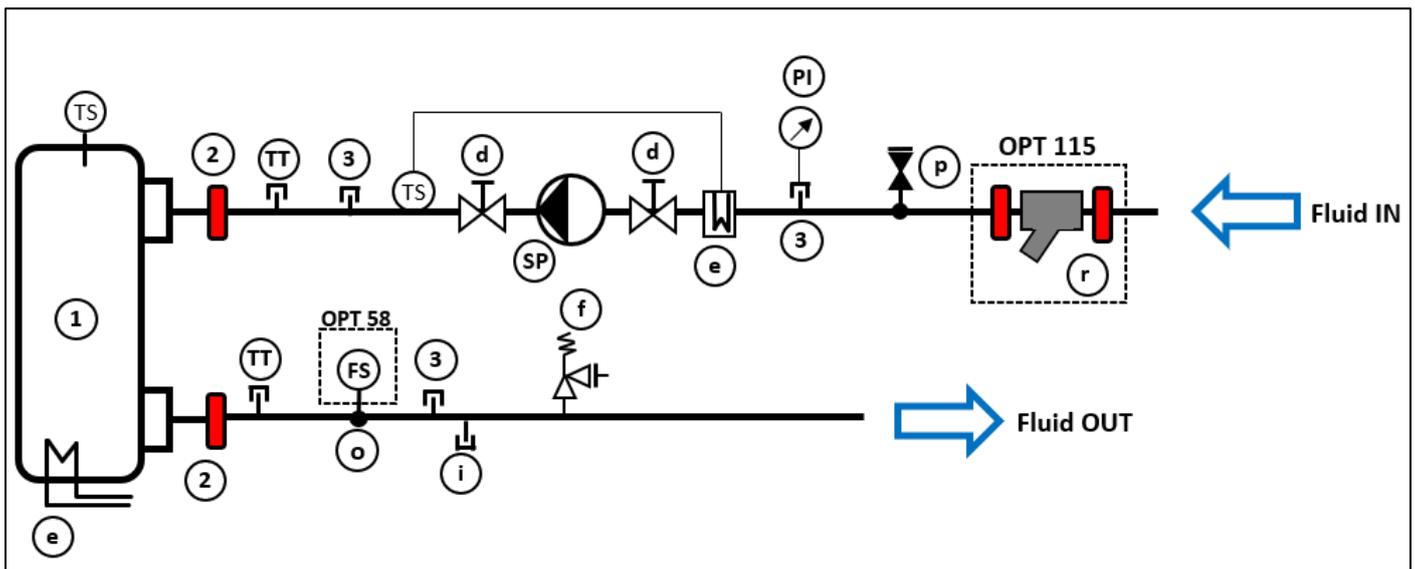
10.1 Hydraulic scheme without pump on board



Legend	
1	Brazed Plate heat Exchanger - Evaporator
2	Victaulic connection
3	Plugged Fitting ¼" NPT
i	Drain ¼" NPT
o	Flow switch fitting ½" G or 1" G
r	Filter (available as option – OPT115)
e	electric heater
TT	Temperature sensor
TS	Temperature switch
FS	Flow switch

NOTE:
 installation of filter and flow switch is mandatory.
 Circuit must be protected from freezing

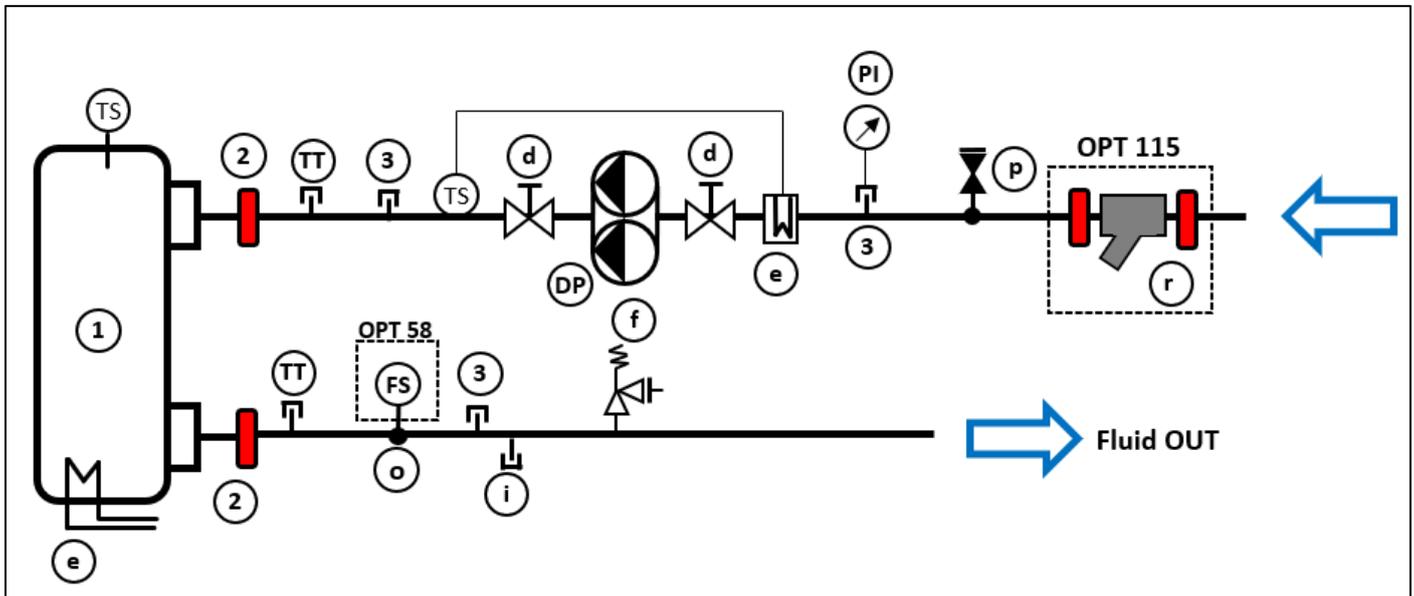
10.2 Hydraulic scheme single pump on board (OPT 78/79)



Legend	
1	Brazen Plate heat Exchanger – Evaporator
2	Victaulic connection
3	Plugged Fitting ¼" NPT
SP	Single pump (see paragraph 10.8)
i	Drain ¼" NPT
o	Flow switch fitting ½" G or 1" G
r	Filter (available as option – OPT115)
d	Isolation valve
e	electric heater
f	Relief valve 10 bar ½" MF
p	Filling valve fitting ½" G
TT	Temperature sensor
TS	Temperature switch
FS	Flow switch
PI	Pressure gauge

NOTE:
 installation of filter and flow switch is mandatory.
 Circuit must be protected from freezing

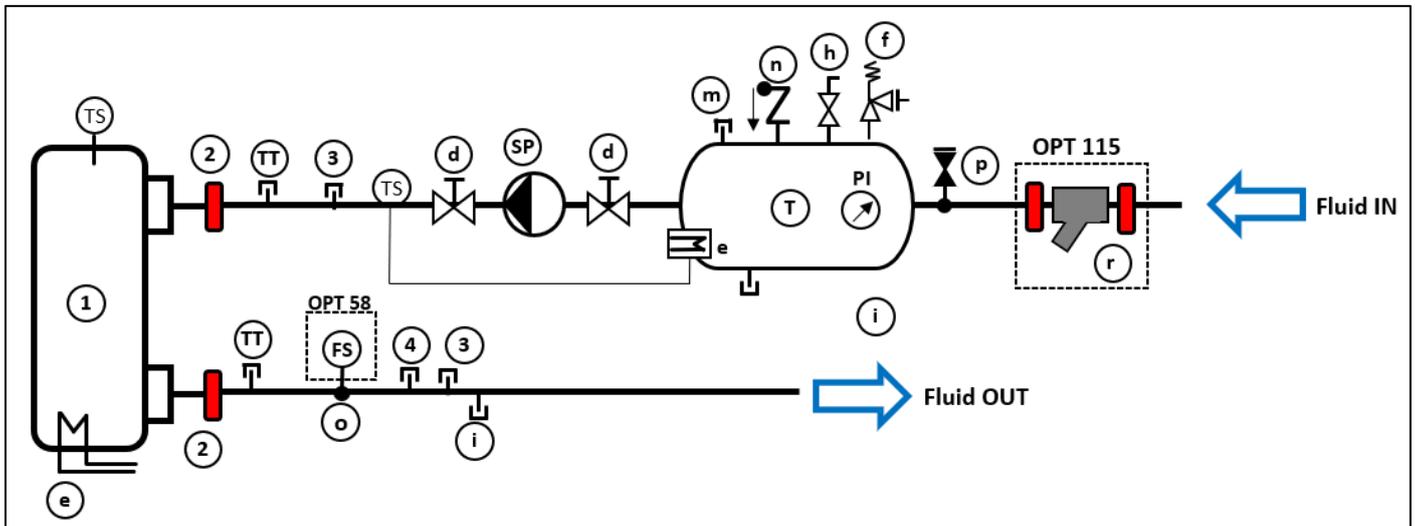
10.3 Hydraulic scheme dual pump on board (OPT 80/81)



Legend	
1	Brazed Plate heat Exchanger – Evaporator
2	Victaulic connection
3	Plugged Fitting ¼" NPT
DP	Dual pump (see paragraph 10.8)
i	Drain ¼" NPT
o	Flow switch fitting ½" G or 1" G
r	Filter (available as option – OPT115)
d	Isolation valve
e	electric heater
f	Relief valve 10 bar ½" MF
p	Filling valve fitting ½" G
TT	Temperature sensor
TS	Temperature switch
FS	Flow switch
PI	Pressure gauge

NOTE:
 installation of filter and flow switch is mandatory.
 Circuit must be protected from freezing

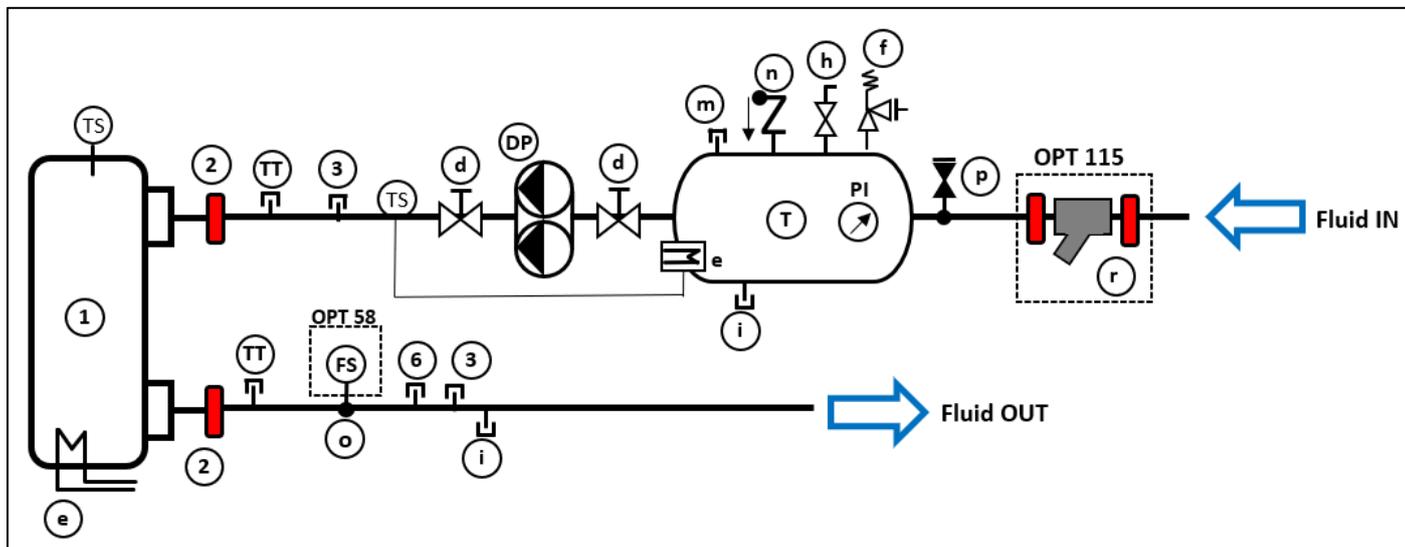
10.4 Hydraulic scheme single pump with tank on board (OPT 134/135)



Legend	
1	Brazed Plate heat Exchanger – Evaporator
2	Victaulic connection
3	Plugged Fitting ¼" NPT
4	Plugged sensor fitting ¼" NPT
SP	Single pump (see paragraph 10.8)
T	Tank (see paragraph 10.7)
i	Drain ¼" NPT
o	Flow switch fitting ½" G or 1" G
r	Filter (available as option – OPT115)
d	Isolation valve
e	electric heater
f	Relief valve 10 bar ½" MF
p	Filling valve fitting ½" G
n	Check valve
h	Air vent 3/8" NPT
TT	Temperature sensor
TS	Temperature switch
FS	Flow switch
PI	Pressure gauge

NOTE:
 installation of filter and flow switch is mandatory.
 Circuit must be protected from freezing

10.5 Hydraulic scheme dual pump with tank on board (OPT 136/137)



Legend	
1	Brazed Plate heat Exchanger – Evaporator
2	Victaulic connection
3	Plugged Fitting ¼" NPT
4	Plugged sensor fitting ¼" NPT
DP	Dual pump (see paragraph 10.8)
T	Tank (see paragraph 10.7)
i	Drain ¼" NPT
o	Flow switch fitting ½" G or 1" G
r	Filter (available as option – OPT115)
d	Isolation valve
e	electric heater
f	Relief valve 10 bar ½" MF
p	Filling valve fitting ½" G
n	Check valve
h	Air vent 3/8" NPT
TT	Temperature sensor
TS	Temperature switch
FS	Flow switch
PI	Pressure gauge

NOTE:
 installation of filter and flow switch is mandatory.
 Circuit must be protected from freezing

10.6 Integrated Water Tank – OPT 134,135,136,137

To increase system inertia and improve stability of supplied temperature is possible to select hydronic kit with pump and water tank integrated on chiller frame. The volume of the tank depends on the chiller model.

The table below report the volume of the tank for each model:

Silver Models		tank volume [lt]
EWAT310B-SSC1	EWAT310B-SRC1	280
EWAT350B-SSC1	EWAT350B-SRC1	280
EWAT250B-SSC2	EWAT250B-SRC2	280
EWAT270B-SSC2	EWAT270B-SRC2	280
EWAT320B-SSC2	EWAT320B-SRC2	280
EWAT380B-SSC2	EWAT380B-SRC2	390
EWAT430B-SSC2	EWAT430B-SRC2	390
EWAT480B-SSC2	EWAT480B-SRC2	390
EWAT570B-SSC2	EWAT570B-SRC2	550
EWAT620B-SSC2	EWAT620B-SRC2	550
EWAT670B-SSC2	EWAT670B-SRC2	550
EWAT730B-SSC2	EWAT730B-SRC2	750
EWAT790B-SSC2	EWAT790B-SRC2	750
EWAT860B-SSC2	EWAT860B-SRC2	950
EWAT960B-SSC2	EWAT960B-SRC2	950

Gold Models		tank volume [lt]
EWAT250B-XSC1	EWAT250B-XRC1	280
EWAT320B-XSC1	EWAT320B-XRC1	390
EWAT370B-XSC1	EWAT370B-XRC1	390
EWAT390B-XSC2	EWAT390B-XRC2	390
EWAT450B-XSC2	EWAT450B-XRC2	550
EWAT510B-XSC2	EWAT510B-XRC2	550
EWAT540B-XSC2	EWAT540B-XRC2	750
EWAT590B-XSC2	EWAT590B-XRC2	750
EWAT630B-XSC2	EWAT630B-XRC2	750
EWAT720B-XSC2	EWAT720B-XRC2	950
EWAT760B-XSC2	EWAT760B-XRC2	950
EWAT830B-XSC2	EWAT830B-XRC2	950
EWAT880B-XSC2	EWAT880B-XRC2	950
EWATC10B-XSC2	EWATC10B-XRC2	950

NOTE: the additional water volume of the tank on board does not automatically ensure proper inertia. Optimal water volume to ensure desired system performances depends on the characteristic of each specific installation and not by the chiller. The evaluation of the minimum water content must be carried by system designer taking into account the system. All chilled water systems need adequate time to recognize a load change to avoid short cycling of the compressors or loss of control. The potential for short cycling usually exists when the building load falls below the minimum chiller plant capacity or on close-coupled systems with very small water volumes.

Design considerations for water volume are the minimum cooling load, the minimum chiller plant capacity during the low load period and the desired cycle time for the compressors. Assuming that there are no sudden load changes, and that the chiller plant has reasonable turndown, a general rule of thumb for comfort application minimum water content considered is 3,5 lt/kW, for process applications where a more precise control of the temperature supplied to the terminals is required the minimum system volume increase to 6,5 lt/kW. This consideration refers to the water volume always flowing through the unit. A properly designed storage tank should be added if the system components do not provide sufficient water volume.

10.7 Hydronic Kit technical data

10.7.1 Silver Efficiency – Single Pump Low Lift

EWAT B- SS/SR Silver Efficiency Single Pump Low Lift 400 V / 3ph / 50 Hz							
Models	Ref.	Pump power input (3)	current (3)	flow rate (1)	Evaporator pressure drop (1)(2)	Pump available head @ std condition (1)(2)	Net water head @ std condition (1) (2)
		kW	A	l/s	kPa	kPa	KPa
EWAT310B-SSC1	A	5,5	10,5	15	49	198	149
EWAT350B-SSC1	B	5,5	10,5	17	55	191	135
EWAT320B-SSC2	B	5,5	10,5	15	47	196	149
EWAT380B-SSC2	B	5,5	10,5	18	67	183	116
EWAT430B-SSC2	C	7,5	14,1	20	73	229	156
EWAT480B-SSC2	C	7,5	14,1	23	91	217	126
EWAT570B-SSC2	D	7,5	14,1	27	22	192	171
EWAT620B-SSC2	D	7,5	14,1	30	26	175	149
EWAT670B-SSC2	E	7,5	14,1	32	20	159	139
EWAT730B-SSC2	F	11	20,2	35	24	196	173
EWAT790B-SSC2	F	11	20,2	38	27	187	160
EWAT860B-SSC2	F	11	20,2	41	32	175	144
EWAT960B-SSC2	F	11	20,2	46	31	156	125
EWAT310B-SRC1	A	5,5	10,5	14	47	198	151
EWAT350B-SRC1	B	5,5	10,5	16	52	191	139
EWAT320B-SRC2	B	5,5	10,5	15	44	198	153
EWAT380B-SRC2	B	5,5	10,5	18	64	183	119
EWAT430B-SRC2	C	7,5	14,1	20	70	229	160
EWAT480B-SRC2	C	7,5	14,1	22	86	217	131
EWAT570B-SRC2	D	7,5	14,1	26	21	192	172
EWAT620B-SRC2	D	7,5	14,1	29	24	175	150
EWAT670B-SRC2	E	7,5	14,1	31	19	159	140
EWAT730B-SRC2	F	11	20,2	34	22	196	174
EWAT790B-SRC2	F	11	20,2	37	26	187	161
EWAT860B-SRC2	F	11	20,2	40	30	175	145
EWAT960B-SRC2	F	11	20,2	45	30	156	126

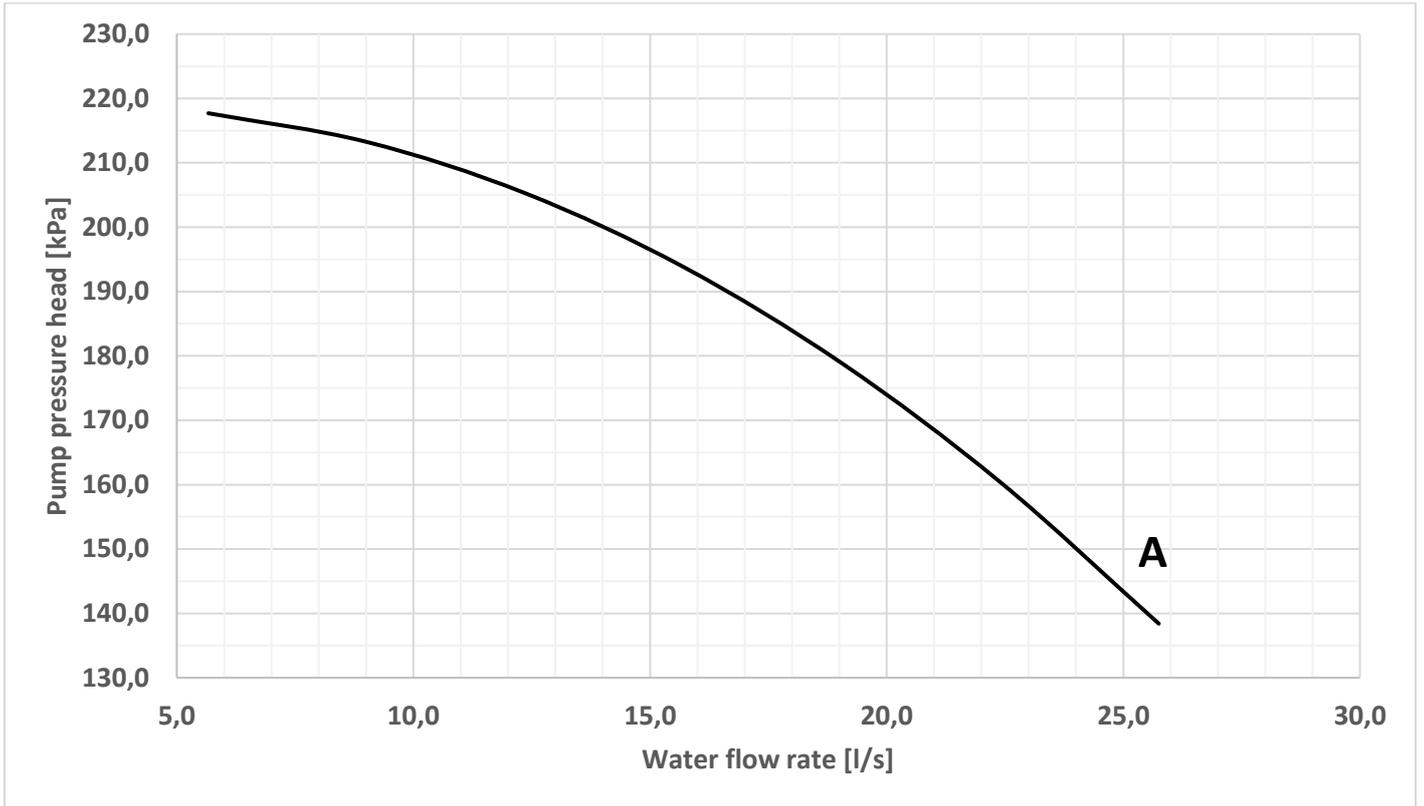
i) The above data are referred to the unit without additional optional.

ii) Pump performances are valid for liquids with density $\rho = 1,0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

