Databook

Code: Chiller Configurator – 1.5
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BLUEVOLUTION

Air Cooled Chiller with Scroll Compressors

EWFT~B- C

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

R-32

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1. General Characteristics

Low operating cost

Daikin BLUEVOLUTION Free Cooling chiller series (EWFT-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.
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 BLUEVOLUTION 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 CO_2 – eq.	1879	496	346
Indirect Emissions kg CO_2 – eq.	15384	14419	14662
Total Emissions kg CO_2 – eq.	17263	**14916 (best!)**	15008

Thanks to lower refrigerant charge required and higher efficiency (lower power consumption) of R32, the total equivalent emission of CO_2 is lower than R454B even if GWP is higher.

Range overview

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

- Silver (avg. EER =3,5*; avg. SEER = 4,8)
- Gold (avg. EER = 3,9*; avg. SEER = 5,1)

* (1) Standard Rating at Ambient 35°C Inlet temperature 28°C, leaving temperature 18°C: Fluid Ethylene glycol 25%, Fouling factor = 0

three sound configurations:

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

Free Cooling

EWFT-B- chillers are provided with fully integrated free cooling system (heat exchanger and piping). The unit control enables the free cooling operation when the outdoor air temperature is cold enough to chill the fluid returning to the chiller form the system. Standard unit is configured with open loop free cooling meaning that the fluid from the system pass through the free cooling heat exchanger. The closed loop version is available as option to allow operation with water or lower percentage of glycol in the system.
Either open loop or closed loop versions have free cooling components integrated in the unit footprint, no additional space required compared to a standard chiller without free cooling capability.

Chiller w/out Free Cooling EWAT-B-

Chiller with Free Cooling EWFT-B-

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 quite 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, costal, 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.

Free Cooling circuit
The free cooling circuit is integrated in the chiller footprint. Pipes are made of steel with integrated filter for free cooling circuit. Motorized valves managed by unit control send the fluid to the evaporator or to free cooling exchanger first based on the operating conditions.
Standard unit is with “open loop” configuration meaning that the fluid from the system is sent directly in the free cooling heat exchanger. Fluid must be a brine mixture to prevent freeze and burst when temperature is equal or lower than 4°C.
As option the unit can be provided with “closed loop” configuration. In this configuration a closed loop is created between the free cooling heat exchanger and an additional brazed plate heat exchanger with a circulating pump. Fluid in the closed loop is with glycol. The fluid returning from the system is chilled by the glycol coming from the free cooling exchanger in the intermediate heat exchanger. The glycol is confined in the closed loop and the fluid in the system can be pure water or lower concentration of glycol.

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

Silver efficiency, Standard Sound
Base version, variable speed EC fans

Silver efficiency, Reduced Sound
Base version, fixed air flow EC fans, Soundproof compressor enclosure

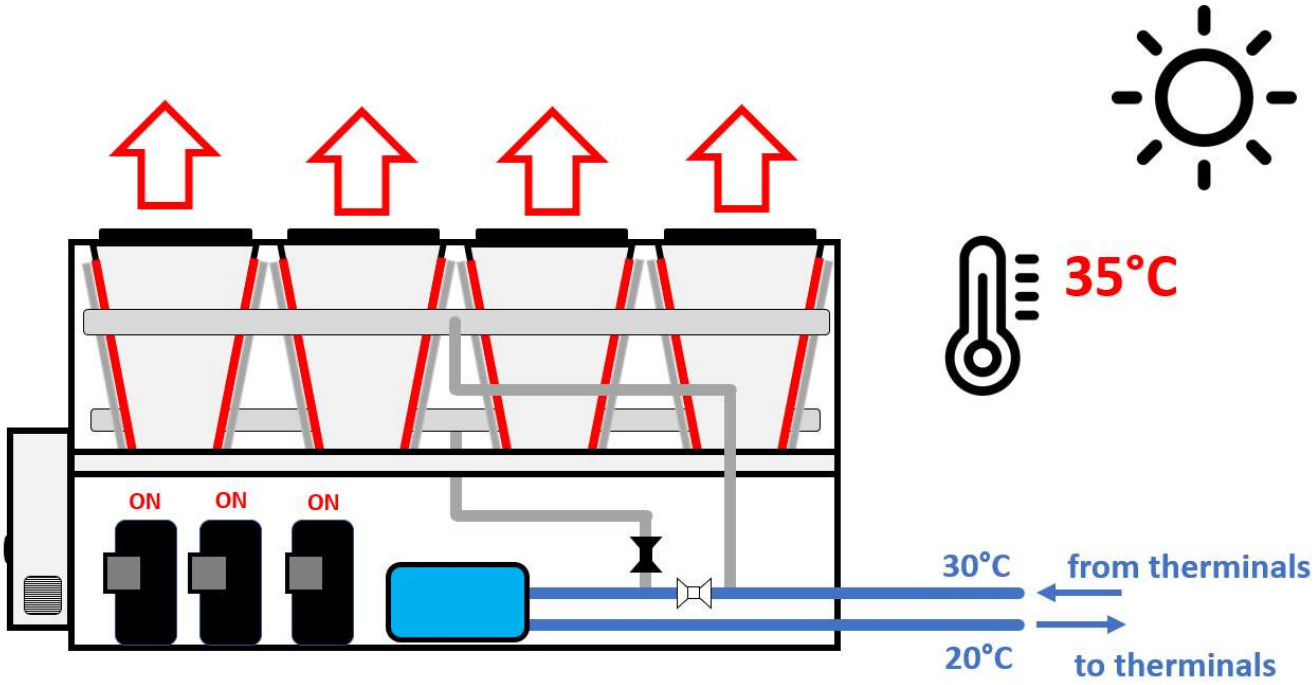
Gold efficiency, Standard Sound
Enhanced condensing section, variable speed EC fans

Gold efficiency, Reduced Sound
Enhanced condensing section, variable speed EC fans, Soundproof compressor enclosure

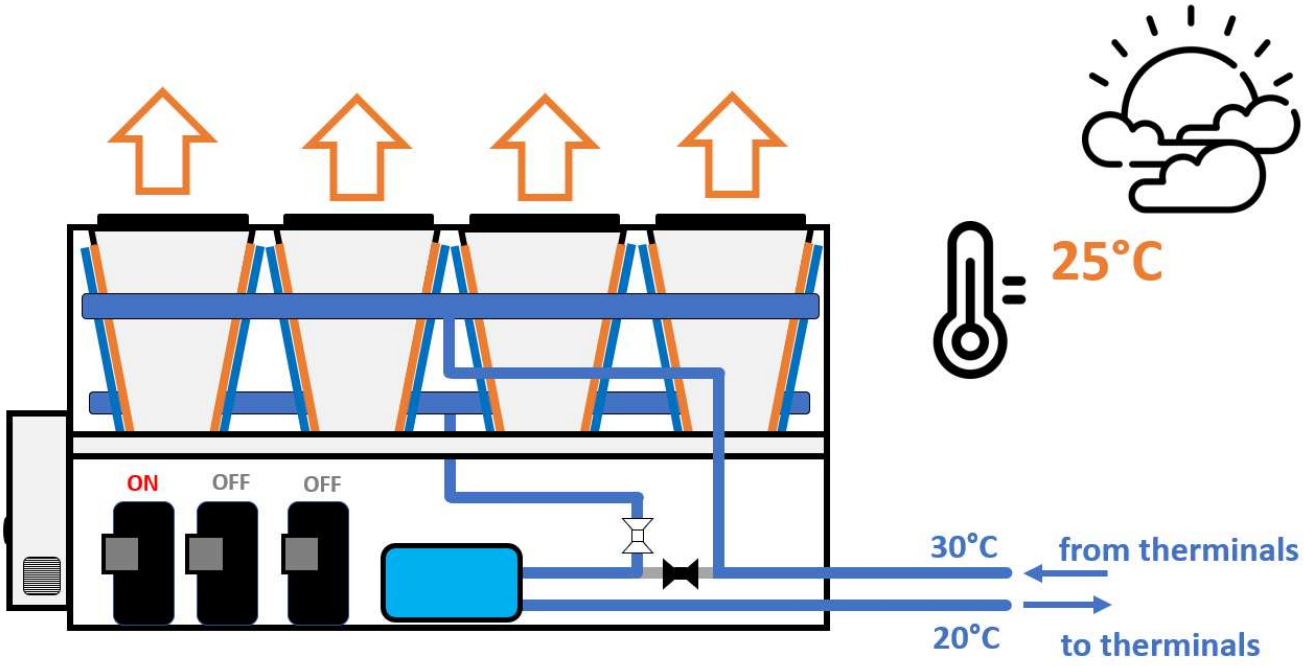
2. Free Cooling description

Free Cooling operation – Open Loop (with glycol)

EWFT chiller is equipped with fully integrated free cooling system to exploit the cold energy available from the environment to chill the fluid.
The fluid entering the unit can be sent directly to the evaporator (where mechanical cooling is provided) or to the free cooling coils installed in series with the condenser coils first and then to the evaporator.
Fluid in air cooled exchanger must be glycol mixture to avoid bursting and freezing when ambient temperatures is close and below zero.
When outdoor ambient is above fluid temperature the unit runs in full mechanical mode providing the cooling capacity using only the compressors as a traditional chiller. This operating mode is called “mechanical cooling”

