KELVIN
Air Conditioning System
2016

Qualified for **Energy Technology List**
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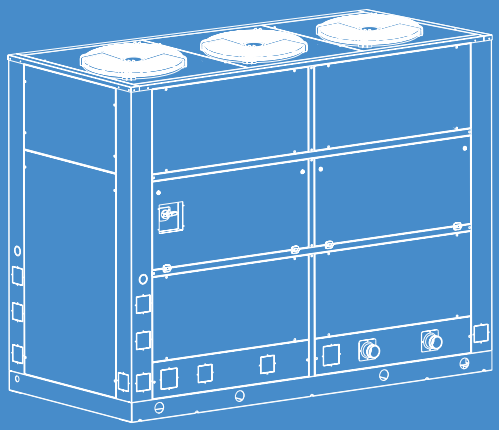
TM

bsi. ISO 9001 Quality Management | ISO 14001 Environmental Management

# KELVIN Clim A20

Cooling capacity: 20 ~ 260 kW



R410A PLATE EC EU

Air cooled liquid chillers with scroll compressors, plate heat exchengers and EC axial fans

KELVIN AIR CONDITIONING

# KELVIN Clim A20

**KELVIN CLIM A20 :** Air cooled liquid chillers for outdoor installation, equipped with scroll compressors and axial fans
**Cooling Capacity: 260 ~ 20 kW**


EUROVENT CERTIFIED PERFORMANCE Pending... www.eurovent-certification.com

## KELVIN AIR CONDITIONING

R410A PLATE EC EU

### MAIN FEATURES

- Air cooled liquid chiller.
- 29 models available, for a wide selection opportunity.
- Average step of 10kW.
- EER up to 3,22.
- ESEER up to 4,18.
- Scroll compressors.
- R410A Refrigerant charge.
- Single or double refrigerant circuit.
- Plate type heat exchangers.
- EC Axial fans.
- Single air circuit.
- Suitable for outdoor installation.

### MAIN BENEFITS

- Units with two scroll compressors for each refrigerant circuit to reach a high effi ciency.
- Units with one or two refrigerant circuits.
- High EER and ESEER.
- Availability of kit for the reduction and the extreme reduction of the noise.
- Availability of pumping groups.
- Availability of total or partial heat recovery system.
- EC Axial fans for a high efficiency.
- Easily of maintenance.
- Components dedicated to the safety of the unity.
- Eurovent Certifi cation. (pending)

### FANS WITH BRUSHLESS TYPE EC MOTOR

The fans electric motors are the brushless type with built-in electronic commutation system (EC) which yield high energy savings during operation in reduced air flow.
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: -12~20°C
Ambient temperature: -10~45°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.
- Terminal box with IP54 enclosure class.
- 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 fi ns, specifi cally 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 fl ow required for the heat exchange.
- Sub-cooling circuit to allow a signifi cant increase in cooling capacity.
- Frame in galvanized steel.

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.
- Electronic expansion valve for models 197 P2 S and 230 P3 S.

The valve allows high performance and system effi ciency 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.
- 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.
- 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
- MP.COM 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 A20<br>SIZE | C1 | C2 | C3 | C4 | C5 |
|---|---|---|---|---|---|
| 739 - Pumping group (1 pump) | ● | ● | ● | ● | ● |
| 740 - Pumping group (2 pumps) | - | - | ● | ● | ● |
| 756 - Pumping group LN (1 pump) | ● | ● | ● | ● | ● |
| 757 - Pumping group LN (2 pumps) | - | - | ● | ● | ● |
| 768 - Chilled water storage tank | ● | ● | ● | ● | ● |
| 150 - LNO kit | ● | ● | ● | ● | ● |
| 151 - Kit ELN | ● | ● | ● | ● | ● |
| 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) | ● | ● | ● | ● | ● |
| 450 - Partial heat recovery | ● | ● | ● | ● | ● |
| %100 - 451 heat reclaim | ● | ● | ● | ● | ● |
| 251 - Coils protection nets | ● | ● | ● | ● | ● |
| 351 - Coils with pre-painted fins | ● | ● | ● | ● | ● |
| Condensing coil in special execution | ● | ● | ● | ● | ● |
| Silencing plenum on condensing air discharge | ● | ● | ● | ● | ● |
| 731 - Safety water flow switch | ● | ● | ● | ● | ● |
| 605 - Compr. power factor capacitor - 0,9 | ● | ● | ● | ● | ● |
| Ambient temperature sensor | ● | ● | ● | ● | ● |
| 81 - Phases sequence control | ● | ● | ● | ● | ● |
| 83 - Compressor operation indicator | ● | ● | ● | ● | ● |
| 88 - Analog set point compensation | ● | ● | ● | ● | ● |
| 1002 - Soft Starter | ● | ● | ● | ● | ● |
| 1003 - Analogic flowmeter | ● | ● | ● | ● | ● |
| 1005 - Power supply analyzer | ● | ● | ● | ● | ● |
| 1009 - Multimeter kit | ● | ● | ● | ● | ● |
| 919 - Clock card | ● | ● | ● | ● | ● |
| 923 - KLEVIN-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 | ● | ● | ● | ● | ● |
| 934 - MP.COM expansion card | ● | ● | ● | ● | ● |
| 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 A20

