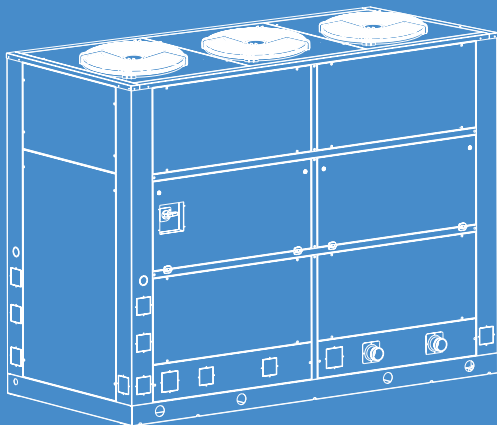


KELVIN Clim F20

Cooling Capacity: 22 ~ 299 kW
Free-Cooling Capacity: 20 ~ 197 kW



Packaged air cooled liquid chillers with free-cooling system for outdoor installation, equipped with scroll compressors and axial fans

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KELVIN AIR CONDITIONING



MAIN FEATURES

- Air cooled liquid chiller with free-cooling system.
- 29 models available, for a wide selection opportunity.
- Average step of 12,5kW.
- EER up to 2,92.
- ESEER up to 3,80.
- Scroll compressors.
- R410A Refrigerant charge.
- Single or double refrigerant circuit.
- Plate type heat exchangers.
- EC Axial fans.
- Single air circuit.
- Electronic expansion valve.
- Suitable for outdoor installation.

MAIN BENEFITS

- Units equipped with two scroll compressors for refrigerant circuit to reach a high efficiency.
- Units with single and double refrigerant circuits.
- Indirect free cooling system.
- High EER and ESEER.
- EC axial fans for a high efficiency.
- Availability of kit for the reduction and the extreme reduction of the noise.
- Availability of pumping groups.
- Availability of partial heat recovery system.
- Easily of maintenance.
- Complete set of components dedicated to the safety of the unity.
- Eurovent Certification.(pending)

INDIRECT FREE COOLING SYSTEM

Complete cooling of the chilled water of the existing cooling system with the outside air. The energy saving will be higher the longer the outside temperature remains below the required temperature for cooling.

FANS WITH BRUSHLESS TYPE EC MOTOR

These electric motors are ensuring high performances, minimum energy consumption and total absence of electromagnetic noise.

WORKING LIMITS IN COOLING MODE

Chilled water outlet temperature: 4~15°C
Ambient temperature: -10~45°C

WORKING LIMITS IN FREE-COOLING MODE

Minimum chilled water outlet temperature: -15°C
Minimum ambient temperature: -20°C



MAIN COMPONENTS

FRAMEWORK

- Base, self supporting frame and panelling in steel plate with protective surfaces treatment in compliance with UNI ISO 9227/ASTMB117 and ISO 7253, and painted with epoxy powders.
- Colour: RAL 9002.

COMPRESSORS

- Orbiting spiral (SCROLL) hermetic compressors with spiral profile optimized for R410A refrigerant.
- ON / OFF capacity control (0 / 100% each compressor).
- 2-pole 3-phase electric motor with direct on line starting.
- Phase sequence electronic relay.
- Crankcase heater.
- Electric motor thermal protection via internal winding temperature sensors.
- Rubber supports.

EVAPORATOR

- Copper brazed plate type with cover plates, plates and connections in AISI 316 stainless steel:
 - With single refrigerant circuit for S version machines,
 - With double refrigerant circuit for D version machines.
- Anticondensate insulation made of polyurethane.
- Temperature sensors on water inlet and outlet.
- Differential water pressure switch for water flow control.
- Antifreeze heater.

CONDENSING COIL

- Heat exchanger coil with internally corrugated copper tubes and high efficiency aluminium fins, specifically developed to provide high heat transfer and lower pressure drops. The combination of two factors, special tubes and fins, allow to optimally combine the following aspects:
 - Maximum capacity relative to the size of the exchanger,
 - Minimum charge of refrigerant,
 - Reduction of the air flow required for the heat exchange.
- Sub-cooling circuit to allow a significant increase in cooling capacity.
- Frame in galvanized steel.

