




Huawei Energy Powering the Future


Huawei Smart Cooling Solution

HUAWEI TECHNOLOGIES CO., LTD.





To meet increasing demands of data centers such as IT business integration, virtualization and cloud computing, Huawei introduces NetCol8000, in-room cooling product and NetCol5000, in-row cooling product to provide cooling solutions for various types of data centers, which ensures data centers work stably in constant temperature and humidity environment.



Huawei NetCol smart cooling product is safe & reliable, and has features such as high efficiency, high reliability, simple O & M, which makes it your best choice for cooling solution.

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In-row Smart Cooling Product



NetCol5000-A
(21-42kW)



NetCol5000-C
(30kW)

In-room Smart Cooling Product



NetCol8000-A
(50-100kW)



NetCol8000-C
(62-253kW)

A: Air cooled
C: Chilled water

Air Cooled In-row Cooling Product

NetCol5000-A

Introduction

NetCol5000-A is the air cooled in-row smart cooling product developed by Huawei. It is configured with DC inverter compressor, EC fans, PTC electric heater and electrode humidifier. Cooling capacity is 21kW, 25kW, 42kW. It is usually installed between the IT racks, closely coupled with heat source so as to provide in-row cooling solution for medium-high density data centers. NetCol5000-A supports piping and cabling from both top and bottom side of the unit, and can be accessed from both front and back side. It is an efficient, reliable and simple solution, helps to build next generation green data center.

Application Scenarios

- Modularized data center and container data center
- Equipment room with partial overheating, high thermal density room and room with high energy saving requirement
- Medium and small computer rooms and data center (IDC)
- Container data center

Value & Features

Efficient

- DC inverter: inverter compressor and EC fan, 10%~100%* stepless capacity regulation, high efficiency at partial load
- Group control: maximum 32 units can be group controlled, precision management for capacity and power consumption
- Without heating water, save 95%+ energy compared with traditional humidifier

Reliable

- Stable operation: works stably at extremely high/low ambient temperature (-40~+55°C), with less cooling capacity derating than others
- Dehumidification at low load: reliable dehumidification at minimum 10% load, eliminate condensation risk
- Expansion valve shut automatically: Expansion valve will shut automatically after unexpected power cut, eliminate liquid return which may hit compressor

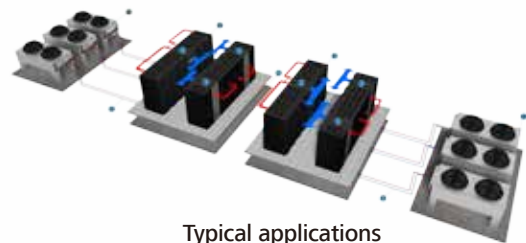
Simple

- Intelligent display: 7" true color screen, clear and friendly operation interface, easy O&M
- No welding maintain: compressor uses Rotolock connection, no welding on maintenance
- Malfunction self-diagnosis*: remove irrelevant reason intelligently, guiding O&M engineer maintain quickly

Notice: the feature with * is just for 042H.



NetCol5000-A



Typical applications



DC inverter scroll compressor



EC fan

Technical Specification

NetCol5000-A Technical Specification

Unit model	Unit	NetCol5000-A021H (300)	NetCol5000-A025H (300)	NetCol5000-A042H (600)
System type	—	Air cooled		
Air discharge direction	—	Horizontal		
Total cooling capacity ^①	kW	21.0	25.0	42.0
	Btu/h	71,652	85,300	143,304
Sensible cooling capacity	kW	21.0	25.0	42.0
	Btu/h	71,652	85,300	143,304
Air flow	m ³ /h	4,300	5,000	8,600
Power supply	V/Ph/Hz	208/3/60	380-415/3/50(60)	380-415/3/50, 380-415/3/60
Refrigerant	—	R410A		
Heating capacity	kW	4	4	6
Humidifier capacity	kg/h	1.5	1.5	3
Full load current ^②	A	28.0 (48.0)	20.0 (30.0)	40.0 (46.0)
Dimensions: W*D*H	mm	300*1100*2000	300*1100*2000	600*1100*2000
Net weight	kg	260	230	305

