EMICON

INNOVATION AND COMFORT

EUROVENT CERTIFIED PERFORMANCE

COMFORT

TECHNICAL CATALOGUE 2018

INDEX

AIR COOLED CHILLERS

INNOVATION & COMFORT

PROJECT AIR CONDITIONING
EVOLUTION GOES ON

During these years, the activity of Emicon has been developed with the production of liquid chillers for air conditioning and industrial applications, close control units, heat pumps, roof top and, thanks to its considerable production flexibility, special tailor-made units.

Presently, due to the great experience achieved in the market and the professionalism of its engineers, Emicon is a leader company between the international manufacturers, able to give adequate and effective answers to all requirements of civil and industrial air conditioning.

THE ENVIRONMENT
EFFICIENCY AND SUSTAINABILITY

The research of the environmental quality represents for Emicon AC a basic choice for all the technological applications realized each time. On this purpose, environmental compatibility means efficiency optimization, mainly facing two topical subjects: the sound level and the ozone problems.
It is the awareness of environmental issues who moved Emicon AC to persevere with research, development and certification, to add, to its catalogue, units that use new refrigerants with low environmental impact such as HFO 1234ze and R290 with very high efficiency and low GWP (= 6 and 3).

ENVIRONMENTAL POLICY
RESEARCH & QUALITY

In order to assure the end customer satisfaction, keeping a leadership position on the market and at the same time aiming to a continous improvement of the company internal working conditions and of its environmental performances, Emicon intends to promote in its organization the culture of Quality and Environment Protection and it is therefore extremely important the pollution preventing and the constant respect of the environmental regulations.

Emicon is perfectly aware that the market requests are the driving motor of the company activity and that an organization methodically managed in its processes represents a topical factor for the customer satisfaction. In order to achieve such results, Emicon believes it is important to develop and to improve its Quality and Environmental Service as the basic tool for supporting all the company processes. On this purpose, it is really important for Emicon, for its own success, to aim to the training, the involvement and the motivations of the whole staff working in a healthy environment and with the necessary facilities for a correct execution of their own working activities.




APPLICATIONS

EMICON LABS

CLIMATIC TESTING ROOM FOR CLOSE CONTROL UNITS, CHILLERS AND HEAT PUMPS

More and more often, engineering consultants and designers are asking for performance certifications as regards air conditioning units, not only under nominal operating conditions but also at different source temperatures and under various load conditions.
In many projects and technical specifications, builders must declare these data concerning the level of efficiency of their products in full safety conditions and with precision.
The projects focusing on energy saving concepts are based on these standard seasonal efficiency rates.
Hence the need to make sure that the contractual data for the product are as precise as possible, while testing the latter under climate conditions that reproduce the same ambient conditions of the installation site and especially using diversified load profiles with a view to certifying the machine performance levels at partial load conditions.
EMICON in order to achieve the goals outlined above serves the purpose of building, inside the factory, two performance testing climatic testing rooms under simulated environmental conditions.

"Galleon" laboratory

MAIN FEATURES

It is an environment that is kept airtight from the outside, within which – through auxiliary and heat recovery systems – a controlled microclimate is created in terms of air temperatures, where fluids are treated according to the specific characteristics of the product being tested.
The types of machines that may be tested are single units, either air- or water cooled, available in a cooling version only or as heat pump with reversed cooling cycle.
Power levels are managed independently by the new climatic testing room; they range from 5 to over 1000 kw cooling kW and can reach 1600 thermal kW.
The temperature range for process fluids is from -5°C to 80°C.
The temperature of the air flow entering the finned heat exchangers can be controlled up to a maximum of +52°C when, starting from -8°C as minimum inside temperature.

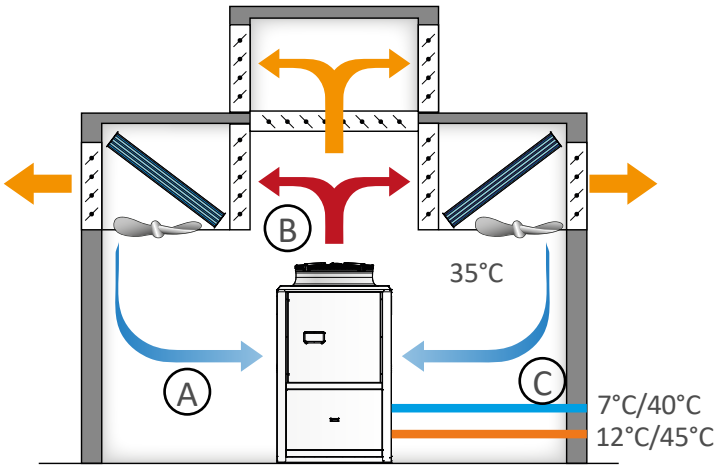
Galleon laboratory permits the performances measurement of water cooled chillers, heat pumps and 6-pipe units up to 1.500 kW and air cooled chillers up to 1.200 kW.

Yatch laboratory, allow the performances check of air and water cooled close control units up to a cooling capacity of 150 kW and an air flow rate of 30.000 m^3/h.

Currently, if the required power is greater, it is possible to perform the test by dividing the operating phases of the unit in equivalent cooling circuits.

"Yacht" laboratory

PRINCIPLE OF OPERATION

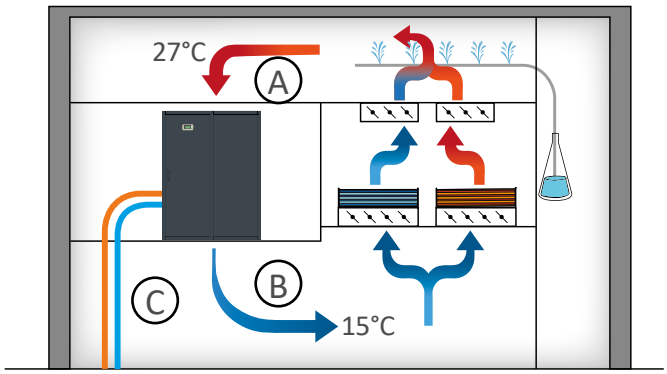


A Condensation return air
B Condensation supply air
C Connections

GALLEON

Galleon laboratory permits the performances measurement of water cooled chillers, heat pumps and 6-pipe units up to 1.500 kW and air cooled chillers up to 1.200 kW.

"Galleon" climatic chamber is provided with a double circuit with chilled and hot water for testing air and water cooled chillers and heat pumps, with desuperheater or total heat recovery, 4-pipe and split units.
Air temperature: min -8°C / max 52°C.
Fluid temperature: min -10°C / max 25°C.



12°C 7°C
35°C 30°C
48°C gas

A Return air
B Supply air
C Connections

YACHT

Yatch laboratory, allow the performances check of air and water cooled close control units up to a cooling capacity of 150 kW and an air flow rate of 30.000 m^3/h.

"Yacht" climatic chamber allows to test direct expansion, chilled water and dual coil close control units.
Air temperature: min 15°C / max 45°C.
Fluid temperature: min 5°C / max 25°C.

At the end of the test a certificate is issued with the performance of the unit at nominal conditions, seasonal and/or requested by the customer certifying the consumption and therefore the energy index.

Both laboratories are suitable for tests at 50 and 60 Hz.

EUROVENT certification can be obtain through our internal accredited laboratory.
Moreover, this new testing rooms will provide an additional service to our customers . Through this it will be possible to run the test in the presence of the end costumer directly in the EMICON factory or remotely thanks to some webcams.

ERAE Kc

AIR COOLED CHILLERS WITH SCROLL COMPRESSOR AND AXIAL FANS

COOLING CAPACITY FROM 150 to 771 kW

The images shown above are indicative and not binding.

AIR COOLED CHILLERS FOR OUTDOOR INSTALLATION WITH SCROLL COMPRESSOR, AXIAL FANS AND HEAT-EXCHANGE EXTERNAL COILS WITH MICRO-FINNED COPPER TUBES

Packaged air cooled chillers of ERAE...Kc series are suitable for outdoor installation and can be used to cool pure fluid solutions for air conditioning or in industrial applications.
Multiscroll technology allows to reach great efficiency improvements at part load, if compared to the other traditional systems for cooling capacity control.
The coupling of high-efficiency finned exchangers and the thermo physical purity of R410A refrigerant, particularly glide-free at state exchanges, allows this range to attain good nominal performances and to meet the requirements for seasonal efficiency foreseen by the (EU) Regulation 2016/2281.

These units have been designed considering limited space requirements and keeping, at the same time, high cooling performances. Such result has been attained with high-quality and up-to-date components.
All units are completely assembled and tested in the factory with specific quality procedures and are already equipped with all necessary hydraulic, refrigerant and electrical connections for a quick installation on site.
Before factory testing, cooling circuits are tested under pressure and then supplied with R410a refrigerant and a non-freezing oil charge.

Operation limits:

Standard units
Air: from -20 to 42°C; **Water** (outlet from the evaporator): from 5 to 15°C.

WA application units
Air: from +10 to 38°C; **Water** (outlet from the evaporator): from 7,1 to 18°C.

Structure
Structure made of a base and a chassis manufactured in high-thickness galvanised steel, assembled with stainless steel rivets.
All galvanised steel surfaces are powder-coated with colour RAL 7035.

Compressors
Scroll compressors with R410a refrigerant, operating on two independent circuits in tandem or trio version.
The compressors are installed on rubber isolation dampers, provided with direct-start motors cooled by suction gas and fitted with both overload protection and crankcase heaters.
They are charged with polyester oil and the terminal board is IP54.
The on-board microprocessor automatically controls the individual compressors to regulate the cooling capacity.

Evaporator
Stainless steel plate evaporator of dual circuit type, with high thickness close cell insulation and UV ray-proof.
The max operating pressure limits are 6 bar for water side and 45 bar for refrigerant side.
The evaporator is also equipped with safety water flow switch switching off the unit in case of low water flow through the evaporator.

Heat-exchange coils
Heat-exchange external coils with micro-finned copper tubes, positioned in staggered rows and mechanically expanded into an aluminium finned pack.
Fins are designed with such a shape providing the highest heat exchange efficiency.
The max operating pressure refrigerant side is 45 relative bar.

Fans
6-poles Axial Fans with electrical motor with external rotor directly coupled to the impeller and driven by a V/F inverter system which controls the condensation temperature.
Aluminum blades with wings profile are suitably designed to avoid any turbulence in the air detachment zone, granting in this way the max efficiency with the minimum noise level.
The fan is equipped with galvanized steel protection grid painted after the construction.
The fan motors are of totally closed type and have got a protection factor IP54 and protection winding-flooded thermostat.

Refrigerant circuit
Independent cooling circuits, each provided with a shut-off valve for refrigerant charge, antifreeze sensor, shut-off valves on liquid lines, sight glass, dehydrating filter, high-pressure safety device on high pressure refrigerant side and mechanical thermostatic expansion valve (electronic type from 40020 model to 59020) as well as high and low pressure switches and gauges.

Electric board
Electric board built in compliance with CE Norms, inside of which are placed the control system and the components for motors starting, wired and tested in the factory. It is made by a cabinet suitable for outdoor installation, containing power and control devices, microprocessor electronic board complete with keypad and display, for visualizing the several functions available, main switch of lock-door type, isolation transformer for auxiliary circuits, automatic switches, fuses and protection switches for compressors and fans, terminals for general alarm and remote ON/OFF, terminal board, relays for phase sequencing and possibility to interface to BMS systems.

Versions

ERAE...Kc – standard version

ERAE...U Kc – Ultra silenced version (U)
Reduced sound level in version U is realised by using condensers with larger surface areas as well as soundproofed compressor cabinets.

Applications

Warm applications version (WA)
Units CE certified in compliance with the European regulation 2016/2281 at working conditions, on the use side 23°C / 18°C.

Abroad market version (AM)
Units in compliance with the European regulation whose sales is reserved to countries out of the European Union.

Technical data - ERAE Kc serie

ERAE Kc		16020	19020	24020	28020	32020	35120
Performance data							
Cooling capacity (EN14511)	kW	153,3	194,1	240,9	277,6	312,1	355,5
Total input power (EN14511)	kW	54,2	71,2	89,4	103,2	114,2	131,3
EER	W/W	2,83	2,73	2,69	2,69	2,73	2,71
SEER (1)		3,83	3,80	3,81	3,96	3,87	4,00
ηs,c (1)		150,3	148,9	149,2	155,4	151,7	157,0
Refrigerant data R410A							
Global warming potential	GWP	2088	2088	2088	2088	2088	2088
Equivalent CO_2 charge	t	62,6	71,0	91,9	96,0	116,9	121,1
Refrigerant charge	Kg	30	34	44	46	56	58
Scroll Compressors							
Quantity/Circuits	n°/n°	4 / 2	4 / 2	4 / 2	4 / 2	4 / 2	4 / 2
Nominal consumption of the unit	A	91,8	109,6	138,6	157	174,6	198,5
Max. current consumption of the unit	A	140	165	195	229	264	299
Max. starting current of the unit	A	250	310	380	429	444	559
Axial fans							
Quantity	n°	2	3	3	4	4	5
Motors power input	kW	5,0	7,4	7,4	9,9	9,9	12,4
Total condensing air flow	m^3/h	50500	80100	75950	106800	101050	133500
Electrical current consumption	A	10,3	15,5	15,5	20,6	20,6	25,8
Evaporator plate heat exchanger							
Quantity	n°	1	1	1	1	1	1
Water flow	m^3/h	26,4	33,5	41,5	47,9	53,8	61,3
Pressure drop	kPa	31,0	48,0	58,0	56,0	71,0	58,5
Sound power level (2)	dB(A)	88,0	92,5	94,5	95,0	95,0	96,0
Power supply	V/Hz/Ph	400/50/3	400/50/3	400/50/3	400/50/3	400/50/3	400/50/3

ERAE Kc		40020	46020	51020	55020	59020
Performance data						
Cooling capacity (EN14511)	kW	399,5	465,4	501,4	551,8	588,1
Total input power (EN14511)	kW	144,2	171,3	187,5	198,4	215,6
EER	W/W	2,27	2,72	2,67	2,78	2,73
SEER (1)		3,87	4,16	4,12	4,15	4,12
ηs,c (1)		151,6	163,6	161,9	162,9	160,1
Refrigerant data R410A						
Global warming potential	GWP	2088	2088	2088	2088	2088
Equivalent CO_2 charge	t	154,5	187,9	187,9	221,3	225,5
Refrigerant charge	Kg	74	90	90	106	108
Scroll Compressors						
Quantity/Circuits	n°/n°	4 / 2	6 / 2	6 / 2	6 / 2	6 / 2
Nominal consumption of the unit	A	219,4	262	287,2	305	326,4
Max. current consumption of the unit	A	334	394	429	464	496
Max. starting current of the unit	A	579	539	649	669	691
Axial fans						
Quantity	n°	5	8	8	8	10
Motors power input	kW	12,4	15,5	15,5	15,5	19,4
Total condensing air flow	m^3/h	126350	169100	169100	162350	211450
Electrical current consumption	A	25,8	31,2	31,2	31,2	39,0
Evaporator plate heat exchanger						
Quantity	n°	1	1	1	1	1
Water flow	m^3/h	68,9	80,2	86,4	95,1	101,4
Pressure drop	kPa	53,5	47,5	55,0	62,0	73,0
Sound power level (2)	dB(A)	98,5	98,5	98,5	98,5	100,0
Power supply	V/Hz/Ph	400/50/3	400/50/3	400/50/3	400/50/3	400/50/3

Performances are referred to the following conditions: ambient air temperature 35°C - water 12/7°C

(1) In accordance with (EU) 2016/2281 and relative norms part of this.

(2) Sound power level in accordance with ISO 3744.

Technical data - ERAE WA Kc serie

ERAE WA Kc		16020	19020	24020	28020	32020	35120
Performance data							
Cooling capacity (EN14511)	kW	195,3	245,8	306,1	351,7	400,6	458,9
Total input power (EN14511)	kW	62,63	84,07	103,80	118,80	133,30	149,50
EER	W/W	3,12	2,92	2,95	2,96	3,01	3,07
SEER (1)		3,96	3,90	3,89	4,04	3,84	4,08
ηs,c (1)		155,3	152,9	152,6	158,5	150,7	160,3
Refrigerant data R410A							
Global warming potential	GWP	2088	2088	2088	2088	2088	2088
Equivalent CO_2 charge	t	54,3	62,6	75,2	96,0	96,0	125,3
Refrigerant charge	Kg	26	30	36	46	46	60
Scroll Compressors							
Quantity/Circuits	n°/n°	4 / 2	4 / 2	4 / 2	4 / 2	4 / 2	4 / 2
Nominal consumption of the unit	A	102,9	127,6	155,9	180,1	200,2	226
Max. current consumption of the unit	A	140	165	195	230	264	299
Max. starting current of the unit	A	260	325	395	445	464	574
Axial fans							
Quantity	n°	2	2	3	3	4	4
Motors power input	kW	5,0	5,0	7,4	7,4	9,9	9,9
Total condensing air flow	m^3/h	50500	50500	80100	80100	106800	106800
Electrical current consumption	A	10,3	10,3	15,5	15,5	20,6	20,6
Evaporator plate heat exchanger							
Quantity	n°	1	1	1	1	1	1
Water flow	m^3/h	33,8	42,7	53,1	61,1	69,3	79,7
Pressure drop	kPa	47,0	72,0	92,0	82,0	106,0	90,0
Sound power level (2)	dB(A)	88,0	91,5	94,5	95,0	95,0	96,0
Power supply	V/Hz/Ph	400/50/3	400/50/3	400/50/3	400/50/3	400/50/3	400/50/3

ERAE WA Kc		40020	46020	51020	55020	59020
Performance data						
Cooling capacity (EN14511)	kW	515,7	603,0	646,4	696,2	771,5
Total input power (EN14511)	kW	169,00	199,80	219,80	235,20	245,3
EER	W/W	3,05	3,02	2,94	2,96	3,14
SEER (1)		3,87	4,22	4,15	4,30	4,23
ηs,c (1)		151,7	165,6	162,9	168,9	166,4
Refrigerant data R410A						
Global warming potential	GWP	2088	2088	2088	2088	2088
Equivalent CO_2 charge	t	125,3	167,0	183,7	192,1	221,3
Refrigerant charge	Kg	60	80	88	92	106
Scroll Compressors						
Quantity/Circuits	n°/n°	4 / 2	6 / 2	6 / 2	6 / 2	6 / 2
Nominal consumption of the unit	A	253,6	305,1	335,7	355,8	371,1
Max. current consumption of the unit	A	334	394	429	464	499
Max. starting current of the unit	A	604	569	684	709	729
Axial fans						
Quantity	n°	5	5	5	8	8
Motors power input	kW	12,4	12,4	12,4	15,5	15,5
Total condensing air flow	m^3/h	133500	133500	133500	169100	169100
Electrical current consumption	A	25,8	25,8	25,8	31,2	31,2
Evaporator plate heat exchanger						
Quantity	n°	1	1	1	1	1
Water flow	m^3/h	89,5	104,8	112,4	120,8	133,9
Pressure drop	kPa	83,0	76,0	86,0	91,5	111,0
Sound power level (2)	dB(A)	98,5	98,5	98,5	98,5	100,0
Power supply	V/Hz/Ph	400/50/3	400/50/3	400/50/3	400/50/3	400/50/3

Performances are referred to the following conditions: ambient air temperature 35°C - water 23/18°C

(1) In accordance with (EU) 2016/2281 and relative norms part of this.

(2) Sound power level in accordance with ISO 3744.

Technical data - ERAE Kc serie

ERAE AM Kc		16020	19020	24020	28020	32020	35120
Performance data							
Cooling capacity (EN14511)	kW	147,7	184,9	234,0	266,4	303,5	348,0
Total input power (EN14511)	kW	56,5	73,7	93,2	105,5	118,3	132,1
EER	W/W	2,61	2,51	2,51	2,53	2,57	2,63
SEER (1)		3,34	3,40	3,55	3,51	3,38	3,58
ηs,c (1)		130,6	133,0	139,0	137,3	132,2	140,2
Refrigerant data R410A							
Global warming potential	GWP	2088	2088	2088	2088	2088	2088
Equivalent CO_2 charge	t	54,3	62,6	75,2	96,0	96,0	125,3
Refrigerant charge	Kg	26	30	36	46	46	60
Scroll Compressors							
Quantity/Circuits	n°/n°	4 / 2	4 / 2	4 / 2	4 / 2	4 / 2	4 / 2
Nominal consumption of the unit	A	95,1	116	143,4	163,3	180,5	203
Max. current consumption of the unit	A	140	165	195	230	264	299
Max. starting current of the unit	A	255	315	385	435	449	559
Axial fans							
Quantity	n°	2	2	3	3	4	4
Motors power input	kW	5,0	5,0	7,4	7,4	9,9	9,9
Total condensing air flow	m^3/h	50500	50500	80100	80100	106800	106800
Electrical current consumption	A	10,3	10,3	15,5	15,5	20,6	20,6
Evaporator plate heat exchanger							
Quantity	n°	1	1	1	1	1	1
Water flow	m^3/h	25,5	31,9	40,3	45,9	52,3	60,0
Pressure drop	kPa	29,0	44,0	53,5	52,0	67,5	56,5
Sound power level (2)	dB(A)	88,0	91,5	94,5	95,0	95,0	96,0
Power supply	V/Hz/Ph	400/50/3	400/50/3	400/50/3	400/50/3	400/50/3	400/50/3

ERAE AM Kc		40020	46020	51020	55020	59020
Performance data						
Cooling capacity (EN14511)	kW	390,0	455,3	488,7	529,7	582,9
Total input power (EN14511)	kW	149,3	176,1	192,9	207,9	216,1
EER	W/W	2,61	2,59	2,53	2,55	2,70
SEER (1)		3,43	3,60	3,58	3,73	3,80
ηs,c (1)		134,0	141,1	140,4	146,1	149,1
Refrigerant data R410A						
Global warming potential	GWP	2088	2088	2088	2088	2088
Equivalent CO_2 charge	t	125,3	167,0	183,7	192,1	221,3
Refrigerant charge	Kg	60	80	88	92	106
Scroll Compressors						
Quantity/Circuits	n°/n°	4 / 2	6 / 2	6 / 2	6 / 2	6 / 2
Nominal consumption of the unit	A	227	273,3	299,4	318,9	332,5
Max. current consumption of the unit	A	334	394	429	464	499
Max. starting current of the unit	A	584	544	654	679	694
Axial fans						
Quantity	n°	5	5	5	8	8
Motors power input	kW	12,4	12,4	12,4	15,5	15,5
Total condensing air flow	m^3/h	133500	133500	133500	169100	169100
Electrical current consumption	A	25,8	25,8	25,8	31,2	31,2
Evaporator plate heat exchanger						
Quantity	n°	1	1	1	1	1
Water flow	m^3/h	67,2	78,5	84,3	91,3	100,5
Pressure drop	kPa	51,0	45,5	52,5	57,5	72,5
Sound power level (2)	dB(A)	98,5	98,5	98,5	98,5	100,0
Power supply	V/Hz/Ph	400/50/3	400/50/3	400/50/3	400/50/3	400/50/3

Performances are referred to the following conditions: ambient air temperature 35°C - water 12/7°C

(1) In accordance with (EU) 2016/2281 and relative norms part of this.

(2) Sound power level in accordance with ISO 3744.

Technical data - ERAE WA Kc serie

ERAE U Kc		16020	19020	24020	28020	32020	35120
Performance data							
Cooling capacity (EN14511)	kW	155,6	194,3	241,2	276,6	310,6	353,8
Total input power (EN14511)	kW	53,0	69,1	88,5	100,8	114,1	128,4
EER	W/W	2,94	2,81	2,73	2,74	2,72	2,76
SEER (1)		3,96	3,84	3,86	3,97	3,82	4,01
ηs,c (1)		155,6	150,7	151,3	155,6	150,0	157,3
Refrigerant data R410A							
Global warming potential	GWP	2088	2088	2088	2088	2088	2088
Equivalent CO_2 charge	t	71,0	87,7	91,9	116,9	112,8	150,3
Refrigerant charge	Kg	34	42	44	56	54	72
Scroll Compressors							
Quantity/Circuits	n°/n°	4 / 2	4 / 2	4 / 2	4 / 2	4 / 2	4 / 2
Nominal consumption of the unit	A	90,5	110,3	138,8	158,4	177,3	200,4
Max. current consumption of the unit	A	136	161	198	228	266	301
Max. starting current of the unit	A	251	311	378	428	446	556
Axial fans							
Quantity	n°	3	3	4	4	5	5
Motors power input	kW	4,7	4,7	6,3	6,3	7,9	7,9
Total condensing air flow	m^3/h	62620	58560	83450	78030	104340	97570
Electrical current consumption	A	8,7	8,7	11,6	11,6	14,5	14,5
Evaporator plate heat exchanger							
Quantity	n°	1	1	1	1	1	1
Water flow	m^3/h	26,8	33,5	41,6	47,7	53,6	61,0
Pressure drop	kPa	32,0	48,0	58,5	55,2	68,5	56,0
Sound power level (2)	dB(A)	82,5	86,0	88,5	89,0	89,5	90,0
Power supply	V/Hz/Ph	400/50/3	400/50/3	400/50/3	400/50/3	400/50/3	400/50/3

ERAE U Kc		40020	46020	51020	55020	59020
Performance data						
Cooling capacity (EN14511)	kW	393,5	470,0	504,9	540,8	591,6
Total input power (EN14511)	kW	145,6	165,8	181,8	199,6	210,4
EER	W/W	2,70	2,83	2,78	2,71	2,81
SEER (1)		3,80	4,22	4,15	4,17	4,10
ηs,c (1)		148,8	165,8	162,8	163,6	160,8
Refrigerant data R410A						
Global warming potential	GWP	2088	2088	2088	2088	2088
Equivalent CO_2 charge	t	183,7	233,9	258,9	258,9	263,1
Refrigerant charge	Kg	88	112	124	124	126
Scroll Compressors						
Quantity/Circuits	n°/n°	4 / 2	6 / 2	6 / 2	6 / 2	6 / 2
Nominal consumption of the unit	A	228	261,6	286,7	310,9	328,3
Max. current consumption of the unit	A	331	397	427	463	498
Max. starting current of the unit	A	581	537	647	668	693
Axial fans						
Quantity	n°	5	8	8	10	10
Motors power input	kW	7,9	9,7	9,7	12,1	12,1
Total condensing air flow	m^3/h	91770	129030	122900	170090	161340
Electrical current consumption	A	14,5	17,8	17,8	22,3	22,3
Evaporator plate heat exchanger						
Quantity	n°	1	1	1	1	1
Water flow	m^3/h	67,8	81,0	87,1	93,2	102,0
Pressure drop	kPa	44,5	46,5	55,0	59,0	69,0
Sound power level (2)	dB(A)	92,5	92,5	92,5	92,5	94,0
Power supply	V/Hz/Ph	400/50/3+N+T	400/50/3+N+T	400/50/3+N+T	400/50/3+N+T	400/50/3+N+T

Performances are referred to the following conditions: ambient air temperature 35°C - water 12/7°C

(1) In accordance with (EU) 2016/2281 and relative norms part of this.