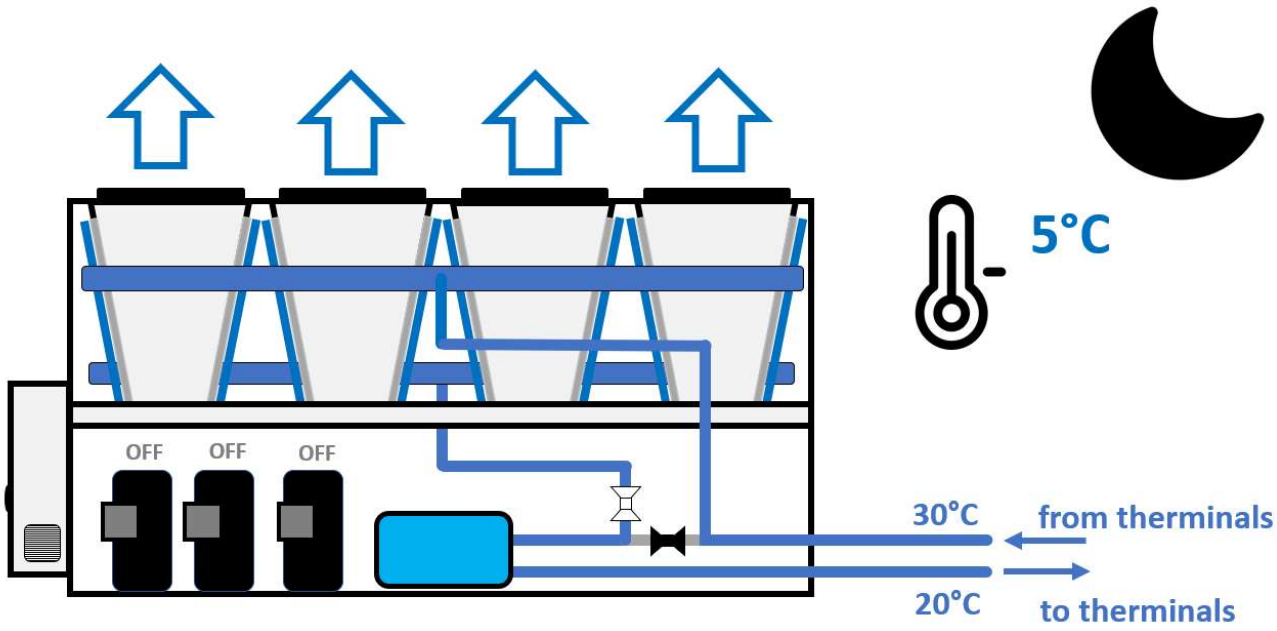


Once ambient temperature falls below enough the temperature of the fluid entering the unit, is possible to exploit the outdoor air to pre-chill the fluid before entering the evaporator. The fluid returning to the chiller is sent to the free cooling heat exchanger installed in series with the condenser to be chilled by the outdoor air.



The fluid leaves the free cooling exchanger after been partially chilled and enters the chiller evaporator to be brought to set point temperature. This operating condition is usually called “partial free cooling” or “mixed mode” because the fluid is chilled at first using the air for the surroundings and only after enters the chiller evaporator where the mechanical cooling (with compressors) provides the remaining cold energy. Having part of the cooling effect provided for free by ambient air, the mechanical cooling is required for a fraction of the required load so mechanical cooling operates unloaded with air efficiency.

When ambient temperature is lower enough than required set point the load is entirely provided for free by the outdoor air. The mechanical cooling is turned off and the fluid leaves the free cooling exchanger at set point temperature. This operating mode is called “Full Free Cooling mode”

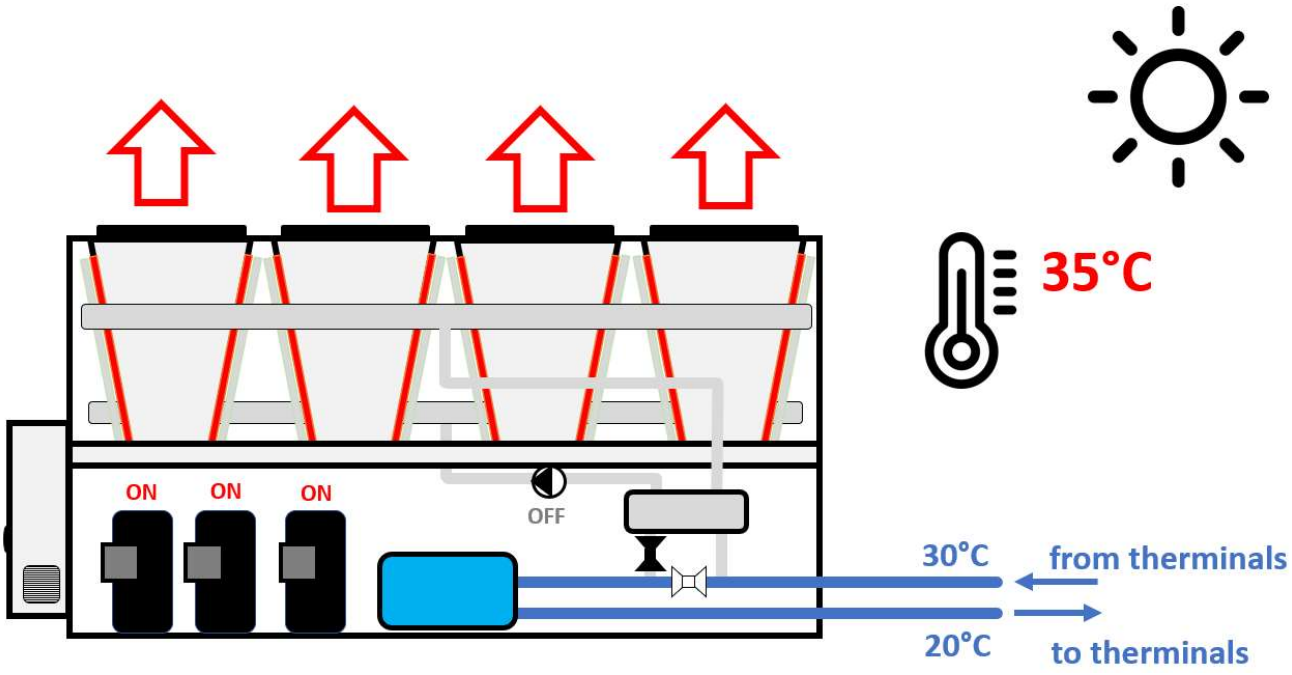


The modulation of the capacity is achieved adjusting the fan speed based on required capacity and ambient temperature.

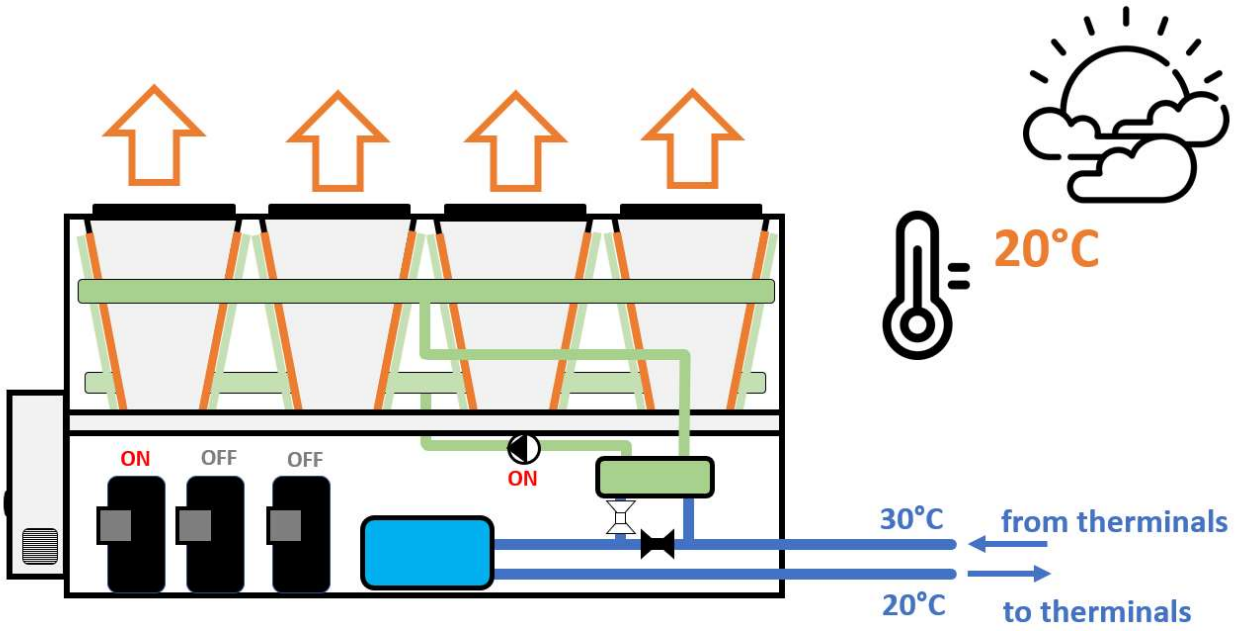
The cooling efficiency for the three operating modes change greatly based on the ambient temperature and so the operating mode. Applications with high occurrence of Mixed Mode and Free Cooling Mode provides short Return of Investment (ROI) against traditional chillers.

