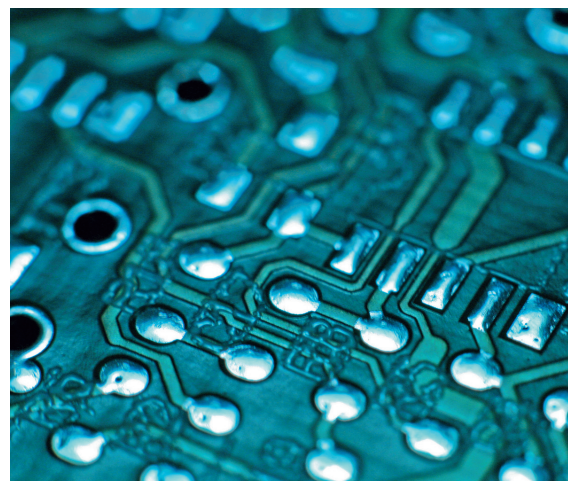


Chiller water close control air conditioners

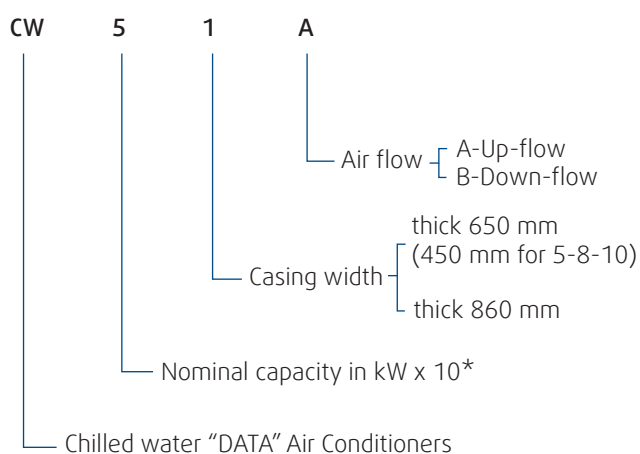
CW data series



CW data series



Unit identification



* kW for 5-8-10.

Technical specifications

The air conditioners belonging to the "DATA" series have been specifically designed and manufactured for close control air conditioning where the almost exclusive handling of sensible heat loads is a fundamental requirement.

The typical applications are computer rooms, digital telephone exchanges, switch rooms, weather stations, medical laboratories, CAT and MR scanners, as well as any other application where a sensible heat load must be dissipated without modifying the relative humidity.

The series, which can be either upflow or downflow, offers a large range of accessories and variations in design, allowing for maximum flexibility in the use of the units and it has been designed to reduce the footprint.

Standard version

Frame in painted aluminium profiles. Painted aluminium alloy corner joints.

Panels (external and internal) in galvanized sheet steel with an external plastic coating. Panels are mounted with stainless steel screws; inspection panels are fitted on hinges and equipped with easy to open locks requiring a separate key.

Room air return grill in galvanized steel with an external plastic coating, for up-flow models only.

Air-tight gaskets on panel edges in polyurethane with dual density.

Internal structure in galvanized sheet steel.

Internal lining

- Doors: thermal insulation between two aluminium sheets in rigid polyurethane foam class1, non-flammable, 22 mm thickness, density of 47 kg/m³ and a thermal conductivity of, 0.024 W/(m°C).
- Panels: in thermo-acoustic open-cell expanded polyurethane, 22 mm thickness for the external panels and 15 mm for the internal ones, selfextinguishing class 1, density of 33 kg/m³ and a thermal conductivity of, 0.036 W/(m°C).

Evaporating coil DX type in copper tubes mechanically expanded into aluminium fins, galvanized steel frame. Air discharge valve on header.

Three way valve mounted as mixing on return of chilled water, complete modulating (advanced microprocessor) electric actuator. Valve is assembled in air-flow.

Drain pan in stainless steel with plastic connection to external discharge.

Air filter cleanable type in synthetic fibre, stainless steel frame, G4 efficiency.





Supply air centrifugal fan single inlet, backward curved blades, impeller statically and dynamically balanced, directly coupled to brushless electric motor EC (electronically commutated) type with built-in overload protection.

Air flow switch on room supply air fan.

Electric control panel complete with:

- Main interlocking power switch.
- Automatic fuse protections are each single utility.
- Fan motor contactors or speed regulation board, depending on unit model.
- Auxiliary services transformer.
- Components and wiring in compliance with applicable IEC Norms.