(2) Sound power level in accordance with ISO 3744.

Technical data - ERAE WA U Kc serie

ERAE WA U KC		16020	19020	24020	28020	32020	35120
Performance data							
Cooling capacity (EN14511)	kW	193,4	252,8	306,2	356,3	397,1	455,1
Total input power (EN14511)	kW	62,02	81,13	101,90	117,00	131,60	150,10
EER	W/W	3,12	3,12	3,00	3,05	3,02	3,03
SEER (1)		4,15	4,03	4,13	4,16	4,03	4,18
ηs,c (1)		136,0	158,3	162,0	163,5	158,3	164,1
Refrigerant data R410A							
Global warming potential	GWP	2088	2088	2088	2088	2088	2088
Equivalent CO_2 charge	t	75,2	71,0	91,9	96,0	116,9	121,1
Refrigerant charge	Kg	36	34	44	46	56	58
Scroll Compressors							
Quantity/Circuits	n°/n°	4 / 2	4 / 2	4 / 2	4 / 2	4 / 2	4 / 2
Nominal consumption of the unit	A	104,5	123,8	156,9	179,1	202,7	229,9
Max. current consumption of the unit	A	139	161	196	228	263	301
Max. starting current of the unit	A	259	326	396	443	463	576
Axial fans							
Quantity	n°	2	3	3	4	4	5
Motors power input	kW	3,14	4,71	4,71	6,28	6,28	7,85
Total condensing air flow	m^3/h	33790	62620	58560	83450	78030	104340
Electrical current consumption	A	5,8	8,7	8,7	11,6	11,6	14,5
Evaporator plate heat exchanger							
Quantity	n°	1	1	1	1	1	1
Water flow	m^3/h						
Pressure drop	kPa	46,0	76,0	89,0	85,0	104,0	89,0
Sound power level (2)	dB(A)	82,5	86,0	88,5	89,0	89,5	90,0
Power supply	V/Hz/Ph	400/50/3	400/50/3	400/50/3	400/50/3	400/50/3	400/50/3

ERAE WA U KC		40020	46020	51020	55020	59020
Performance data						
Cooling capacity (EN14511)	kW	512,4	598,8	661,3	709,0	754,0
Total input power (EN14511)	kW	166,60	196,00	208,2	226,60	246,30
EER	W/W	3,08	3,06	3,18	3,13	3,06
SEER (1)		4,11	4,58	4,67	4,62	4,29
ηs,c (1)		161,3	180,0	183,9	181,8	168,6
Refrigerant data R410A						
Global warming potential	GWP	2088	2088	2088	2088	2088
Equivalent CO_2 charge	t	154,5	187,9	233,9	263,1	263,1
Refrigerant charge	Kg	74	90	112	126	126
Scroll Compressors						
Quantity/Circuits	n°/n°	4 / 2	6 / 2	6 / 2	6 / 2	6 / 2
Nominal consumption of the unit	A	256,7	302,7	321,8	350,7	377,1
Max. current consumption of the unit	A	331	397	427	462	498
Max. starting current of the unit	A	606	572	687	712	728
Axial fans						
Quantity	n°	5	8	8	8	10
Motors power input	kW	7,85	9,68	9,68	9,68	12,1
Total condensing air flow	m^3/h	97570	136040	129030	122900	170090
Electrical current consumption	A	14,5	17,84	17,84	17,84	22,3
Evaporator plate heat exchanger						
Quantity	n°	1	1	1	1	1
Water flow	m^3/h					
Pressure drop	kPa	69,5	74,5	90,0	95,0	106,0
Sound power level (2)	dB(A)	92,5	92,5	92,5	92,5	94,0
Power supply	V/Hz/Ph	400/50/3	400/50/3	400/50/3	400/50/3	400/50/3

Performances are referred to the following conditions: ambient air temperature 35°C - water 23/18°C

(1) In accordance with (EU) 2016/2281 and relative norms part of this.

(2) Sound power level in accordance with ISO 3744.

EMICON INNOVATION AND COMFORT

Technical data - ERAE AM U Kc serie

ERAE AM U KC		16020	19020	24020	28020	32020	35120
Performance data							
Cooling capacity (EN14511)	kW	147,1	188,1	231,5	269,5	301,1	345,3
Total input power (EN14511)	kW	55,4	71,9	91,0	104,0	116,3	132,2
EER	W/W	2,65	2,62	2,54	2,59	2,59	2,61
SEER (1)		3,54	3,50	3,58	3,63	3,58	3,68
ηs,c (1)		138,6	137,1	140,1	142,0	140,2	144,1
Refrigerant data R410A							
Global warming potential	GWP	2088	2088	2088	2088	2088	2088
Equivalent CO_2 charge	t	75,2	71,0	91,9	96,0	116,9	121,1
Refrigerant charge	Kg	36	34	44	46	56	58
Scroll Compressors							
Quantity/Circuits	n°/n°	4 / 2	4 / 2	4 / 2	4 / 2	4 / 2	4 / 2
Nominal consumption of the unit	A	95,9	113,9	143,8	162,7	182,6	206
Max. current consumption of the unit	A	139	161	196	228	263	301
Max. starting current of the unit	A	254	316	386	433	448	561
Axial fans							
Quantity	n°	2	3	3	4	4	5
Motors power input	kW	3,14	4,71	4,71	6,28	6,28	7,85
Total condensing air flow	m^3/h	33790	62620	58560	83450	78030	104340
Electrical current consumption	A	5,8	8,7	8,7	11,6	11,6	14,5
Evaporator plate heat exchanger							
Quantity	n°	1	1	1	1	1	1
Water flow	m^3/h	25,4	32,4	39,9	46,5	51,9	59,5
Pressure drop	kPa	29,0	45,0	54,0	52,5	64,5	53,5
Sound power level (2)	dB(A)	82,5	86,0	88,5	89,0	89,5	90,0
Power supply	V/Hz/Ph	400/50/3	400/50/3	400/50/3	400/50/3	400/50/3	400/50/3

ERAE AM U KC		40020	46020	51020	55020	59020
Performance data						
Cooling capacity (EN14511)	kW	387,5	450,7	500,6	537,9	573,5
Total input power (EN14511)	kW	146,3	173,4	184,0	199,6	217,6
EER	W/W	2,65	2,60	2,72	2,69	2,64
SEER (1)		3,66	3,93	4,03	3,85	3,85
ηs,c (1)		143,6	154,3	158,3	151,0	151,2
Refrigerant data R410A						
Global warming potential	GWP	2088	2088	2088	2088	2088
Equivalent CO_2 charge	t	154,5	187,9	233,9	263,1	263,1
Refrigerant charge	Kg	74	90	112	126	126
Scroll Compressors						
Quantity/Circuits	n°/n°	4 / 2	6 / 2	6 / 2	6 / 2	6 / 2
Nominal consumption of the unit	A	229	272,5	289,8	314,5	338,8
Max. current consumption of the unit	A	331	397	427	462	498
Max. starting current of the unit	A	586	542	657	677	693
Axial fans						
Quantity	n°	5	8	8	8	10
Motors power input	kW	7,85	9,68	9,68	9,68	12,1
Total condensing air flow	m^3/h	97570	136040	129030	122900	170090
Electrical current consumption	A	14,5	17,84	17,84	17,84	22,3
Evaporator plate heat exchanger						
Quantity	n°	1	1	1	1	1
Water flow	m^3/h	66,8	77,7	86,3	92,7	98,9
Pressure drop	kPa	43,5	43,0	54,5	58,5	65,0
Sound power level (2)	dB(A)	92,5	92,5	92,5	92,5	94,0
Power supply	V/Hz/Ph	400/50/3	400/50/3	400/50/3	400/50/3	400/50/3

Performances are referred to the following conditions: ambient air temperature 35°C - water 12/7°C

(1) In accordance with (EU) 2016/2281 and relative norms part of this.

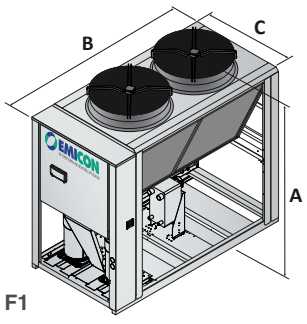
(2) Sound power level in accordance with ISO 3744.

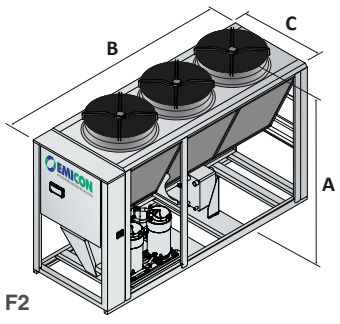
Accessories - ERAE Kc serie

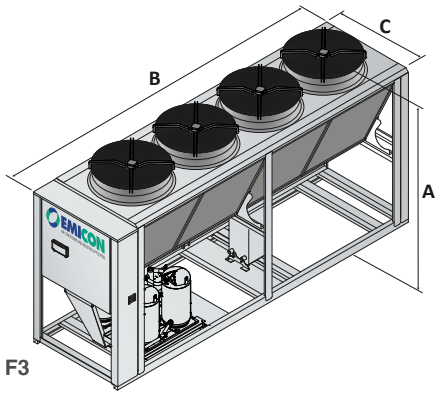
ERAE Kc		16020	19020	24020	28020	32020	35120
Amperometer	A	o	o	o	o	o	o
Operation in cooling mode down to -20°C (by frequency converter electronic device)	BF	●	●	●	●	●	●
Soundproofed compressors cabinet with standard material	CF	o	o	o	o	o	o
Overall compressor and technical compartment cabinet	CFT	o	o	o	o	o	o
Compressors inrush counter	CS	o	o	o	o	o	o
Axial fans with electronic commutated motor	EC	o	o	o	o	o	o
Condensing coil protection grid	GP	o	o	o	o	o	o
Anti-intrusion grid	GP2	o	o	o	o	o	o
Anti-intrusion grid with compressors cabinet	GP3	o	o	o	o	o	o
Victaulic insulation on pump side	I1	o	o	o	o	o	o
Victaulic insulation buffer tank side	I2	o	o	o	o	o	o
RS 485 Serial interface	IH	o	o	o	o	o	o
LON Protocol serial interface	IH (LON)	o	o	o	o	o	o
Seawood packing	IM	o	o	o	o	o	o
SNMP or TCP/IP Protocol serial interface	IWG	o	o	o	o	o	o
Phase monitor	MF	o	o	o	o	o	o
Buffer tank module	MV	o	o	o	o	o	o
Pump group	P1	o	o	o	o	o	o
Higher available pressure pump group	P1H	o	o	o	o	o	o
Double pump group (only one working)	P2	o	o	o	o	o	o
Higher available pressure double pump group (only one working)	P2H	o	o	o	o	o	o
Rubber-type vibration dampers	PA	o	o	o	o	o	o
Spring-type vibration dampers	PM	o	o	o	o	o	o
Remote display	PQ	o	o	o	o	o	o
In-line twin pump group (only one working)	PT	o	o	o	o	o	o
Anti-freeze heater on evaporator	RA	o	o	o	o	o	o
Shut-off valve on compressors discharge side	RD	o	o	o	o	o	o
Shut-off valve on compressors suction side	RH	o	o	o	o	o	o
Electronic thermostatic valve	TE	o	o	o	o	o	o
Voltmeter	V	o	o	o	o	o	o
Brine Version	VB	o	o	o	o	o	o
Solenoid valve	VS	o	o	o	o	o	o
Compressor overload relays	RL	o	o	o	o	o	o
Partial heat recovery	RP	o	o	o	o	o	o
Total heat recovery	RT	o	o	o	o	o	o
Copper/Copper coil	RR	o	o	o	o	o	o
Condensing coil with pre-painted fins	RM	o	o	o	o	o	o
Personalized frame painting in alternative RAL colour	RV	o	o	o	o	o	o

● Standard o Optional - Not available

Dimensions - ERAE Kc serie







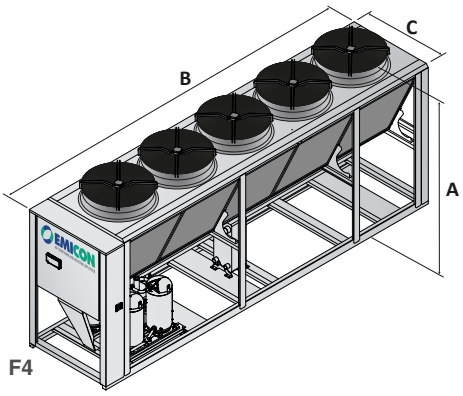
Mod.		A (mm)	B (mm)	C (mm)	Kg
16020	F1	2420	2660	1370	1166
19020	F2	2420	3700	1370	1620
24020	F2	2420	3700	1370	1776
28020	F3	2420	4740	1370	1954
32020	F3	2420	4740	1370	2066
35120	F4	2420	5780	1370	2248

Accessories - ERAE Kc serie

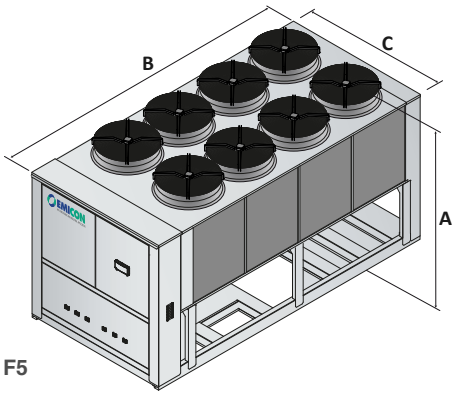
ERAE Kc		40020	46020	51020	55020	59020
Amperometer	A	o	o	o	o	o
Operation in cooling mode down to -20°C (by frequency converter electronic device)	BF	●	●	●	●	●
Soundproofed compressors cabinet with standard material	CF	o	o	o	o	o
Overall compressor and technical compartment cabinet	CFT	o	-	-	-	-
Compressors inrush counter	CS	o	o	o	o	o
Axial fans with electronic commutated motor	EC	o	o	o	o	o
Condensing coil protection grid	GP	o	o	o	o	o
Anti-intrusion grid	GP2	o	o	o	o	o
Anti-intrusion grid with compressors cabinet	GP3	o	o	o	o	o
Victaulic insulation on pump side	I1	o	o	o	o	o
Victaulic insulation buffer tank side	I2	o	o	o	o	o
RS 485 Serial interface	IH	o	o	o	o	o
LON Protocol serial interface	IH (LON)	o	o	o	o	o
Seawood packing	IM	o	o	o	o	o
SNMP or TCP/IP Protocol serial interface	IWG	o	o	o	o	o
Phase monitor	MF	o	o	o	o	o
Buffer tank module	MV	o	o	o	o	o
Pump group	P1	o	o	o	o	o
Higher available pressure pump group	P1H	o	o	o	o	o
Double pump group (only one working)	P2	o	o	o	o	o
Higher available pressure double pump group (only one working)	P2H	o	o	o	o	o
Rubber-type vibration dampers	PA	o	o	o	o	o
Spring-type vibration dampers	PM	o	o	o	o	o
Remote display	PQ	o	o	o	o	o
In-line twin pump group (only one working)	PT	o	o	o	o	o
Anti-freeze heater on evaporator	RA	o	o	o	o	o
Shut-off valve on compressors discharge side	RD	o	o	o	o	o
Shut-off valve on compressors suction side	RH	o	o	o	o	o
Electronic thermostatic valve	TE	●	●	●	●	●
Voltmeter	V	o	o	o	o	o
Brine Version	VB	o	o	o	o	o
Solenoid valve	VS	o	o	o	o	o
Compressor overload relays	RL	o	o	o	o	o
Partial heat recovery	RP	o	o	o	o	o
Total heat recovery	RT	o	o	o	o	o
Copper/Copper coil	RR	o	o	o	o	o
Condensing coil with pre-painted fins	RM	o	o	o	o	o
Personalized frame painting in alternative RAL colour	RV	o	o	o	o	o

● Standard o Optional - Not available

Dimensions - ERAE Kc serie



F4



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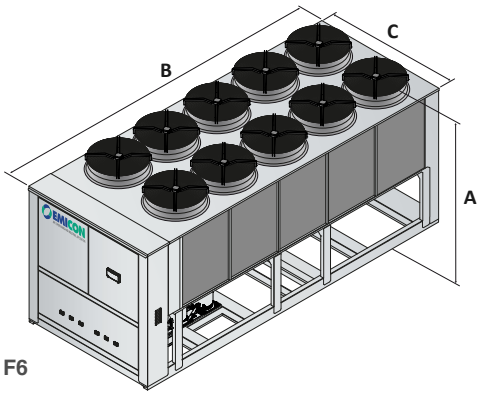


F6

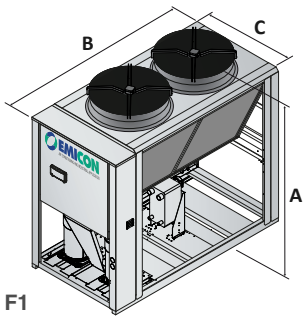
Mod.		A (mm)	B (mm)	C (mm)	Kg
40020	F4	2420	5780	1370	2410
46020	F5	2560	4750	2300	3278
51020	F5	2560	4750	2300	3368
55020	F5	2560	4750	2300	3592
59020	F6	2560	5700	2300	4038

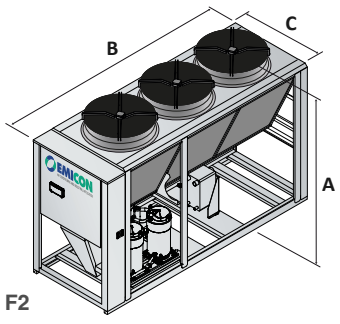
Accessories - ERAE WA Kc serie

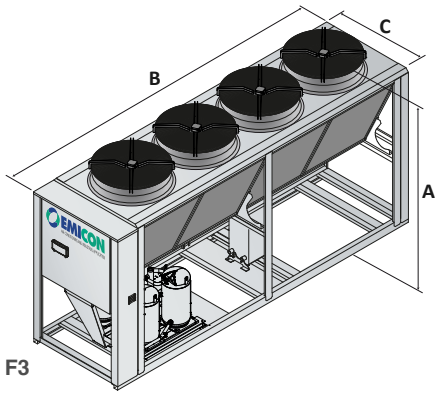
ERAE WA Kc		16020	19020	24020	28020	32020	35120
Amperometer	A	o	o	o	o	o	o
Operation in cooling mode down to -20°C (by frequency converter electronic device)	BF	o	o	o	o	o	o
Soundproofed compressors cabinet with standard material	CF	o	o	o	o	o	o
Overall compressor and technical compartment cabinet	CFT	o	o	o	o	o	o
Compressors inrush counter	CS	o	o	o	o	o	o
Axial fans with electronic commutated motor	EC	o	o	o	o	o	o
Condensing coil protection grid	GP	o	o	o	o	o	o
Anti-intrusion grid	GP2	o	o	o	o	o	o
Anti-intrusion grid with compressors cabinet	GP3	o	o	o	o	o	o
Victaulic insulation on pump side	I1	o	o	o	o	o	o
Victaulic insulation buffer tank side	I2	o	o	o	o	o	o
RS 485 Serial interface	IH	o	o	o	o	o	o
LON Protocol serial interface	IH (LON)	o	o	o	o	o	o
Seawood packing	IM	o	o	o	o	o	o
SNMP or TCP/IP Protocol serial interface	IWG	o	o	o	o	o	o
Phase monitor	MF	o	o	o	o	o	o
Buffer tank module	MV	o	o	o	o	o	o
Pump group	P1	o	o	o	o	o	o
Higher available pressure pump group	P1H	o	o	o	o	o	o
Double pump group (only one working)	P2	o	o	o	o	o	o
Higher available pressure double pump group (only one working)	P2H	o	o	o	o	o	o
Rubber-type vibration dampers	PA	o	o	o	o	o	o
Spring-type vibration dampers	PM	o	o	o	o	o	o
Remote display	PQ	o	o	o	o	o	o
In-line twin pump group (only one working)	PT	o	o	o	o	o	o
Anti-freeze heater on evaporator	RA	o	o	o	o	o	o
Shut-off valve on compressors discharge side	RD	o	o	o	o	o	o
Shut-off valve on compressors suction side	RH	o	o	o	o	o	o
Electronic thermostatic valve	TE	o	o	o	o	o	o
Voltmeter	V	o	o	o	o	o	o
Brine Version	VB	o	o	o	o	o	o
Solenoid valve	VS	o	o	o	o	o	o
Compressor overload relays	RL	o	o	o	o	o	o
Partial heat recovery	RP	o	o	o	o	o	o
Total heat recovery	RT	o	o	o	o	o	o
Copper/Copper coil	RR	o	o	o	o	o	o
Condensing coil with pre-painted fins	RM	o	o	o	o	o	o
Personalized frame painting in alternative RAL colour	RV	o	o	o	o	o	o

● Standard o Optional - Not available

Dimensions - ERAE WA Kc serie







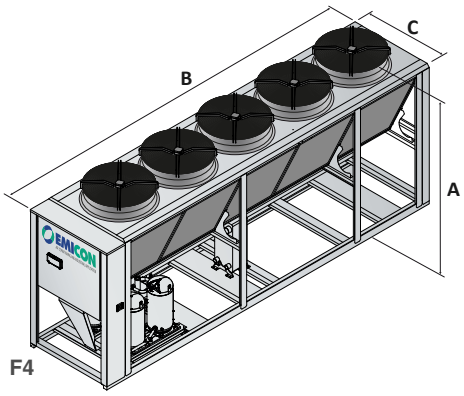
Mod.		A (mm)	B (mm)	C (mm)	Kg
16020	F1	2420	2660	1370	1110
19020	F1	2420	2660	1370	1516
24020	F2	2420	3700	1370	1690
28020	F2	2420	3700	1370	1870
32020	F3	2420	4740	1370	1954
35120	F3	2420	4740	1370	2200

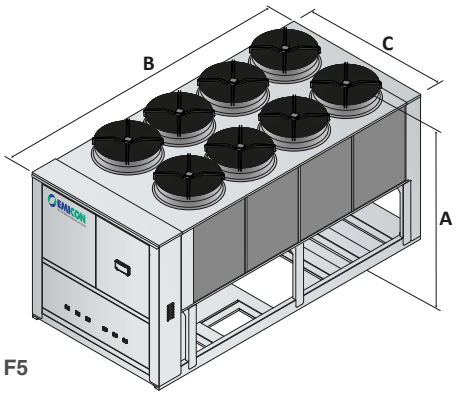
Accessories - ERAE WA Kc serie

ERAE WA Kc		40020	46020	51020	55020	59020
Amperometer	A	o	o	o	o	o
Operation in cooling mode down to -20°C (by frequency converter electronic device)	BF	o	o	o	o	o
Soundproofed compressors cabinet with standard material	CF	o	o	o	o	o
Overall compressor and technical compartment cabinet	CFT	o	o	o	-	-
Compressors inrush counter	CS	o	o	o	o	o
Axial fans with electronic commutated motor	EC	o	o	o	o	o
Condensing coil protection grid	GP	o	o	o	o	o
Anti-intrusion grid	GP2	o	o	o	o	o
Anti-intrusion grid with compressors cabinet	GP3	o	o	o	o	o
Victaulic insulation on pump side	I1	o	o	o	o	o
Victaulic insulation buffer tank side	I2	o	o	o	o	o
RS 485 Serial interface	IH	o	o	o	o	o
LON Protocol serial interface	IH (LON)	o	o	o	o	o
Seawood packing	IM	o	o	o	o	o
SNMP or TCP/IP Protocol serial interface	IWG	o	o	o	o	o
Phase monitor	MF	o	o	o	o	o
Buffer tank module	MV	o	o	o	o	o
Pump group	P1	o	o	o	o	o
Higher available pressure pump group	P1H	o	o	o	o	o
Double pump group (only one working)	P2	o	o	o	o	o
Higher available pressure double pump group (only one working)	P2H	o	o	o	o	o
Rubber-type vibration dampers	PA	o	o	o	o	o
Spring-type vibration dampers	PM	o	o	o	o	o
Remote display	PQ	o	o	o	o	o
In-line twin pump group (only one working)	PT	o	o	o	o	o
Anti-freeze heater on evaporator	RA	o	o	o	o	o
Shut-off valve on compressors discharge side	RD	o	o	o	o	o
Shut-off valve on compressors suction side	RH	o	o	o	o	o
Electronic thermostatic valve	TE	o	o	o	o	o
Voltmeter	V	o	o	o	o	o
Brine Version	VB	o	o	o	o	o
Solenoid valve	VS	o	o	o	o	o
Compressor overload relays	RL	o	o	o	o	o
Partial heat recovery	RP	o	o	o	o	o
Total heat recovery	RT	o	o	o	o	o
Copper/Copper coil	RR	o	o	o	o	o
Condensing coil with pre-painted fins	RM	o	o	o	o	o
Personalized frame painting in alternative RAL colour	RV	o	o	o	o	o

