



**CLOSE CONTROL**

**MD Series**

**Aurwell**



## **TECHNICAL SPECIFICATIONS**

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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. The overall noise level of the units is maintained at a low level by the use of “scroll” compressors, size of the fans used and the face area of the coils.

The compressor(s) and the refrigeration circuit(s) are positioned in a separate compartment out of the airflow ensuring a reduction in the transmission of noise and the possibility of maintenance with the machine in operation.

**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. Compressor section separate from air flow.

#### **INTERNAL LINING**

**Doors:** thermal insulation between two aluminium sheets in rigid polyurethane foam class 1, non-flammable, 22 mm thickness, density of 47 kg/m<sup>3</sup> 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, self-extinguishing class 1, density of 33 kg/m<sup>3</sup> and a thermal conductivity of, 0.036 W/(m°C).

**EVAPORATING COIL**, DX type in copper tubes mechanically expanded into aluminium fins; frame in galvanized steel. Double refrigerant circuit for dehumidification operation, optional, each connection complete with "Venturi" type distributor.

**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 electric motor (external rotor type) with built-in overload protection. Electrical supply from 4-speed autotransformer. Settings can be effected on site. Fan section is supplied separately for field assembly and wiring for 262 and 302 sizes up-flow version.

**AIR FLOW SWITCH** on room supply air fan.

**HERMETIC COMPRESSOR "SCROLL"** type with built-in safety valve. 2-pole electric motor with integrated electronic overload protection. Mounted on rubber shock absorbers. Valves for welding mounted on suction and discharge connections (conf. 2).

**REFRIGERANT FILTER** with mechanical and desiccant action, molecular-sieve type.

**LIQUID SIGHT-GLASS** with colour-change for moisture indication.

**EXPANSION VALVE** with plastic external equalizer.

**REFRIGERANT CIRCUIT** in copper piping that has been brazed welded with silver alloy. Suction line insulated with closed-cell vapour-proof material.

**HIGH-PRESSURE SWITCH** with manual reset.

**LOW-PRESSURE SWITCH** with automatic reset.

**SAFETY DEVICE** in high-pressure section.

**ELECTRIC CONTROL PANEL** complete with:

- Main interlocking power switch.
- Automatic fuse protections are each single utility.
- Compressor motor contactor.
- Fan motor contactors.
- 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 activation of the compressor or the electric heater or the modulation of the three-way valve (the later are options)
- supply air temperature limit
- management of all alarm conditions
- remote start-stop
- general alarm
- password

**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

**R407C REFRIGERANT AND OIL CHARGE** (anti freeze oil type).

#### **FACTORY TESTS AND INSPECTION**

## CONFIGURATIONS

Configuration 1	Direct expansion packaged water cooled unit, condensing water from cooling tower, spring water or city water. It is recommended to use a water-regulating (differential pressure) valve in case of city or spring water to reduce water consumption. The unit, as described above, is complete with: <b>CONDENSER</b> water cooled plate heat exchanger, braze-welded stainless steel plates
Configuration 2	Self-contained direct expansion unit in two sections, with air-cooled condenser for remote installation. The unit, as described above, is complete with: <b>SHUT-OFF VALVES</b> on refrigerant pipes. Standard supply also includes remote condenser, all electrical and pipe connections on site to be effected by the contractor. <b>AIR COOLED CONDENSER</b> with: <ul style="list-style-type: none"><li>- <b>CASING</b> in prepainted aluminium sheet fixed with rivets, floor supports for air horizontal discharge.</li><li>- <b>PROPELLER FAN</b>, aluminium blades statically and dynamically balanced, protection grille on air discharge, directly coupled to external rotor electric motor.</li><li>- <b>CONDENSING COIL</b> made in copper tubes mechanically expanded into aluminium fins, copper header with threaded connection for rotalock valves.</li><li>- <b>TAPS</b> on refrigerant pipes.</li></ul>
Configuration 6	Direct expansion packaged unit cooled with water-glycol coming from a dry-cooler or from an industrial cooling system. the unit is similar to Configuration 1 with the condenser oversized to allow increased temperature and density typical of operation with a water-glycol mixture.
Configuration 7	“DUALCOOL” unit with a double cooling system: the unit can operate in direct expansion and also with chilled water coil that is supplied by an independent source. The unit is made to operate normally using one of the two modes of cooling, and the other cooling mode remains an emergency mode. To the standard direct expansion units in configurations 1, 2 or 6, the following components are added: <b>CHILLED WATER COIL</b> made with copper tubes mechanically expanded into aluminium fins, galvanized steel frame. <b>THREE WAY VALVE</b> complete with a modulating electric actuator, mounted as mixing on the return of the chilled water.
Configuration 8	“COOL RECOVERY” is a direct expansion unit equipped with a coil that can also be supplied with glycol-water coming from an external dry cooler. The glycol-water leaving the coil is then made to pass, via a three way valve, into a plate heat exchanger (condenser) allowing the compressor to operate with a reduced load. The use of this configuration is recommended in installations where outdoor temperatures are suitable to cool the glycol-water down to a temperature around 7°C. To the standard directed expansion unit in configuration 1, the following components are added: <b>CHILLED WATER COIL</b> made with copper tubes mechanically expanded into aluminium fins, galvanized steel frame. <b>THREE WAY VALVE</b> complete with a modulating electric actuator, mounted as mixing on the return of the cooled glycol-water. <b>PIPING</b> in welded-brazed copper with vapour-proof insulation. Configuration 8 is not available on sizes MD 262 and 302.

## 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** consist of an optical survey presence smoke directly wired to the microprocessor where the alarm can be customized.

**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. It is controlled directly by the microprocessor.

**HOT WATER REHEATING COIL** made with copper tubes mechanically expanded into aluminium fins, galvanized steel frame. Available with one row.

**HOT GAS REHEATING COIL** made with copper tubes mechanically expanded into aluminium fins, rust-proof frame, complete with by-pass and check valves.

**THREE WAY VALVE** mounted as mixing on return of hot water, complete with 3-point (basic microprocessor) or modulating (advanced microprocessor) electric actuator.

**STEAM HUMIDIFIER** immersed electrodes type, modulating version, complete with probe mounted on the return air and with microprocessor control card.

**DEHUMIDIFICATION SYSTEM** made with fan speed and consequently air flow reduction. Humidity probe on return air

**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 diam.) that has to be connected to the fresh air duct. Drilling and flexible connection with diameter of 100 mm are to be effected by the contractor. Max available air flow 0,04 m<sup>3</sup>/sec.

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

**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. Electrical supply from autotransformer. Fan section is supplied separately for field assembly and wiring for 262 and 302 sizes up-flow version.