Microprocessor control for single or multi-unit management system, with the following characteristics:

- room air temperature control through the modulation of the three way valve or the electric heater (option);
- supply air temperature limit (necessary probe);
- management of all alarm conditions;
- remote start-stop;
- general alarm;
- password.

Advanced microprocessor high performance 16 bit programmable control. It is used when customized programmes are required, or an increased number of alarms, or advanced functions for LAN connections.

User interface for the display of unit conditions, status and operating parameters, with the following characteristics:

- display of room temperature and temperature set-point for supply air;
- display of operating parameters;
- control keyboard with two levels of "password";
- alarm reset and unit set-up;
- on/off safety switch;
- watchdog function.

Factory tests and inspection.

Accessories and options

Differential pressure switch for clogged filter alarm.

Water leakage alarm complete with control relay and two sensors to be installed in the raised floor.

Fire alarm consisting of an optical sensor to detect presence of smoke and directly wired to the microprocessor.

Electric reheating coil one, two or three stages, available depending on the size and manufactured in extruded aluminium; complete with contactor, thermal overload protection and safety thermostat.

Steam humidifier immersed electrodes type, modulating version, complete with probe mounted on the return air and with microprocessor control card.

Dehumidification system effected with double speed of fan/s Humidity probe on return air.

Advanced microprocessor for **temperature + humidity** control, complete with card and probe for relative humidity control on return air and the dehumidification system.

Fresh air intake kit separately supplied for assembly on site. It is composed of a container with G4 air filter; the container is equipped with a circular connection (80 mm dia.) that has to be connected to the fresh air duct. Drilling and flexible connection with diameter of 100mm are to be effected by



the contractor. Max available air flow 0,04 m³/sec.

Rear return air intake only for up-flow models. Closed front panel and return air intake on the rear side with flange for connection to the duct system.

Air delivery plenum frame in painted aluminium profiles and panels in galvanized steel sheet with external plastic coating, internally lined with thermo acoustic polyurethane open cell foam, complete with a grill with a double row of adjustable fins. Can be supplied with front diffuser grill only or with front and side grills.

Base frame made in strong painted steel welded profiles and is equipped with adjustable pedestals (adjustment 50 mm) and air deflector. The height, has to be indicated by the mechanical contractor, and can be comprised between 150 and 700 mm. Special versions having gravity or motorized damper, or silenced can be supplied on request.

Non-return damper with aluminium fins fitted on nylon bushings.

Clock module accessory for microprocessor, necessary for alarm reports and and history of alarm situations.

Air filter having efficiency F5 or F7 installed instead of the standard filters. Made in synthetic fibre with stainless steel frame are not washable type.

Special coils with an anti corrosion surface treatment.

Internal lining of the panels in double layers of open-cell polyurethane foam with interposed lead sheet, weight of 6.3 kg/m², 22 mm thickness for external panels and 15 mm for internal ones. It has the same thermal insulation characteristics of the standard and improves of 4 dB(A) the noise of the unit.

Sandwich panels external in galvanized steel sheet plastic coated, internal in galvanized steel sheet. Thermal insulation between the two metal sheets in polyurethane foam class1, non-flammable and conductivity 0.024 W/(m°C). It has the same thermal insulation characteristics of the standard and improves of 4 dB(A) the noise of the unit. Can be used when high pressure fans are required.

Serial output card RS 485.



Main technical data

Main technical data								
Data series	Size		5	8	10	21	31	41
	Total cooling capacity (1)	kW	5.7	7.7	9.8	15.1	25.8	35.5
	Sensible cooling capacity (1)	kW	4.7	6.2	8.0	13.8	22.6	30.2
Supply fan EC	Nominal air flow	m³/s	1.35	2.00	1.95	1.11	1.45	1.81
	External static pressure	Pa	100	130	100	250	150	100
	Power input	kW	200	300	300	0.7	0.8	0.9
	Engaged electric power	kW	0.485	0.485	0.485	2.7	2.7	2.7
Cooling coil	Face area	m²	0.32	0.32	0.32	0.49	0.70	1.13
	Rows number	n°	2	2	3	3	3	3
	Fin spacing	mm	1.6	1.6	1.6	1.6	1.6	1.6
	Nominal chilled water flow	l/s	0.3	0.4	0.5	0.72	1.23	1.70
	Nominal water pressure drop	kPa	10	18	18	22	44	31
Three way valve	Connection size	"	¾"	¾"	¾"	¾"	1"	1"¼
	Water pressure drop	kPa	16	11	18	23	21	21
Total water pressure drop		kPa	26	29	36	45	65	52
Dimensions	Length	mm	650	650	650	650	840	1.238
	Width	mm	450	450	450	650	650	650
	Height	mm	1.970	1.970	1.970	1.970	1.970	1.970
Operating weight (up-flow/down-flow) (2)		dB(A)	55.9/ 51.9	55.5/ 51.5	55.5/ 51.5	54.5/ 50.5	56/52	58.5/ 54.5
Operating weight		kg	130	145	155	160	210	280

