

BCWC



Water-cooled modulating water chillers for indoor installation

Range:

Cooling capacity: 300 ÷ 1300 kW

Available versions:

- basic
- sea water condensers (*)

**Refrigerant R134a
"oil-free" centrifugal compressors
with magnetic bearings**

STANDARD FEATURES

- Self supporting metal frame in galvanised steel varnished in epoxy powders (colour RAL7037)
- Between one and four "oil free" centrifugal compressors with magnetic bearings equipped with:
 - internal thermal protection
 - protection and control of the rotation axis position
 - brushless synchronized DC motor
 - integrated control system
 - speed control with inverter
 - soft start start-up
 - phase sequence control
 - pre-rotation valve
 - temperature and pressure sensors
 - 2 centrifugal compressor stages
 - anti-vibration supports
- Single refrigerant circuit conforming to EC standards (PED 97/23/CE) with copper tubing including: filter dryer, liquid sight glass, electronic expansion valve controlled by a level sensor, discharge and suction taps on the compressor, pressure switches, high and low pressure transducers and gauges
- By-pass line for vacuum start-up with high pressure ratio
- Shell & Tube evaporator featuring an integrated de-mister to prevent the formation of droplets: the exchanger is insulated with closed-cell expanded polyurethane
- Differential water pressure switch for the evaporator and the condenser
- Shell & Tube condenser
- Electric panel conforming to EC standards (2006/95/EC and EMC 2004/108/EC directives) with EMC integrated filter for protection of the harmonics, maximum internal temperature control, auxiliary transformer, general auxiliary cut-off switch, fuses on the compressors and remote control cut-off switches
- Line reactance for each compressor to stabilize the power supply
- Phase sequence control and minimum / maximum power supply and voltage
- UPC3m microprocessor control system including:
 - continuous control of the cooling capacity by means of an inverter and IGV (Inlet Guide Vane)
 - PGD local user terminal with external display
 - outlet water temperature regulation
 - integrated LAN card for connecting more than one unit to the local area network
 - clock card
- The control system also features:
 - external pump group management for the evaporator
 - set-point modification by an external 0-10V signal
 - management of a double set-point with contact selection
 - general alarm contact and 2 addressable alarms
 - remote ON-OFF control
 - 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

BCWC MODEL		0320A	0630A	0950A	1252A
Power supply	V/ph/Hz	400 / 3 / 50			
Compressors	nr. x mod	1 x centrifugal	2 x centrifugal	3 x centrifugal	4 x centrifugal
Evaporator	nr. x mod	1 x flooded			
Condensers	nr. x mod	1 x Shell & Tube			
Cooling only					
Cooling capacity (1)	kW	320	630	950	1250
Absorbed power (1)	kW	70	120	169	234
E.E.R. (1)	kW	5.32	5.24	5.32	5.34
I.P.L.V. (2)		9.96	9.80	9.92	9.87
E.S.E.E.R. (3)		9.61	8.90	9.57	9.53
Noise levels					
Noise pressure level (4)	dB(A)	67.3	70.3	72.1	73.3
Dimensions and weight					
Height	mm	2015	2115	2380	2380
Length	mm	2550	2950	3300	4850
Width	mm	980	1015	1400	1400
Weight (5)	kg	1585	2814	3752	5760

(1) Data refers to nominal conditions: In/out evaporator water temperature: 12/7°C; In/out condenser water temperature: 30/35°C; Condenser fouling coefficient: 0,000043 m²°C/W; Evaporator fouling coefficient: 0,000043 m²°C/W; R134a refrigerant

(2) Integrated Partial Load Value: based on ARI conditions

(3) European Seasonal Energy Efficiency Ratio

(4) Measured in free field with Q=2 directional factor, at a distance of 1 mt. from the unit

(5) Data refers to unloaded units

CONSTRUCTION OPTIONS

- Condenser for sea water use (*)
- RS485 serial card for connection to Uniflair Supervision system or an external BMS
- LON FFT10 serial card for connection to an external BMS with LON protocol (*) on request

OPTIONS

- Remote control panel which enables:
 - the settings to be displayed / changed
 - alarm status to be displayed
- Neoprene anti-vibration supports