

RAE Kc

AIR COOLED CHILLERS FOR OUTDOOR INSTALLATION MULTISCROLL COMPRESSORS

COOLING CAPACITY FROM 78 TO 618 kW 1 AND 2 COOLING CIRCUITS

RAE 4102 Kc + CF + GP3 + PT

RAE 6102 S Kc



Above pictures are only indicative and are not binding.



Packaged air cooled chillers of **RAE 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 EER nominal values close to 3 with ESEER higher than 4,5. 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.

Following versions are available:

- **RAE Kc** - standard version
- **RAE S Kc** - silenced version
- **RAE U Kc** - ultra silenced version

Reduced sound level in versions S and U is realised by using condensers with

larger surface areas as well as soundproofed compressor cabinets. On the U version, the electronic fans speed control is also standard provided.

Operation limits (standard unit):

AIR: from 10 to 42°C; WATER (outlet from the evaporator): From 5 to 15°C.

MAIN COMPONENTS

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.

Scroll compressors with R410a refrigerant, operating on one single circuit or on two independent circuits in either 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.

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 42 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 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 (turbo-fin). The max operating pressure refrigerant side is 45 relative bar.

Axial fans, of directly coupled type, with wing-profile aluminium blades, are designed not to create air turbulence. This ensures the max efficiency with the lowest sound level. Each fan is provided with a galvanized steel protection grid, which is painted after construction. The IP54 fans motors are completely closed and provided with in-built overload protection thermostat, incorporated to the motor windings.

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, as well as high and low pressure switches and gauges.

Electric board built in compliance with 60204-1/IEC 204-1 standards, 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.

ACCESSORIES

- A Amperometer:** Electrical device to measure the electrical current absorbed by the unit.
- AE Electrical power supply different than standard:** 230 V three-phase, 460 V three-phase. Frequency 50/60 Hz.
- BT Low temperature operation (-8°C):** Electronic device for the continuous modulating voltage control of the condensing pressure through the variation of the fan rotation speed (Alternative to BF).
- BF Low ambient temperature operation (down to -20°C):** 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).
- CF Soundproofed compressors cabinet with standard material:** Insulation of compressors by a cabinet coated with 25 mm thick sound and fireproofing material. (Included in S version)
- CFU Soundproofed compressors cabinet with higher thickness material:** Compressor insulation with high-density sound and fireproofing materials of higher thickness. (Included in U version)
- CFT Overall compressor and technical compartment cabinet:** Insulation with sound and fireproofing materials 25 mm thickness for compressor and technical compartment. (Not available for 6-8-10 fans version) (For 1 fan version, this option correspond to CF)

- CS Compressors inrush counter:** Electromechanical device positioned inside the electrical board, recording the total inrush starts of compressors.
- EC Axial fans with electronic commutated motor:** Made of high-performance composite material, 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. 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.
- GP2 Anti-intrusion grid:** Metal protection grid to protect compressors and exchangers. (not available with CF, CFU and CFT)
- GP3 Anti-intrusion grid with compressors cabinet:** Anti-intrusion metal protection grid coupled with soundproofed compressor cabinet (only available with CF and CFU).
- I1 Victaulic insulation on pump side:** Insulation of the joints by close-cell polyurethane material, to prevent condensation, pump side.
- I2 Victaulic insulation buffer tank side:** Insulation of the joints by close-cell polyurethane material, to prevent condensation, buffer tank side.
- 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 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 protection bag with hygroscopic salts, 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.
- 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 for standard and S versions, 4-pole for U version.
- 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 for standard and S versions, 4-pole for U version.
- 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 pumps are of enbloc 2-pole type for standard and S versions, 4-pole for U version.
- 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,

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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 pumps are of enbloc 2-pole type for standard and S versions, 4-pole for U version

- 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 pumps are of enbloc 2-pole type for standard and S versions, 4-pole for U version. (Not available for one-fan units).
- PA Rubber-type vibration dampers:** Bell-shaped vibration dampers supports for isolating the unit (supplied in kit), made of base and bell in galvanized steel and natural rubber mixture.
- PM Spring-type vibration dampers:** Spring-type vibration dampers supports, for isolating 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.
- PQ Remote display:** Remote terminal, allowing to display the temperature values detected by probes, the alarm digital inputs, the outputs and the remote ON/OFF of the unit, to change and program of the parameters, the signaling and the display of the present alarms.
- RA Anti-freeze heater on evaporator:** Electrical heater installed on the evaporator, in order to prevent freezing, 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 $\cos\phi \geq 0,9$:** Electrical device made by suitable condensers for compressor rephasing that ensure a $\cos\phi$ value $\geq 0,9$, 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 Compressors overload relays:** Electromechanical protection devices against compressor's overload with displayed alarm.
- 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 color.**
- 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.