Main technical data								
Data series	Size		51	61	82	102	112	152
	Total cooling capacity (1)	kW	49.8	57.8	83	94.8	110.8	152.8
	Sensible cooling capacity (1)	kW	42.7	51.1	67.9	78	95.8	128.9
Supply fan EC	Nominal air flow	m³/s	2.78	3.33	4.86	5.56	6.94	10.0
	External static pressure	Pa	200	120	200	250	200	200
	Power input	kW	2x0.8	2x0.9	2x1.8	2x1.3	2x1.7	3x1.3
	Engaged electric power	kW	2x2.7	2x2.7	2x2.7	2x3.1	2x2.8	3x2.8
Cooling coil	Face area	m²	1.32	1.51	2.81	3.37	3.37	4.52
	Rows number	n°	3	3	3	3	3	3
	Fin spacing	mm	1.6	1.6	1.8	1.8	1.8	1.8
	Nominal chilled water flow	l/s	2.38	2.76	3.97	4.53	5.29	7.30
	Nominal water pressure drop	kPa	44	52	42	50	57	63
Three way valve	Connection size	"	1"¼	1"½	2"	2"	2"	2x1"½
	Water pressure drop	kPa	29	16	13	17	23	28
Total water pressure drop		kPa	73	68	55	67	80	91
Dimensions	Length	mm	1.428	1.618	1.885	1.885	2.265	2.853
	Width	mm	650	650	860	860	860	860
	Height	mm	1.970	1.970	1.980	1.980	1.980	1.980
Operating weight (up-flow/down-flow) (2)		dB(A)	59/55	61.5/ 57.5	65.0/ 61.0	63.0/ 59.0	64.0/ 60.0	67.0/ 63.0
Operating weight		kg	330	380	470	540	600	720

Capacities referred to:

(1) Room air conditions +24°C/ 50%UR. Chilled water temperature +7/12°C.

(2) Sound pressure level measured a 2 mt from the unit, 1 m height, in free field conditions.

The fan power input has not been subtracted from the capacities indicated above.