FREE-COOLING COIL

- Heat exchanger coil with copper tubes and high efficiency aluminium fins, specifically developed to provide high heat transfer and lower pressure drops. The combination of two factors, special tubes and fins, allow to optimally combine the following aspects:
 - Maximum capacity relative to the size of the exchanger,
 - Reduction of the air flow required for the heat exchange.
- Frame in galvanized steel.
- Motorized valves for free-cooling water circuit control.
- Temperature sensor on ambient air.

FANS SECTION

- Axial fans with sickle-shaped blades, fan guard and optimized for low noise levels.
- Brushless type synchronous EC motor with integrated electronic commutated system and continuous variation of the rotation speed. The motor rotation control is obtained with the EC system (Electronic Commutation) that manage the motor according to the 0~10V proportional signal coming from the microprocessor control.
- Maintenance-free bearings.
- IP54 enclosure class.

REFRIGERANT CIRCUIT

Components for each refrigerant circuit:

- Thermostatic expansion valve up to model 76 P2 C3 D included.
- Electronic expansion valve from model 98 P2 C4 S included. The valve allows high performance and system efficiency thanks to a timely and accurate response to changes in temperature and pressure. The electronic expansion valve exclude the installation of the electromagnetic valve on liquid line.
- Sight glass.
- Liquid receiver.
- Electromagnetic valve on liquid line. The electromagnetic valve is not installed when the electronic expansion valve is present.
- Filter dryer on liquid line.
- Service valves on liquid line and gas discharge.
- Safety valve on low pressure side.
- Safety valve on high pressure side.
- Pressure transducers with indication, control and protection functions, on low and high refrigerant pressure.
- High pressure safety switch with manual reset.
- Refrigerant circuit with copper tubing with anticondensate insulation of the suction line.
- Plastic capillary hoses for pressure sensors connection.
- R410A refrigerant charge.

ELECTRICAL PANEL

In accordance with EN60204-1 norms, suitable for outdoor installation, complete with:

- Main switch with door lock safety.
- Magnetothermic switch or fuses for each compressor.
- Magnetothermic switches for fans or water pumps (if scheduled).
- Contactors for each load.
- Transformer for auxiliary circuit and microprocessor supply.
- Panel with machine controls.
- Power supply: 400/3/50.

CONTROL SYSTEM

• MPCOM microprocessor system with graphic display for control and monitor of operating and alarms status. The system includes:

- Voltage free contact for remote general alarm,
- Main components hour-meter,
- Nonvolatile "Flash" memory for data storage,
- Menu with protection password,
- LAN connection.

OPTIONAL ACCESSORIES

KELVIN Clim F20 SIZE	C1	C2	C3	C4	C5	C5H
739 - Pumping group (1 pump)	•	•	•	•	•	•
740 - Pumping group (2 pumps)	-	-	•	•	•	•
768 - Chilled water storage tank	•	•	•	•	•	•
150 - LNO kit (noise reduction)	•	•	•	•	•	•
151 - ELN kit (extremely noise reduction)	•	•	•	•	•	•
170 - Spring antivibration holders (kit)	•	•	•	•	•	•
172 - Rubber support (kit)	•	•	•	•	•	•
118 - Kit brine A (for glycol solution production up to °6-C)	•	•	•	•	•	•
119 - Kit brine B (for glycol solution production up to °12-C)	•	•	•	•	•	•
79 - Electrical panel heating system	•	•	•	•	•	•
450 - Partial heat recovery	•	•	•	•	•	•
251 - Coils protection nets	•	•	•	•	•	•
351 - Coils with pre-painted fins	•	•	•	•	•	•
Condensing coil in special execution	•	•	•	•	•	•
160 - Silencing plenum on condensing air discharge	•	•	•	•	•	•
731 - Safety water flow switch	•	•	•	•	•	•
143 - Glycol free	•	•	•	•	•	•
605 - Compr. power factor capacitor - 0,9	•	•	•	•	•	•
1002 - Soft Starter	•	•	•	•	•	•
83 - Compressor operation indicator	•	•	•	•	•	•
Expansion valve energy reserve module	•	•	•	•	•	•
Ambient temperature sensor	•	•	•	•	•	•
81 - Phases sequence control	•	•	•	•	•	•
1003 - Analogic flowmeter	•	•	•	•	•	•
1005 - Power supply analyzer	•	•	•	•	•	•
1009 - Multimeter kit	•	•	•	•	•	•
919 - Clock card	•	•	•	•	•	•
923 - KELVIN-Com MBUS/JBUS Serial board	•	•	•	•	•	•
926 - LON Serial board	•	•	•	•	•	•
931 - BACnet Ethernet - SNMP - TCP/IP Serial board	•	•	•	•	•	•
932 - BACnet MS/TP Serial board	•	•	•	•	•	•
942 - Serial card for GSM Modem	•	•	•	•	•	•
943 - Data Logger	•	•	•	•	•	•
962 - Kit modem GSM	•	•	•	•	•	•
957 - Plantwatch without modem	•	•	•	•	•	•
930 - Remote graphic terminal kit	•	•	•	•	•	•
889 - Master plant SEQUENCER	•	•	•	•	•	•
KELVIN CLOUD PLATFORM	•	•	•	•	•	•