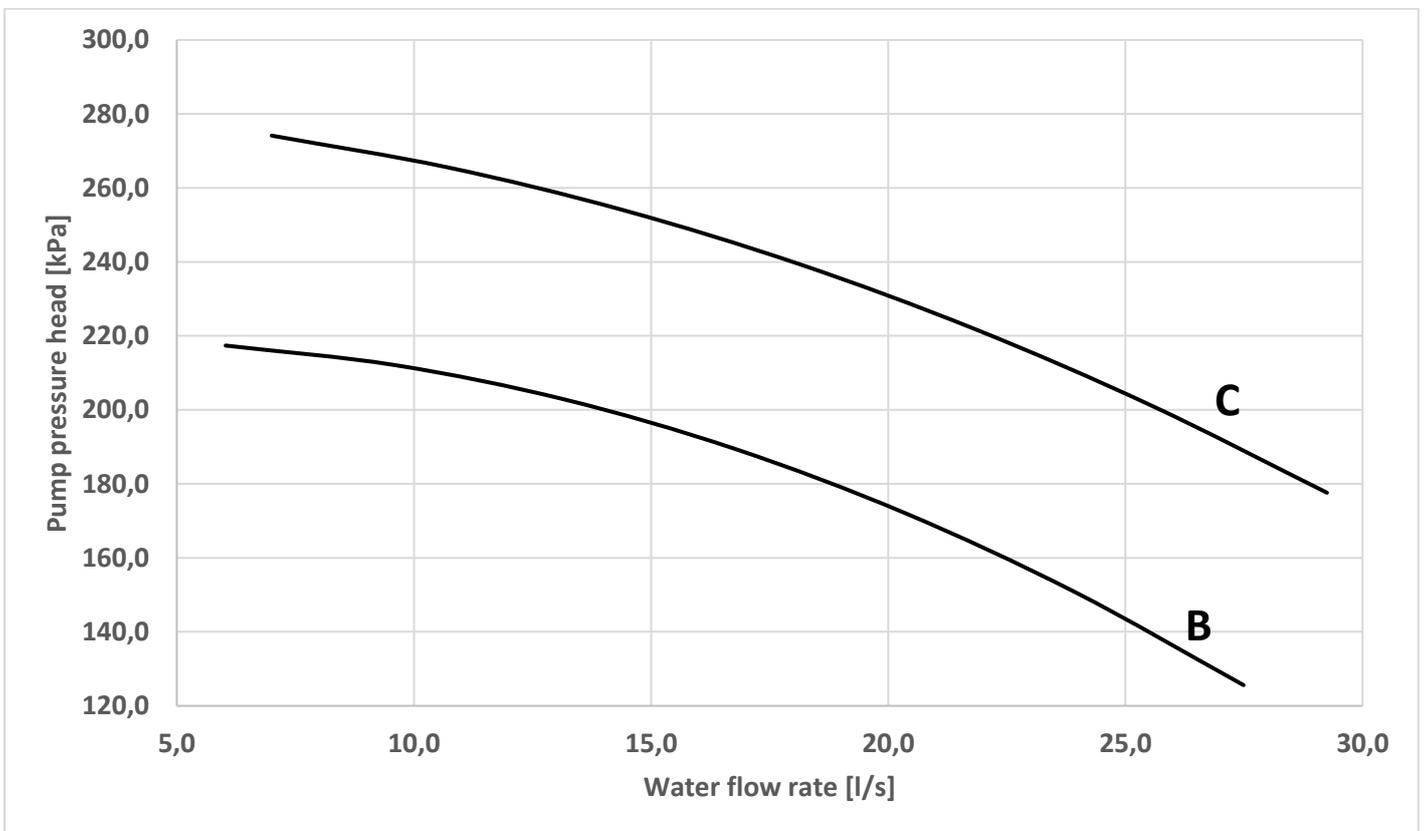
iii) All the data are subject to change without notice. For updated information on project base refer to Chiller Selection Software and unit's certified drawing

- (1) Standard Rating Conditions for Air to water chillers according to EN14511:2 Outdoor Heat exchanger inlet dry bulb temperature 35°C at sea level; Indoor heat exchanger inlet water temperature 12°C, outlet water temperature 7°C. Fluid: water, Fouling factor = 0
- (2) Fluid: water, not including filter pressure drop. The installation of the filter is mandatory
- (3) 400V power supply with $\pm 10\%$ tolerance on Voltage, Voltage unbalance between phases must be within $\pm 3\%$
 - Pump motor protection IP55
 - Pump motor Insulation Class F

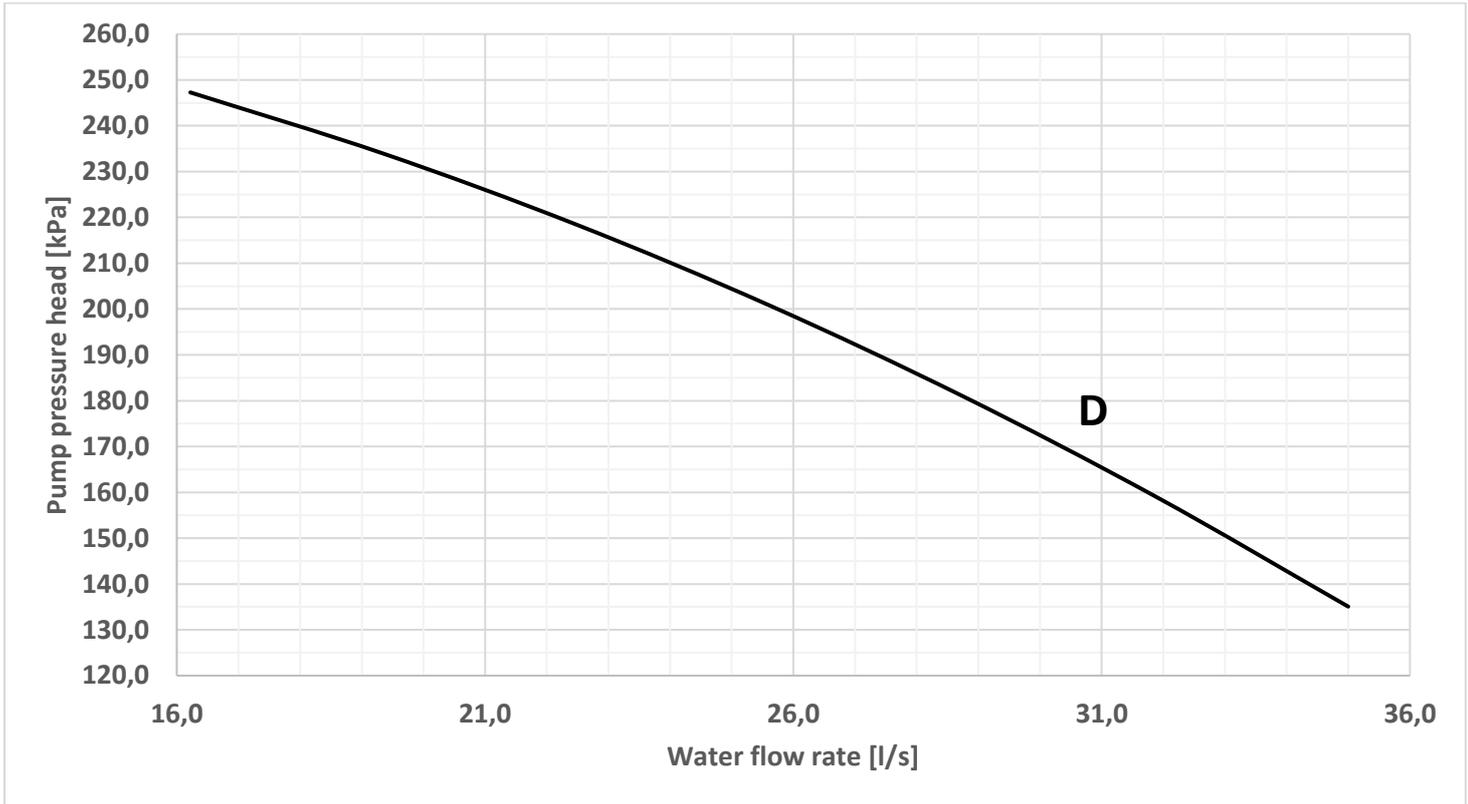
NOTE: In case of use with brine mixture contact factory



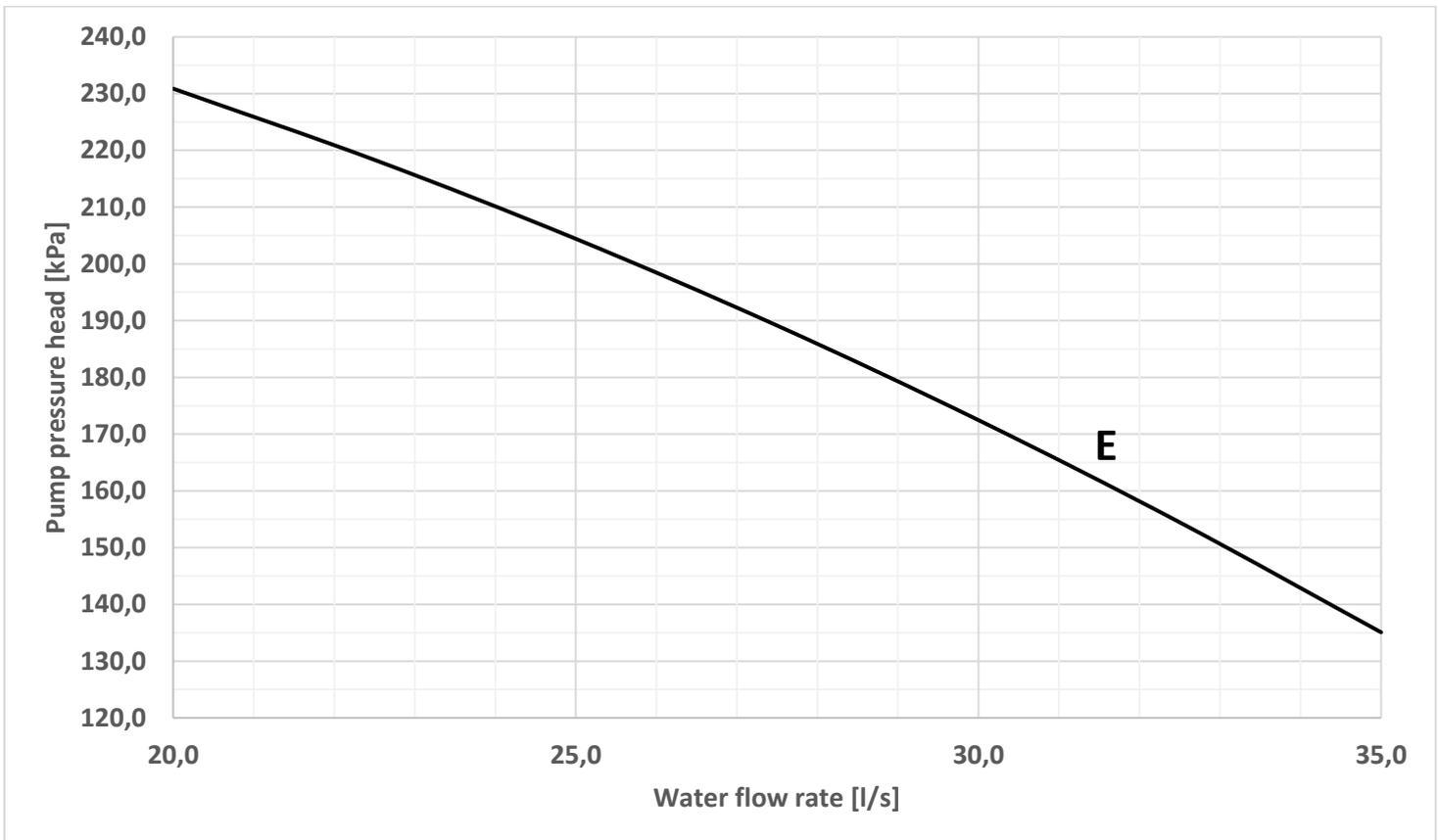
All above data are subject to change without notice.



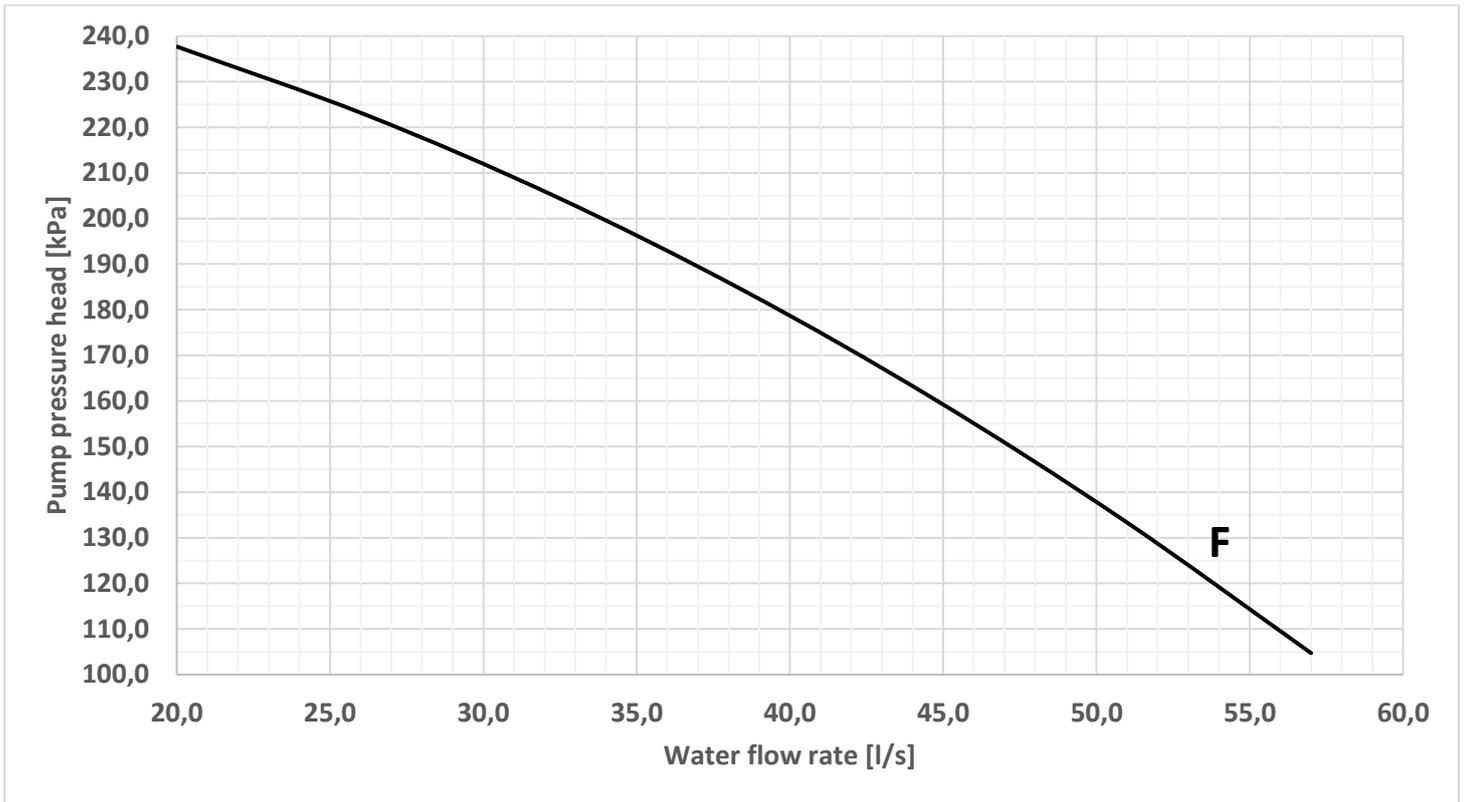
All above data are subject to change without notice.



All above data are subject to change without notice.



All above data are subject to change without notice.



All above data are subject to change without notice.

10.7.2 Silver Efficiency – Single Pump High Lift

EWAT B- SS/SR Silver Efficiency Single Pump High Lift 400 V / 3ph / 50 Hz							
Models	Ref.	Pump power input (3)	current (3)	flow rate (1)	Evaporator pressure drop (1)(2)	Pump available head @ std condition (1)(2)	Net water head @ std condition (1) (2)
		kW	A	l/s	kPa	kPa	KPa
EWAT310B-SSC1	G	7,5	14,1	15	49	251,9	203
EWAT350B-SSC1	G	7,5	14,1	17	55	244,1	189
EWAT320B-SSC2	G	7,5	14,1	15	47	251,9	205
EWAT380B-SSC2	H	9,2	17,4	18	67	268,7	202
EWAT430B-SSC2	I	11	20,2	20	73	295,2	222
EWAT480B-SSC2	I	11	20,2	23	91	279,9	189
EWAT570B-SSC2	J	11	20,2	27	22	256,2	234
EWAT620B-SSC2	J	11	20,2	30	26	235,9	210
EWAT670B-SSC2	J	11	20,2	32	20	221,2	201
EWAT730B-SSC2	K	15	26,6	35	24	263,9	240
EWAT790B-SSC2	K	15	26,6	38	27	254,5	227
EWAT860B-SSC2	K	15	26,6	41	32	244,1	212
EWAT960B-SSC2	L	18,5	33	46	31	273,5	242
EWAT310B-SRC1	G	7,5	14,1	15	49	253,3	204
EWAT350B-SRC1	G	7,5	14,1	17	55	246,2	191
EWAT320B-SRC2	G	7,5	14,1	15	44	253,0	209
EWAT380B-SRC2	H	9,2	17,4	18	67	267,8	201
EWAT430B-SRC2	I	11	20,2	20	73	293,8	221
EWAT480B-SRC2	I	11	20,2	23	91	281,2	190
EWAT570B-SRC2	J	11	20,2	27	22	256,2	235
EWAT620B-SRC2	J	11	20,2	30	26	238,1	213
EWAT670B-SRC2	J	11	20,2	32	20	222,0	202
EWAT730B-SRC2	K	15	26,6	35	24	263,9	240
EWAT790B-SRC2	K	15	26,6	38	27	255,5	228
EWAT860B-SRC2	K	15	26,6	41	32	244,5	213
EWAT960B-SRC2	L	18,5	33	46	31	274,3	243

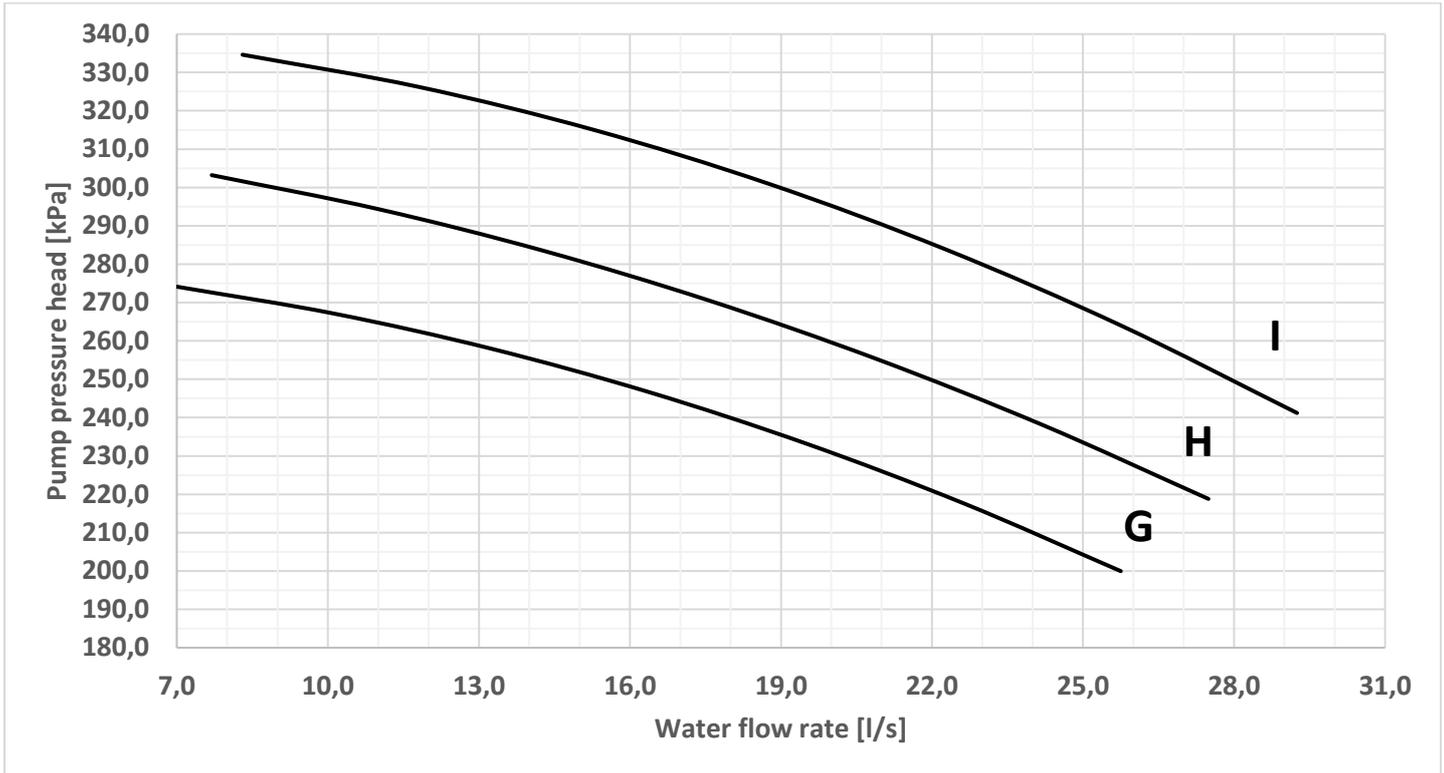
i) The above data are referred to the unit without additional optional.

ii) Pump performances are valid for liquids with density $\rho = 1,0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