Cooling capacity

Room air conditions °C - %RH									
Size	Th	20-50		22-50		24-50		26-50	
		Ct	Cs	Ct	Cs	Ct	Cs	Ct	Cs
	°C	kW	kW	kW	kW	kW	kW	kW	kW
5	7	4.00	4.00	4.90	4.50	5.70	4.70	6.80	4.90
	9	3.50	3.50	4.10	4.10	4.90	4.50	5.80	4.70
	10	3.10	3.10	3.80	3.80	4.40	4.40	5.30	4.60
	12	2.50	2.50	3.10	3.10	3.80	3.80	4.50	4.50
8	7	5.50	5.50	6.40	6.00	7.70	6.20	8.90	6.40
	9	4.20	4.20	5.50	5.30	6.40	6.00	7.60	6.10
	10	4.20	4.20	5.00	5.00	5.90	5.70	7.10	6.10
	12	3.40	3.40	4.20	4.20	5.00	5.00	5.90	5.90
10	7	6.60	6.60	8.10	8.10	9.80	8.00	11.60	8.50
	9	5.60	5.60	6.80	6.80	8.20	7.50	9.80	8.00
	10	5.30	5.30	6.20	6.20	7.40	7.20	8.90	7.80
	12	4.10	4.10	5.20	5.20	6.30	6.30	7.40	7.40
21	7	11.1	11.1	12.7	12.7	15.1	13.8	18.2	14.7
	9	9.5	9.5	11.2	11.2	12.9	12.9	16.3	13.7
	10	8.6	8.6	10.4	10.4	12.1	12.1	13.8	11.5
	12	7.0	7.0	8.7	8.7	10.5	10.5	12.2	10.2
31	7	16.4	16.3	21.1	18.3	25.8	22.6	31.0	22.1
	9	14.3	14.3	16.9	16.9	20.9	18.3	26.0	20.1
	10	13.0	13.0	15.6	15.6	18.5	16.1	23.4	18.1
	12	10.4	10.4	13.0	13.0	15.6	13.6	18.3	14.1
41	7	22.6	21.8	28.9	24.5	35.5	30.2	42.4	29.7
	9	19.3	19.3	22.3	21.8	28.8	24.5	35.7	27.1
	10	17.5	17.5	20.9	20.5	25.5	21.7	32.3	24.5
	12	14.1	14.1	17.5	17.2	20.9	17.8	25.2	19.1
51	7	31.7	31.3	40.6	35.1	49.8	42.7	59.7	42.4
	9	27.5	27.5	32.3	32.3	40.5	35.1	50.2	38.7
	10	25.0	25.0	29.9	29.9	35.7	30.9	45.3	34.9
	12	20.0	20.0	25.0	25.0	29.9	25.9	35.3	27.2
61	7	36.8	36.3	47.0	40.8	57.8	51.1	69.2	49.2
	9	31.9	31.9	37.6	37.6	46.7	40.7	58.2	45.0
	10	29.1	29.1	34.8	34.8	41.3	36.0	52.5	40.6
	12	23.3	23.3	29.0	29.0	34.7	30.2	40.9	31.6
82	7	52.9	52.2	67.5	58.5	83.0	67.9	99.4	70.6
	9	45.7	45.7	54.0	54.0	67.3	58.4	83.5	64.4
	10	41.7	41.7	49.9	49.9	59.4	51.5	73.8	59.2
	12	33.4	33.4	41.6	41.6	49.8	43.2	58.7	45.3
102	7	60.3	59.5	77.1	66.7	94.8	78.0	113.6	80.6
	9	52.2	52.2	61.5	61.5	77.0	66.7	95.4	73.6
	10	47.5	47.5	56.8	56.8	67.8	58.8	86.1	66.4
	12	37.9	37.9	47.5	47.5	56.8	49.2	67.1	51.8
112	7	70.6	70.2	90.1	78.7	110.8	95.8	132.6	94.8
	9	61.5	61.5	72.5	72.5	89.8	78.6	111.3	86.6
	10	56.1	56.1	67.0	67.0	79.1	69.2	100.5	78.2
	12	44.9	44.9	56.0	56.0	66.9	58.6	78.2	60.9
152	7	100.8	100.8	124.2	109.4	152.8	128.9	182.8	131.6
	9	85.5	85.5	100.8	100.8	123.8	109.4	153.5	120.5
	10	77.8	77.8	93.1	93.1	109.1	96.4	138.4	108.6
	12	62.4	62.4	77.7	77.7	93.0	82.2	107.8	84.6

Th Inlet chilled water temperature/Constant nominal flow.

Ct Total cooling capacity.

Cs Sensible cooling capacity.

The fan power input has not been subtracted from the capacities indicated above.

Electric heater capacity

Electric heater capacity													
		Size											
		5	8	10	21	31	41	51	61	82	102	112	152
Single stage	kW	1.5	1.5	3	4.5	6	9	9	12	18	18	24	24
Three stages	kW	n.a	n.a	n.a	1.8/ 2.7/ 4.5	2.4/ 3.6/ 6	2.4/ 3.6/ 6	3.6/ 5.4/ 9	4.8/ 7.2/ 12	7.2/ 10.8/ 18	7.2/ 10.8/ 18	9.6/ 14.4/ 24	9.6/ 14.4/ 24
FLA*	A	6.5	6.5	13	6.5	8.7	13.0	13.0	17.3	26.0	26.0	34.6	34.6

* Referred to single stage heater.

