CLIMAVENETA

COOLBLADE

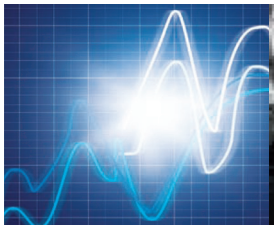
Climaveneta

Europe Company

Marketing features

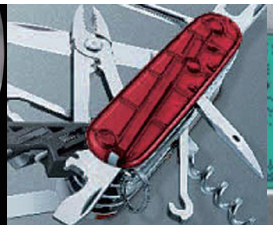
The new high-efficiency air conditioner COOLBLADE adds the finishing touch to the already prominent presence on the world industrial air-conditioning scenario.

It has been designed to satisfy the conditioning requirements of technological rooms, offering features that make it suitable for all the various applications in daily use and from which we demand utmost reliability.



Global efficiency

Outstanding performances



Total versatility

Intelligent control

Total compatibility

CENTRALLY CONTROLLED SYSTEMS

- Banks
- Hotel
- Airports
- Retail and distribution industry
- Museums and Libraries
- Medium/large companies

KEY CUSTOMERS

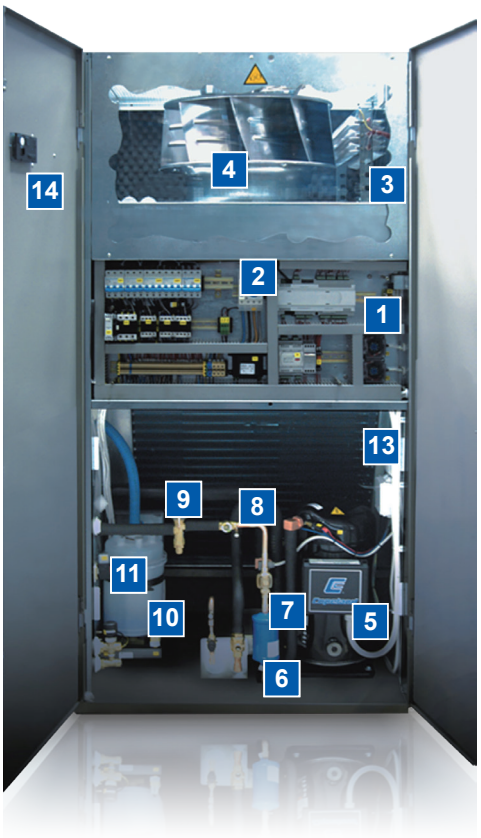
- Railways and motorways
- Internet providers
- Armed Forces
- Public sector
- Radio and TV companies
- TELECOM operators

FINAL APPLICATIONS

- Data dispatching nodes
- Call Centers
- Data collecting centers
- Internet centers
- Cloud Computing Centers

Index

Introduction



1	MAIN BOARD
2	MAIN SWITCH
3	HEATERS
4	INVERTER EC FANS
5	COMPRESSOR
6	DRIER FILTER
7	LIQUID LINE VALVE
8	SIGHT GLASS
9	THERMOSTATIC VALVE
10	HUMIDIFIER
11	DEHUMIDIFICATION VALVE
13	TEMP. & HUMIDITY SENSOR
14	USER TERMINAL

Close air-conditioning means not only compliance with the severest environmental parameters but also with the specific requirements of the site, such as EFFICIENCY, FLEXIBILITY, OPERATING RELIABILITY AND RESPECT FOR THE ENVIRONMENT, which today's products must satisfy. COOLBLADE has been created to meet all these requirements, exploiting the renowned capacity to supply total quality airconditioning systems

EFFICIENCY MOST OF ALL

Nowadays efficiency is no longer considered as just energy saving in respect of the single unit, but takes into account both the PERFORMANCE of the whole system and its COMPLETE RELIABILITY and MODULARITY over the years.

In offering COOLBLADE as a solution to technological cooling problems, we have been concentrated on the use of known quality parts and integration with BMS (building management systems).

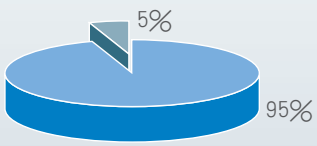
Standard solutions
- SCROLL compressors
- Thermostat valve with internal pressure equalization
- Electronic thermostat (optional)
- Standard centrifugal fans
- High efficiency EC INVERTER ventilation (optional)
- Standard condensation control (DX versions)
- Electric reheat or with hot water
- Immersed electrode humidifying system
- Intelligent dehumidifying system with constant airflow
- Semi-graphic control display
- Connection to traditional BMS

EXCELLENT SHR PERFORMANCE

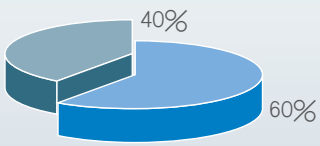
As is known, electronic equipment develops solely SENSIBLE heat loads and therefore needs dedicated air conditioning to deal with this.

That is why COOLBLADE has been made; to ensure maximum SENSIBLE cooling capacity to the detriment of the LATENT capacity, which would be a sheer waste of energy in these applications.

This is of basic importance for transforming all the supplied energy into a real room temperature control.
The result is a high SHR, minimum of 0.85 and a maximum of1. In order to have the utmost SENSIBLE and not latent type of cooling.



SHR for TECHNOLOGICAL Application



SHR for COMFORT Application

EC INVERTER FANS

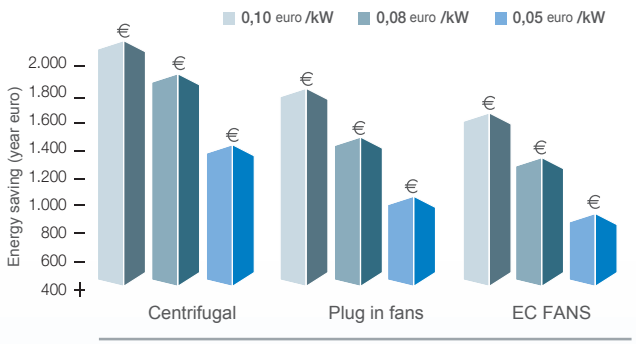
This new technology with electronically commutated motor increases the efficiency of the COOLBLADE system, optimizing running costs through state-of-the-art electronics, which are used to change parameters such as:

- Flow rate
- cooling capacity
- External pressure
- Noise level

Thereby guaranteeing best operation of the system at any moment, and in particular:

1 Continuous adjustment of air flow
2 Intelligent and low-noise system of air conveyance throughout the whole appliance
3 Up to 45% saving in the chilled water units