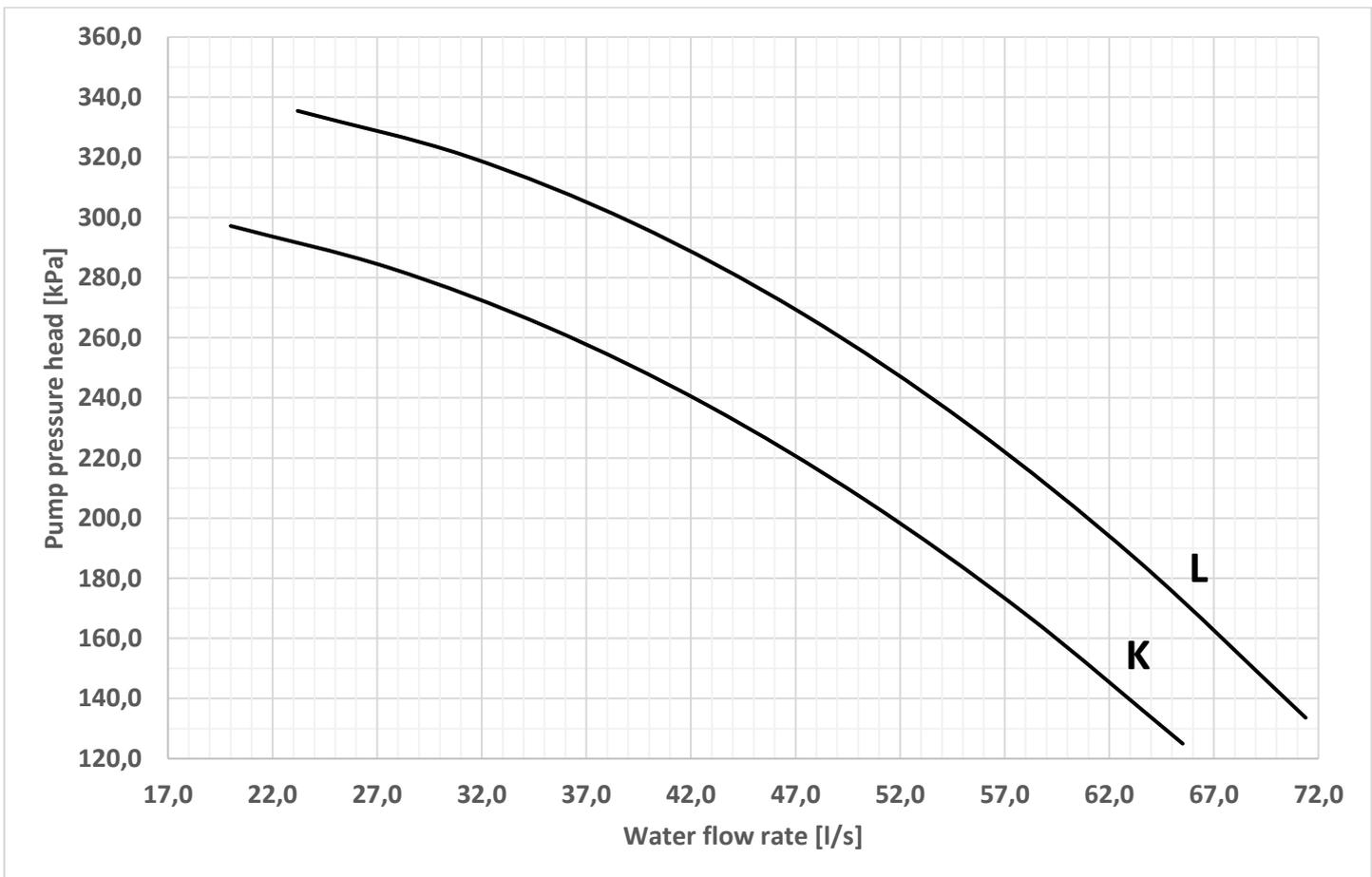
iii) All the data are subject to change without notice. For updated information on project base refer to Chiller Selection Software and unit's certified drawing

- (1) Standard Rating Conditions for Air to water chillers according to EN14511:2 Outdoor Heat exchanger inlet dry bulb temperature 35°C at sea level; Indoor heat exchanger inlet water temperature 12°C, outlet water temperature 7°C. Fluid: water, Fouling factor = 0
- (2) Fluid: water, not including filter pressure drop. The installation of the filter is mandatory
- (3) 400V power supply with $\pm 10\%$ tolerance on Voltage, Voltage unbalance between phases must be within $\pm 3\%$
 - Pump motor rating: IP55
 - Pump motor Insulation Class: F

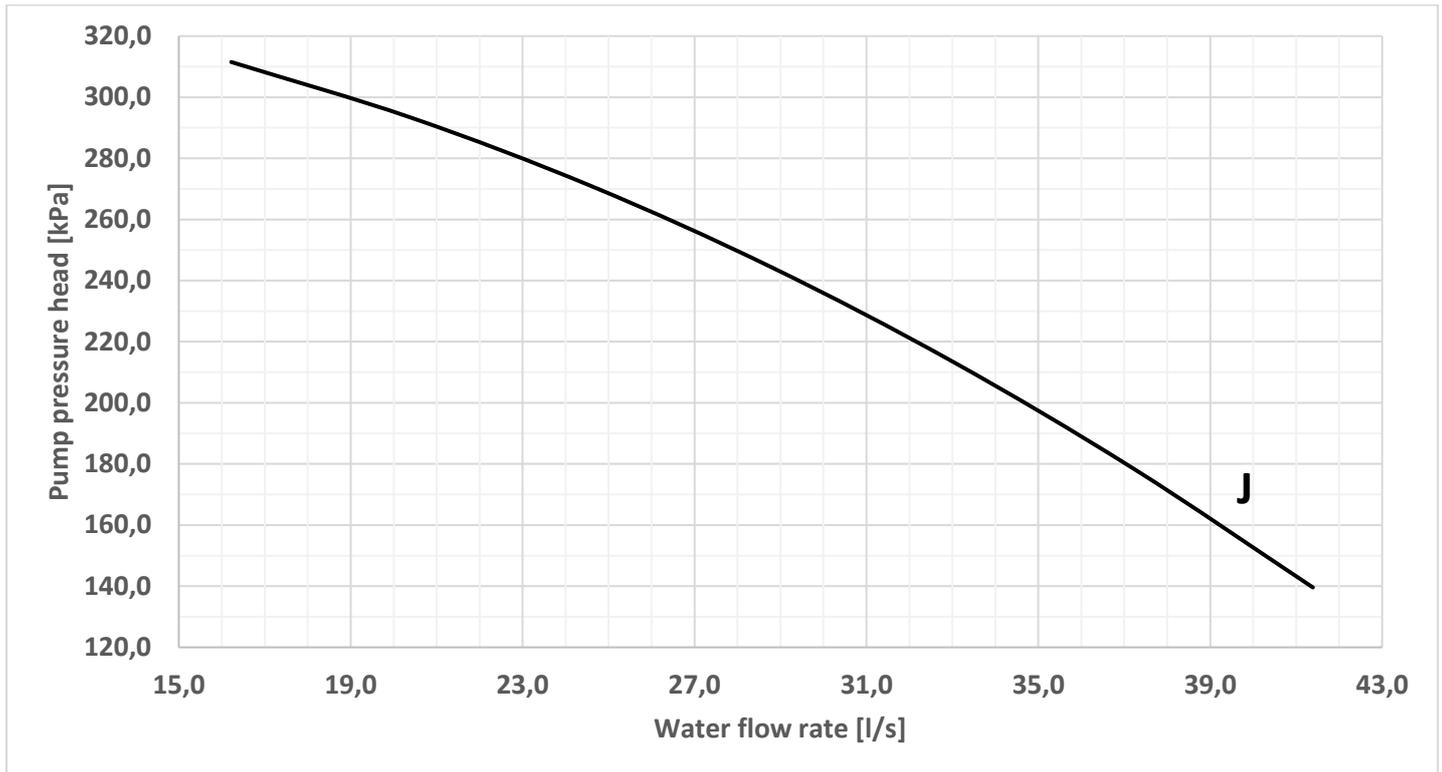
NOTE: In case of use with brine mixture contact factory



All above data are subject to change without notice.



All above data are subject to change without notice.



All above data are subject to change without notice.

10.7.3 Silver Efficiency – Dual Pump Low Lift

EWAT B- SS/SR Silver Efficiency Dual Pump Low Lift 400 V / 3ph / 50 Hz							
Models	Ref.	Pump power input (3)	current (3)	flow rate (1)	Evaporator pressure drop (1)(2)	Pump available head @ std condition (1)(2)	Net water head @ std condition (1) (2)
		kW	A	l/s	kPa	kPa	KPa
EWAT310B-SSC1	M	4	7,75	15	49	155	106
EWAT350B-SSC1	M	4	7,75	17	55	137	82
EWAT320B-SSC2	M	4	7,75	15	47	154	107
EWAT380B-SSC2	N	5,5	10,5	18	67	187	120
EWAT430B-SSC2	O	7,5	14,1	20	73	213	140
EWAT480B-SSC2	O	7,5	14,1	23	91	181	90
EWAT570B-SSC2	P	7,5	14,1	27	22	175	153
EWAT620B-SSC2	P	7,5	14,1	30	26	149	123
EWAT670B-SSC2	Q	11	20,2	32	20	197	177
EWAT730B-SSC2	Q	11	20,2	35	24	187	163
EWAT790B-SSC2	Q	11	20,2	38	27	176	149
EWAT860B-SSC2	Q	11	20,2	41	32	163	131
EWAT960B-SSC2	R	15	20,2	46	31	213	182
EWAT310B-SRC1	M	4	7,75	15	49	159	109
EWAT350B-SRC1	M	4	7,75	17	55	142	86
EWAT320B-SRC2	M	4	7,75	15	44	158	114
EWAT380B-SRC2	N	5,5	10,5	18	67	185	118
EWAT430B-SRC2	O	7,5	14,1	20	73	210	137
EWAT480B-SRC2	O	7,5	14,1	23	91	184	92
EWAT570B-SRC2	P	7,5	14,1	27	22	175	153
EWAT620B-SRC2	P	7,5	14,1	30	26	152	126
EWAT670B-SRC2	Q	11	20,2	32	20	198	178
EWAT730B-SRC2	Q	11	20,2	35	24	187	164
EWAT790B-SRC2	Q	11	20,2	38	27	177	150
EWAT860B-SRC2	Q	11	20,2	41	32	163	132
EWAT960B-SRC2	R	15	20,2	46	31	214	182

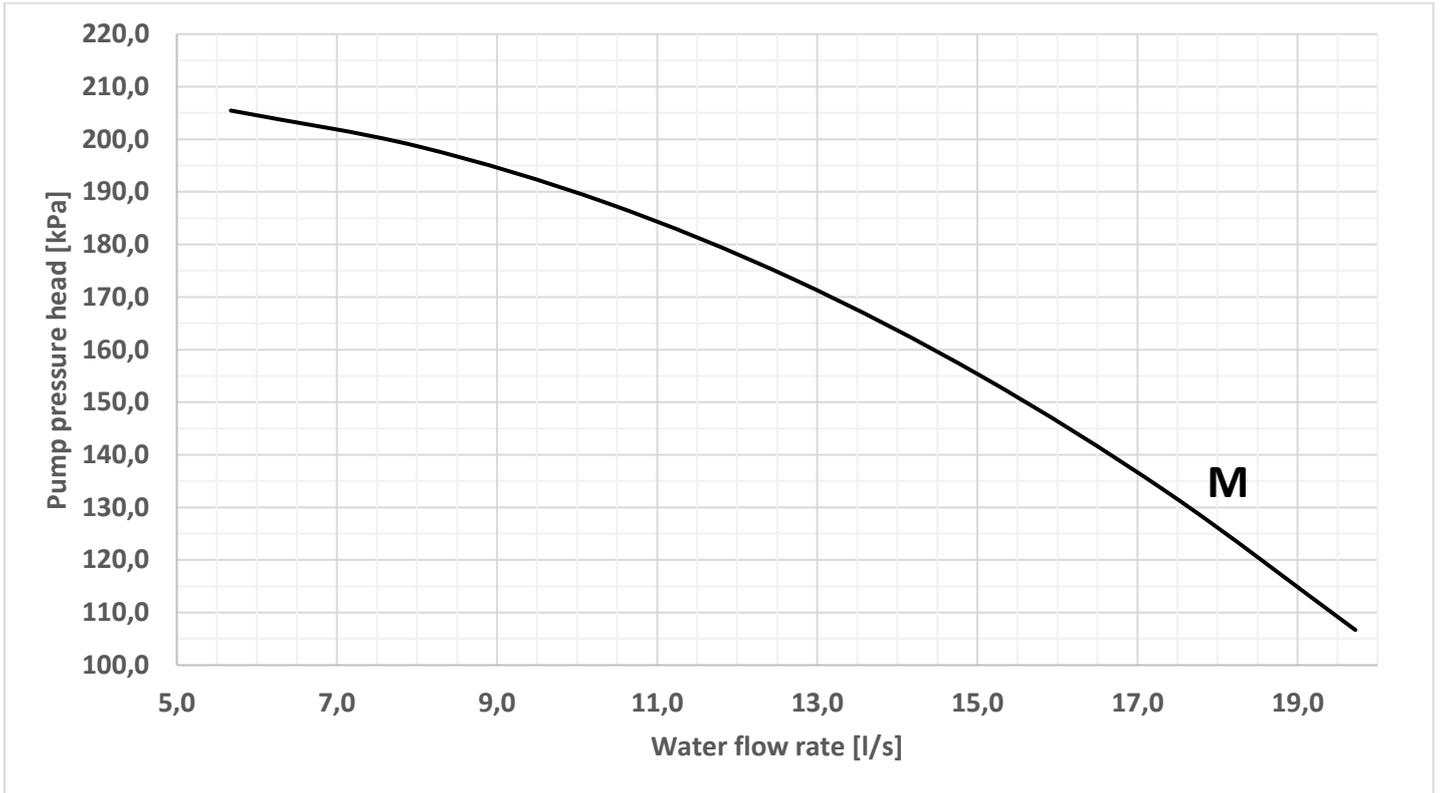
i) The above data are referred to the unit without additional optional.

ii) Pump performances are valid for liquids with density $\rho = 1,0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

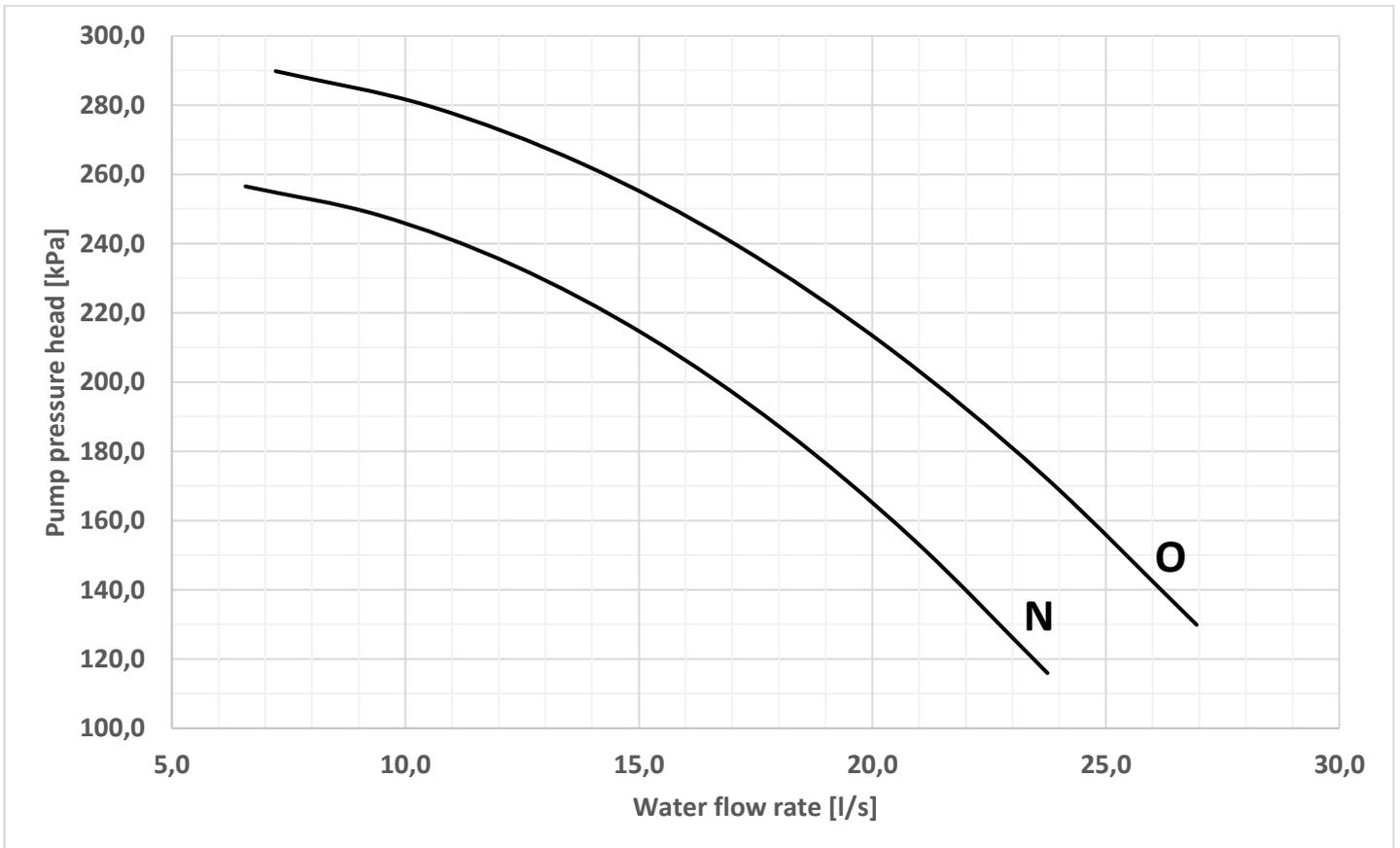
iii) All the data are subject to change without notice. For updated information on project base refer to Chiller Selection Software and unit's certified drawing

- (1) Standard Rating Conditions for Air to water chillers according to EN14511:2 Outdoor Heat exchanger inlet dry bulb temperature 35°C at sea level; Indoor heat exchanger inlet water temperature 12°C, outlet water temperature 7°C. Fluid: water, Fouling factor = 0
- (2) Fluid: water, not including filter pressure drop. The installation of the filter is mandatory
- (3) 400V power supply with $\pm 10\%$ tolerance on Voltage, Voltage unbalance between phases must be within $\pm 3\%$
 - Pump motor rating: IP55
 - Pump motor Insulation Class: F

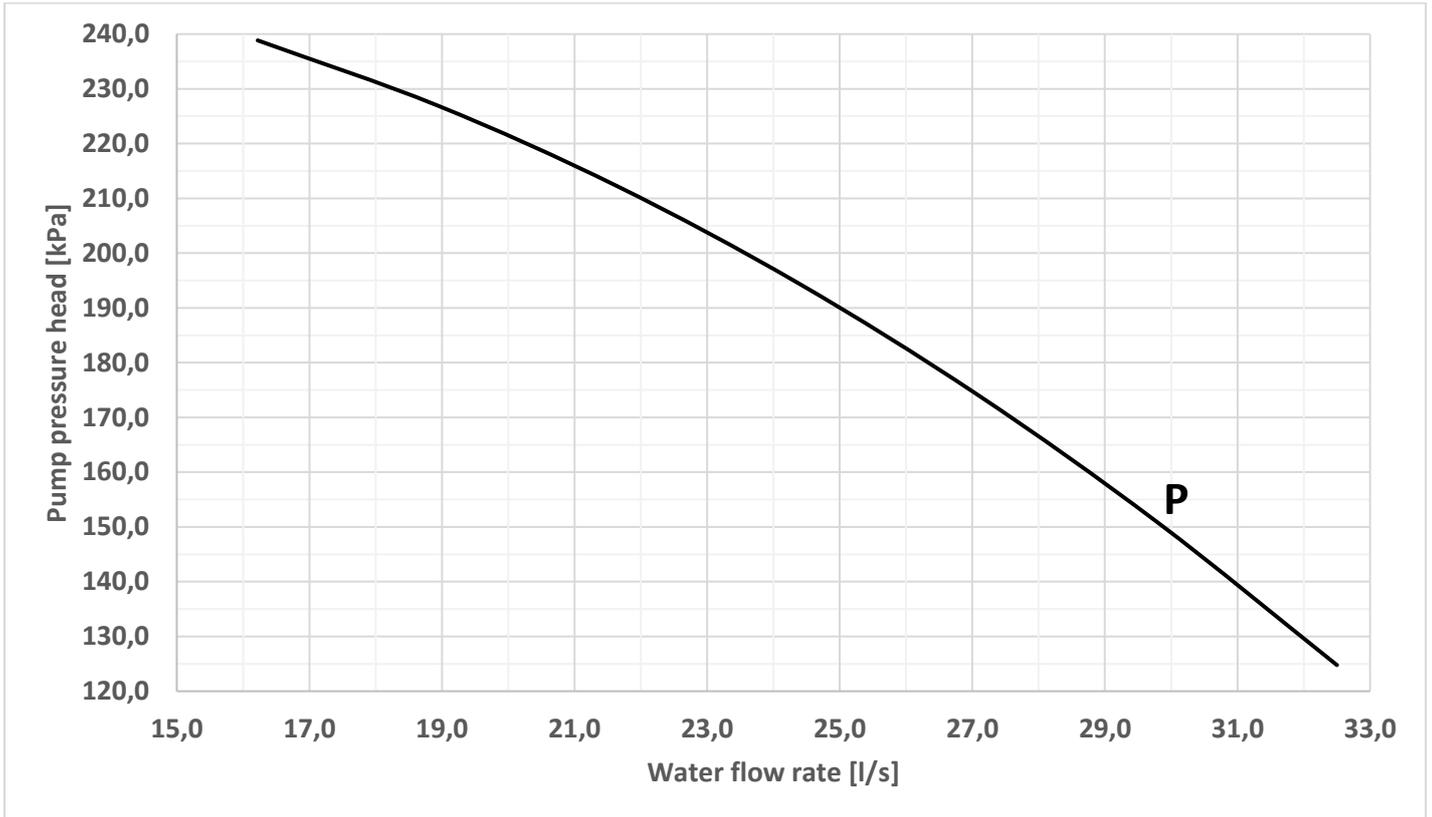
NOTE: In case of use with brine mixture contact factory



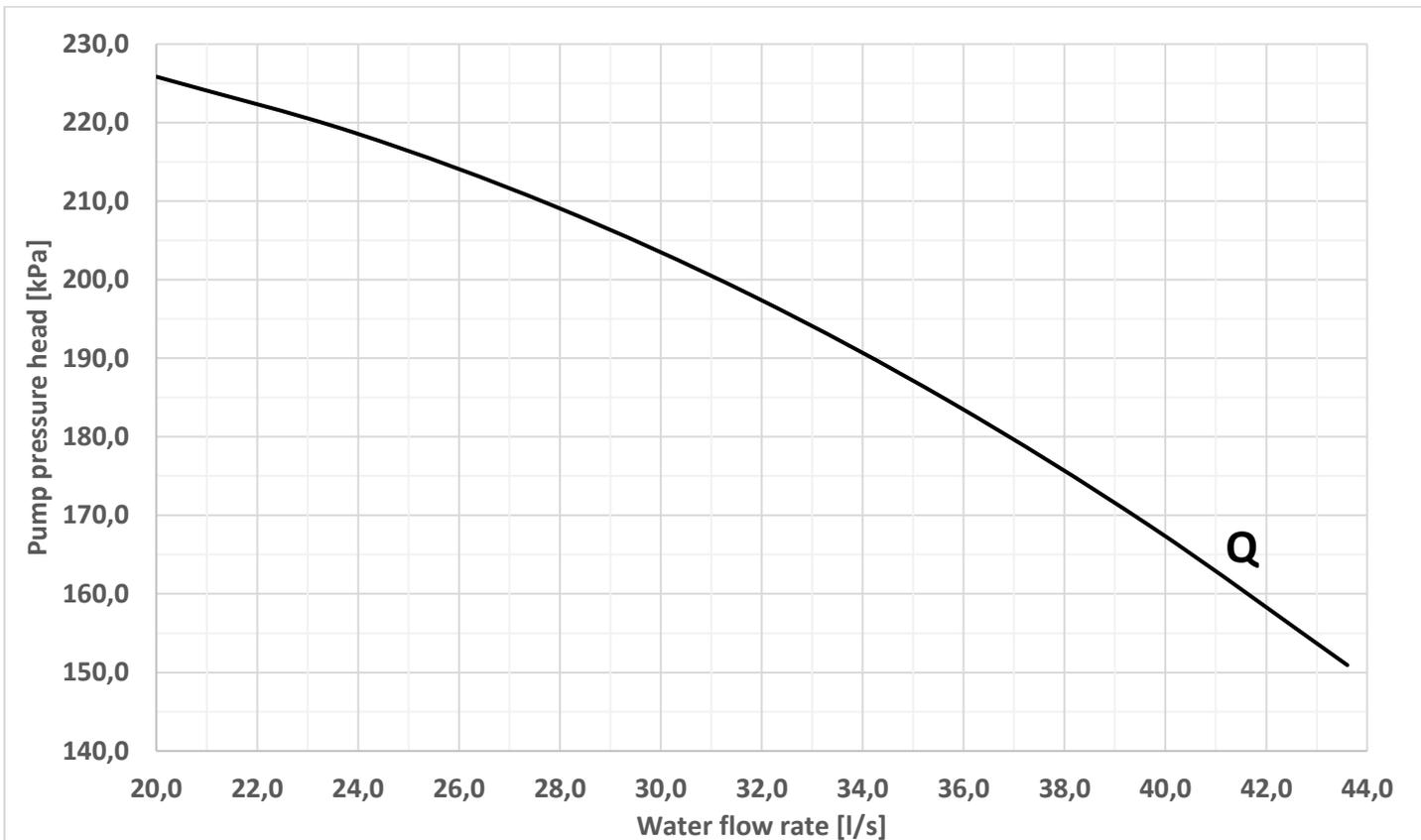
All above data are subject to change without notice.