**AIR DELIVERY PLENUM** frame and panels in galvanized steel sheet with plastic coating and internally lined with thermo acoustic polyurethane open cell foam, complete with a grill with a double row of adjustable vanes. 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 700mm.

**NON-RETURN DAMPER** with aluminium fins fitted on nylon bushings.

For down-flow version please contact our sales dept.

**TEMPERATURE + HUMIDITY MICROPROCESSOR** complete with card and probe for relative humidity control on return air. The accessory also includes the dehumidification system described above.

**CLOCK MODULE** accessory for microprocessor, necessary for alarm reports and and history of alarm situations.

**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.

**ADVANCED MICROPROCESSOR for TEMPERATURE + HUMIDITY** control, complete with card and probe for relative humidity control on return air and dehumidification system.

**AIR FILTER** with efficiency F5 or F7 instead of the standard filters. Made in synthetic fiber with stainless steel frame; the filters are not washable.

**DIFFERENTIAL PRESSURE WATER VALVE** to control the condensing pressure can be used with water cooled configurations (1 and 6)

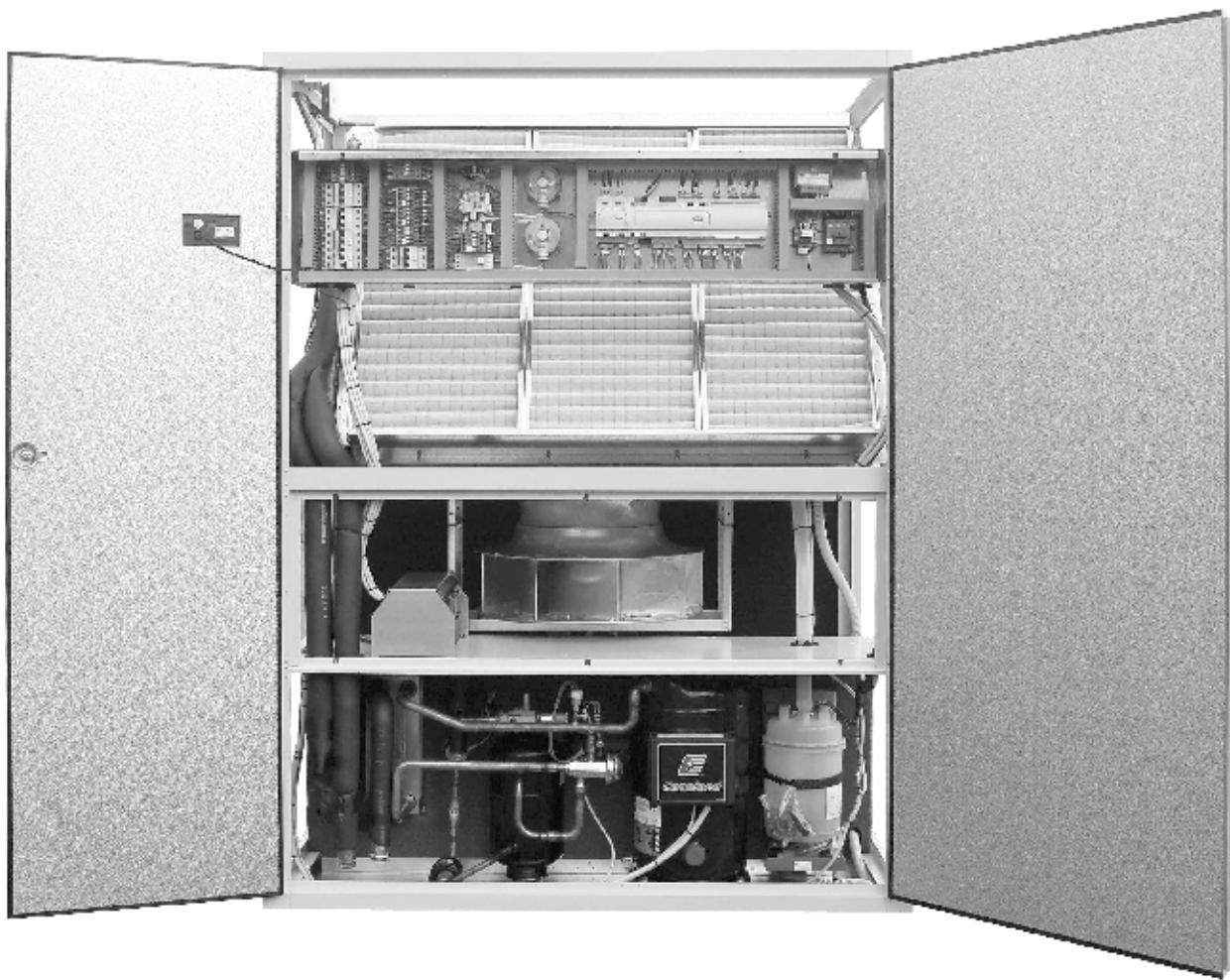
**SPECIAL COILS** with an anti corrosion surface treatment.

**SPECIAL REFRIGERANT** R134a or R22 HCFC (only for export to non-EEC countries).

**INTERNAL LINING** of the panels in double layers of open-cell polyurethane foam with interposed lead sheet, weight of 6.3 kg/m<sup>2</sup>, 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 pre-painted galvanized steel sheet. Thermal insulation between the two metal sheets in rigid polyurethane foam class1, non-flammable, density 47 kg/m<sup>3</sup> 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** can be used with both models of microprocessor.



### OPERATING RANGE

		SIZE														
		061	071	091	101	131	151	082	102	132	152	182	202	262	302	
Aair flow	m <sup>3</sup> /s	min	1.11	1.66	1.66	1.66	2.22	3.33	1.66	1.66	2.22	3.33	3.33	3.33	5.56	5.56
		max	1.45	2.13	2.13	2.60	3.70	4.25	2.13	2.60	3.70	4.25	4.75	4.75	7.72	7.72
Max condenser water flow	l/s	conf. 1	0.58	0.76	0.90	1.04	1.20	1.58	0.82	1.00	1.34	1.50	1.82	2.00	2.56	2.96
		conf. 6	2.40	3.18	3.76	4.30	5.42	6.62	3.42	4.20	5.58	3.00	3.64	4.00	5.12	5.92
Max hydraulic pressure	kPa	600														
Max Dp on valve	kPa	200	200	200	200	150	150	200	200	150	150	600	600	600	600	