EC INVERTER FANS TECHNOLOGY
The most advanced solution for energy saving



Energy saving by EC INVERTER Fans Vs. standard traditional fans

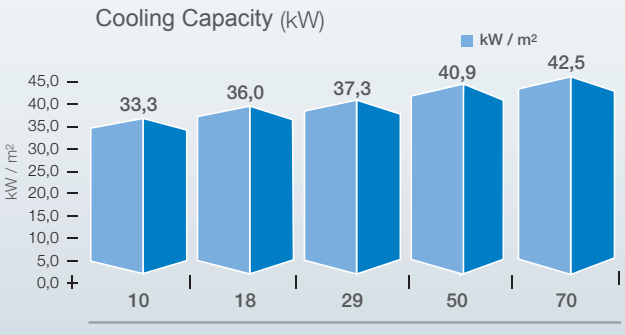
THE MOST COMPACT DESIGN

It is a known fact that the set loads (W/m2) in technological applications are continuously increasing.This is mainly due to the increase in data traffic, giving rise to new equipment with an increasingly greater capacity of transmission, which in turn develops a higher heat load to be dispersed.

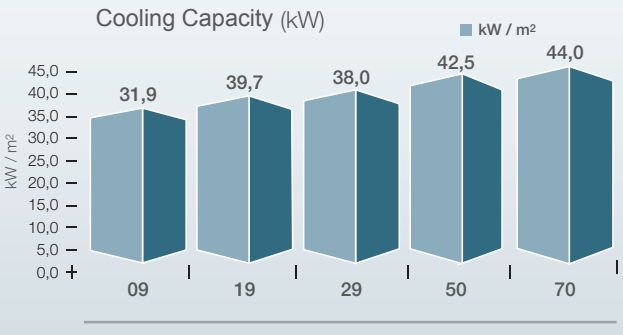
This requires ever better performance from the air-conditioning system that should, however, take up as little space as possible, leaving it for the transmission equipment.

COOLBLADE is the air-conditioner with the best SUPPLIED POWER / FOOT PRINT ratio in the market.
Because space means value.

DIRECT EXPANSION RANGE



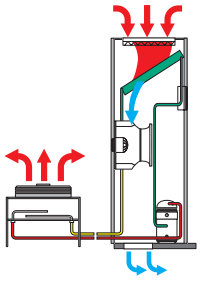
CHILLED WATER RANGE



Total versatility

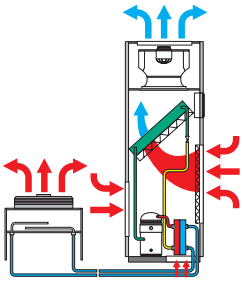
All-round flexibility seen as a service offered for any type of system. COOLBLADE provides customers with the most flexible solutions.

TYPES OF COOLING



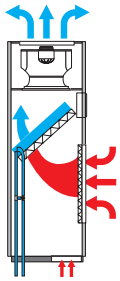
DIRECT EXPANSION AIR COOLED
cooling capacity:8-101kW

Refrigerant for heat transfer is used in these direct expansion units.



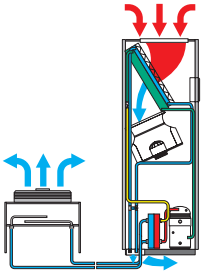
DIRECT EXPANSION WATER COOLED
cooling capacity:8-104kW

The condensation heat is dispersed in an internal plate-type exchanger connected in turn to a water circuit. The water of condensation may come from a well, local water mains or closed circuits such as cooling towers or dry coolers.



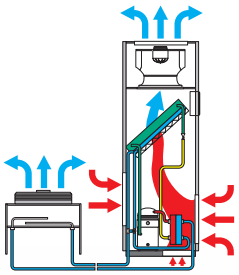
CHILLED WATER
cooling capacity:9-220kW

Water coming generally from a chiller is used in these units to transfer the heat. The flow of liquid through the unit water coil is controlled through an internal 2 or 3-way valve.



AIR COOLED DUAL FLUID
WARET COOLED DUAL FLUID
cooling capacity:24-100kW

A PRIMARY circuit, made by a chilled water circuit (CW) generally connected to an external chiller, plus a SECONDARY circuit in direct expansion (DX) who is considered as BACK-UP. Such units are particulary indicated anywhere RELIABILITY, SAFETY and REDUNDANCY are required.



FREE COOLING
cooling capacity:25-102kW

A PRIMARY direct expansion circuit (DX) plus a SECONDARY chilled water circuit (CW) generally connected to an external dry cooler who is considered as "support" to the primary one. Such units are particulary indicated anywhere EFFICIENCY & ENERGY SAVING are required.

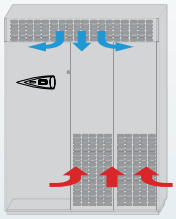
AIRFLOW CONFIGURATION

OVER
The versions called OVER with air outflow from the top generally have the air intake at the front, rear or bottom of the unit, according to customer choice, and the outflow from the top is along ducts behind suspended ceilings or front delivery plenums.

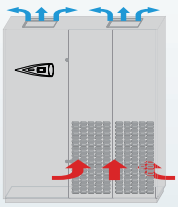
UNDER
The versions called UNDER with air outflow under the floor have the air intake on the top of the unit taking air directly from the environment or through intake ducts or plenums.

FRONT
The versions called FRONT with air outflow from the upper front pare of the unit have the air intake at the front, so there is no necessity to add an additional front outlet plenum.

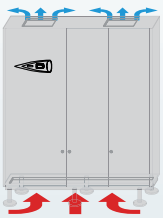
OVER unit with front intake and delivery plenum



OVER unit with front intake and top delivery

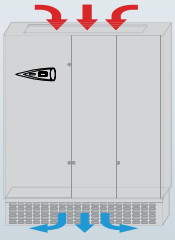


OVER unit with underfloor intake and top delivery

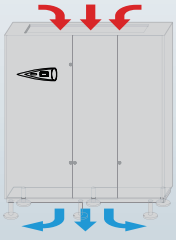


OVER unit with rear intake and top deliver

UNDER unit with top intake and front delivery plenum



Under unit with top intake and underfloor delivery



FRONT unit with front intake and upper front delivery

Intelligent control

COOLBLADE has an intelligent electronic heart that allows it to keep a constant control over all the operating and environmental parameters of the site.
The COOLBLADE electronic unit is open and configurable to specific user requirements both in site and particularly in the factory with dedicated customisation.