● Standard o Optional - Not available

Dimensions - ERAE WA Kc serie





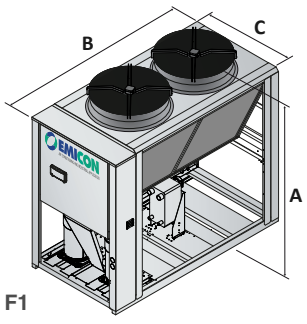
Mod.		A (mm)	B (mm)	C (mm)	Kg
40020	F4	2420	5780	1370	2270
46020	F4	2420	5780	1370	2752
51020	F4	2420	5780	1370	2982
55020	F5	2560	4750	2300	3380
59020	F5	2560	4750	2300	3592

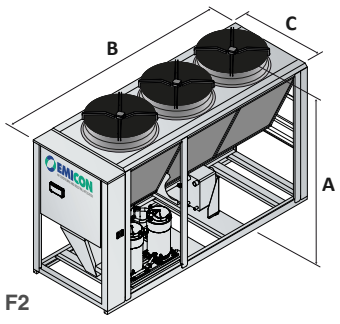
Accessories - ERAE AM Kc serie

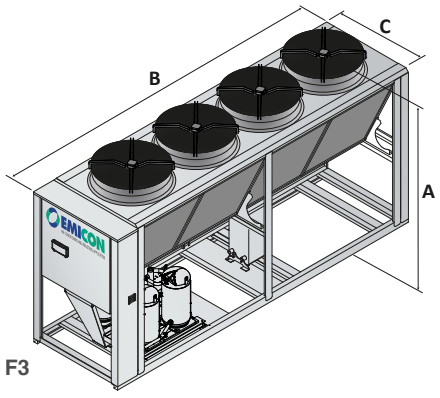
ERAE AM Kc		16020	19020	24020	28020	32020	35120
Amperometer	A	o	o	o	o	o	o
Operation in cooling mode down to -20°C (by frequency converter electronic device)	BF	o	o	o	o	o	o
Soundproofed compressors cabinet with standard material	CF	o	o	o	o	o	o
Overall compressor and technical compartment cabinet	CFT	o	o	o	o	o	o
Compressors inrush counter	CS	o	o	o	o	o	o
Axial fans with electronic commutated motor	EC	o	o	o	o	o	o
Condensing coil protection grid	GP	o	o	o	o	o	o
Anti-intrusion grid	GP2	o	o	o	o	o	o
Anti-intrusion grid with compressors cabinet	GP3	o	o	o	o	o	o
Victaulic insulation on pump side	I1	o	o	o	o	o	o
Victaulic insulation buffer tank side	I2	o	o	o	o	o	o
RS 485 Serial interface	IH	o	o	o	o	o	o
LON Protocol serial interface	IH (LON)	o	o	o	o	o	o
Seawood packing	IM	o	o	o	o	o	o
SNMP or TCP/IP Protocol serial interface	IWG	o	o	o	o	o	o
Phase monitor	MF	o	o	o	o	o	o
Buffer tank module	MV	o	o	o	o	o	o
Pump group	P1	o	o	o	o	o	o
Higher available pressure pump group	P1H	o	o	o	o	o	o
Double pump group (only one working)	P2	o	o	o	o	o	o
Higher available pressure double pump group (only one working)	P2H	o	o	o	o	o	o
Rubber-type vibration dampers	PA	o	o	o	o	o	o
Spring-type vibration dampers	PM	o	o	o	o	o	o
Remote display	PQ	o	o	o	o	o	o
In-line twin pump group (only one working)	PT	o	o	o	o	o	o
Anti-freeze heater on evaporator	RA	o	o	o	o	o	o
Shut-off valve on compressors discharge side	RD	o	o	o	o	o	o
Shut-off valve on compressors suction side	RH	o	o	o	o	o	o
Electronic thermostatic valve	TE	o	o	o	o	o	o
Voltmeter	V	o	o	o	o	o	o
Brine Version	VB	o	o	o	o	o	o
Solenoid valve	VS	o	o	o	o	o	o
Compressor overload relays	RL	o	o	o	o	o	o
Partial heat recovery	RP	o	o	o	o	o	o
Total heat recovery	RT	o	o	o	o	o	o
Copper/Copper coil	RR	o	o	o	o	o	o
Condensing coil with pre-painted fins	RM	o	o	o	o	o	o
Personalized frame painting in alternative RAL colour	RV	o	o	o	o	o	o

● Standard o Optional - Not available

Dimensions - ERAE AM Kc serie







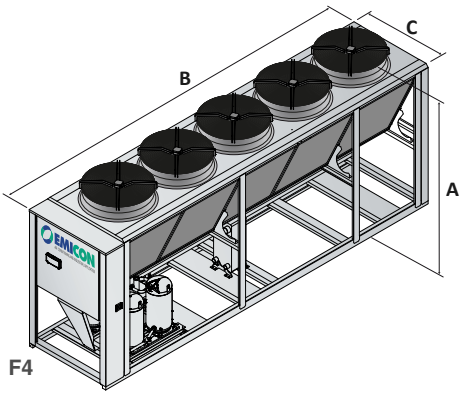
Mod.		A (mm)	B (mm)	C (mm)	Kg
16020	F1	2420	2660	1370	1110
19020	F1	2420	2660	1370	1516
24020	F2	2420	3700	1370	1690
28020	F2	2420	3700	1370	1870
32020	F3	2420	4740	1370	1954
35120	F3	2420	4740	1370	2200

Accessories - ERAE AM Kc serie

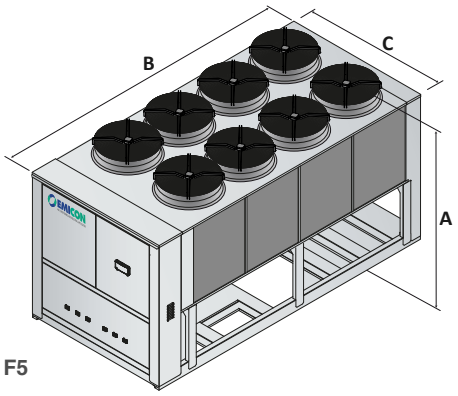
ERAE AM Kc		40020	46020	51020	55020	59020
Amperometer	A	o	o	o	o	o
Operation in cooling mode down to -20°C (by frequency converter electronic device)	BF	o	o	o	o	o
Soundproofed compressors cabinet with standard material	CF	o	o	o	o	o
Overall compressor and technical compartment cabinet	CFT	o	o	o	-	-
Compressors inrush counter	CS	o	o	o	o	o
Axial fans with electronic commutated motor	EC	o	o	o	o	o
Condensing coil protection grid	GP	o	o	o	o	o
Anti-intrusion grid	GP2	o	o	o	o	o
Anti-intrusion grid with compressors cabinet	GP3	o	o	o	o	o
Victaulic insulation on pump side	I1	o	o	o	o	o
Victaulic insulation buffer tank side	I2	o	o	o	o	o
RS 485 Serial interface	IH	o	o	o	o	o
LON Protocol serial interface	IH (LON)	o	o	o	o	o
Seawood packing	IM	o	o	o	o	o
SNMP or TCP/IP Protocol serial interface	IWG	o	o	o	o	o
Phase monitor	MF	o	o	o	o	o
Buffer tank module	MV	o	o	o	o	o
Pump group	P1	o	o	o	o	o
Higher available pressure pump group	P1H	o	o	o	o	o
Double pump group (only one working)	P2	o	o	o	o	o
Higher available pressure double pump group (only one working)	P2H	o	o	o	o	o
Rubber-type vibration dampers	PA	o	o	o	o	o
Spring-type vibration dampers	PM	o	o	o	o	o
Remote display	PQ	o	o	o	o	o
In-line twin pump group (only one working)	PT	o	o	o	o	o
Anti-freeze heater on evaporator	RA	o	o	o	o	o
Shut-off valve on compressors discharge side	RD	o	o	o	o	o
Shut-off valve on compressors suction side	RH	o	o	o	o	o
Electronic thermostatic valve	TE	o	o	o	o	o
Voltmeter	V	o	o	o	o	o
Brine Version	VB	o	o	o	o	o
Solenoid valve	VS	o	o	o	o	o
Compressor overload relays	RL	o	o	o	o	o
Partial heat recovery	RP	o	o	o	o	o
Total heat recovery	RT	o	o	o	o	o
Copper/Copper coil	RR	o	o	o	o	o
Condensing coil with pre-painted fins	RM	o	o	o	o	o
Personalized frame painting in alternative RAL colour	RV	o	o	o	o	o

● Standard o Optional - Not available

Dimensions - ERAE AM Kc serie



F4



F5

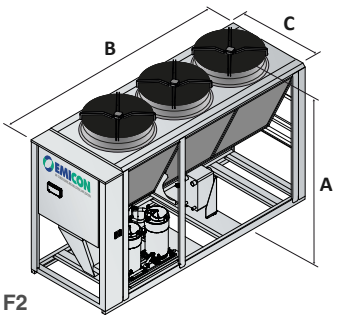
Mod.		A (mm)	B (mm)	C (mm)	Kg
40020	F4	2420	5780	1370	2270
46020	F4	2420	5780	1370	2752
51020	F4	2420	5780	1370	2982
55020	F5	2560	4750	2300	3380
59020	F5	2560	4750	2300	3592

Accessories - ERAE U Kc serie

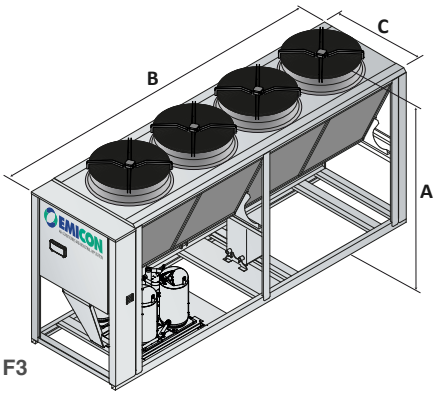
ERAE U Kc		16020	19020	24020	28020	32020	35120
Amperometer	A	o	o	o	o	o	o
Operation in cooling mode down to -20°C (by frequency converter electronic device)	BF	●	●	●	●	●	●
Soundproofed compressors cabinet with standard material	CF	●	●	●	●	●	●
Overall compressor and technical compartment cabinet	CFT	o	o	o	o	o	o
Compressors inrush counter	CS	o	o	o	o	o	o
Axial fans with electronic commutated motor	EC	o	o	o	o	o	o
Condensing coil protection grid	GP	o	o	o	o	o	o
Anti-intrusion grid	GP2	o	o	o	o	o	o
Anti-intrusion grid with compressors cabinet	GP3	o	o	o	o	o	o
Victaulic insulation on pump side	I1	o	o	o	o	o	o
Victaulic insulation buffer tank side	I2	o	o	o	o	o	o
RS 485 Serial interface	IH	o	o	o	o	o	o
LON Protocol serial interface	IH (LON)	o	o	o	o	o	o
Seawood packing	IM	o	o	o	o	o	o
SNMP or TCP/IP Protocol serial interface	IWG	o	o	o	o	o	o
Phase monitor	MF	o	o	o	o	o	o
Buffer tank module	MV	o	o	o	o	o	o
Pump group	P1	o	o	o	o	o	o
Higher available pressure pump group	P1H	o	o	o	o	o	o
Double pump group (only one working)	P2	o	o	o	o	o	o
Higher available pressure double pump group (only one working)	P2H	o	o	o	o	o	o
Rubber-type vibration dampers	PA	o	o	o	o	o	o
Spring-type vibration dampers	PM	o	o	o	o	o	o
Remote display	PQ	o	o	o	o	o	o
In-line twin pump group (only one working)	PT	o	o	o	o	o	o
Anti-freeze heater on evaporator	RA	o	o	o	o	o	o
Shut-off valve on compressors discharge side	RD	o	o	o	o	o	o
Shut-off valve on compressors suction side	RH	o	o	o	o	o	o
Electronic thermostatic valve	TE	o	o	o	o	o	o
Voltmeter	V	o	o	o	o	o	o
Brine Version	VB	o	o	o	o	o	o
Solenoid valve	VS	o	o	o	o	o	o
Compressor overload relays	RL	o	o	o	o	o	o
Power factor correction system cosfi ≥ 0,9	RF	o	o	o	o	o	o
Total heat recovery	RT	o	o	o	o	o	o
Copper/Copper coil	RR	o	o	o	o	o	o
Condensing coil with pre-painted fins	RM	o	o	o	o	o	o
Personalized frame painting in alternative RAL colour	RV	o	o	o	o	o	o

● Standard o Optional - Not available

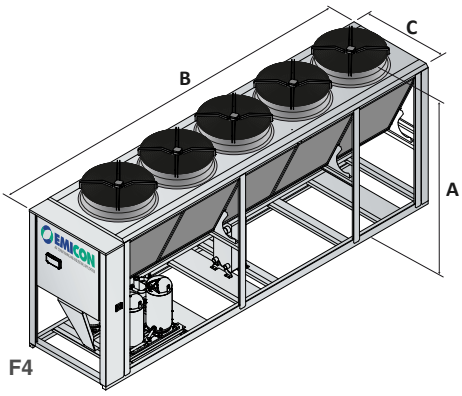
Dimensions - ERAE U Kc serie



F2



F3



F4

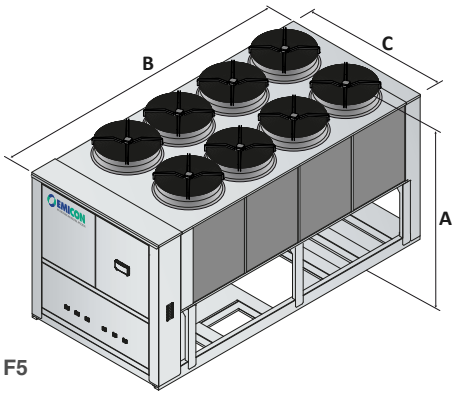
Mod.		A (mm)	B (mm)	C (mm)	Kg
16020	F2	2420	3700	1370	1400
19020	F2	2420	3700	1370	1834
24020	F3	2420	4740	1370	1990
28020	F3	2420	4740	1370	2196
32020	F4	2420	5780	1370	2244
35120	F4	2420	5780	1370	2518

Accessories - ERAE U Kc serie

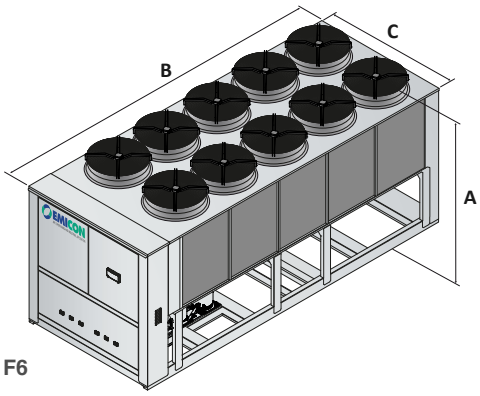
ERAE U Kc		40020	46020	51020	55020	59020
Amperometer	A	o	o	o	o	o
Operation in cooling mode down to -20°C (by frequency converter electronic device)	BF	●	●	●	●	●
Soundproofed compressors cabinet with standard material	CF	●	●	●	●	●
Overall compressor and technical compartment cabinet	CFT	o	-	-	-	-
Compressors inrush counter	CS	o	o	o	o	o
Axial fans with electronic commutated motor	EC	o	o	o	o	o
Condensing coil protection grid	GP	o	o	o	o	o
Anti-intrusion grid	GP2	o	o	o	o	o
Anti-intrusion grid with compressors cabinet	GP3	o	o	o	o	o
Victaulic insulation on pump side	I1	o	o	o	o	o
Victaulic insulation buffer tank side	I2	o	o	o	o	o
RS 485 Serial interface	IH	o	o	o	o	o
LON Protocol serial interface	IH (LON)	o	o	o	o	o
Seawood packing	IM	o	o	o	o	o
SNMP or TCP/IP Protocol serial interface	IWG	o	o	o	o	o
Phase monitor	MF	o	o	o	o	o
Buffer tank module	MV	o	o	o	o	o
Pump group	P1	o	o	o	o	o
Higher available pressure pump group	P1H	o	o	o	o	o
Double pump group (only one working)	P2	o	o	o	o	o
Higher available pressure double pump group (only one working)	P2H	o	o	o	o	o
Rubber-type vibration dampers	PA	o	o	o	o	o
Spring-type vibration dampers	PM	o	o	o	o	o
Remote display	PQ	o	o	o	o	o
In-line twin pump group (only one working)	PT	o	o	o	o	o
Anti-freeze heater on evaporator	RA	o	o	o	o	o
Shut-off valve on compressors discharge side	RD	o	o	o	o	o
Shut-off valve on compressors suction side	RH	o	o	o	o	o
Electronic thermostatic valve	TE	●	●	●	●	●
Voltmeter	V	o	o	o	o	o
Brine Version	VB	o	o	o	o	o
Solenoid valve	VS	o	o	o	o	o
Compressor overload relays	RL	o	o	o	o	o
Power factor correction system cosfi ≥ 0,9	RF	o	o	o	o	o
Total heat recovery	RT	o	o	o	o	o
Copper/Copper coil	RR	o	o	o	o	o
Condensing coil with pre-painted fins	RM	o	o	o	o	o
Personalized frame painting in alternative RAL colour	RV	o	o	o	o	o

● Standard o Optional - Not available

Dimensions - ERAE U Kc serie



F5



F6

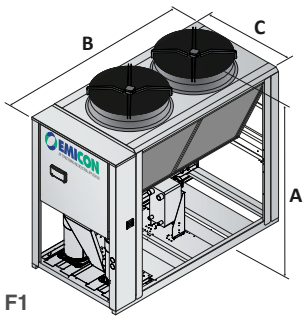
Mod.		A (mm)	B (mm)	C (mm)	Kg
40020	F4	2420	5780	1370	2686
46020	F5	2560	4750	2300	3678
51020	F5	2560	4750	2300	3996
55020	F6	2560	5720	2300	4210
59020	F6	2560	5720	2300	4482

Accessories - ERAE WA U Kc serie

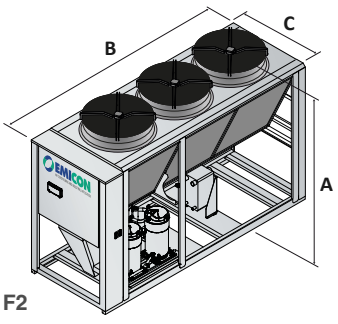
ERAE WA U KC		16020	19020	24020	28020	32020	35120
Amperometer	A	o	o	o	o	o	o
Operation in cooling mode down to -20°C (by frequency converter electronic device)	BF	o	o	o	o	o	o
Operation in cooling mode down to – 20°C (by modulating voltage control)	BT	o	o	o	o	o	o
Soundproofed compressors cabinet with standard material	CF	●	●	●	●	●	●
Overall compressor and technical compartment cabinet	CFT	o	o	o	o	o	o
Compressors inrush counter	CS	o	o	o	o	o	o
Axial fans with electronic commutated motor	EC	o	o	o	o	o	o
Condensing coil protection grid	GP	o	o	o	o	o	o
Anti-intrusion grid	GP2	o	o	o	o	o	o
Anti-intrusion grid with compressors cabinet	GP3	o	o	o	o	o	o
Victaulic insulation on pump side	I1	o	o	o	o	o	o
Victaulic insulation buffer tank side	I2	o	o	o	o	o	o
RS 485 Serial interface	IH	o	o	o	o	o	o
LON Protocol serial interface	IH (LON)	o	o	o	o	o	o
Seawood packing	IM	o	o	o	o	o	o
SNMP or TCP/IP Protocol serial interface	IWG	o	o	o	o	o	o
Phase monitor	MF	o	o	o	o	o	o
Buffer tank module	MV	o	o	o	o	o	o
Pump group	P1	o	o	o	o	o	o
Higher available pressure pump group	P1H	o	o	o	o	o	o
Double pump group (only one working)	P2	o	o	o	o	o	o
Higher available pressure double pump group (only one working)	P2H	o	o	o	o	o	o
Rubber-type vibration dampers	PA	o	o	o	o	o	o
Spring-type vibration dampers	PM	o	o	o	o	o	o
Remote display	PQ	o	o	o	o	o	o
In-line twin pump group (only one working)	PT	o	o	o	o	o	o
Anti-freeze heater on evaporator	RA	o	o	o	o	o	o
Shut-off valve on compressors discharge side	RD	o	o	o	o	o	o
Shut-off valve on compressors suction side	RH	o	o	o	o	o	o
Electronic thermostatic valve	TE	o	o	o	o	o	o
Voltmeter	V	o	o	o	o	o	o
Brine Version	VB	o	o	o	o	o	o
Solenoid valve	VS	o	o	o	o	o	o
Compressor overload relays	RL	o	o	o	o	o	o
Power factor correction system cosfi ≥ 0,9	RF	o	o	o	o	o	o
Total heat recovery	RT	o	o	o	o	o	o
Copper/Copper coil	RR	o	o	o	o	o	o
Condensing coil with pre-painted fins	RM	o	o	o	o	o	o
Personalized frame painting in alternative RAL colour	RV	o	o	o	o	o	o

● Standard o Optional - Not available

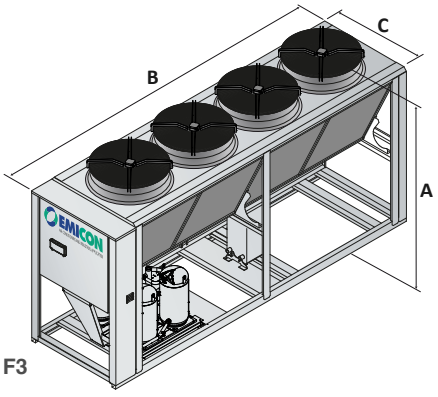
Dimensions - ERAE WA U Kc serie



F1



F2



F3

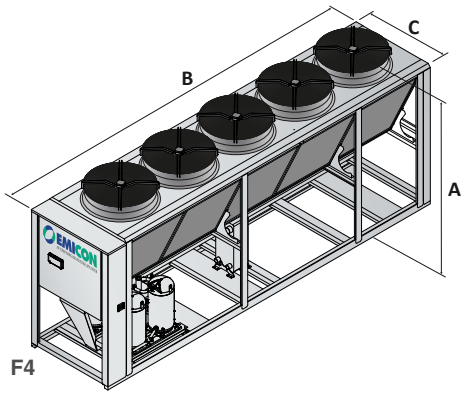
Mod.		A (mm)	B (mm)	C (mm)	Kg
16020	F1	2420	2660	1370	1324
19020	F2	2420	3700	1370	1748
24020	F2	2420	3700	1370	1904
28020	F3	2420	4740	1370	2084
32020	F3	2420	4740	1370	2196
35120	F4	2420	5780	1370	2378

Accessories - ERAE WA U Kc serie

ERAE WA U KC		40020	46020	51020	55020	59020
Amperometer	A	o	o	o	o	o
Operation in cooling mode down to -20°C (by frequency converter electronic device)	BF	o	o	o	o	o
Operation in cooling mode down to – 20°C (by modulating voltage control)	BT	o	o	o	o	o
Soundproofed compressors cabinet with standard material	CF	●	●	●	●	●
Overall compressor and technical compartment cabinet	CFT	o	o	o	o	o
Compressors inrush counter	CS	o	o	o	o	o
Axial fans with electronic commutated motor	EC	o	o	o	o	o
Condensing coil protection grid	GP	o	o	o	o	o
Anti-intrusion grid	GP2	o	o	o	o	o
Anti-intrusion grid with compressors cabinet	GP3	o	o	o	o	o
Victaulic insulation on pump side	I1	o	o	o	o	o
Victaulic insulation buffer tank side	I2	o	o	o	o	o
RS 485 Serial interface	IH	o	o	o	o	o
LON Protocol serial interface	IH (LON)	o	o	o	o	o
Seawood packing	IM	o	o	o	o	o
SNMP or TCP/IP Protocol serial interface	IWG	o	o	o	o	o
Phase monitor	MF	o	o	o	o	o
Buffer tank module	MV	o	o	o	o	o
Pump group	P1	o	o	o	o	o
Higher available pressure pump group	P1H	o	o	o	o	o
Double pump group (only one working)	P2	o	o	o	o	o
Higher available pressure double pump group (only one working)	P2H	o	o	o	o	o
Rubber-type vibration dampers	PA	o	o	o	o	o
Spring-type vibration dampers	PM	o	o	o	o	o
Remote display	PQ	o	o	o	o	o
In-line twin pump group (only one working)	PT	o	o	o	o	o
Anti-freeze heater on evaporator	RA	o	o	o	o	o
Shut-off valve on compressors discharge side	RD	o	o	o	o	o
Shut-off valve on compressors suction side	RH	o	o	o	o	o
Electronic thermostatic valve	TE	●	●	●	●	●
Voltmeter	V	o	o	o	o	o
Brine Version	VB	o	o	o	o	o
Solenoid valve	VS	o	o	o	o	o
Compressor overload relays	RL	o	o	o	o	o
Power factor correction system cosfi ≥ 0,9	RF	o	o	o	o	o
Total heat recovery	RT	o	o	o	o	o
Copper/Copper coil	RR	o	o	o	o	o
Condensing coil with pre-painted fins	RM	o	o	o	o	o
Personalized frame painting in alternative RAL colour	RV	o	o	o	o	o

