MAGISTER

Precision air handling cabinet

Wide range of chilled water systems

Compact and attractive design

Energy savings with EC motor

and self-adjusting control

Easy installation

Cooling capacity: 10 to 116 kW

Air flow rate: 3000 to 27,500 m^3/h

USE

Close control unit specifically adapted to meet the needs of rooms with a high heat load or sensitive locations (data centres, computer rooms, autocom rooms, etc.).

The choice of technology used (self-adjusting control which adapts to the room loads, electronically commutated EC motor) can reduce the energy consumption. Thanks to its skilful design, the **MAGISTER** integrates seamlessly into its intended location.

CHILLED WATER OPERATION

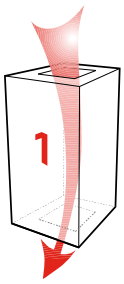
■ Magister CW - Chilled water

Air handling cabinet supplied with chilled water.

The fan also has a ModBus card which allows faults and settings such as the actual power input, current, rotation speed, etc. to be transmitted.

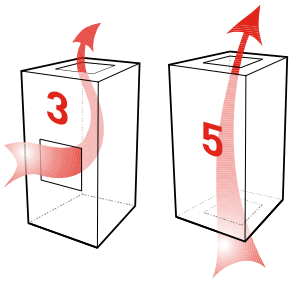
Fitting UNDER

Air supply via raised floor



Fitting OVER

Return air on front panel
(except CW 115)



Return air below
(except CW 115)

QUICK SELECTION

CW range - Chilled water

Units	CW40	CW53	CW78	CW100	CW115
Air flow rate (m^3/h)	10 000	13 300	18 800	24 500	27 000
* Maximum operating pressure with G4 filtration /COARSE 65%	400	230	400	344	400
* Maximum operating pressure with F7 filtration /ePM1: 55%	400	141	400	261	400
Total/sensible cooling capacity (kW)	41.9 / 40	57.4/ 54	80.7 / 76	107 / 100	123 /113
Water flow rate (m^3/h)	7,2	9,8	14	18	21
Pressure drop (mWC) (Coil + valve)	6,4	9,6	8,1	7,1	10

Conditions: return air 24 °C 45% (RH)
Water temperature 7/12 °C

Units	CW40	CW53	CW78	CW100	CW115
Air flow rate (m^3/h)	13 300	13 300	20 500	27 000	27 500
* Maximum operating pressure with G4 filtration / COARSE 65%	175	237	400	124	400
* Maximum operating pressure with F7 filtration / ePM1: 55%	66	148	400	30	395
Total/sensible cooling capacity (kW)	46 / 46	51/ 51	78 / 78	100 / 100	124 / 124
Water flow rate (m^3/h)	7,9	8,8	13	17	21
Pressure drop (mWC) (Coil + valve)	7,5	7,7	7,5	6,2	10

Conditions: return air 26 °C 40% (RH)
Water temperature 10/15 °C

Units	CW40	CW53	CW78	CW100	CW115
Air flow rate (m^3/h)	13 300	13 300	20 500	27 000	27 500
* Maximum operating pressure with G4 filtration /COARSE 65%	174	236	400	123	400
* Maximum operating pressure with F7 filtration /ePM1: 55%	67	145	400	30	384
Total/sensible cooling capacity (kW)	56 / 56	60/ 60	94 / 94	132 / 132	124 /124
Water flow rate (m^3/h)	9,6	10	16	23	21
Pressure drop (mWC) (Coil + valve)	10	10	10	10	10

Conditions: return air 32 °C 35% (RH)
Water temperature 12/17 °C

* Maximum operating pressure dependent on air flow rate. If there is a heating coil present, see "heating coil" table.
The operation point can be adjusted directly via the controller. Hence all the air flow/operating pressure combinations are possible, with the values in the table above as the maximum values.