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Technical data sheet - RAE 801-2902 Kc

RAE		801 Kc	1001 Kc	1301 Kc	1501 Kc	1702 Kc	2002 Kc	2302 Kc	2502 Kc	2902 Kc
Cooling capacity										
Cooling capacity										
Absorbed power	kW	78,7	102,2	130,6	151,8	170,2	208,0	237,0	257,0	293,0
EER Gross		2,94	2,75	3,05	3,21	3,18	2,87	3,05	2,93	2,95
EER NET		2,69	2,57	2,73	2,90	2,90	2,61	2,79	2,71	2,74
ESEER		3,10	3,49	3,07	3,19	3,29	3,04	3,28	3,26	3,34
Scroll compressors										
Quantity	n	2	2	2	2	2	4	4	4	4
Standard steps capacity	n	2	2	2	2	2	4	4	4	4
Circuits	n	1	1	1	1	2	2	2	2	2
Maximum absorbed current	A	66,1	88,1	106,0	119,0	132,0	176,1	194,1	212,1	238,1
Inrush current	A	175,7	240,0	244,0	320,4	330,5	297,9	300,8	314,4	401,5
Axial fans										
Quantity	n	1	1	2	2	2	3	3	3	3
Rotation speed	rpm	885	885	885	885	885	885	885	885	885
Motors power	kW	2,5	2,5	5,0	5,0	5,0	7,4	7,4	7,4	7,4
Total air flow	m ³ /h	26.150	24.600	54.120	48.530	47.140	82.050	76.050	76.050	73.800
Total air flow	l/s	7.264	6.833	15.033	13.481	13.094	22.792	21.125	21.125	20.500
Nominal absorbed current	A	5,2	5,2	10,3	10,3	10,3	15,5	15,5	15,5	15,5
Brazed plate evaporator										
Quantity	n	1	1	1	1	1	1	1	1	1
Water flow rate	m ³ /h	13,5	17,6	22,5	26,1	29,3	35,8	40,8	44,2	50,4
Water flow rate	l/s	3,8	4,9	6,2	7,3	8,1	9,9	11,3	12,3	14,0
Pressure drop	kPa	47	49	49	48	66	65	66	75	63
Pump group P1										
Available pressure	kPa	104	120	102	100	126	106	111	124	101
Motor power	kW	1,1	1,5	1,9	1,9	3,0	3,0	4,0	4,0	4,0
Nominal absorbed current	A	3,1	3,8	5,0	5,0	6,2	6,5	8,3	8,5	8,5
Weight	Kg	13	14	15	15	27	35	41	44	44
Pump group P1H										
Available pressure	kPa	203	272	251	228	198	210	231	200	249
Motor power	kW	3,0	3,0	3,0	3,0	3,0	5,5	5,5	5,5	7,5
Nominal absorbed current	A	5,7	5,7	5,7	5,7	5,7	10,7	10,3	10,3	15,0
Weight	Kg	34	55	55	55	55	35	50	50	60
Pump group P2										
Available pressure	kPa	104	120	102	100	126	106	111	124	101
Motor power	kW	1,1	1,5	1,9	1,9	3,0	3,0	4,0	4,0	4,0
Nominal absorbed current	A	3,1	3,8	5,0	5,0	6,2	6,5	8,3	8,5	8,5
Weight	Kg	25	28	31	31	54	70	82	88	88
Pump group P2H										
Available pressure	kPa	203	272	251	228	198	210	231	200	249
Motor power	kW	3,0	3,0	3,0	3,0	3,0	5,5	5,5	5,5	7,5
Nominal absorbed current	A	5,7	5,7	5,7	5,7	5,7	10,7	10,3	10,3	15,0
Weight	Kg	68	110	110	110	110	70	100	100	120
Pump group PT										
Available pressure	kPa	88	124	151	155	116	91	105	84	134
Motor power	kW	1,5	2,2	3,0	3,0	3,0	3,0	4,0	4,0	5,5
Nominal absorbed current	A	3,3	4,6	6,1	6,1	6,1	6,1	7,8	7,8	10,3
Weight	Kg	94	99	118	123	123	123	137	137	168
Hydraulic kit										
Buffer tank water volume	l	100	100	250	250	250	400	400	400	800
Weight with empty MV included	Kg	40	40	80	80	80	95	95	95	145
Electrical data										
Total absorbed power	kW	29,3	39,7	47,8	52,3	58,6	79,8	85,0	95,0	106,8
Total nominal absorbed current	A	48,6	65,2	78,3	86,5	97,3	132,7	140,1	154,7	174,7
Total maximum absorbed current	A	71,2	93,2	116,3	129,3	142,3	191,5	209,5	227,5	253,5
Total inrush current	A	180,9	245,2	254,3	330,7	340,8	313,4	316,3	329,9	417,0
Sound pressure level										
Sound pressure level 2)	dB(A)	75,2	75,2	78,0	79,1	79,1	80,0	80,3	79,7	80,7
Dimensions										
Length	mm	1.620	1.620	2.660	2.660	2.660	3.700	3.700	3.700	3.700
Width	mm	1.370	1.370	1.370	1.370	1.370	1.370	1.370	1.370	1.370
Height	mm	2.420	2.420	2.420	2.420	2.420	2.420	2.420	2.420	2.420
Weight	kg	982	1.042	1.177	1.266	1.320	1.707	1.823	1.825	1.968
Weight with empty MV included	kg	1.022	1.082	1.257	1.346	1.400	1.802	1.918	1.920	2.113
Refrigerant charge	kg	9	12	19	22	28	34	36	38	46
Power supply										
Power supply	V / ph / Hz	400 V / 50Hz / 3Ph + N + T								
NOTES										
Nominal condition referred to: air 35 °C - chilled water 7/12 °C.										
2) Measured at 1 m in open field (ISO 3746).										