● Standard o Optional - Not available

Dimensions - ERAE WA U Kc serie



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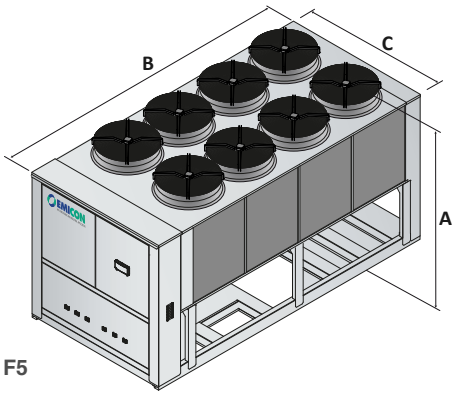

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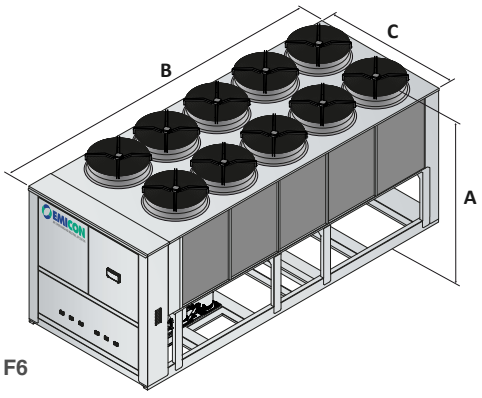


F6

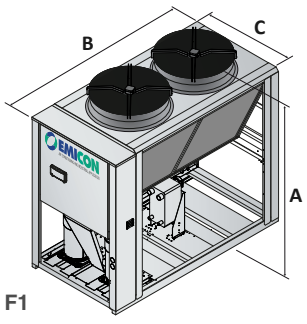
Mod.		A (mm)	B (mm)	C (mm)	Kg
40020	F4	2420	5780	1370	2540
46020	F5	2560	4750	2300	3458
51020	F5	2560	4750	2300	3768
55020	F5	2560	4750	2300	4000
59020	F6	2560	5700	2300	4236

Accessories - ERAE AM U Kc serie

ERAE AM U KC		16020	19020	24020	28020	32020	35120
Amperometer	A	o	o	o	o	o	o
Operation in cooling mode down to -20°C (by frequency converter electronic device)	BF	o	o	o	o	o	o
Operation in cooling mode down to – 20°C (by modulating voltage control)	BT	o	o	o	o	o	o
Soundproofed compressors cabinet with standard material	CF	●	●	●	●	●	●
Overall compressor and technical compartment cabinet	CFT	o	o	o	o	o	o
Compressors inrush counter	CS	o	o	o	o	o	o
Axial fans with electronic commutated motor	EC	o	o	o	o	o	o
Condensing coil protection grid	GP	o	o	o	o	o	o
Anti-intrusion grid	GP2	o	o	o	o	o	o
Anti-intrusion grid with compressors cabinet	GP3	o	o	o	o	o	o
Victaulic insulation on pump side	I1	o	o	o	o	o	o
Victaulic insulation buffer tank side	I2	o	o	o	o	o	o
RS 485 Serial interface	IH	o	o	o	o	o	o
LON Protocol serial interface	IH (LON)	o	o	o	o	o	o
Seawood packing	IM	o	o	o	o	o	o
SNMP or TCP/IP Protocol serial interface	IWG	o	o	o	o	o	o
Phase monitor	MF	o	o	o	o	o	o
Buffer tank module	MV	o	o	o	o	o	o
Pump group	P1	o	o	o	o	o	o
Higher available pressure pump group	P1H	o	o	o	o	o	o
Double pump group (only one working)	P2	o	o	o	o	o	o
Higher available pressure double pump group (only one working)	P2H	o	o	o	o	o	o
Rubber-type vibration dampers	PA	o	o	o	o	o	o
Spring-type vibration dampers	PM	o	o	o	o	o	o
Remote display	PQ	o	o	o	o	o	o
In-line twin pump group (only one working)	PT	o	o	o	o	o	o
Anti-freeze heater on evaporator	RA	o	o	o	o	o	o
Shut-off valve on compressors discharge side	RD	o	o	o	o	o	o
Shut-off valve on compressors suction side	RH	o	o	o	o	o	o
Electronic thermostatic valve	TE	o	o	o	o	o	o
Voltmeter	V	o	o	o	o	o	o
Brine Version	VB	o	o	o	o	o	o
Solenoid valve	VS	o	o	o	o	o	o
Compressor overload relays	RL	o	o	o	o	o	o
Power factor correction system cosfi ≥ 0,9	RF	o	o	o	o	o	o
Total heat recovery	RT	o	o	o	o	o	o
Copper/Copper coil	RR	o	o	o	o	o	o
Condensing coil with pre-painted fins	RM	o	o	o	o	o	o
Personalized frame painting in alternative RAL colour	RV	o	o	o	o	o	o

● Standard o Optional - Not available

Dimensions - ERAE AM U Kc serie



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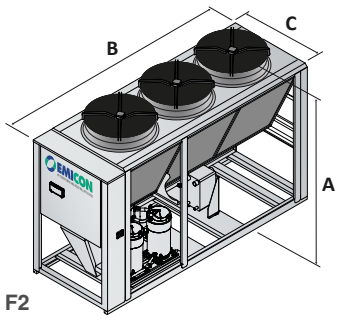

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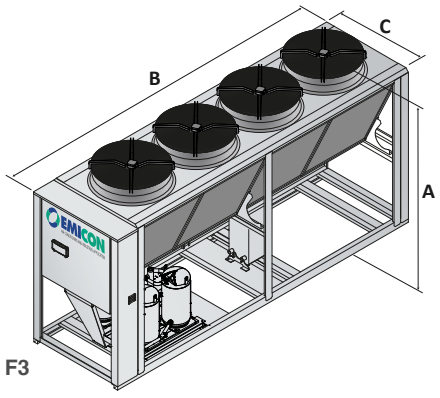


F3

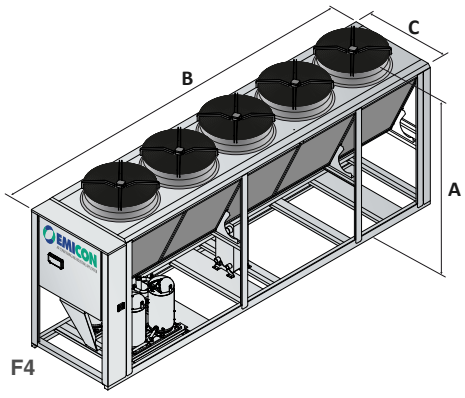
Mod.		A (mm)	B (mm)	C (mm)	Kg
16020	F1	2420	2660	1370	1324
19020	F2	2420	3700	1370	1748
24020	F2	2420	3700	1370	1904
28020	F3	2420	4740	1370	2084
32020	F3	2420	4740	1370	2196
35120	F4	2420	5780	1370	2378

Accessories - ERAE AM U Kc serie

ERAE AM U KC		40020	46020	51020	55020	59020
Amperometer	A	o	o	o	o	o
Operation in cooling mode down to -20°C (by frequency converter electronic device)	BF	o	o	o	o	o
Operation in cooling mode down to – 20°C (by modulating voltage control)	BT	o	o	o	o	o
Soundproofed compressors cabinet with standard material	CF	●	●	●	●	●
Overall compressor and technical compartment cabinet	CFT	o	-	-	-	-
Compressors inrush counter	CS	o	o	o	o	o
Axial fans with electronic commutated motor	EC	o	o	o	o	o
Condensing coil protection grid	GP	o	o	o	o	o
Anti-intrusion grid	GP2	o	o	o	o	o
Anti-intrusion grid with compressors cabinet	GP3	o	o	o	o	o
Victaulic insulation on pump side	I1	o	o	o	o	o
Victaulic insulation buffer tank side	I2	o	o	o	o	o
RS 485 Serial interface	IH	o	o	o	o	o
LON Protocol serial interface	IH (LON)	o	o	o	o	o
Seawood packing	IM	o	o	o	o	o
SNMP or TCP/IP Protocol serial interface	IWG	o	o	o	o	o
Phase monitor	MF	o	o	o	o	o
Buffer tank module	MV	o	o	o	o	o
Pump group	P1	o	o	o	o	o
Higher available pressure pump group	P1H	o	o	o	o	o
Double pump group (only one working)	P2	o	o	o	o	o
Higher available pressure double pump group (only one working)	P2H	o	o	o	o	o
Rubber-type vibration dampers	PA	o	o	o	o	o
Spring-type vibration dampers	PM	o	o	o	o	o
Remote display	PQ	o	o	o	o	o
In-line twin pump group (only one working)	PT	o	o	o	o	o
Anti-freeze heater on evaporator	RA	o	o	o	o	o
Shut-off valve on compressors discharge side	RD	o	o	o	o	o
Shut-off valve on compressors suction side	RH	o	o	o	o	o
Electronic thermostatic valve	TE	●	●	●	●	●
Voltmeter	V	o	o	o	o	o
Brine Version	VB	o	o	o	o	o
Solenoid valve	VS	o	o	o	o	o
Compressor overload relays	RL	o	o	o	o	o
Power factor correction system cosfi ≥ 0,9	RF	o	o	o	o	o
Total heat recovery	RT	o	o	o	o	o
Copper/Copper coil	RR	o	o	o	o	o
Condensing coil with pre-painted fins	RM	o	o	o	o	o
Personalized frame painting in alternative RAL colour	RV	o	o	o	o	o

● Standard o Optional - Not available

Dimensions - ERAE AM U Kc serie



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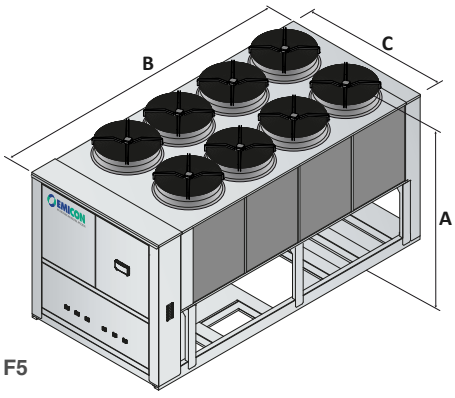

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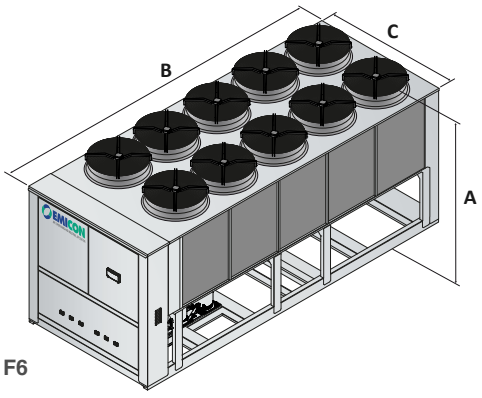


F6

Mod.		A (mm)	B (mm)	C (mm)	Kg
40020	F4	2420	5780	1370	2540
46020	F5	2560	4750	2300	3458
51020	F5	2560	4750	2300	3768
55020	F5	2560	4750	2300	4000
59020	F6	2560	5700	2300	4236

ERAE MC HE Kc

AIR COOLED CHILLERS WITH SCROLL COMPRESSORS AXIAL FANS AND MICROCHANNEL CONDENSING COILS

COOLING CAPACITY FROM 134 to 664 kW

The images shown above are indicative and not binding.

AIR COOLED CHILLERS EQUIPPED WITH SCROLL COMPRESSORS, AXIAL FANS AND MICROCHANNEL CONDENSING COILS

Packaged air cooled chillers of ERAE... MC HE Kc series are suitable for outdoor installation and can be used to cool pure fluid solutions for air conditioning or in industrial applications.

The coupling of high-efficiency microchannel condensing coils and Stainless steel plate evaporator WITH increased exchange surface area and the thermo physical purity of R410A refrigerant, particularly glide-free at state exchanges, allows this range to attain EER nominal values in class A efficiency and to meet the requirements for seasonal efficiency foreseen by the (EU) Regulation 2016/2281.

Micro channel condensing coils are totally made up of mechanically expanded aluminum alloy. In comparison to the traditional Copper-Aluminum coils, the micro channel geometry provides less resistance to the air passing. This allows to optimize the performances of the fans section and consequently to reduce the absorbed power of the fans.
Moreover the micro channel technology permits to reduce the weight of the condensing section as well as the refrigerant charge.

The cross "V" arrangement of the condensing coils makes the units of this series perfectly each other modular, granting at the same time the easiest access to the technical room both for checking operations required during the normal unit functioning and for maintenance.

All the units are totally factory assembled and tested, following specific quality procedures. Besides they are totally hydraulic, cooling and electrical connected permitting a quick installation once on site. Before the test the cooling circuits of each unit are subjected to a pressure test and then charged with Refrigerant R410A and non-freezing oil. So, once on site, the units must be only positioned and electrically and hydraulically connected.

Operation limits:
Air: da +10 a +42°C ; **Water** (outlet from the evaporator): da 5 a 15°C.

Structure
Structure made of a base and a chassis manufactured in high-thickness galvanised steel, assembled with stainless steel rivets. All galvanised steel surfaces are powder-coated with colour RAL 7035.

Compressors
Scroll compressors with R410a refrigerant, operating on one or two independent circuits in single, tandem or trio version. The compressors are installed on rubber isolation dampers, provided with direct-start motors cooled by suction gas and fitted with both overload protection and crankcase heaters. They are charged with polyester oil and the terminal board is IP54. The on-board microprocessor automatically controls the individual compressors to regulate the cooling capacity.

Evaporator
Stainless steel plate evaporator of "single" or "dual" circuit type, with high thickness close cell insulation and UV ray-proof. The max operating pressure limits are 6 bar for water side and 45 bar for refrigerant side. The evaporator is also equipped with safety water flow switch switching off the unit in case of low water flow through the evaporator.

Coils
Microchannel condensing Coils totally made up of mechanically expanded aluminum alloy to grant a perfect and continuous contact among tubes and fins optimizing the thermal exchange and reducing dimensions.
The high passivation degree of the used alloy, besides the peculiar assembling way, avoids the possibility to have galvanic corrosion phenomena. On demand it is also possible to provide the units installed in particularly aggressive environments with surface treatments against exchangers environmental corrosion. (Option ACP and PCP).

Fans
Axial fans, 6 poles electrical motor with external rotor directly coupled to the wheel, designed to work with high external air temperatures and provided with in-built overload protection. Fan is statically and dynamically balanced in order to grant, together with the peculiar wing profile, a low sound level during operation. The fan is provided with safety protection grid. On demand, it is possible to supply a condensation pressure control for low external air temperatures operation thanks to the fans speed modulation through a phase cut (Standard for sizes from 5102 to 6602) or inverter driven electronic regulator. (Option BT and BF).

Refrigerant circuit
Independent cooling circuits, each provided with a shut-off valve for refrigerant charge, antifreeze sensor, shut-off valves on liquid lines, sight glass, dehydrating filter, high-pressure safety device on high pressure refrigerant side and electronic thermostatic expansion valve, as well as high and low pressure switches and gauges.

Electrical board
Electrical board in compliance with CE Norms, contained in a suitable section protected by internal safety panel, provided with a lock-door main switch. Inside all the control and protection components are suitably placed, together with terminal board and auxiliaries. Microprocessor and relevant display are also placed inside the electrical cabinet.

Microprocessor
Electronic Microprocessor for unit management installed inside the electrical cabinet, with double evaporator in/out control of the chilled water temperature, as well as control of working parameters and equalization of compressors working hours, failures auto-detection system, alarm log, start and set point timeslot programming, possibility of remote management and supervision by enabling standard communication protocols management.

Versions

High efficiency version (HE)
Units with full load efficiency Eurovent class A EER ≥ 3.1.

Technical data - ERAE MC HE Kc serie

ERAE MC HE Kc		1301	1701	2102	2402	2702	3102	3502
Performance data								
Cooling capacity (EN14511)	kW	134,1	179,2	214,0	243,0	268,6	311,0	343,3
Total input power (EN14511)	kW	43,3	54,2	67,5	76,9	86,4	96,9	110,4
EER	W/W	3,10	3,31	3,17	3,16	3,11	3,21	3,11
SEER (1)		3,82	4,11	3,89	3,84	3,84	4,03	4,00
ηs,c (1)		149,8	161,6	152,7	150,7	150,6	158,1	157,0
Refrigerant data R410A								
Global warming potential	GWP	2088	2088	2088	2088	2088	2088	2088
Equivalent CO_2 charge	t	39,7	54,3	64,7	73,1	79,3	91,9	102,3
Refrigerant charge	Kg	19	26	31	35	38	44	49
Scroll Compressors								
Quantity/Circuits	n°/n°	2 / 1	2 / 1	4 / 2	4 / 2	4 / 2	4 / 2	4 / 2
Nominal consumption of the unit	A	67,5	81,8	107,3	119,6	134,8	150,6	171,6
Max. current consumption of the unit	A	97	130	160	177	194	228	262
Max. starting current of the unit	A	306	351	305	358	373	419	440
Axial fans								
Quantity	n°	2	4	4	4	4	6	6
Motors power input	kW	5,0	7,8	7,8	9,9	9,9	11,6	11,6
Total condensing air flow	m^3/h	54900	86000	86000	109800	109800	129000	129000
Electrical current consumption	A	10,3	15,6	15,6	20,6	20,6	23,4	23,4
Evaporator plate heat exchanger								
Quantity	n°	1	1	1	1	1	1	1
Water flow	m^3/h	23,1	30,9	36,9	41,9	46,3	53,6	59,2
Pressure drop	kPa	31,7	36,8	49,6	50,7	48,5	62,1	57,0
Sound power level (2)	dB(A)	91,0	91,0	91,0	93,0	94,0	94,0	94,0
Power supply	V/Hz/Ph	400/50/3	400/50/3	400/50/3	400/50/3	400/50/3	400/50/3	400/50/3

Performances are referred to the following conditions: ambient air temperature 35°C - water 12/7°C

(1) In accordance with (EU) 2016/2281 and relative norms part of this.

(2) Sound power level in accordance with ISO 3744.

Technical data - ERAE MC HE Kc serie

ERAE MC HE Kc		4002	4402	5102	5602	6302	6602
Performance data							
Cooling capacity (EN14511)	kW	396,7	442,7	522,8	565,3	624,7	664,0
Total input power (EN14511)	kW	124,7	139,7	164,9	181,2	194,0	210,8
EER	W/W	3,18	3,17	3,17	3,12	3,22	3,15
SEER (1)		3,96	4,11	4,22	4,19	4,21	4,17
ηs,c (1)		155,3	161,3	165,7	164,6	165,4	163,7
Refrigerant data R410A							
Global warming potential	GWP	2088	2088	2088	2088	2088	2088
Equivalent CO_2 charge	t	116,9	131,5	154,5	167,0	185,8	196,3
Refrigerant charge	Kg	56	63	74	80	89	94
Scroll Compressors							
Quantity/Circuits	n°/n°	4 / 2	4 / 2	6 / 2	6 / 2	6 / 2	6 / 2
Nominal consumption of the unit	A	191,5	213,6	254,1	280,5	295,2	320,8
Max. current consumption of the unit	A	296	331	393	427	462	496
Max. starting current of the unit	A	546	569	522	635	651	677
Axial fans							
Quantity	n°	6	8	8	8	10	10
Motors power input	kW	14,9	15,5	19,8	19,8	24,8	24,8
Total condensing air flow	m^3/h	164700	172000	219600	219600	274500	274500
Electrical current consumption	A	30,9	31,2	41,2	41,2	51,5	51,5
Evaporator plate heat exchanger							
Quantity	n°	1	1	1	1	1	1
Water flow	m^3/h	68,4	76,3	90,1	97,5	107,7	114,5
Pressure drop	kPa	49,8	53,5	55,8	54,5	59,7	64,5
Sound power level (2)	dB(A)	96,0	98,0	96,0	98,0	98,0	100,0
Power supply	V/Hz/Ph	400/50/3	400/50/3	400/50/3	400/50/3	400/50/3	400/50/3

Performances are referred to the following conditions: ambient air temperature 35°C - water 12/7°C

(1) In accordance with (EU) 2016/2281 and relative norms part of this.

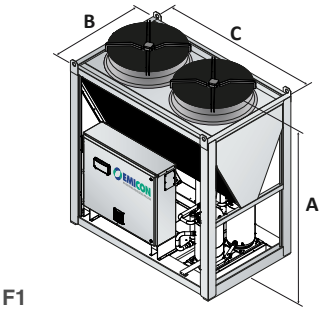
(2) Sound power level in accordance with ISO 3744.

Accessories - ERAE MC HE Kc serie

ERAE MC HE KC		1301	1701	2102	2402	2702	3102	3502
Amperometer	A	o	o	o	o	o	o	o
Anti-corrosive protection of the condensing coils (AIAX coating)	ACP	o	o	o	o	o	o	o
Electrical power supply different than standard	AE	o	o	o	o	o	o	o
Operation in cooling mode down to – 20°C (by modulating voltage control)	BT	o	o	o	o	o	o	o
Operation in cooling mode down to -20°C (by frequency converter electronic device)	BF	o	o	o	o	o	o	o
Soundproofed compressors cabinet with standard material	CF	o	o	o	o	o	o	o
Overall compressor and technical compartment cabinet	CFT	o	o	o	o	o	o	o
Soundproofed compressors cabinet with polyester material	CFU	o	o	o	o	o	o	o
Compressors inrush counter	CS	o	o	o	o	o	o	o
Axial fans with electronic commutated motor	EC	o	o	o	o	o	o	o
Condensing coil protection grid	GP	o	o	o	o	o	o	o
Anti-intrusion grid	GP1	o	o	o	o	o	o	o
RS 485 Serial interface	IH	o	o	o	o	o	o	o
LON Protocol serial interface	IH (LON)	o	o	o	o	o	o	o
Seawood packing	IM	o	o	o	o	o	o	o
SNMP or TCP/IP Protocol serial interface	IWG	o	o	o	o	o	o	o
Phase monitor	MF	o	o	o	o	o	o	o
Buffer tank module	MV	-	o	o	o	o	o	o
Pump group	P1	-	o	o	o	o	o	o
Higher available pressure pump group	P1H	-	o	o	o	o	o	o
Double pump group (only one working)	P2	-	o	o	o	o	o	o
Higher available pressure double pump group (only one working)	P2H	-	o	o	o	o	o	o
Rubber-type vibration dampers	PA	o	o	o	o	o	o	o
Anti-corrosive protection of the condensing coils (Powder coating)	PCP	o	o	o	o	o	o	o
Spring-type vibration dampers	PM	o	o	o	o	o	o	o
Remote display	PQ	o	o	o	o	o	o	o
In-line twin pump group (only one working)	PT	-	o	o	o	o	o	o
Anti-freeze heater on evaporator	RA	o	o	o	o	o	o	o
Shut-off valve on compressors discharge side	RD	o	o	o	o	o	o	o
Power factor correction system cosfi ≥0,9	RF	o	o	o	o	o	o	o
Shut-off valve on compressors suction side	RH	o	o	o	o	o	o	o
Voltmeter	V	o	o	o	o	o	o	o
Brine Version	VB	o	o	o	o	o	o	o
Solenoid valve	VS	o	o	o	o	o	o	o
Compressor overload relays	RL	o	o	o	o	o	o	o
Partial heat recovery	RP	o	o	o	o	o	o	o
Total heat recovery	RT	o	o	o	o	o	o	o
Electronic thermostatic valve	TE	●	●	●	●	●	●	●

● Standard o Optional - Not available

Dimensions - ERAE MC HE Kc serie



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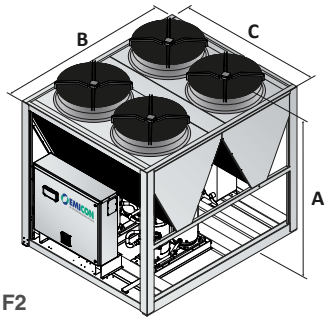

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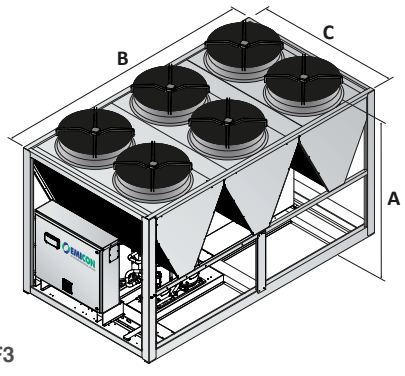


F3

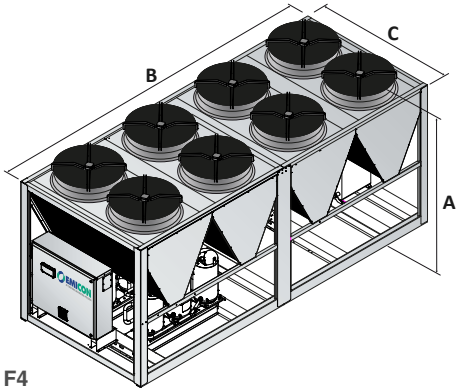
Mod.		A (mm)	B (mm)	C (mm)	Kg
1301	F1	2470	1340	2260	1174
1701	F2	2470	2680	2260	1598
2102	F2	2470	2680	2260	1871
2402	F2	2470	2680	2260	1977
2702	F2	2470	2680	2260	1988
3102	F3	2470	4020	2260	2473
3502	F3	2470	4020	2260	2478