ELECTRONICS

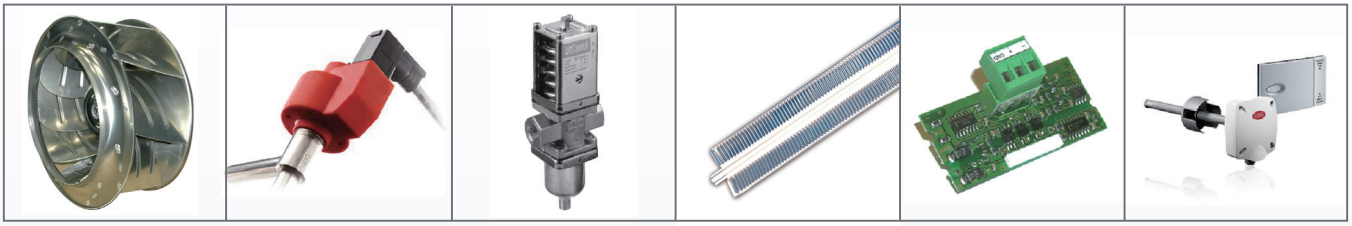
STANDARD FUNCTIONS

- Semi-graphic display 132 x 64 pixel
- Programmable software
- ICONS Graphic Display
- General alarm
- Automatic reset after blackout
- Compressor FIFO management
- Integral LAN system
- Standby management
- Automatic rotation
- Serious alarms
- Clock card
- Emergency function

MAIN OPTIONS

- Serial cards for BMS interconnection
- Fire-smoke alarms
- Flooding alarm
- Electronic thermostat control
- SMS alarm

OPTIONS AND MAIN ACCESSORIES



STANDARD

Structure
- Variable frequency EC fan
- High efficiency Copeland scroll compressor
- High and low pressure switch
- G4 standard filter configuration
- R-410A refrigerant
- Electrode humidifier
- electric heater
- Stepless speed regulation of outdoor fan

Electronic unit
- Through Lan connection, realize backup management function
- Delay start

OPTIONALS

Structure
-modbus, bacnet, snmp communication card
- DC inverter compressor
- Water leak alarm
- Hood
- Electronic expansion valve

Electronic unit
- Serial card for building management system interface connection
- 7 inch touch screen

Total compatibility

Model Nomenclature

CLIMAVENETA COOLBLADE products include several series depending on cooling type: direct expansion air cooled, direct expansion water cooled, single coil chilled water, dual coil chilled water, dual fluid air cooled, dual fluid water cooled and water cooled with free cooling.

DIRECT EXPANSION UNIT

S A U 030 D

- Default: DXA
- D: DXA(DXW)&CW
- F: DXW with free cooling

Cooling capacity

U: under flow
O: over flow
F: front flow

A: air cooled condensing type
W: water cooled condensing type

S: single compressor
D: dual compressors

CHILLED WATER UNIT

SC U 100 B2

- Default: single coil chilled water
- B2: dual coils chilled water

Cooling capacity

U: under flow

SC: chilled water type

COOLBLADE IS TOTAL COMMUNICATION

In a policy of “total communication” COOLBLADE offers various solutions for interconnection to the most modern BMSs, aimed at satisfying varying needs.

GLOBAL SUPERVISION

firmware protocol for total management of all the air-conditioning parameters, including:

- Detection and transmission of alarms from remote
- Change of data from remote
- Recording of data and alarms
- Sending of SMS via GSM modem

all through dedicated serial cards and supervision systems both in LOCAL and REMOTE mode.

ADVANCED SUPERVISION

solutions of compatibility for all the most common BMSs available on the market today, such as:

- MODBUS
- METASYS
- BACNET
- TREND
- LONWORKS
- SNMP/TCPIP

to satisfy every single customer requirement and to offer the possibility of communicating with the global network.

RESPECT FOR THE ENVIROMENT

COOLBLADE is totally in line with the known policy of full respect for the environment in which we live and for human health and safety. The use of recyclable materials and eco-compatible refrigerants R410A to current standards and legislation, make COOLBLADE a state-of-the-art product in this sense.

NOISELESS COLD

Modern telephone applications in residential areas must satisfy increasingly severer requirements in terms of noise pollution. COOLBLADE then propose a large range to satisfy such requests, often customized base on customer requests and site conditions.

Main systems are:

- Centrifugal fans (STD)
- EC INVERTER FANS (OPT) with air flow modulation capability
- Paneling clad in soundproofing material (STD)

MAINTENANCE

The design of the new COOLBLADE models was based on the need to simplify routine and extraordinary maintenance work carried out during the lifetime of the product.
The refrigerant circuit area is completely separate from the fan area, thereby allowing routine maintenance to be carried out also with the unit in operation.

All servicing operations, even the most critical ones, can be accomplished by a full front access.
That is why all the front panels are openable and can even be removed thanks to simple hinges.

Type: DIRECT EXPANSION, AIR COOLED,
upflow or downflow or frontflow version

Evolution	Available Versions
STD	Cooling only without condensation control device
MOD	Cooling only with condensation control device through external unit fans regulation

UNIT DESCRIPTION

Cooling capacity: 8~101kW
Particularly suitable for air-conditioning technological applications, server and CED rooms and all technological applications in general.

STANDARD CONFIGURATION

- Indoor unit and outdoor air-cooled condenser
- Maximum resistance to rust thanks to galvanized sheet metal structures and panels with powder-coated painting The panels adopt sound-insulating material.
- Reliable compressors and other key components from world leading brand such as Copeland compressor.
- Double-inlet centrifugal fan units directly coupled and suspended on vibration-isolation mountings.
  The fans are of the forward-bladed type for maximum efficiency and low noise.
- Electrical box under IEC 204-1/EN60204-1 rules
- Standard G4 filter, F5~F8 optional; in accordance with CEN-EN 779; 90.1% filter efficiency, conforming ASHRAE standard.
- The microprocessor controls the compressor activation times with FIFO logic, thereby regulating the cooling capacity; it also controls the operating alarms with the possibility of interfacing to supervisor and remote-servicing systems.
- Other standard components: thermal expansion valve, high/low pressure safety switch, sight glass, dry filter, etc.