OPTIONS (AVAILABLE CAPACITIES)

Electric heaters

Units	CW			
	CW 40	CW 53	CW 78	CW 100/CW 115
Power (kW)	12	18	24	33,6
Total current (A)	17,3	26	34,7	48,6

Hot water support coil

Units	CW40		CW53	CW78		CW100	
Air flow rate (m^3/h)	10 000	13 300	13 300	18 800	20 500	24 500	26 000
* Maximum operating pressure with G4 filtration /COARSE 65%	400	135	200	400	400	295	170
* Maximum operating pressure with F7 filtration /ePM1: 55%	400	25	115	400	380	216	80
Heating capacity (kW)	36	40	44	63	66	71	73
Water flow rate (m^3/h)	1,5	1,7	1,9	2,7	2,8	3,1	3,1
Pressure drop (mWC) (Coil + valve)	2,2	2,6	2,8	5,3	5,8	6,6	6,9

Conditions: return air 17 °C 35% (RH)
Water temperature 80/60 °C
* Maximum operating pressure dependent on air flow rate.
The operation point can be adjusted directly via the controller. Hence all the air flow/operating pressure combinations are possible, with the values in the table above as the maximum values.

Humidifier

Model	CW 40 to CW115
Steam flow rate (kg/h)	8
Electrical power (kW)	6
Current (A)	8,7

Ventilation

Units	CW									
	CW 40		CW 53		CW 78		CW 100		CW115	
Air flow rate (m^3/h)	Nominal	Maximum	Nominal	Maximum	Nominal	Maximum	Nominal	Maximum	Nominal	Maximum
	10 000	13 300	13 300	13 300	18 800	20 500	24 500	27 000	27 000	27 500
* Maximum operating pressure with G4 filtration (COARSE 65% according to ISO16890)	400	171	229	229	400	400	343	157	400	400
* Maximum operating pressure with F7 filtration (COARSE ePM1 60% according to ISO16890)	400	60	140	140	400	400	261	68	400	385

DESCRIPTION

Casing

Dual-wall construction (with M0/A1 fire rating).

RAL 7035 and 7024 grey precoated removable panel.
- 0.8 mm painted precoated exterior panel.
- Mineral wool, 25 mm thick.
- 0.8 mm galvanised interior panel.

Filtration

Filter cells COARSE 65% efficiency according to ISO16890 (G4 efficiency according to EN 779-2012) or filter efficiency ePM1 60% according to ISO16890
(F7 efficiency according to EN 779-2012)

Filter cells kept compressed against the counter frame with the gasket directly on the filter cells.

Filter fouling value monitored by analogue sensor and displayed by the controller.

Cooling coil cross-section

Copper tubes, aluminium fins.

Stainless condensate drain pan.

Stainless coil flanges (option).

2-way or 3-way control valve fitted and connected.

Ventilation cross-section

Centrifugal plug fan, associated with an electronically commutated (EC motor).

EC motor: fan adaptation via manual adjustment or "self-regulating" adjustment by the controller, depending on the room load - system air control.

The fan* also has a ModBus card which allows faults and settings such as the actual power input, current, rotation speed, etc. to be transmitted * except CW115.

Electrics box

Power, command and control electrics box consisting of:
- Three-phase 400 V power supply + Earth.
- Main disconnect switch.
- Three-phase 400 V 50 Hz transformer with protection.
- Protection and control of all electrical components by a circuit breaker and contact switch.
- CIAT µAIR CONNECT2 control systems using PLC.
- Return air dry-bulb temperature control.
- Return humidity control, in supply or dehumidification mode.
- Water leak detection as standard.
- Remote control and fault summary contact.

Accessories (option)

Free cooling box.

Support sub-base for supply air via raised floor.

Cased sub-base with grille or damper.

Supply plenum.

Motorised damper on intake section.

Fire thermostat.

Supply air low limit sensor.

Raised floor pressure management.

Changeover thermostat.

OPTIONS

Electric heater

Fan-controlled operation.

Control by 2-stage operation or by progressive action (TRIAC).

High-limit safety thermostat with automatic and manual reset.

Hot water air coil

1-row coil made of copper tubes with aluminium fins.

2- or 4-way progressive action valve fitted, and connected.