Accessories - ERAE MC HE Kc serie

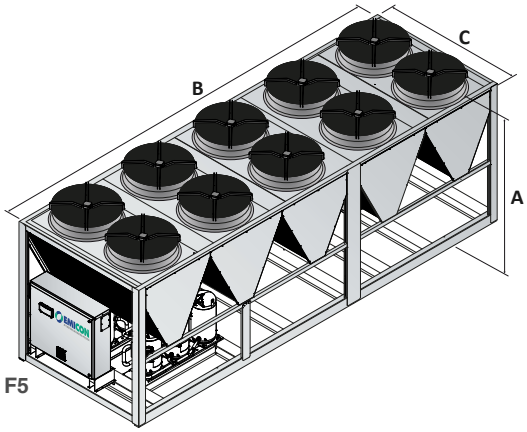
ERAE MC HE KC		4002	4402	5102	5602	6302	6602
Amperometer	A	o	o	o	o	o	o
Anti-corrosive protection of the condensing coils (AIAX coating)	ACP	o	o	o	o	o	o
Electrical power supply different than standard	AE	o	o	o	o	o	o
Operation in cooling mode down to – 20°C (by modulating voltage control)	BT	o	o	●	●	●	●
Operation in cooling mode down to -20°C (by frequency converter electronic device)	BF	o	o	o	o	o	o
Soundproofed compressors cabinet with standard material	CF	o	o	o	o	o	o
Overall compressor and technical compartment cabinet	CFT	o	o	o	o	o	o
Soundproofed compressors cabinet with polyester material	CFU	o	o	o	o	o	o
Compressors inrush counter	CS	o	o	o	o	o	o
Axial fans with electronic commutated motor	EC	o	o	o	o	o	o
Condensing coil protection grid	GP	o	o	o	o	o	o
Anti-intrusion grid	GP1	o	o	o	o	o	o
RS 485 Serial interface	IH	o	o	o	o	o	o
LON Protocol serial interface	IH (LON)	o	o	o	o	o	o
Seawood packing	IM	o	o	o	o	o	o
SNMP or TCP/IP Protocol serial interface	IWG	o	o	o	o	o	o
Phase monitor	MF	o	o	o	o	o	o
Buffer tank module	MV	o	o	o	o	o	o
Pump group	P1	o	o	o	o	o	o
Higher available pressure pump group	P1H	o	o	o	o	o	o
Double pump group (only one working)	P2	o	o	o	o	o	o
Higher available pressure double pump group (only one working)	P2H	o	o	o	o	o	o
Rubber-type vibration dampers	PA	o	o	o	o	o	o
Anti-corrosive protection of the condensing coils (Powder coating)	PCP	o	o	o	o	o	o
Spring-type vibration dampers	PM	o	o	o	o	o	o
Remote display	PQ	o	o	o	o	o	o
In-line twin pump group (only one working)	PT	o	o	o	o	o	o
Anti-freeze heater on evaporator	RA	o	o	o	o	o	o
Shut-off valve on compressors discharge side	RD	o	o	o	o	o	o
Power factor correction system cosfi ≥0,9	RF	o	o	o	o	o	o
Shut-off valve on compressors suction side	RH	o	o	o	o	o	o
Voltmeter	V	o	o	o	o	o	o
Brine Version	VB	o	o	o	o	o	o
Solenoid valve	VS	o	o	o	o	o	o
Compressor overload relays	RL	o	o	o	o	o	o
Partial heat recovery	RP	o	o	o	o	o	o
Total heat recovery	RT	o	o	o	o	o	o
Electronic thermostatic valve	TE	●	●	●	●	●	●

● Standard o Optional - Not available

Dimensions - ERAE MC HE Kc serie



F4



F5

Mod.		A (mm)	B (mm)	C (mm)	Kg
4002	F3	2470	4020	2260	2579
4402	F4	2470	5360	2260	2988
5102	F4	2470	5360	2260	3422
5602	F4	2470	5360	2260	3488
6302	F5	2470	6700	2260	3941
6602	F5	2470	6700	2260	3952

ERAH MC Ka

AIR COOLED CHILLERS WITH SCREW COMPRESSORS, AXIAL FANS AND MICROCHANNEL CONDENSING COILS

COOLING CAPACITY FROM 400 to 1580 kW

The images shown above are indicative and not binding.

AIR COOLED CHILLERS EQUIPPED WITH SCREW COMPRESSORS, AXIAL FANS AND MICROCHANNEL CONDENSING COILS

The modular air cooled chillers of ERAH...MC HE Ka are designed for external installation and are particularly suitable for cooling liquid solutions in industrial applications or for air conditioning in commercial field, where excellent seasonal performances must be granted keeping at the same time a low environmental impact, class A efficiency and meeting the seasonal efficiency requirements established by (EU) 2016/2281 Regulation.

Micro channel condensing coils are totally made up of mechanically expanded aluminum alloy. In comparison to the traditional Copper-Aluminum coils, the micro channel geometry provides less resistance to the air passing. This allows to optimize the performances of the fans section and consequently to reduce dimensions keeping performances unchanged.
Moreover the micro channel technology permits to reduce the weight of the condensing section as well as the refrigerant charge.

The cross "V" arrangement of the condensing coils makes the units of this series perfectly each other modular, granting at the same time the easiest access to the technical room both for checking operations required during the normal unit functioning and for maintenance.

All the units are totally factory assembled and tested, following specific quality procedures. Besides they are totally hydraulic, cooling and electrical connected permitting a quick installation once on site. Before the test the cooling circuits of each unit are subjected to a pressure test and then charged with Refrigerant R134a and non-freezing oil. So, once on site, the units must be only positioned and electrically and hydraulically connected.

Operation limits:

WA application units
Air: from +15 to +38°C ; **water** from 7,1°C to 18°C (outlet from the evaporator)

AM application units
Air: from +15 to +42°C ; **water** from 5°C to 15°C (outlet from the evaporator)

Structure
Structure realized with frame made up of hot galvanized steel sheet and RAL 7035 painted, suitable to resist to atmospheric agents. Compressors and main components are easily accessible and suitably placed in the technical room.

Compressors
Compressors, semi-hermetic type, provided with capacity steps, motor thermal protection, rotation direction control, crankcase heater, discharge side shut-off valve and anti-vibration kit.
Compressors lubrication is of forced type, without pump and to avoid excessive oil migration to the cooling circuits, they are provided with an in-built oil separator. In the standard configuration it is also included a discharge junction flange, as well as steps capacity control system, non-return and safety valve, oil heater, lubrication management system, oil filter, oil service valve, POE oil charge, integral motor protection with protection module, discharge side temperature control device.
The electrical motor of the compressors is provided with an inrush current reduction device obtained thanks to some interlocked contactors. Besides the capacity can be continuously modulated through option M12.

Evaporator
Shell & Tube Evaporator, dry expansion type with pure electrolytic copper tubes and shell and tubes plate made up of carbon steel. The exchanger is provided with anti-condensation insulation made up of a nitrile rubber and polyethylene foam with a thickness of 10 mm externally protected by a UV-ray proof, embossed scratchproof polyethylene film. The hydraulic connections are of Victaulic type. Inside the shell, some plastic and corrosion-proof baffles are suitably placed, allowing a correct water distribution and making the tube bundle particularly strong and vibration free, even with high water flows. Water side exchanger design pressures are 10 bar.

Coils
Micro channel condensing Coils totally made up of mechanically expanded aluminum alloy to grant a perfect and continuous contact among tubes and fins optimizing the thermal exchange and reducing dimensions.
The high passivation degree of the used alloy, besides the peculiar assembling way, avoids the possibility to have galvanic corrosion phenomena. On demand it is also possible to provide the units installed in particularly aggressive environments with surface treatments against exchangers environmental corrosion. (Option ACP and PCP)

Fans
Axial fans, with external rotor directly coupled to a three-phase electronically commutated motor (EC) they have the possibility of a continuous regulation of the speed by means of a 0-10V signal completely managed by the microprocessor. Aluminum blades with wings profile are suitably designed to avoid any turbulence in the air detachment zone, granting in this way the max efficiency with the minimum noise level. The fan is equipped with galvanized steel protection grid painted after the construction. Thanks to a more accurate adjustment of air flow, they allow operation of the unit with external temperature down to -20 °C.

Refrigerant circuit
Cooling circuit made up of electronic thermostatic expansion valve, sight glass, high pressure safety device, anti-freeze protection on evaporator, high and low pressure switches, non return valve in-built on compressors discharge side, dehydrating filter with replaceable cartridges, shut-off valve on liquid line. Each compressor operates on an independent circuit granting in this way, a considerable reliability.

Electrical board
Electrical board in compliance with CE Norms, contained in a suitable section protected by internal safety panel, provided with a lock-door main switch. Inside all the control and protection components are suitably placed, together with terminal board and auxiliaries. The electrical board also includes the control device for power supply phases to prevent the compressor wrong side rotation. Microprocessor and relevant display are also placed inside the electrical cabinet.

Microprocessor
Electronic Microprocessor for unit management installed inside the electrical cabinet, with double evaporator in/out control of the chilled water temperature, as well as control of working parameters and equalization of compressors working hours, failures auto-detection system, alarm log, start and set point timeslot programming, possibility of remote management and supervision by enabling standard communication protocols management, complete with compressors hour counter.

Applications

Warm applications version (WA)
Units CE certified in compliance with the European regulation 2016/2281 at working conditions, on the use side 23°C / 18°C.

Abroad market version (AM)
Units in compliance with the European regulation whose sales is reserved to countries out of the European Union.

Technical data - ERAH WA MC ka serie

ERAH WA MC KA		4120	4520	5320	6120	7020	7320
Performance data							
Cooling capacity (EN14511)	kW	543,3	609,9	739,4	810,8	935,0	987,0
Total input power (EN14511)	kW	180,2	191,6	219,4	263,3	318,8	334,2
EER	W/W	3,01	3,18	3,37	3,08	2,93	2,95
SEER (1)		4,13	4,13	4,11	4,12	4,11	4,17
ηs,c (1)		162,2	162,0	161,5	161,7	161,3	164,0
Refrigerant data R134a							
Global warming potential	GWP	1430	1430	1430	1430	1430	1430
Equivalent CO_2 charge	t	88,7	94,4	120,1	128,7	137,3	145,9
Refrigerant charge	Kg	62	66	84	90	96	102
Screw compressors							
Quantity/Circuits	n°/n°	2 / 2	2 / 2	2 / 2	2 / 2	2 / 2	2 / 2
Nominal consumption of the unit	A	272,7	286,4	322,4	398,7	496,4	514,9
Max. current consumption of the unit	A	290	360	396	442	566	598
Max. starting current of the unit	A	624	566	702	785	680	714
Axial fans							
Quantity	n°	6	6	8	8	8	10
Motors power input	kW	11,6	14,9	19,8	19,8	19,8	19,4
Total condensing air flow	m^3/h	127500	162000	216000	216000	216000	212500
Electrical current consumption	A	23,4	30,9	41,2	41,2	41,2	39,0
Shell & Tube Evaporator							
Quantity	n°	1	1	1	1	1	1
Water flow	m^3/h	93,4	104,9	127,2	139,5	160,8	169,8
Pressure drop	kPa	85,0	69,0	102,0	79,0	61,0	67,0
Sound power level (2)	dB(A)	93,3	96,8	97,3	97,6	97,4	97,0
Power supply	V/Hz/Ph	400/50/3	400/50/3	400/50/3	400/50/3	400/50/3	400/50/3

ERAH WA MC KA		8020	9020	10120	10520	11520
Performance data						
Cooling capacity (EN14511)	kW	1083,0	1235,0	1399,0	1468,0	1576,0
Total input power (EN14511)	kW	339,9	387,1	422,5	472,8	486,2
EER	W/W	3,19	3,19	3,31	3,10	3,24
SEER (1)		4,16	4,12	4,11	4,14	4,11
ηs,c (1)		163,3	161,7	161,6	162,5	161,2
Refrigerant data R134a						
Global warming potential	GWP	1430	1430	1430	1430	1430
Equivalent CO_2 charge	t	154,4	185,9	197,3	205,9	237,4
Refrigerant charge	Kg	108	130	138	144	166
Screw compressors						
Quantity/Circuits	n°/n°	2 / 2	2 / 2	2 / 2	2 / 2	2 / 2
Nominal consumption of the unit	A	500,8	583,0	632,0	717,5	733,1
Max. current consumption of the unit	A	630	712	854	948	980
Max. starting current of the unit	A	700	859	981	1166	1172
Axial fans						
Quantity	n°	10	12	14	14	16
Motors power input	kW	24,8	29,8	34,7	34,7	39,7
Total condensing air flow	m^3/h	270000	324000	378000	378000	432000
Electrical current consumption	A	51,5	61,8	72,1	72,1	82,4
Shell & Tube Evaporator						
Quantity	n°	1	1	1	1	1
Water flow	m^3/h	186,3	212,4	240,6	252,5	271,1
Pressure drop	kPa	80,0	106,0	114,0	69,0	75,0
Sound power level (2)	dB(A)	97,9	98,6	99,1	101,6	101,8
Power supply	V/Hz/Ph	400/50/3	400/50/3	400/50/3	400/50/3	400/50/3

Performances are referred to the following conditions: ambient air temperature 35°C - water 23/18°C

(1) In accordance with (EU) 2016/2281 and relative norms part of this.

(2) Sound power level in accordance with ISO 3744.

EMICON INNOVATION AND COMFORT

Technical data - ERAH AM MC Ka serie

ERAH AM MC Ka		4120	4520	5320	6120	7020	7320
Performance data							
Cooling capacity (EN14511)	kW	401,4	448,9	527,0	610,3	701,0	732,2
Total input power (EN14511)	kW	151,0	167,2	188,0	223,9	275,9	289,4
EER	W/W	2,66	2,68	2,80	2,73	2,54	2,53
SEER (1)		3,27	3,38	3,34	3,34	3,39	3,49
ηs,c (1)		127,8	132,3	130,7	130,6	132,5	136,4
Refrigerant data R134a							
Global warming potential	GWP	1430	1430	1430	1430	1430	1430
Equivalent CO_2 charge	t	88,7	94,4	120,1	128,7	137,3	145,9
Refrigerant charge	Kg	62	66	84	90	96	102
Screw compressors							
Quantity/Circuits	n°/n°	2 / 2	2 / 2	2 / 2	2 / 2	2 / 2	2 / 2
Nominal consumption of the unit	A	223	247	274	329	420	436
Max. current consumption of the unit	A	290	360	396	442	566	598
Max. starting current of the unit	A	602	559	670	754	650	679
Axial fans							
Quantity	n°	6	6	8	8	8	10
Motors power input	kW	11,6	14,9	19,8	19,8	19,8	19,4
Total condensing air flow	m^3/h	127500	162000	216000	216000	216000	212500
Electrical current consumption	A	23,4	30,9	41,2	41,2	41,2	39,0
Shell & Tube Evaporator							
Quantity	n°	1	1	1	1	1	1
Water flow	m^3/h	69,2	77,4	90,9	105,2	120,9	126,2
Pressure drop	kPa	53,0	43,0	60,0	51,0	39,0	42,0
Sound power level (2)	dB(A)	93,3	96,8	97,3	97,6	97,4	97,0
Power supply	V/Hz/Ph	400/50/3	400/50/3	400/50/3	400/50/3	400/50/3	400/50/3

ERAH AM MC Ka		8020	9020	10120	10520	11520
Performance data						
Cooling capacity (EN14511)	kW	792,2	897,8	1019,0	1049,0	1143,0
Total input power (EN14511)	kW	299,1	329,5	358,7	400,0	413,6
EER	W/W	2,65	2,72	2,84	2,62	2,76
SEER (1)		3,49	3,27	3,32	3,35	3,36
ηs,c (1)		136,7	127,7	129,9	130,9	131,2
Refrigerant data R134a						
Global warming potential	GWP	1430	1430	1430	1430	1430
Equivalent CO_2 charge	t	154,4	185,9	197,3	205,9	237,4
Refrigerant charge	Kg	108	130	138	144	166
Screw compressors						
Quantity/Circuits	n°/n°	2 / 2	2 / 2	2 / 2	2 / 2	2 / 2
Nominal consumption of the unit	A	432	490	528	596	614
Max. current consumption of the unit	A	630	712	854	948	980
Max. starting current of the unit	A	686	837	919	1108	1116
Axial fans						
Quantity	n°	10	12	14	14	16
Motors power input	kW	24,8	29,8	34,7	34,7	39,7
Total condensing air flow	m^3/h	270000	324000	378000	378000	432000
Electrical current consumption	A	51,5	61,8	72,1	72,1	82,4
Shell & Tube Evaporator						
Quantity	n°	1	1	1	1	1
Water flow	m^3/h	136,6	154,8	175,7	180,9	197,1
Pressure drop	kPa	49,0	64,0	69,0	41,0	45,0
Sound power level (2)	dB(A)	97,9	98,6	99,1	101,6	101,8
Power supply	V/Hz/Ph	400/50/3	400/50/3	400/50/3	400/50/3	400/50/3

Performances are referred to the following conditions: ambient air temperature 35°C - water 12/7°C

(1) In accordance with (EU) 2016/2281 and relative norms part of this.

(2) Sound power level in accordance with ISO 3744.

Technical data - ERAH MC U ka serie

ERAH MC U Ka		4320	5320	6420	8120	10520	11020
Performance data							
Cooling capacity (EN14511)	kW	400,6	523,9	609,6	801,3	997,9	1078,0
Total input power (EN14511)	kW	145,9	184,9	217,1	287,3	349,9	384,4
EER	W/W	2,75	2,83	2,81	2,79	2,85	2,80
SEER (1)		4,11	4,14	4,13	4,15	4,11	4,14
ηs,c (1)		161,5	162,8	162,2	163,2	161,6	162,7
Refrigerant data R134a							
Global warming potential	GWP	1430	1430	1430	1430	1430	1430
Equivalent CO_2 charge	t	103,0	128,7	145,9	180,2	237,4	243,1
Refrigerant charge	Kg	72	90	102	126	166	170
Screw compressors							
Quantity/Circuits	n°/n°	2 / 2	2 / 2	2 / 2	2 / 2	2 / 2	2 / 2
Nominal consumption of the unit	A	216	271	320	414	522	573
Max. current consumption of the unit	A	290	396	442	630	854	948
Max. starting current of the unit	A	598	669	752	677	913	1095
Axial fans							
Quantity	n°	8	10	12	14	18	20
Motors power input	kW	6,4	10,0	9,6	14,0	18,0	20,0
Total condensing air flow	m^3/h	136000	205000	204000	287000	369000	410000
Electrical current consumption	A	8,8	15,0	13,2	21,0	27,0	30,0
Shell & Tube Evaporator							
Quantity	n°	1	1	1	1	1	1
Water flow	m^3/h	69,1	90,3	105,1	138,2	172,1	185,9
Pressure drop	kPa	21,0	40,0	28,0	27,0	68,0	43,0
Sound power level (2)	dB(A)	87,9	91,9	91,4	92,7	93,9	96,1
Power supply	V/Hz/Ph	400/50/3	400/50/3	400/50/3	400/50/3	400/50/3	400/50/3

Performances are referred to the following conditions: ambient air temperature 35°C - water 12/7°C

(1) In accordance with (EU) 2016/2281 and relative norms part of this.

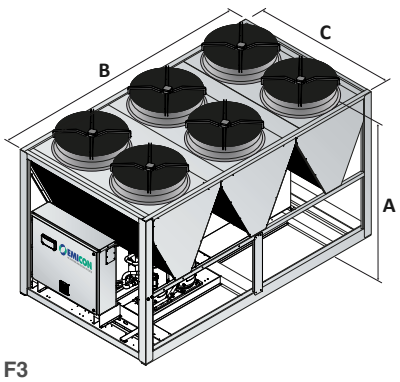
(2) Sound power level in accordance with ISO 3744.

Accessories - ERAH WA MC ka serie

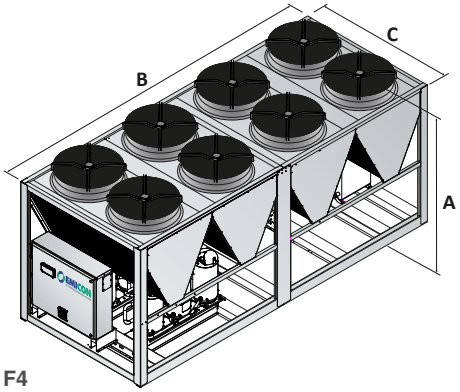
ERAH WA MC Ka		4120	4520	5320	6120	7020	7320
Amperometer	A	o	o	o	o	o	o
Anti-corrosive protection of the condensing coils (AIAX coating)	ACP	o	o	o	o	o	o
Electrical power supply different than standard	AE	o	o	o	o	o	o
Operation in cooling mode down to – 20°C (by modulating voltage control)	BT	o	o	o	o	o	o
Operation in cooling mode down to -20°C (by frequency converter electronic device)	BF	o	o	o	o	o	o
Soundproofed compressors cabinet with standard material	CF	o	o	o	o	o	o
Compressors inrush counter	CS	o	o	o	o	o	o
Star/Delta	DS	-	-	-	-	o	o
Axial fans with electronic commutated motor	EC	o	o	o	o	o	o
Condensing coil protection grid	GP	o	o	o	o	o	o
Anti-intrusion grid	GP1	o	o	o	o	o	o
RS 485 serial interface	IH	o	o	o	o	o	o
LON Serial interface for LON Protocol	IH (LON)	o	o	o	o	o	o
Seawood packing	IM	o	o	o	o	o	o
Serial interface for SNMP or TCP/IP Protocol	IWG	o	o	o	o	o	o
Modulating capacity control	M12	o	o	o	o	o	o
Buffer tank module	MV	-	-	-	-	-	-
Oil flow safety switch	OS	o	o	o	o	o	o
Pump group	P1	o	o	o	o	o	o
Higher available pressure pump group	P1H	o	o	o	o	o	o
Double pump group (only one working)	P2	o	o	o	o	o	o
Higher available pressure double pump group (only one working)	P2H	o	o	o	o	o	o
Rubber-type vibration dampers	PA	o	o	o	o	o	o
Anti-corrosive protection of the condensing coils (Powder coating)	PCP	o	o	o	o	o	o
Safety water flow switch	PF	o	o	o	o	o	o
Spring-type vibration dampers	PM	o	o	o	o	o	o
Remote display	PQ	o	o	o	o	o	o
In-line twin pump group (only one working)	PT	o	o	o	o	o	o
Anti-freeze heater on evaporator	RA	o	o	o	o	o	o
Power factor correction system cosfi ≥ 0,9	RF	o	o	o	o	o	o
Shut-off valve on suction side	RH	o	o	o	o	o	o
Voltmeter	V	o	o	o	o	o	o
Brine Version	VB	o	o	o	o	o	o
Solenoid valve	VS	o	o	o	o	o	o
Compressors overload relays	RL	o	o	o	o	o	o
Partial heat recovery	RP	o	o	o	o	o	o
Total heat recovery	RT	-	-	-	-	-	-
Electronic thermostatic valve	TE	●	●	●	●	●	●
Part-Winding	PW	●	●	●	●	-	-

● Standard o Optional - Not available

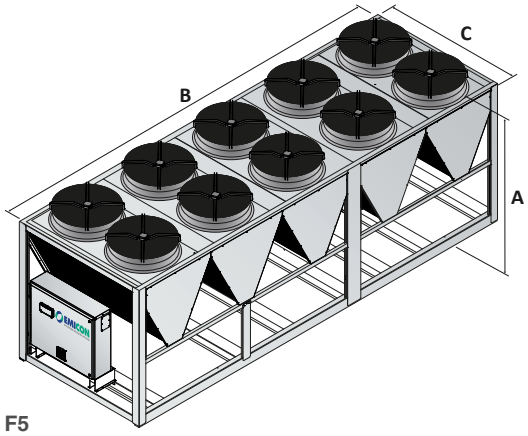
Dimensions - ERAH WA MC ka serie



F3



F4



F5

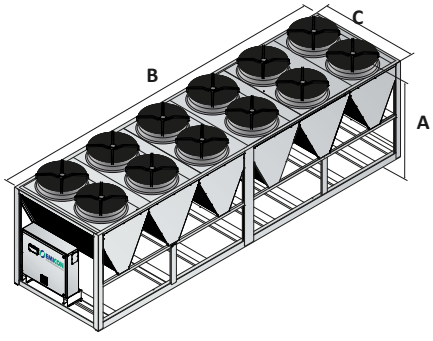
Mod.		A (mm)	B (mm)	C (mm)	Kg
4120	F3	2470	4020	2260	3272
4520	F3	2470	4020	2260	3972
5320	F4	2470	5360	2260	4438
6120	F4	2470	5360	2260	4618
7020	F4	2470	5360	2260	5838
7320	F5	2470	6700	2260	6186