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Technical data sheet - RAE 3202-6102 Kc

RAE		3202 Kc	3402 Kc	3602 Kc	3802 Kc	4102 Kc	4902 Kc	5202 Kc	5602 Kc	6102 Kc
Cooling capacity										
Cooling capacity	kW	325,0	346,0	367,0	388,0	416,0	492,0	526,0	565,0	618,0
Absorbed power	kW	113,2	117,2	120,6	127,2	132,0	167,4	193,2	191,2	200,4
EER Gross		2,87	2,95	3,04	3,05	3,15	2,94	2,72	2,96	3,08
EER NET		2,69	2,72	2,81	2,83	2,88	2,74	2,56	2,73	2,86
ESEER		3,33	3,22	3,27	3,40	3,30	3,33	3,32	3,34	3,42
Scroll compressors										
Quantity	n	4	4	4	4	4	6	6	6	6
Standard steps capacity	n	4	4	4	4	4	4	4	4	4
Circuits	n	2	2	2	2	2	2	2	2	2
Maximum absorbed current	A	264,1	284,0	304,0	314,0	324,1	396,1	456,0	466,0	486,0
Inrush current	A	423,8	428,3	420,3	455,2	460,6	511,5	537,0	561,8	572,0
Axial fans										
Quantity	n	3	4	4	4	5	5	6	8	8
Rotation speed	rpm	885	885	885	885	885	885	895	895	895
Motors power	kW	7,4	9,9	9,9	9,9	12,4	12,4	12,0	16,0	16,0
Total air flow	m ³ /h	73.800	102.400	99.200	92.800	128.000	116.000	112.920	167.200	156.800
Total air flow	l/s	20.500	28.444	27.556	25.778	35.556	32.222	31.367	46.444	43.556
Nominal absorbed current	A	15,5	20,6	20,6	20,6	25,8	25,8	25,8	34,4	34,4
Brazed plate evaporator										
Quantity	n	1	1	1	1	1	1	1	1	1
Water flow rate	m ³ /h	55,9	59,5	63,1	66,7	71,6	84,6	90,5	97,2	106,3
Water flow rate	l/s	15,5	16,5	17,5	18,5	19,9	23,5	25,1	27,0	29,5
Pressure drop	kPa	74	63	70	54	61	67	70	61	71
Pump group P1										
Available pressure	kPa	88	110	99	92	111	140	128	112	119
Motor power	kW	4,0	5,5	5,5	5,5	5,5	7,5	7,5	7,5	9,2
Nominal absorbed current	A	8,5	10,2	10,2	10,2	11,0	14,0	14,0	14,0	16,5
Weight	Kg	44	53	53	53	53	58	58	58	75
Pump group P1H										
Available pressure	kPa	224	232	201	196	264	250	240	235	196
Motor power	kW	7,5	7,5	7,5	7,5	11,0	11,0	11,0	11,0	11,0
Nominal absorbed current	A	15,0	15,0	15,0	15,0	21,5	21,5	21,5	21,5	21,5
Weight	Kg	60	60	60	60	81	81	81	81	81
Pump group P2										
Available pressure	kPa	88	110	99	92	111	140	128	112	119
Motor power	kW	4,0	5,5	5,5	5,5	5,5	7,5	7,5	7,5	9,2
Nominal absorbed current	A	8,5	10,2	10,2	10,2	11,0	14,0	14,0	14,0	16,5
Weight	Kg	88	106	106	106	106	116	116	116	150
Pump group P2H										
Available pressure	kPa	224	232	201	196	264	250	240	235	196
Motor power	kW	7,5	7,5	7,5	7,5	11,0	11,0	11,0	11,0	11,0
Nominal absorbed current	A	15,0	15,0	15,0	15,0	21,5	21,5	21,5	21,5	21,5
Weight	Kg	120	120	120	120	162	162	162	162	162
Pump group PT										
Available pressure	kPa	94	91	89	94	144	120	112	102	142
Motor power	kW	5,5	5,5	5,5	5,5	7,5	7,5	7,5	7,5	11,0
Nominal absorbed current	A	10,3	10,3	10,3	10,3	13,8	13,8	13,8	13,8	20,2
Weight	Kg	168	168	166	166	182	182	182	182	267
Hydraulic kit										
Buffer tank water volume	l	800	800	1100	1100	1100	1100	1100	1100	1100
Weight with empty MV included	Kg	145	145	220	220	220	220	220	220	220
Electrical data										
Total absorbed power	kW	120,6	127,1	130,5	137,1	144,4	179,8	205,2	207,2	216,4
Total nominal absorbed current	A	197,9	214,0	225,0	232,4	242,6	295,2	349,8	353,6	363,2
Total maximum absorbed current	A	279,5	304,6	324,6	334,6	349,8	421,8	481,8	500,4	520,4
Total inrush current	A	439,3	448,9	440,9	475,8	486,4	537,3	562,8	596,2	606,4
Sound pressure level										
Sound pressure level 2)	dB(A)	80,6	82,1	81,6	82,6	84,1	83,6	81,6	83,3	84,7
Dimensions										
Length	mm	3.700	4.740	4.740	4.740	5.780	5.780	3.770	4.750	4.750
Width	mm	1.370	1.370	1.370	1.370	1.370	1.370	2.300	2.300	2.300
Height	mm	2.420	2.420	2.420	2.420	2.420	2.420	2.560	2.560	2.560
Weight	kg	2.063	2.102	2.225	2.433	2.375	2.875	3.572	3.496	3.810
Weight with empty MV included	kg	2.208	2.247	2.445	2.653	2.595	3.095	3.792	3.716	4.030
Refrigerant charge	kg	52	56	68	74	78	82	86	90	94
Power supply										
Power supply	V / ph / Hz	400 V/ 50Hz / 3Ph + N + T								
NOTES										
Nominal condition referred to: air 35 °C - chilled water 7/12 °C.										
2) Measured at 1 m in open field (ISO 3746).										