Notes:

1. Nominal cooling condition: Return air dry bulb temperature 37.8°C/RH20%, outdoor temperature 35°C
2. The data in brackets are applicable to the indoor unit with electric heater & humidifier
3. Data are subject to change without prior notice

Out Door Condenser Technical Specification

Unit model	Unit	NetCol500-A026	NetCol500-A032	NetCol500-A036	NetCol500-A072
Power supply	V/Ph/Hz	380-415/3/50, 380-415/3/60, 440-480/3/60			
Fan quantity	—	1	1	1	2
Liquid pipe diameter	in	5/8 in	5/8 in		
Gas pipe diameter	in	3/4 in	7/8 in		
Full load current	A	2.5	2.5	2.5	4.5
Dimensions: H*W*D	mm	920*1120*1094	1160*1370*1094	1160*1370*1094	1160*1370*1094
Net weight	kg	132	110	130	185

Notes: Data are subject to change without prior notice; the pipe diameter only for reference and it may be changed for the actual configuration

Chilled Water In-row Cooling Product

NetCol5000-C

Introduction

NetCol5000-C is a chilled water smart cooling product developed by Huawei. Basically, it is just a fan coil unit installed inside the data center, moreover, combined together with chiller, chilled water pump and piping etc.; it forms a complete cooling system. It is coupled with EC fan, and has the functions of cooling & dehumidification. Normally, it is installed between the IT racks, closely coupled with heat source so as to provide in-row cooling solution for medium to high density data centers. NetCol5000-C is an efficient, reliable and simple solution, helps to build next generation green data center.

Application Scenarios

- Medium-large exchange room and data room
- Computer room and data center (IDC)
- High-tech environment and lab
- Industry control room and precision processing equipment room
- Standard test room and calibration center
- Container data center

Value & Features

Efficient

- High efficiency DC power module: Fans are powered by high efficiency self-developed DC power module, efficiency is up to 94%, unit's total rated power input is only 1.0kW
- High efficiency heat exchanger: CFD simulation and field synergy helps achieve optimum heat exchange, improves heat transfer efficiency by 10%

Reliable

- Dual condensation pumps: Dual floats & dual condensation pumps, condensation drainage is not affected when one pump fails
- Dual power sources: automatically switches to the other power source in case of power failure
- Multi. EC fans: Mutual backup, ensures smooth air flow, performance is not affected when single fan is faulty

Simple

- On-line fan maintenance: No need to switch off power for fan replacement
- Water piping: high quality imported rubber hose; threaded connection makes installation easier and free of brazing work
- It supports piping and cabling from both top and bottom of the unit, and can be accessed from both front and rear
- Leading-edge 7-inch colored touch screen features innovative one-touch interface switch and provides temperature & humidity curves display of the last 30 days, bringing an excellent usage experience



NetCol5000-C



IT Equipment 1 2 Precision AC

Typical applications



7 inch LCD true color touch screen



EC fan

Technical Specification

NetCol5000-C Technical Specification

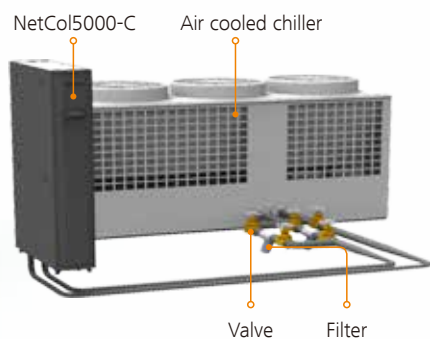
Unit model	Unit	NetCol5000-C030H
System type	—	Chilled water
Air discharge direction	—	Horizontal
Total cooling capacity ^①	kW	30.0
	Btu/h	102,360
Sensible cooling capacity	kW	30.0
	Btu/h	102,360
Air flow	m ³ /h	5,100
Power supply	V/Ph/Hz	220-240/1/50, 220-240/1/60
Refrigerant	—	—
Water flow	l/s	1.4
Water pressure drop	kPa	55
Electric heating capacity	kW	3
Humidifier capacity	kg/h	3
Full load current ^②	A	5.5 (23)
Dimensions: W*D*H	mm	300*1000/1200*2000
Net weight ^③	kg	185