Free Cooling operation – Closed Loop (without glycol) (OPT231)

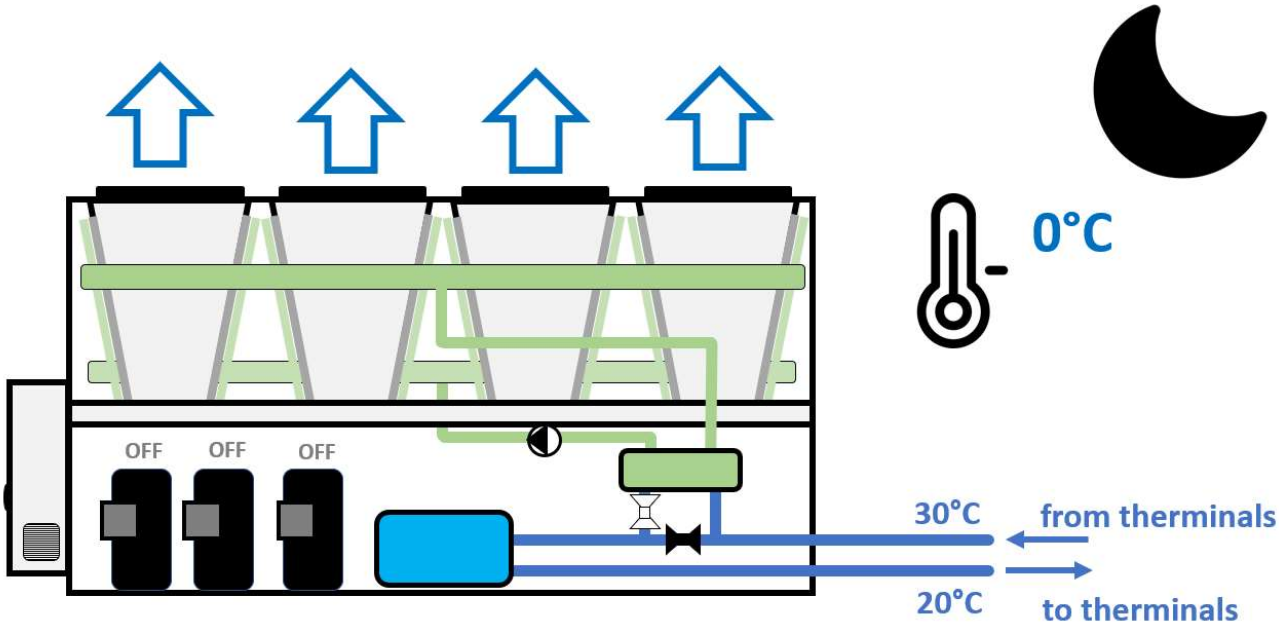
To prevent bursting and freezing in the free cooling exchanger when ambient temperatures is close and below zero use of glycol is required. For installation where glycol is not allowed in the system is possible to select option 231 to have the Closed Loop version. By selecting option 231 the unit is equipped with a brazed plate heat exchanger installed to create a closed loop with the free cooling exchanger and a dedicated pump. With this option the fluid in the system can be pure water while the glycol is confined in the closed loop between free cooling exchanger and brazed plate exchanger. The concept is the same of Open Loop version. When ambient temperature is above the water temperature returning to the unit the operation is purely mechanical. The pump on the closed loop is OFF and the BPHE is bypassed.



When ambient temperature is lower enough than the returning water temperature the “Mixed Mode” is enabled. The pump in the closed loop in tuned ON and the water is pre-chiller in the BPHE by the flowing in the free cooling exchanger.



Compared to the open loop version the temperature difference between water entering the exchanger and ambient must be bigger as result of the additional heat exchange.
When outdoor temperature is cold enough the mechanical cooling is turned OFF and the full capacity is provided by Free Cooling operation.



Due to the additional heat exchange the Free Cooling Performances are lower than Open Loop version while the performance in mechanical mode is the same.

3. 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)
EWFT310B-SSC1	R32	675	1	22	15	-	-
EWFT320B-SSC2	R32	675	2	12,5	8	12,5	8
EWFT350B-SSC1	R32	675	1	30	20	-	-
EWFT380B-SSC2	R32	675	2	15,5	10	15,5	10
EWFT430B-SSC2	R32	675	2	17,5	12	17,5	12
EWFT480B-SSC2	R32	675	2	19,5	13	19,5	13
EWFT570B-SSC2	R32	675	2	22,5	15	22,5	15
EWFT620B-SSC2	R32	675	2	25	17	25	17
EWFT670B-SSC2	R32	675	2	26,5	18	26,5	18
EWFT730B-SSC2	R32	675	2	29,5	20	29,5	20
EWFT790B-SSC2	R32	675	2	31,5	21	31,5	21
EWFT860B-SSC2	R32	675	2	34	23	34	23
EWFT960B-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)
EWFT310B-SRC1	R32	675	1	22	15	-	-
EWFT320B-SRC2	R32	675	2	12,5	8	12,5	8
EWFT350B-SRC1	R32	675	1	30	20	-	-
EWFT380B-SRC2	R32	675	2	15,5	10	15,5	10
EWFT430B-SRC2	R32	675	2	17,5	12	17,5	12
EWFT480B-SRC2	R32	675	2	19,5	13	19,5	13
EWFT570B-SRC2	R32	675	2	22,5	15	22,5	15
EWFT620B-SRC2	R32	675	2	25	17	25	17
EWFT670B-SRC2	R32	675	2	26,5	18	26,5	18
EWFT730B-SRC2	R32	675	2	29,5	20	29,5	20
EWFT790B-SRC2	R32	675	2	31,5	21	31,5	21
EWFT860B-SRC2	R32	675	2	34	23	34	23
EWFT960B-SRC2	R32	675	2	38,5	26	38,5	26

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EWFT250B-XSC1	R32	675	1	26	18	-	-
EWFT320B-XSC1	R32	675	1	30	20	-	-
EWFT370B-XSC1	R32	675	1	33	22	-	-
EWFT390B-XSC2	R32	675	2	18,5	12	18,5	12
EWFT450B-XSC2	R32	675	2	21	14	21	14
EWFT510B-XSC2	R32	675	2	23,5	16	23,5	16
EWFT540B-XSC2	R32	675	2	25	17	25	17
EWFT590B-XSC2	R32	675	2	27	18	27	18
EWFT630B-XSC2	R32	675	2	29	20	29	20
EWFT720B-XSC2	R32	675	2	33	22	33	22
EWFT760B-XSC2	R32	675	2	34,5	23	34,5	23
EWFT830B-XSC2	R32	675	2	37,5	25	37,5	25
EWFT880B-XSC2	R32	675	2	40	27	40	27
EWFTC10B-XSC2	R32	675	2	45	30	45	30

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EWFT320B-XRC1	R32	675	1	30	20	-	-
EWFT370B-XRC1	R32	675	1	33	22	-	-
EWFT390B-XRC2	R32	675	2	18,5	12	18,5	12
EWFT450B-XRC2	R32	675	2	21	14	21	14
EWFT510B-XRC2	R32	675	2	23,5	16	23,5	16
EWFT540B-XRC2	R32	675	2	25	17	25	17
EWFT590B-XRC2	R32	675	2	27	18	27	18
EWFT630B-XRC2	R32	675	2	29	20	29	20
EWFT720B-XRC2	R32	675	2	33	22	33	22
EWFT760B-XRC2	R32	675	2	34,5	23	34,5	23
EWFT830B-XRC2	R32	675	2	37,5	25	37,5	25
EWFT880B-XRC2	R32	675	2	40	27	40	27
EWFTC10B-XRC2	R32	675	2	45	30	45	30

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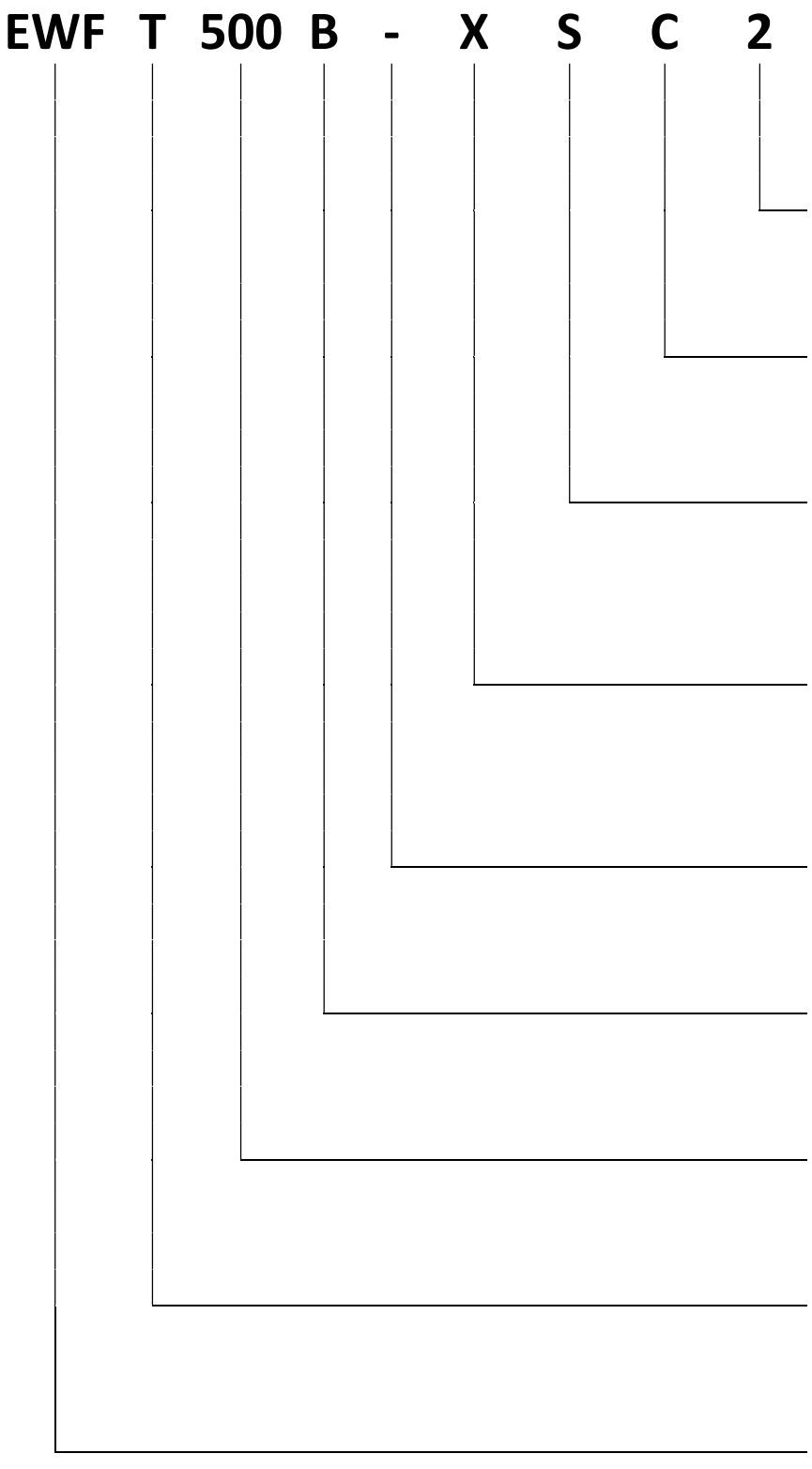
4. Nomenclature



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

EWF = Air Cooled Free Cooling Chiller

5. 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
- Quite 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)

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.

