

LRAC-LRAH



Air-cooled water chillers and heat pumps with axial fans designed for outdoor installation

Range:

Cooling capacity: 6 ÷ 39 kW

Heating capacity: 7 ÷ 43 kW

Available versions

- Low noise
- Top Operating Performance

**Refrigerant R410A
Scroll Compressor/s**

STANDARD FEATURES

- Compact, vertically developing unit
- Self-supporting, galvanised steel, RAL7037 frame with panels coated in epoxy powders in compliance with norm ASTM B117
- One hermetic Scroll compressor (023B - 090A models) with internal thermal protection and anti-vibration supports
- Two hermetic Scroll compressors (120A - 180A models) with internal thermal protection and anti-vibration supports
- Crankcase heaters (LRAH)
- Ecological Refrigerant: R410A
- One cooling circuit in compliance with EC norms (PED 97/23/EC directive) in copper tubes comprising a filter dryer, water flow switch, stainless steel thermostatic valve with external equalization, and high pressure switch
- Low pressure limit function carried out by control
- Exchange of cycle on the refrigerant side with reversing valve (LRAH)
- Stainless steel, brazed plate heat exchangers insulated using closed-cell, expanded polyurethane
- Heat exchangers with aluminium fins and mechanically-expanded copper tubes protected by metal grilles
- Statically and dynamically balanced axial fans with sickle-blades and safety protection grilles in polymeric material
- Fan housing nozzle in sound-proofing material
- Condensation control, including continuous fan speed control
- Electric panel conforming to EC Directives 73/23/EC and EMC 89/336/EC with auxiliary 12/24V circuit, general cut-off switch, magneto-thermal protection cut-off switches and anti-condensation heater (LRAH)
- UECH microprocessor control system with local user control and monitoring terminal with LCD display and LED signals for all working parameters, chilled/hot water temperature adjustment, self-adjusting set-point regulations, anti-freeze protection, compressor timing and protection, fan speed adjustment, alarm code signalling, and centralization for general alarm control transmission, remote ON-OFF switch and remote cycle inversion (LRAH)
- Water flow differential pressure switch
- Rubber anti-vibration feet

TOP OPERATING PERFORMANCE

- Electronic Expansion Valve
- Hot gas by-pass disposal guaranteeing constant chilled water temperature even with a 0 to 100% change in load (optional)
- UPCOxs microprocessor control system with specific algorithm to:
 - chiller/hot outlet water temperature regulation guaranteeing a constant chilled water temperature even with no tank
 - E.E.V. total management
 - hot gas by-pass disposal management
 - advanced management of compressors run through automatic set-point sensitivity regulation (optional)
 - advanced defrost function to minimise cycle inversions (LRAH)
 - advanced anti-freeze protection on evaporator
 - integrated LAN card for local network connection of a group of chillers (max. 10 units)
- Moreover, the microprocessor control system permits:
 - management of double set-point and selection
 - free-contact for general alarm and 2 addressable alarm management
 - ability to interface with Modbus protocol directly on RS485 serial card
 - ability to interface with main external communication protocols: Bacnet, Lonworks, Metasys, TCP/IP and SNMP

TECHNICAL DATA

LRAC - LRAH MODEL

| | | 023B | 032B | 041B | 054A | 067A | 090A | 120A | 137A | 180A | |
|---|---------|--------------|-------|-------|-------|------------------|-------|-------|-------|-------|--|
| Power supply | V/ph/Hz | 230 / 1 / 50 | | | | 400 / 3 + N / 50 | | | | | |
| Cooling capacity (1) | kW | 6 | 8 | 10 | 14 | 17 | 19 | 27 | 33 | 39 | |
| Absorbed power (1) | kW | 1,5 | 2,2 | 2,9 | 4,4 | 4,9 | 6 | 8,7 | 10 | 12 | |
| COP (1) | | 4,0 | 3,6 | 3,5 | 3,2 | 3,5 | 3,3 | 3,1 | 3,2 | 3,2 | |
| Heating capacity (2) | kW | 6,7 | 9 | 10,9 | 15,5 | 18,9 | 22,1 | 30,2 | 36,7 | 43,5 | |
| Absorbed power (2) | kW | 1,7 | 2,3 | 2,8 | 3,9 | 4,7 | 5,5 | 8,5 | 10 | 11,9 | |
| Noise pressure level (3) | dB(A) | 34 | 34 | 34 | 35 | 37 | 38 | 38 | 40 | 41 | |
| N ^o of fans / N ^o of poles | | 1 / 6 | 1 / 6 | 1 / 6 | 1 / 6 | 2 / 6 | 2 / 6 | 2 / 6 | 3 / 6 | 4 / 6 | |
| N ^o circuits / N ^o of compressors | | 1 / 1 | 1 / 1 | 1 / 1 | 1 / 1 | 1 / 1 | 1 / 1 | 1 / 2 | 1 / 2 | 1 / 2 | |
| Compressor type | | Scroll | | | | | | | | | |
| Evaporator | | Plate | | | | | | | | | |
| Water tank | l | 25 | 25 | 25 | 50 | 50 | 50 | 100 | 100 | 100 | |
| Dimensions and weight | | | | | | | | | | | |
| Height | mm | 650 | 650 | 650 | 1271 | 1271 | 1271 | 1271 | 1271 | 1271 | |
| Depth | mm | 458 | 458 | 458 | 458 | 458 | 458 | 615 | 615 | 615 | |
| Width | mm | 1274 | 1274 | 1274 | 1273 | 1273 | 1273 | 2054 | 2054 | 2054 | |
| Weight (without hydronic kit) | kg | 100 | 101 | 103 | 152 | 160 | 162 | 262 | 272 | 282 | |
| Weight (version with pump) | kg | 104 | 105 | 107 | 159 | 167 | 169 | 273 | 281 | 291 | |
| Weight (version with water tank and pump) (4) kg | | 116 | 117 | 119 | 179 | 187 | 189 | 300 | 308 | 318 | |

(1) Data refer to nominal conditions: water temperature 12/7°C; ambient temperature 35°C; R410A refrigerant

(2) Data refer to nominal conditions: water temperature 40/45°C; ambient temperature 7°C d.b. 6°C w.b.; R410A refrigerant

(3) Measured in free field at 10m (Q=2, front) from the unit running in nominal conditions

(4) Data refer to empty unit

CONSTRUCTION OPTIONS

- On-board water tank and pump
- High head pressure pump (*)
- Low external temperature option: unit works down to - 20°C
- Production of glycol water mixture at low temperatures option (down to - 10 °C)
- Anti-freeze protection on evaporator, water tank and pump
- RS485 serial adaptor used to communicate with Uniflair supervisory system or to interface with external BMS
- LON FTT10 serial adaptor used to communicate with external BMS managed with LON protocol
- TCP/IP serial adaptor used to interface with external BMS
- Condensing coils equipped with safety grilles and filter

(*) on request

OPTIONS

- Remote user terminal for:
 - display / entering of commands
 - display unit status and alarms
- Chilled / hot water piping filter