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Technical data sheet - RAE 801-2902 S Kc

RAE S		801 Kc	1001 Kc	1301 Kc	1501 Kc	1702 Kc	2002 Kc	2302 Kc	2502 Kc	2902 Kc
Cooling capacity										
Cooling capacity		77,4	101,6	131,7	146,9	168,1	206,2	228,0	250,0	291,0
Absorbed power	kW	27,6	34,4	42,2	49,6	54,0	73,2	82,2	91,2	100,4
EER Gross		2,80	2,95	3,12	2,96	3,11	2,82	2,77	2,74	2,90
EER NET		2,65	2,71	2,90	2,79	2,86	2,65	2,62	2,61	2,73
ESEER		3,23	3,67	3,44	3,28	3,30	3,39	3,52	3,49	3,47
Scroll compressors										
Quantity	n	2	2	2	2	2	4	4	4	4
Standard steps capacity	n	2	2	2	2	2	4	4	4	4
Circuits	n	1	1	1	1	2	2	2	2	2
Nominal absorbed current	A	44,4	57,4	68,0	79,4	87,4	118,4	131,4	144,4	160,2
Maximum absorbed current	A	66,0	88,0	106,0	119,0	132,0	176,0	194,0	212,0	238,0
Inrush current	A	176,2	238,7	244,0	321,8	330,7	298,8	305,7	318,3	402,3
Axial fans										
Quantity	n	1	2	2	2	3	3	3	3	4
Rotation speed	rpm	685	685	685	685	685	685	685	685	685
Motors power	kW	1,6	3,1	3,1	3,1	4,7	4,7	4,7	4,7	6,3
Total air flow	m ³ /h	17.400	45.400	36.400	34.600	67.200	60.150	53.700	51.750	80.200
Total air flow	l/s	4.833	12.611	10.111	9.611	18.667	16.708	14.917	14.375	22.278
Nominal absorbed current	A	2,9	5,8	5,8	5,8	8,7	8,7	8,7	8,7	11,6
Brazed plate evaporator										
Quantity	n	1	1	1	1	1	1	1	1	1
Water flow rate	m ³ /h	13,3	17,5	22,7	25,3	28,9	35,5	39,2	43,0	50,1
Water flow rate	l/s	3,7	4,9	6,3	7,0	8,0	9,9	10,9	11,9	13,9
Pressure drop	kPa	45	55	50	54	65	62	62	70	64
Pump group P1										
Available pressure	kPa	139	127	106	92	136	116	103	142	115
Motor power	kW	2,2	2,2	2,2	3,0	4,0	4,0	4,0	5,5	5,5
Nominal absorbed current	A	5,1	5,1	5,1	7,2	9,2	9,2	9,2	12,5	12,5
Weight	Kg	50	50	50	54	90	90	90	105	105
Pump group P1H										
Available pressure	kPa	226	220	212	212	194	180	203	192	190
Motor power	kW	5,5	5,5	5,5	5,5	5,5	5,5	9,2	9,2	9,2
Nominal absorbed current	A	12,5	12,5	12,5	12,5	12,5	12,5	18,2	18,2	18,2
Weight	Kg	105	105	105	105	105	105	173	173	173
Pump group P2										
Available pressure	kPa	139	127	106	92	136	116	103	142	115
Motor power	kW	2,2	2,2	2,2	3,0	4,0	4,0	4,0	5,5	5,5
Nominal absorbed current	A	5,1	5,1	5,1	7,2	9,2	9,2	9,2	12,5	12,5
Weight	Kg	100	100	100	108	180	180	180	210	210
Pump group P2H										
Available pressure	kPa	226	220	212	212	194	180	203	192	190
Motor power	kW	5,5	5,5	5,5	5,5	5,5	5,5	9,2	9,2	9,2
Nominal absorbed current	A	12,5	12,5	12,5	12,5	12,5	12,5	18,2	18,2	18,2
Weight	Kg	210	210	210	210	210	210	346	346	346
Pump group PT										
Available pressure	kPa	147	131	113	102	121	111	108	92	124
Motor power	kW	3,0	3,0	3,0	3,0	3,0	4,0	4,0	4,0	5,5
Nominal absorbed current	A	6,4	6,4	6,4	6,4	6,4	8,2	8,2	8,2	11,4
Weight	Kg	158	158	158	158	168	180	180	180	204
Hydraulic kit										
Buffer tank water volume	l	100	100	250	250	250	400	400	400	800
Weight with empty MV included	Kg	40	40	80	80	80	95	95	95	145
Electrical data										
Total absorbed power	kW	29,2	37,5	45,3	52,7	58,7	77,9	86,9	95,9	106,7
Total nominal absorbed current	A	47,3	63,2	73,8	85,2	96,1	127,1	140,1	153,1	171,8
Total maximum absorbed current	A	68,9	93,8	111,8	124,8	140,7	184,7	202,7	220,7	249,6
Total inrush current	A	179,1	244,5	249,8	327,6	339,4	307,5	314,4	327,0	413,9
Sound pressure level										
Sound pressure level 2)	dB(A)	72,0	72,4	73,1	74,4	74,6	75,1	75,4	74,8	76,4
Dimensions										
Length	mm	1.620	2.660	2.660	2.660	3.700	3.700	3.700	3.700	4.740
Width	mm	1.370	1.370	1.370	1.370	1.370	1.370	1.370	1.370	1.370
Height	mm	2.420	2.420	2.420	2.420	2.420	2.420	2.420	2.420	2.420
Weight	kg	1.132	1.238	1.382	1.464	1.480	1.895	2.005	2.096	2.160
Weight with empty MV included	kg	1.172	1.278	1.462	1.544	1.560	1.990	2.100	2.191	2.305
Refrigerant charge	kg	9	12	19	22	28	34	36	38	46
Power supply										
Power supply	V / ph / Hz	400 V/ 50Hz / 3Ph + N + T								
NOTES										
Nominal condition referred to: air 35 °C - chilled water 7/12 °C.										
2) Measured at 1 m in open field (ISO 3746).										