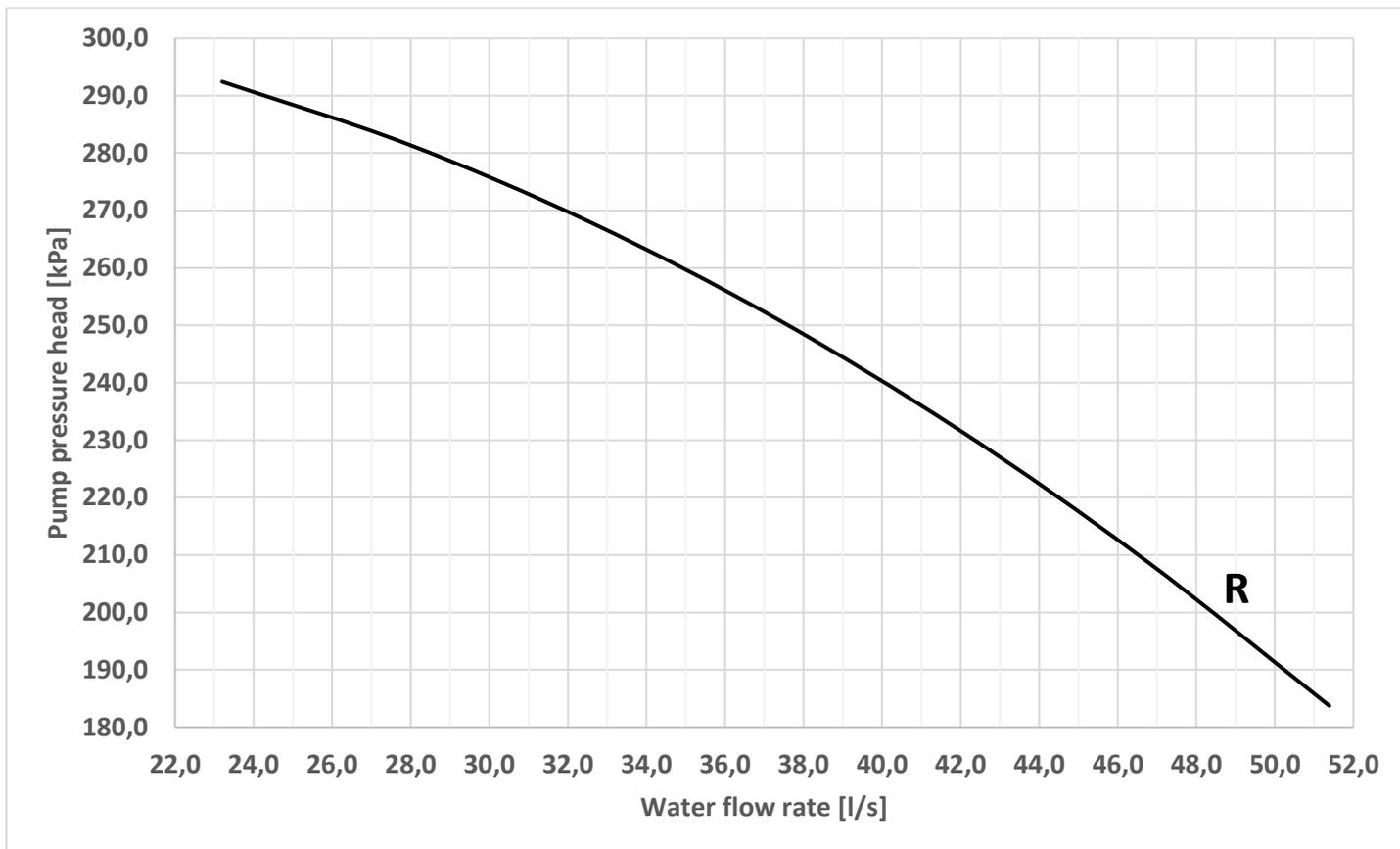
All above data are subject to change without notice.



All above data are subject to change without notice.



All above data are subject to change without notice.



All above data are subject to change without notice.

10.7.4 Silver Efficiency – Dual Pump High Lift

EWAT B- SS/SR Silver Efficiency Dual Pump High Lift 400 V / 3ph / 50 Hz							
Models	Ref.	Pump power input (3)	current (3)	flow rate (1)	Evaporator pressure drop (1)(2)	Pump available head @ std condition (1)(2)	Net water head @ std condition (1) (2)
		kW	A	l/s	kPa	kPa	KPa
EWAT310B-SSC1	S	7,5	14,1	15	49	255	206
EWAT350B-SSC1	S	7,5	14,1	17	55	240	185
EWAT320B-SSC2	S	7,5	14,1	15	47	254	207
EWAT380B-SSC2	T	9,2	17,4	18	67	275	208
EWAT430B-SSC2	T	9,2	17,4	20	73	266	193
EWAT480B-SSC2	U	11	20,2	23	91	289	198
EWAT570B-SSC2	V	11	20,2	27	22	265	243
EWAT620B-SSC2	V	11	20,2	30	26	243	217
EWAT670B-SSC2	W	15	26,6	32	20	270	250
EWAT730B-SSC2	W	15	26,6	35	24	260	236
EWAT790B-SSC2	W	15	26,6	38	27	248	221
EWAT860B-SSC2	X	18,5	33	41	32	285	253
EWAT960B-SSC2	Y	22	42,2	46	31	310	279
EWAT310B-SRC1	S	7,5	14,1	15	49	255	206
EWAT350B-SRC1	S	7,5	14,1	17	55	240	185
EWAT320B-SRC2	S	7,5	14,1	15	44	257	213
EWAT380B-SRC2	T	9,2	17,4	18	67	275	208
EWAT430B-SRC2	T	9,2	17,4	20	73	266	193
EWAT480B-SRC2	U	11	20,2	23	91	289	198
EWAT570B-SRC2	V	11	20,2	27	22	265	243
EWAT620B-SRC2	V	11	20,2	30	26	243	217
EWAT670B-SRC2	W	15	26,6	32	20	270	250
EWAT730B-SRC2	W	15	26,6	35	24	260	236
EWAT790B-SRC2	W	15	26,6	38	27	248	221
EWAT860B-SRC2	X	18,5	33	41	32	285	253
EWAT960B-SRC2	Y	22	42,2	46	31	310	279

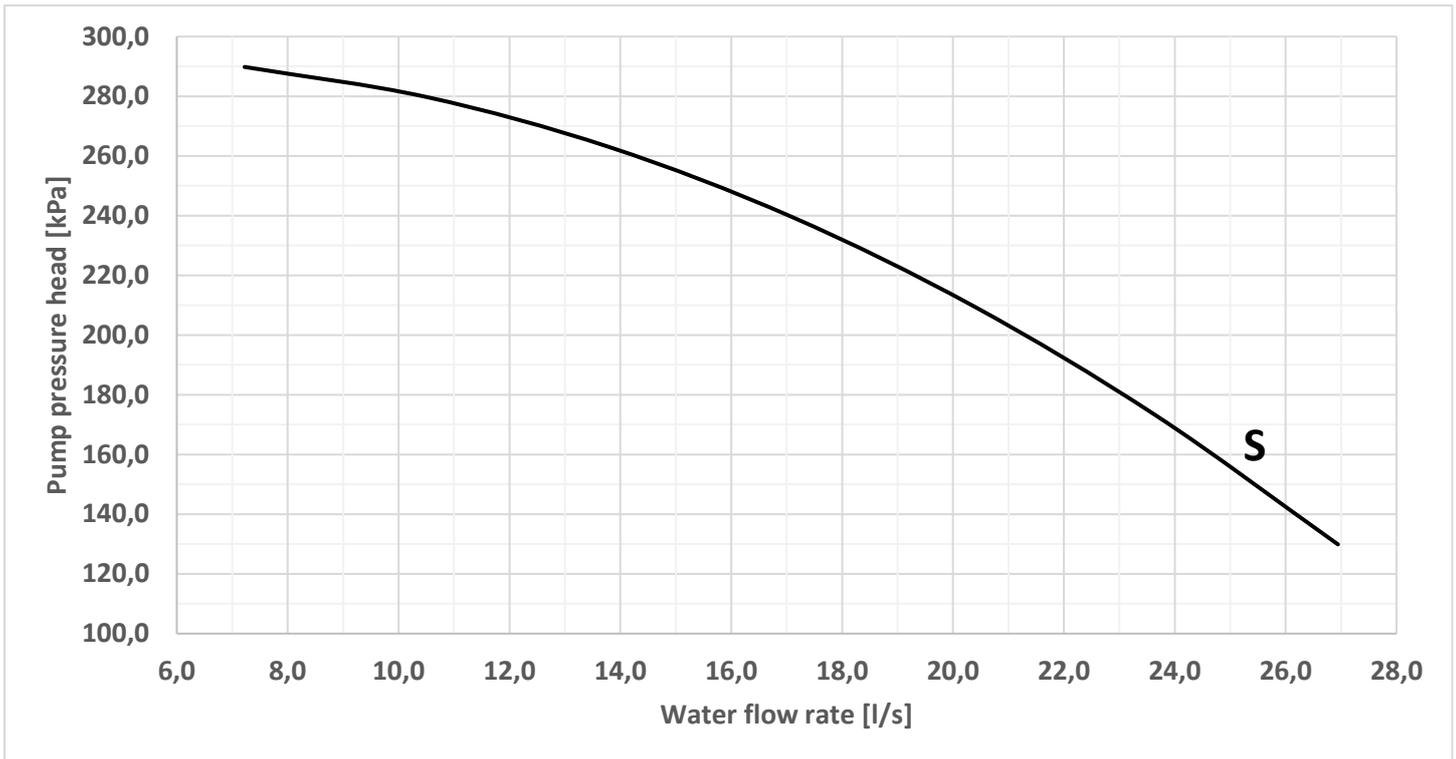
i) The above data are referred to the unit without additional optional.

ii) Pump performances are valid for liquids with density $\rho = 1,0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

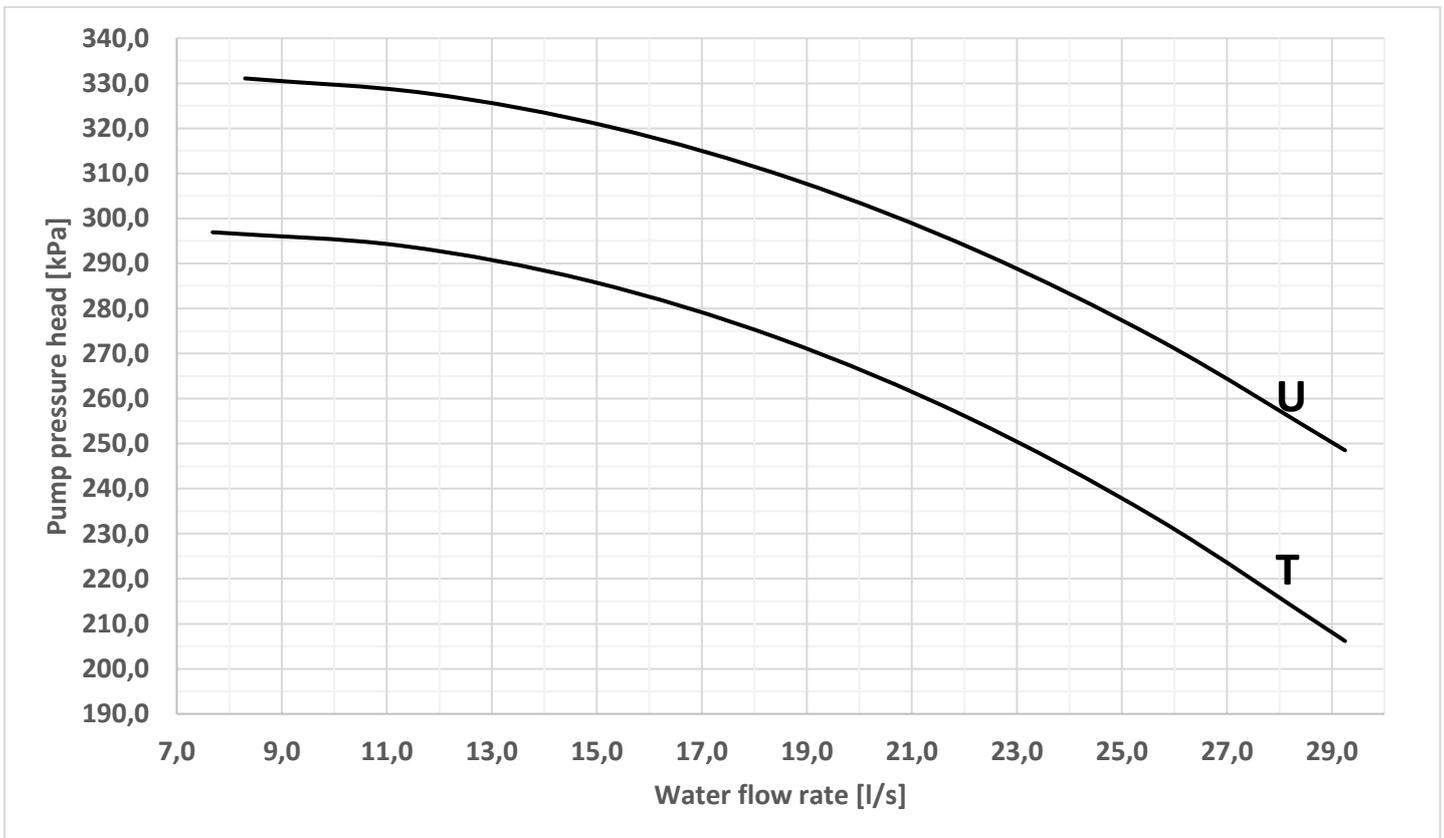
iii) All the data are subject to change without notice. For updated information on project base refer to Chiller Selection Software and unit's certified drawing

- (1) Standard Rating Conditions for Air to water chillers according to EN14511:2 Outdoor Heat exchanger inlet dry bulb temperature 35°C at sea level; Indoor heat exchanger inlet water temperature 12°C, outlet water temperature 7°C. Fluid: water, Fouling factor = 0
- (2) Fluid: water, not including filter pressure drop. The installation of the filter is mandatory
- (3) 400V power supply with $\pm 10\%$ tolerance on Voltage, Voltage unbalance between phases must be within $\pm 3\%$
 - Pump motor rating: IP55
 - Pump motor Insulation Class: F

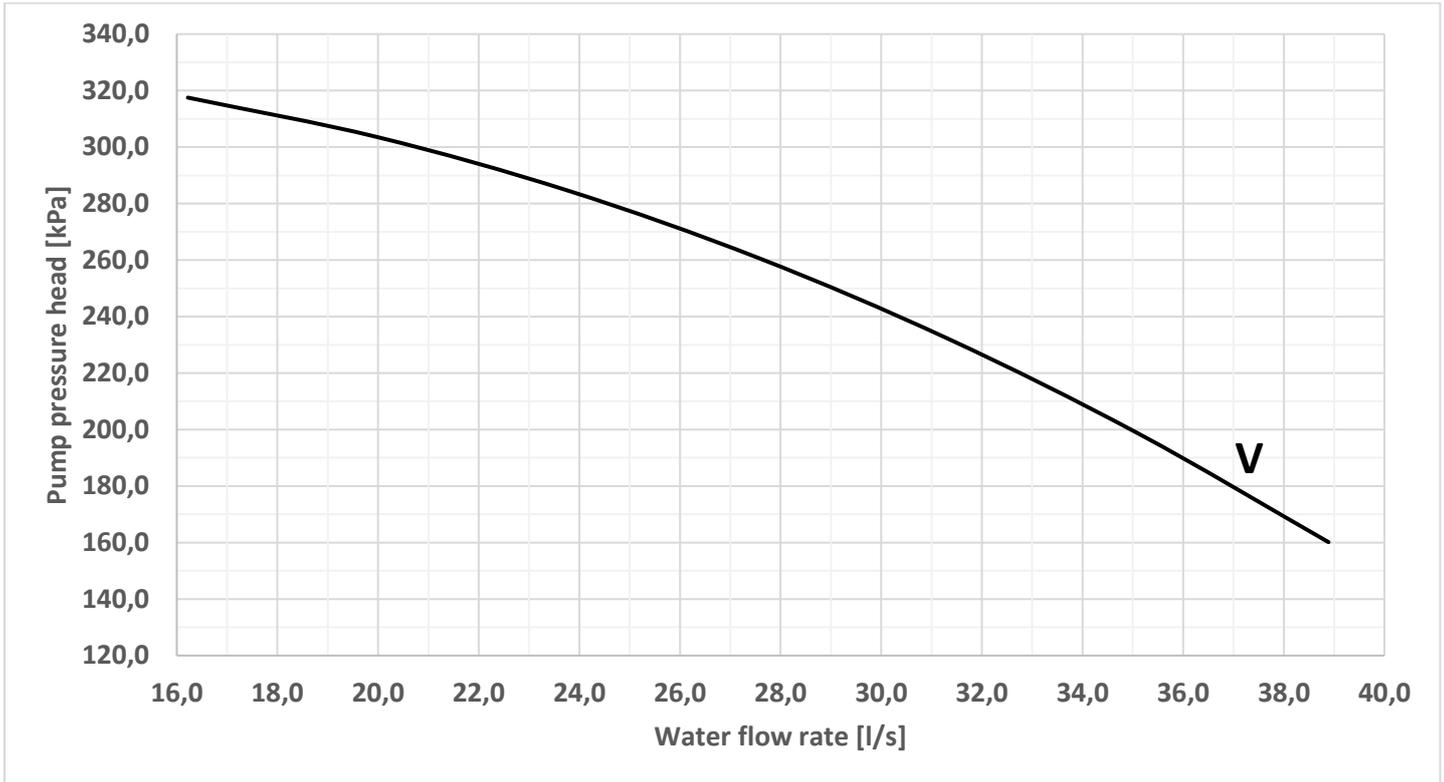
NOTE: In case of use with brine mixture contact factory



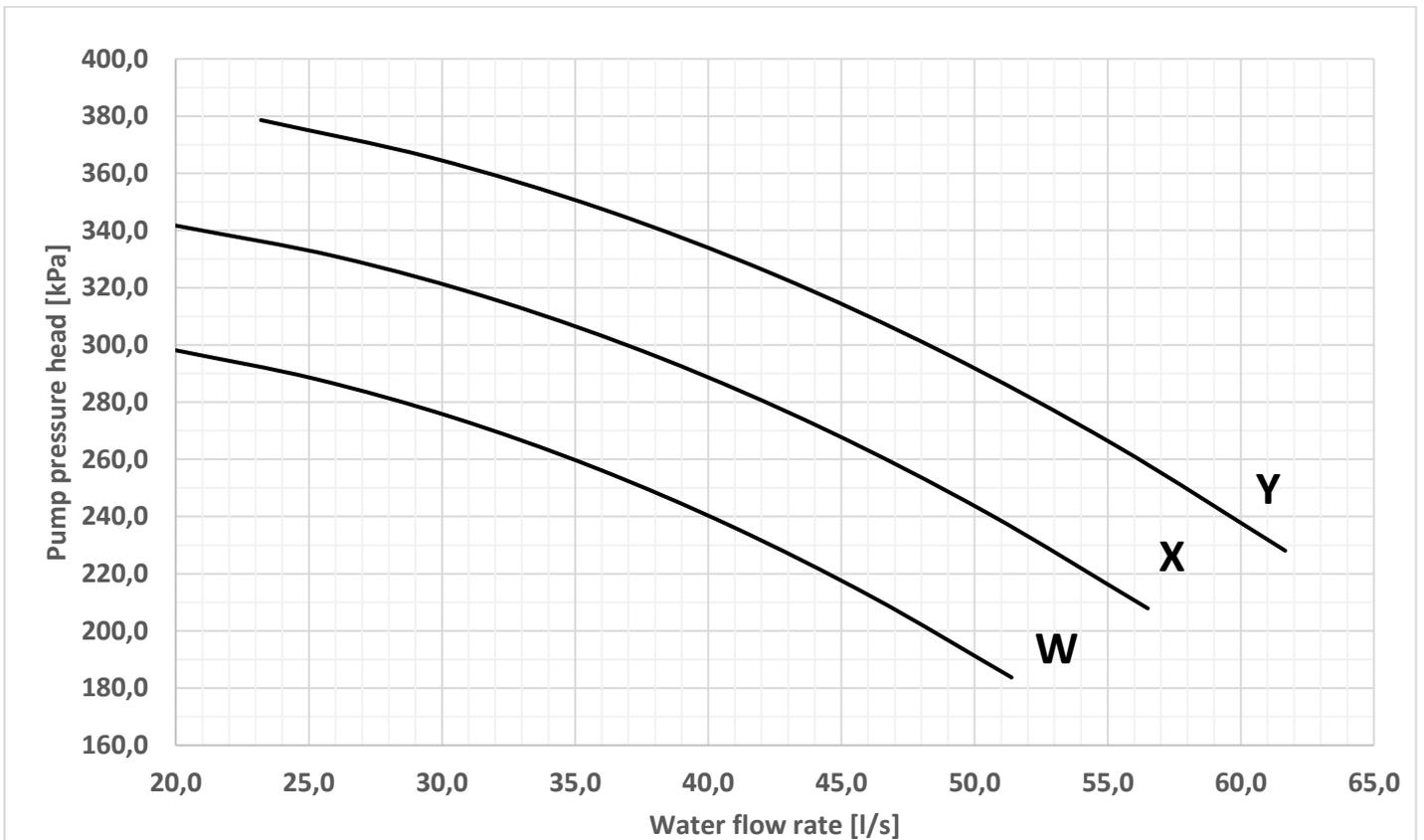
All above data are subject to change without notice.



All above data are subject to change without notice.



All above data are subject to change without notice.



All above data are subject to change without notice.