• available accessory; - not available accessory

TECHNICAL DATA KELVIN Clim F20

KELVIN Clim F20		21 P1	24 P1	28 P1	30 P1	34 P1	40 P1	50 P1	52 P2		
		S	S	S	S	S	S	S	S		
SIZE		C1	C1	C1	C1	C2	C2	C2	C2		
STANDARD	Cooling capacity (1)	kW	22,2	25,0	29,6	32,4	39,0	43,9	54,0	56,0	
	Unit power input	kW	7,9	9,3	11,7	13,1	13,4	16,1	21,6	22,5	
	Free-Cooling capacity (2)	kW	19,8	20,6	24,9	25,7	33,3	37,5	44,7	45,1	
	Total water flow rate	m³/h	4,1	4,6	5,5	6,0	7,2	8,1	10,0	10,3	
	Total pressure drop	kPa	102	128	161	170	146	168	169	180	
	Compressors		scroll	scroll	scroll	scroll	scroll	scroll	scroll	scroll	
	Quantity	n.	1	1	1	1	1	1	1	2	
	Capacity steps	n.	1	1	1	1	1	1	1	2	
	Axial fans EC	n.	1	1	1	1	2	2	2	2	
	Total air flow	m³/h	7500	7500	9650	9650	12000	14000	17300	17300	
	Air circuits	n.	1	1	1	1	1	1	1	1	
	Refrigerant		R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	
	Total refrigerant charge (optional excluded)	kg	11,3	11,3	11,3	11,5	13,7	13,7	15,0	15,3	
	Gas circuits	n.	1	1	1	1	1	1	1	1	
	Power supply	V/Ph/Hz	50/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/400	
	Max unit operating current (FLA)	A	18,4	23,6	24,8	27,9	35,7	38,9	45,4	49,6	
	Unit starting current (LRA)	A	96,5	112,5	119,6	119,6	143,0	177,0	228,2	143,2	
	EER (1)	kW/kW	2,81	2,69	2,52	2,47	2,92	2,72	2,50	2,49	
	ESEER		3,31	3,20	3,18	3,07	3,52	3,22	3,00	3,13	
	Sound power level [Lw] (3)	dB(A)	80,8	81,2	82,6	81,8	83,6	86,6	89,8	87,2	
	Average sound pressure level [Lp _m] (4)	dB(A)	64,2	64,6	66,0	65,2	66,4	69,4	72,5	70,0	
	Net weight	kg	430	440	440	440	600	600	740	700	
	Hydraulic connections										
	Evaporator IN/OUT - ISO 1/7 - R	Ø	2	"2	"2	"2	"2/1 1	"2/1 1	"2/1 1	"2/1 1"	
	Evaporator IN/OUT - OD (5)	Ø mm	-	-	-	-	-	-	-	-	
	OPTIONAL	Partial heat recovery (6)									
		Heating capacity	kW	7,7	8,6	10,2	11,1	13,4	15,1	18,6	19,3
		Pumping group									
		1 pump - 2 poles electric motor	kW	1,1	1,1	1,1	1,1	1,5	1,5	1,5	1,5
		2 pump - 2 poles electric motor	kW	-	-	-	-	-	-	-	-
	Water tank - volume	l	130	130	130	130	210	210	210	210	
	LNO KIT %100	Cooling capacity (1)	kW	22,2	25,0	29,6	32,4	39,0	43,9	54,0	56,0
		Unit power input	kW	8,0	9,4	11,7	13,1	13,4	16,3	21,6	22,5
		Free-Cooling capacity (2)	kW	19,8	20,6	24,9	25,7	33,3	37,5	44,7	45,1
		Total air flow	m³/h	7500	7500	9650	9650	12000	14000	17300	17300
EER (1)		kW/kW	2,79	2,67	2,52	2,47	2,91	2,70	2,50	2,49	
LNO KIT %85	Cooling capacity (1)	kW	21,7	24,3	28,8	31,3	37,9	42,8	52,6	54,2	
	Unit power input	kW	8,0	9,5	11,9	13,3	13,6	16,3	21,7	22,9	
	Free-Cooling capacity (2)	kW	19,6	20,4	24,7	25,4	33,0	37,2	44,4	44,8	
	Total air flow	m³/h	6375	6375	8203	8203	10200	11900	14705	14705	
	EER (1)	kW/kW	2,70	2,55	2,42	2,36	2,78	2,62	2,42	2,37	
ELN KIT	Cooling capacity (1)	kW	20,9	23,3	27,6	29,8	36,4	41,1	50,5	51,7	
	Unit power input	kW	8,3	9,9	12,2	13,8	14,1	16,7	22,4	23,6	
	Free-Cooling capacity (2)	kW	19,3	20,1	24,4	25,0	32,6	36,8	43,9	44,2	
	Total air flow	m³/h	5250	5250	6755	6755	8400	9800	12110	12110	
	EER (1)	kW/kW	2,52	2,36	2,26	2,16	2,58	2,46	2,25	2,19	
Sound power level [Lw] (3)	dB(A)	72,8	73,3	74,6	73,9	75,7	78,5	82,3	79,0		
Average sound pressure level [Lp _m] (4)	dB(A)	56,2	56,8	58,0	57,3	58,5	61,3	65,1	61,8		