Humidifier

Humidifier with immersed electrodes and a CPY board to relay all information relating to the humidifier directly to the CIAT µAIR CONNECT2 PLC
- Stainless steel large surface area electrodes.
- Flow rate of 8 kg/h, depending on the model.
- Steam cylinder in a single easy to remove component.
- Drain pump and filling solenoid valve.
- Electronics board for operation management.
- Diffusion duct.

Operates using municipal water supply only (water conductivity of between 350 and 1250 µS inclusive and hardness between 15 and 30°F). Do not use deionised or softened water.

CONTROL SYSTEM

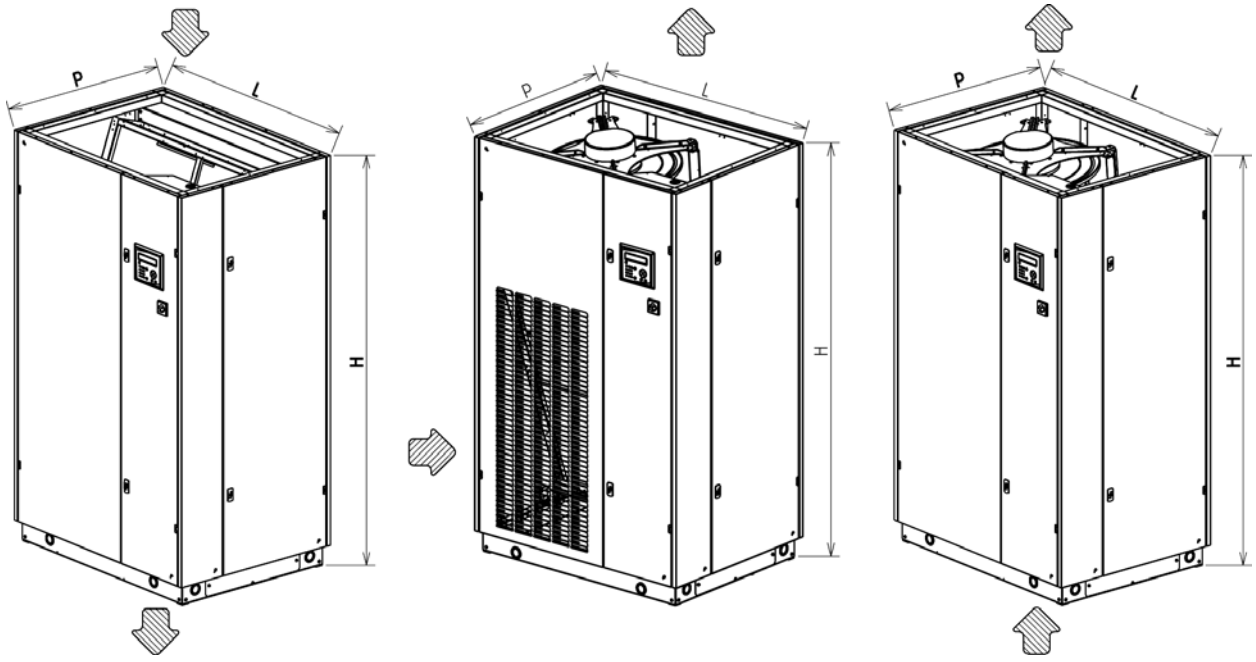
Unit control and monitoring:

CIAT µAIR CONNECT2 PLC

- 160-character display showing the operating instructions, operating states, faults and solutions. Configurable controller.
- Two fault levels.
- Monitoring of operating times.
- RS 485 output with Jbus/ModBus RTU protocol.
- Master/slave type management possible. (Backup, rotation and additions between the units)
- On special request, BacNet gateway (IP or MSTP) or ModBus/JBus TCP/IP gateway
- Optional LON gateway
- Optional management of pressure in raised floor
- Optional changeover thermostat
- Bus management between the centrifugal plug fan and the µAIR CONNECT2 controller.
- Transmits fan faults and settings such as the actual power input, current, rotation speed, etc. to the controller.