| | KELVIN Clim A20 | | 21 P1 S | 24 P1 S | 28 P1 S | 30 P1 S | 34 P1 S | 40 P1 S | 50 P1 S | 52 P2 S |
|---|---|---|---|---|---|---|---|---|---|---|
| | SIZE | | C1 | C1 | C1 | C1 | C2 | C2 | C2 | C2 |
| STANDARD | **Cooling capacity (1)** | **kW** | **19,8** | **22,4** | **26,5** | **29,2** | **34,0** | **39,0** | **49,6** | **50,5** |
| | Unit power input | kW | 6,6 | 7,7 | 9,2 | 10,7 | 10,9 | 13,4 | 17,9 | 18,7 |
| | Evaporator water flow rate | m³/h | 3,4 | 3,9 | 4,6 | 5,0 | 5,8 | 6,7 | 8,5 | 8,7 |
| | Evaporator pressure drop | kPa | 28 | 36 | 38 | 29 | 38 | 39 | 35 | 36 |
| | 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 | 8500 | 8500 | 11000 | 11000 | 13000 | 15000 | 20500 | 20500 |
| | 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 | 5,3 | 5,3 | 5,3 | 5,5 | 7,7 | 7,7 | 9,0 | 12,9 |
| | 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 | 18,5 | 23,7 | 24,8 | 27,9 | 35,9 | 39,1 | 45,5 | 49,7 |
| | Unit starting current (LRA) | A | 96,6 | 112,6 | 119,6 | 119,6 | 143,2 | 177,2 | 228,3 | 143,3 |
| | EER - Eurovent standard (1) | kW/kW | 3,00 | 2,90 | 2,87 | 2,74 | 3,12 | 2,92 | 2,77 | 2,70 |
| | ESEER | | 3,59 | 3,50 | 3,56 | 3,45 | 3,80 | 3,50 | 3,38 | 3,91 |
| | Sound power level [Lw] (2) | dB(A) | 81,1 | 81,5 | 82,2 | 81,4 | 82,2 | 84,9 | 89,0 | 86,1 |
| | Average sound pressure level [LPm] (3) | dB(A) | 64,6 | 64,9 | 65,6 | 64,8 | 64,9 | 67,7 | 71,8 | 68,9 |
| | Net weight | kg | 350 | 350 | 360 | 360 | 520 | 520 | 610 | 590 |
| | 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 (4) | Ø mm | – | -- | – | – | -- | – | – | -- |
| OPTIONAL | **Partial heat recovery-Heating Capacity (5)** | **kW** | **7,3** | **8,2** | **9,7** | **10,7** | **12,5** | **14,3** | **18,2** | **18,5** |
| | **Total heat recovery-Heating capacity (6)** | **kW** | **27,1** | **31,4** | **36,8** | **39,9** | **51,6** | **52,0** | **66,3** | **68,1** |
| | Pumping group | | | | | | | | | |
| | 1 pump - 2 poles electric motor | kW | 0,75 | 0,75 | 0,75 | 0,75 | 1,5 | 1,5 | 1,5 | 1,5 |
| | 2 pump - 2 poles electric motor | kW | – | -- | – | – | -- | – | – | -- |
| | 1 pump - 4 poles electric motor | kW | 0,37 | 0,37 | 0,37 | 0,37 | 0,55 | 0,55 | 0,55 | 0,55 |
| | 2 pump - 4 poles electric motor | kW | – | -- | – | – | -- | – | – | -- |
| | Water tank - volume | l | 130 | 130 | 130 | 130 | 210 | 210 | 210 | 210 |
| LNO KIT %100 | **Cooling capacity (1)** | **kW** | **19,8** | **22,4** | **26,5** | **29,2** | **34,0** | **39,0** | **49,6** | **50,5** |
| | Unit power input | kW | 6,7 | 7,8 | 9,2 | 10,7 | 11,0 | 13,5 | 17,9 | 18,7 |
| | Total air flow | m³/h | 8500 | 8500 | 11000 | 11000 | 13000 | 15000 | 20500 | 20500 |
| | EER - Eurovent standard (1) | kW/kW | 2,95 | 2,86 | 2,87 | 2,74 | 3,09 | 2,88 | 2,77 | 2,70 |
| | Sound power level [Lw] (2) | dB(A) | 80,7 | 80,8 | 81,6 | 80,7 | 81,2 | 84,3 | 87,4 | 85,8 |
| | Average sound pressure level [LPm] (3) | dB(A) | 64,1 | 64,2 | 65,0 | 64,1 | 64,0 | 67,1 | 70,2 | 68,6 |
| LNO KIT %85 | **Cooling capacity (1)** | **kW** | **19,4** | **21,9** | **25,9** | **28,4** | **33,2** | **38,1** | **48,6** | **49,3** |
| | Unit power input | kW | 6,7 | 7,9 | 9,2 | 10,8 | 11,2 | 13,6 | 17,9 | 18,7 |
| | Total air flow | m³/h | 7225 | 7225 | 9350 | 9350 | 11050 | 12750 | 17425 | 17425 |
| | EER - Eurovent standard (1) | kW/kW | 2,89 | 2,77 | 2,81 | 2,63 | 2,96 | 2,80 | 2,72 | 2,63 |
| | Sound power level [Lw] (2) | dB(A) | 77,0 | 77,2 | 78,0 | 77,2 | 77,8 | 80,7 | 84,4 | 82,1 |
| | Average sound pressure level [LPm] (3) | dB(A) | 60,4 | 60,7 | 61,4 | 60,6 | 60,6 | 63,5 | 67,2 | 64,9 |
| ELN KIT | **Cooling capacity (1)** | **kW** | **18,9** | **21,1** | **25,0** | **27,3** | **32,0** | **36,8** | **47,1** | **47,5** |
| | Unit power input | kW | 6,9 | 8,1 | 9,4 | 11,1 | 11,6 | 14,0 | 18,2 | 19,2 |
| | Total air flow | m³/h | 5950 | 5950 | 7700 | 7700 | 9100 | 10500 | 14350 | 14350 |
| | EER - Eurovent standard (1) | kW/kW | 2,75 | 2,59 | 2,65 | 2,47 | 2,77 | 2,63 | 2,59 | 2,47 |
| | Sound power level [Lw] (2) | dB(A) | 73,1 | 73,6 | 74,2 | 73,5 | 74,4 | 76,9 | 81,7 | 78,0 |
| | Average sound pressure level [LPm] (3) | dB(A) | 56,5 | 57,0 | 57,7 | 57,0 | 57,2 | 59,7 | 64,5 | 60,7 |