10.7.5 Gold Efficiency – Single Pump Low Lift

EWAT B- XS/XR Gold Efficiency Single Pump Low Lift 400 V / 3ph / 50 Hz							
Models	Ref.	Pump power input (3)	current (3)	flow rate (1)	Evaporator pressure drop (1)(2)	Pump available head @ std condition (1)(2)	Net water head @ std condition (1) (2)
		kW	A	l/s	kPa	kPa	KPa
EWAT250B-XSC1	A	3	6,33	12	34	147	113
EWAT320B-XSC1	B	5,5	10,5	15	55	195	139
EWAT370B-XSC1	C	5,5	10,5	18	64	185	122
EWAT390B-XSC2	D	7,5	14,1	18	61	238	177
EWAT450B-XSC2	D	7,5	14,1	21	81	224	144
EWAT510B-XSC2	E	7,5	14,1	24	18	208	190
EWAT540B-XSC2	E	7,5	14,1	26	20	200	181
EWAT590B-XSC2	E	7,5	14,1	28	23	186	163
EWAT630B-XSC2	E	7,5	14,1	30	26	172	146
EWAT720B-XSC2	F	11	20,2	34	22	199	177
EWAT760B-XSC2	F	11	20,2	36	25	192	166
EWAT830B-XSC2	F	11	20,2	40	30	180	150
EWAT880B-XSC2	F	11	20,2	42	33	171	138
EWATC10B-XSC2	F	11	20,2	48	34	146	111
EWAT250B-XRC1	A	3	6,33	12	31	155	124
EWAT320B-XRC1	B	5,5	10,5	15	52	197	145
EWAT370B-XRC1	C	5,5	10,5	17	58	189	130
EWAT390B-XRC2	D	7,5	14,1	18	56	241	186
EWAT450B-XRC2	D	7,5	14,1	21	75	228	153
EWAT510B-XRC2	E	7,5	14,1	23	16	214	198
EWAT540B-XRC2	E	7,5	14,1	25	18	205	187
EWAT590B-XRC2	E	7,5	14,1	27	21	193	172
EWAT630B-XRC2	E	7,5	14,1	29	24	181	157
EWAT720B-XRC2	F	11	20,2	33	21	204	183
EWAT760B-XRC2	F	11	20,2	35	23	197	174
EWAT830B-XRC2	F	11	20,2	38	28	185	158
EWAT880B-XRC2	F	11	20,2	40	31	178	148
EWATC10B-XRC2	F	11	20,2	46	32	155	123

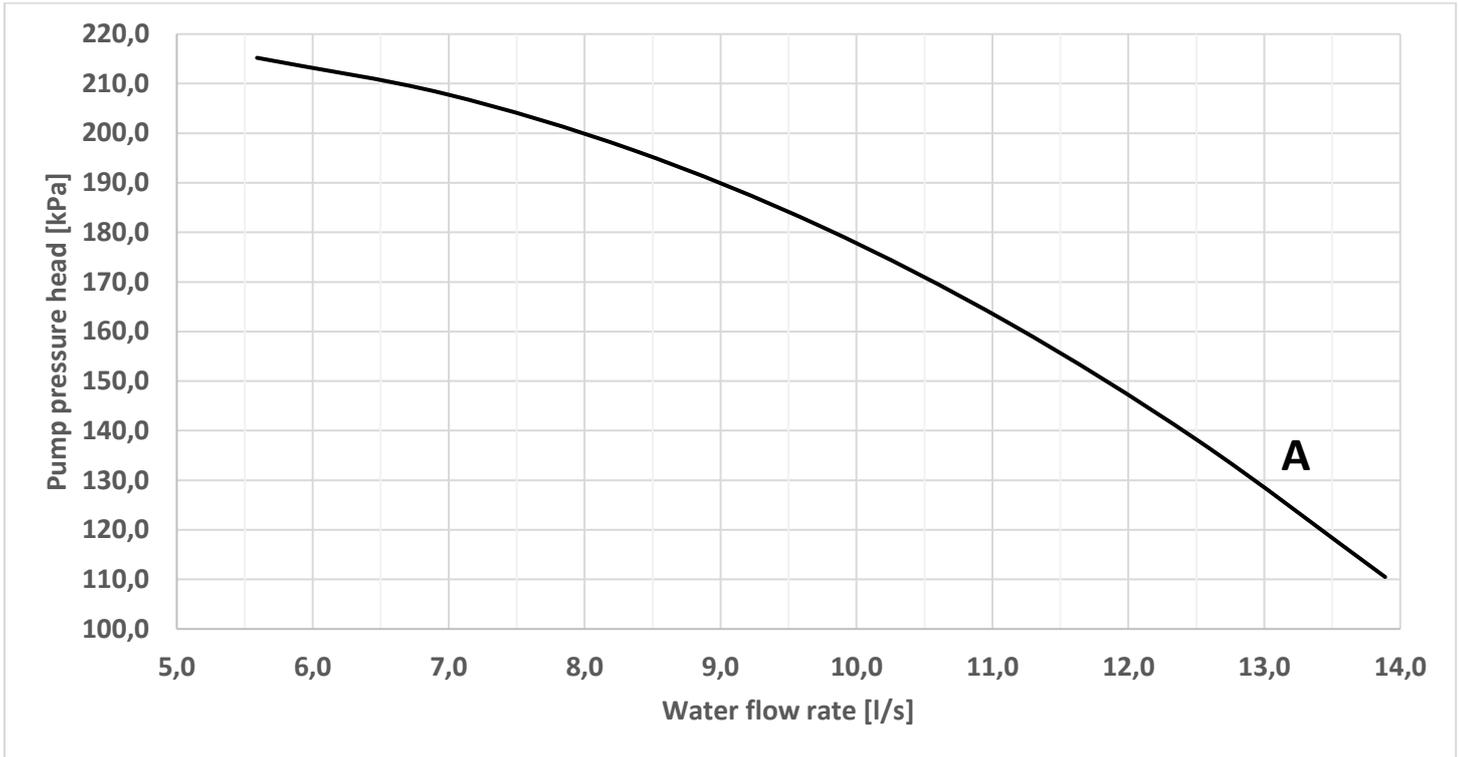
i) The above data are referred to the unit without additional optional.

ii) Pump performances are valid for liquids with density $\rho = 1,0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

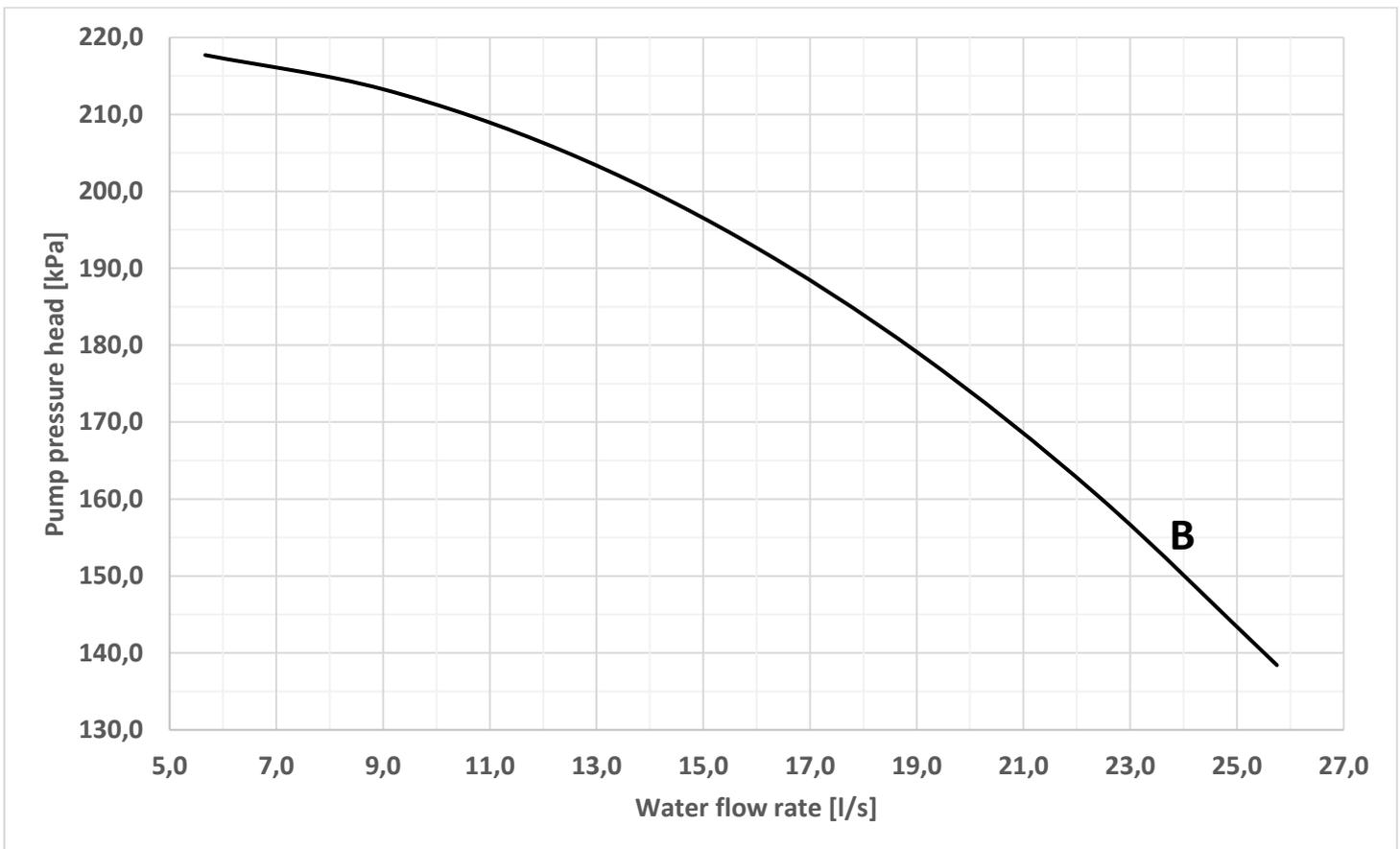
iii) All the data are subject to change without notice. For updated information on project base refer to Chiller Selection Software and unit's certified drawing

- (1) Standard Rating Conditions for Air to water chillers according to EN14511:2 Outdoor Heat exchanger inlet dry bulb temperature 35°C at sea level; Indoor heat exchanger inlet water temperature 12°C, outlet water temperature 7°C. Fluid: water, Fouling factor = 0
- (2) Fluid: water, not including filter pressure drop. The installation of the filter is mandatory
- (3) 400V power supply with $\pm 10\%$ tolerance on Voltage, Voltage unbalance between phases must be within $\pm 3\%$
 - Pump motor protection IP55
 - Pump motor Insulation Class F

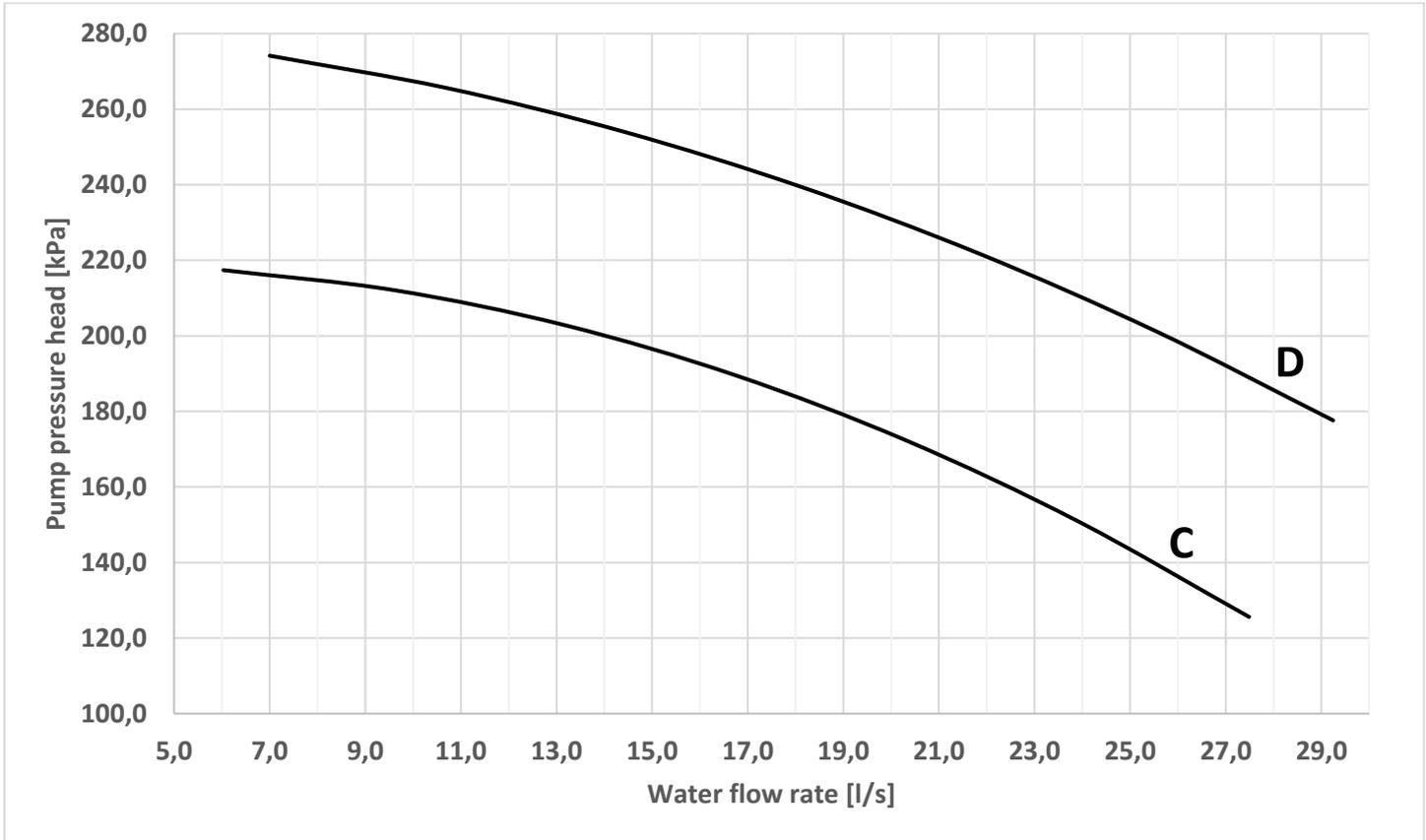
NOTE: In case of use with brine mixture contact factory



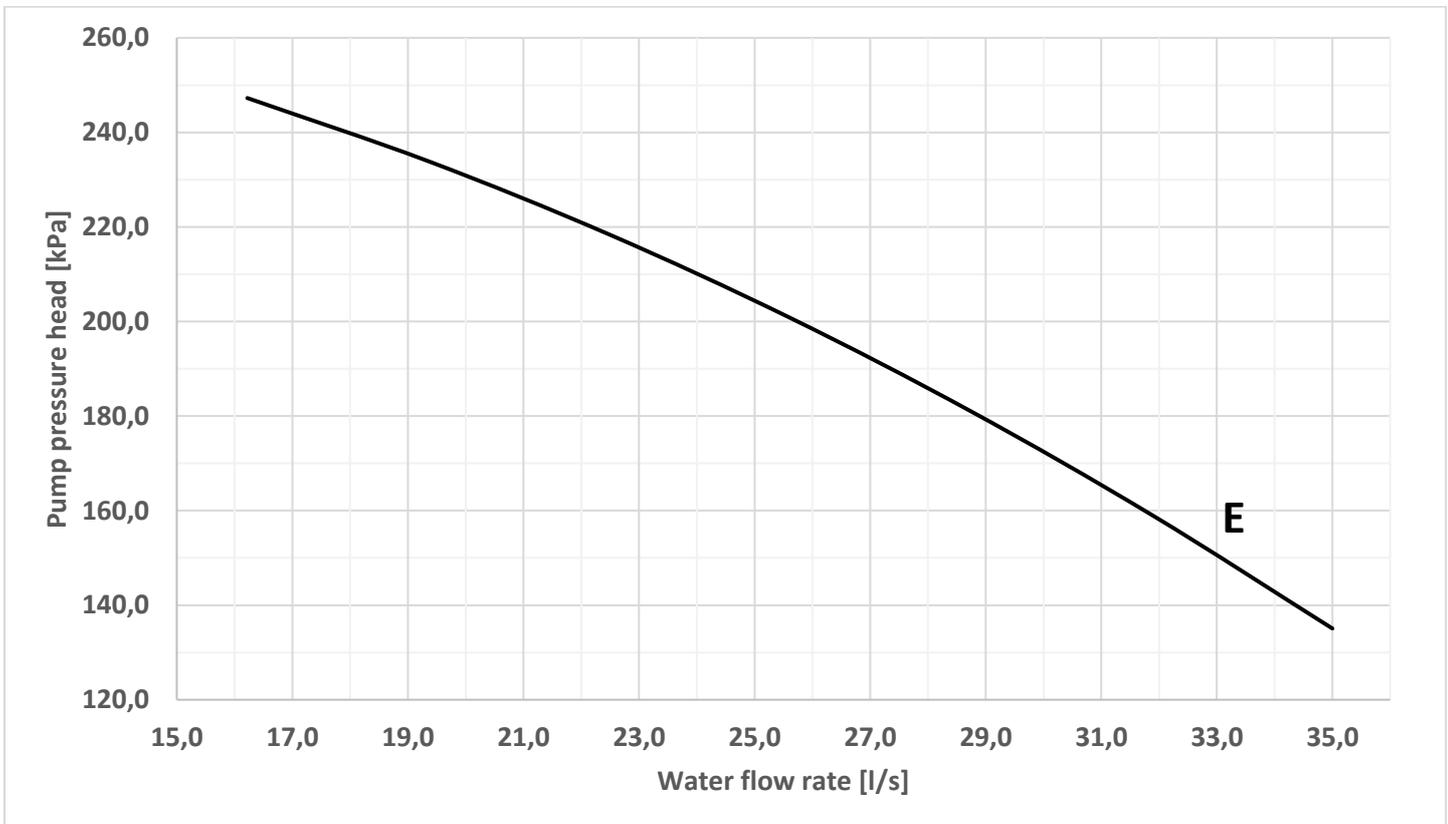
All above data are subject to change without notice.



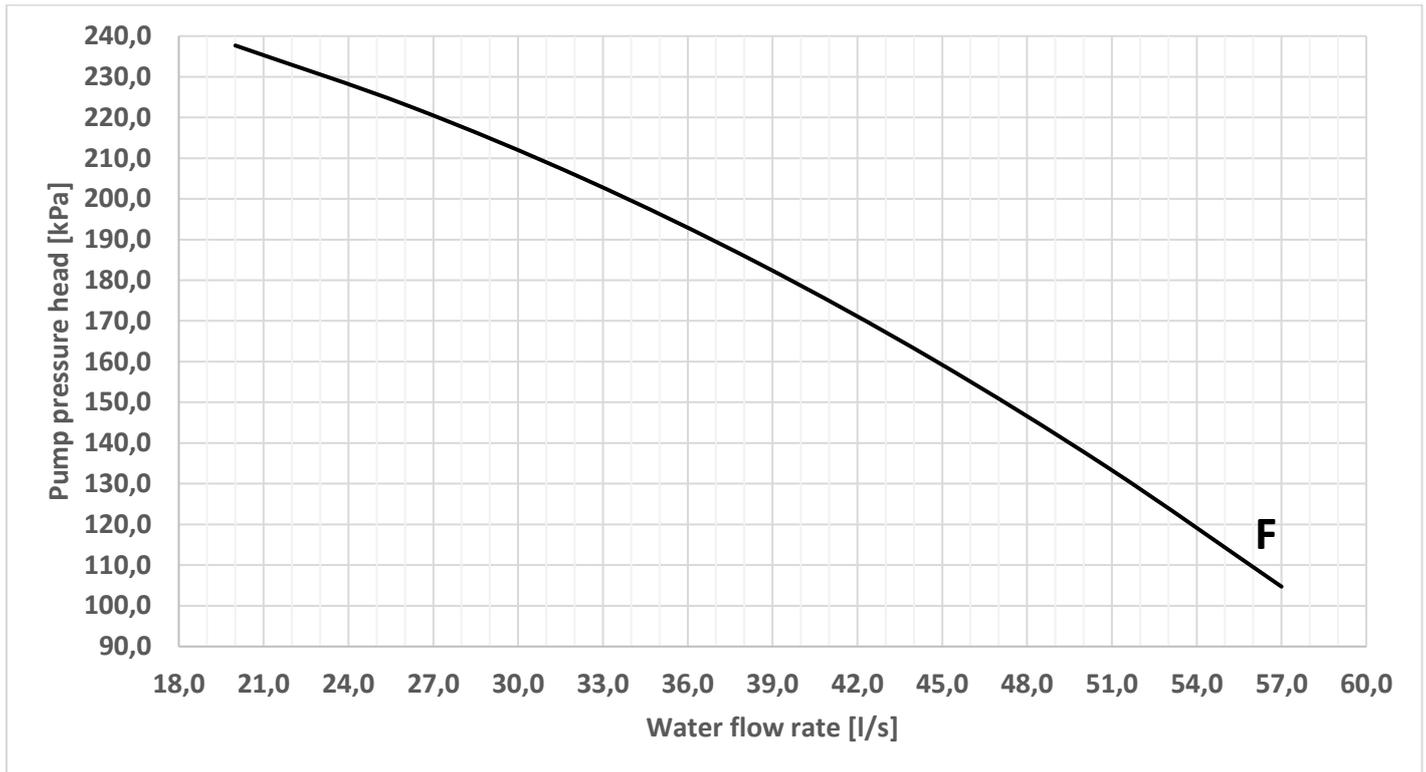
All above data are subject to change without notice.



All above data are subject to change without notice.



All above data are subject to change without notice.



All above data are subject to change without notice.