Humidifier

Humidifier													
		Size											
		5	8	10	21	31	41	51	61	82	102	112	152
Power supply		230+/-10%-1+N-50Hz				420+/-10%-3+N50Hz							
Max steam production	kg/h	1.5-3			3	8	8	8	8	8	8	15	15
Full load power input	kW	2.3			2.3	6.0	6.0	6.0	6.0	6.0	6.0	11.3	11.3
Full load current	A	10.2			3.3	8.7	8.7	8.7	8.7	8.7	8.7	16.3	16.3
Water conductivity min-max	µS/cm ²	125-1.250											
Water suppli pipe diam.	"G	¾"											
Min int. diam. humid. supply	mm	6											
Water drain pipe diam.	mm	32											

Water connections

Water connections													
Connection		Size											
		5	8	10	21	31	41	51	61	82	102	112	152
3-way cooling coil valve	"	¾"	¾"	¾"	¾"	1"	1¼"	1¼"	1½"	2"	2"	2"	2x1½"
Nominal pressure drop	kPa	16	11	16	45	65	52	73	68	55	67	80	91
Chilled water connections	"G	⅝"	⅝"	¾"	1"	1¼"	1½"	1½"	1½"	2"	2"	2"	2x2"
Humidifier water supply	"G	¾"	¾"	¾"	¾"	¾"	¾"	¾"	¾"	¾"	¾"	¾"	¾"
Min int. diam. humid. supply	mm	6	6	6	6	6	6	6	6	6	6	6	6
Humidifier water drain	mm	32	32	32	32	32	32	32	32	32	32	32	32
Condensate drain	mm	20	20	20	20	20	2x20	2x20	4x20	4x20	4x20	4x20	4x20

Electrical data

Electrical data													
		Size											
		5	8	10	21	31	41	51	61	82	102	112	152
Full load power input (1)	kW	4.3	4.3	5.8	9.45	14.7	17.7	20.4	23.4	29.4	30.2	40.65	43.35
FLA (1)	A	19.7	19.7	26.2	14	21.7	26	30.3	34.6	43.3	44.5	59.4	63.7
Backward-blade fan	nxkW	0.5	0.5	0.5	2.7	2.7	2.7	2x2.7	2x2.7	2x2.7	2x3.1	2x2.8	3x2.8
LRA	A	19.7	19.7	26.2	14	21.7	26	30.3	34.6	43.3	44.5	59.4	63.7
Copper wire size (2)	5xmm ²	3x6	3x6	3x6	10	10	16	16	16	25	25	25	25
Electrical supply	V/ph/Hz	230±10%/1+N/50				400±10%/3+N/50							

(1) At the maximum operating admitted conditions. Unit complete with humidifier and electric heater.

(2) Wire size valid for distances up to 30 mt. Max. voltage drop 3%.

For the operating data please refer to the unit wiring diagram.

Air filters

Air filters														
			Size											
			5	8	10	21	31	41	51	61	82	102	112	152
Up flow	Quantity	n.	2	2	2	1	1	2	2	2	6	6	6	8
	Dimensions	mm	435x 490	435x 490	435x 490	545x 1.000	735x 1.000	545x 1.000	660x 1.000	750x 1.000	445x 655	445x 655	2x445 + 4x635 655	4x445 + 4x455 655
	Thickness	mm	48	48	48	48	48	48	48	48	48	48	48	48
	Quantity	n.	1	1	1	1	1	2	2	2	5	5	6	6
Down flow	Dimensions	mm	545x 385	545x 385	545x 385	545x 595	735x 595	565x 595	660x 595	755x 595	350x 800	350x 800	355x 800	455x 800
	Thickness	mm	98	98	98	98	98	98	98	98	98	98	98	98

Operating range

Operating range														
			Size											
			5	8	10	21	31	41	51	61	82	102	112	152
Air flow	m³/s	min	0.17	0.25	0.25	0.69	0.98	1.58	1.85	2.11	3.93	4.72	4.72	6.39
		max	0.44	0.58	0.55	1.23	1.75	2.83	3.30	3.78	7.03	8.43	8.43	11.30
Max hydraulic pressure		kPa	6											
Max Dp on valve		kPa	250	100	100	200	200	150	150	250	250	250	250	400

Please contact our Technical Dept. for 2-way valves limits.