1. Referred to chilled water temperature 12/7°C – 0% glycol solution; air temperature to the condenser 35°C. Fouling factor of the exchangers 0,043 m²°K/kW.
2. Sound power level [Lw] according to ISO EN 9614 – 2.
3. Average sound pressure level [LPm] 1m far according to ISO EN 3744.
4. Hydraulic connection with grooved end complete with fl exible joint and adapter pipe for solder connection.
5. Referred to chilled water temperature 12/7°C – 0% 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 m²°K/kW.
6. Referred to chilled water temperature 12/7°C – 0% glycol solution; water temperature heat recovery 40/45°C – 0% glycol solution; Fouling factor of the exchangers 0,043 m²°K/kW.

TECHNICAL DATA KELVIN Clim A20

| | KELVIN Clim A20 | | 52 P2 D | 58 P2 S | 58 P2 D | 62 P1 S | 65 P2 S | 65 P2 D | 76 P2 S | 76 P2 D |
|---|---|---|---|---|---|---|---|---|---|---|
| | SIZE | | C2 | C3 | C3 | C3 | C3 | C3 | C3 | C3 |
| STANDARD | **Cooling capacity (1)** | **kW** | **50,5** | **57,7** | **60,8** | **61,2** | **64,8** | **64,7** | **75,4** | **75,0** |
| | Unit power input | kW | 18,3 | 20,0 | 18,7 | 21,5 | 22,6 | 22,5 | 27,8 | 27,7 |
| | Evaporator water flow rate | m³/h | 8,7 | 9,9 | 10,5 | 10,5 | 11,1 | 11,1 | 13,0 | 12,9 |
| | Evaporator pressure drop | kPa | 21 | 36 | 19 | 30 | 35 | 21 | 37 | 23 |
| | 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 | 20500 | 22000 | 22000 | 23000 | 24000 | 24000 | 30000 | 30000 |
| | 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 | 9,3 | 9,0 | 12,7 | 12,4 | 13,1 | 12,7 | 13,6 | 13,5 |
| | 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 | 49,7 | 57,4 | 57,4 | 55,9 | 70,0 | 70,0 | 76,5 | 76,5 |
| | Unit starting current (LRA) | A | 143,3 | 147,7 | 147,7 | 276,7 | 175,7 | 175,7 | 212,9 | 212,9 |
| | EER (1) | kW/kW | 2,76 | 2,89 | 3,25 | 2,85 | 2,87 | 2,87 | 2,71 | 2,71 |
| | ESEER | | 3,57 | 4,18 | 4,16 | 3,47 | 4,08 | 3,65 | 3,78 | 3,40 |
| | Sound power level [Lw] (2) | dB(A) | 86,1 | 85,9 | 85,9 | 91,6 | 85,7 | 85,7 | 86,1 | 86,1 |
| | Average sound pressure level [LPm] (3) | dB(A) | 68,9 | 68,0 | 68,0 | 73,8 | 67,8 | 67,8 | 68,2 | 68,2 |
| | Net weight | kg | 590 | 810 | 810 | 850 | 820 | 820 | 840 | 840 |
| | Hydraulic connections | | | | | | | | | |
| | Evaporator IN/OUT - ISO 1/7 – R | Ø | 2" | – | – | – | -- | -- | – | – |
| | Evaporator IN/OUT - OD (4) | Ø mm | 76,1 | 76,1 | 76,1 | 76,1 | 76,1 | 76,1 | 76,1 | – |
| OPTIONAL | **Partial heat recovery-Heating Capacity (5)** | **kW** | **18,5** | **21,2** | **22,3** | **22,4** | **23,8** | **23,7** | **27,7** | **27,5** |