Options on demand

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 91 – Double pressure relief valve with diverter

OPT 115 – Water filter

OPT 121 – Refrigerant Leak detection
Requires compressor enclosure (OPT 76-b)

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 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 231 – Glycol free (closed loop free cooling)
Enhanced esthetics and protection of piping

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 95 – Compressor circuit breakers

OPT 102 – Ground fault relay

OPT 142 – High Ambient kit
Unit suitable for operation continuous operation above 46°C air entering the unit condenser.

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 110 – Rapid restart
Restore full capacity within 180 seconds from power restoration.

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

6. Technical data

EWFT B- SS | Silver Efficiency, Standard Sound | 400 V / 3ph / 50 Hz							
Model		**310**	**350**	**320**	**380**	**430**	**480**
Cooling Capacity [1]	kW	395.2	439.1	351.7	499.3	493.6	553.8
Power input [1]	kW	122	152	96	138	131	164
Cooling Efficiency – EER [1]	kW/kW	3.250	2.894	3.667	3.608	3.760	3.373
Seasonal Energy Efficiency Ratio - SEER [1][2]	kW/kW	4.833	4.641	4.546	4.688	4.73	4.742
$\eta_{s,c}$ [3]	%	190.32	182.64	178.84	184.52	186.20	186.68
Seasonal Energy Performance Ratio - SEPR [1][2]	kW/kW	5.845	5.587	5.459	5.773	5.716	5.623
IPLV [5]	kW/kW	5.259	5.080	4.869	5.078	5.086	5.122
Full Free Cooling Temperature[12]	°C	1.35	-0.95	3.14	4.23	3.36	2.31
Flow rate [1]	l/s	12.60	14.00	11.22	15.92	15.74	17.66
Evaporator Pressure Drop free cooling OFF [1][6]	kPa	42.1	45.7	29.9	58.5	50.3	63.0
Unit pressure drop free cooling ON[12][6]	kPa	173	213	135	166	149	186
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 – open loop Free Cooling	Lt	143	148	148	171	186	186
Minimum water flow rate [10]	l/s	5.6	6.0	6.0	6.0	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	2245	2373	2288	2852	3012	3155
Operating weight [8]	kg	2388	2521	2436	3023	3198	3341
Water Connection Size	Ø mm	88.9	88.9	88.9	88.9	88.9	88.9
Running Current [1][8][12]	A	216.2	264.3	174.1	252.3	240.2	294.4
Max Running Current [7][8][11]	A	245	287	249	302	344	390
Current for Wiring Sizing [8]	A	269	316	273	332	379	429
Max Inrush Current [8][9][11]	A	693	735	697	750	792	838

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 at Ambient 35°C Inlet temperature 26°C, leaving temperature 18°C: Fluid Ethylene glycol 25%, 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 ηs,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: Ethylene Glycol 25%, 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) ±10% tolerance on Voltage, Voltage unbalance between phases must be within ± 3%.
(12) Inlet 30°C, Leaving 20°C, Fluid: 25% Ethylene Glycol.

Eurovent certified data

EWFT B- SS | Silver Efficiency, Standard Sound | 400 V / 3ph / 50 Hz							
Model		**570**	**620**	**670**	**730**	**790**	**860**
Cooling Capacity (1)	kW	738.6	803.5	749.6	843.7	1018	1112
Power input (1)	kW	211	245	212	221	316	325
Cooling Efficiency – EER (1)	kW/kW	3.501	3.278	3.538	3.819	3.222	3.422
Seasonal Energy Efficiency Ratio - SEER (1)(2)	kW/kW	4.921	4.879	4.815	5.014	5.049	5.076
$\eta_{s,c}$ (3)	%	193.84	192.16	189.60	197.56	198.96	200.04
Seasonal Energy Performance Ratio - SEPR (1)(2)	kW/kW	6.083	5.913	5.863	6.096	5.958	6.061
IPLV (5)	kW/kW	5.284	5.275	5.241	5.392	5.307	5.381
Full Free Cooling Temperature(12)	°C	2.14	0.84	2.14	3.81	0.55	2.35
Flow rate (1)	l/s	23.55	25.62	23.90	26.90	32.48	35.47
Evaporator Pressure Drop free cooling OFF (1)(6)	kPa	18.7	21.9	13.0	16.2	23.1	27.3
Unit pressure drop free cooling ON(12)(6)	kPa	138	148	133	118	173	150
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 – open loop Free Cooling	Lt	270	270	287	387	387	429
Minimum water flow rate (10)	l/s	16.2	16.2	20.0	20.0	20.0	20.0
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	3774	3953	4056	4667	5035	5546
Operating weight (8)	kg	4044	4223	4343	5054	5422	5975
Water Connection Size	Ø mm	139.7	139.7	139.7	139.7	139.7	139.7
Running Current (1)(8)(12)	A	378.9	435	380.3	403.2	559	581.8
Max Running Current (7)(8)(11)	A	443	488	531	584	631	684
Current for Wiring Sizing (8)	A	487	537	584	642	694	752
Max Inrush Current (8)(9)(11)	A	891	936	979	1032	1079	1132

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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 at Ambient 35°C Inlet temperature 26°C, leaving temperature 18°C: Fluid Ethylene glycol 25%, 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 ηs,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: Ethylene Glycol 25%, 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) ±10% tolerance on Voltage, Voltage unbalance between phases must be within ± 3%.
(12) Inlet 30°C, Leaving 20°C, Fluid: 25% Ethylene Glycol.

Eurovent certified data

EWFT B- SS | Silver Efficiency, Standard Sound | 400 V / 3ph / 50 Hz		
Model		**960**
Cooling Capacity (1)	kW	1235
Power input (1)	kW	388
Cooling Efficiency – EER (1)	kW/kW	3.188
Seasonal Energy Efficiency Ratio - SEER (1)(2)	kW/kW	4.93
$\eta_{s,c}$ (3)	%	194.20
Seasonal Energy Performance Ratio - SEPR (1)(2)	kW/kW	5.944
IPLV (5)	kW/kW	5.312
Full Free Cooling Temperature(12)	°C	0.34
Flow rate (1)	l/s	39.39
Evaporator Pressure Drop free cooling OFF (1)(6)	kPa	26.4
Unit pressure drop free cooling ON(12)(6)	kPa	173
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 – open loop Free Cooling	Lt	451
Minimum water flow rate (10)	l/s	22.6
Length	mm	6928
Width	mm	2238
Height	mm	2535
Shipping weight (8)	kg	5860
Operating weight (8)	kg	6311
Water Connection Size	Ø mm	139.7
Running Current (1)(8)(12)	A	683.6
Max Running Current (7)(8)(11)	A	772
Current for Wiring Sizing (8)	A	849
Max Inrush Current (8)(9)(11)	A	1220

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(1) Standard Rating at Ambient 35°C Inlet temperature 26°C, leaving temperature 18°C: Fluid Ethylene glycol 25%, 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 ηs,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: Ethylene Glycol 25%, 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) ±10% tolerance on Voltage, Voltage unbalance between phases must be within ± 3%.
(12) Inlet 30°C, Leaving 20°C, Fluid: 25% Ethylene Glycol.

Eurovent certified data

EWFT B- SR | Silver Efficiency, Reduce Sound | 400 V / 3ph / 50 Hz							
Model		**310**	**350**	**320**	**380**	**430**	**480**
Cooling Capacity (1)	kW	395.2	439.1	408.4	480.6	544.2	598.2
Power input (1)	kW	122	152	131	144	168	204
Cooling Efficiency – EER (1)	kW/kW	3.250	2.894	3.115	3.344	3.249	2.928
Seasonal Energy Efficiency Ratio - SEER (1)(2)	kW/kW	4.778	4.602	4.329	4.713	4.715	4.662
$\eta_{s,c}$ (3)	%	188.12	181.08	170.16	185.52	185.60	183.48
Seasonal Energy Performance Ratio - SEPR (1)(2)	kW/kW	5.83	5.535	5.287	5.793	5.827	5.641
IPLV (5)	kW/kW	5.281	5.084	4.858	5.074	5.096	5.148
Full Free Cooling Temperature(12)	°C	1.15	-0.97	0.5	4.79	2.64	0.98
Flow rate (1)	l/s	12.60	14.00	13.02	15.32	17.36	19.08
Evaporator Pressure Drop free cooling OFF (1)(6)	kPa	42.1	45.6	39.7	54.3	60.9	73.2
Unit pressure drop free cooling ON(12)(6)	kPa	189	211	176	149	192	228
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 – open loop Free Cooling	Lt	143	148	148	171	186	186
Minimum water flow rate (10)	l/s	5.6	6.0	6.0	6.0	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	2336	2464	2379	2942	3134	3298
Operating weight (8)	kg	2479	2612	2527	3113	3320	3484
Water Connection Size	Ø mm	88.9	88.9	88.9	88.9	88.9	88.9
Running Current (1)(8)(12)	A	229.6	277.7	243.8	266.8	312.2	372.3
Max Running Current (7)(8)(11)	A	245	287	249	302	344	390
Current for Wiring Sizing (8)	A	269	316	273	332	379	428
Max Inrush Current (8)(9)(11)	A	693	735	697	750	792	838

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(1) Standard Rating at Ambient 35°C Inlet temperature 26°C, leaving temperature 18°C: Fluid Ethylene glycol 25%, 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 ηs,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: Ethylene Glycol 25%, 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) ±10% tolerance on Voltage, Voltage unbalance between phases must be within ± 3%.
(12) Inlet 30°C, Leaving 20°C, Fluid: 25% Ethylene Glycol.