Glycol correction factors

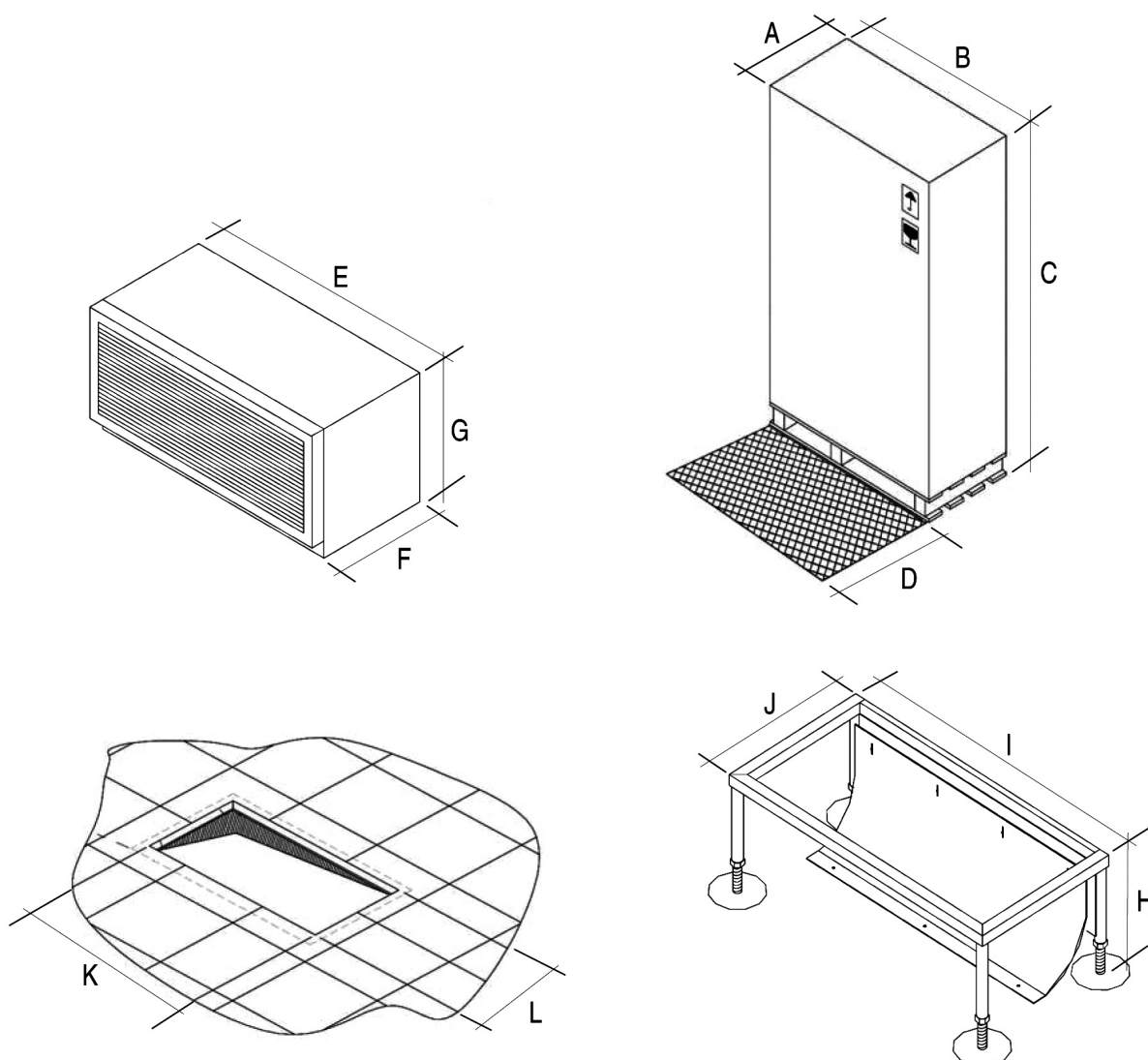
Glycol correction factors							
Glycol percentage		0%	10%	20%	30%	40%	50%
Freezing point	°C	0	-5	-10	-15	-20	-30
Capacity factor		1	0.98	0.95	0.93	0.91	0.88
Water flow factor		1	1.01	1.04	1.08	1.14	1.20
Pressare drop factor		1	1.05	1.13	1.21	1.26	1.32

Dimensions and weights

Packing - Plenum - Baseframe - Floor hole													
		Size											
		5	8	10	21	31	41	51	61	82	102	112	152
A	mm	500	500	500	700	700	700	700	340	900	900	900	900
B	mm	700	700	700	700	900	1.300	1.500	1.700	1.950	1.950	2.350	2.950
C	mm	2.120	2.120	2.120	2.120	2.120	2.120	2.120	2.120	2.130	2.130	2.130	2.130
D	mm	650	650	650	650	840	650	840	840	650	650	840	840
E	mm	650	650	650	650	840	1.238	1.428	1.618	1.885	1.885	2.265	2.853
F	mm	650	650	650	650	650	650	650	650	860	860	860	860
G	mm	600	600	600	600	600	600	600	600	600	600	600	600
H*	mm	150 700	150 700	150 700	150 700	150 700	150 700	150 700	150 700	150 700	150 700	150 700	150 700
I	mm	600	600	600	590	780	1.178	1.368	1.558	1.805	1.805	2.185	2.776
J	mm	400	400	400	590	590	590	590	590	780	780	780	780
K	mm	560	560	560	550	740	1.138	1.328	1.518	1.765	1.765	2.145	2.736
L	mm	340	340	340	530	530	530	530	530	720	720	720	720
Peso**	kg	165	140	155	170	220	290	340	390	480	550	610	730