10.7.6 Gold Efficiency – Single Pump High Lift

EWAT B- XS/XR Gold Efficiency Single Pump High Lift 400 V / 3ph / 50 Hz							
Models	Ref.	Pump power input (3)	current (3)	flow rate (1)	Evaporator pressure drop (1)(2)	Pump available head @ std condition (1)(2)	Net water head @ std condition (1) (2)
		kW	A	l/s	kPa	kPa	KPa
EWAT250B-XSC1	G	3	6,33	12	34	241	207
EWAT320B-XSC1	H	5,5	10,5	15	55	250	195
EWAT370B-XSC1	I	5,5	10,5	18	64	270	206
EWAT390B-XSC2	J	7,5	14,1	18	61	302	241
EWAT450B-XSC2	J	7,5	14,1	21	81	289	208
EWAT510B-XSC2	K	7,5	14,1	24	18	272	254
EWAT540B-XSC2	K	7,5	14,1	26	20	264	245
EWAT590B-XSC2	K	7,5	14,1	28	23	250	227
EWAT630B-XSC2	K	7,5	14,1	30	26	235	209
EWAT720B-XSC2	L	11	20,2	34	22	266	244
EWAT760B-XSC2	L	11	20,2	36	25	260	235
EWAT830B-XSC2	L	11	20,2	40	30	248	218
EWAT880B-XSC2	L	11	20,2	42	33	241	207
EWATC10B-XSC2	M	11	20,2	48	34	264	230
EWAT250B-XRC1	G	3	6,33	12	31	243	212
EWAT320B-XRC1	H	5,5	10,5	15	52	252	201
EWAT370B-XRC1	I	5,5	10,5	17	58	273	215
EWAT390B-XRC2	J	7,5	14,1	18	56	306	250
EWAT450B-XRC2	J	7,5	14,1	21	75	293	218
EWAT510B-XRC2	K	7,5	14,1	23	16	278	262
EWAT540B-XRC2	K	7,5	14,1	25	18	270	251
EWAT590B-XRC2	K	7,5	14,1	27	21	257	236
EWAT630B-XRC2	K	7,5	14,1	29	24	244	220
EWAT720B-XRC2	L	11	20,2	33	21	270	250
EWAT760B-XRC2	L	11	20,2	35	23	265	242
EWAT830B-XRC2	L	11	20,2	38	28	254	226
EWAT880B-XRC2	L	11	20,2	40	31	247	217
EWATC10B-XRC2	M	11	20,2	46	32	273	241

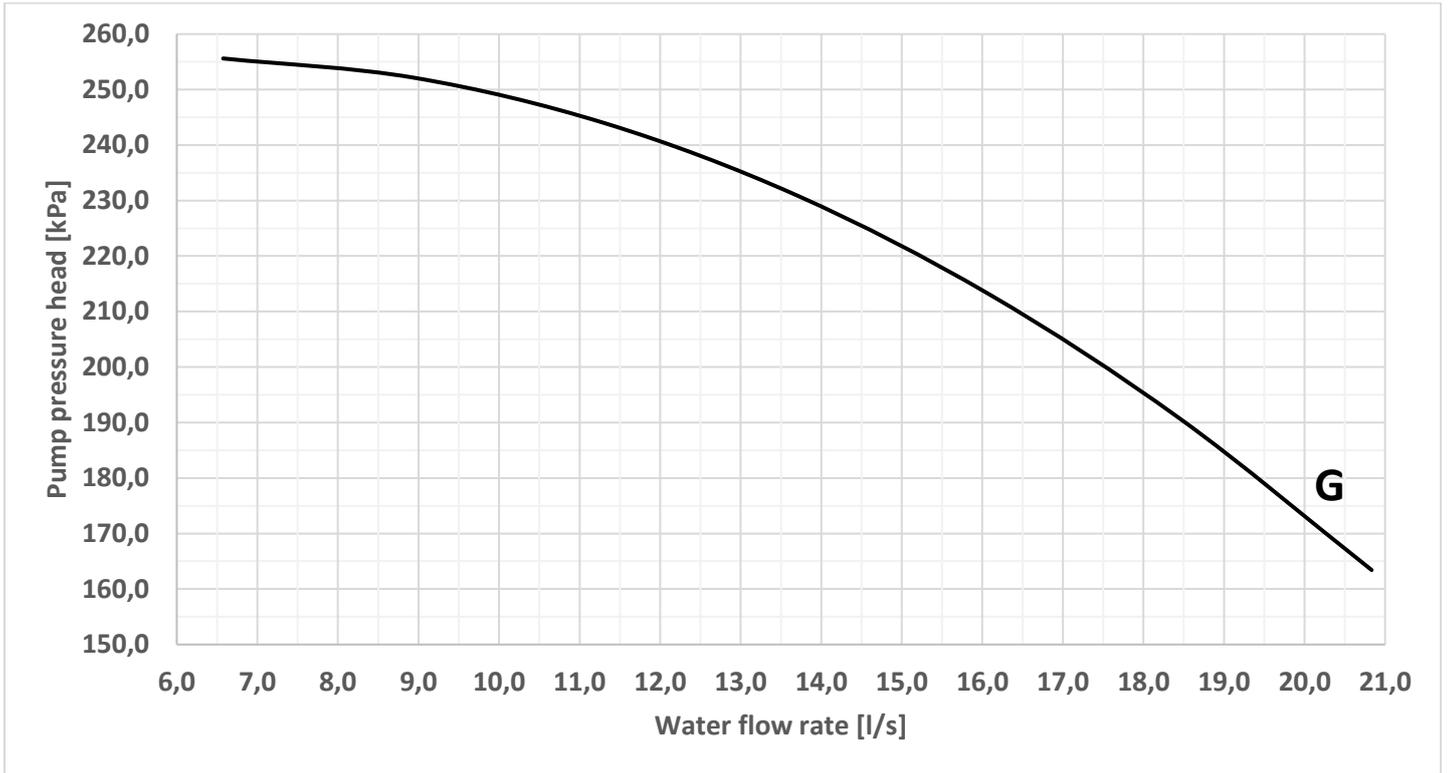
i) The above data are referred to the unit without additional optional.

ii) Pump performances are valid for liquids with density $\rho = 1,0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

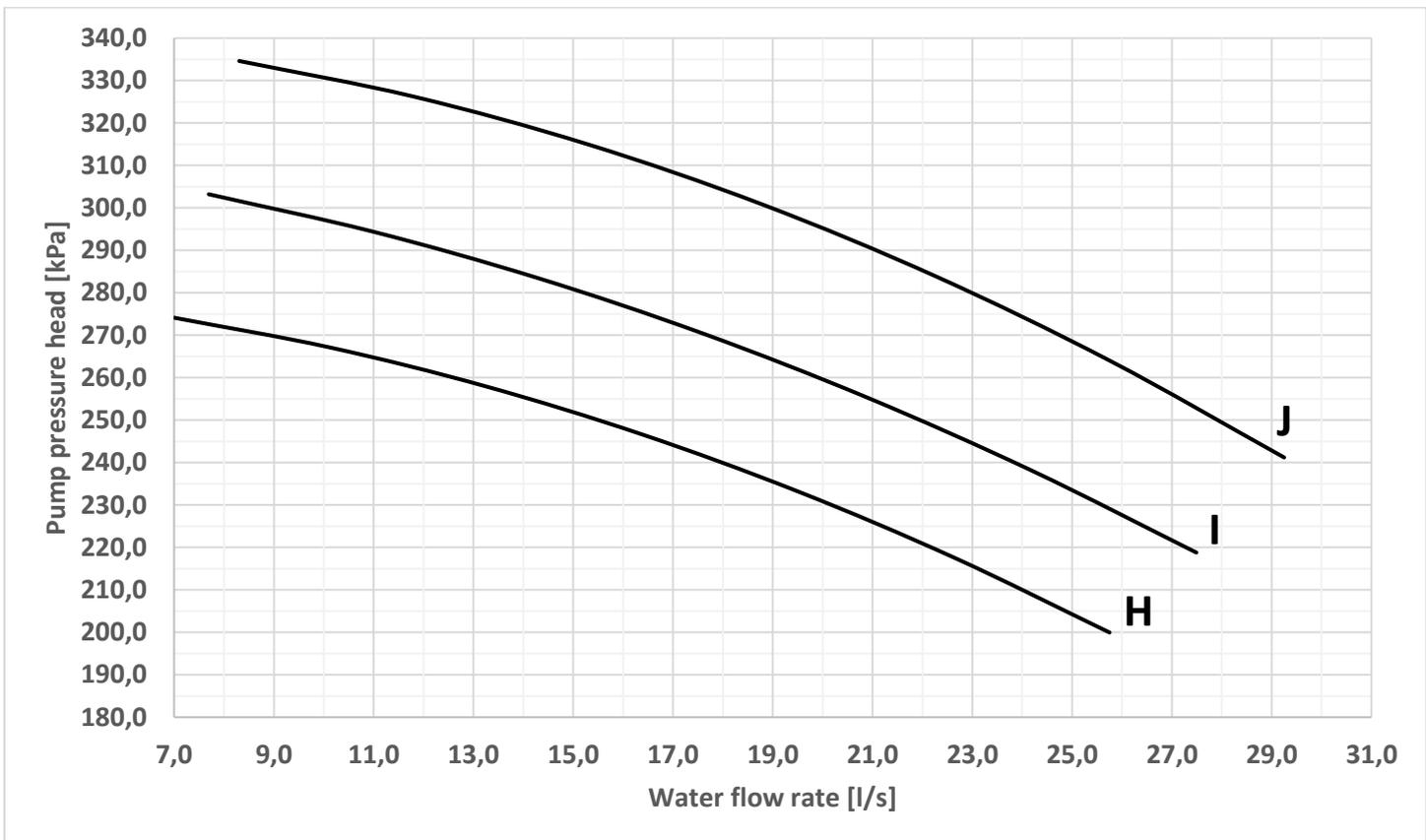
iii) All the data are subject to change without notice. For updated information on project base refer to Chiller Selection Software and unit's certified drawing

- (1) Standard Rating Conditions for Air to water chillers according to EN14511:2 Outdoor Heat exchanger inlet dry bulb temperature 35°C at sea level; Indoor heat exchanger inlet water temperature 12°C, outlet water temperature 7°C. Fluid: water, Fouling factor = 0
- (2) Fluid: water, not including filter pressure drop. The installation of the filter is mandatory
- (3) 400V power supply with $\pm 10\%$ tolerance on Voltage, Voltage unbalance between phases must be within $\pm 3\%$
 - Pump motor protection IP55
 - Pump motor Insulation Class F

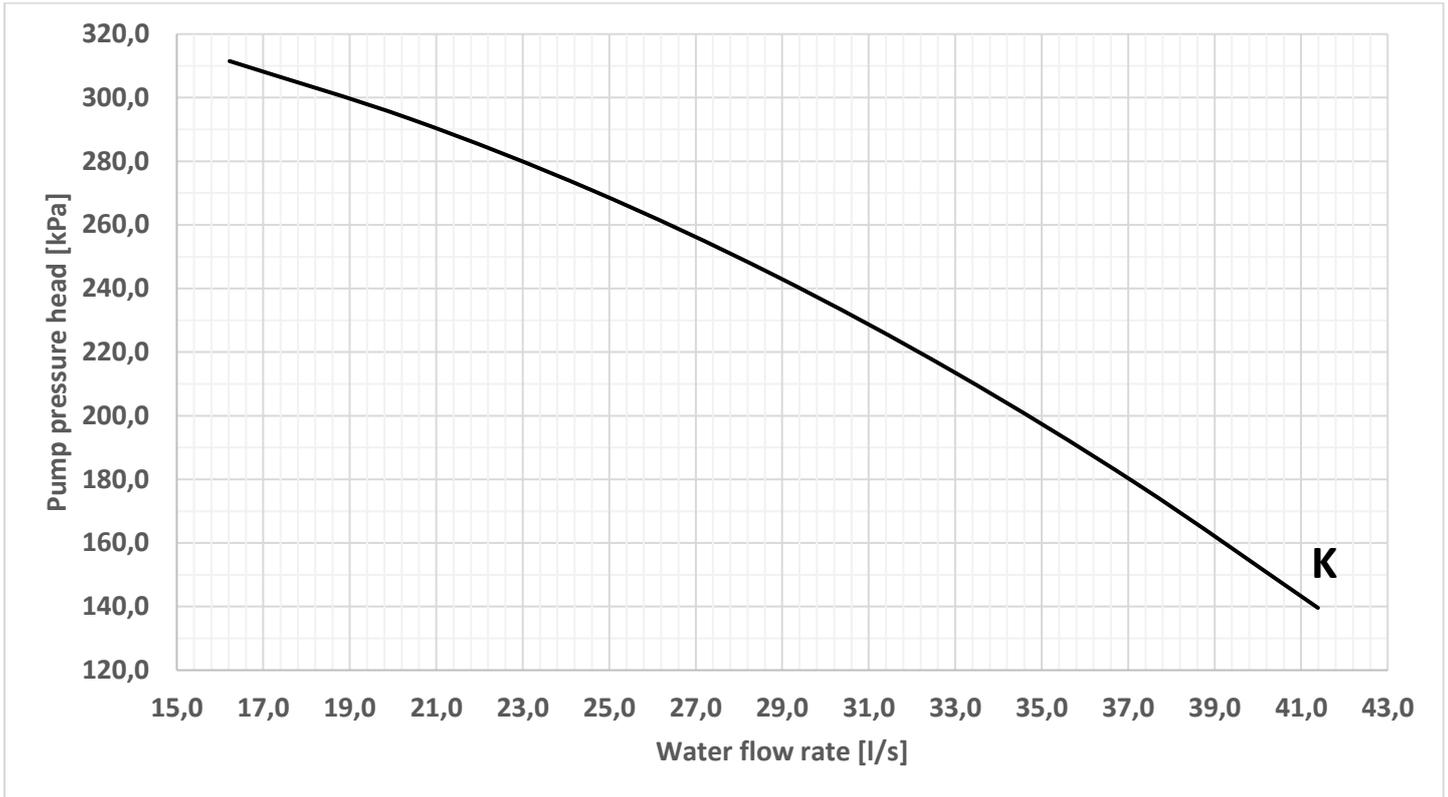
NOTE: In case of use with brine mixture contact factory



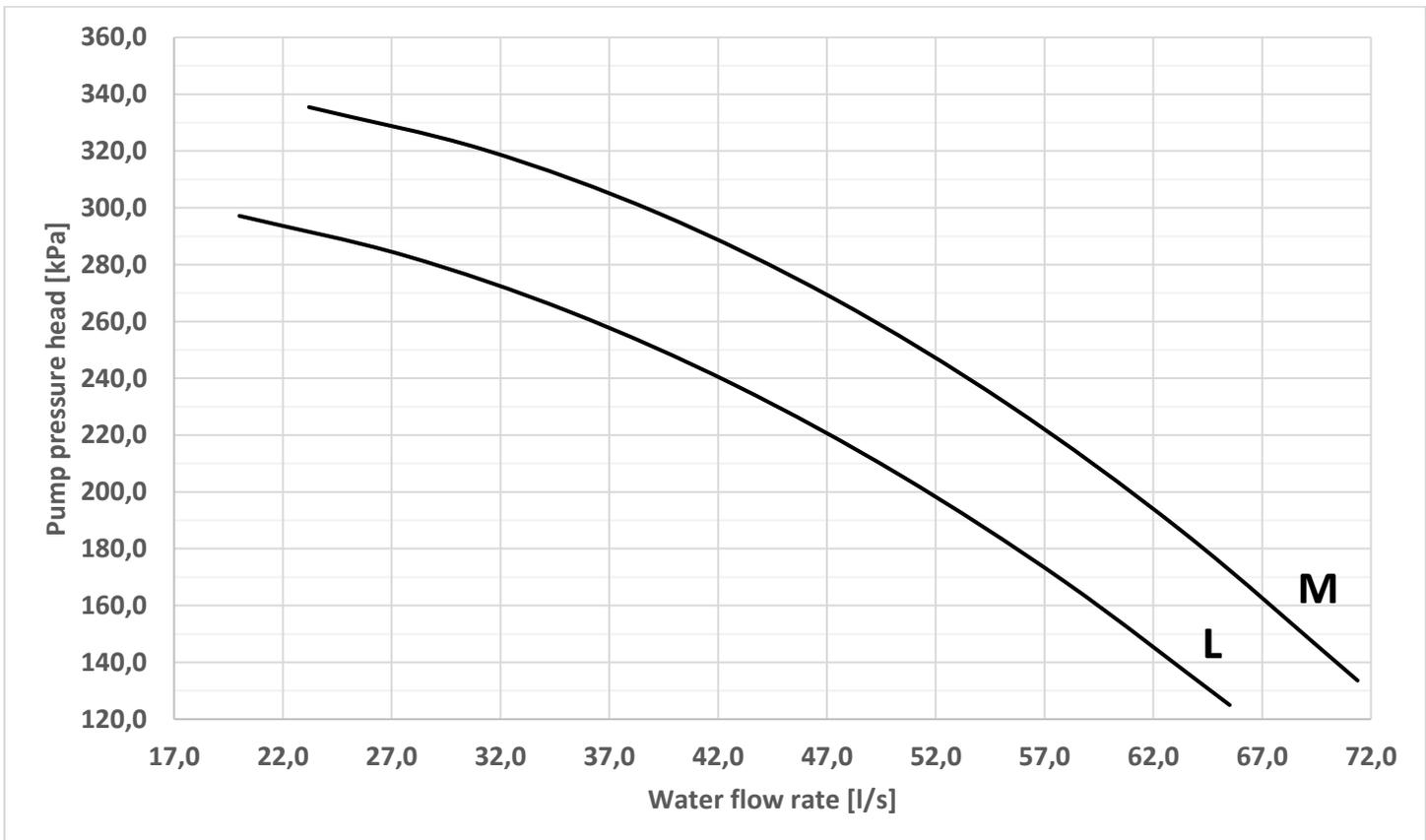
All above data are subject to change without notice.



All above data are subject to change without notice.



All above data are subject to change without notice.



All above data are subject to change without notice.

10.7.7 Gold Efficiency – Dual Pump Low Lift

EWAT B- XS/XR Gold Efficiency Dual Pump Low Lift 400 V / 3ph / 50 Hz							
Models	Ref.	Pump power input (3)	current (3)	flow rate (1)	Evaporator pressure drop (1)(2)	Pump available head @ std condition (1)(2)	Net water head @ std condition (1) (2)
		kW	A	l/s	kPa	kPa	KPa
EWAT250B-XSC1	N	4	7,75	12	34	178	144
EWAT320B-XSC1	N	4	7,75	15	55	151	96
EWAT370B-XSC1	O	5,5	10,5	18	64	190	127
EWAT390B-XSC2	P	7,5	14,1	18	61	228	167
EWAT450B-XSC2	P	7,5	14,1	21	81	199	119
EWAT510B-XSC2	Q	7,5	14,1	24	18	194	176
EWAT540B-XSC2	Q	7,5	14,1	26	20	185	165
EWAT590B-XSC2	Q	7,5	14,1	28	23	167	144
EWAT630B-XSC2	Q	7,5	14,1	30	26	148	122
EWAT720B-XSC2	R	11	20,2	34	22	190	168
EWAT760B-XSC2	R	11	20,2	36	25	182	157
EWAT830B-XSC2	R	11	20,2	40	30	168	138
EWAT880B-XSC2	R	11	20,2	42	33	159	125
EWATC10B-XSC2	S	15	26,6	48	34	201	167
EWAT250B-XRC1	N	4	7,75	12	31	181	150
EWAT320B-XRC1	N	4	7,75	15	52	156	104
EWAT370B-XRC1	O	5,5	10,5	17	58	198	139
EWAT390B-XRC2	P	7,5	14,1	18	56	235	179
EWAT450B-XRC2	P	7,5	14,1	21	75	208	133
EWAT510B-XRC2	Q	7,5	14,1	23	16	202	185
EWAT540B-XRC2	Q	7,5	14,1	25	18	191	173
EWAT590B-XRC2	Q	7,5	14,1	27	21	176	155
EWAT630B-XRC2	Q	7,5	14,1	29	24	160	136
EWAT720B-XRC2	R	11	20,2	33	21	195	174
EWAT760B-XRC2	R	11	20,2	35	23	188	165
EWAT830B-XRC2	R	11	20,2	38	28	175	147
EWAT880B-XRC2	R	11	20,2	40	31	167	136
EWATC10B-XRC2	S	15	26,6	46	32	212	180

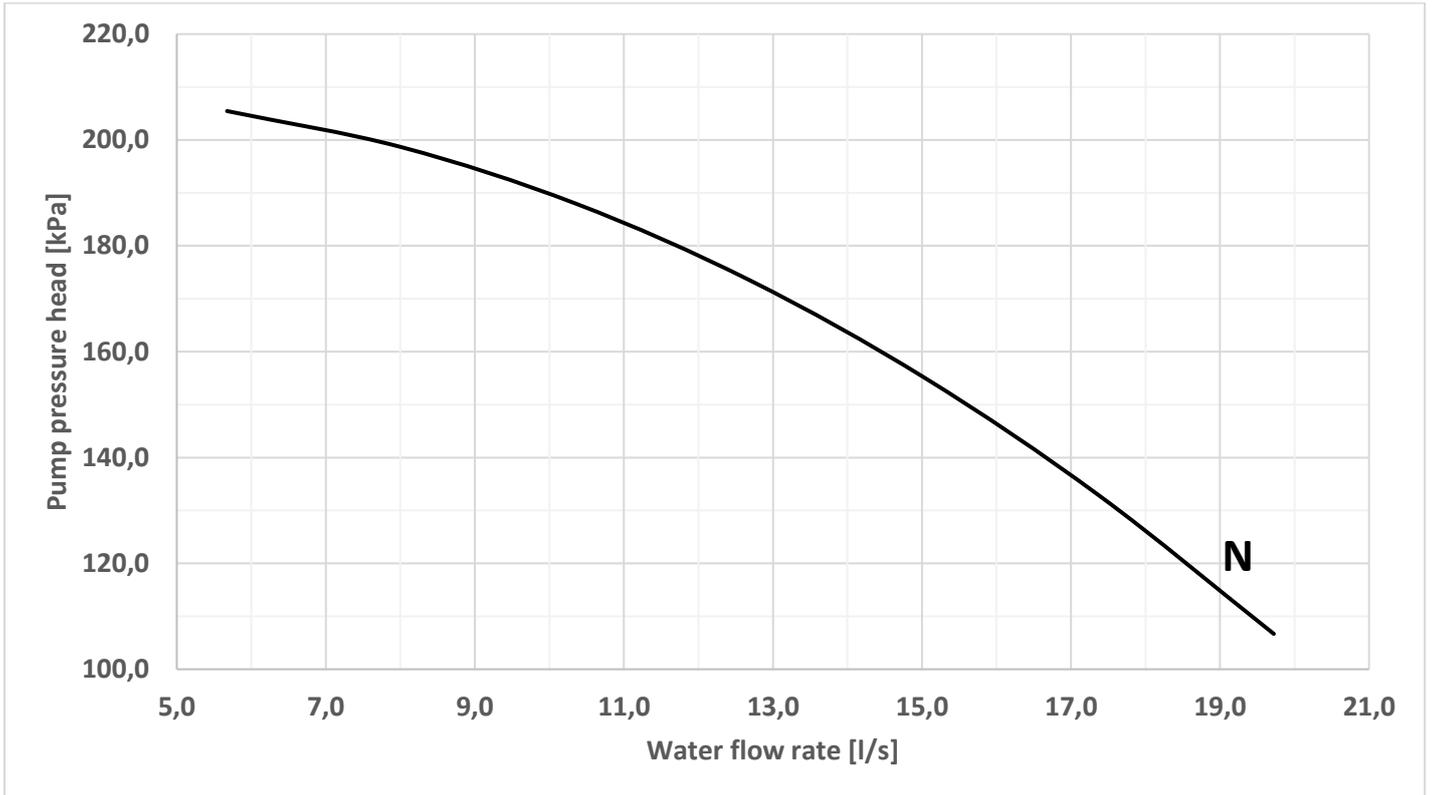
i) The above data are referred to the unit without additional optional.

ii) Pump performances are valid for liquids with density $\rho = 1,0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