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

### HUMIDIFIER

		SIZE													
		061	071	091	101	131	151	082	102	132	152	182	202	262	302
Max steam production	kg/h	3	8	8	8	8	8	8	8	8	8	8	8	8	8
Full load power input	kW	2.3	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Full load ampere	A	3.3	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7
Water conductivity min-max	μS/cm <sup>2</sup>	125 - 1250													
Water supply pipe diam	"G	3/4"													
Min int. diam. humid. supply	mm	6													
Water drain pipe diam.	mm	32													

**MAIN TECHNICAL DATA**

Data Series	Size		061	071	091	101	131	151	082
CONFIG. 1. 7/1 with compressor	TOTAL COOLING CAPACITY	(1) kW	20.5	26.4	31.4	36.1	45.1	55.1	29.0
	SENSIBLE COOLING CAPACITY	(1) kW	18.6	24.8	28.5	32.7	42.8	50.6	27.4
	INPUT POWER	(1) kW	3.9	5.1	6.2	7.1	9.0	10.8	5.4
CONFIG. 2. 6. 7/2. 8 with compressor	TOTAL COOLING CAPACITY	(2) kW	18.3	24.3	28.4	32.9	41.3	50.4	26.3
	SENSIBLE COOLING CAPACITY	(2) kW	17.4	23.0	26.3	30.5	38.5	47.8	24.2
	INPUT POWER	(2) kW	4.9	6.3	7.8	8.7	11.1	13.5	6.8
CONFIG. 7 with chilled water coil	TOTAL COOLING CAPACITY	(3) kW	17.8	28.3	28.3	34.3	51.9	59.8	28.3
	SENSIBLE COOLING CAPACITY	(3) kW	15.5	24.2	24.2	29.1	42.4	48.0	24.2
CONFIG. 8 with chilled water coil	TOTAL COOLING CAPACITY	(4) kW	13.1	20.1	20.1	24.0	35.5	41.2	20.1
	SENSIBLE COOLING CAPACITY	(4) kW	13.1	20.1	20.1	24.0	35.5	41.2	20.1
SUPPLY FUN	NOMINAL AIR FLOW	m³/s	1.39	2.08	2.08	2.50	3.61	3.89	2.08
	EXTERNAL STATIC PRESSURE	Pa	250	300	300	200	100	250	300
	POWER INPUT	kW	1.1	1.6	1.6	1.7	2 x 1.4	2 x 1.4	1.6
	ENGAGED ELECTRIC POWER	kW	1.5	2.3	2.3	2.3	2 x 1.5	2 x 2.3	2.3
COOLING COIL	FACE AREA	m²	0.576	0.850	0.850	1.016	1.386	1.692	0.850
	NUMBER OF ROWS	Nr.	4	4	4	4	4	4	4
	FIN SPACING	mm	1.8	1.8	1.8	1.8	1.8	1.8	1.8
COMPRESSOR	NUMBER OF COMPRESSORS	Nr.	1	1	1	1	1	1	2
	NOMINAL COMPRESSOR POWER	HP	6	7.5	9	10	13	15	4
CONF. 1 WATER COOLED CONDENS.	WATER FLOW	L/sec	0.29	0.38	0.45	0.52	0.65	0.79	0.41
	WATER PRESSURE DROP	kPa	3.1	4.5	3.4	4.6	4.7	4.6	3.1
CONF. 6 WATER COOLED CONDENS.	30% GLYCOL WATER FLOW	L/sec	1.2	1.59	1.88	2.15	2.71	3.31	1.71
	WATER PRESSURE DROP	kPa	53.1	42.0	56.6	49.0	54.7	58.0	33.6
AIR COOLED CONDENSED MODEL		CN	060	075	100	100	120	150	2 x 050
OIL CHARGE PER CIRCUIT		L	1.6	4	4	4	4	4	2.2
REFRIGERANT CHARGE	CONFIGURATION 1, 6, 7/1, 8	kg	1.7	2.1	2.5	2.8	3.6	4.2	2.2
	CONFIGURATION 2, 7/2	kg	5.6	6.7	8.1	9.0	11.7	13.5	7.2
SOUND PRESSURE LEVEL	UP-FLOW	dB(A)	55	61.5	61.5	60.5	64	66	61.5
	DOWN-FLOW (5)		51	57.5	57.5	56.5	60	60	57.5
DIMENSIONS	LENGTH	mm	860	1258	1258	1448	1885	2265	1258
	WIDTH	mm	860	860	860	860	860	860	860
	HEIGHT	mm	1980	1980	1980	1980	1980	1980	1980
OPERATING WEIGHT	CONFIGURATION 1, 6	kg	280	340	350	400	520	640	370
	CONFIGURATION 2	kg	270	330	340	380	495	610	360

**Capacities referred to:**

- Room air conditions +24°C/ 50%RH
  - (1) Condensing water temperature +15/35°C
  - (2) External air temperature +32°C
  - (3) DUAL COOL chilled water temperature +7/12°C
  - (4) FREE-COOLING chilled water inlet temperature +7°C 30% glycol
  - FREE COOLING chilled water flow same as DUAL COOL
  - Dry-cooler water temperature +35/40°C
  - (5) Sound pressure level measured a 2 mt from the machine. 1 m from the ground in free field conditions
- The fan power input has not been subtracted from the capacities indicated above.