* The eight has to be indicated by the mechanical contractor; adjustment 50 mm.

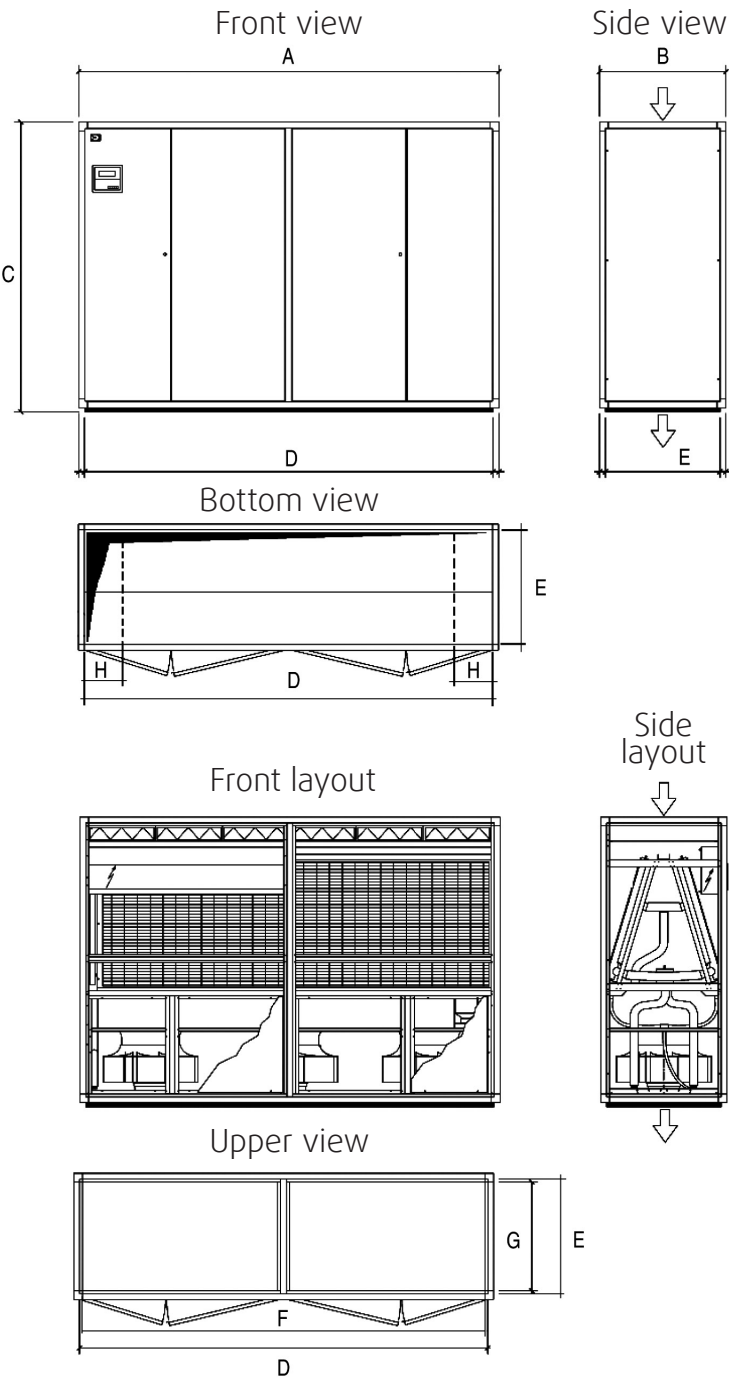
** Shipping weight.