LIQUID CHILLERS - AIR COOLED

Technical data sheet - RAE 3202-6102 S Kc

RAE S		3202 Kc	3402 Kc	3602 Kc	3802 Kc	4102 Kc	4902 Kc	5202 Kc	5602 Kc	6102 Kc
Cooling capacity										
Cooling capacity	kW	323,0	346,0	367,0	383,0	406,0	496,0	538,0	572,0	623,0
Absorbed power	kW	114,8	117,2	120,8	129,4	136,0	166,2	187,8	192,8	198,0
EER Gross		2,81	2,95	3,04	2,96	2,99	2,98	2,86	2,97	3,15
EER NET		2,67	2,77	2,85	2,79	2,82	2,81	2,72	2,78	2,96
ESEER		3,48	3,43	3,45	3,54	3,53	3,50	3,50	3,55	3,60
Scroll compressors										
Quantity	n	4	4	4	4	4	6	6	6	6
Standard steps capacity	n	4	4	4	4	4	4	4	4	4
Circuits	n	2	2	2	2	2	2	2	2	2
Nominal absorbed current	A	184,8	193,4	204,0	215,0	223,2	267,6	315,6	312,4	325,2
Maximum absorbed current	A	264,0	284,0	304,0	314,0	324,0	396,0	456,0	466,0	486,0
Inrush current	A	425,6	428,3	420,0	457,6	465,4	510,0	530,0	556,2	569,0
Axial fans										
Quantity	n	4	5	5	5	5	8	8	10	10
Rotation speed	rpm	685	685	685	685	685	685	685	685	685
Motors power	kW	6,3	7,9	7,9	7,9	7,9	10,2	10,2	12,7	12,7
Total air flow	m ³ /h	67.920	100.250	94.400	94.400	87.000	130.800	118.000	163.500	149.000
Total air flow	l/s	18.867	27.847	26.222	26.222	24.167	36.333	32.778	45.417	41.389
Nominal absorbed current	A	11,6	14,5	14,5	14,5	14,5	20,0	20,0	25,0	25,0
Brazed plate evaporator										
Quantity	n	1	1	1	1	1	1	1	1	1
Water flow rate	m ³ /h	55,6	59,5	63,1	65,9	69,8	85,3	92,5	98,4	107,2
Water flow rate	l/s	15,4	16,5	17,5	18,3	19,4	23,7	25,7	27,3	29,8
Pressure drop	kPa	76	65	70	53	57	70	72	63	73
Pump group P1										
Available pressure	kPa	88	110	103	106	86	147	130	114	91
Motor power	kW	5,5	5,5	5,5	5,5	5,5	9,2	9,2	9,2	9,2
Nominal absorbed current	A	11,9	11,9	11,9	11,9	11,9	18,2	18,2	18,2	18,2
Weight	Kg	77	77	77	77	77	173	173	173	173
Pump group P1H										
Available pressure	kPa	178	226	211	220	210	187	174	251	221
Motor power	kW	9,2	11,0	11,0	11,0	11,0	11,0	11,0	15,0	15,0
Nominal absorbed current	A	18,2	21,4	21,4	21,4	21,4	21,4	21,4	31,0	31,0
Weight	Kg	173	186	186	186	186	186	186	204	204
Pump group P2										