1. Referred to glycol solution temperature 15/10°C; 20% Ethylene glycol solution; air temperature to the condenser 35°C. Fouling factor of the exchangers 0,043 m²K/kW.
2. Referred to glycol solution inlet temperature 15°C; 20% Ethylene glycol solution; ambient temperature 3°C. Fouling factor of the exchangers 0,043 m²K/kW.
3. Sound power level [Lw] according to ISO EN 9614 - 2.
4. Average sound pressure level [Lp_m] 1m far according to ISO EN 3744.
5. Hydraulic connection with grooved end complete with flexible joint and adapter pipe for solder connection.
6. Referred to glycol solution temperature 15/10°C; 20% Ethylene glycol solution; air temperature to the condenser 35°C. Water temperature heat recovery 40/45°C - 0% glycol solution; Fouling factor of the exchangers 0,043 m²K/kW.

TECHNICAL DATA KELVIN Clim F20

KELVIN Clim F20		52 P2	58 P2	58 P2	62 P1	65 P2	65 P2	76 P2	76 P2	
SIZE		D C2	S C3	D C3	S C3	S C3	D C3	S C3	D C3	
STANDARD	Cooling capacity (1)	kW	55,8	65,1	65,3	69,3	73,1	72,8	83,4	83,1
	Unit power input	kW	22,6	23,6	23,9	26,1	27,2	27,0	33,2	32,8
	Free-Cooling capacity (2)	kW	45,1	56,7	56,7	59,2	61,6	61,6	68,1	68,0
	Total water flow rate	m³/h	10,3	12,0	12,0	12,8	13,5	13,4	15,4	15,3
	Total pressure drop	kPa	159	157	134	163	182	161	173	154
	Compressors		scroll	scroll	scroll	scroll	scroll	scroll	scroll	scroll
	Quantity	n.	2	2	2	1	2	2	2	2
	Capacity steps	n.	2	2	2	1	2	2	2	2
	Axial fans EC	n.	2	3	3	3	3	3	3	3
	Total air flow	m³/h	17300	21000	21000	22000	23000	23000	25750	25750
	Air circuits	n.	1	1	1	1	1	1	1	1
	Refrigerant		R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A
	Total refrigerant charge (optional excluded)	kg	16,0	21,7	19,3	18,9	22,1	19,6	28,6	25,5
	Gas circuits	n.	2	1	2	1	1	2	1	2
	Power supply	V/Ph/Hz	50/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/400
	Max unit operating current (FLA)	A	49,6	57,2	57,2	55,7	69,8	69,8	76,4	76,4
	Unit starting current (LRA)	A	143,2	147,5	147,5	276,5	175,5	175,5	212,8	212,8
	EER (1)	kW/kW	2,47	2,76	2,73	2,66	2,69	2,70	2,51	2,53
	ESEER		3,55	3,44	3,80	3,16	3,34	3,68	3,09	3,47
	Sound power level [Lw] (3)	dB(A)	87,2	88,2	88,2	93,0	88,1	88,1	87,3	87,3
	Average sound pressure level [LPm] (4)	dB(A)	70,0	70,3	70,3	75,1	70,2	70,2	69,4	69,4
	Net weight	kg	700	930	920	970	940	930	1000	1000
	Hydraulic connections									
	Evaporator IN/OUT - ISO 1/7 - R	Ø	2"	-	-	-	-	-	-	-
Evaporator IN/OUT - OD (5)	Ø mm	76,1	76,1	76,1	76,1	76,1	76,1	76,1	76,1	
OPTIONAL	Partial heat recovery (6)									
	Heating capacity	kW	19,2	22,4	22,5	23,8	25,1	25,0	28,7	28,6
	Pumping group									
	1 pump - 2 poles electric motor	kW	1,5	3,0	3,0	3,0	3,0	3,0	3,0	3,0
	2 pump - 2 poles electric motor	kW	3,0	3,0	3,0	3,0	3,0	3,0	3,0	3,0
Water tank - volume	l	210	360	360	360	360	360	360	360	
LNO KIT %100	Cooling capacity (1)	kW	55,8	65,1	65,3	69,3	73,1	72,8	83,4	83,1
	Unit power input	kW	22,6	23,8	24,1	26,2	27,4	27,2	33,2	32,8
	Free-Cooling capacity (2)	kW	45,1	56,7	56,7	59,2	61,6	61,6	68,1	68,0
	Total air flow	m³/h	17300	21000	21000	22000	23000	23000	25750	25750
	EER (1)	kW/kW	2,47	2,74	2,71	2,65	2,67	2,68	2,51	2,53
LNO KIT %85	Cooling capacity (1)	kW	51,5	60,6	60,8	64,8	67,9	67,6	77,5	77,2
	Unit power input	kW	22,8	24,1	24,5	26,3	27,5	27,3	33,3	32,9
	Free-Cooling capacity (2)	kW	44,7	56,2	56,3	58,8	61,1	61,1	67,5	67,5
	Total air flow	m³/h	14705	17850	17850	18700	19550	19550	21888	21888
	EER (1)	kW/kW	2,37	2,62	2,59	2,56	2,58	2,59	2,43	2,45
ELN KIT	Cooling capacity (1)	kW	51,5	60,6	60,8	64,8	67,9	67,6	77,5	77,2
	Unit power input	kW	23,6	25,0	25,4	27,2	28,3	28,3	34,1	33,9
	Free-Cooling capacity (2)	kW	44,2	55,5	55,6	58,1	60,4	60,3	66,8	66,7
	Total air flow	m³/h	12110	14700	14700	15400	16100	16100	18025	18025
	EER (1)	kW/kW	2,18	2,42	2,39	2,38	2,40	2,39	2,27	2,28
Sound power level [Lw] (3)	dB(A)	79,0	79,9	79,9	85,6	79,8	79,8	79,1	79,1	
Average sound pressure level [LPm] (4)	dB(A)	61,8	62,0	62,0	67,7	61,9	61,9	61,2	61,2	