Notes:

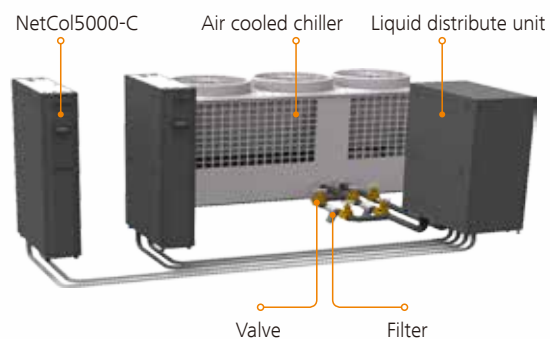
1. Nominal cooling condition: The current data in brackets are applicable to the unit with electric heater & humidifier
2. Return air dry bulb temperature 37.8°C/RH20%, Inlet/Outlet water temperature 10°C/15°C
3. The unit with electric heater & humidifier does not support up piping for without water pump
4. Data are subject to change without prior notice

NetCol520 liquid distribute unit

Without NetCol520 (Liquid distribute unit)



With NetCol520 (liquid distribute unit)



Items	Parameter description
Unit model	NetCol520-12T (Upper water pipe) / NetCol520-12B (bottom water pipe)
Dimensions	1800*1200*600mm (H*W*D)
Unit weight	300kg
Water flow	43.2 m ³ /h

Air Cooled In-room Cooling Product

NetCol8000-A

Introduction

NetCol8000-A is the air cooled in-room smart cooling product developed by Huawei. It is composed of indoor and outdoor unit. Indoor unit is configured with scroll compressor, large surface evaporator, EC fan, electric humidifier and electric heater. Cooling capacity is 50kW (down flow) and 100kW (down flow). The down flow unit is usually deployed around the white space of the data center, can be installed against the wall providing 100% front access maintenance, and the fan can be sunk under the floor to further improve air supply efficiency. NetCol8000-A is an efficient, reliable and simple solution, helps to build next generation green data center.

Application Scenarios

- Medium-large exchange room and data room
- Computer room and data center (IDC)
- High-tech environment and lab
- Industry control room and precision processing equipment room
- Standard test room and calibration center
- UPS and battery room
- Biochemical culturing room Hospital and test room

Value & Features

Efficient

- Energy saving logic: For single unit, unique energy-saving mode, partial load EER increased by 26%; For multi units, avoids competitive operation, collaborated efficiency optimization algorithm; energy saving by 30%+
- Group control: realizes an optimized alternative operation to avoid conflict within a multi-unit system, dynamically distributes cooling capacity and provides major control system backup

Reliable

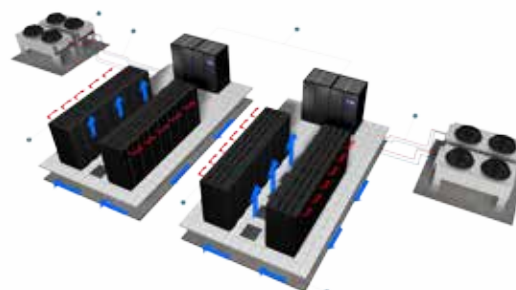
- Redundant design, mutual backup module, If one circuit is faulty, the operation of the other circuit is not affected
- Multiple system protections, including: compressor failure, insufficient airflow, high and low pressure protection of compressor, temperature/humidity out of limit alarm, etc.
- Refrigerant leakage and anti-freeze protection: When refrigerant is leaked, unit automatically switched off, avoids freezing on evaporator

Simple

- Module design, eliminates brazing work for on-site unit disassembly, reduces the requirement on dimensions of elevator and doors
- 100% front access, supports side by side installation, smallest maintenance space in the industry
- The control system, featuring self-diagnosis and precaution functions, can provide pre-maintenance tips.