| | **Total heat recovery-Heating capacity (6)** | **kW** | **68,5** | **77,0** | **77,9** | **82,4** | **101,0** | **101,0** | **102,0** | **102,0** |
| | Pumping group | | | | | | | | | |
| | 1 pump - 2 poles electric motor | kW | 1,5 | 2,2 | 2,2 | 2,2 | 2,2 | 2,2 | 2,2 | 2,2 |
| | 2 pump - 2 poles electric motor | kW | 2,2 | 2,2 | 2,2 | 2,2 | 2,2 | 2,2 | 2,2 | -- |
| | 1 pump - 4 poles electric motor | kW | 0,55 | 1,5 | 1,5 | 1,5 | 1,5 | 1,5 | 1,5 | 1,5 |
| | 2 pump - 4 poles electric motor | kW | 1,5 | 1,5 | 1,5 | 1,5 | 1,5 | 1,5 | 1,5 | -- |
| | Water tank - volume | l | 210 | 360 | 360 | 360 | 360 | 360 | 360 | 360 |
| LNO KIT %100 | **Cooling capacity (1)** | **kW** | **50,5** | **57,7** | **60,8** | **61,2** | **64,8** | **64,7** | **75,4** | **75,0** |
| | Unit power input | kW | 18,3 | 20,2 | 18,9 | 21,7 | 22,8 | 22,8 | 27,8 | 27,7 |
| | Total air flow | m³/h | 20500 | 22000 | 22000 | 23000 | 24000 | 24000 | 30000 | 30000 |
| | EER (1) | kW/kW | 2,76 | 2,86 | 3,22 | 2,82 | 2,84 | 2,84 | 2,71 | 2,71 |
| | Sound power level [Lw] (2) | dB(A) | 85,8 | 85,5 | 85,5 | 89,4 | 85,4 | 85,4 | 85,7 | 85,7 |
| | Average sound pressure level [LPm] (3) | dB(A) | 68,6 | 67,6 | 67,6 | 71,6 | 67,5 | 67,5 | 67,8 | 67,8 |
| LNO KIT %85 | **Cooling capacity (1)** | **kW** | **49,2** | **56,3** | **59,3** | **59,7** | **63,1** | **62,9** | **73,7** | **73,3** |
| | Unit power input | kW | 18,4 | 20,5 | 19,1 | 21,9 | 23,1 | 23,0 | 27,8 | 27,6 |
| | Total air flow | m³/h | 17425 | 18700 | 18700 | 19550 | 20400 | 20400 | 25500 | 25500 |
| | EER (1) | kW/kW | 2,68 | 2,75 | 3,10 | 2,73 | 2,73 | 2,73 | 2,65 | 2,66 |
| | Sound power level [Lw] (2) | dB(A) | 82,1 | 81,8 | 81,8 | 86,8 | 81,7 | 81,7 | 82,0 | 82,0 |
| | Average sound pressure level [LPm] (3) | dB(A) | 64,9 | 63,9 | 63,9 | 68,9 | 63,8 | 63,8 | 64,1 | 64,1 |
| ELN KIT | **Cooling capacity (1)** | **kW** | **47,4** | **54,1** | **57,0** | **57,6** | **60,6** | **60,4** | **71,1** | **70,8** |
| | Unit power input | kW | 18,8 | 21,3 | 19,9 | 22,5 | 23,9 | 23,8 | 28,2 | 28,1 |
| | Total air flow | m³/h | 14350 | 15400 | 15400 | 16100 | 16800 | 16800 | 21000 | 21000 |
| | EER (1) | kW/kW | 2,52 | 2,54 | 2,86 | 2,56 | 2,54 | 2,54 | 2,52 | 2,52 |
| | Sound power level [Lw] (2) | dB(A) | 78,0 | 77,8 | 77,8 | 84,6 | 77,6 | 77,6 | 77,9 | 77,9 |
| | Average sound pressure level [LPm] (3) | dB(A) | 60,7 | 59,9 | 59,9 | 66,8 | 59,7 | 59,7 | 60,0 | 60,0 |