1. Referred to glycol solution temperature 15/10°C; 20% Ethylene glycol solution; air temperature to the condenser 35°C. Fouling factor of the exchangers 0,043 m²K/kW.
2. Referred to glycol solution inlet temperature 15°C; 20% Ethylene glycol solution; ambient temperature 3°C. Fouling factor of the exchangers 0,043 m²K/kW.
3. Sound power level [Lw] according to ISO EN 9614 - 2.
4. Average sound pressure level [LPm] 1m far according to ISO EN 3744.
5. Hydraulic connection with grooved end complete with flexible joint and adapter pipe for solder connection.
6. Referred to glycol solution temperature 15/10°C; 20% Ethylene glycol solution; air temperature to the condenser 35°C. Water temperature heat recovery 40/45°C - 0% glycol solution; Fouling factor of the exchangers 0,043 m²K/kW.

TECHNICAL DATA KELVIN Clim F20

KELVIN Clim F20		98 P2	98 P2	124 P2	124 P2	158 P2	158 P2	180 P2	180 P2	
SIZE		S	D	S	D	S	D	S	D	
		C4	C4	C4	C4	C4	C4	C5	C5	
STANDARD	Cooling capacity (1)	kW	109,0	108,0	133,0	131,0	171,0	173,0	196,0	198,0
	Unit power input	kW	41,1	40,1	54,1	52,2	71,0	72,7	76,6	77,6
	Free-Cooling capacity (2)	kW	88,0	87,7	103,0	103,0	118,0	118,0	140,0	141,0
	Total water flow rate	m³/h	20,0	19,8	24,6	24,2	31,5	31,9	36,2	36,4
	Total pressure drop	kPa	131	116	113	102	142	134	102	106
	Compressors		scroll	scroll	scroll	scroll	scroll	scroll	scroll	scroll
	Quantity	n.	2	2	2	2	2	2	2	2
	Capacity steps	n.	2	2	2	2	2	2	2	2
	Axial fans EC	n.	4	4	4	4	4	4	5	5
	Total air flow	m³/h	35000	35000	42000	42000	46800	46800	53000	53000
	Air circuits	n.	1	1	1	1	1	1	1	1
	Refrigerant		R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A
	Total refrigerant charge (optional excluded)	kg	33,9	31,3	38,6	42,1	50,9	42,9	73,7	65,8
	Gas circuits	n.	1	2	1	2	1	2	1	2
	Power supply	V/Ph/Hz	50/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/400
	Max unit operating current (FLA)	A	90,7	90,7	113,8	113,8	149,3	149,3	169,8	169,8
	Unit starting current (LRA)	A	271,4	271,4	331,9	331,9	386,8	386,8	473,7	473,7