Accessories - ERAH WA MC ka serie

ERAH WA MC Ka		8020	9020	10120	10520	11520
Amperometer	A	o	o	o	o	o
Anti-corrosive protection of the condensing coils (AIAX coating)	ACP	o	o	o	o	o
Electrical power supply different than standard	AE	o	o	o	o	o
Operation in cooling mode down to – 20°C (by modulating voltage control)	BT	o	o	o	o	o
Operation in cooling mode down to -20°C (by frequency converter electronic device)	BF	o	o	o	o	o
Soundproofed compressors cabinet with standard material	CF	o	o	o	o	o
Compressors inrush counter	CS	o	o	o	o	o
Star/Delta	DS	o	o	o	o	o
Axial fans with electronic commutated motor	EC	o	o	o	o	o
Condensing coil protection grid	GP	o	o	o	o	o
Anti-intrusion grid	GP1	o	o	o	o	o
RS 485 serial interface	IH	o	o	o	o	o
LON Serial interface for LON Protocol	IH (LON)	o	o	o	o	o
Seawood packing	IM	o	o	o	o	o
Serial interface for SNMP or TCP/IP Protocol	IWG	o	o	o	o	o
Modulating capacity control	M12	o	o	o	o	o
Buffer tank module	MV		o	o	o	o
Oil flow safety switch	OS	o	o	o	o	o
Pump group	P1	o	o	o	o	o
Higher available pressure pump group	P1H	o	o	o	o	o
Double pump group (only one working)	P2	o	o	o	o	o
Higher available pressure double pump group (only one working)	P2H	o	o	o	o	o
Rubber-type vibration dampers	PA	o	o	o	o	o
Anti-corrosive protection of the condensing coils (Powder coating)	PCP	o	o	o	o	o
Safety water flow switch	PF	o	o	o	o	o
Spring-type vibration dampers	PM	o	o	o	o	o
Remote display	PQ	o	o	o	o	o
In-line twin pump group (only one working)	PT	o	o	o	o	o
Anti-freeze heater on evaporator	RA	o	o	o	o	o
Power factor correction system cosfi ≥ 0,9	RF	o	o	o	o	o
Shut-off valve on suction side	RH	o	o	o	o	o
Voltmeter	V	o	o	o	o	o
Brine Version	VB	o	o	o	o	o
Solenoid valve	VS	o	o	o	o	o
Compressors overload relays	RL	o	o	o	o	o
Partial heat recovery	RP	o	o	o	o	o
Total heat recovery	RT	-	-	-	-	-
Electronic thermostatic valve	TE	●	●	●	●	●
Part-Winding	PW	o	o	o	o	o

● Standard o Optional - Not available

Dimensions - ERAH WA MC ka serie



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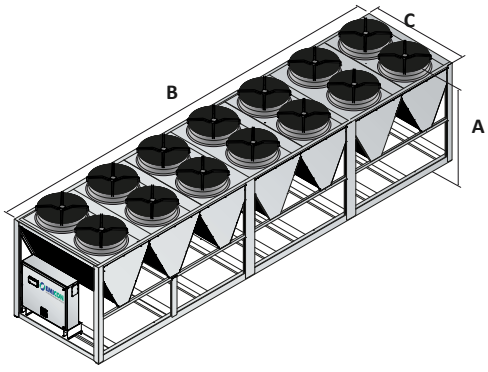

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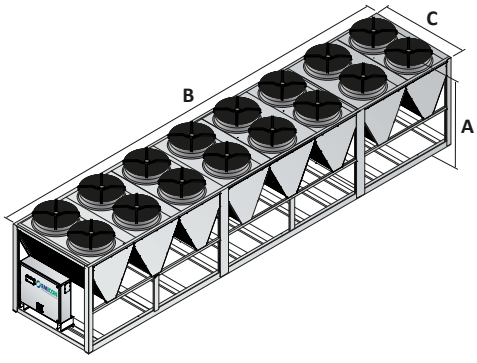


F8

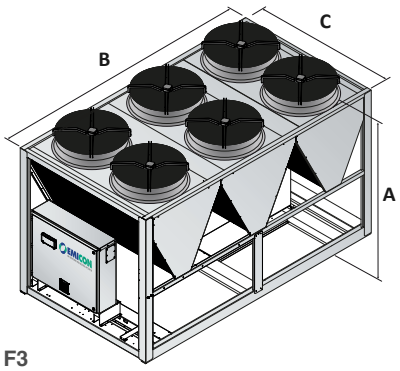
Mod.		A (mm)	B (mm)	C (mm)	Kg
8020	F5	2470	6700	2260	6242
9020	F6	2470	8040	2260	6654
10120	F7	2470	9380	2260	7312
10520	F7	2470	9380	2260	7340
11520	F8	2470	10720	2260	7756

Accessories - ERAH AM MC Ka serie

ERAH AM MC Ka		4120	4520	5320	6120	7020	7320
Amperometer	A	o	o	o	o	o	o
Anti-corrosive protection of the condensing coils (AIAX coating)	ACP	o	o	o	o	o	o
Electrical power supply different than standard	AE	o	o	o	o	o	o
Operation in cooling mode down to – 20°C (by modulating voltage control)	BT	o	o	o	o	o	o
Operation in cooling mode down to -20°C (by frequency converter electronic device)	BF	o	o	o	o	o	o
Soundproofed compressors cabinet with standard material	CF	o	o	o	o	o	o
Compressors inrush counter	CS	o	o	o	o	o	o
Star/Delta	DS	-	-	-	-	o	o
Axial fans with electronic commutated motor	EC	o	o	o	o	o	o
Condensing coil protection grid	GP	o	o	o	o	o	o
Anti-intrusion grid	GP1	o	o	o	o	o	o
RS 485 serial interface	IH	o	o	o	o	o	o
LON Serial interface for LON Protocol	IH (LON)	o	o	o	o	o	o
Seawood packing	IM	o	o	o	o	o	o
Serial interface for SNMP or TCP/IP Protocol	IWG	o	o	o	o	o	o
Modulating capacity control	M12	o	o	o	o	o	o
Buffer tank module	MV	-	-	-	-	-	-
Oil flow safety switch	OS	o	o	o	o	o	o
Pump group	P1	o	o	o	o	o	o
Higher available pressure pump group	P1H	o	o	o	o	o	o
Double pump group (only one working)	P2	o	o	o	o	o	o
Higher available pressure double pump group (only one working)	P2H	o	o	o	o	o	o
Rubber-type vibration dampers	PA	o	o	o	o	o	o
Anti-corrosive protection of the condensing coils (Powder coating)	PCP	o	o	o	o	o	o
Safety water flow switch	PF	o	o	o	o	o	o
Spring-type vibration dampers	PM	o	o	o	o	o	o
Remote display	PQ	o	o	o	o	o	o
In-line twin pump group (only one working)	PT	o	o	o	o	o	o
Anti-freeze heater on evaporator	RA	o	o	o	o	o	o
Power factor correction system cosfi ≥ 0,9	RF	o	o	o	o	o	o
Shut-off valve on suction side	RH	o	o	o	o	o	o
Voltmeter	V	o	o	o	o	o	o
Brine Version	VB	o	o	o	o	o	o
Solenoid valve	VS	o	o	o	o	o	o
Compressors overload relays	RL	o	o	o	o	o	o
Partial heat recovery	RP	o	o	o	o	o	o
Total heat recovery	RT	-	-	-	-	-	-
Electronic thermostatic valve	TE	●	●	●	●	●	●
Part-Winding	PW	●	●	●	●	-	-

● Standard o Optional - Not available

Dimensions - ERAH AM MC Ka serie



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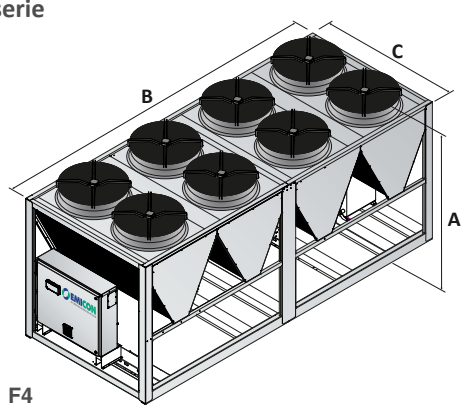

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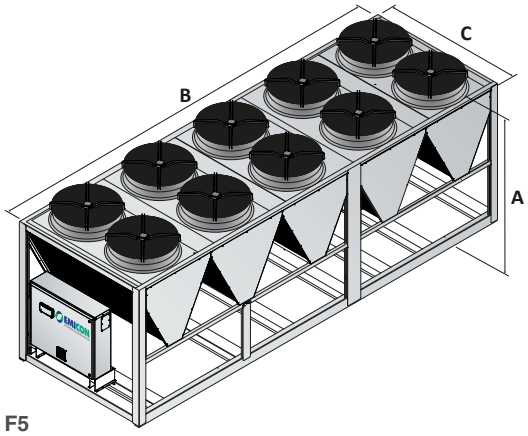


F5

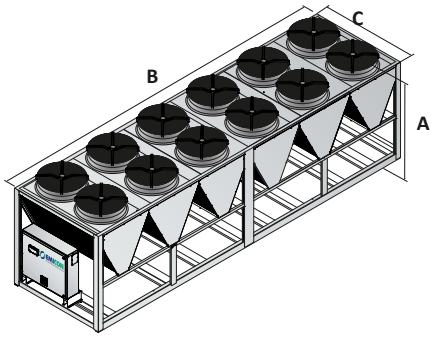
Mod.		A (mm)	B (mm)	C (mm)	Kg
4120	F3	2470	4020	2260	3272
4520	F3	2470	4020	2260	3972
5320	F4	2470	5360	2260	4438
6120	F4	2470	5360	2260	4618
7020	F4	2470	5360	2260	5838
7320	F5	2470	6700	2260	6186

Accessories - ERAH AM MC Ka serie

ERAH AM MC Ka		8020	9020	10120	10520	11520
Amperometer	A	o	o	o	o	o
Anti-corrosive protection of the condensing coils (AIAX coating)	ACP	o	o	o	o	o
Electrical power supply different than standard	AE	o	o	o	o	o
Operation in cooling mode down to – 20°C (by modulating voltage control)	BT	o	o	o	o	o
Operation in cooling mode down to -20°C (by frequency converter electronic device)	BF	o	o	o	o	o
Soundproofed compressors cabinet with standard material	CF	o	o	o	o	o
Compressors inrush counter	CS	o	o	o	o	o
Star/Delta	DS	o	o	o	o	o
Axial fans with electronic commutated motor	EC	o	o	o	o	o
Condensing coil protection grid	GP	o	o	o	o	o
Anti-intrusion grid	GP1	o	o	o	o	o
RS 485 serial interface	IH	o	o	o	o	o
LON Serial interface for LON Protocol	IH (LON)	o	o	o	o	o
Seawood packing	IM	o	o	o	o	o
Serial interface for SNMP or TCP/IP Protocol	IWG	o	o	o	o	o
Modulating capacity control	M12	o	o	o	o	o
Buffer tank module	MV		o	o	o	o
Oil flow safety switch	OS	o	o	o	o	o
Pump group	P1	o	o	o	o	o
Higher available pressure pump group	P1H	o	o	o	o	o
Double pump group (only one working)	P2	o	o	o	o	o
Higher available pressure double pump group (only one working)	P2H	o	o	o	o	o
Rubber-type vibration dampers	PA	o	o	o	o	o
Anti-corrosive protection of the condensing coils (Powder coating)	PCP	o	o	o	o	o
Safety water flow switch	PF	o	o	o	o	o
Spring-type vibration dampers	PM	o	o	o	o	o
Remote display	PQ	o	o	o	o	o
In-line twin pump group (only one working)	PT	o	o	o	o	o
Anti-freeze heater on evaporator	RA	o	o	o	o	o
Power factor correction system cosfi ≥ 0,9	RF	o	o	o	o	o
Shut-off valve on suction side	RH	o	o	o	o	o
Voltmeter	V	o	o	o	o	o
Brine Version	VB	o	o	o	o	o
Solenoid valve	VS	o	o	o	o	o
Compressors overload relays	RL	o	o	o	o	o
Partial heat recovery	RP	o	o	o	o	o
Total heat recovery	RT	-	-	-	-	-
Electronic thermostatic valve	TE	●	●	●	●	●
Part-Winding	PW	o	o	o	o	o

● Standard o Optional - Not available

Dimensions - ERAH AM MC Ka serie



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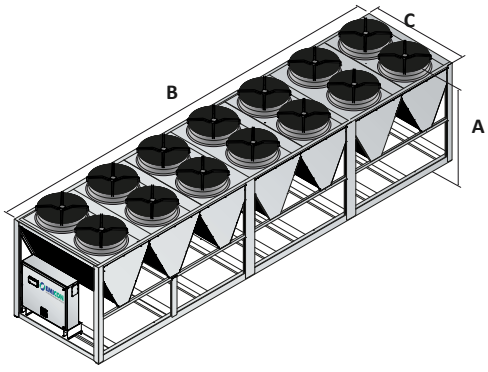

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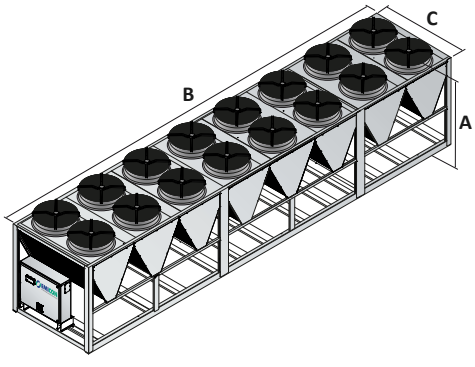


F8

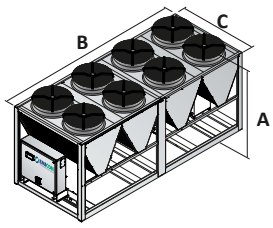
Mod.		A (mm)	B (mm)	C (mm)	Kg
8020	F5	2470	6700	2260	6242
9020	F6	2470	8040	2260	6654
10120	F7	2470	9380	2260	7312
10520	F7	2470	9380	2260	7340
11520	F8	2470	10720	2260	7756

Accessories - ERAH MC U Ka serie

ERAH MC U Ka		4320	5320	6420	8120	10520	11020
Amperometer	A	o	o	o	o	o	o
Anti-corrosive protection of the condensing coils (AIAX coating)	ACP	o	o	o	o	o	o
Electrical power supply different than standard	AE	o	o	o	o	o	o
Soundproofed compressors cabinet with standard material	CF	●	●	●	●	●	●
Compressors inrush counter	CS	o	o	o	o	o	o
Star/Delta	DS	-	-	-	o	o	o
Axial fans with electronic commutated motor	EC	●	●	●	●	●	●
Condensing coil protection grid	GP	o	o	o	o	o	o
Anti-intrusion grid	GP1	o	o	o	o	o	o
RS 485 serial interface	IH	o	o	o	o	o	o
LON Serial interface for LON Protocol	IH (LON)	o	o	o	o	o	o
Seawood packing	IM	o	o	o	o	o	-
Serial interface for SNMP or TCP/IP Protocol	IWG	o	o	o	o	o	o
Modulating capacity control	M12	-	o	o	o	o	o
Buffer tank module	MV	o	o	o	o	o	o
Oil flow safety switch	OS	o	o	o	o	o	o
Pump group	P1	o	o	o	o	o	o
Higher available pressure pump group	P1H	o	o	o	o	o	o
Double pump group (only one working)	P2	o	o	o	o	o	o
Higher available pressure double pump group (only one working)	P2H	o	o	o	o	o	o
Rubber-type vibration dampers	PA	o	o	o	o	o	o
Anti-corrosive protection of the condensing coils (Powder coating)	PCP	o	o	o	o	o	o
Safety water flow switch	PF	o	o	o	o	o	o
Spring-type vibration dampers	PM	o	o	o	o	o	o
Remote display	PQ	o	o	o	o	o	o
In-line twin pump group (only one working)	PT	o	o	o	o	o	o
Anti-freeze heater on evaporator	RA	o	o	o	o	o	o
Power factor correction system cosfi ≥ 0,9	RF	o	o	o	o	o	o
Shut-off valve on suction side	RH	o	o	o	o	o	o
Voltmeter	V	o	o	o	o	o	o
Brine Version	VB	o	o	o	o	o	o
Solenoid valve	VS	o	o	o	o	o	o
Compressors overload relays	RL	o	o	o	o	o	o
Partial heat recovery	RP	o	o	o	o	o	o
Total heat recovery	RT	o	o	o	o	o	o
Electronic thermostatic valve	TE	●	●	●	●	●	●
Part-Winding	PW	●	●	●	-	-	-

● Standard o Optional - Not available

Dimensions - ERAH MC U Ka serie



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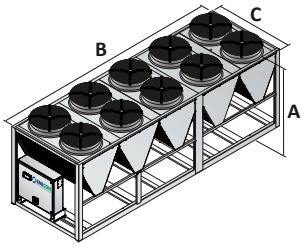

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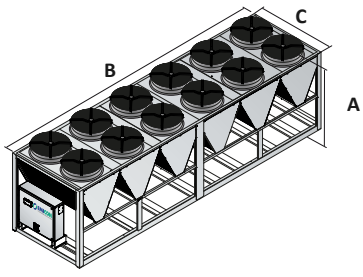
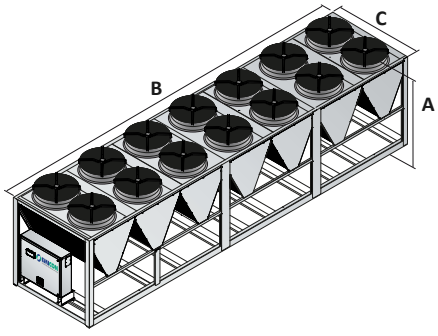


F6

Mod.		A (mm)	B (mm)	C (mm)	Kg
4320	F4	2470	5360	2260	3880
5320	F5	2470	6700	2260	5124
6420	F6	2470	8040	2260	5538
8120	F7	2470	9380	2260	7234
10520	F9	2470	12060	2260	8282
11020	F10	2470	13400	2260	8586



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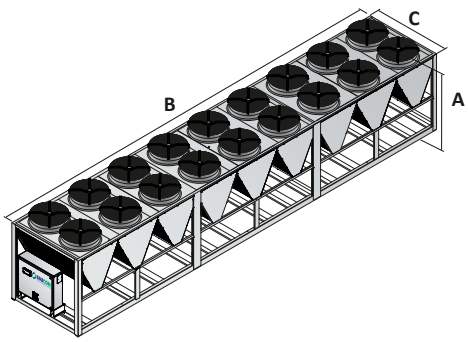

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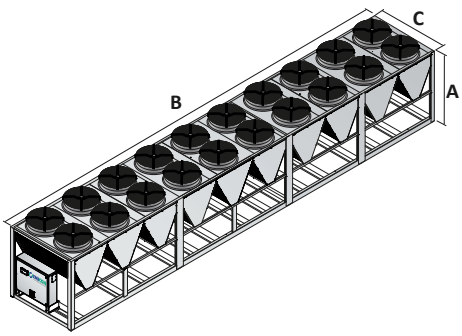


F

ERAH MC HE Ka

AIR COOLED CHILLERS WITH SCREW COMPRESSORS, AXIAL FANS AND MICROCHANNEL CONDENSING COILS

COOLING CAPACITY FROM 490 to 1240 kW

The images shown above are indicative and not binding.

AIR COOLED CHILLERS EQUIPPED WITH SCREW COMPRESSORS, AXIAL FANS AND MICROCHANNEL CONDENSING COILS

The modular air cooled chillers of ERAH...MC HE Ka are designed for external installation and are particularly suitable for cooling liquid solutions in industrial applications or for air conditioning in commercial field, where excellent seasonal performances must be granted keeping at the same time a low environmental impact, class A efficiency and meeting the seasonal efficiency requirements established by (EU) 2016/2281 Regulation.

Micro channel condensing coils are totally made up of mechanically expanded aluminum alloy. In comparison to the traditional Copper-Aluminum coils, the micro channel geometry provides less resistance to the air passing. This allows to optimize the performances of the fans section and consequently to reduce dimensions keeping performances unchanged.
Moreover the micro channel technology permits to reduce the weight of the condensing section as well as the refrigerant charge.

The cross "V" arrangement of the condensing coils makes the units of this series perfectly each other modular, granting at the same time the easiest access to the technical room both for checking operations required during the normal unit functioning and for maintenance.

All the units are totally factory assembled and tested, following specific quality procedures. Besides they are totally hydraulic, cooling and electrical connected permitting a quick installation once on site. Before the test the cooling circuits of each unit are subjected to a pressure test and then charged with Refrigerant R134a and non-freezing oil. So, once on site, the units must be only positioned and electrically and hydraulically connected.

Operation limits:

Standard unit
Air: from -20°C to +45°C ; **water** from 5°C to 15°C (outlet from the evaporator).

Structure
Structure realized with frame made up of hot galvanized steel sheet and RAL 7035 painted, suitable to resist to atmospheric agents. Compressors and main components are easily accessible and suitably placed in the technical room.

Compressors
Compressors, semi-hermetic type, provided with capacity steps, motor thermal protection, rotation direction control, crankcase heater, discharge side shut-off valve and anti-vibration kit.
Compressors lubrication is of forced type, without pump and to avoid excessive oil migration to the cooling circuits, they are provided with an in-built oil separator. In the standard configuration it is also included a discharge junction flange, as well as steps capacity control system, non-return and safety valve, oil heater, lubrication management system, oil filter, oil service valve, POE oil charge, integral motor protection with protection module, discharge side temperature control device.
The electrical motor of the compressors is provided with an inrush current reduction device obtained thanks to some interlocked contactors. Besides the capacity can be continuously modulated through option M12.

Evaporator
Shell & Tube Evaporator, dry expansion type with pure electrolytic copper tubes and shell and tubes plate made up of carbon steel. The exchanger is provided with anti-condensation insulation made up of a nitrile rubber and polyethylene foam with a thickness of 10 mm externally protected by a UV-ray proof, embossed scratchproof polyethylene film. The hydraulic connections are of Victaulic type. Inside the shell, some plastic and corrosion-proof baffles are suitably placed, allowing a correct water distribution and making the tube bundle particularly strong and vibration free, even with high water flows. Water side exchanger design pressures are 10 bar.

Coils
Micro channel condensing Coils totally made up of mechanically expanded aluminum alloy to grant a perfect and continuous contact among tubes and fins optimizing the thermal exchange and reducing dimensions.
The high passivation degree of the used alloy, besides the peculiar assembling way, avoids the possibility to have galvanic corrosion phenomena. On demand it is also possible to provide the units installed in particularly aggressive environments with surface treatments against exchangers environmental corrosion. (Option ACP and PCP)

Fans
Axial fans, with external rotor directly coupled to a three-phase electronically commutated motor (EC) they have the possibility of a continuous regulation of the speed by means of a 0-10V signal completely managed by the microprocessor. Aluminum blades with wings profile are suitably designed to avoid any turbulence in the air detachment zone, granting in this way the max efficiency with the minimum noise level. The fan is equipped with galvanized steel protection grid painted after the construction. Thanks to a more accurate adjustment of air flow, they allow operation of the unit with external temperature down to -20 °C.

Refrigerant circuit
Cooling circuit made up of electronic thermostatic expansion valve, sight glass, high pressure safety device, anti-freeze protection on evaporator, high and low pressure switches, non return valve in-built on compressors discharge side, dehydrating filter with replaceable cartridges, shut-off valve on liquid line. Each compressor operates on an independent circuit granting in this way, a considerable reliability.

Electrical board
Electrical board in compliance with CE Norms, contained in a suitable section protected by internal safety panel, provided with a lock-door main switch. Inside all the control and protection components are suitably placed, together with terminal board and auxiliaries. The electrical board also includes the control device for power supply phases to prevent the compressor wrong side rotation. Microprocessor and relevant display are also placed inside the electrical cabinet.

Microprocessor
Electronic Microprocessor for unit management installed inside the electrical cabinet, with double evaporator in/out control of the chilled water temperature, as well as control of working parameters and equalization of compressors working hours, failures auto-detection system, alarm log, start and set point timeslot programming, possibility of remote management and supervision by enabling standard communication protocols management, complete with compressors hour counter.

Versions

High efficiency version (HE)
Units with full load efficiency Eurovent class A EER ≥ 3.1.

Technical data - ERAH MC HE ka serie

ERAH MC HE Ka		482	522	562	612	672	732	792
Performance data								
Cooling capacity (EN14511)	kW	487,8	514,8	557,1	613,1	657,9	717,6	793,8
Total input power (EN14511)	kW	157,0	164,7	179,2	197,2	208,6	230,9	254,9
EER	W/W	3,11	3,13	3,11	3,11	3,15	3,11	3,11
SEER (1)		4,12	4,13	4,11	4,10	4,12	4,12	4,13
ηs,c (1)		162,0	162,3	161,3	161,1	161,6	161,6	162,1
Refrigerant data R134a								
Global warming potential	GWP	1430	1430	1430	1430	1430	1430	1430
Equivalent CO_2 charge	t	120,1	123,0	134,4	143,0	151,6	161,6	178,8
Refrigerant charge	Kg	84	86	94	100	106	113	125
Screw compressors								
Quantity/Circuits	n°/n°	2 / 2	2 / 2	2 / 2	2 / 2	2 / 2	2 / 2	2 / 2
Nominal consumption of the unit	A	235	245	266	291	305	345	387
Max. current consumption of the unit	A	360	378	396	419	442	504	566
Max. starting current of the unit	A	553	646	666	727	744	746	634
Axial fans								
Quantity	n°	8	10	10	10	12	12	12
Motors power input	kW	12,0	15,0	15,0	15,0	18,0	18,0	18,0
Total condensing air flow	m^3/h	200000	250000	250000	250000	300000	300000	300000
Electrical current consumption	A	18,4	23,0	23,0	23,0	27,6	27,6	27,6
Shell & Tube Evaporator								
Quantity	n°	1	1	1	1	1	1	1
Water flow	m^3/h	84,1	88,8	96,1	105,7	113,4	123,7	136,9
Pressure drop	kPa	28,0	33,0	42,0	28,0	32,0	20,0	23,0
Sound power level (2)	dB(A)	96,6	96,8	97,0	97,1	97,4	97,4	97,4
Power supply	V/Hz/Ph	400/50/3	400/50/3	400/50/3	400/50/3	400/50/3	400/50/3	400/50/3

ERAH MC HE Ka		872	982	1002	1102	1202	1302
Performance data							
Cooling capacity (EN14511)	kW	868,2	977,6	1028,5	1098,2	1167,6	1239,1
Total input power (EN14511)	kW	280,0	314,3	330,4	351,5	375,2	397,3
EER	W/W	3,10	3,11	3,11	98,9	3,11	3,12
SEER (1)		4,12	4,14	4,12	4,14	4,11	4,11
ηs,c (1)		162,0	162,4	162,0	162,7	161,4	161,2
Refrigerant data R134a							
Global warming potential	GWP	1430	1430	1430	1430	1430	1430
Equivalent CO_2 charge	t	205,9	234,5	234,5	243,1	268,8	268,8
Refrigerant charge	Kg	144	164	164	170	188	188
Screw compressors							
Quantity/Circuits	n°/n°	2 / 2	2 / 2	2 / 2	2 / 2	2 / 2	2 / 2
Nominal consumption of the unit	A	405	476	501	515	563	596
Max. current consumption of the unit	A	630	712	783	854	948	980
Max. starting current of the unit	A	673	828	894	912	1091	1107
Axial fans							
Quantity	n°	14	16	16	18	20	20
Motors power input	kW	21,0	24,0	24,0	27,0	30,0	30,0
Total condensing air flow	m^3/h	350000	400000	400000	450000	500000	500000
Electrical current consumption	A	32,2	36,8	36,8	41,4	46,0	46,0
Shell & Tube Evaporator							
Quantity	n°	1	1	1	1	1	1
Water flow	m^3/h	149,7	168,6	177,3	189,3	201,3	213,6
Pressure drop	kPa	49,0	34,0	37,0	42,0	43,0	47,0
Sound power level (2)	dB(A)	97,6	98,3	98,5	98,8	101,4	101,6
Power supply	V/Hz/Ph	400/50/3	400/50/3	400/50/3	400/50/3	400/50/3	400/50/3

Performances are referred to the following conditions: ambient air temperature 35°C - water 12/7°C

(1) In accordance with (EU) 2016/2281 and relative norms part of this.

