

**DATASHEET**  
Room cooling  
system  
CoolRAC CW

**CONTEG**

# COOLRAC ROOM COOLING SYSTEM



➤ **CoolRAC** units represent a family of precision cooling units specifically designed for easy integration into new and renovated data centers. These cooling units—with different cooling principles, sizes and outputs—are still the most widely used system for efficient targeted cooling from smaller server rooms to large data centers.

## MAIN ADVANTAGES

- Variable installation options for the unit with fan module and air outlet in the double floor or above the floor
- Option to equip the unit with one or two fans
- Very low energy consumption thanks to EC fans and control software
- User-friendly and modern control system
- Flexibility of spatial layout
- Option to place the unit outside the data center room and connect the unit to the air duct
- Wide range of accessories

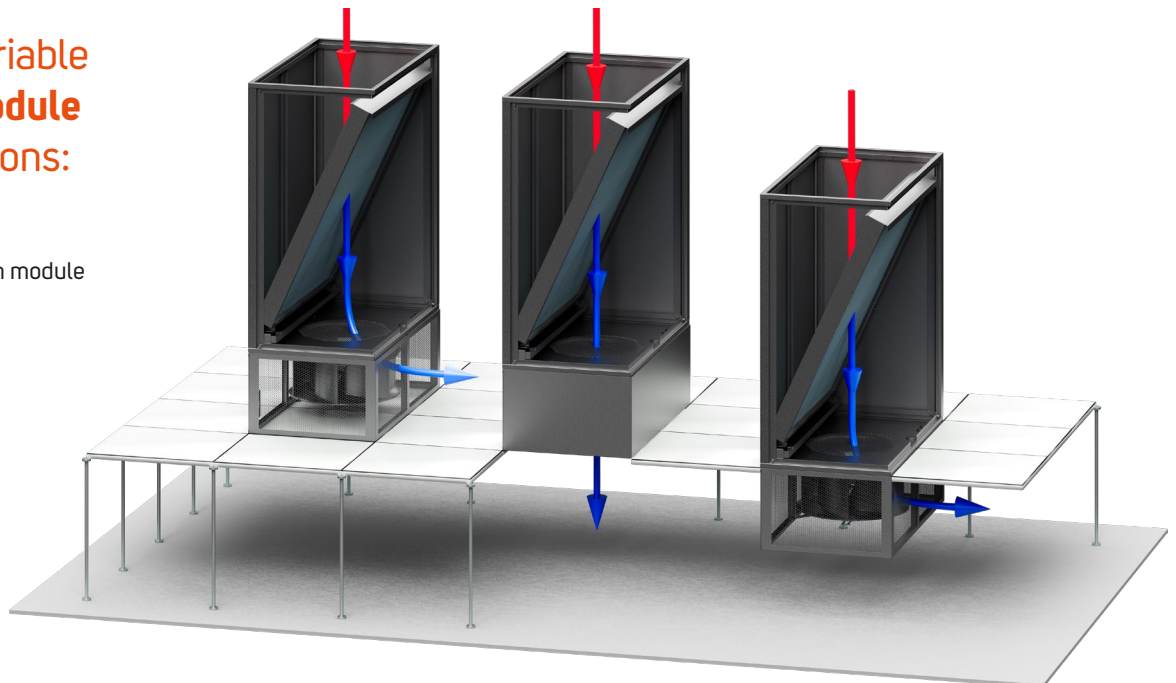
## SUITABLE FOR

- Open aisle
- Contained cold/hot aisle
- Data center of any size

COLOR:  RAL 9005  RAL 7035

## Examples of variable air outlet fan module installation options:

- Above the double floor
- Into the double floor
- With installation of the fan module inside the double floor



## DESCRIPTION

- Radial fans (with EC motors) for lowest energy consumption and precise control of airflow to servers
- High-efficiency copper-aluminium heat exchangers; also useful for Free-cooling systems
- Controller with special CONTEG software, based on long-term experience from worldwide data centers
- 4.3" color touch-screen display for user-friendly communication
- One display operating up to 16 units per group
- Independent unit control as well as CoolRAC group control functions for entire row of racks
- Wide range of settings adjust performance to specific project
- Communication through TCP/IP protocol (standard)
- Easy ModBUS and remote management from any computer connected to Internet (via integrated Webserver)
- Other protocols available
- Humidity sensors integrated into units
- Possibility of humidification and dehumidification mode integration in each unit
- Four temperature sensors per unit
- Three cooling systems:
  1. CW—chilled water system
  2. XC—direct expansion system with compressor (within CoolRAC unit)
  3. DF—hybrid Dual Fluid system

# COOLRAC CW





CoolRAC CW

➤ **CoolRAC CW** water cooled room cooling units are designed to be connected to any system with a cold water source.