1. Referred to chilled water temperature 12/7°C – 0% glycol solution; air temperature to the condenser 35°C. Fouling factor of the exchangers 0,043 $m^2$°K/kW.
2. Sound power level [Lw] according to ISO EN 9614 – 2.
3. Average sound pressure level [LPm] 1m far according to ISO EN 3744.
4. Hydraulic connection with grooved end complete with fl exible joint and adapter pipe for solder connection.
5. Referred to chilled water temperature 12/7°C – 0% 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 $m^2$°K/kW.
6. Referred to chilled water temperature 12/7°C – 0% glycol solution; water temperature heat recovery 40/45°C – 0% glycol solution; Fouling factor of the exchangers 0,043 $m^2$°K/kW.

## TECHNICAL DATA KELVIN Clim A20

| | KELVIN Clim A20 | | 98 P2 S | 98 P2 D | 124 P2 S | 124 P2 D | 158 P2 S | 158 P2 D | 180 P2 S | 180 P2 D |
|---|---|---|---|---|---|---|---|---|---|---|
| | SIZE | | C4 | C4 | C4 | C4 | C4 | C4 | C5 | C5 |
| STANDARD | **Cooling capacity (1)** | **kW** | **97,3** | **96,1** | **123,0** | **120,0** | **155,0** | **157,0** | **177,0** | **178,0** |
| | Unit power input | kW | 34,6 | 34,3 | 44,4 | 44,0 | 60,3 | 60,4 | 64,6 | 64,7 |
| | Evaporator water flow rate | m³/h | 16,7 | 16,5 | 21,1 | 20,5 | 26,6 | 27,0 | 30,3 | 30,6 |
| | Evaporator pressure drop | kPa | 36 | 27 | 38 | 31 | 32 | 28 | 34 | 36 |
| | 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 | 40000 | 40000 | 46000 | 46000 | 55800 | 55800 | 60000 | 60000 |
| | 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 | 18,9 | 19,3 | 23,5 | 24,1 | 24,6 | 24,9 | 47,4 | 47,8 |
| | 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 | 90,8 | 90,8 | 113,8 | 113,8 | 149,3 | 149,3 | 169,8 | 169,8 |
| | Unit starting current (LRA) | A | 271,5 | 271,5 | 331,9 | 331,9 | 386,8 | 386,8 | 453,7 | 453,7 |
| | EER (1) | kW/kW | 2,81 | 2,80 | 2,77 | 2,73 | 2,57 | 2,60 | 2,74 | 2,75 |
| | ESEER | | 3,93 | 3,52 | 3,86 | 3,42 | 3,62 | 3,27 | 3,92 | 3,47 |
| | Sound power level [Lw] (2) | dB(A) | 84,2 | 84,2 | 88,1 | 88,1 | 90,6 | 90,6 | 88,6 | 88,6 |
| | Average sound pressure level [LPm] (3) | dB(A) | 65,6 | 65,6 | 69,5 | 69,5 | 72,0 | 72,0 | 69,3 | 69,3 |
| | Net weight | kg | 1310 | 1310 | 1380 | 1380 | 1410 | 1410 | 1860 | 1860 |
| | Hydraulic connections | | | | | | | | | |
| | Evaporator IN/OUT - ISO 1/7 – R | Ø | – | -- | -- | – | – | – | – | -- |
| | Evaporator IN/OUT - OD (4) | Ø mm | 88,9 | 88,9 | 88,9 | 88,9 | 88,9 | 88,9 | 88,9 | 88,9 |