Direct Expansion Air Cooled(DXA)

Model		SAU/0/F					SAU/O				DAU/O							
		008	013	017	020	025	030	035	040	045	035	045	050	060	070	080	090	100
Power supply	V/Ph/Hz	380/3N/50																
The refrigerant		R410A																
Cooling performances																		
Total cooling capacity (1)	kW	7.5	12.5	15.5	18.5	25.0	30.2	35.6	40.9	45.9	35.3	46.7	50.6	61.5	70.8	80.5	90.5	100.0
Sensible cooling capacity (1)	kW	6.8	11.3	14.0	16.7	22.5	29.4	32.6	40.7	43.2	35.2	46.7	47.5	60.5	68.4	74.7	87.4	96.4
Sensible heat ratioSHR(1)		0.90	0.90	0.90	0.90	0.90	0.97	0.92	0.99	0.94	0.99	1.00	0.94	0.98	0.97	0.93	0.97	0.96
Compressor																		
Number of compressors		1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2
Compressor power input (1)	KW	1.79	3.35	4.09	4.88	6.44	6.45	6.74	8.74	9.72	7.69	10.60	11.40	13.00	14.90	16.80	19.50	23.10
Fan																		
Air volume	m^3/h	3000	3000	4800	5000	5750	8800	9700	13000	16000	11550	15200	16000	21300	22500	23500	28500	29000
Number of EC fans		1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	3	3
EC fan power	kW	0.32	0.32	0.55	0.63	0.82	1.90	2.33	2.33	4.11	1.65	3.58	4.05	4.23	4.75	5.49	7.47	7.64
External static pressure	Pa	20~350																
Noise (2)		52	53	56	56	56	60	62	55	60	52	59	60	57	58	59	65	66
Humidifier																		
Humidification amount	kg/h	3	3	5	5	5	5	5	5	5	5	5	5	8	8	8	8	8
Humidifier power	kW	2.25	2.25	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75	6	6	6	6	6
Electric heating																		
Series		3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Heater power	kW	7.5	7.5	7.5	7.5	7.5	9	9	15	15	15	15	15	18	18	18	18	18
The outdoor unit																		
Outdoor unit model		C17	C24	C24	C29	C33	C42	C49	C58	C58	C24*2	C33*2	C33*2	C42*2	C49*2	C58*2	C58*2	C74*2
Outdoor unit power	kW	0.23	0.59	0.59	0.59	0.46	1.18	1.18	1.18	1.18	1.18	0.92	0.92	2.36	2.36	2.36	2.36	3.54
Whole machine																		
Total power	kW	2.3	4.3	5.2	6.1	7.7	9.5	10.3	12.3	15.0	10.5	15.1	16.4	19.6	22.0	24.7	29.3	34.3
Energy efficiency rating		1	1	1	1	2	1	1	1	2	1	2	2	2	1	1	2	1

NOTE

(1)- Working conditions: return air 24°C, relative humidity 50%, external residual pressure 20Pa

(2)- Measured at 2 meters in front of the unit, 1.5 meters high

(3)- The electric heating capacity and humidification capacity in the table are standard configuration. If the customer needs to increase the heating or humidification capacity of the unit, please consult the Climaveneta factory

(4)- The unit design meets GB19413

(5)- If the project requires units with other energy efficiency levels, please consult the factory

DIMENSION/WEIGHT

Direct Expansion Air Cooled(DXA)

Mode		SAU/O									DAU/O							
		008	013	017	020	025	030	035	040	045	035	045	050	060	070	080	090	100
Width	mm	600		800			1000				1490			1990			2490	
Depth	mm	550		700			790				890			890			890	
Height	mm	1980		1980			1980				1980			1980			1980	
Net Weight	kg	130	145	210	215	225	367	385	459	479	477	499	501	697	737	757	888	918

Type: DIRECT EXPANSION, WATER COOLED,
upflow or downflow version

Available Versions

Evolution

UNIT DESCRIPTION

Cooling capacity range: 8~104kW
Particularly suitable for air-conditioning technological applications, server and CED rooms and all technological applications in general.

STANDARD CONFIGURATION

- Indoor unit(the customer can choose outdoor dry cooler from CLIMAVENETA or provide cooling tower by themselves)
- Maximum resistance to rust thanks to galvanized sheet metal structures and panels with powder-coated painting The panels adopt sound-insulating material.
- Reliable compressors and other key components from world leading brand such as Copeland compressor.
- Double-inlet centrifugal fan units directly coupled and suspended on vibration-isolation mountings.
  The fans are of the forward-bladed type for maximum efficiency and low noise.
- Standard G4 filter, F5~F8 optional; in accordance with CEN-EN 779; 90.1% filter efficiency, conforming ASHRAE standard.
- The microprocessor controls the compressor activation times with FIFO logic, thereby regulating the cooling capacity; it also controls the operating alarms with the possibility of interfacing to supervisor and remote-servicing systems.
- Electrical box under IEC 204-1/EN60204-1 rules
- Other standard components: thermal expansion valve, high/low pressure safety switch, sight glass, dry filter, etc.

Direct Expansion Water Cooled Unit (DXW)

Model		SWU/O					DWU/O							
		025	030	035	040	045	035	045	050	060	070	080	090	100
Power supply	V/Ph/Hz	380/3N/50												
The refrigerant		R410A												
Cooling performances														
Total cooling capacity (1)	kW	25.0	30.5	35.1	41.9	46.2	36.4	48.0	50.8	63.5	71.7	80.2	92.2	101.0
Sensible cooling capacity (1)	kW	22.5	30.0	33.5	41.5	45.5	36.0	47.6	49.5	62.0	70.5	78.0	90.5	98.7
Sensible heat ratioSHR(1)		0.90	0.98	0.95	0.99	0.98	0.99	0.99	0.97	0.98	0.98	0.97	0.98	0.98
Compressor														
Number of compressors		1	1	1	1	1	2	2	2	2	2	2	2	2
Compressor power input (1)	KW	5.17	6.01	6.30	8.25	8.88	7.17	9.88	10.50	12.00	13.90	15.90	17.90	21.90
Plate condenser														
Number of board changes		1	1	1	1	1	2	2	2	2	2	2	2	2
Water flow	l/h	5144	6279	7120	8525	9431	7508	9912	10549	12984	14721	16526	18934	21135
Total pressure drop	kPa	23	30	27	27	30	24	21	21	33	30	26	31	39
Fan														
Air volume	m^3/h	5750	8400	9180	13000	15200	11550	15200	15400	21300	22000	23000	27000	28000
Number of EC fans		1	1	1	2	2	2	2	2	2	2	2	3	3
EC fan power	kW	1.25	1.67	2.00	2.33	3.58	1.65	3.58	3.65	4.23	4.47	5.18	6.42	6.93
External static pressure	Pa	20~350												
Noise (2)		56	58	61	55	59	52	59	59	57	58	59	64	65
Humidifier														
Humidification amount	kg/h	5	5	5	5	5	5	5	5	8	8	8	8	8
Humidifier power	kW	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75	6	6	6	6	6
Electric heating														
Series		3	3	3	3	3	3	3	3	3	3	3	3	3
Heater power	kW	6	9	9	15	15	15	15	15	18	18	18	18	18
Specifications of cooling water inlet and outlet pipes reserved for the unit														
Interface Specifications		F1''1/4												F2''
Whole machine														
Total power	kW	7.2	8.6	9.4	11.8	13.8	9.9	14.9	15.7	18.1	20.5	23.5	27.1	31.9
Energy efficiency rating		3	1	1	2	3	1	3	3	1	1	2	2	3