**MAIN TECHNICAL DATA**

Data Series	Size		102	132	152	182	202	262	302
CONFIG. 1. 7/1 with compressor	TOTAL COOLING CAPACITY	(1) kW	35.2	47.2	52.6	63.9	69.7	88.8	102.9
	SENSIBLE COOLING CAPACITY	(1) kW	32.3	43.3	50.0	58.7	63.3	83.1	93.8
	INPUT POWER	(1) kW	6.8	9.0	10.2	12.4	14.2	18.0	21.6
CONFIG. 2. 6. 7/2. 8 with compressor	TOTAL COOLING CAPACITY	(2) kW	32.3	42.6	48.0	57.6	64.1	80.7	94.3
	SENSIBLE COOLING CAPACITY	(2) kW	29.7	39.5	45.0	54.5	59.2	76.6	85.6
	INPUT POWER	(2) kW	8.2	11.2	12.6	15.6	17.4	22.2	27.0
CONFIG. 7 with chilled water coil	TOTAL COOLING CAPACITY	(3) kW	34.3	51.9	59.8	68.1	68.1	109.5	109.5
	SENSIBLE COOLING CAPACITY	(3) kW	29.1	42.4	48.0	54.6	54.6	87.0	87.0
CONFIG. 8 with chilled water coil	TOTAL COOLING CAPACITY	(4) kW	24.0	35.5	41.2	47.1	47.1	75.3	75.3
	SENSIBLE COOLING CAPACITY	(4) kW	24.0	35.5	41.2	47.1	47.1	75.3	75.3
SUPPLY FUN	NOMINAL AIR FLOW	m³/s	2.50	3.61	3.89	4.44	4.44	6.94	6.94
	EXTERNAL STATIC PRESSURE	Pa	200	100	250	250	250	250	250
	POWER INPUT	kW	1.7	2 x 1.4	2 x 1.4	2 x 1.5	2 x 1.5	2 x 2.9	2 x 2.9
	ENGAGED ELECTRIC POWER	kW	2.3	2 x 1.5	2 x 2.3	2 x 2.3	2 x 2.3	2 x 3.9	2 x 3.9
COOLING COIL	FACE AREA	m²	1.016	1.386	1.692	1.891	1.891	3.084	3.084
	NUMBER OF ROWS	Nr.	4	4	4	4	4	3	3
	FIN SPACING	mm	1.8	1.8	1.8	1.8	1.8	1.8	1.8
COMPRESSOR	NUMBER OF COMPRESSORS	Nr.	2	2	2	2	2	2	2
	NOMINAL COMPRESSOR POWER	HP	5	6.5	7.5	9	10	13	15
CONF. 1 WATER COOLED CONDENS.	WATER FLOW	L/sec	0.50	0.67	0.75	0.91	1.00	1.28	1.49
	WATER PRESSURE DROP	kPa	3.0	3.5	4.2	3.5	4.7	4.5	4.4
CONF. 6 WATER COOLED CONDENS.	30% GLYCOL WATER FLOW	L/sec	2.10	2.79	3.14	3.79	4.22	5.33	6.28
	WATER PRESSURE DROP	kPa	47.7	57.4	40.7	58.3	49.9	52.0	55.0
AIR COOLED CONDENSED MODEL		CN	2 x 0.50	2 x 0.75	2 x 0.75	2 x 100	2 x 100	2 x 120	2 x 150
OIL CHARGE PER CIRCUIT		L	2.8	3.8	8	8	8	8	8
REFRIGERANT CHARGE	CONFIGURATION 1, 6, 7/1, 8	kg	2.8	3.6	4.2	5.0	5.6	7.2	8.4
	CONFIGURATION 2, 7/2	kg	9.0	11.6	13.4	16.2	18.0	23.4	26.5
SOUND PRESSURE LEVEL	UP-FLOW	dB(A)	60.5	64	65	67	67	67	68
	DOWN-FLOW (5)		56.5	60	61	63	63	63	64
DIMENSIONS	LENGTH	mm	1448	1885	2265	2265	2265	2853	2853
	WIDTH	mm	860	860	860	860	860	860	860
	HEIGHT	mm	1980	1980	1980	1980	1980	1980	1980
OPERATING WEIGHT	CONFIGURATION 1, 6	kg	420	540	660	720	870	960	980
	CONFIGURATION 2	kg	400	515	630	685	830	920	940

**Capacities referred to:**

- Room air conditions +24°C/ 50%RH
  - (1) Condensing water temperature +15/35°C
  - (2) External air temperature +32°C
  - (3) DUAL COOL chilled water temperature +7/12°C
  - (4) FREE-COOLING chilled water inlet temperature +7°C 30% glycol
  - FREE COOLING chilled water flow same as DUAL COOL
  - Dry-cooler water temperature +35/40°C
  - (5) Sound pressure level measured a 2 mt from the machine. 1 m from the ground in free field conditions
- The fan power input has not been subtracted from the capacities indicated above.



**R407C COOLING CAPACITY**

**ROOM AIR CONDITIONS °C - %RH**

Size	Conf.	20-50		22-50		24-50		26-50	
		Ct	Cs	Ct	Cs	Ct	Cs	Ct	Cs
		kW	kW	kW	kW	kW	kW	kW	kW
061	1, 7/1	18.4	17.6	19.4	18.1	20.5	18.6	21.6	19.0
	2, 6, 8 7/2, 7/6	16.5	16.5	17.3	16.9	18.3	17.4	19.3	17.8
071	1, 7/1	23.7	22.6	25.0	23.8	26.4	24.8	27.9	25.6
	2, 6, 8 7/2, 7/6	21.8	20.9	23.0	22.1	24.3	23.0	25.7	23.8
091	1, 7/1	28.2	25.8	29.8	27.3	31.4	28.5	33.4	29.5
	2, 6, 8 7/2, 7/6	25.5	23.8	26.9	25.2	28.4	26.3	30.2	27.2
101	1, 7/1	32.1	30.9	34.2	31.9	36.1	32.7	38.2	33.6
	2, 6, 8 7/2, 7/6	29.2	28.9	31.2	29.8	32.9	30.5	34.8	31.3
131	1, 7/1	39.9	39.8	42.3	41.2	45.1	42.8	47.5	43.5
	2, 6, 8 7/2, 7/6	36.6	36.1	38.7	37.3	41.3	38.5	43.5	39.4
151	1, 7/1	49.3	48.0	52.1	49.4	55.1	50.6	58.1	51.7
	2, 6, 8 7/2, 7/6	45.1	45.1	47.7	46.3	50.4	47.8	53.1	48.5
082	1, 7/1	25.9	25.6	27.3	26.5	29.0	27.4	30.7	28.2
	2, 6, 8 7/2, 7/6	23.5	22.6	24.7	23.4	26.3	24.2	27.9	24.9
102	1, 7/1	31.4	29.7	33.2	31.3	35.2	32.3	37.1	33.2
	2, 6, 8 7/2, 7/6	28.8	27.3	30.4	28.8	32.3	29.7	34.1	30.5
132	1, 7/1	42.1	40.0	44.6	41.8	47.2	43.3	50.0	44.6
	2, 6, 8 7/2, 7/6	38.0	36.5	40.2	38.2	42.6	39.5	45.1	40.6
152	1, 7/1	47.0	46.9	49.7	48.5	52.6	50.0	55.7	51.4
	2, 6, 8 7/2, 7/6	42.9	42.2	45.4	43.7	48.0	45.0	50.8	46.2
182	1, 7/1	56.9	55.1	60.4	57.1	63.9	58.7	67.7	60.1
	2, 6, 8 7/2, 7/6	51.3	51.2	54.4	53.0	57.6	54.5	61.0	55.8
202	1, 7/1	62.1	60.0	65.8	61.7	69.7	63.3	74.0	64.8
	2, 6, 8 7/2, 7/6	57.1	56.2	60.5	57.7	64.1	59.2	68.1	60.6
262	1, 7/1	79.5	78.2	83.7	80.8	88.8	83.1	94.6	85.3
	2, 6, 8 7/2, 7/6	72.2	72.1	76.1	74.5	80.7	76.6	85.9	78.6
302	1, 7/1	92.1	90.0	97.5	92.0	102.9	93.8	108.4	95.4
	2, 6, 8 7/2, 7/6	84.4	82.1	89.4	84.0	94.3	85.6	99.3	87.0