| OPTIONAL | **Partial heat recovery-Heating Capacity (5)** | **kW** | **35,7** | **35,3** | **45,0** | **43,9** | **56,9** | **57,7** | **64,8** | **65,3** |
| | **Total heat recovery-Heating capacity (6)** | **kW** | **130,0** | **129,0** | **165,0** | **162,0** | **213,0** | **217,0** | **241,0** | **243,0** |
| | Pumping group | | | | | | | | | |
| | 1 pump - 2 poles electric motor | kW | 2,2 | 2,2 | 2,2 | 2,2 | 2,2 | 2,2 | 4,0 | 4,0 |
| | 2 pump - 2 poles electric motor | kW | 3,0 | 3,0 | 3,0 | 3,0 | 3,0 | 3,0 | 5,5 | 5,5 |
| | 1 pump - 4 poles electric motor | kW | 3,0 | 3,0 | 3,0 | 3,0 | 3,0 | 3,0 | 4,0 | 4,0 |
| | 2 pump - 4 poles electric motor | kW | 3,0 | 3,0 | 3,0 | 3,0 | 3,0 | 3,0 | 4,0 | 4,0 |
| | Water tank - volume | l | 520 | 520 | 520 | 520 | 520 | 520 | 720 | 720 |
| LNO KIT %100 | **Cooling capacity (1)** | **kW** | **97,3** | **96,1** | **123,0** | **120,0** | **155,0** | **157,0** | **177,0** | **178,0** |
| | Unit power input | kW | 34,6 | 34,3 | 44,4 | 44,0 | 60,3 | 60,4 | 64,6 | 64,7 |
| | Total air flow | m³/h | 40000 | 40000 | 46000 | 46000 | 55800 | 55800 | 60000 | 60000 |
| | EER (1) | kW/kW | 2,81 | 2,80 | 2,77 | 2,73 | 2,57 | 2,60 | 2,74 | 2,75 |
| | Sound power level [Lw] (2) | dB(A) | 83,2 | 83,2 | 87,3 | 87,3 | 90,3 | 90,3 | 88,0 | 88,0 |
| | Average sound pressure level [LPm] (3) | dB(A) | 64,6 | 64,6 | 68,7 | 68,7 | 71,7 | 71,7 | 68,7 | 68,7 |
| LNO KIT %85 | **Cooling capacity (1)** | **kW** | **95,2** | **94,0** | **120,0** | **117,0** | **151,0** | **153,0** | **172,0** | **173,0** |
| | Unit power input | kW | 34,7 | 34,6 | 44,3 | 44,0 | 59,7 | 59,8 | 65,2 | 65,3 |
| | Total air flow | m³/h | 34000 | 34000 | 39100 | 39100 | 47430 | 47430 | 51000 | 51000 |
| | EER (1) | kW/kW | 2,74 | 2,72 | 2,71 | 2,66 | 2,53 | 2,56 | 2,64 | 2,65 |
| | Sound power level [Lw] (2) | dB(A) | 79,9 | 79,9 | 83,8 | 83,8 | 86,6 | 86,6 | 84,4 | 84,4 |
| | Average sound pressure level [LPm] (3) | dB(A) | 61,3 | 61,3 | 65,2 | 65,2 | 68,0 | 68,0 | 65,1 | 65,1 |
| ELN KIT | **Cooling capacity (1)** | **kW** | **92,1** | **91,2** | **116,0** | **113,0** | **145,0** | **147,0** | **165,0** | **166,0** |
| | Unit power input | kW | 35,6 | 35,3 | 45,5 | 45,0 | 60,9 | 61,0 | 67,3 | 67,5 |
| | Total air flow | m³/h | 28000 | 28000 | 32200 | 32200 | 39060 | 39060 | 42000 | 42000 |
| | EER (1) | kW/kW | 2,59 | 2,58 | 2,55 | 2,51 | 2,38 | 2,41 | 2,45 | 2,46 |
| | Sound power level [Lw] (2) | dB(A) | 76,6 | 76,6 | 80,3 | 80,3 | 82,4 | 82,4 | 80,7 | 80,7 |
| | Average sound pressure level [LPm] (3) | dB(A) | 58,0 | 58,0 | 61,7 | 61,7 | 63,8 | 63,8 | 61,4 | 61,4 |