NOTE

(1)- Working conditions: return air 24°C, relative humidity 50%, cooling water inlet and outlet temperature 30/35°C, external residual pressure 20Pa

(2)- Measured at 2 meters in front of the unit, 1.5 meters high

(3)- The electric heating capacity and humidification capacity in the table are standard configuration. If the customer needs to increase the heating or humidification capacity of the unit, please consult the Clement factory

(4)- The unit design meets GB19413

(5)-If the project requires units with other energy efficiency levels, please consult the factory

DIMENSION/WEIGHT

Direct Expansion Water Cooled Unit

Model		SWU/O/F	SWU/O				DWU/O							
		025	030	035	040	045	035	045	050	060	070	080	090	100
Width	mm	1000			1490					1990			2490	
Depth	mm	790			890					890			890	
Height	mm	1980			1980					1980			1980	
Net Weight	kg	240	382	402	478	498	501	529	531	731	771	796	926	962

Type：SINGLE COIL CHILLED WATER
up flow or downflow version

Available Versions

STD Cooling only,
with 3-way valve

UNIT DESCRIPTION

Cooling capacity range: 9~220kW

STANDARD CONFIGURATION

- Maximum resistance to rust thanks to galvanized sheet metal structures and panels with powder-coated painting The panels adopt sound-insulating material.
- Reliable key components from world leading brand such as 2-way or 3-way valve from Johnson, controller from Carel.
- High efficient EC fan
- Standard G4 filter, F5~F8 optional; in accordance with CEN-EN 779; 90.1% filter efficiency, conforming ASHRAE standard.
- Electrical box under IEC 204-1/EN60204-1 rules

Single Coil Chilled Water Unit

Model	SCU/O(EX)																		
	009	011	016	020	025	030	035	050	060	070	080	090	100	120	140	160	180	200	220
Power supply V/Ph/Hz	380/3N/50																		
Cooling performances(CONDITION (1)																			
Total cooling capacity(1) kW	8.8	10.8	16.2	21.9	25.8	31.3	36.0	53.6	65.0	76.5	86.9	99.2	110.0	119.0	140.0	160.0	173.0	200.0	206.0
Sensible cooling capacity(1) kW	8.8	10.8	16.2	21.9	25.8	31.3	36.0	53.6	65.0	76.5	86.9	99.2	110.0	119.0	140.0	160.0	173.0	200.0	206.0
SHR(1)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Water side (CONDITION(1)																			
Water Flow(1) m^3/h	1.3	1.6	2.3	3.1	3.7	4.5	5.2	7.7	9.3	11.0	12.5	14.3	15.8	17.1	20.2	22.9	24.8	28.7	29.6
Total pressure drops(1) kPa	20.61	23.53	22.15	45.79	29.30	43.60	50.80	85.40	77.30	76.80	68.80	71.80	86.50	80.00	79.30	66.60	63.80	67.90	74.00
Cooling performances(CONDITION 2)																			
Total cooling capacity(2) kW	8.9	11.1	16.5	21.8	24.0	30.0	35.2	50.2	64.0	74.0	84.1	96.0	105.0	116.0	140.0	158.0	176.0	198.0	212.0
Sensible cooling capacity(2) kW	8.9	10.6	16.5	20.6	21.2	26.2	30.4	43.9	54.1	64.6	72.8	83.1	92.4	98.2	116.0	132.0	142.0	164.0	170.0
SHR(2)	1.00	0.95	1.00	0.94	0.88	0.87	0.86	0.87	0.85	0.87	0.87	0.87	0.88	0.85	0.83	0.84	0.81	0.83	0.80
Water side(CONDITION(2)																			
Water flow(2) m^3/h	1.5	1.9	2.8	3.7	4.1	5.2	6.1	8.6	11.0	12.7	14.5	16.5	18.1	20.1	24.0	27.1	30.2	34.1	36.4
Total pressure drops(2) kPa	30.0	34.7	32.6	64.3	37.5	56.7	69.0	105.0	105.0	100.0	90.3	94.7	112.0	108.0	110.0	91.0	92.8	93.0	108.0
Fan																			
Air flow	2750	2890	5390	5580	6000	7000	7600	13000	13000	16000	18000	20550	23500	23600	27000	31000	32500	38000	38000
N° EC fans	1	1	2	2	1	1	1	1	1	2	2	2	2	2	2	3	3	3	3
Up/down flow EC fan power input kW	0.34	0.41	0.64	0.74	0.90	1.33	1.89	1.80	1.90	2.98	4.20	3.37	4.20	4.40	4.40	6.30	7.16	7.49	7.49
Under floor EC fan power input kW	/	/	/	/	0.77	1.10	1.55	1.47	1.56	2.58	3.67	2.92	3.30	3.53	3.71	5.25	6.04	6.20	6.23
ESP Pa	20~350																		
Humidifier																			
Humidifying capacity kg/h	3	3	5	5	5	5	5	8	8	8	8	8	8	8	10	10	10	10	10
Power input kW	2.25	2.25	3.75	3.75	3.75	3.75	3.75	6	6	6	6	6	6	6	7.5	7.5	7.5	7.5	7.5
Heaters																			
Steps	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Capacity kW	4	4	8	8	9	9	9	18	18	18	18	18	18	18	18	18	18	27	27
Water inlet/outlet connection																			
Connection size	F3/4"		F1"		F1"1/4			DN40	DN40	DN50	DN50	DN50	DN50	DN50	DN65	DN65	DN65	DN65	DN65

NOTE

(1) CONDITION 1

Return air:32℃,RH:30%, the temperature IN/OUT chilled water :12℃/18℃,ESP:20Pa

CONDITION 2

Return air:24℃,RH:50%, the temperature IN/OUT chilled water :7℃/12℃,ESP:20Pa

(2) Measured at 1.5m height and 2m front free field

(3) The humidifying capacity and heating capacity showed in the table is standard data, and we can enlarge the capacity in response to the customer requirement.