(2) Sound power level in accordance with ISO 3744.

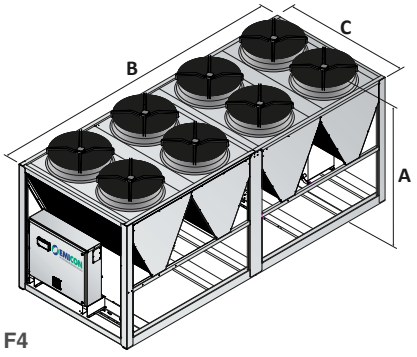
EMICON INNOVATION AND COMFORT

Accessories - ERAH MC HE ka serie

ERAH MC HE Ka		482	522	562	612	672	732	792
Amperometer	A	o	o	o	o	o	o	o
Anti-corrosive protection of the condensing coils (AIAX coating)	ACP	o	o	o	o	o	o	o
Electrical power supply different than standard	AE	o	o	o	o	o	o	o
Soundproofed compressors cabinet with standard material	CF	o	o	o	o	o	o	o
Compressors inrush counter	CS	o	o	o	o	o	o	o
Star/Delta	DS	-	-	-	-	-	o	o
Condensing coil protection grid	GP	o	o	o	o	o	o	o
Anti-intrusion grid	GP1	o	o	o	o	o	o	o
RS 485 serial interface	IH	o	o	o	o	o	o	o
LON Serial interface for LON Protocol	IH (LON)	o	o	o	o	o	o	o
Seawood packing	IM	o	o	o	o	o	o	o
Serial interface for SNMP or TCP/IP Protocol	IWG	o	o	o	o	o	o	o
Modulating capacity control	M12	o	o	o	o	o	o	o
Buffer tank module	MV	-	-	-	-	o	o	o
Oil flow safety switch	OS	o	o	o	o	o	o	o
Pump group	P1	o	o	o	o	o	o	o
Higher available pressure pump group	P1H	o	o	o	o	o	o	o
Double pump group (only one working)	P2	o	o	o	o	o	o	o
Higher available pressure double pump group (only one working)	P2H	o	o	o	o	o	o	o
Rubber-type vibration dampers	PA	o	o	o	o	o	o	o
Anti-corrosive protection of the condensing coils (Powder coating)	PCP	o	o	o	o	o	o	o
Safety water flow switch	PF	o	o	o	o	o	o	o
Spring-type vibration dampers	PM	o	o	o	o	o	o	o
Remote display	PQ	o	o	o	o	o	o	o
In-line twin pump group (only one working)	PT	o	o	o	o	o	o	o
Anti-freeze heater on evaporator	RA	o	o	o	o	o	o	o
Power factor correction system cosfi ≥ 0,9	RF	o	o	o	o	o	o	o
Shut-off valve on suction side	RH	o	o	o	o	o	o	o
Voltmeter	V	o	o	o	o	o	o	o
Brine Version	VB	o	o	o	o	o	o	o
Solenoid valve	VS	o	o	o	o	o	o	o
Compressors overload relays	RL	o	o	o	o	o	o	o
Partial heat recovery	RP	o	o	o	o	o	o	o
Total heat recovery	RT	-	-	-	-	-	-	-
Axial fans with electronic commutated motor	EC	●	●	●	●	●	●	●
Electronic thermostatic valve	TE	●	●	●	●	●	●	●
Part-Winding	PW	●	●	●	●	●	-	-

● Standard o Optional - Not available

Dimensions - ERAH MC HE ka serie



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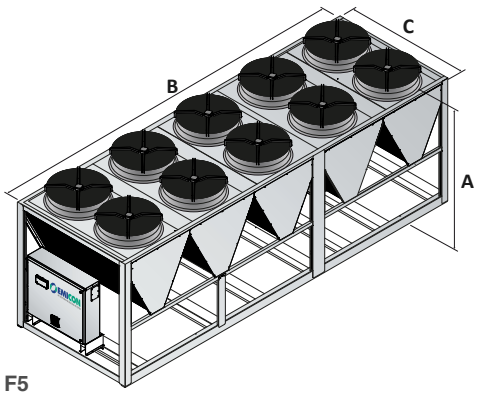

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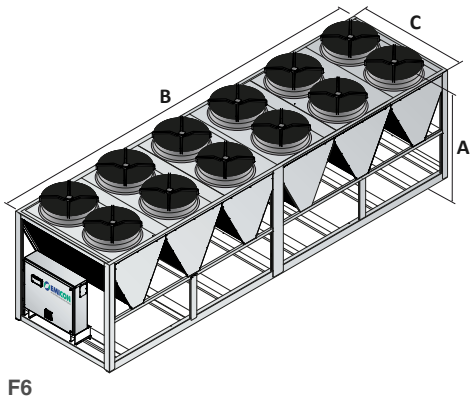


F6

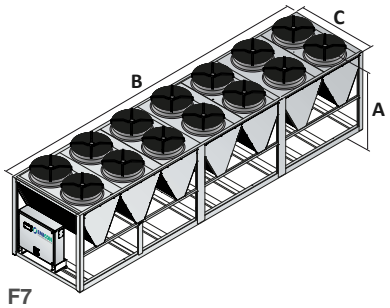
Mod.		A (mm)	B (mm)	C (mm)	Kg
482	F4	2470	5360	2260	4258
522	F5	2470	6700	2260	4656
562	F5	2470	6700	2260	4826
612	F5	2470	6700	2260	4846
672	F6	2470	8040	2260	5240
732	F6	2470	8040	2260	5866
792	F6	2470	8040	2260	6488

Accessories - ERAH MC HE ka serie

ERAH MC HE Ka		872	982	1002	1102	1202	1302
Amperometer	A	o	o	o	o	o	o
Anti-corrosive protection of the condensing coils (AIAX coating)	ACP	o	o	o	o	o	o
Electrical power supply different than standard	AE	o	o	o	o	o	o
Soundproofed compressors cabinet with standard material	CF	o	o	o	o	o	o
Compressors inrush counter	CS	o	o	o	o	o	o
Star/Delta	DS	o	o	o	o	o	o
Condensing coil protection grid	GP	o	o	o	o	o	o
Anti-intrusion grid	GP1	o	o	o	o	o	o
RS 485 serial interface	IH	o	o	o	o	o	o
LON Serial interface for LON Protocol	IH (LON)	o	o	o	o	o	o
Seawood packing	IM	o	o	o	o	-	-
Serial interface for SNMP or TCP/IP Protocol	IWG	o	o	o	o	o	o
Modulating capacity control	M12	o	o	o	o	o	o
Buffer tank module	MV	o	o	o	o	o	o
Oil flow safety switch	OS	o	o	o	o	o	o
Pump group	P1	o	o	o	o	o	o
Higher available pressure pump group	P1H	o	o	o	o	o	o
Double pump group (only one working)	P2	o	o	o	o	o	o
Higher available pressure double pump group (only one working)	P2H	o	o	o	o	o	o
Rubber-type vibration dampers	PA	o	o	o	o	o	o
Anti-corrosive protection of the condensing coils (Powder coating)	PCP	o	o	o	o	o	o
Safety water flow switch	PF	o	o	o	o	o	o
Spring-type vibration dampers	PM	o	o	o	o	o	o
Remote display	PQ	o	o	o	o	o	o
In-line twin pump group (only one working)	PT	o	o	o	o	o	o
Anti-freeze heater on evaporator	RA	o	o	o	o	o	o
Power factor correction system cosfi ≥ 0,9	RF	o	o	o	o	o	o
Shut-off valve on suction side	RH	o	o	o	o	o	o
Voltmeter	V	o	o	o	o	o	o
Brine Version	VB	o	o	o	o	o	o
Solenoid valve	VS	o	o	o	o	o	o
Compressors overload relays	RL	o	o	o	o	o	o
Partial heat recovery	RP	o	o	o	o	o	o
Total heat recovery	RT	o	o	o	o	o	o
Axial fans with electronic commutated motor	EC	●	●	●	●	●	●
Electronic thermostatic valve	TE	●	●	o	o	o	o
Part-Winding	PW	o	o	o	o	o	o

● Standard o Optional - Not available

Dimensions - ERAH MC HE ka serie



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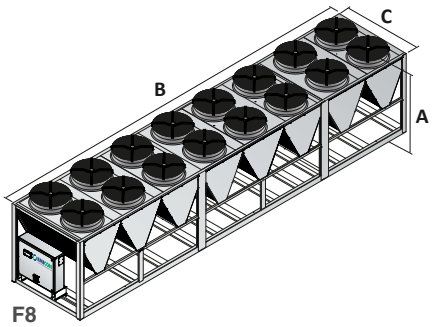

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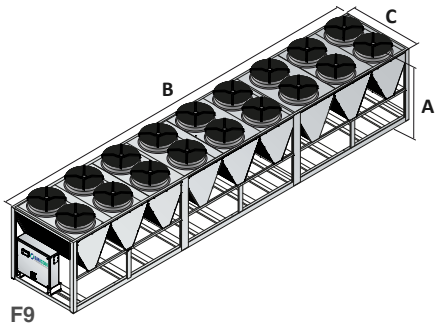

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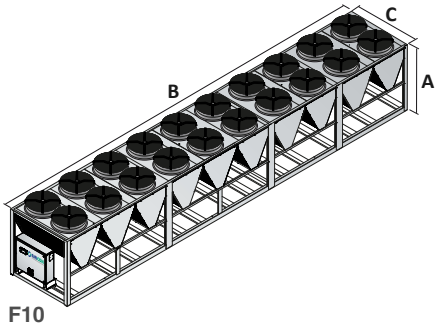


F10

Mod.		A (mm)	B (mm)	C (mm)	Kg
872	F7	2470	9380	2260	7136
982	F8	2470	10720	2260	7574
1002	F8	2470	10720	2260	7588
1102	F9	2470	12060	2260	7998
1202	F10	2470	13400	2260	8310
1302	F10	2470	13400	2260	8316

EMICON INNOVATION AND COMFORT

ERAH MC VS HE Ka

AIR COOLED CHILLERS WITH SCREW COMPRESSORS, AXIAL FANS AND MICROCHANNEL CONDENSING COILS

COOLING CAPACITY FROM 500 to 1110 kW

The images shown above are indicative and not binding.

AIR COOLED CHILLERS EQUIPPED WITH SCREW COMPRESSORS, AXIAL FANS AND MICROCHANNEL CONDENSING COILS

The modular air cooled chillers of ERAH...MC VS HE Ka are designed for external installation and are particularly suitable for cooling liquid solutions in industrial applications or for air conditioning in commercial field, where excellent seasonal performances must be granted keeping at the same time a low environmental impact, class A efficiency and meeting the seasonal efficiency requirements established by (EU) 2016/2281 Regulation.

The units are provided with two semi-hermetic screw compressors, one of which is inverter driven for a continuous and modulating control of the cooling capacity. Each compressor works on a single circuit, completely independent, assuring in this way the maximum reliability.

Micro channel condensing coils are totally made up of aluminum alloy. In comparison to the traditional Copper-Aluminum coils, the micro channel geometry provides less resistance to the air passing, at the same heat exchange capacity. This allows to optimize the performances of the fans section and consequently to reduce dimensions keeping performances and electrical absorption unchanged. Moreover, the micro channel technology allows a significant reduction in weight of the condensing section as well as the refrigerant charge.

The cross "V" arrangement of the condensing coils makes the units of this series perfectly each other modular, granting at the same time the easiest access to the technical room both for checking operations required during the normal unit functioning and for maintenance.

All the units are totally factory assembled and tested, following specific quality procedures. Besides they are totally hydraulic, cooling and electrical connected permitting a quick installation once on site. Before the test the cooling circuits of each unit are subjected to a pressure test and then charged with Refrigerant R134a and non-freezing oil. So, once on site, the units must be only positioned and electrically and hydraulically connected.

Operation Limits:

Standard unit
Air: from -20°C to +45°C; **water** from 5°C to 15°C (outlet from the evaporator).

Structure
Structure realized with frame made up of hot galvanized steel sheet and RAL 7035 painted, suitable to resist to atmospheric agents. Compressors and main components are easily accessible and suitably placed in the technical room.

Compressors
Compressors semi-hermetic type, one of which frequency inverter driven, allowing the adjustment of the capacity to the cooling charge, assuring the best efficiency at the different working conditions. The compressors are provided with motor thermal protection, rotation direction control, crankcase heater, oil filter and service valve, POE oil charge, discharge side shut-off valve and anti-vibration kit.
Compressors lubrication is of forced type, without pump and to avoid excessive oil migration to the cooling circuits, they are provided with an in-built oil separator on the discharge side. The electrical motor of the compressors is provided with an automatic partial load inrush system and some interlocked inrush contactors so to avoid accidental short circuits (standard for sizes from 482 MC VS HE Ka to 672 MC VS HE Ka, option DS for the other sizes).

Evaporator
Shell & Tube Evaporator, dry expansion type with pure electrolytic copper tubes and shell and tubes plate made up of carbon steel. The exchanger is provided with anti-condensation insulation made up of a nitrile rubber and polyethylene foam with a thickness of 10 mm externally protected by a UV-ray proof, embossed scratchproof polyethylene film. The hydraulic connections are of Victaulic type. Inside the shell, some plastic and corrosion-proof baffles are suitably placed, allowing a correct water distribution and making the tube bundle particularly strong and vibration free, even with high water flows. Water side exchanger design pressures are 10 bar.

Coils
Micro channel condensing Coils totally made up of mechanically expanded aluminum alloy to grant a perfect and continuous contact among tubes and fins optimizing the thermal exchange and reducing dimensions.
The high passivation degree of the used alloy, besides the peculiar assembling way, avoids the possibility to have galvanic corrosion phenomena. On demand it is also possible to provide the units installed in particularly aggressive environments with surface treatments against exchangers environmental corrosion. (Option ACP and PCP).

Fans
Axial fans, with external rotor directly coupled to a three-phase electronically commutated motor (EC) they have the possibility of a continuous regulation of the speed by means of a 0-10V signal completely managed by the microprocessor. Aluminum blades with wings profile are suitably designed to avoid any turbulence in the air detachment zone, granting in this way the max efficiency with the minimum noise level. The fan is equipped with galvanized steel protection grid painted after the construction. Thanks to a more accurate adjustment of air flow, they allow operation of the unit with external temperature down to -20 °C.

Refrigerant circuit
Cooling circuit made up of electronic thermostatic expansion valve, sight glass, high pressure safety device, anti-freeze protection on evaporator, high and low pressure switches, non return valve in-built on compressors discharge side, dehydrating filter with replaceable cartridges, shut-off valve on liquid line. Each compressor operates on an independent circuit granting in this way, a considerable reliability.

Electrical board
Electrical board in compliance with CE Norms, contained in a suitable section protected by internal safety panel, provided with a lock-door main switch. Inside all the control and protection components are suitably placed, together with terminal board and auxiliaries. The electrical board also includes the control device for power supply phases to prevent the compressor wrong side rotation. Microprocessor and relevant display are also placed inside the electrical cabinet.

Microprocessor
Electronic Microprocessor for unit management installed inside the electrical cabinet, with double evaporator in/out control of the chilled water temperature, as well as control of working parameters and equalization of compressors working hours, failures auto-detection system, alarm log, start and set point timeslot programming, possibility of remote management and supervision by enabling standard communication protocols management, complete with compressors hour counter.

Versions

High efficiency version (HE)
Units with full load efficiency Eurovent class A EER ≥ 3.1.

Technical data - ERAH MC VS HE Ka serie

ERAH MC VS HE Ka		482	522	562	612	672	732
Performance data							
Cooling capacity (EN14511)	kW	502,6	529,9	573,3	627,0	682,7	738,7
Total input power (EN14511)	kW	161,1	168,4	184,0	201,6	213,8	236,0
EER	W/W	3,12	3,15	3,12	3,11	3,19	3,13
SEER (1)		4,15	4,21	4,15	4,16	4,18	4,21
ηs,c (1)		163,1	165,6	162,9	163,3	164,1	165,2
Refrigerant data R134a							
Global warming potential	GWP	1430	1430	1430	1430	1430	1430
Equivalent CO_2 charge	t	120,1	123,0	134,4	143,0	151,6	161,6
Refrigerant charge	Kg	84	86	94	100	106	113
Screw compressors							
Quantity/Circuits	n°/n°	2 / 2	2 / 2	2 / 2	2 / 2	2 / 2	2 / 2
Nominal consumption of the unit	A	250	263	293	300	326	367
Max. current consumption of the unit	A	415	433	480	503	553	615
Max. starting current of the unit	A	565	658	687	727	757	609
Axial fans							
Quantity	n°	8	10	10	10	12	12
Motors power input	kW	12,0	15,0	15,0	15,0	18,0	18,0
Total condensing air flow	m^3/h	200000	250000	250000	250000	300000	300000
Electrical current consumption	A	18,4	23,0	23,0	23,0	27,6	27,6
Shell & Tube Evaporator							
Quantity	n°	1	1	1	1	1	1
Water flow	m^3/h	86,7	91,4	98,8	108,1	117,7	127,4
Pressure drop	kPa	29,0	34,0	44,0	29,0	33,0	21,0
Sound power level (2)	dB(A)	96,6	96,8	97,0	97,1	97,4	97,4
Power supply	V/Hz/Ph	400/50/3	400/50/3	400/50/3	400/50/3	400/50/3	400/50/3

ERAH MC VS HE Ka		792	872	982	1002	1102
Performance data						
Cooling capacity (EN14511)	kW	813,0	893,4	1001,2	1052,7	1110,6
Total input power (EN14511)	kW	261,1	286,5	321,4	337,8	351,4
EER	W/W	3,11	3,12	3,12	3,12	3,16
SEER (1)		4,16	4,16	4,17	4,14	4,15
ηs,c (1)		163,4	163,6	163,7	162,5	163,1
Refrigerant data R134a						
Global warming potential	GWP	1430	1430	1430	1430	1430
Equivalent CO_2 charge	t	178,8	205,9	234,5	234,5	243,1
Refrigerant charge	Kg	125	144	164	164	170
Screw compressors						
Quantity/Circuits	n°/n°	2 / 2	2 / 2	2 / 2	2 / 2	2 / 2
Nominal consumption of the unit	A	412	438	504	529	544
Max. current consumption of the unit	A	658	742	811	882	901
Max. starting current of the unit	A	650	696	848	914	932
Axial fans						
Quantity	n°	12	14	16	16	18
Motors power input	kW	18,0	21,0	24,0	24,0	27,0
Total condensing air flow	m^3/h	300000	350000	400000	400000	450000
Electrical current consumption	A	27,6	32,2	36,8	36,8	41,4
Shell & Tube Evaporator						
Quantity	n°	1	1	1	1	1
Water flow	m^3/h	140,2	154,0	172,6	181,5	191,5
Pressure drop	kPa	23,0	50,0	35,0	37,0	42,0
Sound power level (2)	dB(A)	97,4	97,6	98,3	98,5	98,8
Power supply	V/Hz/Ph	400/50/3	400/50/3	400/50/3	400/50/3	400/50/3

Performances are referred to the following conditions: ambient air temperature 35°C - water 12/7°C

(1) In accordance with (EU) 2016/2281 and relative norms part of this.

(2) Sound power level in accordance with ISO 3744.

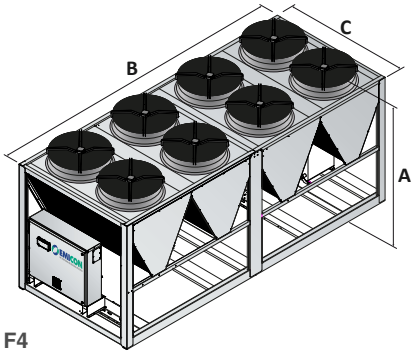
EMICON INNOVATION AND COMFORT

Accessories - ERAH MC VS HE Ka serie

ERAH MC VS HE Ka		482	522	562	612	672	732
Amperometer	A	o	o	o	o	o	o
Anti-corrosive protection of the condensing coils (AIAX coating)	ACP	o	o	o	o	o	o
Electrical power supply different than standard	AE	o	o	o	o	o	o
Soundproofed compressors cabinet with standard material	CF	-	-	-	-	-	-
Compressors inrush counter	CS	o	o	o	o	o	o
Star/Delta	DS	-	-	-	-	-	o
Condensing coil protection grid	GP	o	o	o	o	o	o
Anti-intrusion grid	GP1	o	o	o	o	o	o
RS 485 serial interface	IH	o	o	o	o	o	o
LON Serial interface for LON Protocol	IH (LON)	o	o	o	o	o	o
Seawood packing	IM	o	o	o	o	o	o
Serial interface for SNMP or TCP/IP Protocol	IWG	o	o	o	o	o	o
Buffer tank module	MV	-	-	-	-	o	o
Oil flow safety switch	OS	o	o	o	o	o	o
Pump group	P1	o	o	o	o	o	o
Higher available pressure pump group	P1H	o	o	o	o	o	o
Double pump group (only one working)	P2	o	o	o	o	o	o
Higher available pressure double pump group (only one working)	P2H	o	o	o	o	o	o
Rubber-type vibration dampers	PA	o	o	o	o	o	o
Anti-corrosive protection of the condensing coils (Powder coating)	PCP	o	o	o	o	o	o
Safety water flow switch	PF	o	o	o	o	o	o
Spring-type vibration dampers	PM	o	o	o	o	o	o
Remote display	PQ	o	o	o	o	o	o
In-line twin pump group (only one working)	PT	o	o	o	o	o	o
Anti-freeze heater on evaporator	RA	o	o	o	o	o	o
Power factor correction system cosfi ≥ 0,9	RF	o	o	o	o	o	o
Shut-off valve on suction side	RH	o	o	o	o	o	o
Voltmeter	V	o	o	o	o	o	o
Brine Version	VB	o	o	o	o	o	o
Solenoid valve	VS	o	o	o	o	o	o
Compressors overload relays	RL	o	o	o	o	o	o
Partial heat recovery	RP	o	o	o	o	o	o
Total heat recovery	RT	-	-	-	-	-	-
Electronic thermostatic valve	TE	●	●	●	●	●	●
Part-Winding	PW	●	●	●	●	●	-
Axial fans with electronic commutated motor	EC	●	●	●	●	●	●

● Standard o Optional - Not available

Dimensions - ERAH MC VS HE Ka serie



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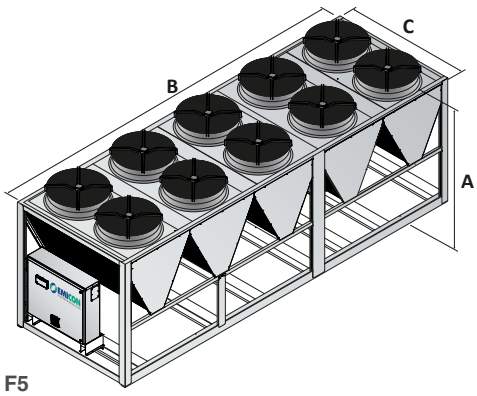

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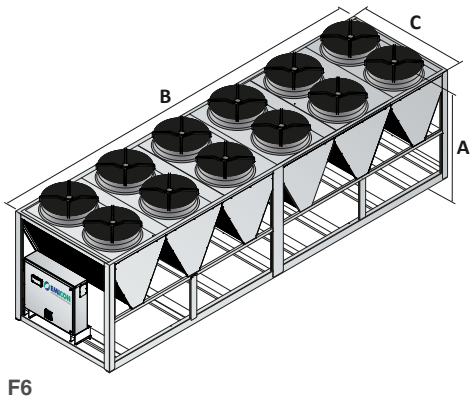


F6

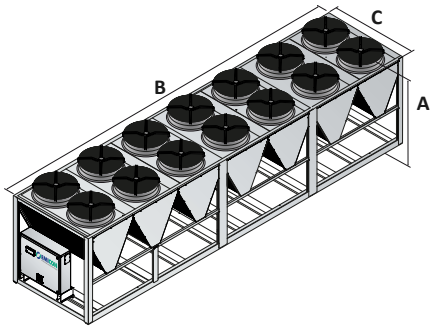
Mod.		A (mm)	B (mm)	C (mm)	Kg
482	F4	2470	5360	2260	4338
522	F5	2470	6700	2260	4736
562	F5	2470	6700	2260	4900
612	F5	2470	6700	2260	4918
672	F6	2470	8040	2260	5918
732	F6	2470	8040	2260	5946