DIMENSIONS*

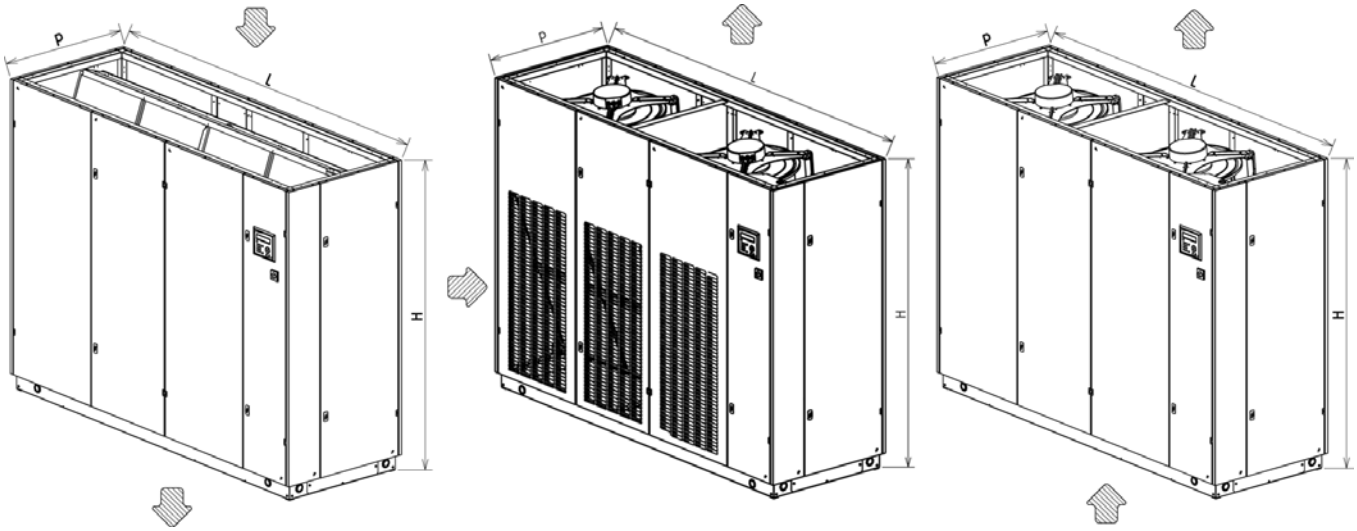
CW 40 - 53



UNDER 1 OVER 3 OVER 5

CW	H	L	D
40	1990	1190	890
53		1520	

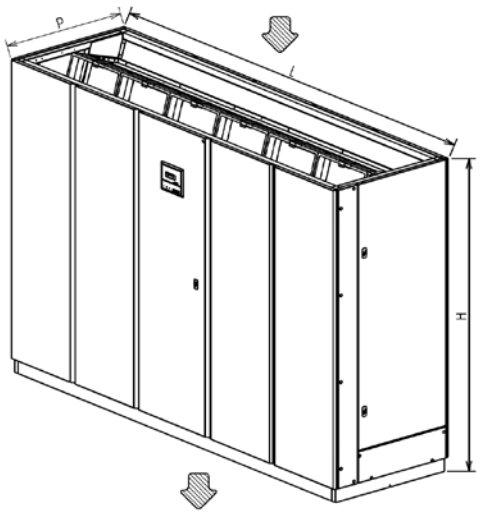
CW 78 - 100



UNDER 1 OVER 3 OVER 5

CW	H	L	D
78	1990	2070	890
100		2620	
115		3000	

CW115



UNDER 1

* Necessary clearance on right-hand side (in front of the cabinet): 900 mm min.
Necessary clearance on front panel: 900 mm min.

WEIGHT

Chilled water (CW)

CW	40	53	78	100	115
Weight (kg)	350	385	545	635	730

This document is not legally binding. As part of its continuous drive to improve its equipment, CIAT reserves the right to make any technical modifications without prior notice.
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Certified Management System

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