DIMENSION/WEIGHT

Chilled Water Unit

Model	SCU/O(EX)																		
	009	011	016	020	025	030	035	050	060	070	080	090	100	120	140	160	180	200	220
Width mm	600		1000		800			1490				1990			2490			2990	
Depth mm	500		500		700			890				890			890			890	
Height mm	1980		1980		1980			1980				1980			1980			1980	
Net Weight kg	120	130	200	210	245	260	290	369	379	385	396	476	495	516	610	650	680	720	760

Type: Dual coil chilled water
up flow, down flow or under floor air flow

Available Versions

STD Cooling only, with 3-way valve

UNIT DESCRIPTION

Cooling capacity: 35~150kW
Suitable for IDC and server room with cooling redundancy requirements

STANDARD CONFIGURATION

- Maximum resistance to rust thanks to galvanized sheet metal structures and panels with powder-coated painting The panels adopt sound-insulating material.
- Reliable key components from world leading brand such as 2-way or 3-way valve from BELIMO or SIMENS, controller from Carel.
- High efficient EC fan
- Standard G4 filter, F5~F8 optional; in accordance with CEN-EN 779; 90.1% filter efficiency, conforming ASHRAE standard.
- Electrical box under IEC 204-1/EN60204-1 rules

Dual Coil Chilled Water Unit

Model		SCU/O-B2										
		030	035	045	050	070	080	090	100	125	130	150
Power supply	V/Ph/Hz	380/3N/50										
Cooling performance												
Total cooling capacity(1)	kW	31.1	36.3	45.5	52.6	71.2	82.3	89.6	103	125	131	148
Sensible cooling capacity(1)	kW	27.3	30.7	38.3	42.7	61.1	68	75.9	84.1	112	128	137
SHR		0.88	0.85	0.84	0.81	0.86	0.83	0.85	0.82	0.90	0.98	0.93
Water side												
Water flow(1)	l/h	5364	6264	7848	9072	12240	14184	15408	17748	21456	22608	25524
Total pressure drop(1)	kPa	74.3	69.2	92.9	71.8	119	116	151	122	81.6	54.6	55.6
Fan												
Air flow	m^3/h	10000	10000	12500	12500	21000	21000	25000	25000	30000	36000	36000
N° EC fans		1	1	1	1	2	2	2	2	2	3	3
EC fans power input	kW	1.66	1.76	1.96	2.04	3.58	3.76	3.82	3.97	5.63	7.15	7.68
ESP	Pa	20～350										
Sound pressure level (2)	dB(A)	59	59	62	62	64	65	67	68	65	69	69
Humidifier												
Humidifying capacity	kg/h	5	5	5	5	8	8	8	8	8	15	15
Power input	kW	3.75	3.75	3.75	3.75	6	6	6	6	6	11.25	11.25
Heaters												
Steps		3	3	3	3	3	3	3	3	3	3	3
Capacity	kW	9	9	15	15	18	18	18	18	18	24	24

Note:

(1) return air:24℃, relative humidity:50%, chilled water inlet/outlet temp. 7/12℃, ESP 20 Pa;

(2) Measured at 1.5m height and 2m front free field;

(3) The humidifying capacity and heating capacity showed in the table is standard data, and we can enlarge the capacity in response to the customer requirement.

Chilled Water Unit

Model		SCU/O-B2										
		030	035	045	050	070	080	090	100	125	130	150
Width	mm	1000	1000	1550	1550	2100	2100	2650	2650	2650	3200	3200
Depth	mm	890	890	890	890	890	890	890	890	890	890	890
Height	mm	2180	2180	2180	2180	2180	2180	2180	2180	2180	2180	2180
Net Weight	kg	419	434	596	611	750	765	895	910	915	944	954

Dual Coil Chilled Water Unit

Model		SCU-B2EX									
		035	045	050	058	060	085	100	120	140	155
Power supply	V/Ph/Hz	380/3N/50									
Cooling performance											
Total cooling capacity(1)	kW	36.6	45	47.6	57.3	58.4	86.5	101.9	117.1	139.7	153.2
Sensible cooling capacity(1)	kW	32.3	37.7	42.1	45.6	53.4	73.8	83.2	101.5	115.7	127.9
SHR		0.88	0.84	0.88	0.80	0.91	0.85	0.82	0.87	0.83	0.83
Water side											
Water flow(1)	l/h	6280	7710	8170	9830	10030	14870	17480	20090	23970	26290
Total pressure drop(1)	kPa	83	114	66	70	97	94	89	75	116	73
Fan											
Air flow	m^3/h	12000	12000	14000	13000	19000	25000	25000	36000	36000	40000
N° EC fans		1	1	1	1	2	2	2	3	3	3
EC fans power input	kW	1.91	2.04	2.05	1.81	3.00	3.56	3.76	5.52	5.74	6.41
ESP	Pa	20～350									
Sound pressure level (2)	dB(A)	61	61	64	64	64	66	66	67	66	70
Humidifier											
Humidifying capacity	kg/h	5	5	5	5	5	8	8	10	10	15
Power input	kW	3.75	3.75	3.75	3.75	3.75	6	6	7.5	7.5	11.25
Heaters											
Steps		3	3	3	3	3	3	3	3	3	3
Water inlet/outlet connection											
Connection size		F1"1/4	F1"1/2		DN50				DN65		

Note:

(1) return air:24℃, relative humidity:50%, chilled water inlet/outlet temp. 7/12℃, ESP 20 Pa;

(2) Measured at 1.5m height and 2m front free field;

(3) The humidifying capacity and heating capacity showed in the table is standard data, and we can enlarge the capacity in response to the customer requirement.

Chilled Water Unit

Model		SCU-B2EX									
		035	045	050	058	060	085	100	120	140	155
Width	mm	1000	1000	1550	1550	1550	2100	2100	2650	2650	3200
Depth	mm	990	990	990	990	990	990	990	990	990	990
Height	mm	1980	1980	1980	1980	1980	1980	1980	1980	1980	1980
Net Weight	kg	486	501	717	717	717	931	946	1154	1169	1264

Type: DUAL FLUID, AIR COOLED,
DUAL FLUID, WATER COOLED
upflow or downflow version

Available Versions

STD	Cooling only without condensation control device
MOD	Cooling only with condensation control device through external unit fans regulation

UNIT DESCRIPTION

Cooling capacity per direct expansion air cooled unit is from 24 to 100kW. Dual fluid unit has two different types dual fluid air cooled and dual fluid water cooled. EC fan is used in dual fluid unit with highest efficiency. Unit will be always running under chilled water mode but it will also automatically change to direct expansion mode while failure of chilled water system happens. So dual fluid unit is the most reliable cooling solution to choose for all the customers.