Ct - Total cooling capacity

Cs - Sensible cooling capacity

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

**R22 COOLING CAPACITY**

**ROOM AIR CONDITIONS °C - %RH**

Size	Conf.	20-50		22-50		24-50		26-50	
		Ct	Cs	Ct	Cs	Ct	Cs	Ct	Cs
		kW	kW	kW	kW	kW	kW	kW	kW
061	1, 7/1	19.9	18.3	20.6	18.6	21.3	19.0	22.2	19.2
	2, 6, 8 7/2, 7/6	17.4	17.1	18.2	17.3	19.1	17.8	19.8	17.9
071	1, 7/1	25.6	23.4	26.5	24.5	27.4	25.3	28.7	25.9
	2, 6, 8 7/2, 7/6	23.1	21.8	24.2	22.7	25.3	23.5	26.4	24.0
091	1, 7/1	30.3	26.8	31.6	28.2	32.6	29.1	34.3	29.8
	2, 6, 8 7/2, 7/6	27.0	24.8	28.3	26.0	29.6	26.9	31.1	27.5
101	1, 7/1	34.5	32.0	36.3	32.9	37.5	33.4	39.2	33.9
	2, 6, 8 7/2, 7/6	30.9	30.0	32.8	30.7	34.3	31.2	35.8	31.7
131	1, 7/1	43.0	41.2	44.8	42.4	46.8	43.7	48.8	43.9
	2, 6, 8 7/2, 7/6	38.7	37.6	40.7	38.4	43.0	39.4	44.7	39.8
151	1, 7/1	53.2	49.7	55.2	50.8	57.2	51.7	59.7	52.3
	2, 6, 8 7/2, 7/6	47.8	46.9	50.0	47.7	52.5	48.9	54.7	49.1
082	1, 7/1	27.9	26.5	28.9	27.3	30.1	28.0	31.5	28.5
	2, 6, 8 7/2, 7/6	24.8	23.5	26.0	24.1	27.4	24.8	28.7	25.2
102	1, 7/1	33.9	30.7	35.1	32.2	36.6	33.0	38.1	33.6
	2, 6, 8 7/2, 7/6	30.5	28.4	31.9	29.6	33.6	30.4	35.1	30.9
132	1, 7/1	45.4	41.4	47.2	43.1	49.0	44.3	51.3	45.0
	2, 6, 8 7/2, 7/6	40.3	37.9	42.2	39.3	44.4	40.4	46.4	41.1
152	1, 7/1	50.7	48.5	52.7	50.0	54.6	51.1	57.2	51.9
	2, 6, 8 7/2, 7/6	45.4	43.9	47.6	45.0	50.0	46.0	52.3	46.7
182	1, 7/1	61.4	57.0	64.0	58.8	66.4	60.0	69.5	60.8
	2, 6, 8 7/2, 7/6	54.3	53.2	57.1	54.6	60.0	55.7	62.8	56.4
202	1, 7/1	66.9	62.2	69.7	63.6	72.4	64.7	76.0	65.5
	2, 6, 8 7/2, 7/6	60.5	58.4	63.5	59.5	66.8	60.5	70.1	61.2
262	1, 7/1	85.7	81.0	88.7	83.2	92.2	84.9	97.1	86.2
	2, 6, 8 7/2, 7/6	76.5	75.0	79.9	76.7	84.1	78.3	88.5	79.5
302	1, 7/1	99.3	93.1	103.4	94.8	106.9	95.9	111.3	96.4
	2, 6, 8 7/2, 7/6	89.4	85.4	93.8	86.5	98.2	87.5	102.3	88.0

Ct - Total cooling capacity

Cs - Sensible cooling capacity

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

**CONF. 7 CHILLED WATER COIL COOLING CAPACITY DATA**

Size	In/out chilled water temperature °C	ROOM AIR CONDITIONS °C - %RH															
		20-50				22-50				24-50				26-50			
		Ct	Cs	Q	Dp	Ct	Cs	Q	Dp	Ct	Cs	Q	Dp	Ct	Cs	Q	Dp
kW	kW	l/s	kPa	kW	kW	l/s	kPa	kW	kW	l/s	kPa	kW	kW	l/s	kPa		
061	7/12	9.7	9.7	0.46	7	12.9	12.9	0.62	11	17.8	15.5	0.85	19	26.1	18.7	1.25	37
	10/15	5.7	5.7	0.27	3	8.5	8.5	0.41	5	11.7	11.7	0.56	9	14.9	14.9	0.71	14
071	7/12	14.6	14.6	0.70	6	19.8	19.8	0.95	10	28.3	24.2	1.35	18	40.8	28.9	1.95	35
	10/15	8.2	8.2	0.39	2	12.7	12.7	0.61	4	17.9	17.9	0.86	8	23.0	23.0	1.10	13
091	7/12	14.6	14.6	0.70	6	19.8	19.8	0.95	10	28.3	24.2	1.35	18	40.8	28.9	1.95	35
	10/15	8.2	8.2	0.39	2	12.7	12.7	0.61	4	17.9	17.9	0.86	8	23.0	23.0	1.10	13
101	7/12	17.2	17.2	0.82	6	23.7	23.7	1.13	10	34.3	29.1	1.64	19	48.8	34.6	2.33	35
	10/15	9.4	9.4	0.45	2	14.9	14.9	0.71	4	21.5	21.5	1.03	8	27.6	27.6	1.32	13
131	7/12	25.2	25.2	1.20	7	34.7	34.7	1.66	13	51.9	42.4	2.48	26	68.9	48.7	3.29	43
	10/15	12.5	12.5	0.60	2	21.7	21.7	1.04	6	31.6	31.6	1.51	11	39.6	37.9	1.89	16
151	7/12	29.6	29.6	1.41	9	40.0	40.0	1.91	15	59.8	48.0	2.86	29	78.8	55.0	3.76	48
	10/15	14.6	14.6	0.70	2	25.7	25.7	1.23	7	36.4	36.4	1.74	12	48.3	43.6	2.31	20
082	7/12	14.6	14.6	0.70	6	19.8	19.8	0.95	10	28.3	24.2	1.35	18	40.8	28.9	1.95	35
	10/15	8.2	8.2	0.39	2	12.7	12.7	0.61	4	17.9	17.9	0.86	8	23.0	23.0	1.10	13
102	7/12	17.2	17.2	0.82	6	23.7	23.7	1.13	10	34.3	29.1	1.64	19	48.8	34.6	2.33	35
	10/15	9.4	9.4	0.45	2	14.9	14.9	0.71	4	21.5	21.5	1.03	8	27.6	27.6	1.32	13
132	7/12	25.2	25.2	1.20	7	34.7	34.7	1.66	13	51.9	42.4	2.48	26	68.9	48.7	3.29	43
	10/15	12.5	12.5	0.60	2	21.7	21.7	1.04	6	31.6	31.6	1.51	11	39.6	37.9	1.89	16
152	7/12	29.6	29.6	1.41	9	40.0	40.0	1.91	15	59.8	48.0	2.86	29	78.8	55.0	3.76	48
	10/15	14.6	14.6	0.70	2	25.7	25.7	1.23	7	36.4	36.4	1.74	12	48.3	43.6	2.31	20
182	7/12	34.1	34.1	1.63	9	45.8	45.8	2.19	16	68.1	54.6	3.25	31	89.6	62.6	4.28	50
	10/15	16.7	16.7	0.80	3	29.7	29.7	1.42	7	41.8	41.8	2.00	13	56.1	50.0	2.68	22
202	7/12	34.1	34.1	1.63	9	45.8	45.8	2.19	16	68.1	54.6	3.25	31	89.6	62.6	4.28	50
	10/15	16.7	16.7	0.80	3	29.7	29.7	1.42	7	41.8	41.8	2.00	13	56.1	50.0	2.68	22
262	7/12	55.7	55.7	2.66	11	74.0	74.0	3.54	17	109.5	87.0	5.23	34	143.4	99.6	6.85	55
	10/15	26.2	26.2	1.25	3	48.6	48.6	2.32	8	67.5	67.5	3.23	14	92.3	80.4	4.41	25
302	7/12	55.7	55.7	2.66	11	74.0	74.0	3.54	17	109.5	87.0	5.23	34	143.4	99.6	6.85	55
	10/15	26.2	26.2	1.25	3	48.6	48.6	2.32	8	67.5	67.5	3.23	14	92.3	80.4	4.41	25