	EER (1)	kW/kW	2,65	2,69	2,46	2,51	2,41	2,38	2,56	2,55
	ESEER		3,25	3,64	3,01	3,41	2,96	3,30	3,12	3,51
	Sound power level [Lw] (3)	dB(A)	87,0	87,0	90,9	90,9	93,0	93,0	93,3	93,3
	Average sound pressure level [Lp _m] (4)	dB(A)	68,4	68,4	72,3	72,3	74,4	74,4	74,1	74,1
	Net weight	kg	1470	1470	1610	1610	1660	1640	2240	2210
	Hydraulic connections									
	Evaporator IN/OUT - ISO 1/7 - R	Ø	-	-	-	-	-	-	-	-
	Evaporator IN/OUT - OD (5)	Ø mm	88,9	88,9	88,9	88,9	88,9	88,9	88,9	88,9
OPTIONAL	Partial heat recovery (6)									
	Heating capacity	kW	37,4	37,0	45,8	45,1	58,8	59,5	67,6	67,9
	Pumping group									
	1 pump - 2 poles electric motor	kW	3,0	3,0	3,0	3,0	3,0	3,0	5,5	5,5
	2 pump - 2 poles electric motor	kW	4,0	4,0	4,0	4,0	4,0	4,0	7,5	7,5
Water tank - volume	l	520	520	520	520	520	520	720	720	
LNO KIT %100	Cooling capacity (1)	kW	109,0	108,0	133,0	131,0	171,0	173,0	196,0	198,0
	Unit power input	kW	41,1	40,1	54,1	52,2	71,0	72,7	76,6	77,6
	Free-Cooling capacity (2)	kW	88,0	87,7	103,0	103,0	118,0	118,0	140,0	141,0
	Total air flow	m³/h	35000	35000	42000	42000	46800	46800	53000	53000
	EER (1)	kW/kW	2,65	2,69	2,46	2,51	2,41	2,38	2,56	2,55
LNO KIT %85	Cooling capacity (1)	kW	106,0	105,0	129,0	127,0	165,0	167,0	190,0	191,0
	Unit power input	kW	41,4	40,5	54,0	52,0	70,8	72,6	76,9	78,0
	Free-Cooling capacity (2)	kW	87,2	86,9	103,0	102,0	117,0	117,0	139,0	139,0
	Total air flow	m³/h	29750	29750	35700	35700	39780	39780	45050	45050
	EER (1)	kW/kW	2,56	2,59	2,39	2,44	2,33	2,30	2,47	2,45
ELN KIT	Cooling capacity (1)	kW	102,0	101,0	124,0	122,0	157,0	159,0	181,0	182,0
	Unit power input	kW	42,9	41,9	55,4	53,3	73,0	75,0	80,1	80,9
	Free-Cooling capacity (2)	kW	86,1	85,7	101,0	101,0	115,0	116,0	136,0	136,0
	Total air flow	m³/h	24500	24500	29400	29400	32760	32760	37100	37100
	EER (1)	kW/kW	2,38	2,41	2,24	2,29	2,15	2,12	2,26	2,25
Sound power level [Lw] (3)	dB(A)	79,2	79,2	82,7	82,7	84,6	84,6	85,0	85,0	
Average sound pressure level [Lp _m] (4)	dB(A)	60,6	60,6	64,1	64,1	66,0	66,0	65,7	65,7	