## MAIN ADVANTAGES

- Possibility to choose any type of chiller (water cooler) depending on the requirements of the environment
- Free-cooling system saves significant amount of power
- Virtually unlimited number of indoor units per hydraulic circuit
- Variable chiller types fulfill any requirements (outdoor noise level, extreme ambient temperatures, etc.)
- A wide range of different water temperatures and glycol mixtures can be used

COLOR:  RAL 9005  RAL 7035

CoolRAC CW			
Indoor unit code	Unit	AC-CRCW-00M-08	AC-CRCW-00M-10
Connected outdoor unit code		Chilled water system (Chiller)	
<b>Basic data</b>			
Cooling system	–	Chilled water	
Architecture	–	DownFlow/UnderFlow/FrontFlow	
Nominal cooling capacity <sup>1</sup>	kW	87,1	104,3
Nominal net cooling capacity <sup>2</sup>	kW	85,8	103
Power supply	V/f/Hz	400/3/50-60	
Running current	A	3,5	3,5
Maximum current	A	4,5	4,5
Fan consumption (maximum)	kW	1,3	1,3
Nominal airflow <sup>3</sup>	m <sup>3</sup> /h	16 026	15 564
Number of fans	pcs	1 or 2	
Motor fan technology	–	EC	
Water flow	l/h	14 184	17 990
Filter class	–	G4	
<b>Dimensions</b>			
Height	mm	2 025	
Width	mm	1 353	
Depth	mm	763	
Weight	kg	290	295
<b>Piping connection</b>			
Supply pipe diameter and type	–	6/4" female thread	
Return pipe diameter and type	–	6/4" female thread	

<sup>1</sup>Cooling capacity is changed by controller; nominal cooling capacity is calculated at return hot air temperature of 35 °C without condensation (heat exchanger's temperature above dew-point), chilled water temp. 6/12 °C, clean filters.

<sup>2</sup>Net cooling capacity is the cooling capacity minus fan heat load—the actual unit cooling capacity available to IT equipment.

<sup>3</sup>Airflow is changed by the controller; nominal airflow matches nominal cooling capacity.

# FOLLOW THE STEPS FOR DETERMINING THE CODE OF THE REQUIRED COOLRAC UNIT

AC - CR 1. - 2. 3. 4. - 5. - 6. 7. - 8. 9. 10. 11. 12. 13. 14. 15. 16.

An example of a correct code:

AC - CR DF - 0 0 M - 04 - 1 D - 1 3 A 2 0 0 2 0 3

**Explanation of an example of a correct Code:** CoolRAC cooling unit based on the principle of dual-fluid technology (with integrated indirect free-cooling function), medium-sized W × H × D = 1353 × 2025 × 790 mm. Cooling capacity 45 kW. With perforated bottom cover for air distribution into the double floor. With integrated 4.3" LCD touch screen. Integrated humidifier 3 kg/h steam. Powerful condensate pump. Dual power supply. pCO web communication card for SNMP communication. With two fans. Heating coils for electric reheating of air up to 1200 W.

1. UNIT TYPE	
Code	Model
CW	Chilled water
XC	Direct expansion with an integrated compressor
DF	Free-cooling water cooling with an integrated compressor

2. EMPTY POSITION	
Code	Options
0	

3. EMPTY POSITION	
Code	Options
0	

4. UNIT DIMENSIONS	
Code	W × H × D (mm)
M	Medium. 1353 × 2025 × 790 mm

5. COOLING CAPACITY	
Code	Options
04	45 kW
06	60 kW
08	80 kW
10	100 kW

6. AIR DISTRIBUTION	
Code	Options
0	All perforated
1	Perforated bottom
2	Perforated front
3	Perforated front and sides
4	Perforated front and one side
5	No perforation (for air-outlet installation)

7. DISPLAY POSITION	
Code	Options
D	Display in the door
W	Without display

8. HUMIDIFIER	
Code	Options
0	No humidifier
1	Standard humidifier
2	Humidifier for low conductivity
P	Preparation for humidifier

9. CONDENSATE	
Code	Options
0	Standard drain
1	MiniBlue
2	Flood rope
3	MegaBlue
A	MiniBlue + flood rope
B	MegaBlue + flood rope