Ct - Total cooling capacity

Cs - Sensible cooling capacity

Q - Chilled water flow

Dp - Coil pressure drop

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

**CONF. 8 CHILLED WATER COIL COOLING CAPACITY DATA**

Size	Inlet chilled water temperature °C	ROOM AIR CONDITIONS °C - %RH															
		20-50				22-50				24-50				26-50			
		Ct	Cs	Q	Dp	Ct	Cs	Q	Dp	Ct	Cs	Q	Dp	Ct	Cs	Q	Dp
kW	kW	l/s	kPa	kW	kW	l/s	kPa	kW	kW	l/s	kPa	kW	kW	l/s	kPa		
061	7	8.0	8.0	0.46	8	10.1	10.1	0.62	13	13.1	13.1	0.85	23	19.0	16.0	1.25	45
	10	5.2	5.2	0.27	3	7.1	7.1	0.41	6	9.2	9.2	0.56	11	11.7	11.7	0.71	17
071	7	11.7	11.7	0.70	7	15.0	15.0	0.95	12	20.1	20.1	1.35	23	29.4	24.6	1.95	43
	10	7.4	7.4	0.39	3	10.4	10.4	0.61	5	13.7	13.7	0.86	10	17.6	17.6	1.10	15
091	7	11.7	11.7	0.70	7	15.0	15.0	0.95	12	20.1	20.1	1.35	23	29.4	24.6	1.95	43
	10	7.4	7.4	0.39	3	10.4	10.4	0.61	5	13.7	13.7	0.86	10	17.6	17.6	1.10	15
101	7	13.6	13.6	0.82	7	17.7	17.7	1.13	12	24.0	24.0	1.64	23	35.2	29.4	2.33	43
	10	8.5	8.5	0.45	2	12.0	12.0	0.71	5	16.1	16.1	1.03	10	20.9	20.9	1.32	15
131	7	18.3	18.3	1.20	9	25.0	25.0	1.66	16	35.5	35.5	2.48	32	51.4	42.2	3.29	53
	10	11.0	11.0	0.60	3	16.2	16.2	1.04	7	22.8	22.8	1.51	13	29.7	29.7	1.89	19
151	7	21.1	21.1	1.41	10	28.9	28.9	1.91	18	41.2	41.2	2.86	36	60.3	48.0	3.76	58
	10	12.7	12.7	0.70	3	18.6	18.6	1.23	8	26.4	26.4	1.74	15	35.7	35.7	2.31	24
082	7	11.7	11.7	0.70	7	15.0	15.0	0.95	12	20.1	20.1	1.35	23	29.4	24.6	1.95	43
	10	7.4	7.4	0.39	3	10.4	10.4	0.61	5	13.7	13.7	0.86	10	17.6	17.6	1.10	15
102	7	13.6	13.6	0.82	7	17.7	17.7	1.13	12	24.0	24.0	1.64	23	35.2	29.4	2.33	43
	10	8.5	8.5	0.45	2	12.0	12.0	0.71	5	16.1	16.1	1.03	10	20.9	20.9	1.32	15
132	7	18.3	18.3	1.20	9	25.0	25.0	1.66	16	35.5	35.5	2.48	32	51.4	42.2	3.29	53
	10	11.0	11.0	0.60	3	16.2	16.2	1.04	7	22.8	22.8	1.51	13	29.7	29.7	1.89	19
152	7	21.1	21.1	1.41	10	28.9	28.9	1.91	18	41.2	41.2	2.86	36	60.3	48.0	3.76	58
	10	12.7	12.7	0.70	3	18.6	18.6	1.23	8	26.4	26.4	1.74	15	35.7	35.7	2.31	24
182	7	24.2	24.2	1.63	11	33.2	33.2	2.19	19	47.1	47.1	3.25	38	69.2	54.8	4.28	62
	10	14.4	14.4	0.80	3	21.3	21.3	1.42	9	30.3	30.3	2.00	16	41.3	41.3	2.68	26
202	7	24.2	24.2	1.63	11	33.2	33.2	2.19	19	47.1	47.1	3.25	38	69.2	54.8	4.28	62
	10	14.4	14.4	0.80	3	21.3	21.3	1.42	9	30.3	30.3	2.00	16	41.3	41.3	2.68	26
262	7	38.7	38.7	2.66	13	53.3	53.3	3.54	21	75.3	75.3	5.23	42	112.8	87.9	6.85	67
	10	22.3	22.3	1.25	3	33.9	33.9	2.32	10	48.8	48.8	3.23	17	67.7	67.7	4.41	30
302	7	38.7	38.7	2.66	13	53.3	53.3	3.54	21	75.3	75.3	5.23	42	112.8	87.9	6.85	67
	10	22.3	22.3	1.25	3	33.9	33.9	2.32	10	48.8	48.8	3.23	17	67.7	67.7	4.41	30