Available pressure	kPa	88	110	103	106	86	147	130	114	91
Motor power	kW	5,5	5,5	5,5	5,5	5,5	9,2	9,2	9,2	9,2
Nominal absorbed current	A	11,9	11,9	11,9	11,9	11,9	18,2	18,2	18,2	18,2
Weight	Kg	154	154	154	154	154	346	346	346	346
Pump group P2H										
Available pressure	kPa	178	226	211	220	210	187	174	251	221
Motor power	kW	9,2	11,0	11,0	11,0	11,0	11,0	11,0	15,0	15,0
Nominal absorbed current	A	18,2	21,4	21,4	21,4	21,4	21,4	21,4	31,0	31,0
Weight	Kg	346	372	372	372	372	372	372	408	408
Pump group PT										
Available pressure	kPa	106	107	91	106	123	102	133	134	118
Motor power	kW	5,5	5,5	5,5	7,5	11,0	11,0	11,0	11,0	11,0
Nominal absorbed current	A	11,4	11,4	11,4	15,2	21,5	21,5	21,5	21,5	21,5
Weight	Kg	204	234	234	275	346	346	346	346	346
Hydraulic kit										
Buffer tank water volume	l	800	800	1100	1100	1100	1100	1100	1100	1100
Weight with empty MV included	Kg	145	145	220	220	220	220	220	220	220
Electrical data										
Total absorbed power	kW	121,1	125,1	128,7	137,3	143,9	176,4	198,0	205,5	210,7
Total nominal absorbed current	A	196,4	207,9	218,5	229,5	237,7	287,6	335,6	337,4	350,2
Total maximum absorbed current	A	275,6	298,5	318,5	328,5	338,5	416,0	476,0	491,0	511,0
Total inrush current	A	437,2	442,8	434,5	472,1	479,9	530,0	550,0	581,2	594,0
Sound pressure level										
Sound pressure level 2)	dB(A)	76,1	77,6	77,1	77,8	79,3	79,0	78,4	79,5	80,8
Dimensions										
Length	mm	4.740	5.780	5.780	5.780	5.780	4.750	4.750	5.720	5.720
Width	mm	1.370	1.370	1.370	1.370	1.370	2.300	2.300	2.300	2.300
Height	mm	2.420	2.420	2.420	2.420	2.420	2.560	2.560	2.560	2.560
Weight	kg	2.392	2.410	2.517	2.609	2.756	3.615	3.850	4.465	4.566
Weight with empty MV included	kg	2.537	2.555	2.737	2.829	2.976	3.835	4.070	4.685	4.786
Refrigerant charge	kg	52	56	68	74	78	82	86	90	94
Power supply										
Power supply	V / ph / Hz	400 V / 50Hz / 3Ph + N + T								
NOTES										
Nominal condition referred to: air 35 °C - chilled water 7/12 °C.										
2) Measured at 1 m in open field (ISO 3746).										