NetCol8000-A



Typical applications



Discriptible modular design

Technical Specification

NetCol8000-A Technical Specification

Unit model	Unit	NetCol8000-A 050D	NetCol8000-A 100D
System type	—	Air cooled	
Air discharge direction	—	Down flow	
Total cooling capacity ^①	kW	50.0	100.0
	Btu/h	170,600	341,200
Sensible cooling capacity	kW	46.8	93.5
	Btu/h	159,681.6	319,022
Air flow	m ³ /h	14,000	28,000
Power supply	V/Ph/Hz	380-415/3/50	380-415/3/50
Refrigerant	—	R410A	
Electric heating capacity	kW	6	12
Humidifier capacity	kg/h	7	10
Full load current	A	38.0	76.0
Dimensions: W*D*H	mm	1140*890*1980	2280*890*1980
Net weight	kg	415	830

Notes:

1. Nominal cooling condition: Return air dry bulb temperature 24°C/RH50%,condensing temperature 45°C
2. Data are subject to change without prior notice

Out Door Condenser Technical Specification

Unit model	Unit	NetCol500-A072	NetCol500-A088
Power supply	V/Ph/Hz	380-415/3/50	
Fan quantity	-	2	
Liquid pipe diameter	in	5/8 in	
Gas pipe diameter	in	7/8 in	
Full load current	A	3.15	6.25
Dimensions: W*D*H	mm	2180*1094*1100	2410*1270*1265
Net weight	kg	185	200

Notes: Data are subject to change without prior notice; the pipe diameter only for reference and it may be changed for the actual configuration

Chilled Water In-room Cooling Product

NetCol8000-C 2.0

Introduction

NetCol8000-C is the chilled water in-room smart cooling product developed by Huawei. Normally combined together with chiller, chilled water pump and piping etc., it forms a complete cooling system. Cooling capacity range is from 62kW to 253kW. NetCol8000-C is an efficient, reliable and simple solution, helps to build next generation green data center.

Application Scenarios

- Carrier base, province/city level data center
- ISP, EDC, IDC
- Finance headquarter, disaster recovery data center
- Smart city, safe city
- E-government

Value & Features

Efficient

- Pressure difference control: save 10%+ energy compared with ordinary EC fan with supply and return air control
- Fresh air free cooling: adjust fresh air ratio intelligently, save 30%+ energy comparison with traditional chilled water system
- Wet-film humidifier: save over 95%+ energy in comparison with electrode humidifier

Reliable

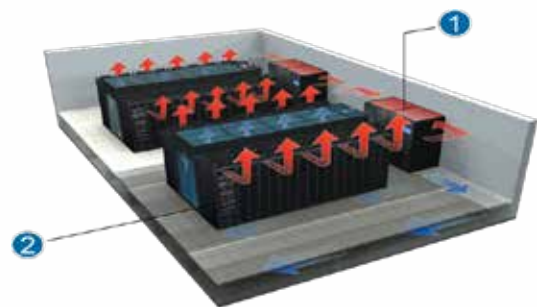
- Modular design: no effect on the operation of the other modules even if there is one faulty module
- Dual power sources: dual auto-switch power supply with independent dual 6kV surge protection and power detection
- On-line maintenance: hot swappable for control module and auxiliary power module

