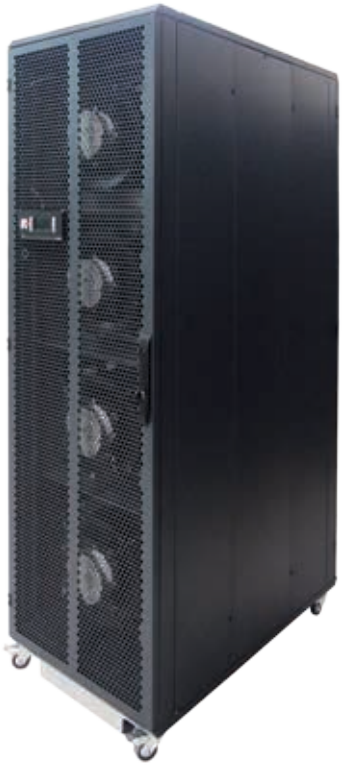
COOL ROW: Direct expansion or chilled water air conditioners for high density racks and blade servers.
Cooling Capacity: **14,4 ÷ 61,1 kW**



NEW !!
RC Hi-Tech

INVERTER
RC Hi-Tech

rcgroupairconditioning

INVERTER R410A CHILLED WATER EC FRONT FLOW

MAIN FEATURES
- Direct expansion or chilled water feeding air conditioner for high density racks and blade servers.
- 4 models, 2 versions available for a wide selection opportunity.
- Plug-fan EC.
- Frontal air delivery.
- Suitable for indoor installation.

DX VERSION:
- BLDC inverter scroll compressor.
- R410A refrigerant charge.
- EER up to 5,78.
- Designed for matching with TEAM MATE, TEAM MATE PF remote condensers.

CW VERSION:
- Chilled water feeding.
- Two-way chilled water valve.
- Designed for matching with RC Group liquid chillers

MAIN BENEFITS
- Suitable for cooling system for rows of racks (hot/cold aisle or in-row).
- High EER.
- BLDC Inverter compressors and plug-fan EC for a higher energy efficiency.
- Availability of connection on the top or on the bottom of the unit.
- Availability of PICCV, pressure independent characterized control valve, (CW version).
- Availability of extra-circuit coil.
- Easily of maintenance.

INDOOR INSTALLATION
The machines are designed for indoor installation.

REMOTE CONDENSER
The units are designed to be matched with remote condensers with axial fans (TEAM MATE series) or plug-fans (TEAM MATE PF series).

WORKING LIMITS
INDOOR UNIT
Room air temperature:

14°C	minimum temperature with wet bulb
26°C	minimum temperature with wet bulb.
40°C	maximum temperature with dry bulb.

Room air humidity:

20%rH	minimum relative humidity.
70%rH	maximum relative humidity.

rcgroup.it
1 9 6 3 2 0 1 3
fifty cool years

MAIN COMPONENTS

FRAMEWORK
- Framework in galvanized steel sheet externally painted with epoxy powders.
- Panels in galvanized steel sheet externally painted with epoxy powders and internal thermal insulation.
- Access doors. The doors are equipped with handle with security lock.
- Holders for unit height adjusting.
- Colour RAL 7016 (anthracite grey) textured.
- Air flow for cooling system for rows of racks with air intake from the back side through honeycomb type grille and frontal air delivery through honeycomb type grille.

FILTER SECTION
- Washable air filters with G2 efficiency, with cells in synthetic fibre, on air suction panel.

FANS SECTION
- Centrifugal fans with backward curved blades with wing profile, single suction and without scroll housings (Plug-fans), directly coupled to external rotor electric motor.
  - Impeller in composite material, PA6 plastic reinforced with glass-fibre, exempt from rust formation.
  - 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 signal coming from the microprocessor control.
- Fans control through ModBus.
- Temperature sensor on air delivery.
- Temperature sensor on air intake.
- Current detector for loss of air flow alarm through ModBus.
- Fans quick installation system for a fast replacement.
- Fan guard IP20

COOLING SECTION
- Heat exchanger coil with internally corrugated copper tubes and high efficiency aluminium fins, specifically developed to provide high heat transfer and lower pressure drops.
- Condensate tray in peraluman with connection (external diameter Ø16) for a discharge tube or for a pump for condensate drain (option).

INVERTER DRIVEN COMPRESSOR (series COOLROW DX)
- scroll compressor BLDC inverter with spiral profile optimized for R410A refrigerant.
- Synchronous brushless inverter driven motor.
- Inverter for modulating capacity control.
- Reactance for the reduction of electromagnetic noise and interference.
- Crankcase heater.
- Rubber supports.
- Soundproof cap.