Down flow version

Down flow version									
		Size							
		5	8	10	21	31	41	51	61
A	mm	650	650	650	650	840	1.238	1.428	1.618
B	mm	450	450	450	650	650	650	650	650
C	mm	1.970	1.970	1.970	1.970	1.970	1.970	1.970	1.970
D	mm	600	600	600	590	780	1.178	1.368	1.558
E	mm	400	400	400	590	590	590	590	590
F	mm	560	560	560	552	742	1.140	1.330	1.520
G	mm	360	360	360	552	552	552	552	552
H	mm	150	150	150	150	150	150	150	150

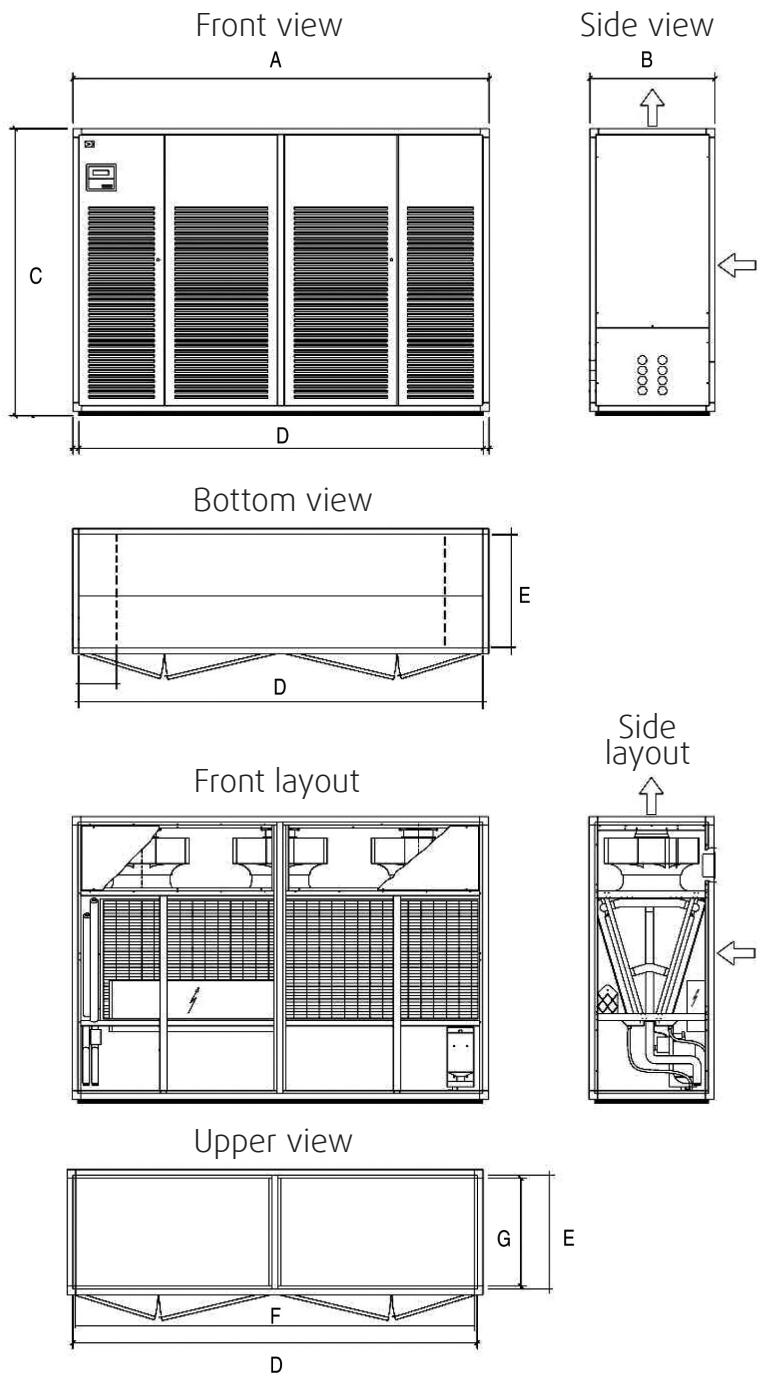
Please contact our Technical Dept. for detailed info about in/out position.



Up flow version

Up flow version					
		Size			
		82	102	112	152
A	mm	1.885	1.885	2.265	2.853
B	mm	860	860	860	860
C	mm	1.980	1.980	1.980	1.980
D	mm	1.805	1.805	2.185	2.773
E	mm	780	780	780	780
F	mm	1.765	1.765	2.145	2.733
G	mm	740	740	740	740
H	mm	150	150	150	150

Please contact our Technical Dept. for detailed info about in/out position.





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