Simple

- Digital management: 7" color touch screen, cooling capacity, air flow and power consumption could be displayed
- Malfunction self-diagnosis: eliminate irrelevant failure reason intelligently and save pending and maintenance time 7h+
- De-engineering: prefabricate components including air damper, dynamic balance valve, save installation man-hour max. 10h/unit



NetCol8000-C



1. Air conditioner 2. IT equipment
Typical applications



Hot swapped module



Discreptible modular design

Technical Specification

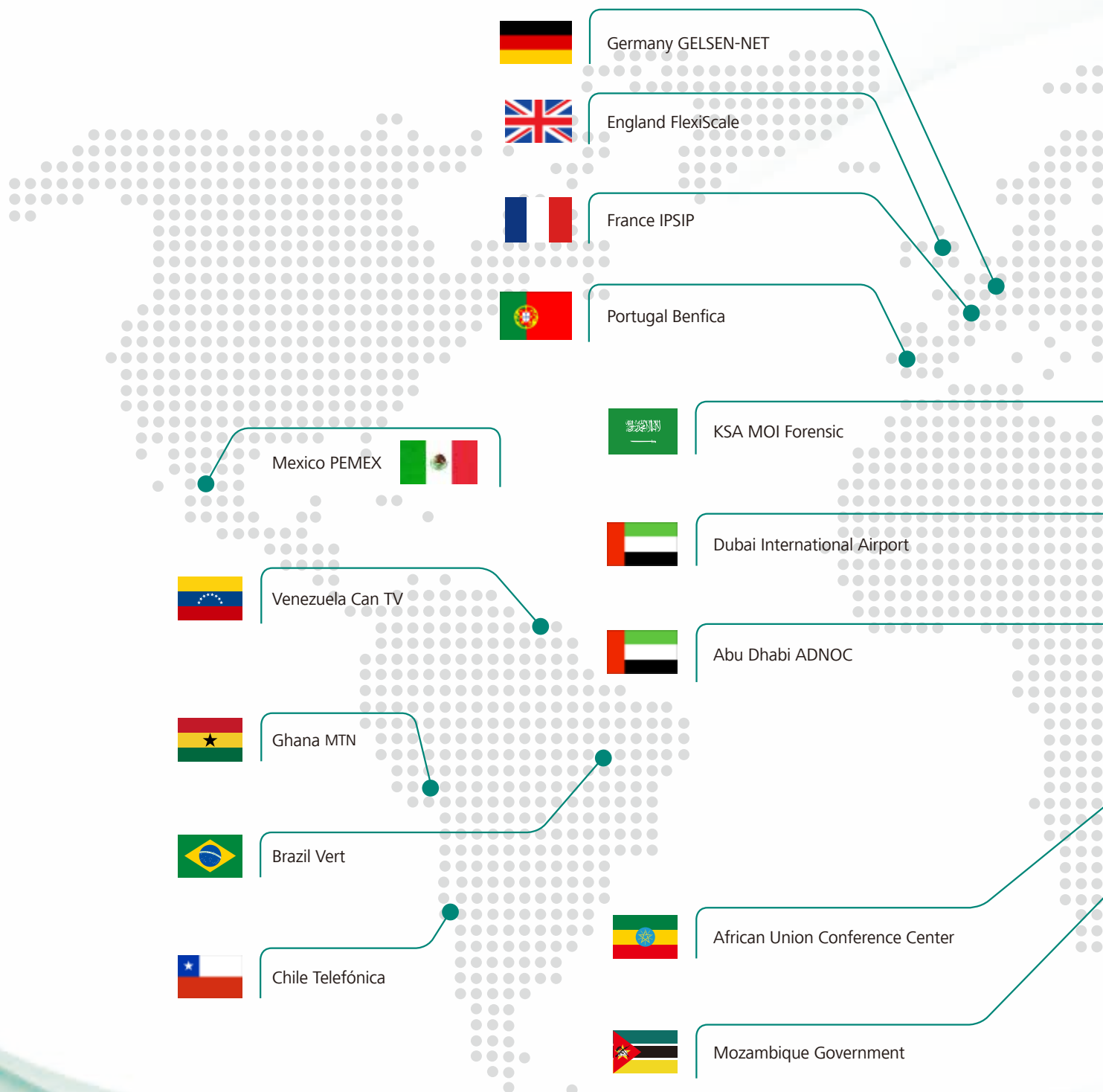
Unit model	Unit	NetCol8000-C070D	NetCol8000-C100D	NetCol8000-C110D	NetCol8000-C130D	NetCol8000-C150D	NetCol8000-C160D
Air direction	—	Down flow	Down flow	Down flow	Down flow	Down flow	Down flow