10. POWER SUPPLY	
Code	Options
0	Standard
A	Dual

11. COMMUNICATION	
Code	Options
0	Standard
1	Modbus RS485 card
2	pCO WEB card

12. REGULATION	
Code	Options
0	Standard

13. EMPTY POSITION	
Code	Options
0	

14. FANS	
Code	Options
1	One fan
2	Two fans

15. SPECIAL MODIFICATIONS	
Code	Options
	Logo, color etc

16. ELECTRIC REHEATING OF AIR	
Code	Options
0	Without
1	600 W
2	900 W
3	1200 W

# BASIC ACCESSORIES

## TOUCH SCREEN

- For more user-friendly communication with the unit's regulator, you can use a 4.3" color touch screen.
- A single touch screen can control up to 16 cooling units. For quick communication and full functionality of BMS, we recommend using a maximum of 8 units.
- RS485 port and Ethernet port enable remote control and monitoring using various master systems. The USB is used primarily for quick and easy software updating and downloading of historical data.
- The touch terminal has a number of functions: connection to a customer network, remote control, ModBus communication and many more.
- The screen can be placed directly onto a CoolRAC unit, on the side of a rack or onto a wall in the data room.



## DUAL POWER SUPPLY

- Electrical PDU for two power branches. The device allows powering the unit from two independent sources.

## STEAM HUMIDIFIER

- The steam humidifier maintains the set relative humidity of the air in the data center.
- The humidifier can output 3 kg of steam per hour
- The steam humidifier of the CoolRAC unit is powered separately.
- You can choose from 2 boiling vessels depending on water hardness.



## pCO WEB COMMUNICATION CARD

- Accessory compatible with CoolRAC regulators.
- Enables additional individual communication (monitoring and control).
- Communication via Ethernet network protocols.
- Functions: web server, e-mail, FTP, SNMP, BAC-Net, ModBus TCP/IP and more.



## CONDENSATE PUMP

- All CONTEG units can be connected to the sewerage system via gravity feed.
- If there is no sewerage connection in the room, the water can be conducted away using a condensate pump.
- Each unit includes a water detector that activates the pump, and a level sensor that turns off the unit in case of increased water levels.





Comparison	CoolTeg Plus				CoolTop		CoolSeven	CoolRAC		
	CW	DX	XC	DF	CW	DX		CW	XC	DF
<b>Installation</b>										
Between IT racks	✓	✓	✓	✓	-	-	-	-	-	-
On top of IT racks	-	-	-	-	✓	✓	-	-	-	-
Inside of 19" racks	-	-	-	-	-	-	✓	-	-	-
Farther from IT racks	-	-	-	-	-	-	-	✓	✓	✓
<b>Cooling medium</b>										
Water/glycol	✓	-	-	-	✓	-	-	✓	-	-
R410A	-	✓	✓	-	-	✓	✓	-	✓	-
R410A + water/glycol	-	-	-	✓	-	-	-	-	-	✓
<b>Application</b>										
Smaller	✓	✓	✓	✓	✓	✓	✓	-	-	-
Medium	✓	-	✓	✓	✓	✓	-	✓	✓	✓
Bigger	-	-	-	-	-	-	-	✓	✓	✓
<b>Occupied floor area (in data center)</b>										
None	-	-	-	-	✓	✓	✓	-	-	-
Small	✓	✓	✓	✓	-	-	-	-	-	-
Large	-	-	-	-	-	-	-	✓	✓	✓
<b>Nominal cooling capacity</b> <span style="float: right;">Air temperature in hot zone: 35 °C; water temperature of 6/12 °C (for CW units), no condensation.</span>										
7-19 kW	-	DXSmall DX30	-	-	-	-	CoolSeven	-	-	-
20-39 kW	CW30 CW30 SuperC	DX30	XC30	DF	CoolTop2	CoolTop2 CoolTop3	-	-	-	-
40-100 kW	CW60	-	XC40	-	CoolTop3	CoolTop2 CoolTop3	-	CoolRAC CW CoolRAC XC CoolRAC DF		
<b>Suitable for</b>										
Smaller applications – e.g. Modular Closed Loop	-	✓	-	✓	-	-	✓	-	-	-
High outside temp.	-	-	✓	-	-	-	✓	-	✓	-
Cooling system with a cold-water source	✓	-	-	-	✓	-	-	✓	-	-
No water in a data center	-	✓	✓	-	-	✓	-	-	✓	-
Free-cooling	✓	-	-	✓	✓	-	-	✓	-	✓



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