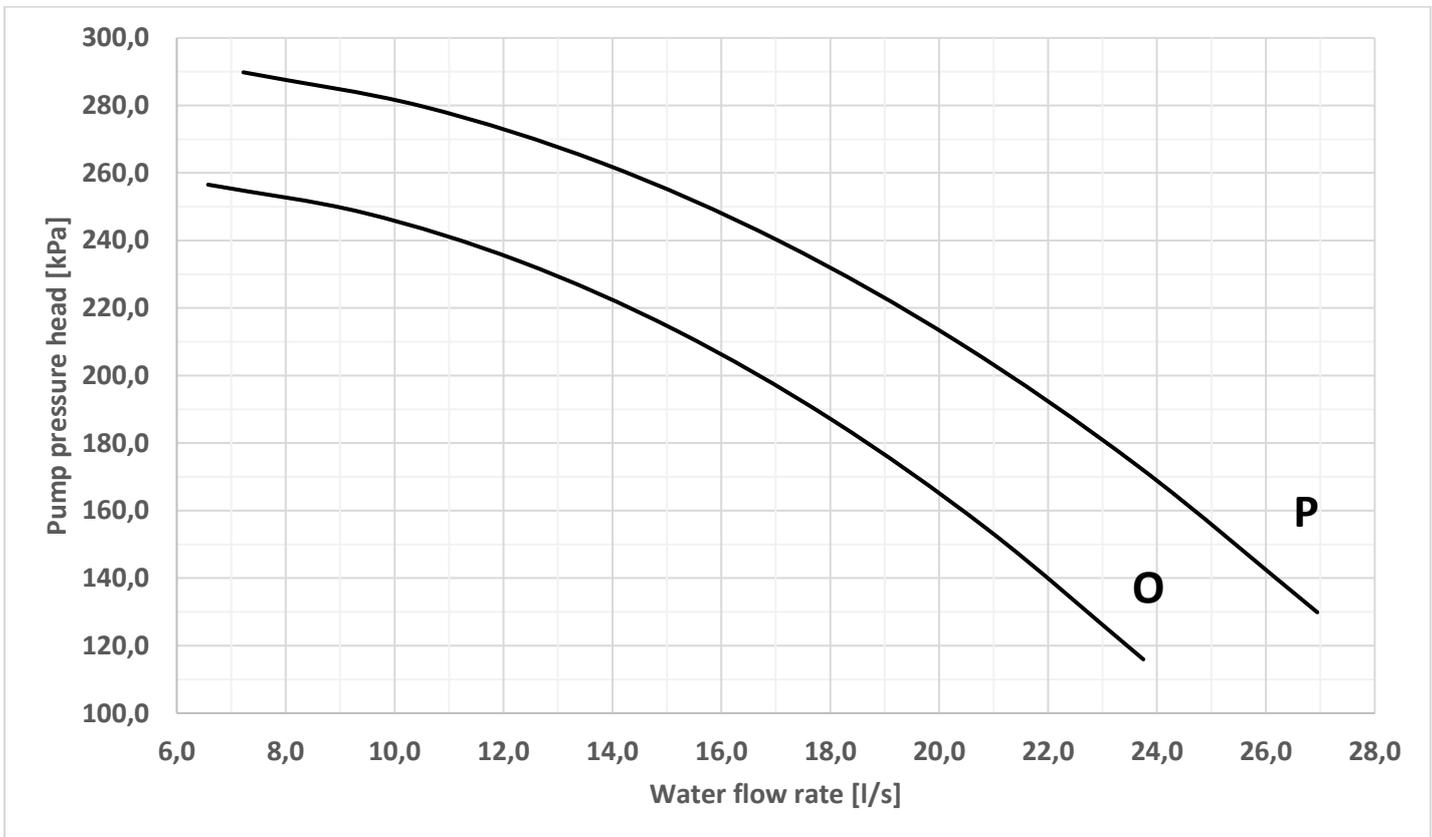
iii) All the data are subject to change without notice. For updated information on project base refer to Chiller Selection Software and unit's certified drawing

- (1) Standard Rating Conditions for Air to water chillers according to EN14511:2 Outdoor Heat exchanger inlet dry bulb temperature 35°C at sea level; Indoor heat exchanger inlet water temperature 12°C, outlet water temperature 7°C. Fluid: water, Fouling factor = 0
- (2) Fluid: water, not including filter pressure drop. The installation of the filter is mandatory
- (3) 400V power supply with $\pm 10\%$ tolerance on Voltage, Voltage unbalance between phases must be within $\pm 3\%$
 - Pump motor protection IP55
 - Pump motor Insulation Class F

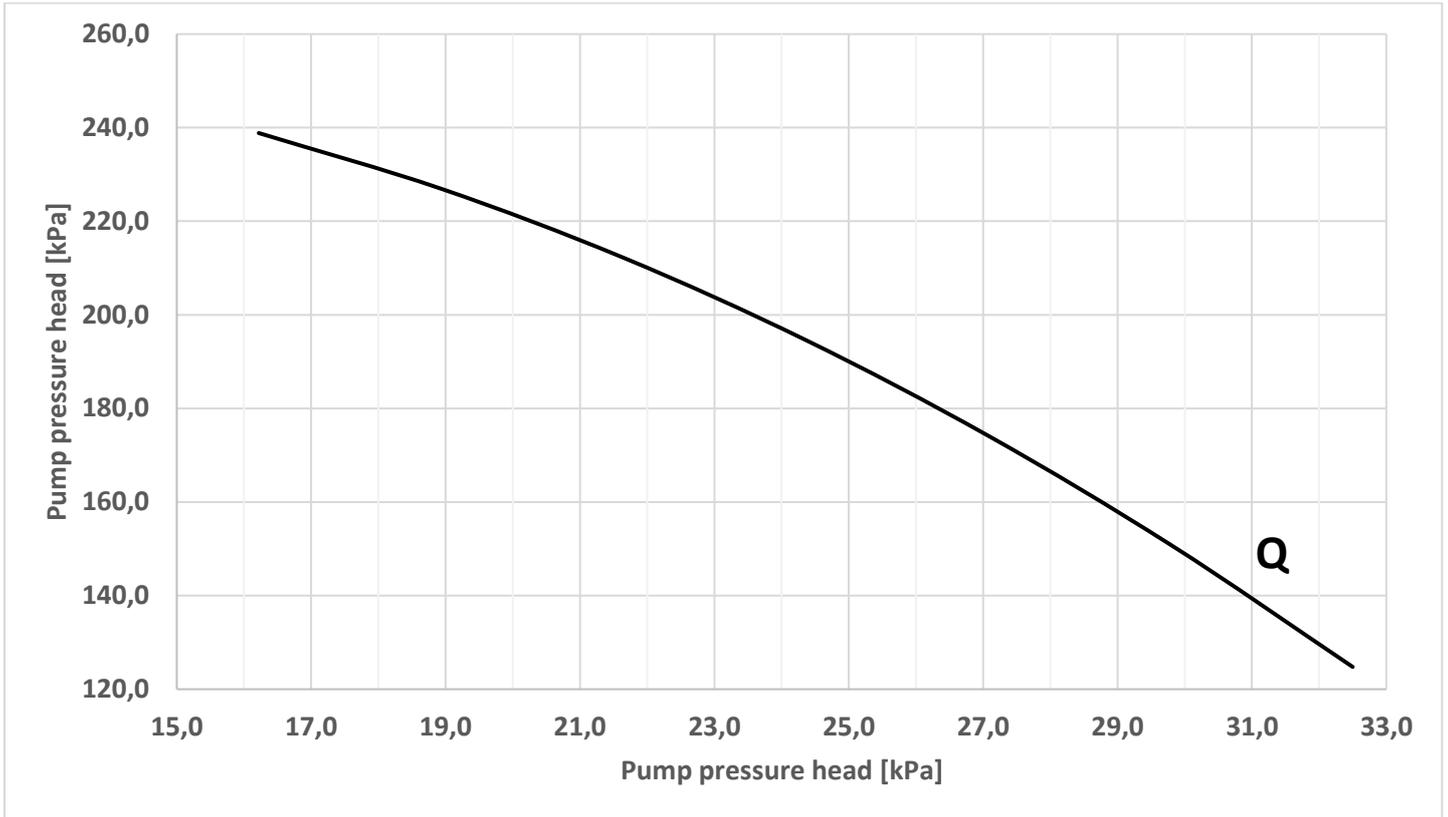
NOTE: In case of use with brine mixture contact factory



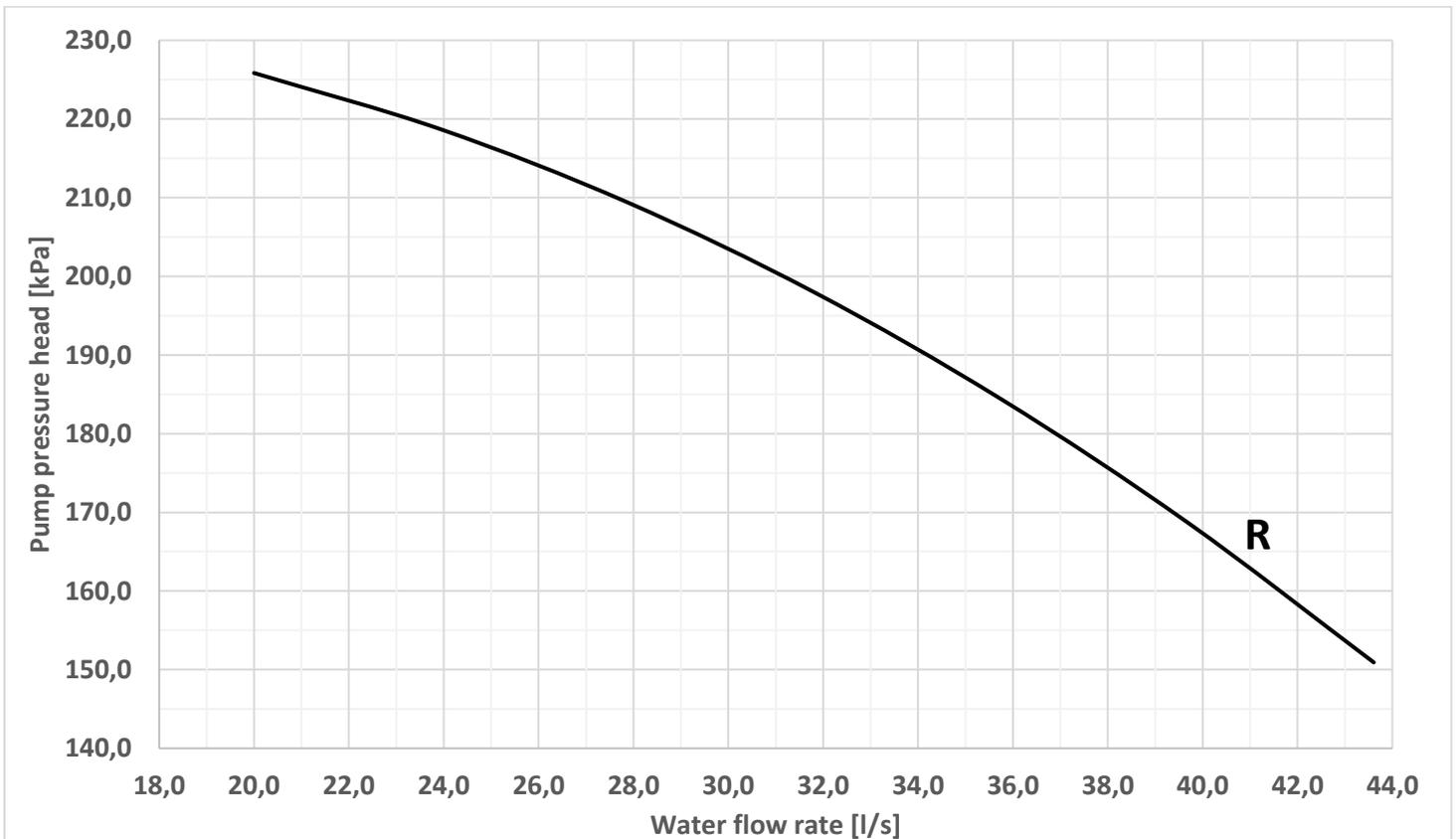
All above data are subject to change without notice



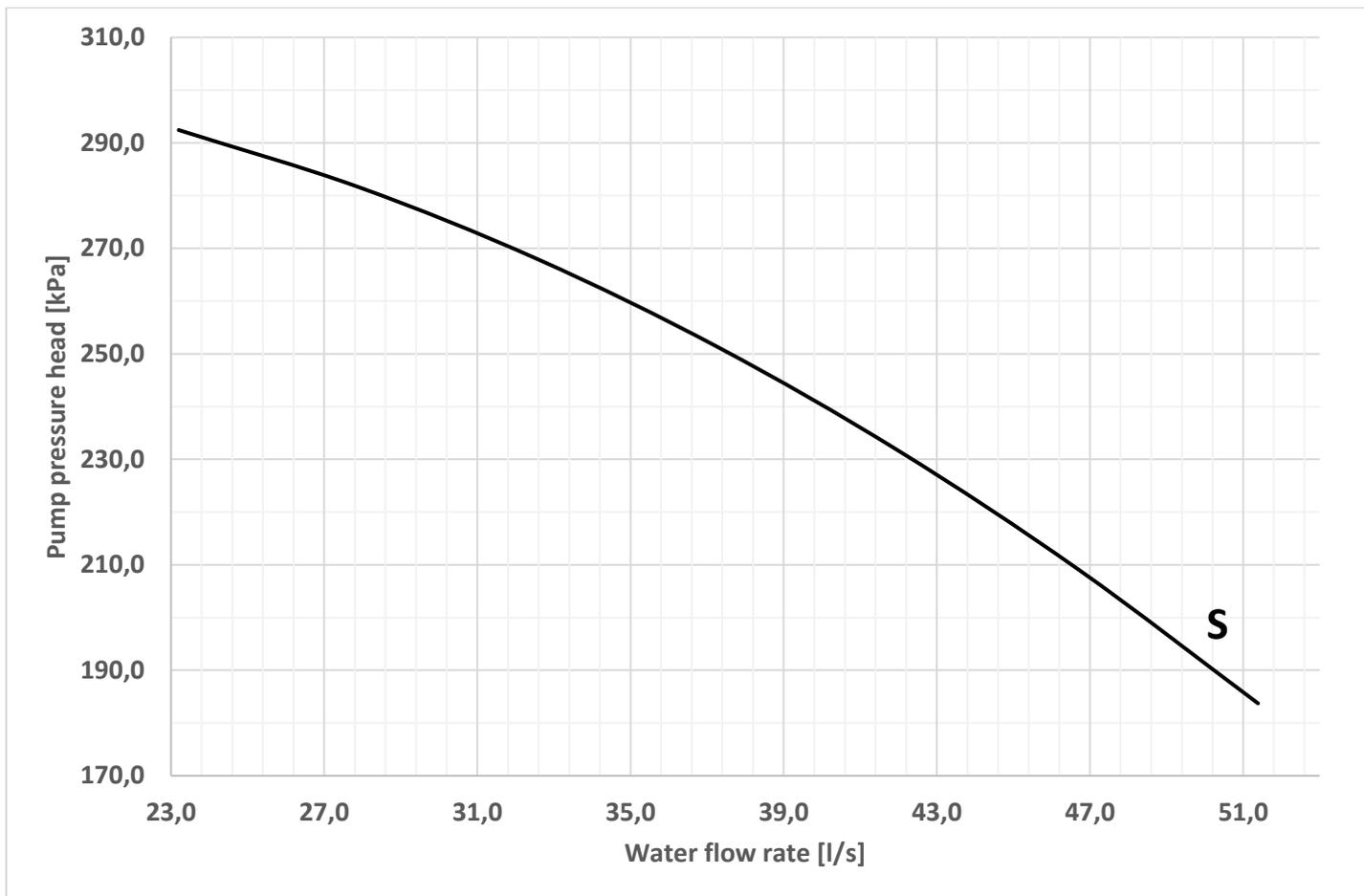
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All above data are subject to change without notice.



All above data are subject to change without notice.



All above data are subject to change without notice.

10.7.8 Gold Efficiency – Dual Pump High Lift

EWAT B- XS/XR Gold Efficiency Dual Pump High Lift 400 V / 3ph / 50 Hz							
Models	Ref.	Pump power input (3)	current (3)	flow rate (1)	Evaporator pressure drop (1)(2)	Pump available head @ std condition (1)(2)	Net water head @ std condition (1) (2)
		kW	A	l/s	kPa	kPa	KPa
EWAT250B-XSC1	T	7,5	14,1	12	34	273	239
EWAT320B-XSC1	T	7,5	14,1	15	55	252	197
EWAT370B-XSC1	U	9,2	17,4	18	64	276	213
EWAT390B-XSC2	U	9,2	17,4	18	61	273	212
EWAT450B-XSC2	V	11	20,2	21	81	297	217
EWAT510B-XSC2	W	11	20,2	24	18	281	263
EWAT540B-XSC2	W	11	20,2	26	20	273	253
EWAT590B-XSC2	W	11	20,2	28	23	258	235
EWAT630B-XSC2	W	11	20,2	30	26	242	216
EWAT720B-XSC2	X	15	26,6	34	22	263	240
EWAT760B-XSC2	X	15	26,6	36	25	255	230
EWAT830B-XSC2	Y	18,5	33	40	30	289	260
EWAT880B-XSC2	Y	18,5	33	42	33	281	248
EWATC10B-XSC2	Z	22	42,2	48	34	300	266
EWAT250B-XRC1	T	7,5	14,1	12	31	275	244
EWAT320B-XRC1	T	7,5	14,1	15	52	256	204
EWAT370B-XRC1	U	9,2	17,4	17	58	279	221
EWAT390B-XRC2	U	9,2	17,4	18	56	277	221
EWAT450B-XRC2	V	11	20,2	21	75	301	226
EWAT510B-XRC2	W	11	20,2	23	16	287	271
EWAT540B-XRC2	W	11	20,2	25	18	278	260
EWAT590B-XRC2	W	11	20,2	27	21	266	244
EWAT630B-XRC2	W	11	20,2	29	24	252	228
EWAT720B-XRC2	X	15	26,6	33	21	267	247
EWAT760B-XRC2	X	15	26,6	35	23	261	237
EWAT830B-XRC2	Y	18,5	33	38	28	296	268
EWAT880B-XRC2	Y	18,5	33	40	31	288	257
EWATC10B-XRC2	Z	22	42,2	46	32	310	278

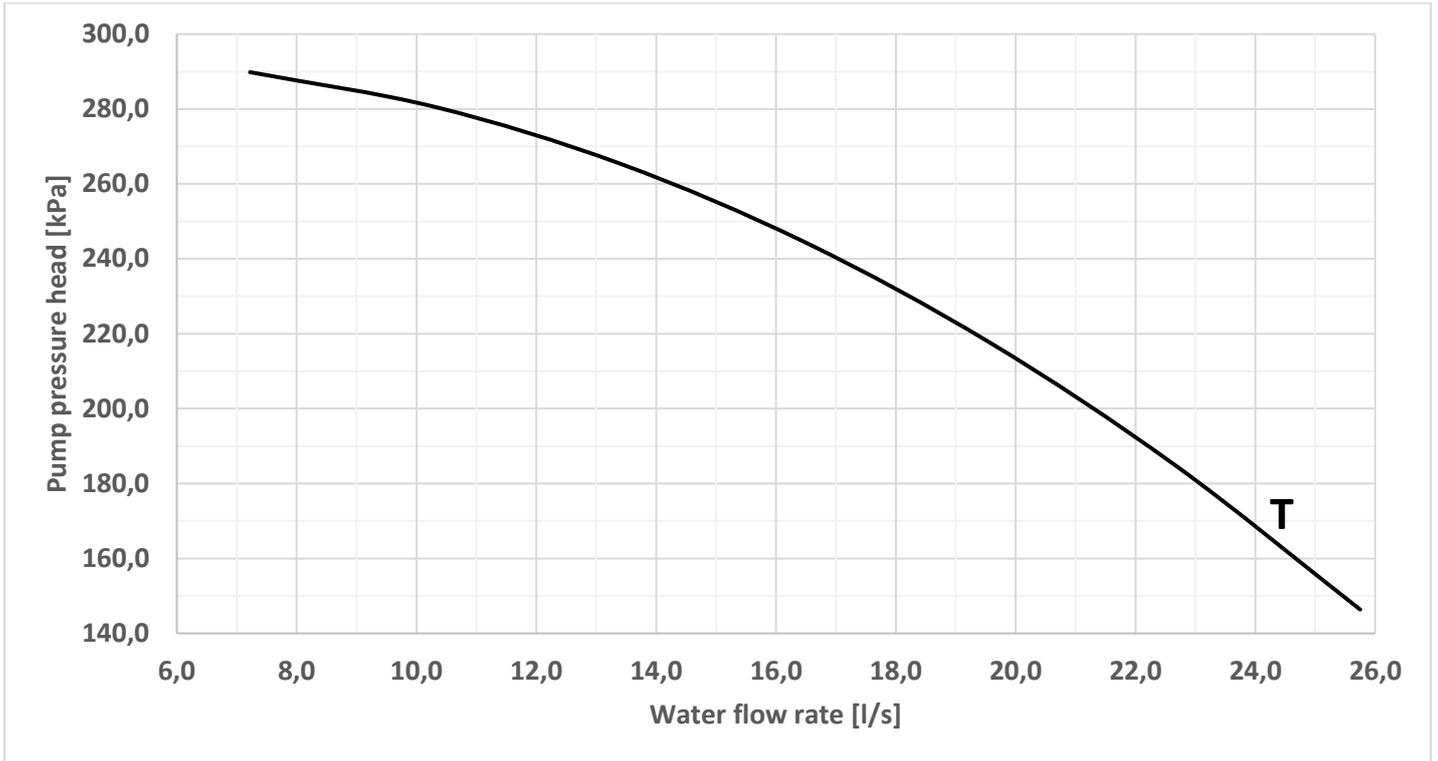
i) The above data are referred to the unit without additional optional.

ii) Pump performances are valid for liquids with density $\rho = 1,0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

