

ERAF



Air-cooled water chillers with axial fans and free-cooling system

Range:

Cooling capacity: 50 ÷ 120 kW

Available versions:

- low noise
- ultra low noise

Refrigerant R410A Scroll compressors

STANDARD FEATURES

- Exclusive free-cooling system completely managed by the micro-processor control
- Self supporting frame in galvanised steel with panels varnished with epoxy powders (colour RAL7037)
- Access panel to the unit equipped with handles and fast screws
- Two hermetic scroll compressors with internal thermal protection, anti-vibration supports and crankcase heaters
- Single refrigerant circuit (*) conforming to EC Directives (PED 97/23/CE) in copper tubing including filter dryer, liquid sight glass, dual flow thermostatic valve with external equalisation, high and low pressure switches and high pressure transducers
- Environmentally friendly R410A Refrigerant
- Water side brazed plate heat exchanger in stainless steel insulated with closed cell expanded polyurethane
- Free-cooling air side exchange coil with aluminium fins and mechanically-expanded copper tubes
- Free-cooling pump driver by microprocessor control
- Water flow differential pressure switch
- Sickle-blade axial fans, statically and dynamically balanced and made from composite materials for high efficiency and low acoustic impact with internal and external safety protection grills (motor with IP54 protection grade)
- Modulating condensation control based on the condensation pressure
- Electrical panel conforming to EC Directives (73/23/CE and EMC 89/336/CE) protection grade IP54 with auxiliary transformer, lockable general cut off switch, anti-condensation heaters, automatic magneto-thermal cut off switches and remote control
- Sequence phase control
- Microprocessor control system including:
 - Local user terminal externally visible and accessible via an access hatch
 - Chilled/hot water temperature regulation (ERAH) on the discharge
 - Anti-freeze protection
 - Compressor timing and protection
 - Compressor rotation based on FIFO logic
 - Pump rotation on a timed basis for equal operation and start-up of the stand-by pump (with alarm signal) in the event of a breakdown
 - Display of compressor operating hours
 - Alarm code signal
 - General alarm with clean signal contact
 - ON-OFF remote control

(*) ERAC models with **22A suffix are available with two compressors on two circuits

TOP LEVEL OPTIONS

- Electronic expansion valve directly controlled by the unit microprocessor control
- Evolved UpC01m control for:
 - Discharge water temperature regulation
 - Management of the electronic thermostatic valve
 - Management of Intelligent free-cooling
 - Monitoring of the refrigerant load
 - Self-adjustment of the set-point regulation
 - Integrated LAN card
 - Compatibility with the most common external BMS systems and with the Modbus protocol using only a RS485 card

TECHNICAL DATA

ERAF MODEL		0521A	0621A	0721A	0821A	0921A	0922A	1021A	1022A	1221A	1222A
Power supply	V/ph/Hz	400 / 3 + N / 50									
Fans	nr.	2	2	2	3	3	3	3	3	4	4
Refrigerant circuits	nr.	1	1	1	1	1	2	1	2	1	2
Compressors	nr. x mod	2 x Scroll									
Evaporator	nr.	1	1	1	1	1	2	1	2	1	2
Evaporator	mod	plate									
ERAF - Low noise version											
Cooling capacity (1)	kW	50	59	69	80	88	88	102	102	117	118
Absorbed power (1)(2)	kW	14.7	18.8	20.7	23.3	27.7	27.7	31.8	31.8	37.4	37.5
E.E.R. (2)		3.40	3.13	3.35	3.43	3.17	3.17	3.20	3.20	3.14	3.14
Capacity in free-cooling (3)	kW	35	37	43	52	53	53	62	62	71	71
E.E.R. (3)(4)		22.40	23.50	21.30	18.98	18.98	19.53	25.58	25.58	22.80	22.84
Noise pressure level (5)	dB(A)	42.6	43.5	44.0	44.3	44.3	44.3	53.4	53.4	54.7	54.7
ERAF - Ultra low noise version											
Cooling capacity (1)	kW	48	56	67	77	84	84	97	97	112	113
Absorbed power (1)(2)	kW	15.2	19.8	22.0	24.4	29.3	29.3	33.8	33.9	39.6	39.7
E.E.R. (2)		3.18	2.85	3.04	3.16	2.87	2.87	2.87	2.88	2.83	2.85
Capacity in free-cooling (3)	kW	31	32	38	46	47	47	54	54	63	63
E.E.R. (3)(4)		24.29	25.29	20.51	20.02	20.51	20.51	25.91	25.91	24.63	24.29
Noise pressure level (5)	dB(A)	39.1	39.8	40.3	40.1	40.1	40.1	44.2	44.2	45.5	45.5
Dimensions and weights											
Height	mm	1560	1560	1560	1560	1560	1560	1875	1875	1875	1875
Depth	mm	1190	1190	1190	1190	1190	1190	1190	1190	1190	1190
Width	mm	2010	2010	2805	2805	2805	2805	3075	3075	3075	3075
Weight (6)	kg	700	705	855	884	890	881	1128	1107	1157	1137

(1) Data refer to nominal conditions: water temperature 10/15°C; external temperature 35°C; glycol 20%; R410A refrigerant

(2) Data refer to the total absorbed power (compressors and fans)

(3) Data refer to nominal conditions: inlet water temperature 15°C; external temperature 5°C; glycol 20%

(4) Data refer to the absorbed power of the fans and the free-cooling pump

(5) Data measured in free field at 10 metres from the unit operating at nominal conditions, coil side, Q=2 directional factor

(6) Data refer to an empty unit without pump and water tank

CONSTRUCTION OPTIONS

- Ultra low noise version via a specific algorithm and sound-proofing of the compressors
- Partial condensation heat recovery
- Integrated hydraulic module with one or two pumps (1 + 1 stand-by) with heat-protected circulation, reservoir tank and safety valve
- Internal water tank
- Internal water tank including a pump to manage the primary circuit
- Power factor improvement compressors
- Compressor Softstart
- Cataphoresis treatment for the condensing coils
- Shut off taps on the compressor discharge
- Evaporator, water tank and pump group anti-freeze heaters
- Modification of the set point by external 0-10V signal

OPTIONS

- Remote user terminal
- Clock card
- RS485 serial card, FTT10 or TCP/IP for connection to the Uniflair supervision system or an external BMS
- Metal filters and protection grills for the condensing coils
- Rubber or spring anti-vibration supports