REFRIGERANT CIRCUIT (series COOLROW DX)
- Electronic expansion valve.
- Pressure transducers with indication, control and protection functions, on low and high refrigerant pressure.
- High pressure safety switch with manual reset.
- Refrigerant temperature sensor for expansion valve.
- Filter dryer on liquid line.
- Oil separator on gas discharge.
- Refrigerant circuit with copper tubing with anticondensate insulation.
- Rotalock valves on liquid and suction line placed on bottom side of the unit for coupling to remote condenser unit.
- 0÷10V proportional signal to manage the condensing control system of the remote air cooled condenser.
- R410A refrigerant charge and lubricant oil type PVE (Polyvinyl ether).

COOLING SECTION (Series COOLROW CW)
- 2-way motorized valve for water flow regulation with 0÷10 VDC control actuator and emergency manual control. Nominal operating pressure up to 1600 kPa and closing pressure (Δps) of 1400 kPa.

ELECTRICAL PANEL
Electrical panel, in accordance with EN60204-1 norms, complete with:
- Magnetothermic switch on power supply
- Magnetothermic switches for fans.
- Magnetothermic switch for compressor (DX version).
- Transformer for auxiliary circuit and microprocessor supply.
- Terminals for external enabling, external alarm, general alarm and LAN connection.
- Power supply: 230/1/50.

CONTROL SYSTEM
- Microprocessor system with graphic display for control and monitor of operating and alarms status. The system includes:
  - Real time clock.
  - Predisposition for connectivity board housing (RCcom MBUS/JBUS, LON, BACnet for Ethernet (SNMP- TCP/IP), BACnet for MS/TP).
  - Main components hour-meter.
  - Nonvolatile “Flash” memory for data storage in case of power supply faulty and for alarms status recording (2MB – up to 100 alarms).
  - Menu with protection password.
  - LAN connection.

TO BE MATCHED WITH REMOTE CONDENSER

The DX units are designed to be matched with remote condensers with axial fans (TEAM MATE series) or plug-fans (TEAM MATE PF series).

TEAM MATE
pg:145

TEAM MATE PF
pg:149

OPTIONAL ACCESSORIES - COOLROW DX Inv

MODEL SIZE	25 B6 F	40 B6 F
TEAM MATE remote condenser	●	●
TEAM MATE PF remote condenser	●	●
213 -TEAM MATE electrical power supply by internal unit	●	●
Unit handling Kit (wheels+baseboard)	●	●
310 - Electric heater	●	●
321 - Steam humidifier	●	●
Adiabatic humidifier	●	●
773 - Dehumidification system	●	●
405 - Extra-Circuit system	●	●
850 - Condensate discharge pump	●	●
G4 Filters	●	●
Refrigerant connection from the top	●	●
Double serial interface	●	●
863 - Remote terminal shared	●	●
851 - Dual power supply	●	●
909 - Clogged filters alarm	●	●
911 - Water presence alarm	●	●
913 - Additional water sensor (kit)	●	●
860 - T/rH sensor on air return	●	●
867 - T/rH remote sensor	●	●
Differential air pressure control	●	●
Temporary microprocessor supply	●	●
Emergency button	●	●
923 - RC-Com MBUS/JBUS Serial board	●	●
926 - LON Serial board	●	●
931 - BACnet Ethernet - SNMP - TCP/IP Serial board	●	●
932 - BACnet MS/TP Serial board	●	●
962 - Kit modem GSM	●	●
957 - Plantwatch without modem	●	●
930 - Remote graphic terminal kit	●	●

OPTIONAL ACCESSORIES - COOLROW CW

MODEL SIZE	50 B6 F	60 B6 F
Unit handling Kit (wheels+baseboard)	●	●
310 - Electric heater	●	●
321 - Steam humidifier	●	●
Adiabatic humidifier	●	●
773 - Dehumidification system	●	●
405 - Extra-Circuit system	●	-
850 - Condensate discharge pump	●	●
G4 Filters	●	●
Chilled water connections from the top	●	●
Flexible joint with adapter pipe (solder type)	●	●
501 - Three-way valve	●	●
PICCV - Two-way valve	●	●
Double serial interface	●	●
863 - Remote terminal shared	●	●
851 - Dual power supply	●	●
909 - Clogged filters alarm	●	●
911 - Water presence alarm	●	●
913 - Additional water sensor (kit)	●	●
860 - T/rH sensor on air return	●	●
867 - T/rH remote sensor	●	●
Differential air pressure control	●	●
Temporary microprocessor supply	●	●
Emergency button	●	●
923 - RC-Com MBUS/JBUS Serial board	●	●
926 - LON Serial board	●	●
931 - BACnet Ethernet - SNMP - TCP/IP Serial board	●	●
932 - BACnet MS/TP Serial board	●	●
Power supply with cable (3m) and IP44 IEC 309 plug	●	●
962 - Kit modem GSM	●	●
957 - Plantwatch without modem	●	●
930 - Remote graphic terminal kit	●	●