1. Referred to chilled water temperature 12/7°C – 0% glycol solution; air temperature to the condenser 35°C. Fouling factor of the exchangers 0,043 $m^2°K/kW$.
2. Sound power level [Lw] according to ISO EN 9614 – 2.
3. Average sound pressure level [LPm] 1m far according to ISO EN 3744.
4. Hydraulic connection with grooved end complete with fl exible joint and adapter pipe for solder connection.
5. Referred to chilled water temperature 12/7°C – 0% 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 $m^2°K/kW$.
6. Referred to chilled water temperature 12/7°C – 0% glycol solution; water temperature heat recovery 40/45°C – 0% glycol solution; Fouling factor of the exchangers 0,043 $m^2°K/kW$.

TECHNICAL DATA KELVIN Clim A20

| | KELVIN Clim A20 | | 197 P2 S C5 | 197 P2 D C5 | 230 P3 S C5 | 240 P4 D C5 | 260 P4 D C5 |
|---|---|---|---|---|---|---|---|
| | SIZE | | | | | | |
| STANDARD | **Cooling capacity (1)** | **kW** | **194,0** | **197,0** | **227,0** | **234,0** | **260,0** |
| | Unit power input | kW | 74,0 | 74,1 | 89,0 | 94,7 | 111,1 |
| | Evaporator water flow rate | m³/h | 33,4 | 33,9 | 39,0 | 40,3 | 44,7 |
| | Evaporator pressure drop | kPa | 41 | 35 | 41 | 40 | 36 |
| | 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 | 66000 | 66000 | 69000 | 69000 | 69000 |
| | Air circuits | n. | 1 | 1 | 1 | 1 | 1 |
| | Refrigerant | | R410A | R410A | R410A | R410A | R410A |
| | Total refrigerant charge (optional excluded) | kg | 49,3 | 49,6 | 49,9 | 60,8 | 60,6 |
| | 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 | 324,6 |
| | Unit starting current (LRA) | A | 470,3 | 470,3 | 455,1 | 431,8 | 601,1 |
| | EER (1) | kW/kW | 2,62 | 2,66 | 2,55 | 2,47 | 2,34 |
| | ESEER | | 3,74 | 3,35 | 3,97 | 3,82 | 3,80 |
| | Sound power level [Lw] (2) | dB(A) | 90,4 | 90,4 | 91,2 | 92,9 | 93,0 |
| | Average sound pressure level [LPm] (3) | dB(A) | 71,1 | 71,1 | 71,9 | 73,6 | 73,8 |
| | Net weight | kg | 1870 | 1870 | 2020 | 2130 | 2170 |
| | Hydraulic connections | | | | | | |
| | Evaporator IN/OUT - ISO 1/7 – R | Ø | – | – | – | -- | -- |
| | Evaporator IN/OUT - OD (4) | Ø mm | 88,9 | 88,9 | 88,9 | 88,9 | 88,9 |
| OPTIONAL | **Partial heat recovery-Heating Capacity (5)** | **kW** | **71,2** | **72,3** | **83,2** | **85,9** | **95,3** |
| | **Total heat recovery-Heating capacity (6)** | **kW** | **268,0** | **273,0** | **316,0** | **331,0** | **379,0** |
| | Pumping group | | | | | | |
| | 1 pump - 2 poles electric motor | kW | 4,0 | 4,0 | 4,0 | 4,0 | 4,0 |
| | 2 pump - 2 poles electric motor | kW | 5,5 | 5,5 | 5,5 | 5,5 | 5,5 |