Eurovent certified data

EWFT B- SR | Silver Efficiency, Reduce Sound | 400 V / 3ph / 50 Hz							
Model		**570**	**620**	**670**	**730**	**790**	**860**
Cooling Capacity [1]	kW	725	762.6	851.4	947.6	970.4	1093
Power input [1]	kW	214	259	277	283	335	330
Cooling Efficiency – EER [1]	kW/kW	3.385	2.941	3.069	3.344	2.893	3.312
Seasonal Energy Efficiency Ratio - SEER [1][2]	kW/kW	4.899	4.823	4.782	4.972	4.984	5.057
$\eta_{s,c}$ [3]	%	192.96	189.92	188.28	195.88	196.36	199.28
Seasonal Energy Performance Ratio - SEPR [1][2]	kW/kW	6.081	5.937	5.863	6.111	5.997	6.151
IPLV [5]	kW/kW	5.329	5.347	5.309	5.414	5.271	5.399
Full Free Cooling Temperature[12]	°C	2.81	1.57	-0.32	1.94	1.5	2.71
Flow rate [1]	l/s	23.12	24.32	27.15	30.22	30.95	34.84
Evaporator Pressure Drop free cooling OFF [1][6]	kPa	18.1	19.9	16.5	20.1	21.1	26.4
Unit pressure drop free cooling ON[12][6]	kPa	128	141	156	134	152	137
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 – open loop Free Cooling	Lt	270	270	287	387	387	429
Minimum water flow rate [10]	l/s	16.2	16.2	20.0	20.0	20.0	20.0
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	3917	4116	4219	4830	5220	5730
Operating weight [8]	kg	4187	4386	4506	5217	5607	6159
Water Connection Size	Ø mm	139.7	139.7	139.7	139.7	139.7	139.7
Running Current [1][8][12]	A	401.2	464.7	509.7	529.5	597.9	615.2
Max Running Current [7][8][11]	A	443	488	531	584	630	683
Current for Wiring Sizing [8]	A	487	537	584	642	693	752
Max Inrush Current [8][9][11]	A	891	936	979	1032	1078	1131

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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 at Ambient 35°C Inlet temperature 26°C, leaving temperature 18°C: Fluid Ethylene glycol 25%, 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 ηs,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: Ethylene Glycol 25%, 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) ±10% tolerance on Voltage, Voltage unbalance between phases must be within ± 3%.
(12) Inlet 30°C, Leaving 20°C, Fluid: 25% Ethylene Glycol.

Eurovent certified data

EWFT B- SR | Silver Efficiency, Reduce Sound | 400 V / 3ph / 50 Hz		
Model		**960**
Cooling Capacity (1)	kW	1170
Power input (1)	kW	410
Cooling Efficiency – EER (1)	kW/kW	2.856
Seasonal Energy Efficiency Ratio - SEER (1)(2)	kW/kW	4.883
$\eta_{s,c}$ (3)	%	192.32
Seasonal Energy Performance Ratio - SEPR (1)(2)	kW/kW	5.92
IPLV (5)	kW/kW	5.300
Full Free Cooling Temperature(12)	°C	1.39
Flow rate (1)	l/s	37.31
Evaporator Pressure Drop free cooling OFF (1)(6)	kPa	23.8
Unit pressure drop free cooling ON(12)(6)	kPa	157
Sound Power (1)(7) **– Lw**	dB(a)	93
Number of circuits / Compressors	#	2/8
Water volume – open loop Free Cooling	Lt	451
Minimum water flow rate (10)	l/s	22.6
Length	mm	6928
Width	mm	2238
Height	mm	2535
Shipping weight (8)	kg	6065
Operating weight (8)	kg	6516
Water Connection Size	Ø mm	139.7
Running Current (1)(8)(12)	A	727.8
Max Running Current (7)(8)(11)	A	771
Current for Wiring Sizing (8)	A	849
Max Inrush Current (8)(9)(11)	A	1219

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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 at Ambient 35°C Inlet temperature 26°C, leaving temperature 18°C: Fluid Ethylene glycol 25%, 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 ηs,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: Ethylene Glycol 25%, 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) ±10% tolerance on Voltage, Voltage unbalance between phases must be within ± 3%.
(12) Inlet 30°C, Leaving 20°C, Fluid: 25% Ethylene Glycol.

Eurovent certified data

EWFT B- XS | Gold Efficiency, Standard Sound | 400 V / 3ph / 50 Hz							
Model		**250**	**320**	**370**	**390**	**450**	**510**
Cooling Capacity [1]	kW	331.9	429.6	487.6	508.5	591.6	673.7
Power input [1]	kW	88	108	131	139	153	177
Cooling Efficiency – EER [1]	kW/kW	3.772	3.963	3.722	3.650	3.877	3.810
Seasonal Energy Efficiency Ratio - SEER [1][2]	kW/kW	4.723	5.186	5.011	4.74	4.957	4.911
$\eta_{s,c}$ [3]	%	185.92	204.44	197.44	186.60	195.28	193.44
Seasonal Energy Performance Ratio - SEPR [1][2]	kW/kW	6.047	6.199	5.939	5.838	6.123	6.224
IPLV [5]	kW/kW	5.185	5.518	5.366	5.122	5.326	5.322
Full Free Cooling Temperature[12]	°C	4.24	6.4	4.57	3.89	5.93	3.99
Flow rate [1]	l/s	10.58	13.70	15.55	16.22	18.87	21.48
Evaporator Pressure Drop free cooling OFF [1][6]	kPa	30.1	49.4	55.9	53.3	71.7	15.8
Unit pressure drop free cooling ON[12][6]	kPa	121	135	159	163	170	111
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 – open loop Free Cooling	Lt	143	173	175	179	238	270
Minimum water flow rate [10]	l/s	5.6	5.6	6.0	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	2129	2678	2800	2885	3420	3634
Operating weight [8]	kg	2272	2851	2975	3064	3658	3904
Water Connection Size	Ø mm	88.9	88.9	88.9	88.9	88.9	139.7
Running Current [1][8][12]	A	160.7	202.1	239.6	253.6	282.7	322.7
Max Running Current [7][8][11]	A	199	255	298	302	355	397
Current for Wiring Sizing [8]	A	219	281	327	332	390	437
Max Inrush Current [8][9][11]	A	647	703	746	750	803	845

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 at Ambient 35°C Inlet temperature 26°C, leaving temperature 18°C: Fluid Ethylene glycol 25%, 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 ηs,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: Ethylene Glycol 25%, 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) ±10% tolerance on Voltage, Voltage unbalance between phases must be within ± 3%.
(12) Inlet 30°C, Leaving 20°C, Fluid: 25% Ethylene Glycol.

Eurovent certified data

EWFT B- XS | Gold Efficiency, Standard Sound | 400 V / 3ph / 50 Hz							
Model		**540**	**590**	**630**	**720**	**760**	**830**
Cooling Capacity [1]	kW	716.2	774.8	829.5	945.8	1002	1100
Power input [1]	kW	175	198	220	242	265	285
Cooling Efficiency – EER [1]	kW/kW	4.088	3.923	3.772	3.912	3.789	3.865
Seasonal Energy Efficiency Ratio - SEER [1][2]	kW/kW	5.213	5.141	5.131	5.219	5.193	5.251
$\eta_{s,c}$ [3]	%	205.52	202.64	202.24	205.76	204.72	207.04
Seasonal Energy Performance Ratio - SEPR [1][2]	kW/kW	6.474	6.315	6.202	6.382	6.247	6.304
IPLV [5]	kW/kW	5.623	5.546	5.509	5.570	5.518	5.553
Full Free Cooling Temperature[12]	°C	6.39	5.33	4.24	5.05	4.14	5.1
Flow rate [1]	l/s	22.84	24.71	26.45	30.16	31.96	35.08
Evaporator Pressure Drop free cooling OFF [1][6]	kPa	17.7	20.5	23.3	20.0	22.4	26.7
Unit pressure drop free cooling ON[12][6]	kPa	89	107	130	112	124	121
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 – open loop Free Cooling	Lt	370	370	370	429	429	473
Minimum water flow rate [10]	l/s	16.2	16.2	16.2	20.0	20.0	20.0
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	4150	4266	4377	4975	5086	5879
Operating weight [8]	kg	4520	4636	4747	5404	5515	6352
Water Connection Size	Ø mm	139.7	139.7	139.7	139.7	139.7	139.7
Running Current [1][8][12]	A	327.1	364.3	401.6	445.1	482.9	523.9
Max Running Current [7][8][11]	A	410	453	496	551	594	694
Current for Wiring Sizing [8]	A	451	498	545	607	653	763
Max Inrush Current [8][9][11]	A	858	901	944	999	1042	1142

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 at Ambient 35°C Inlet temperature 26°C, leaving temperature 18°C: Fluid Ethylene glycol 25%, 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 ηs,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: Ethylene Glycol 25%, 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) ±10% tolerance on Voltage, Voltage unbalance between phases must be within ± 3%.
(12) Inlet 30°C, Leaving 20°C, Fluid: 25% Ethylene Glycol.