Total cooling capacity ¹⁾	kW	63.2	100.2	113.0	126.4	150.3	169.5
	Btu/h	215,638.4	341,882.4	385,556.0	431,276.8	512,823.6	578,334.0
Sensible cooling capacity	kW	51.4	83.0	94.2	102.8	124.5	141.3
	Btu/h	175,376.8	283,196.0	321,410.4	350,753.6	424,794.0	482,115.6
Air flow	m ³ /h	13,500	23,000	28,000	27,000	34,500	42,000
Power supply	V/Ph/Hz	380-415/3/50, 380-415/3/60, 440-480/3/60					
Water flow	l/s	3.02	4.78	5.39	6.03	7.17	8.09
Water pressure drop	kPa	62.4	70.7	85.8	85.4	77.4	94.3
Heating capacity	kW	6	12	12	12	12	12
Humidifier capacity	kg/h	5	8	8	8	12	12
Full load current ²⁾	A	4.7 (15.2)	9.4 (30.4)	8.9 (29.9)	8.9 (29.9)	13.8 (34.8)	13.1 (34.1)
Dimensions:W*D*H	mm	900*1000*2000	1800*1000*2000	1800*1000*2000	1800*1000*2000	2700*1000*2000	2700*1000*2000
Net weight	kg	340	600	615	635	880	900

