

# LRAC-LRAH



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

### Range:

Cooling capacity: 6 ÷ 40 kW

Heating capacity: 7 ÷ 43 kW

### Available versions

- low noise
- Top Operating Performance
- condensing version (\*)

### Refrigerant R410A Scroll Compressor/s

## STANDARD FEATURES

- Designed with a minimal footprint
- Self-supporting frame in galvanised steel (colour RAL7037) with panels varnished with epoxy powders in compliance with the ASTM B117 norm
- One hermetic Scroll compressor (023B - 090A models) with internal thermal protection and anti-vibration feet
- Two hermetic Scroll compressors (120A - 180A models) with internal thermal protection and anti-vibration feet
- Crankcase heaters (\*)
- Ecological refrigerant: R410A
- Refrigerant circuit in compliance with EC norms (PED 97/23/EC directive) in copper tubes mainly including a filter dryer, water flow switch, thermostatic valve with external equalisation (stainless steel made) and high and low pressure switches
- Cycle inversion on the refrigerant side with 4-way reversing valve (\*)
- Stainless steel, brazed plate heat exchanger insulated with closed-cell, expanded polyurethane
- Anti-freeze heater on evaporator (\*)
- Air side heat exchanger with aluminium fins and mechanically-expanded copper tubes
- Metal grille panel to protect the air side heat exchanger
- Axial fans, statically and dynamically balanced, with sickle-blades and with safety protection grilles
- Sound-proofing polymeric impeller for each fan
- Condensation control including continuous regulation of fan speed
- Electric panel conforming to EC Directive 73/23/EC and Directive EMC 89/336/EC with auxiliary 12V circuit, general cut-off switch, magneto-thermal protection cut-off switches
- 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 regulation, anti-freeze protection, compressor timing and protection, fan speed regulation, alarm code signalling, centralization for general alarm control and remote ON-OFF switch
- Water flow differential pressure switch
- Predisposition for cooling / heating systems with heating panels
- Rubber anti-vibration feet

(\*) Standard only for LRAH

## TOTAL OPERATING PERFORMANCE

- Electronic expansion valve driven by the microprocessor control
- Hot gas by-pass disposal for a constant outlet water temperature (optional; only LRAC)
- Advanced UPCOxs microprocessor control system with specific algorithm to:
  - outlet water temperature regulation for a high level of precision even without the water tank
  - advanced management of compressors run through automatic set-point sensitivity regulation
  - advanced management of the de-frosting function to minimise cycle inversions (\*)
- advanced anti-freeze protection on evaporator
- integrated LAN card for local network connection of a group of chillers (up to 10 units, with 1 or 2 stand-by units)
- Moreover, the microprocessor control system enables:
  - remote cycle inversion (\*)
  - the set point adjustment by an 0-10V external signal
  - the management and selection of double set-point
  - free contact for general alarm and 2 addressable alarm
  - remote ON-OFF control
  - the ability to interface with main external communications protocols: Modbus, Bacnet, Lonworks, Metasys, TCP/IP and SNMP

## TECHNICAL DATA

LRAC/LRAH MODELS		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	6.0	8.7	10.0	12.0	
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	9.0	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	10.0	11.9	
Noise pressure level (3)	dB(A)	34	34	34	35	37	38	38	40	41	
Fans / poles	nr.	1 / 6	1 / 6	1 / 6	1 / 6	2 / 6	2 / 6	2 / 6	3 / 6	4 / 6	
Circuits / compressors	nr.	1 / 1	1 / 1	1 / 1	1 / 1	1 / 1	1 / 1	1 / 2	1 / 2	1 / 2	
Compressor type		Scroll plate									
Evaporator											
Water tank	l	25	25	25	50	50	50	100	100	100	
<b>Dimensions and weight</b>											
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; external temperature 35°C; R410A refrigerant

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

(3) Measured in free field at 10 mt. (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 (\*)
- Condensing Unit (\*)
- 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