1. Referred to glycol solution temperature 15/10°C; 20% Ethylene glycol solution; air temperature to the condenser 35°C. Fouling factor of the exchangers 0,043 m²K/kW.
2. Referred to glycol solution inlet temperature 15°C; 20% Ethylene glycol solution; ambient temperature 3°C. Fouling factor of the exchangers 0,043 m²K/kW.
3. Sound power level [Lw] according to ISO EN 9614 - 2.
4. Average sound pressure level [Lp_m] 1m far according to ISO EN 3744.
5. Hydraulic connection with grooved end complete with flexible joint and adapter pipe for solder connection.
6. Referred to glycol solution temperature 15/10°C; 20% Ethylene glycol solution; air temperature to the condenser 35°C. Water temperature heat recovery 40/45°C - 0% glycol solution; Fouling factor of the exchangers 0,043 m²K/kW.

TECHNICAL DATA KELVIN Clim F20

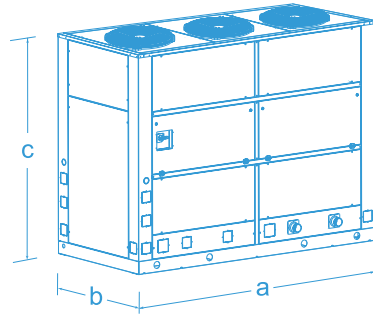
KELVIN Clim F20		197 P2	197 P2	230 P3	240 P4	270 P4	
		S	D	S	D	D	
SIZE		C5	C5	C5	C5H	C5H	
STANDARD	Cooling capacity (1)	kW	215,0	212,0	242,0	270,0	299,0
	Unit power input	kW	90,3	87,2	109,5	107,6	126,2
	Free-Cooling capacity (2)	kW	151,0	150,0	159,0	171,0	197,0
	Total water flow rate	m³/h	39,7	39,1	44,7	49,8	54,5
	Total pressure drop	kPa	147	138	168	159	171
	Compressors		scroll	scroll	scroll	scroll	scroll
	Quantity	n.	2	2	3	4	4
	Capacity steps	n.	2	2	3	4	4
	Axial fans EC	n.	5	5	5	5	5
	Total air flow	m³/h	54000	54000	56300	69000	69000
	Air circuits	n.	1	1	1	1	1
	Refrigerant		R410A	R410A	R410A	R410A	R410A
	Total refrigerant charge (optional excluded)	kg	83,1	102,2	83,7	127,0	126,6
	Gas circuits	n.	1	2	1	2	2
	Power supply	V/Ph/Hz	50/3/50	400/3/50	400/3/50	400/3/50	400/3/400
	Max unit operating current (FLA)	A	187,2	187,2	221,0	218,7	254,2
	Unit starting current (LRA)	A	490,3	490,3	455,1	431,8	486,7
	EER (1)	kW/kW	2,38	2,43	2,21	2,51	2,37
	ESEER		2,96	3,43	3,52	3,66	3,64
	Sound power level [Lw] (3)	dB(A)	93,7	93,7	94,7	93,4	93,4
	Average sound pressure level [Lp _m] (4)	dB(A)	74,4	74,4	75,4	74,1	74,1
	Net weight	kg	2220	2230	2370	2510	2510