Accessories - ERAH MC VS HE Ka serie

ERAH MC VS HE Ka		792	872	982	1002	1102
Amperometer	A	o	o	o	o	o
Anti-corrosive protection of the condensing coils (AIAX coating)	ACP	o	o	o	o	o
Electrical power supply different than standard	AE	o	o	o	o	o
Soundproofed compressors cabinet with standard material	CF	-	-	-	-	-
Compressors inrush counter	CS	o	o	o	o	o
Star/Delta	DS	o	o	o	o	o
Condensing coil protection grid	GP	o	o	o	o	o
Anti-intrusion grid	GP1	o	o	o	o	o
RS 485 serial interface	IH	o	o	o	o	o
LON Serial interface for LON Protocol	IH (LON)	o	o	o	o	o
Seawood packing	IM	o	o	o	o	o
Serial interface for SNMP or TCP/IP Protocol	IWG	o	o	o	o	o
Buffer tank module	MV	o	o	o	o	o
Oil flow safety switch	OS	o	o	o	o	o
Pump group	P1	o	o	o	o	o
Higher available pressure pump group	P1H	o	o	o	o	o
Double pump group (only one working)	P2	o	o	o	o	o
Higher available pressure double pump group (only one working)	P2H	o	o	o	o	o
Rubber-type vibration dampers	PA	o	o	o	o	o
Anti-corrosive protection of the condensing coils (Powder coating)	PCP	o	o	o	o	o
Safety water flow switch	PF	o	o	o	o	o
Spring-type vibration dampers	PM	o	o	o	o	o
Remote display	PQ	o	o	o	o	o
In-line twin pump group (only one working)	PT	o	o	o	o	o
Anti-freeze heater on evaporator	RA	o	o	o	o	o
Power factor correction system cosfi ≥ 0,9	RF	o	o	o	o	o
Shut-off valve on suction side	RH	o	o	o	o	o
Voltmeter	V	o	o	o	o	o
Brine Version	VB	o	o	o	o	o
Solenoid valve	VS	o	o	o	o	o
Compressors overload relays	RL	o	o	o	o	o
Partial heat recovery	RP	o	o	o	o	o
Total heat recovery	RT	-	-	-	-	-
Electronic thermostatic valve	TE	●	●	●	●	●
Part-Winding	PW	-	-	-	-	-
Axial fans with electronic commutated motor	EC	●	●	●	●	●

● Standard o Optional - Not available

Dimensions - ERAH MC VS HE Ka serie



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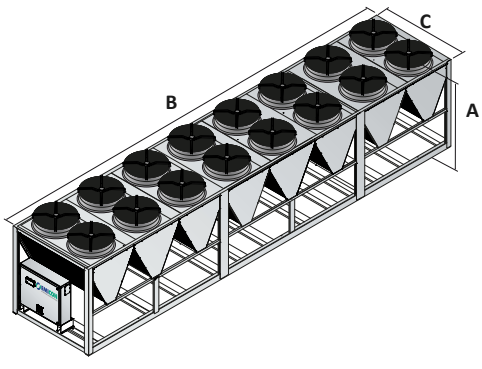

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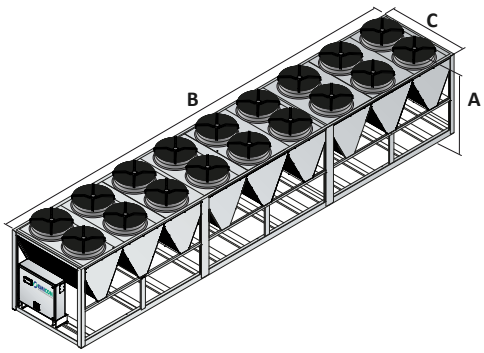


F9

Mod.		A (mm)	B (mm)	C (mm)	Kg
792	F6	2470	8040	2260	6582
872	F7	2470	9380	2260	7232
982	F8	2470	10720	2260	7668
1002	F8	2470	10720	2260	7668
1102	F9	2470	12060	2260	8078

EMICON INNOVATION AND COMFORT

ERAC Ka

AIR COOLED CHILLERS
WITH BRUSHLESS OIL-FREE TURBOCOR COMPRESSORS

COOLING CAPACITY FROM 443 to 1400 kW

AIR COOLED CHILLERS FOR EXTERNAL INSTALLATION EQUIPPED WITH BRUSHLESS OIL-FREE TURBOCOR COMPRESSORS

The monoblock air-cooled chillers of ERAC...Ka series are suitable for external installation and are particularly indicated for liquid cooling in air conditioning and industrial process plants, where high efficiency with partial loads, quietness and long lifetime must be granted. This series meet the requirements for seasonal efficiency foreseen by the (EU) Regulation 2016/2281.

The extreme compactness of both compressor and condensing section has allowed to produce chillers with a compact design and resulting reduced weight if compared to traditional chillers with same cooling capacity. This aspect connected to the lack of lubricating oil in the cooling circuit, allows to significantly reduce the maintenance costs and to make the most of the heat exchangers in their global thermal exchange surface.

All the units are totally factory assembled and tested following specific quality procedures. They are also totally hydraulically and electrically connected so, once on site, they can be quickly installed. Before final test, cooling circuits are pressure tightness tested and charged with refrigerant R134a. Therefore, once on site, the units must only be positioned and hydraulically and electrically connected.

Operation limits:

Air: from -8°C to +42°C ; **water** (outlet from the evaporator): from 5°C to 15°C.

Structures
Made up of high-thickness galvanized carbon steel, epoxy-powder RAL 7035 painted elements. The structure is strongly fixed through galvanized self-locking bolts and nuts able to absorb any mechanical stress due to handling and transport. Evaporating section, compressors and regulation valve can be easily accessed and inspected in order to make check and maintenance operation easier and safer.

Compressors
Double-stage, magnetic-levitation centrifugal hermetic Compressors (without mechanical bearings). They are oil-free and provided with in-built electronic management system, pressure and temperature probes, direct-cooling system and inverter for speed regulation. Each compressor is equipped with rubber type anti-vibration dampers, suction side shut-off valve, discharge side shut-off valve with in-built check valve, suction filter, double stage hot gas by-pass system for start phases, liquid refrigerant line with sigh-glass and valve for compressor direct and controlled cooling. Compressors are suitably weather protected, being installed inside a sealed and sound-proof cabinet, easy to be inspected thanks side panels provided with ¼ turn locks which can be opened through special keys. The electrical cabinet with interlocked double panels can be opened by an external main switch positioned on the unit front side.

Evaporator
Shell & tube flooded Evaporator. Refrigerant is outside the tubes and inside a carbon steel shell; the flooding level is controlled by an electronic sensor which grants the max efficiency at any load condition. Refrigerant side design pressure is 16,5 bar. Water side one is 10 bar. The exchange tube, the chilled solutions (water or glycol solutions) flows in, is made up of pure corrugated copper to optimize thermal exchange. The exchange shell is covered by 10 mm thickness, fire retardant, closed cell material and protected by scratch-resistant coating. Hydraulic connections are of Victaulic type.

Condensing coils
External Condensing Coils made up of finned pack heat-exchangers with cross-fin pure electrolytic copper pipes and louvered aluminium fins. On demand, if the units are installed in particularly aggressive environments, it is possible to realize coils with a double-layer epoxy paint or to realized a totally pure copper coil (option RM and RR).

Fans
6-poles Axial Fans with electrical motor with external rotor directly coupled to the impeller and driven by a V/F inverter system which controls the condensation temperature. Aluminum blades with wings profile are suitably designed to avoid any turbulence in the air detachment zone, granting in this way the max efficiency with the minimum noise level. The fan is equipped with galvanized steel protection grid painted after the construction. The fan motors are of totally closed type and have got a protection factor IP54 and protection winding-flooded thermostat. On demand, for operation till -20°C external air temperature is possible to provide it with EC Brushless fans (Option EC).

Refrigerant circuit
Cooling Circuits mainly consisting of: electronic thermostatic valve with in-built microprocessor to regulate the refrigerant flow even with compressor partial load operation, also working as complete closure solenoid valve, shut-off valves on each compressor discharge line and shut-off valve on suction side, discharge side non-return valve, liquid line shut-off valve, dehydrating filter with interchangeable artridges, sight-glass, hot gas by-pass line with tandem or trio-compressors, liquid tapping line for compressors internal cooling, high and low pressure safety valve, gauges, high and low pressure transducers, high and low pressure switches.

Electrical Board
Contained inside a housing suitable for external installation (IP 54) and consisting of: lockable main switch, contactors, amperometric and thermal protections insulation switches for low tension auxiliaries derivation, conductors numbered as relevant terminals, passive filters for harmonics and electromagnetic interferences removal, user interface consisting of alphanumeric backlit display, special microprocessor electronic board, thermostat on electrical board for internal temperature control in case of operation or parking where external temperatures are below 0°C, forced electrical cabinet ventilation to grant the right operation of those components subject to relevant sunlight.

Microprocessor
Electronic Microprocessor consisting of IN/OUT electronic board, LCD Graphic Display, LED signals and keyboard. This microprocessor allows the PID regulation of evaporator outlet water temperature and the working parameters setting, as well as the alarms management, the measured values (temperature, working hours etc...) reading and the possibility to control them through a supervision system. It also allows the reading and setting of: all the INPUTS and OUTPUTS, all the system working parameters as well to display all the existing alarms.

Versions

High efficiency version (HE)
Units with full load efficiency Eurovent class A EER ≥ 3.1.

Technical data - ERAC Ka serie

ERAC KA		451	562	682	812	983	1404
Performance data							
Cooling capacity (EN14511)	kW	443,0	557,6	676,0	807,7	979,2	1395,9
Total input power (EN14511)	kW	142,0	189,0	200,0	254,0	283,0	423,0
EER	W/W	3,1	2,95	3,38	3,18	3,46	3,30
SEER (1)		5,20	5,13	5,01	5,18	4,99	4,91
ηs,c (1)		205,0	202,0	197,9	204,4	196,6	193,5
Refrigerant data R134a							
Global warming potential	GWP	1430	1430	1430	1430	1430	1430
Equivalent CO_2 charge	t	403,3	396,1	563,4	586,3	836,6	1029,6
Refrigerant charge	Kg	282	277	394	410	585	720
Centrifugal compressors							
Quantity/Circuits	n°/n°	1 / 1	2 / 1	2 / 1	2 / 1	3 / 1	4 / 2
Nominal consumption of the unit	A	202,7	271	288,7	368,9	409	614,2
Max. current consumption of the unit	A	244	313	463	472	690	926
Max. starting current of the unit	A	101	301	418	451	618	870
Axial fans							
Quantity	n°	8	10	10	12	14	20
Motors power input	kW	15,6	20,0	20,0	24,0	28,0	40,0
Total condensing air flow	m^3/h	155200	210400	186000	223200	260400	372000
Electrical current consumption	A	31,2	39,0	39,0	47,4	55,3	79,0
Shell & tube flooded Evaporator							
Quantity	n°	1	1	1	1	1	2
Water flow	m^3/h	76,4	96,1	116,6	139,3	168,8	240,7
Pressure drop	kPa	24,0	92,5	65,0	74,0	70,0	78,0
Sound power level (2)	dB(A)	90,0	93,0	93,0	94,0	94,0	96,0
Power supply	V/Hz/Ph	400/50/3	400/50/3	400/50/3	400/50/3	400/50/3	400/50/3

Performances are referred to the following conditions: ambient air temperature 35°C - water 12/7°C

(1) In accordance with (EU) 2016/2281 and relative norms part of this.

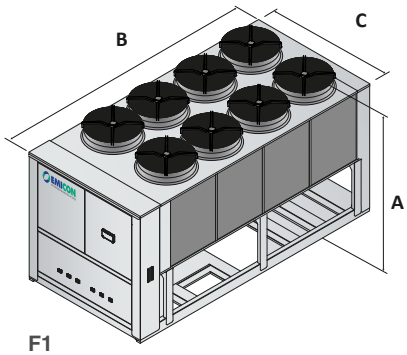
(2) Sound power level in accordance with ISO 3744.

Accessories - ERAC Ka serie

ERAC Ka		451	562	682	812	983	1404
Amperometer	A	o	o	o	o	o	o
Operation in cooling mode down to -20°C (by frequency converter electronic device)	BF	●	●	●	●	●	●
Refrigerant leakage detector	DR	o	o	o	o	o	o
EC Brushless fans	EC	o	o	o	o	o	o
Anti-pollen filters on condensing coils	FA	o	o	o	o	o	o
Mechanical flow switch	FL	o	o	o	o	o	o
Condensing coil protection grid	GP	o	o	o	o	o	o
Protection grid for compressors section	GP1	o	o	o	o	o	o
RS 485 serial interface	IH	o	o	o	o	o	o
Seawood packing	IM	o	o	o	o	o	o
SNMP or TCP/IP Protocol serial interface	IWG	o	o	o	o	o	o
Rubber-type vibration dampers	PA	o	o	o	o	o	o
Spring-type vibration dampers	PM	o	o	o	o	o	o
Remote display	PQ	o	o	o	o	o	o
Anti-freeze heater on evaporator	RA	o	o	o	o	o	o
Voltmeter	V	o	o	o	o	o	o
Compressors overload relays	RL	o	o	o	o	o	o
Condensing coil with pre-painted fins	RM	o	o	o	o	o	o
Copper/copper condensing coils	RR	o	o	o	o	o	o

● Standard o Optional - Not available

Dimensions - ERAH MC VS HE Ka serie



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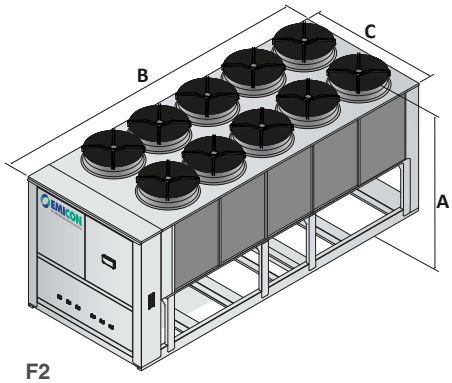

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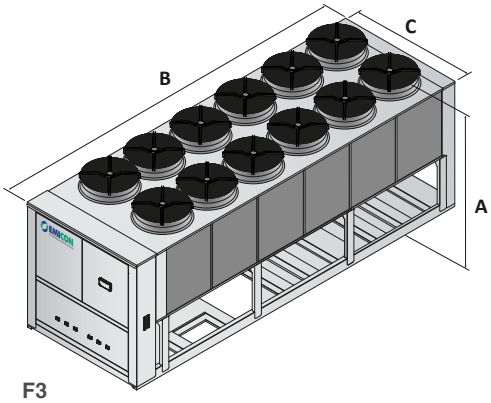

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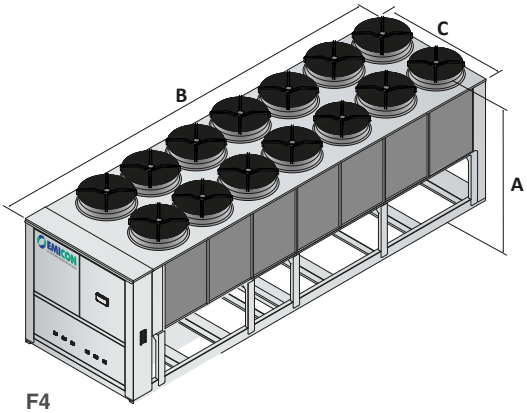

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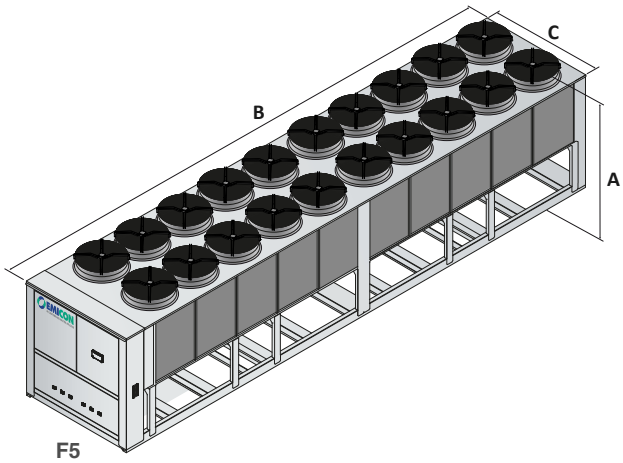

F5

Mod.		A (mm)	B (mm)	C (mm)	Kg
482	F1	2560	4570	2300	4338
562	F2	2560	5720	2300	4736
682	F2	2560	5720	2300	4900
812	F3	2560	6690	2300	4918
983	F4	2560	7670	2300	5918
1404	F5	2560	10570	2300	5946

ACCESSORIES

A Amperometer: Electrical device to measure the electrical current absorbed by the unit.

ACP Anti-corrosive protection of the condensing coils (AIAX coating): flooding painting of the exchanger surface by application of resin suitable to ensure a protection against atmospheric agents, for installations in highly corrosive environments in industrial areas with high concentration of pollutant (>100 ppm) and urban areas with high levels of atmospheric pollution (> 125 ug/m3). This is a valid alternative to the well-known Blygold or Thermo guard protections. (Alternative to PCP).

AE Electrical power supply different than standard: Particularly 230 V three-phase, 460 V three-phase. Frequency 50/60 Hz.

BT Operation in cooling mode down to – 20°C (by modulating voltage control): Electronic device for the continuous modulating voltage control of the condensing pressure through the variation of the fan rotation speed, allowing the unit operation down to -20°C ambient temperature. (Alternative to BF and EC).

BF Operation in cooling mode down to -20°C (by frequency converter electronic device): Electronic device, frequency converter type, for the continuous modulating control of the condensing pressure through the variation of the fan rotation speed. (Alternative to BT and EC).

CF Soundproofed compressors cabinet with standard material: Insulation of compressors by a cabinet with profile and panels made of hot dip galvanized and powder painted sheet, coated with soundproofing material specifically designed for reduction of the sound with frequencies typical of the used compressors. Access panels are easy to be opened thanks to a triangular wrench.

CFU Soundproofed compressors cabinet with polyester material: Insulation of compressors by a cabinet with profile and panels made of hot dip galvanized and powder painted sheet, coated with high thickness soundproofing polyester material. Access panels are easy to be opened thanks to a triangular wrench.

CFT Overall compressor and technical compartment cabinet: Insulation with sound and fireproofing materials 25 mm thickness for compressor and technical compartment. (Not available for 8-10 fans version).

CS Compressors inrush counter: Electromechanical device positioned inside the electrical board, recording the total inrush starts of compressors.

DS Star/Delta: Electric device of close transition type to reduce inrush current, complete with short circuit safety by mechanical interlock (Available from unit 7020 AM MC Ka to 11520 AM MC Ka).

EC Axial fans with electronic commutated motor: with external rotor directly coupled to a three-phase electronically commutated motor (EC) they have the possibility of a continuous regulation of the speed by means of a 0-10V signal completely managed by the microprocessor. Aluminum blades with wings profile are suitably designed to avoid any turbulence in the air detachment zone, granting in this way the max efficiency with the minimum noise level. The fan is equipped with galvanized steel protection grid painted after the construction. Thanks to a more accurate adjustment of air flow, they allow operation of the unit with external temperature down to -20 °C. (Alternative to BT and BF).

GP Condensing coil protection grid: Metal grid to protect against accidental impacts. (Alternative to GP1).

GP2 Anti-intrusion grid: Metal protection grid to protect compressors and exchangers (Not available with CF, CFU e CFT).

GP3 Anti-intrusion grid with compressors cabinet: Anti-intrusion metal protection grid coupled with soundproofed compressor cabinet. (Only available with CF and for ultra-silenced version).

I1 Isolamento Victaulic lato pompa: Coibentazione dei giunti con poliuretano a cellule chiuse per evitare la formazione di condensa, lato pompa.

I2 Isolamento Victaulic lato serbatoio: Coibentazione dei giunti con poliuretano a cellule chiuse per evitare la formazione di condensa, lato serbatoio.

IH RS 485 Serial interface: Electronic card to be connected to the microprocessor to allow connection of the units to supervision systems, for a remote control and monitoring of the unit. (Alternative to IH LON or IWG).

IH LON LON Protocol serial interface: Electronic card to be connected to the microprocessor to allow connection of the units to supervision systems with LON protocol, for a remote control and monitoring of the unit. (Alternative to IH or IWG).

IM Seawood packing: Fumigated seawood case and film envelope together added with slowly vaporizing corrosion inhibitors completely nitrates and heavy metals (VCI) free suitable for long sea transports.

IWG SNMP or TCP/IP Protocol serial interface: Electronic card to be connected to the microprocessor to allow connection of the units to supervision systems with SNMP or TCP/IP protocol, for a remote control and monitoring of the unit. (Alternative to IH or IH LON).

MF Phase monitor: Electronic device that checks the correct sequence and/or the lack of one of the 3 phases, switching off the unit if necessary.

MV Buffer tank module: Of suitable capacity complete with expansion vessel, safety valve, water gauge, water charge and discharge valves, air purging valves, check valves for filter service operations.

OS Oil flow safety switch: In-built in the compressor to control the compressor internal oil flow, it signals the eventual decrease of the oil level. It is a flow-static optoelectronic device.

P1 Pump group: Chilled water pump group made of a single pump, expansion vessel, safety valve water gauge, water charge and discharge valves, air purging valves, electric control of the pump. The

pump is of enbloc 2-pole type.

P1H Higher available pressure pump group: Chilled water pump group made of a single pump, expansion vessel, safety valve water gauge, water charge and discharge valves, air purging valves, electric control of the pump. The pump is of enbloc 2-pole type.

P2 Double pump group (only one working): Chilled water pump group made by two pumps in parallel, expansion vessel, safety valve, water gauge, water charge and discharge valves, air purging valves, water shut-off valve on suction and check valve on discharge for each single pump, electric control of the pump. The pump is of enbloc 2-pole type.

P2H Higher available pressure double pump group (only one working): Chilled water pump group made by two higher available pressure pumps in parallel, expansion vessel, safety valve, water gauge, water charge and discharge valves, air purging valves, water shut-off valve on suction and check valve on discharge for each single pump, electric control of the pump. The pump is of enbloc 2-pole type.

PT In-line twin pump group (only one working): Chilled water pump group made by a twin pump group with a single impeller body and two separate electric motors. The hydronic kit is made by an expansion vessel, safety valve, water gauge, water charge and discharge valves, air purging valves, electric control of the pump. The pump is of enbloc 2-pole type.

PA Rubber-type vibration dampers: Bell-shaped vibration dampers supports for isolating the unit (supplied in kit), made of base and bell in galvanized iron and natural rubber mixture.

PCP Anti-corrosive protection of the condensing coils (Powder coating): painting of the exchanger surface by application of a black colored epoxy resin suitable to ensure a protection against atmospheric agents, for coastal installations, industrial environments with an average concentration of pollutant (< 100 ppm) and urban areas with lower middle levels of atmospheric pollution (< 125 ug/m3). (Alternative to ACP).

PM Spring-type vibration dampers: Spring-type vibration dampers support, for insulating the unit (supplied in kit), mainly indicated for installation in difficult and aggressive environments. Made of two steel plates containing a suitable quantity of harmonic steel springs. (Alternative to PA).

PQ Remote display: Remote terminal displaying temperature values detected by probes, alarm digital inputs, outputs, remote ON/OFF of the unit. It also gives the possibility to change and program parameters and report/display alarms.

PW Part-Winding: Equipment for step compressors starting, reducing of about 35% the inrush current of each compressor.

RA Anti-freeze heater on evaporator: Electrical heater installed on the evaporator, in order to prevent freezing and provided with thermostat.

RD Shut-off valve on compressors discharge side: They are used to isolate compressors during service operation.

RF Power factor correction system cosfi ≥0,9: Electrical device made by suitable condensers for compressor rephasing that ensure a cosfi value ≥0,9, so to reduce absorption from electrical network.

RH Shut-off valve on compressors suction side: They are used to isolate compressors during service operation.

RL Compressor overload relays: Electromechanical protection devices against compressors overload.

RM Condensing coil with pre-painted fins: Double-layer treatment of condensing coils with epoxy coating.

RP Partial heat recovery: (about 20%) of condensing heat through a refrigerant/water plate exchanger (desuperheater) always in series to the compressors. It is used when you want to partially recover condensing heat capacity for production of sanitary water.

RR Copper/Copper coil: Special condensing coils with copper pipes and fins.

RT Total heat recovery: (100%) of condensing heat by refrigerant/water heat exchanger in alternative and in parallel to the condensing air section. It is used when you want to completely recover condensing heat capacity for production of sanitary water or for heating applications.

RV Personalized frame painting in alternative RAL colour.

TE Electronic thermostatic valve: Electronic thermostatic valve that reduces the response times of the unit. Useful in case of frequent changes on cooling demand, so as to improve efficiency.

V Voltmeter: Electrical device measuring the electrical voltage of the unit power supply.

VB Brine Version: Unit suitable for working with evaporator outlet water temperatures lower than 0°C. A 20 mm evaporator insulation will be provided.

VS Solenoid valve: Electromagnetic solenoid valve on each cooling circuit to cut off the liquid line at compressors switch-off.

ICONS

	Scroll compressors		Air condesing unit
	Screw compressors		Only cooling
	Brushless oil-free turbocor compressors		High efficiency and energy saving unit
	Inverter Screw compressor		Low noise version
	Microchannel condensing coils		Ecological refrigerant R410A
	Ventilatori AC		Ecological refrigerant R134a
	Ventilatori EC		In accordance with ERP 2018

COMF. 02/18

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