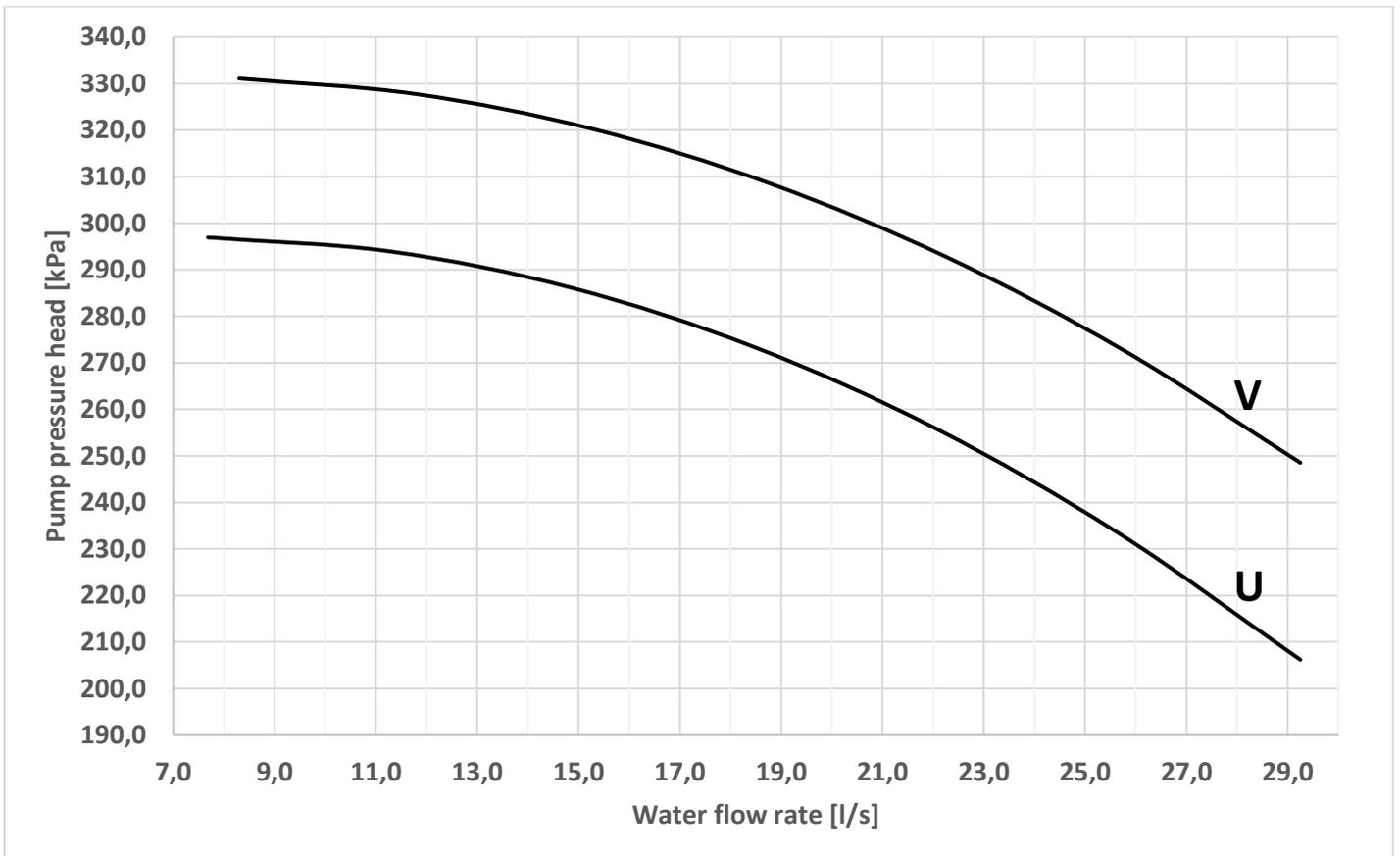
iii) All the data are subject to change without notice. For updated information on project base refer to Chiller Selection Software and unit's certified drawing

- (1) Standard Rating Conditions for Air to water chillers according to EN14511:2 Outdoor Heat exchanger inlet dry bulb temperature 35°C at sea level; Indoor heat exchanger inlet water temperature 12°C, outlet water temperature 7°C. Fluid: water, Fouling factor = 0
- (2) Fluid: water, not including filter pressure drop. The installation of the filter is mandatory
- (3) 400V power supply with $\pm 10\%$ tolerance on Voltage, Voltage unbalance between phases must be within $\pm 3\%$
 - Pump motor protection IP55
 - Pump motor Insulation Class F

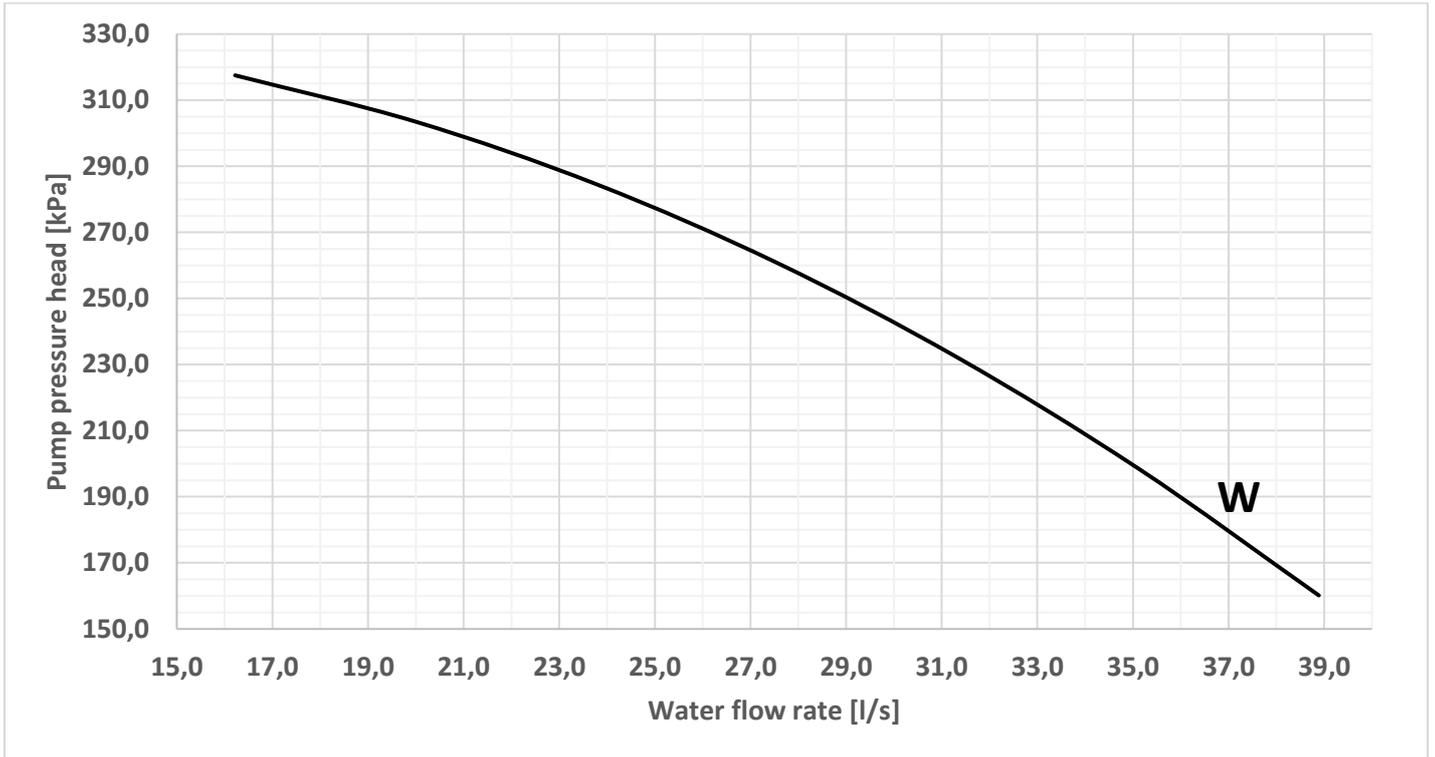
NOTE: In case of use with brine mixture contact factory



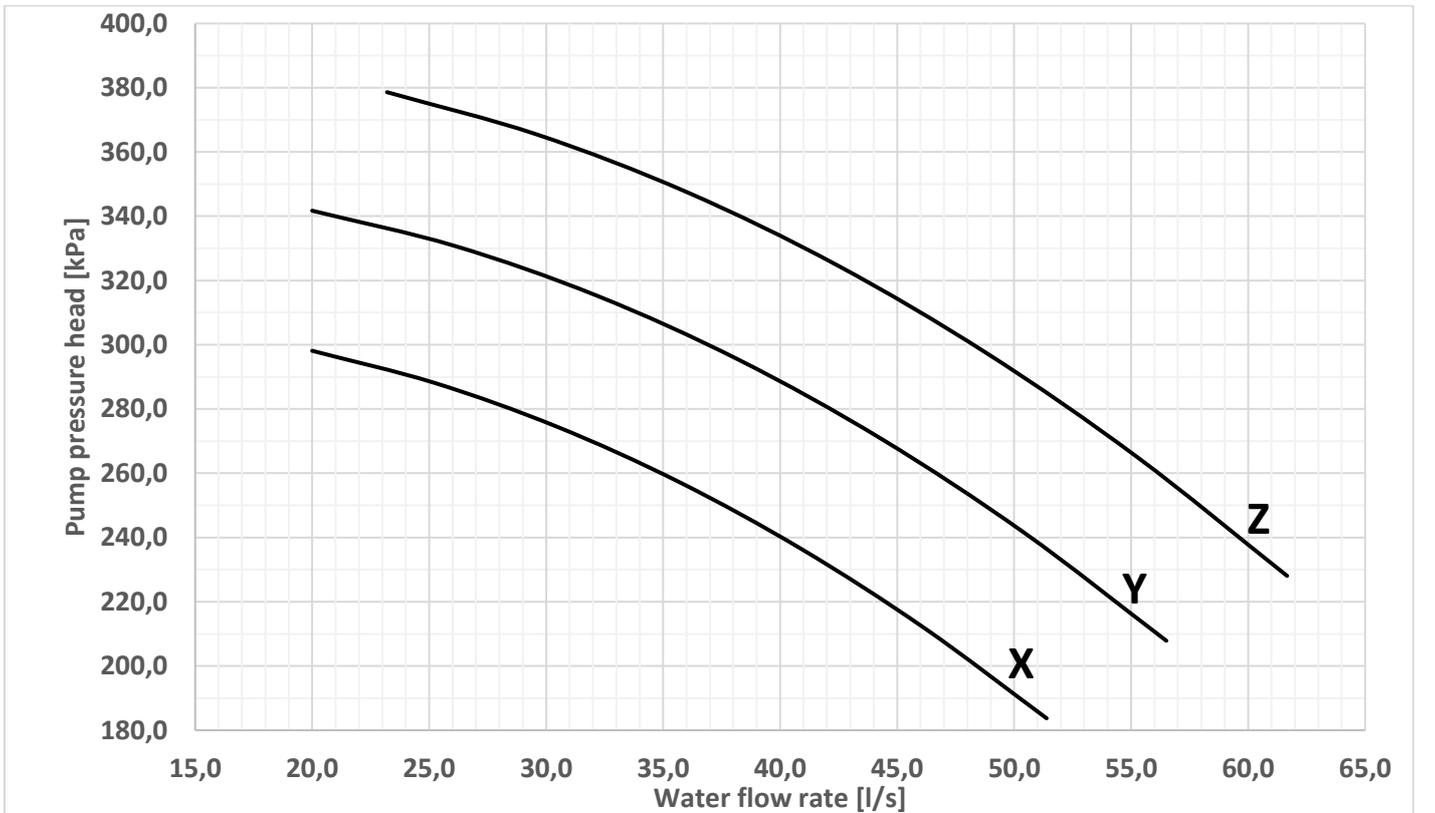
All above data are subject to change without notice.



All above data are subject to change without notice.



All above data are subject to change without notice.



All above data are subject to change without notice.

10.8 Heat recovery

EWAT B- C can be equipped with heat recovery capability. There are two levels of heat recovery:

- OPT 01 Total Heat recovery
- OPT 03A Partial heat recovery

The heat recovery exchange is Brazed Plate type. Each circuit is provided with dedicated BPHE. Dual circuit unit have two separate BPHE. Refer to unit drawing for heat exchanger position and connections

The water contents for the heat recovery exchangers are listed in the below tables:

Water content [lt] – Heat Recovery Brazed Plate Heat Exchanger		
Model	Partial Heat recovery	Total Heat recovery
EWAT310B-SSC1	7,4	13,2
EWAT350B-SSC1	7,4	13,2
EWAT320B-SSC2	9,2	14,7
EWAT380B-SSC2	9,2	14,7
EWAT430B-SSC2	9,2	18,1
EWAT480B-SSC2	12,0	22,3
EWAT570B-SSC2	12,0	22,3
EWAT620B-SSC2	14,7	26,5
EWAT670B-SSC2	14,7	26,5
EWAT730B-SSC2	14,7	26,5
EWAT790B-SSC2	18,1	32,3
EWAT860B-SSC2	18,1	32,3
EWAT960B-SSC2	21,4	38,2
EWAT310B-SRC1	7,4	13,2
EWAT350B-SRC1	7,4	13,2
EWAT320B-SRC2	9,2	14,7
EWAT380B-SRC2	9,2	14,7
EWAT430B-SRC2	9,2	18,1
EWAT480B-SRC2	12,0	22,3
EWAT570B-SRC2	12,0	22,3
EWAT620B-SRC2	14,7	26,5
EWAT670B-SRC2	14,7	26,5
EWAT730B-SRC2	14,7	26,5
EWAT790B-SRC2	18,1	32,3
EWAT860B-SRC2	18,1	32,3
EWAT960B-SRC2	21,4	38,2

All above data are subject to change without notice.

Water content [lt] – Heat Recovery Brazed Plate Heat Exchanger		
Model	Partial Heat recovery	Total Heat recovery
EWAT250B-XSC1	4,6	9,0
EWAT320B-XSC1	7,4	13,2
EWAT370B-XSC1	7,4	13,2
EWAT390B-XSC2	9,2	14,7
EWAT450B-XSC2	9,2	18,1
EWAT510B-XSC2	9,2	18,1
EWAT540B-XSC2	12,0	22,3
EWAT590B-XSC2	12,0	22,3
EWAT630B-XSC2	12,0	22,3
EWAT720B-XSC2	14,7	26,5
EWAT760B-XSC2	14,7	26,5
EWAT830B-XSC2	18,1	32,3
EWAT880B-XSC2	18,1	32,3
EWATC10B-XSC2	21,4	38,2
EWAT250B-XRC1	4,6	9,0
EWAT320B-XRC1	7,4	13,2
EWAT370B-XRC1	7,4	13,2
EWAT390B-XRC2	9,2	14,7
EWAT450B-XRC2	9,2	18,06
EWAT510B-XRC2	9,2	18,1
EWAT540B-XRC2	12,0	22,3
EWAT590B-XRC2	12,0	22,3
EWAT630B-XRC2	12,0	22,3
EWAT720B-XRC2	14,7	26,5
EWAT760B-XRC2	14,7	26,5
EWAT830B-XRC2	18,1	32,3
EWAT880B-XRC2	18,1	32,3
EWATC10B-XRC2	21,4	38,2

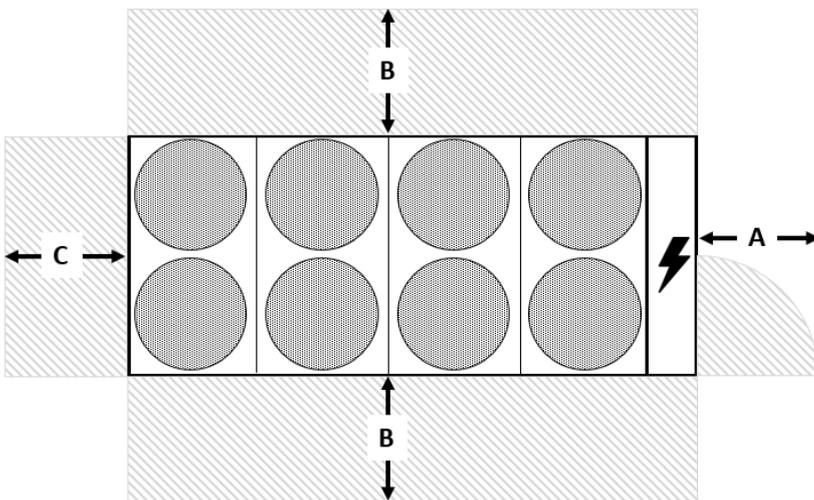
All above data are subject to change without notice.

11. Installation notes

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

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 cabinet.

The units are produced for outdoor 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 leveled; 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 Each side of the unit must be accessible after installation for periodic service.

The following pictures shows you minimum recommended clearance requirements for service activities.

- A at least 1500 mm
- B at least 1800 mm
- C at least 1800 mm

The above values are general guidelines. When consider unit installation is fundamental to consider proper clearances around the unit to perform all possible maintenance activities and replacing of unit's components in respect of safety standard. Deviation from guidelines should be evaluated by local service provider.

Is important also to consider proper space around the unit to prevent/mitigate hot air recirculation. In most of the cases hot air recirculation results in higher temperature entering the condenser affecting the unit performances. In case of unit to be installed close to a wall with same eight a general rule is to have at least 3 meters between the wall and the unit. If the wall taller than the unit countermeasures could be necessary to mitigate hot air recirculation (see option list and contact Daikin representative to discuss possible solutions).

In case of multiple chillers installed side by side general rule is to have 3,6 meters between each chiller if the installation does not allow for this there are countermeasures could be necessary to mitigate hot air recirculation. The above are general guidelines and different solutions could be considered based on specific installation constrains.

Refer to Installation and Operation Manual for details on storage, handling, and installation of the unit

12. Technical Specifications

General information

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

- Construction of pressure vessel 2014/68/EU
- Machinery Directive 2006/42/EC
- Low Voltage 2014/35/EU
- Electromagnetic Compatibility 2014/30/EU
- Harmonized standard EN 60204–1 Safety of Machinery
- Manufacturing Quality Standards UNI – UNI EN 14000

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 HFC R-32

Performance

Chiller shall supply the following performances:

Number of Chiller(s)		unit(s)
Fluid		type
Cooling capacity for single chiller		kW
Power input for single chiller		kW
Evaporator Entering Temperature (EET)		°C
Evaporator Leaving Temperature (ELT)		°C
Evaporator Water Flow rate		l/s
Design outdoor temperature		°C
Minimum full load efficiency (EER)		kW/kW
Minimum part load efficiency (SEER)		kW/kW
Minimum part load efficiency (SEPR)		kW/kW
Minimum part load efficiency (IPLV)		kW/kW
Minimum part load efficiency (ESEER)		kW/kW

Operating voltage range should be 400V ±10%, 3ph, 50Hz (or 380V ±10%, 3ph, 60Hz), voltage unbalance maximum 3%, without neutral conductor and shall only have one power connection point.

Unit description

Chiller shall include one or two independent refrigerant circuits, hermetic orbiting scroll type optimized for R-32 operation, electronic expansion device (EEXV), direct expansion, PHE evaporator, air-cooled condenser section made with aluminum Microchannel technology, R-32 refrigerant, lubrication system, 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 power level shall not exceeddB(A). The sound power levels must be rated in accordance with ISO 9614 (other types of rating cannot 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

Compressors

Hermetic orbiting scroll type optimized for R-32 operation and complete with motor over-temperature and over-current protection devices. Each compressor equipped with oil heater that keeps the oil from being diluted with the refrigerant when the chiller is not running. Each compressor is mounted on rubber antivibration mounts for a quiet operation. Unit is delivered with complete oil charge.

Evaporator

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 controlled by a thermostat and shall be insulated with flexible, closed cell polyurethane insulation material. The water connections shall be VICTAULIC type connections as standard to ensure quick mechanical disconnection between the unit and the hydronic network.

As option flanged connection can be provided.

The evaporator will be manufactured in accordance with PED approval.

Flow switch on evaporator available as option (shipped loose on Modular V)

Water filter on evaporator available as option (shipped loose)

Condenser Heat Exchanger

Full Aluminum - Microchannel type (standard Configuration)

The condenser is made entirely of aluminum with flat tubes containing small channels. Full - depth louvered aluminum fins are inserted between the tubes maximizing the heat exchange. The Microchannel technology ensures the highest performance with the minimum surface for the exchanger. The quantity of refrigerant is also reduced compared to Tube and fins condenser. Anticorrosion treatments ensure resistance to the corrosion by atmospheric agents extending the lifetime (available on request).

Cu/Al - Tube & fins type (available as option)

The condenser is manufactured with internally enhanced seamless copper tubes arranged in a staggered row pattern and mechanically expanded into lanced and rippled aluminum Air Side Heat Exchanger 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.

Additional treatments available as option

- **Blue Coat for Microchannel (available as option):**

Epoxy powder is sprayed and electrostatically fixed to the coil. Once the external surface is completely covered by the epoxy material, the coil is sent into a furnace for the drying and curing phase. The result is a uniform and durable coating on the external surface of the coil that enhance the resistance to the corrosion. The treatment is recommended in all application where moderate risk of corrosion exist (e.g.: light polluted urban and industrial environments).

- **E-coating (available as option)**

A layer of an epoxy polymer is added on the surface of the exchanger. The process consists in the complete immersion of the exchanger in the epoxy polymer solution. An electric voltage applied to the exchanger causes a difference with the electrical charge of the polymer molecules that, as result, are drawn to the metal. The thickness of the coating is controlled by the applied voltage. The result is a uniform layer of epoxy polymers applied all over the exchanger surface. A final UV top-coat treatment is applied on the coil surface.

The heat exchanger provided with e-coating shall Pass 3000 hours in SWAAT test according to ASTM G85 Annex 3 without leakage.

Condenser fans

The condenser fans used in conjunction with the condenser coils, shall be propeller 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 AC or EC type (depending on model and option selected). Fan shall be rated IP55.

The condenser fans shall have as a standard a thermally protection by internal thermal motor.

Refrigerant circuit

The unit shall have one or two independent refrigerant circuits.

The circuit shall include as standard: electronic expansion device controlled by unit's microprocessor control, liquid line shut-off valve, sight glass with moisture indicator, filter drier, charging valves, high pressure switch, high- and low-pressure transducers, oil pressure transducer 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 0°C for units with AC fans, -20°C for unit with EC fans

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.

The compressor shall be connected to unit's metal base frame by rubber anti vibration supports to prevent the transmission of vibrations to all metal unit structure, to limit the unit noise emissions.

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

Rapid Restart (available as option)

When unit is equipped with rapid restart, unit controller is powered by UPS unit. In case of power failure UPS unit keeps unit controller powered for 180 sec. When power is restored within that period unit start compressor within 30 seconds and reach full capacity within 180 seconds.

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

As option depending on unit model an integrated buffer tank is available.

Unit control capable to manage variable flow operation in case of unit selected with VFD pumps.

Master/Slave

The unit shall be able to operate in Master / Slave mode to be connected with another similar unit (up to 4), The master unit shall manage the slave units connected in series on the hydraulic plant with the aim of balancing compressors running hours and the load between of the units.

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 starter devices

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 A mobile App HMI (Daikin mAP) will show chiller operating status plus temperatures and pressures of water, refrigerant and air, programmable values and set points. With Daikin mAP it is possible to access to unit documentation, spare parts list and making live Trend of unit operating values.

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 received from the unit itself (such as motor temperatures, refrigerant gas and oil pressures, correct phase sequence, pressure switches and evaporator flow switch). The input coming from the high-pressure switch cuts all digital output from the controller in less than 50ms, this will be an additional safety for the equipment.

Floating point calculations supported for increased accuracy in P/T conversions

Controller features

Controller shall be guarantee following minimum functions:

Management of the compressors,

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
- Compressor and evaporator pumps hours counter
- Display of Status Safety Devices
- Number of starts and compressor working hours
- Optimized management of unit load
- Fan management according to condensing pressure
- Re-start in case of power failure (automatic / manual)
- Soft Load (optimized management of the unit 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) set-point reset

Set point Reset from external signal (optional)

Application and system upgrade with commercial SD cards

Ethernet port for remote or local servicing using standard web browsers

Master / Slave (provided as standard)

Variable primary Flow (available as option)

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:

- Modbus RTU
- BACnet BTP certified over IP

Performance monitoring (available as option)

Unit shall be capable of providing both instantaneous and integrated information of Capacity, Power Absorption and Efficiency. This information shall be accessible from unit controller with mobile App and remotely via communication protocol (Modbus, BACnet)

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