| | 1 pump - 4 poles electric motor | kW | 4,0 | 4,0 | 4,0 | 4,0 | 4,0 |
| | 2 pump - 4 poles electric motor | kW | 4,0 | 4,0 | 4,0 | 4,0 | 4,0 |
| | Water tank - volume | l | 720 | 720 | 720 | 720 | 720 |
| LNO KIT %100 | **Cooling capacity (1)** | **kW** | **194,0** | **197,0** | **227,0** | **234,0** | **260,0** |
| | Unit power input | kW | 74,0 | 74,1 | 89,0 | 94,7 | 111,1 |
| | Total air flow | m³/h | 66000 | 66000 | 69000 | 69000 | 69000 |
| | EER (1) | kW/kW | 2,62 | 2,66 | 2,55 | 2,47 | 2,34 |
| | Sound power level [Lw] (2) | dB(A) | 90,0 | 90,0 | 90,8 | 92,5 | 92,6 |
| | Average sound pressure level [LPm] (3) | dB(A) | 70,7 | 70,7 | 71,6 | 73,3 | 73,3 |
| LNO KIT %85 | **Cooling capacity (1)** | **kW** | **189,0** | **192,0** | **220,0** | **227,0** | **250,0** |
| | Unit power input | kW | 74,4 | 74,4 | 89,8 | 95,0 | 113,1 |
| | Total air flow | m³/h | 56100 | 56100 | 58650 | 58650 | 58650 |
| | EER (1) | kW/kW | 2,54 | 2,58 | 2,45 | 2,39 | 2,21 |
| | Sound power level [Lw] (2) | dB(A) | 86,3 | 86,3 | 87,1 | 88,8 | 88,9 |
| | Average sound pressure level [LPm] (3) | dB(A) | 67,0 | 67,0 | 67,9 | 69,6 | 69,7 |
| ELN KIT | **Cooling capacity (1)** | **kW** | **181,0** | **184,0** | **210,0** | **216,0** | **235,0** |
| | Unit power input | kW | 76,7 | 77,0 | 92,9 | 98,6 | 118,7 |
| | Total air flow | m³/h | 46200 | 46200 | 48300 | 48300 | 48300 |
| | EER (1) | kW/kW | 2,36 | 2,39 | 2,26 | 2,19 | 1,98 |
| | Sound power level [Lw] (2) | dB(A) | 82,3 | 82,3 | 83,0 | 84,7 | 85,0 |
| | Average sound pressure level [LPm] (3) | dB(A) | 63,0 | 63,0 | 63,7 | 65,4 | 65,7 |

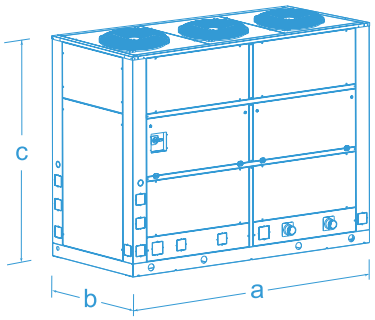
1. Referred to chilled water temperature 12/7°C – 0% glycol solution; air temperature to the condenser 35°C. Fouling factor of the exchangers 0,043 m²°K/kW.
2. Sound power level [Lw] according to ISO EN 9614 – 2.
3. Average sound pressure level [LPm] 1m far according to ISO EN 3744.
4. Hydraulic connection with grooved end complete with fl exible joint and adapter pipe for solder connection.
5. Referred to chilled water temperature 12/7°C – 0% 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 m²°K/kW.
6. Referred to chilled water temperature 12/7°C – 0% glycol solution; water temperature heat recovery 40/45°C – 0% glycol solution; Fouling factor of the exchangers 0,043 m²°K/kW.

DIMENSIONS (mm)

KELVIN Clim A20

SIZE C

| | a | b | c |
|---|---|---|---|
| C1 | 1250 | 890 | 2010 |
| C2 | 1800 | 1040 | 2060 |
| C3 | 2600 | 1200 | 2060 |
| C4 | 3700 | 1260 | 2050 |
| C5 | 4950 | 1260 | 2090 |



## Note

## Note


KELVIN
Air Conditioning System