	Hydraulic connections						
	Evaporator IN/OUT - ISO 1/7 - R	Ø	-	-	-	-	-
	Evaporator IN/OUT - OD (5)	Ø mm	88,9	88,9	88,9	88,9	88,9
OPTIONAL	Partial heat recovery (6)						
	Heating capacity	kW	73,9	72,9	83,2	92,8	103,0
	Pumping group						
	1 pump - 2 poles electric motor	kW	5,5	5,5	5,5	5,5	5,5
	2 pump - 2 poles electric motor	kW	7,5	7,5	7,5	7,5	7,5
Water tank - volume	l	720	720	720	720	720	
LNO KIT %100	Cooling capacity (1)	kW	215,0	212,0	242,0	270,0	299,0
	Unit power input	kW	90,3	87,2	109,5	107,6	126,2
	Free-Cooling capacity (2)	kW	151,0	150,0	159,0	171,0	197,0
	Total air flow	m³/h	54000	54000	56300	69000	69000
	EER (1)	kW/kW	2,38	2,43	2,21	2,51	2,37
LNO KIT %85	Cooling capacity (1)	kW	207,0	204,0	232,0	261,0	287,0
	Unit power input	kW	92,0	88,3	112,1	108,3	128,7
	Free-Cooling capacity (2)	kW	150,0	149,0	157,0	169,0	195,0
	Total air flow	m³/h	45900	45900	47855	58650	58650
	EER (1)	kW/kW	2,25	2,31	2,07	2,41	2,23
ELN KIT	Cooling capacity (1)	kW	196,0	193,0	217,0	248,0	270,0
	Unit power input	kW	96,1	92,8	116,0	111,7	134,3
	Free-Cooling capacity (2)	kW	148,0	147,0	155,0	168,0	193,0
	Total air flow	m³/h	37800	37800	39410	48300	48300
	EER (1)	kW/kW	2,04	2,08	1,87	2,22	2,01
Sound power level [Lw] (3)	dB(A)	85,4	85,4	86,3	85,2	85,2	
Average sound pressure level [Lp _m] (4)	dB(A)	66,1	66,1	67,1	65,9	65,9	

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2. Referred to glycol solution inlet temperature 15°C; 20% Ethylene glycol solution; ambient temperature 3°C. Fouling factor of the exchangers 0,043 m²K/kW.
3. Sound power level [Lw] according to ISO EN 9614 - 2.
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5. Hydraulic connection with grooved end complete with flexible joint and adapter pipe for solder connection.
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DIMENSIONS (mm)

KELVIN Clim F20

SIZE C			
	a	b	c
C1	1250	1010	2010
C2	1800	1180	2060
C3	2600	1340	2060
C4	3700	1490	2050
C5	4950	1500	2090
C5H	4950	1500	2090



● Note

● Note