Ct - Total cooling capacity

Cs - Sensible cooling capacity

Q - Chilled water flow

Dp - Coil pressure drop

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

**HOT WATER HEATING COIL CAPACITY**

Size	Th	ROOM AIR CONDITIONS °C								
		15			17			20		
	°C	Cr	Q	Dp	Cr	Q	Dp	Cr	Q	Dp
061	80/70	26.0	0.64	4	25.0	0.61	3	23.5	0.58	3
	80/65	23.4	0.38	2	22.4	0.36	1	20.9	0.34	1
071	80/70	42.7	1.04	12	41.1	1.01	11	38.7	0.95	10
	80/65	39.3	0.64	5	37.8	0.61	5	35.4	0.58	4
091	80/70	42.7	1.04	12	41.1	1.01	11	38.7	0.95	10
	80/65	39.3	0.64	5	37.8	0.61	5	35.4	0.58	4
101	80/70	51.4	1.26	19	49.5	1.21	18	46.7	1.14	16
	80/65	47.6	0.78	8	45.8	0.74	8	43.0	0.70	7
131	80/70	71.5	1.75	42	69.0	1.69	39	65.1	1.59	36
	80/65	66.8	1.09	18	64.2	1.05	17	60.4	0.98	15
151	80/70	81.5	1.99	62	78.6	1.92	58	74.2	1.82	53
	80/65	76.5	1.25	28	73.6	1.20	26	69.2	1.13	23
082	80/70	42.7	1.04	12	41.1	1.01	11	38.7	0.95	10
	80/65	39.3	0.64	5	37.8	0.61	5	35.4	0.58	4
102	80/70	51.4	1.26	19	49.5	1.21	18	46.7	1.14	16
	80/65	47.6	0.78	8	45.8	0.74	8	43.0	0.70	7
132	80/70	71.5	1.75	42	69.0	1.69	39	65.1	1.59	36
	80/65	66.8	1.09	18	64.2	1.05	17	60.4	0.98	15
152	80/70	81.5	1.99	62	78.6	1.92	58	74.2	1.82	53
	80/65	76.5	1.25	28	73.6	1.20	26	69.2	1.13	23
182	80/70	81.9	2.20	63	79.0	1.93	59	74.6	1.83	53
	80/65	76.9	1.25	28	73.9	1.21	26	69.6	1.13	23
202	80/70	81.9	2.20	63	79.0	1.93	59	74.6	1.83	53
	80/65	76.9	1.25	28	73.9	1.21	26	69.6	1.13	23
262	80/70	101.7	2.49	17	98.0	2.40	16	92.4	2.26	14
	80/65	94.5	1.54	7	90.8	1.48	7	85.3	1.39	6
302	80/70	101.7	2.49	17	98.0	2.40	16	92.4	2.26	14
	80/65	94.5	1.54	7	90.8	1.48	7	85.3	1.39	6

Th - Water temperature (°C)  
Cr - Heating capacity (kW)

Q - Water flow (l/s)  
Dp - Pressure drop (kPa)

### ELECTRIC HEATER CAPACITY

		Grandezza - Size													
		061	071	091	101	131	151	082	102	132	152	182	202	262	302
Single stage	Kw	6	9	9	12	15	18	9	12	15	18	18	18	24	24
Two stages	Kw	3.6/6	5.4/9	5.4/9	7.2/12	9/15	10.8/18	5.4/9	7.2/12	9/15	10.8/18	10.8/18	10.8/18	14.4/24	14.4/24
Three stages*	Kw	2.4/3.6/6	3.6/5.4/9	3.6/5.4/9	4.8/7.2/12	6/9/15	7.2/10.8/18	3.6/5.4/9	4.8/7.2/12	6/9/15	7.2/10.8/18	7.2/10.8/18	7.2/10.8/18	9.6/14.4/24	9.6/14.4/24
FLA**	A	8.7	13.0	13.0	17.3	21.7	26.0	13.0	17.3	21.7	26.0	26.0	26.0	34.6	34.6

\* Only for three phase systems with neutral

\*\* Referred to single stage heater

### PERFORMANCES OF DIRECT DRIVE BACKWARD-BLADE FANS

Available static pressure		SIZE													
		061	071	091	101	131	151	082	102	132	152	182	202	262	302
100	rpm	1140	1100	1100	1150	1270	1060	1100	1150	1270	1060	1100	1100	1200	1200
	kWa	1.2	1.8	1.8	1.4	2 x 1.5	2 x 1.6	1.8	1.4	2 x 1.5	2 x 1.6	2 x 1.8	2 x 1.8	2 x 3.0	2 x 3.0
200	rpm	1260	1250	1250	1290	-	1150	1250	1290	-	1150	1250	1250	1300	1300
	kWa	1.4	2.1	2.1	1.8	-	2 x 1.9	2.1	1.8	-	2 x 1.9	2 x 2.1	2 x 2.1	2 x 3.5	2 x 3.5
250	rpm	1310	1300	1300	1350	-	1200	1300	1350	-	1200	1300	1300	1320	1320
	kWa	1.5	2.2	2.2	2.0	-	2 x 2.0	2.2	2.0	-	2 x 2.0	2 x 2.2	2 x 2.2	2 x 3.9	2 x 3.9
	m³/s	1.45	2.13	2.13	2.60	3.70	4.25	2.13	2.60	3.70	4.25	4.75	4.75	7.72	7.72

rpm - Fan speed/Nominal air flow

kWa - Fan motor power input

m³/s - Max available air flow

### ELECTRICAL DATA

		SIZE													
		061	071	091	101	131	151	082	102	132	152	182	202	262	302
Full load power input (1)	kW	12.0	16.9	18.4	22.4	28.9	34.3	17.2	21.9	29.0	33.4	36.6	38.4	52.0	56.8
FLA (1)	A	23.3	29.6	31.9	37.1	45.7	56.7	29.8	37.5	48.3	59.4	63.8	65.2	81.6	89.4
LRA	A	83.6	112.1	136.1	140.3	181.9	215.7	78.6	86.6	126.1	128.9	155.0	159.7	204.9	239.8
Backward-blade fan	n	1	1	1	1	2	2	1	1	2	2	2	2	2	2
	kW tot	1.1	1.6	1.6	1.7	2.8	2.8	1.6	1.7	2.8	2.8	3.0	3.0	5.8	5.8
	A tot	6.3	4.4	4.4	4.6	6.2	9.0	4.6	4.6	6.2	9.0	8.8	8.8	11.4	11.4
Copper wire size (2)	5 x mm²	10	16	16	16	16	25	16	16	16	25	25	25	35	35
Electrical supply	V/ph/Hz	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.