● available accessory; - not available accessory

TECHNICAL DATA - COOL ROW DX Inv

COOLROW DX Inv			25			40	
SIZE			B6 BF			B6 BF	
COOLING CAPACITY (1)		Min	Nom	Max	Min	Nom	Max
Total	**kW**	**14,4**	**23,1**	**28,5**	**18**	**36,5**	**39,7**
Sensible	**kW**	**14,4**	**23,1**	**28,5**	**18**	**36,5**	**39,7**
SHR	kW/kW	1,00	1,00	1,00	1,00	1,00	1,00
Unit power input (*)	kW	2,5	5,3	7,9	3,4	10,7	13,0
Supply fans	n.	4	4	4	4	4	4
Air flow	m^3/h	3450	5800	7400	4400	9400	9400
Compressors			scroll			scroll	
Quantity	n.		1			1	
Capacity steps	n.		MOD			MOD	
Air filters	n.		1			1	
Efficiency			G2			G2	
Refrigerant			R410a			R410a	
Refrigerant charge (2)	kg		4,5			4,6	
Gas circuits	n.		1			1	
Power supply (**)	V/Ph/Hz		400/3/50+N			400/3/50+N	
Max operating current (FLA) (*)	A		20,1			30,9	
Unit starting current (LRA)	A		5,0			6,4	
Energy efficiency indexes (1)							
Energy Efficiency Ratio - EER (3) (*)	kW/kW	5,78	4,34	3,6	5,29	3,4	3,06
Sound pressure level - ISO 3744 (4)							
On front side	dB(A)	43,6	54,9	60,2	48,9	65,4	65,4
Net weight	kg		290			290	
Remote condenser (5)	n.		1			1	
TEAM MATE	n. x Mod.		M 35			M 45	
Refrigerant connections							
Gas delivery	ODS Ø		16			18	
Liquid return	ODS Ø		16			16	

THE COOLING CAPACITY DOES NOT CONSIDER THE SUPPLY FAN MOTOR THERMAL LOAD

1. Characteristics referred to entering air at 24°C-50%RH; 35°C ambient temperature.
2. Unit refrigerant charge. Remote condenser, connections pipes and optional are excluded.
3. The Energy Efficiency Index consider also the remote air cooled condenser as shown in the table.
4. Noise level at 1 meter in free field (external static pressure at nominal conditions)
5. For matching to other remote air cooled condensers please refer to RC WORLD selection program

(*) The value includes the remote condenser

(**) The remote condenser has separated power supply

TECHNICAL DATA - COOL ROW CW

MODEL SIZE		50 B6 BF	60 B6 BF
COOLING CAPACITY (1)			
Total	**kW**	**49,7**	**61,1**
Sensible	**kW**	**49,7**	**61,1**
SHR	kW/kW	1,00	1,00
Unit power input	kW		
Supply fans	n.	4	4
Air flow	m^3/h	10000	10000
Cooling coil			
Water flow rate	m^3/h	8,5	10,5
Pressure drop - coil + valve	kPa	33	33
Air filters	n.	1	1
Efficiency		G2	G2
Power supply (**)	V/Ph/Hz	230/1/50	230/1/50
Max operating current (FLA) (*)	A		
Sound pressure level - ISO 3744 (2)			
On front side	dB(A)	66,7	67,5
Net weight	kg	246	262
Connection			
Chilled water inlet/outlet	M Ø	1+1/2"	2"

THE COOLING CAPACITY DOES NOT CONSIDER THE SUPPLY FAN MOTOR THERMAL LOAD
1. Characteristics referred to entering air at 35°C-25%RH with chilled water temperature 10-15°C - 0% glycol.
2. Noise level at 1 meter in free field.

TECHNICAL DATA - OPTIONAL ACCESSORIES COOL ROW

COOL ROW SIZE		25 B6 BF	40 B6 BF	50 B6 BF	60 B6 BF
Humidifier					
Steam capacity	kg/h	2	2	**2**	**2**
Power input	kW	1,4	1,4	1,4	1,4
Extra circuit coil (1)					
Total cooling capacity	**kW**	**47,5**	**47,5**	**47,5**	**-**
Sensible cooling capacity	**kW**	**47,5**	**47,5**	**47,5**	**-**

1. Characteristics referred to entering air at 35°C-25%RH with chilled water temperature 10-15°C - 0% glycol.

DIMENSIONS (mm)

SIZE	a	b	c
B6 L	600	1200	2000