LIQUID CHILLERS - AIR COOLED

Technical data sheet - RAE 801-2902 U Kc

RAE U		801 Kc	1001 Kc	1301 Kc	1501 Kc	1702 Kc	2002 Kc	2302 Kc	2502 Kc	2902 Kc
Cooling capacity										
Cooling capacity										
Absorbed power	kW	77,0	104,6	130,2	147,7	164,8	202,7	226,0	248,0	288,0
EER Gross		2,79	2,92	3,04	3,00	2,96	2,70	2,72	2,70	2,83
EER NET		2,64	2,69	2,83	2,82	2,73	2,54	2,58	2,56	2,67
ESEER		2,55	3,38	2,95	2,65	3,06	3,00	3,07	2,97	3,14
Scroll compressors										
Quantity	n	2	2	2	2	2	4	4	4	4
Standard steps capacity	n	2	2	2	2	2	4	4	4	4
Circuits	n	1	1	1	1	2	2	2	2	2
Nominal absorbed current	A	44,4	57,8	68,0	79,0	89,6	120,8	132,2	145,8	162,6
Maximum absorbed current	A	66,0	88,0	106,0	119,0	132,0	176,0	194,0	212,0	238,0
Inrush current	A	176,2	238,9	244,0	321,6	331,8	300,6	306,3	319,2	404,0
Axial fans										
Quantity	n	1	2	2	2	3	3	3	3	4
Rotation speed	rpm	617	596	591	608	608	630	630	639	625
Motors power	kW	1,57	3,14	3,14	3,14	4,71	4,71	4,71	4,71	6,28
Total air flow	m ³ /h	17.400	45.400	36.400	34.600	67.200	60.150	53.700	51.750	80.200
Total air flow	l/s	4.833	12.611	10.111	9.611	18.667	16.708	14.917	14.375	22.278
Nominal absorbed current	A	2,9	5,8	5,8	5,8	8,7	8,7	8,7	8,7	11,6
Brazed plate evaporator										
Quantity	n	1	1	1	1	1	1	1	1	1
Water flow rate	m ³ /h	13,2	18,0	22,4	25,4	28,3	34,9	38,9	42,7	49,5
Water flow rate	l/s	3,7	5,0	6,2	7,1	7,9	9,7	10,8	11,8	13,8
Pressure drop	kPa	54	55	67	65	68	64	68	79	75
Pump group P1										
Available pressure	kPa	139	127	106	92	136	116	103	142	115
Motor power	kW	2,2	2,2	2,2	3,0	4,0	4,0	4,0	5,5	5,5
Nominal absorbed current	A	5,1	5,1	5,1	7,2	9,2	9,2	9,2	12,5	12,5
Weight	Kg	50	50	50	54	90	90	90	105	105
Pump group P1H										
Available pressure	kPa	226	220	212	212	194	180	203	192	190
Motor power	kW	5,5	5,5	5,5	5,5	5,5	5,5	9,2	9,2	9,2
Nominal absorbed current	A	12,5	12,5	12,5	12,5	12,5	12,5	18,2	18,2	18,2
Weight	Kg	105	105	105	105	105	105	173	173	173
Pump group P2										
Available pressure	kPa	139	127	106	92	136	116	103	142	115
Motor power	kW	2,2	2,2	2,2	3,0	4,0	4,0	4,0	5,5	5,5
Nominal absorbed current	A	5,1	5,1	5,1	7,2	9,2	9,2	9,2	12,5	12,5
Weight	Kg	100	100	100	108	180	180	180	210	210
Pump group P2H										
Available pressure	kPa	226	220	212	212	194	180	203	192	190
Motor power	kW	5,5	5,5	5,5	5,5	5,5	5,5	9,2	9,2	9,2
Nominal absorbed current	A	12,5	12,5	12,5	12,5	12,5	12,5	18,2	18,2	18,2
Weight	Kg	210	210	210	210	210	210	346	346	346
Pump group PT										
Available pressure	kPa	147	131	113	102	121	111	108	92	124
Motor power	kW	3,0	3,0	3,0	3,0	3,0	4,0	4,0	4,0	5,5
Nominal absorbed current	A	6,4	6,4	6,4	6,4	6,4	8,2	8,2	8,2	11,4
Weight	Kg	158	158	158	158	168	180	180	180	204
Hydraulic kit										
Buffer tank water volume	l	100	100	250	250	250	400	400	400	800
Weight with empty MV included	Kg	40	40	80	80	80	95	95	95	145
Electrical data										
Total absorbed power	kW	29,2	38,9	45,9	52,4	60,3	79,9	87,7	96,7	107,9
Total nominal absorbed current	A	47,3	63,6	73,8	84,8	98,3	129,5	140,9	154,5	174,2
Total maximum absorbed current	A	68,9	93,8	111,8	124,8	140,7	184,7	202,7	220,7	249,6
Total inrush current	A	179,1	244,7	249,8	327,4	340,5	309,3	315,0	327,9	415,6
Sound pressure level										
Sound pressure level 2)	dB(A)	64,7	65,0	65,5	67,0	67,4	67,7	68,1	67,0	69,5
Dimensions										
Length	mm	1.620	2.660	2.660	2.660	3.700	3.700	3.700	3.700	4.740
Width	mm	1.370	1.370	1.370	1.370	1.370	1.370	1.370	1.370	1.370
Height	mm	2.420	2.420	2.420	2.420	2.420	2.420	2.420	2.420	2.420
Weight	kg	1.132	1.238	1.382	1.464	1.490	1.895	2.005	2.096	2.160
Weight with empty MV included	kg	1.172	1.278	1.462	1.544	1.570	1.990	2.100	2.191	2.305
Refrigerant charge	kg	9	12	19	22	28	34	36	38	46
Power supply										
Power supply	V / ph / Hz	400 V / 50Hz / 3Ph + N + T								
NOTES										
Nominal condition referred to: air 35 °C - chilled water 7/12 °C.										
2) Measured at 1 m in open field (ISO 3746).										