Eurovent certified data

EWFT B- XS | Gold Efficiency, Standard Sound | 400 V / 3ph / 50 Hz			
Model		**880**	**C10**
Cooling Capacity [1]	kW	1156	1326
Power input [1]	kW	307	352
Cooling Efficiency – EER [1]	kW/kW	3.763	3.770
Seasonal Energy Efficiency Ratio - SEER [1][2]	kW/kW	5.243	5.189
$\eta_{s,c}$ [3]	%	206.72	204.56
Seasonal Energy Performance Ratio - SEPR [1][2]	kW/kW	6.24	6.277
IPLV [5]	kW/kW	5.519	5.514
Full Free Cooling Temperature[12]	°C	4.32	4.26
Flow rate [1]	l/s	36.87	42.28
Evaporator Pressure Drop free cooling OFF [1][6]	kPa	29.4	30.3
Unit pressure drop free cooling ON[12][6]	kPa	124	134
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 – open loop Free Cooling	Lt	473	539
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	5991	6792
Operating weight [8]	kg	6464	7331
Water Connection Size	Ø mm	139.7	139.7
Running Current [1][8][12]	A	561.6	642.5
Max Running Current [7][8][11]	A	694	792
Current for Wiring Sizing [8]	A	763	872
Max Inrush Current [8][9][11]	A	1142	1240

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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 at Ambient 35°C Inlet temperature 26°C, leaving temperature 18°C: Fluid Ethylene glycol 25%, 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 ηs,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: Ethylene Glycol 25%, 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) ±10% tolerance on Voltage, Voltage unbalance between phases must be within ± 3%.
(12) Inlet 30°C, Leaving 20°C, Fluid: 25% Ethylene Glycol.

Eurovent certified data

EWFT B- XR | Gold Efficiency, Reduce Sound | 400 V / 3ph / 50 Hz							
Model		**250**	**320**	**370**	**390**	**450**	**510**
Cooling Capacity [1]	kW	306.4	403.9	451.4	484.7	553.5	620.5
Power input [1]	kW	96	114	143	147	163	193
Cooling Efficiency – EER [1]	kW/kW	3.198	3.531	3.168	3.300	3.402	3.217
Seasonal Energy Efficiency Ratio - SEER [1][2]	kW/kW	4.7	5.144	5.025	4.698	5.002	4.833
$\eta_{s,c}$ [3]	%	185.00	202.76	198.00	184.92	197.08	190.32
Seasonal Energy Performance Ratio - SEPR [1][2]	kW/kW	6.041	6.291	6.07	5.787	6.166	6.091
IPLV [5]	kW/kW	5.118	5.587	5.431	5.094	5.373	5.305
Full Free Cooling Temperature[12]	°C	5.41	7.23	5.67	4.68	6.88	5.3
Flow rate [1]	l/s	9.77	12.88	14.40	15.46	17.65	19.79
Evaporator Pressure Drop free cooling OFF [1][6]	kPa	25.9	43.9	48.2	48.6	62.9	13.6
Unit pressure drop free cooling ON[12][6]	kPa	117	117	142	147	148	102
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 – open loop Free Cooling	Lt	143	173	175	179	238	270
Minimum water flow rate [10]	l/s	5.6	5.6	6.0	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	2189	2768	2891	2975	3543	3757
Operating weight [8]	kg	2332	2941	3066	3154	3781	4027
Water Connection Size	Ø mm	88.9	88.9	88.9	88.9	88.9	139.7
Running Current [1][8][12]	A	178.3	220.3	265.6	285.1	309.9	358.4
Max Running Current [7][8][11]	A	199	255	298	302	355	397
Current for Wiring Sizing [8]	A	219	280	327	332	390	437
Max Inrush Current [8][9][11]	A	647	703	746	750	803	845

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 at Ambient 35°C Inlet temperature 26°C, leaving temperature 18°C: Fluid Ethylene glycol 25%, 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 ηs,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: Ethylene Glycol 25%, 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) ±10% tolerance on Voltage, Voltage unbalance between phases must be within ± 3%.
(12) Inlet 30°C, Leaving 20°C, Fluid: 25% Ethylene Glycol.

Eurovent certified data

EWFT B- XR | Gold Efficiency, Reduce Sound | 400 V / 3ph / 50 Hz							
Model		**540**	**590**	**630**	**720**	**760**	**830**
Cooling Capacity (1)	kW	673.3	721.2	765.7	878.7	924.2	1023
Power input (1)	kW	184	212	240	260	288	307
Cooling Efficiency – EER (1)	kW/kW	3.657	3.407	3.196	3.378	3.206	3.335
Seasonal Energy Efficiency Ratio - SEER (1)(2)	kW/kW	5.214	5.167	5.064	5.159	5.121	5.293
$\eta_{s,c}$ (3)	%	205.56	203.68	199.56	203.36	201.84	208.72
Seasonal Energy Performance Ratio - SEPR (1)(2)	kW/kW	6.473	6.383	6.22	6.404	6.324	6.346
IPLV (5)	kW/kW	5.650	5.567	5.515	5.620	5.549	5.598
Full Free Cooling Temperature(12)	°C	7.23	6.28	5.41	6.08	5.41	6.11
Flow rate (1)	l/s	21.47	23.00	24.42	28.02	29.47	32.61
Evaporator Pressure Drop free cooling OFF (1)(6)	kPa	15.8	17.9	20.0	17.5	29.5	23.2
Unit pressure drop free cooling ON(12)(6)	kPa	90	90	108	92	101	102
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 – open loop Free Cooling	Lt	370	370	370	429	429	473
Minimum water flow rate (10)	l/s	16.2	16.2	16.2	20.0	20.0	20.0
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	4293	4409	4520	5139	5250	6062
Operating weight (8)	kg	4663	4779	4890	5568	5679	6535
Water Connection Size	Ø mm	139.7	139.7	139.7	139.7	139.7	139.7
Running Current (1)(8)(12)	A	356	400.7	445.7	490.5	536.1	577.5
Max Running Current (7)(8)(11)	A	410	453	496	551	594	694
Current for Wiring Sizing (8)	A	451	498	545	606	653	763
Max Inrush Current (8)(9)(11)	A	858	901	944	999	1042	1142

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ii) The above data are referred the unit installed in compliancy with installation prescription.
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(1) Standard Rating at Ambient 35°C Inlet temperature 26°C, leaving temperature 18°C: Fluid Ethylene glycol 25%, 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 ηs,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: Ethylene Glycol 25%, 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) ±10% tolerance on Voltage, Voltage unbalance between phases must be within ± 3%.
(12) Inlet 30°C, Leaving 20°C, Fluid: 25% Ethylene Glycol.

Eurovent certified data

EWFT B- XR | Gold Efficiency, Reduce Sound | 400 V / 3ph / 50 Hz			
Model		**880**	**C10**
Cooling Capacity [1]	kW	1068	1224
Power input [1]	kW	335	383
Cooling Efficiency – EER [1]	kW/kW	3.190	3.195
Seasonal Energy Efficiency Ratio - SEER [1][2]	kW/kW	5.181	5.14
$\eta_{s,c}$ [3]	%	204.24	202.60
Seasonal Energy Performance Ratio - SEPR [1][2]	kW/kW	6.314	6.26
IPLV [5]	kW/kW	5.563	5.568
Full Free Cooling Temperature[12]	°C	5.45	5.43
Flow rate [1]	l/s	34.06	39.04
Evaporator Pressure Drop free cooling OFF [1][6]	kPa	25.2	26.0
Unit pressure drop free cooling ON[12][6]	kPa	114	116
Sound Power [1][7] **– Lw**	dB(a)	89	90
Number of circuits / Compressors	#	2/7	2/8
Water volume – open loop Free Cooling	Lt	473	539
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	6174	6997
Operating weight [8]	kg	6647	7536
Water Connection Size	Ø mm	139.7	139.7
Running Current [1][8][12]	A	623.1	712.9
Max Running Current [7][8][11]	A	694	792
Current for Wiring Sizing [8]	A	763	871
Max Inrush Current [8][9][11]	A	1142	1240

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 at Ambient 35°C Inlet temperature 26°C, leaving temperature 18°C: Fluid Ethylene glycol 25%, 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 ηs,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: Ethylene Glycol 25%, 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) ±10% tolerance on Voltage, Voltage unbalance between phases must be within ± 3%.
(12) Inlet 30°C, Leaving 20°C, Fluid: 25% Ethylene Glycol.

Eurovent certified data

7. Sound data

7.1 Silver Efficiency – Standard Sound

EWFT B- SS | Silver Efficiency, Standard Sound										
Model	Sound pressure level @ 1 m from the unit (rif. 2 x10^{-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	81,1	71,3	70,7	70,5	70,4	68,9	61,4	53,3	74,9	94
350	81,1	71,3	70,7	70,6	71,4	69,4	62,0	53,7	75,5	95
320	81,1	71,3	70,8	70,5	69,3	69,3	61,6	53,6	74,7	94
380	82,2	72,4	71,8	71,5	70,7	69,3	61,8	54,0	75,4	95
430	82,2	72,4	71,8	71,6	71,5	69,7	62,3	54,3	75,9	96
480	82,2	72,4	71,9	71,6	71,6	70,3	62,8	54,7	76,2	96
570	82,9	73,1	72,5	72,3	72,2	70,3	62,8	54,9	76,5	97
620	82,9	73,1	72,6	72,3	72,3	70,8	63,3	55,2	76,7	97
670	82,9	73,1	72,6	72,4	72,8	71,0	63,6	55,4	77,0	97
730	83,4	73,6	73,0	72,8	73,1	70,9	63,5	55,5	77,2	98
790	83,4	73,6	73,0	72,8	73,1	71,2	63,8	55,7	77,4	98
860	83,7	74,0	73,3	73,1	73,3	71,1	63,7	55,7	77,5	99
960	83,7	74,0	73,4	73,2	73,7	71,6	64,2	56,1	77,8	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

EWFT B- SS | Silver Efficiency, Standard Sound

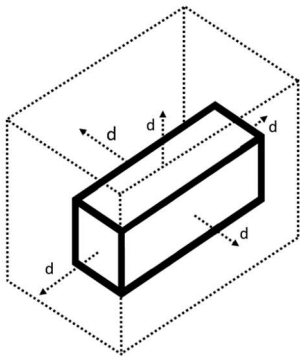
model	Sound Power Lw [dB(a)]	Sound pressure - Lp [dB(a)] at									
		1 m	2 m	3 m	4 m	5 m	6 m	7m	8 m	9 m	10 m
310	94	74,9	72,1	69,9	68,2	66,8	65,6	64,5	63,5	62,7	61,9
350	95	75,4	72,6	70,4	68,7	67,3	66,1	65,0	64,0	63,2	62,4
320	94	74,7	71,9	69,7	68,0	66,6	65,4	64,3	63,3	62,5	61,7
380	95	75,4	72,7	70,7	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:

Lp = Lw – 10 x Log10(Ad)



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

Eurovent certified data

7.2 Silver Efficiency – Reduced Sound

EWFT B- SR | Silver Efficiency, Reduced Sound										
Model	Sound pressure level @ 1 m from the unit (rif. 2 x10^{-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	70,7	67,4	67,2	67,3	64,5	59,4	51,9	44,6	68,8	88
350	70,7	67,4	67,2	67,3	64,7	59,7	52,3	44,8	69,0	88
320	70,7	67,4	67,2	67,3	64,2	59,6	52,0	44,8	68,8	88
380	71,9	68,6	68,3	68,4	65,4	60,1	52,6	45,6	69,8	90
430	71,9	68,6	68,3	68,4	65,6	60,3	52,9	45,7	69,9	90
480	71,9	68,6	68,3	68,4	65,6	60,7	53,2	45,9	70,0	90
570	72,6	69,3	69,0	69,2	66,3	61,0	53,5	46,4	70,6	91
620	72,6	69,3	69,0	69,2	66,3	61,2	53,8	46,5	70,7	91
670	72,6	69,3	69,0	69,2	66,5	61,4	54,0	46,6	70,8	91
730	73,1	69,8	69,5	69,6	66,9	61,5	54,1	46,9	71,2	92
790	73,1	69,8	69,5	69,6	66,9	61,7	54,3	47,0	71,2	92
860	73,4	70,1	69,9	70,0	67,2	61,8	54,4	47,2	71,5	93
960	73,4	70,1	69,9	70,0	67,3	62,1	54,7	47,4	71,6	93

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

EWFT B- SR | Silver Efficiency, Reduced Sound

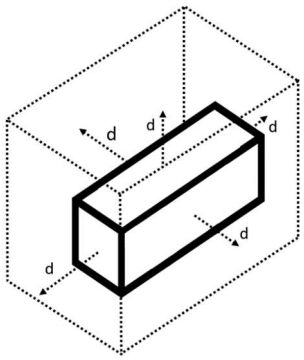
model	Sound Power Lw [dB(a)]	Sound pressure - Lp [dB(a)] at									
		1 m	2 m	3 m	4 m	5 m	6 m	7m	8 m	9 m	10 m
310	88	68,8	66,0	63,8	62,1	60,7	59,5	58,4	57,4	56,6	55,8
350	88	69,0	66,2	64,0	62,3	60,9	59,7	58,6	57,6	56,8	56,0
320	88	68,7	65,9	63,7	62,0	60,6	59,4	58,3	57,3	56,5	55,7
380	90	69,8	67,1	65,1	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:

Lp = Lw – 10 x Log10(Ad)



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

Eurovent certified data

7.3 Gold Efficiency – Standard Sound

EWFT B- XS | Gold Efficiency, Standard Sound										
Model	Sound pressure level @ 1 m from the unit (rif. 2 x10^{-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

EWFT 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

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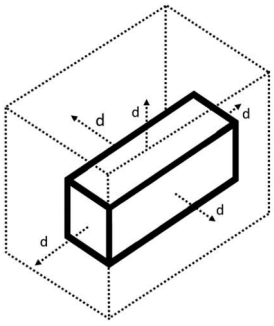
Sound Power levels are measured in accordance with ISO 9614
Sound Pressure levels at 1 meter are measured in accordance with ISO 3744

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

Lp = Lw – 10 x Log10(Ad)



where Ad being the surface around the chiller calculated

Eurovent certified data

7.5 Gold Efficiency – Reduced Sound

EWFT B- XR | Gold Efficiency, Reduced Sound										
Model	Sound pressure level @ 1 m from the unit (rif. 2 x10^{-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

EWFT B- XR | Gold Efficiency, Reduced Sound

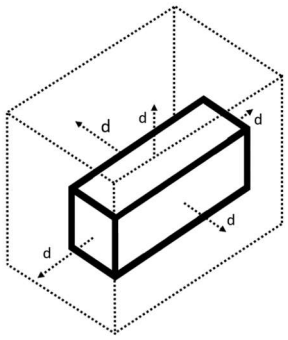
model	Sound Power Lw [dB(a)]	Sound pressure - Lp [dB(a)] at									
		1 m	2 m	3 m	4 m	5 m	6 m	7m	8 m	9 m	10 m
250	84	64,9	62,1	59,9	58,2	56,8	55,6	54,5	53,5	52,7	51,9
320	85	65,7	63,0	61,0	59,3	58,0	56,8	55,7	54,8	53,9	53,2
370	86	66,0	63,3	61,3	59,6	58,3	57,1	56,0	55,1	54,2	53,5
390	86	65,9	63,2	61,2	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:

Lp = Lw – 10 x Log10(Ad)



where Ad being the surface around the chiller calculated

Eurovent certified data

8. Electrical data

EWFT B- SS/SR | Silver Efficiency, Standard & Reduced Sound				
Models	Fans FLA	Auxiliary circuit	Entry cross section cable	SCC Icw 1 Sec.
	A	A	q.ty x mm²	kA eff
EWFT310B-SSC1	20,8	2,38	3x240 mm² PE 1x120mm²	15
EWFT350B-SSC1	20,8	2,38	3x240 mm² PE 1x120mm²	15
EWFT320B-SSC2	20,8	3,5	3x240 mm² PE 1x120mm²	15
EWFT380B-SSC2	31,2	3,5	3x240 mm² PE 1x120mm²	15
EWFT430B-SSC2	31,2	3,5	3x2x185 mm² PE 1x185mm²	20
EWFT480B-SSC2	31,2	3,5	3x2x185 mm² PE 1x185mm²	20
EWFT570B-SSC2	41,6	3,5	3x2x185 mm² PE 1x185mm²	20
EWFT620B-SSC2	41,6	3,5	3x2x185 mm² PE 1x185mm²	20
EWFT670B-SSC2	41,6	3,5	3x2x240 mm² PE 1x240mm²	20
EWFT730B-SSC2	52,0	3,5	3x2x240 mm² PE 1x240mm²	20
EWFT790B-SSC2	52,0	5	3x2x300 mm² PE 1x300mm²	25
EWFT860B-SSC2	62,4	5	3x2x300 mm² PE 1x300mm²	25
EWFT960B-SSC2	62,4	5	3x2x400 mm² PE 1x400mm²	25
EWFT310B-SRC1	20,8	2,38	3x240 mm² PE 1x120mm²	15
EWFT350B-SRC1	20,8	2,38	3x240 mm² PE 1x120mm²	15
EWFT320B-SRC2	20,8	3,5	3x240 mm² PE 1x120mm²	15
EWFT380B-SRC2	31,2	3,5	3x240 mm² PE 1x120mm²	15
EWFT430B-SRC2	31,2	3,5	3x2x185 mm² PE 1x185mm²	20
EWFT480B-SRC2	31,2	3,5	3x2x185 mm² PE 1x185mm²	20
EWFT570B-SRC2	41,6	3,5	3x2x185 mm² PE 1x185mm²	20
EWFT620B-SRC2	41,6	3,5	3x2x185 mm² PE 1x185mm²	20
EWFT670B-SRC2	41,6	3,5	3x2x240 mm² PE 1x240mm²	20
EWFT730B-SRC2	52,0	3,5	3x2x240 mm² PE 1x240mm²	20
EWFT790B-SRC2	52,0	5	3x2x300 mm² PE 1x300mm²	25
EWFT860B-SRC2	62,4	5	3x2x300 mm² PE 1x300mm²	25
EWFT960B-SRC2	62,4	5	3x2x400 mm² PE 1x400mm²	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

EWFT B- XS/XR | Gold Efficiency, Standard & Reduced Sound				
Models	Fans FLA	Auxiliary circuit	Entry cross section cable	SCC Icw 1 Sec.
	A	A	q.ty x mm²	kA eff
EWFT250B-XSC1	20,8	2,38	3x240 mm² PE 1x120mm²	15
EWFT320B-XSC1	31,2	2,38	3x240 mm² PE 1x120mm²	15
EWFT370B-XSC1	31,2	2,38	3x240 mm² PE 1x120mm²	15
EWFT390B-XSC2	31,2	3,5	3x240 mm² PE 1x120mm²	15
EWFT450B-XSC2	41,6	3,5	3x2x185 mm² PE 1x185mm²	20
EWFT510B-XSC2	41,6	3,5	3x2x185 mm² PE 1x185mm²	20
EWFT540B-XSC2	52,0	3,5	3x2x185 mm² PE 1x185mm²	20
EWFT590B-XSC2	52,0	3,5	3x2x185 mm² PE 1x185mm²	20
EWFT630B-XSC2	52,0	3,5	3x2x240 mm² PE 1x240mm²	20
EWFT720B-XSC2	62,4	3,5	3x2x240 mm² PE 1x240mm²	20
EWFT760B-XSC2	62,4	3,5	3x2x240 mm² PE 1x240mm²	20
EWFT830B-XSC2	72,8	5	3x2x300 mm² PE 1x300mm²	25
EWFT880B-XSC2	72,8	5	3x2x300 mm² PE 1x300mm²	25
EWFTC10B-XSC2	83,2	5	3x2x400 mm² PE 1x400mm²	25
EWFT250B-XRC1	20,8	2,38	3x240 mm² PE 1x120mm²	15
EWFT320B-XRC1	31,2	2,38	3x240 mm² PE 1x120mm²	15
EWFT370B-XRC1	31,2	2,38	3x240 mm² PE 1x120mm²	15
EWFT390B-XRC2	31,2	3,5	3x240 mm² PE 1x120mm²	15
EWFT450B-XRC2	41,6	3,5	3x2x185 mm² PE 1x185mm²	20
EWFT510B-XRC2	41,6	3,5	3x2x185 mm² PE 1x185mm²	20
EWFT540B-XRC2	52,0	3,5	3x2x185 mm² PE 1x185mm²	20
EWFT590B-XRC2	52,0	3,5	3x2x185 mm² PE 1x185mm²	20
EWFT630B-XRC2	52,0	3,5	3x2x240 mm² PE 1x240mm²	20
EWFT720B-XRC2	62,4	3,5	3x2x240 mm² PE 1x240mm²	20
EWFT760B-XRC2	62,4	3,5	3x2x240 mm² PE 1x240mm²	20
EWFT830B-XRC2	72,8	5	3x2x300 mm² PE 1x300mm²	25
EWFT880B-XRC2	72,8	5	3x2x300 mm² PE 1x300mm²	25
EWFTC10B-XRC2	83,2	5	3x2x400 mm² PE 1x400mm²	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

9. Operating Limits

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

The use of glycol mixture is mandatory. Min percentage to be defined based on minimum ambient temperature.
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 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.