STANDARD CONFIGURATION

- Maximum resistance to rust thanks to galvanized sheet metal structures and panels with powder-coated painting The panels adopt sound-insulating material.
- Reliable compressors and other key components from world leading brand such as Copeland compressor, 2-way or 3-way valve from BELIMO or SIMENS, etc.
- High efficient EC fan
- Standard G4 filter, F5~F8 optional; in accordance with CEN-EN 779; 90.1% filter efficiency, conforming ASHRAE standard.
- The microprocessor controls the compressor activation times with FIFO logic, thereby regulating the cooling capacity; it also controls the operating alarms with the possibility of interfacing to supervisor and remote-servicing systems.
- Electrical box under IEC 204-1/EN60204-1 rules
- Other standard components: thermal expansion valve, high/low pressure safety switch, sight glass, dry filter, etc.

Air Cooled Dual Fluid

Model		SAU/O-D				DAU/O-D						
		025	030	035	045	035	050	055	060	080	090	100
Power supply	V/Ph/Hz	380/3N/50										
Refrigerant		R410A										
Cooling performances												
Direct expansion total cooling capacity (1)	kW	24.15	29.98	33.55	43	37.32	48.33	55.84	63.21	76.77	88	100.33
Direct expansion sensible cooling capacity (1)	kW	23.17	29.28	33.04	40.35	37.08	48.12	54.15	61.49	74.79	87.72	97.41
Direct expansion SHR (1)		0.96	0.98	0.98	0.94	0.99	0.99	0.97	0.97	0.97	0.99	0.97
Chilled water total cooling capacity (2)	kW	25.46	30.09	33.56	53.55	42.85	53.55	55.03	69.34	72.02	97.47	99.35
Chilled water sensible cooling capacity (2)	kW	24.06	29.16	32.81	51.2	40.82	51.2	52.86	67.95	71.12	93.89	96.04
Chilled water SHR (2)		0.95	0.97	0.98	0.93	0.95	0.96	0.96	0.98	0.99	0.96	0.97
Compressors												
Quantity		1	1	1	1	2	2	2	2	2	2	2
Power input(1)	kW	4.93	6.01	6.75	7.87	7.15	9.87	11.70	12.02	15.40	17.68	21.38
Fan												
Air flow	m^3/h	6600	8250	8800	14300	11000	14300	14850	19800	20900	26400	27120
N° EC fans		1	1	1	2	2	2	2	3	3	3	3
EC fan power input	kW	0.89	1.60	1.80	3.40	2.09	3.40	3.65	4.50	5.20	6.1	6.1
Sound pressure level (3)	dB(A)	56	60	60	64	59	64	64	67	67	67	67
Humidifier												
Humidifying capacity	kg/h	5	5	5	5	5	5	5	8	8	8	8
EC fan power input	kW	3.75	3.75	3.75	3.75	3.75	3.75	3.75	6	6	6	6
Heaters												
Steps		3	3	3	3	3	3	3	3	3	3	3
Capacity	kW	9	9	9	15	15	15	15	18	18	18	18

NOTE

(1) DXA operating condition: return air:24°C, relative humidity: 50%, outdoor temperature: 35°C;

(2)CW operating condition: return air:24°C, relative humidity: 50%, chilled water inlet/outlet temp. 7/12℃;

(3)Measured at 1.5m height and 2m front free field;

(4)The humidifying capacity and heating capacity showed in the table is standard data, and we can enlarge the capacity in response to the customer requirement.

DIMENSION/WEIGHT

Air Cooled Dual Fluid

Model		SAU/O-D				DAU/O-D						
		025	030	035	045	035	050	055	060	080	090	100
Width	mm	1000	1000	1000	1550	1550	1550	1550	2100	2100	2650	2650
Depth	mm	790	790	790	790	790	790	790	790	790	790	790
Height	mm	1980	1980	1980	1980	1980	1980	1980	1980	1980	1980	1980
Net Weight	kg	312	359	377	516	428	511	536	774	794	993	1023

Water Cooled Dual Fluid

Model		SWU/O-D				DWU/O-D						
		025	030	035	045	035	050	055	070	080	090	100
Power supply	V/Ph/Hz	380/3N/50										
Refrigerant		R410A										
Cooling performances												
Direct expansion water cooled total cooling capacity (1)	kW	25.21	31.1	33.69	47.98	38.78	50.96	55.19	71.57	77.58	93.31	102.9
Direct expansion water cooled sensible cooling capacity (1)	kW	23.99	30.05	32.72	47.55	38.57	50.25	53.64	70.33	75.16	92.78	99.75
Direct expansion SHR (1)		0.93	0.97	0.97	0.99	0.99	0.99	0.97	0.98	0.97	0.99	0.97
Chilled water total cooling capacity (2)	kW	25.46	30.09	33.56	53.55	42.85	53.55	55.03	69.34	72.02	97.47	99.35
Chilled water sensible cooling capacity (2)	kW	24.06	29.16	32.51	51.2	40.82	51.2	52.86	67.95	71.12	93.89	96.04
Chilled water SHR(2)		0.95	0.97	0.97	0.96	0.95	0.96	0.96	0.98	0.99	0.96	0.97
Compressors												
Quantity		1	1	1	1	2	2	2	2	2	2	2
Power input(1)	kW	4.30	5.40	6.11	6.94	6.44	8.61	10.55	12.28	13.30	16.03	19.33
Plate condenser												
Quantity		1	1	1	1	2	2	2	2	2	1	1
Water Flow(1)	l/h	4900	6330	7002	8430	7380	9810	11954	14360	16132	18120	20830
Water pressure drop in DX mode	kPa	24	32	28	31	27	21	32	30	28	33	41
Total pressure drops	kPa	26	35	35	46	30	46	46	26	26	53	53
Fan												
Air flow	m^3/h	6600	8250	8800	14300	11000	14300	14850	19800	20900	26400	27120
N° EC fans		1	1	1	2	2	2	2	3	3	3	3
EC fan power input	kW	0.89	1.60	1.80	3.40	2.09	3.40	3.65	4.50	5.20	6.1	6.1
ESP	Pa	20-350										
Sound pressure level (3)	dB(A)	56	60	60	64	59	64	64	67	67	67	67
Humidifier												
Humidifying capacity	kg/h	5	5	5	5	5	5	5	8	8	8	8
Power input	kW	3.75	3.75	3.75	3.75	3.75	3.75	3.75	6	6	6	6
Heaters												
Steps		3	3	3	3	3	3	3	3	3	3	3
Capacity	kW	9	9	9	15	15	15	15	18	18	18	18

NOTE

(1)DXW operating condition: return air:24°C, relative humidity: 50%, cooling water inlet/outlet: 30/35°C;

(2)CW operating condition: return air: 24°C, relative humidity: 50%, chilled water inlet/outlet temp. 7/12℃;

(3)Measured at 1.5m height and 2m front free field;

(4)The humidifying capacity and heating capacity showed in the table is standard data, and we can enlarge the capacity in response to the customer requirement.