LIQUID CHILLERS - AIR COOLED

Technical data sheet - RAE 3202-6102 U Kc

RAE U		3202 Kc	3402 Kc	3602 Kc	3802 Kc	4102 Kc	4902 Kc	5202 Kc	5602 Kc	6102 Kc
Cooling capacity										
Cooling capacity	kW	324,0	328,0	358,0	378,0	401,0	486,0	533,0	560,0	615,0
Absorbed power	kW	113,2	118,6	124,4	131,8	138,4	169,8	189,0	192,8	200,4
EER Gross		2,86	2,77	2,88	2,87	2,90	2,86	2,82	2,90	3,07
EER NET		2,71	2,59	2,71	2,71	2,74	2,70	2,68	2,73	2,89
ESEER		3,02	3,16	3,11	3,14	3,07	2,44	2,17	2,47	2,43
Scroll compressors										
Quantity	n	4	4	4	4	4	6	6	6	6
Standard steps capacity	n	4	4	4	4	4	4	4	4	4
Circuits	n	2	2	2	2	2	2	2	2	2
Nominal absorbed current	A	182,4	195,4	209,2	218,8	226,8	253,6	297,4	321,2	303,8
Maximum absorbed current	A	264,0	284,0	304,0	314,0	324,0	396,0	456,0	466,0	486,0
Inrush current	A	423,8	429,8	423,9	460,4	468,1	515,0	531,5	563,4	572,0
Axial fans										
Quantity	n	4	5	5	5	5	8	8	10	10
Rotation speed	rpm	625	617	611	622	625	625	620	613	599
Motors power	kW	6,28	7,85	7,85	7,85	7,85	10,16	10,16	12,7	12,7
Total air flow	m ³ /h	67.920	100.250	94.400	94.400	87.000	130.800	118.000	163.500	149.000
Total air flow	l/s	18.867	27.847	26.222	26.222	24.167	36.333	32.778	45.417	41.389
Nominal absorbed current	A	11,6	14,5	14,5	14,5	14,5	20	20	25	25
Brazed plate evaporator										
Quantity	n	1	1	1	1	1	1	1	1	1
Water flow rate	m ³ /h	55,7	56,4	61,6	65,0	69,0	83,6	91,7	96,3	105,8
Water flow rate	l/s	15,5	15,7	17,1	18,1	19,2	23,2	25,5	26,8	29,4
Pressure drop	kPa	92	66	74	59	66	72	78	77	90
Pump group P1										
Available pressure	kPa	88	110	103	106	86	147	130	114	91
Motor power	kW	5,5	5,5	5,5	5,5	5,5	9,2	9,2	9,2	9,2
Nominal absorbed current	A	11,9	11,9	11,9	11,9	11,9	18,2	18,2	18,2	18,2
Weight	Kg	77	77	77	77	77	173	173	173	173
Pump group P1H										
Available pressure	kPa	178	226	211	220	210	187	174	251	221
Motor power	kW	9,2	11,0	11,0	11,0	11,0	11,0	11,0	15,0	15,0
Nominal absorbed current	A	18,2	21,4	21,4	21,4	21,4	21,4	21,4	31,0	31,0
Weight	Kg	173	186	186	186	186	186	186	204	204
Pump group P2										
Available pressure	kPa	88	110	103	106	86	147	130	114	91
Motor power	kW	5,5	5,5	5,5	5,5	5,5	9,2	9,2	9,2	9,2
Nominal absorbed current	A	11,9	11,9	11,9	11,9	11,9	18,2	18,2	18,2	18,2
Weight	Kg	154	154	154	154	154	346	346	346	346
Pump group P2H										
Available pressure	kPa	178	226	211	220	210	187	174	251	221
Motor power	kW	9,2	11,0	11,0	11,0	11,0	11,0	11,0	15,0	15,0
Nominal absorbed current	A	18,2	21,4	21,4	21,4	21,4	21,4	21,4	31,0	31,0
Weight	Kg	346	372	372	372	372	372	372	408	408
Pump group PT										
Available pressure	kPa	106	107	91	106	123	102	133	134	118
Motor power	kW	5,5	5,5	5,5	7,5	11,0	11,0	11,0	11,0	11,0
Nominal absorbed current	A	11,4	11,4	11,4	15,2	21,5	21,5	21,5	21,5	21,5
Weight	Kg	204	234	234	275	346	346	346	346	346
Hydraulic kit										
Buffer tank water volume	l	800	800	1100	1100	1100	1100	1100	1100	1100
Weight with empty MV included	Kg	145	145	220	220	220	220	220	220	220
Electrical data										
Total absorbed power	kW	119,5	126,5	132,3	139,7	146,3	180,0	199,2	205,5	213,1
Total nominal absorbed current	A	194,0	209,9	223,7	233,3	241,3	273,6	317,4	346,2	328,8
Total maximum absorbed current	A	275,6	298,5	318,5	328,5	338,5	416,0	476,0	491,0	511,0
Total inrush current	A	435,4	444,3	438,4	474,9	482,6	535,0	551,5	588,4	597,0
Sound pressure level										
Sound pressure level 2)	dB(A)	68,9	70,4	69,8	71,0	72,9	74,5	73,9	75,5	74,9
Dimensions										
Length	mm	4.740	5.780	5.780	5.780	5.780	4.750	4.750	5.720	5.720
Width	mm	1.370	1.370	1.370	1.370	1.370	2.300	2.300	2.300	2.300
Height	mm	2.420	2.420	2.420	2.420	2.420	2.560	2.560	2.560	2.560
Weight	kg	2.392	2.410	2.517	2.609	2.756	3.615	3.850	4.465	4.566
Weight with empty MV included	kg	2.537	2.555	2.737	2.829	2.976	3.835	4.070	4.685	4.786
Refrigerant charge	kg	52	56	68	74	78	82	86	90	94
Power supply										
Power supply	V / ph / Hz	400 V / 50Hz / 3Ph + N + T								
NOTES										
Nominal condition referred to: air 35 °C - chilled water 7/12 °C.										
2) Measured at 1 m in open field (ISO 3746).										