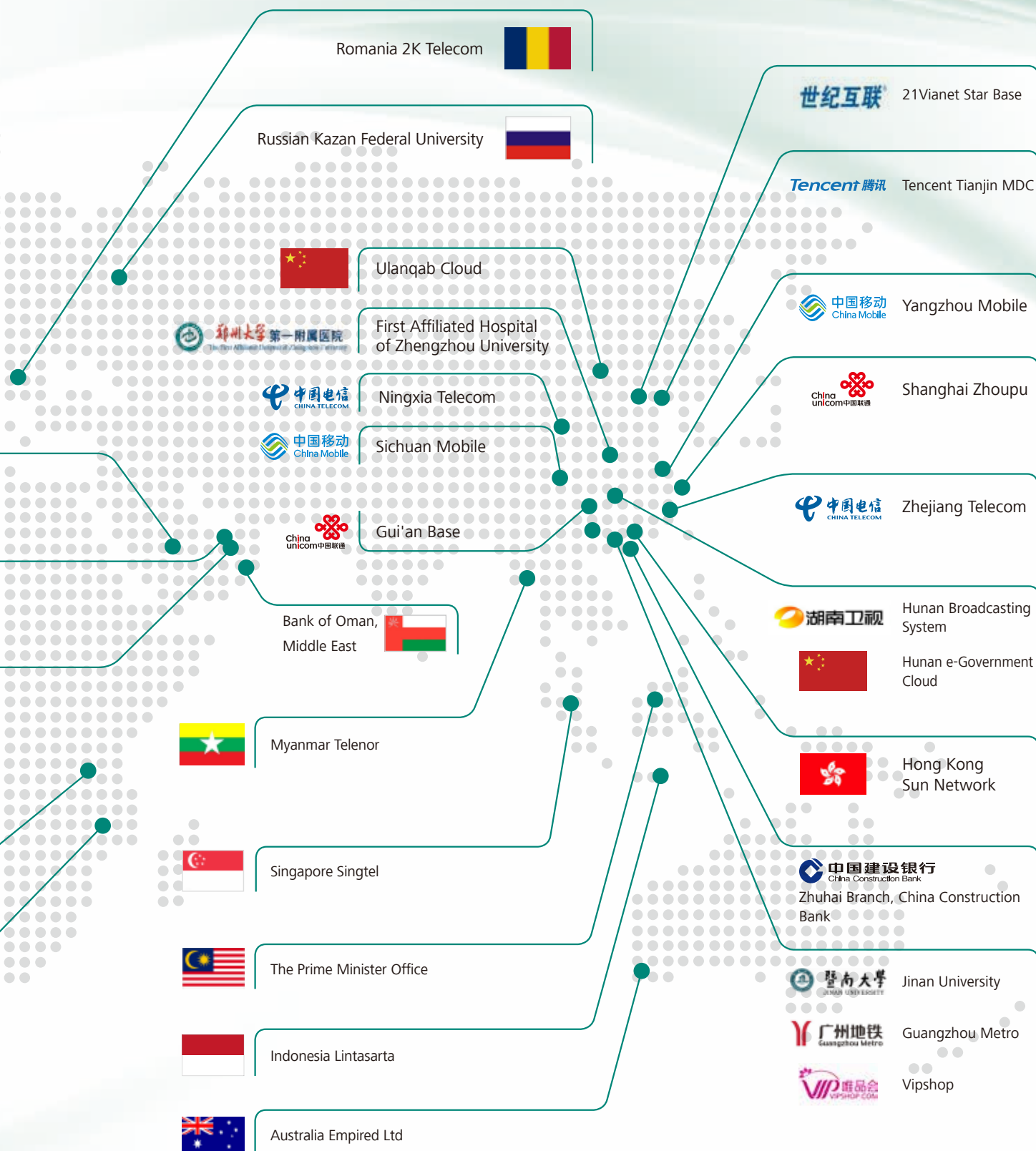
Unit model	Unit	NetCol8000-C190D	NetCol8000-C220D	NetCol8000-C260D	NetCol8000-C070U	NetCol8000-C130U	NetCol8000-C190U
Air direction	—	Down flow	Down flow	Down flow	Up flow	Up flow	Up flow
Total cooling capacity ¹⁾	kW	189.6	226.0	252.8	61.9	123.8	185.7
	Btu/h	646,915.2	771,112.0	862,553.6	211,202.8	422,405.6	633,608.4
Sensible cooling capacity	kW	154.2	188.4	205.6	50.3	100.6	150.9
	Btu/h	526,130.4	642,820.8	701,507.2	171,623.6	343,247.2	514,870.8
Air flow	m ³ /h	40,500	56,000	54,000	13,200	26,400	39,600
Power supply	V/Ph/Hz	380-415/3/50, 380-415/3/60, 440-480/3/60					
Water flow	l/s	9.05	10.79	12.07	2.95	5.91	8.86
Water pressure drop	kPa	96.0	108.8	114.0	60.5	82.6	92.7
Heating capacity	kW	12	12	12	6	12	12
Humidifier capacity	kg/h	12	12	12	5	8	12
Full load current ²⁾	A	13.1 (34.1)	17.3 (38.3)	17.3 (38.3)	4.7 (15.2)	8.9 (29.9)	13.1 (34.1)
Dimensions:W*D*H	mm	2700*1000*2000	3600*1000*2000	3600*1000*2000	900*1000*2000	1800*1000*2000	2700*1000*2000
Net weight	kg	930	1195	1225	330	615	900

Notes:

1. Cooling capacity condition:Return air dry bulb temperature 24°C/RH50%, Inlet/Outlet water temperature 7°C/12°C
2. The current data in brackets are applicable to the unit with electric heater & humidifier
3. Data are subject to change without prior notice

Global Applications









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