DIMENSION/WEIGHT

Water Cooled Dual Fluid

Model		SWU/O-D				DWU/O-D						
		025	030	035	045	035	050	055	070	080	090	100
Width	mm	1000	1000	1000	1550	1550	1550	1550	2100	2100	2650	2650
Depth	mm	790	790	790	790	790	790	790	790	790	790	790
Height	mm	1980	1980	1980	1980	1980	1980	1980	1980	1980	1980	1980
Net Weight	kg	348	399	417	556	468	511	576	811	831	981	1061

Type:FREECOOLING, WATER COOLED,
upflow or downflow version

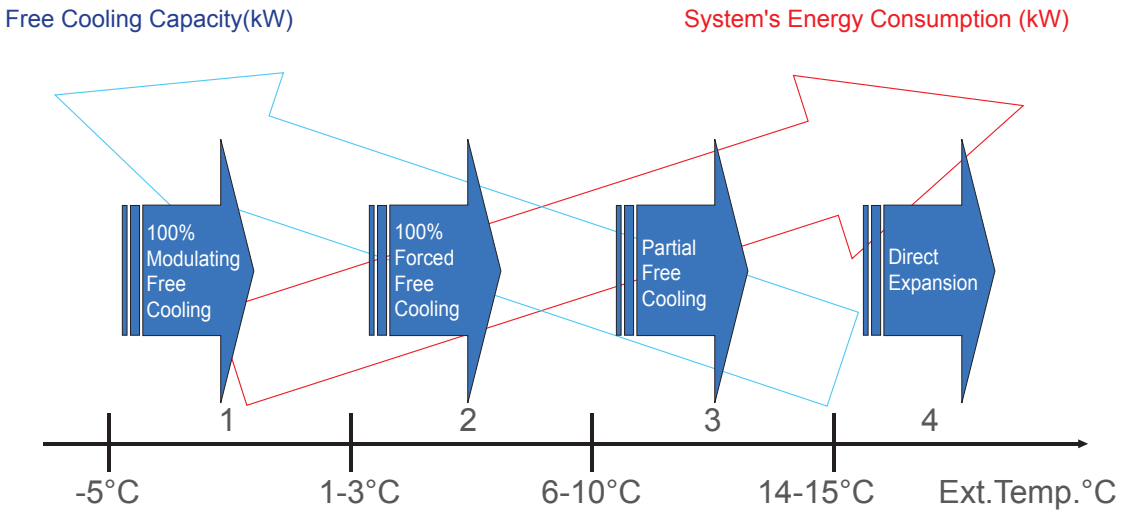
Available Versions

STD Cooling with 3-way valve

UNIT DESCRIPTION

Cooling capacity per free cooling unit is from 25 to 102kW. Free cooling units fit out EC fans normally.Free cooling unit consists of two coils direct expansion water cooled coil and free cooling coil. Unit can automatically switch working mode according to real outdoor temperature.

FREE COOLING CAPACITY



Direct Expansion Water Cooling

Model		SWU/O-F				DWU/O-F						
		025	030	035	045	035	050	055	070	080	090	100
Power supply	V/Ph/Hz	380/3N/50										
Refrigerant		R410A										
Cooling performances												
Direct expansion mode total cooling capacity(1)	kW	25.21	31.1	33.69	47.88	38.78	50.96	55.19	71.57	77.58	93.31	102.9
Direct expansion mode sensible cooling capacity(1)	kW	23.55	30.05	32.72	47.55	38.57	50.25	53.64	70.33	75.16	92.78	99.75
Direct expansion SHR(1)		0.93	0.97	0.97	0.99	0.99	0.99	0.97	0.98	0.97	0.99	0.97
Freecooling mode total cooling capacity(1)	kW	24.9	30.6	32.3	47.3	38.1	50	54.5	70.3	76.7	91.8	102
Freecooling mode sensible cooling capacity(1)	kW	22.9	28.1	30	45.1	36.4	46.8	50.2	65.5	70	86.3	92.5
Freecooling mode SHR(1)		0.92	0.92	0.93	0.96	0.95	0.94	0.92	0.93	0.91	0.94	0.91
Compressors												
Quantity		1	1	1	1	2	2	2	2	2	2	2
Power input(1)	kW	4.40	5.40	6.11	8.00	6.44	8.41	10.96	12.28	13.30	16.03	19.33
Plate condenser												
Quantity		1	1	1	1	2	2	2	2	2	1	1
Water Flow(1)	l/h	4900	6330	7002	8430	7380	9610	12313	14360	16133	18120	20830
Water pressure drop in DX mode	kPa	47	70	46	66	49	58	57	65	70	55	68
Freecooling mode water pressure drop	kPa	60	97	69	89	64	84	95	85	91	80	99
Fan												
Air flow	m^3/h	6600	8250	8800	14300	11000	14300	14850	19800	20900	26400	27120
N° fans		1	1	1	2	2	2	2	3	3	3	3
Power input	kW	0.89	1.60	1.80	3.40	2.09	3.40	3.65	4.50	5.20	6.1	6.1
ESP	Pa	20-350										
Sound pressure level(2)	dB(A)	56	60	60	64	59	64	64	67	67	67	67
Humidifier												
Humidifying capacity	kg/h	5	5	5	5	5	5	5	8	8	8	8
Power input	kW	3.75	3.75	3.75	3.75	3.75	3.75	3.75	6	6	6	6
Heaters												
Steps		3	3	3	3	3	3	3	3	3	3	3
Power input	kW	9	9	9	9	9	9	9	18	18	18	18

NOTE

(1) Return air:24°C,relative humidity: 50%; freecooling water in temperature: 7°C; cooling water in/out temperature:30/35°C, ESP:20Pa

(2) Measured at 1.5m height and 2m front free field

(3) The humidifying capacity and heating capacity showed in the table is standard data, and we can enlarge the capacity in response to the customer requirement.

DIMENSION/WEIGHT

Direct Expansion Water Cooling		SWU/O-F				DWU/O-F						
		025	030	035	045	035	050	055	070	080	090	100
Width	mm	1000	1000	1000	1550	1550	1550	1550	2100	2100	2650	2650
Depth	mm	790	790	790	790	790	790	790	790	790	790	790
Height	mm	1980	1980	1980	1980	1980	1980	1980	1980	1980	1980	1980
Net Weight	kg	362	413	433	489	577	580	605	846	871	993	1123

Chat Union Climaveneta Trading (Shanghai) Co., Ltd
No.328 Minle Road, Sparke Development Zone, Shanghai, China
Tel: +86 021 3757 0088
Fax: +86 021 3757 0068

COOLBLADE

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