Max Operating Pressure on fluid side	Unit type	bar
	Free cooling – open loop	10

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.

10. Coolant Fluid Quality requirements

To ensure the long operating lifespan for microchannel free cooling coil, the following conditions for coolant shall be in place:

- PH: Ideal case pH neutral at 20-25°C (7.5 < pH < 8.5)

- Ammonium NH4+< 2 mg/L.

- Cl- chloride ions < 10 mg/L. (water temp. < 65°C)

- Sulfate ions SO4-2 < 30 mg/L.

- Fluoride ions < 0.1 mg/L.

- No Fe2+ and Fe3+ ions if non negligible levels of dissolved oxygen present (>5mg/L) , Fe2+ and Fe3+ ions < 5mg/L if dissolved oxygen < 5mg/L.

- Zn ions is not allowed (ethylene glycol solution application).

- Dissolved silicon < 1mg/L

- Water hardness: > 0.5 mmol/L. Value between 1 and 2.5 mmol/L is recommended.

- Total alkalimetric title (TAC) < 100 mg/L.

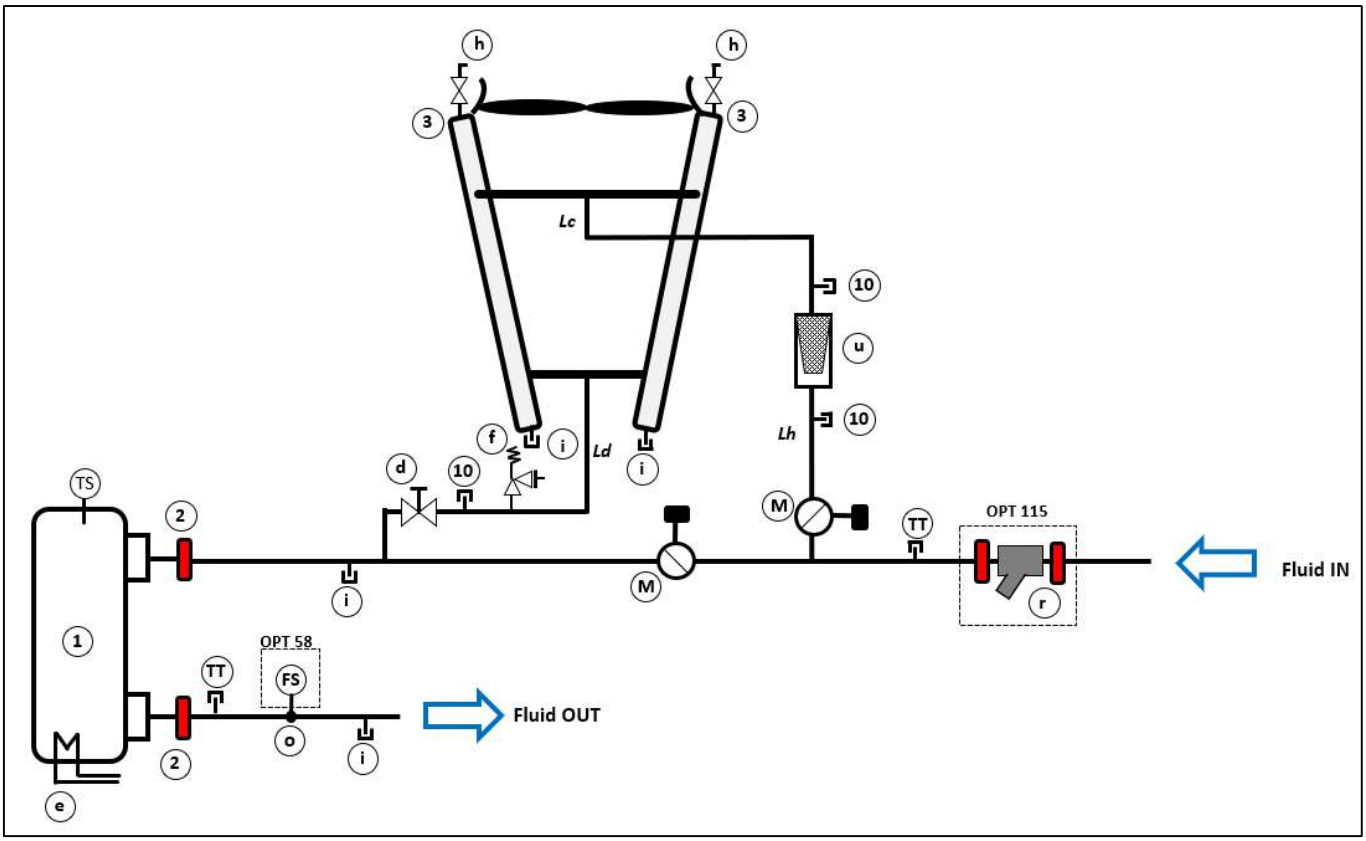
- Specific resistance – electric conductivity : > 30 Ohm.m is expected. For electric conductivity value in the order of 20 to 60 mS/m is expected.

Notes:
- Dissolved oxygen: Any sudden change in water oxygenation conditions is not expected.
- The addition of corrosion inhibitor is necessary for ensured coil protection, e.g., those based on monopropylene glycol or sodium molybdate.
- High coolant velocity may lead to corrosion of microchannel tubes. To avoid the issue, it is recommended not to exceed tube side coolant velocity higher than 1.5m/s.
- Filter with > 20 mesh is recommended to prevent the tubes from blocking.

It is important to point out that this coolant requirement is not a guarantee against corrosion but must be considered as a tool to avoid the most critical issue .

11. Hydronics

11.1 Hydraulic scheme Free Cooling – open loop



Legend	
1	**Brazed Plate heat Exchanger – Evaporator**
2	Victaulic connection
3	Free Cooling Heat Exchanger
10	Access 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
d	Valve
f	Safety valve – 10 bar 1/2" MF
h	Air vent 3/8" NPT
M	Two-way valve with actuator
u	Free cooling exchangers filter
TT	Temperature sensor
TS	Temperature switch
FS	Flow switch
Ld	Coil out - flexible
Lh	Free cooling inlet manifold

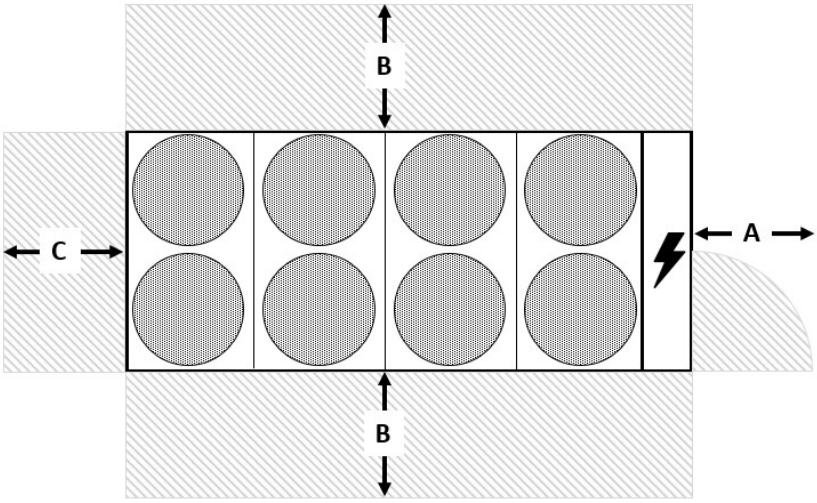
NOTE:
installation of filter and flow switch is mandatory.
Circuit must be protected from freezing.

12. 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

13. 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 free Cooling 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 exceed ……dB(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 quite 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 polyurethaneinsulation material. The water connections shall be VICTAULIC type connections as standard to ensure quickmechanical 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 and Free Cooling 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).

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 equipped with EC electrical motor. 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.

Free Cooling circuit

The free cooling circuit is integrated in the chiller footprint. Pipes are made of steel with integrated filter for free cooling circuit. Motorized valves managed by unit control send the fluid to the evaporator or to free cooling exchanger first based on the operating conditions.

Standard unit is with “open loop” configuration meaning that the fluid from the system is sent directly in the free cooling heat exchanger. Fluid must be a brine mixture to prevent freeze and burst when temperature is equal or lower than 4°C. As option the unit can be provided with “closed loop” configuration. In this configuration a closed loop is created between the free cooling heat exchanger and an additional brazed plate heat exchanger with a circulating pump. Fluid in the closed loop is with glycol. The fluid returning from the system is chilled by the glycol coming from the free cooling exchanger in the intermediate heat exchanger. The glycol is confined in the closed loop and the fluid in the system can be pure water or lower concentration of glycol.

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.

Master/Slave

The unit shell 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

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