## WATER CONNECTIONS

Connection		SIZE													
		061	071	091	101	131	151	082	102	132	152	182	202	262	302
Condenser water connections (conf. 1)	"G	1/2	3/4	3/4	3/4	3/4	1	2 x 1/2	2 x 1/2	2 x 1/2	2 x 3/4	2 x 3/4	2 x 3/4	2 x 1	2 x 1
Nominal pressure drop	kPa	3.1	4.5	3.4	4.6	4.7	4.6	3.1	3.0	3.5	4.2	3.5	4.7	4.5	4.4
Liquid line (conf. 2)	Ø	1/2"	5/8"	5/8"	5/8"	7/8"	7/8"	2 x 1/2"	2 x 1/2"	2 x 1/2"	2 x 5/8"	2 x 5/8"	2 x 5/8"	2 x 7/8"	2 x 7/8"
Gs suppli line (conf. 2)	Ø	5/8"	7/8"	7/8"	7/8"	1.1/8"	1.1/8"	2 x 5/8"	2 x 5/8"	2 x 5/8"	2 x 7/8"	2 x 7/8"	2 x 7/8"	2 x 1.1/8"	2 x 1.1/8"
Condenser water connections (conf. 6)	"G	1	1.1/4	1.1/4	1.1/4	1.1/2	2	2 x 1	2 x 1	2 x 1	2 x 1.1/4	2 x 1.1/4	2 x 1.1/4	2 x 1.1/2	2 x 2
Nominal pressure drop	kPa	53.1	42.0	56.6	49.0	54.7	58.0	33.6	47.7	57.4	40.7	58.3	49.9	52.0	55.0
3-way cooling coil valve	Ø	3/4"	1"	1"	1"	1"1/4	1"1/2	1"	1"	1"1/4	1"1/2	1"1/2	1"1/2	2"	2"
Nominal pressure drop (conf. 7)	kPa	23	25	25	30	22	30	25	30	22	30	15	15	17	17
Chilled water connections (conf. 7)	"G	1	1.1/4	1.1/4	1.1/4	1.1/2	1.1/2	1.1/4	1.1/4	1.1/2	1.1/2	2	2	2	2
Nominal pressure drop (conf. 8)	kPa	23	25	25	30	22	30	25	30	22	30	15	15	17	17
Chilled water connections (conf. 8)	"G	1.1/4	1.1/2	1.1/2	1.1/2	2	2	1.1/2	1.1/2	2	2	2	2	2	2
3-way heating coil valve	Ø	3/4"	1"	1"	1"	1"1/4	1"1/4	1"	1"	1"1/4	1"1/4	1"1/4	1"1/4	1"1/4	1"1/4
Nominal pressure drop	kPa	4	12	12	19	42	62	12	19	42	62	63	63	17	17
Hot water connections	"G	3/4	1	1	1	1.1/4	1.1/4	1	1	1.1/4	1.1/4	1.1/4	1.1/4	1.1/2	1.1/2
Humidifier water supply	"G	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"
Min int. diam. humid. supply	mm	6	6	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	32	32
Condensate drain	mm	20	2 x 20	2 x 20	2 x 20	2 x 20	2 x 20	2 x 20	2 x 20	2 x 20	2 x 20	2 x 20	2 x 20	2 x 20	2 x 20

## AIR FILTERS

		SIZE													
		061	071	091	101	131	151	082	102	132	152	182	202	262	302
Quantity	n	2	2	2	3	3	5	2	3	3	5	5	5	6	6
Dimensions	mm x mm	305	505	505	400	545	410	505	400	545	410	410	410	430	430
		935	885	885	885	885	885	885	885	885	885	985	985	1230	1230
Thickness	mm	48	48	48	48	48	48	48	48	48	48	48	48	48	48

## GLYCOL CORRECTION FACTORS

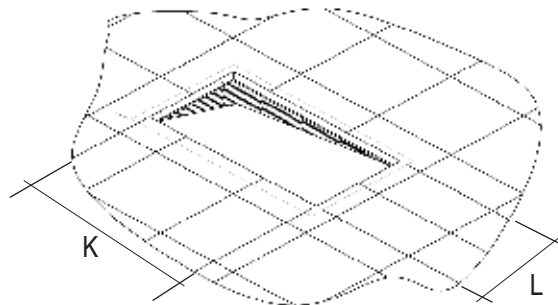
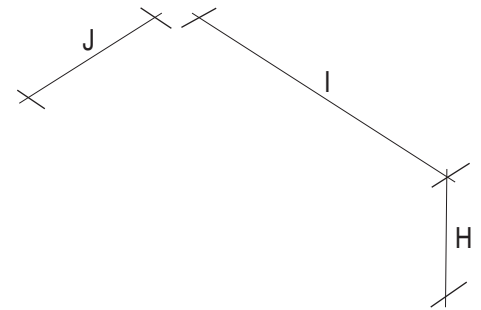
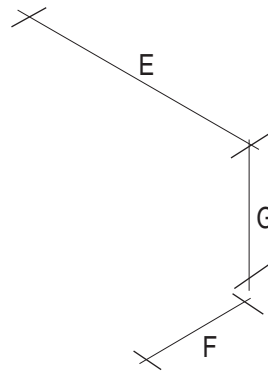
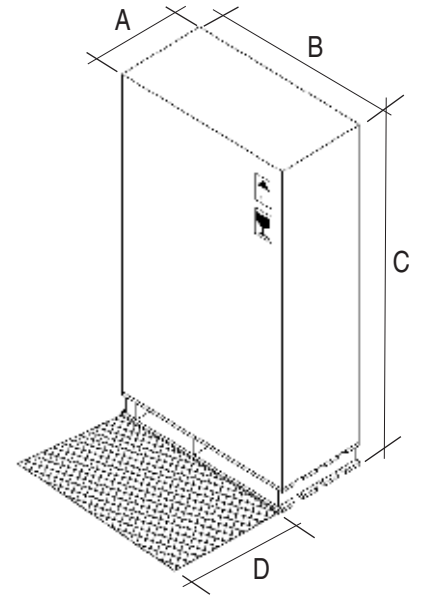
Glycol percentage		0%	10%	20%	30%	40%	50%
Freezing point	°C	0	-5	-10	-15	-20	-30
Capacity factor		1	0.98	0.95	0.93	0.91	0.88
Water flow factor		1	1.01	1.04	1.08	1.14	1.20
Pressure drop factor		1	1.05	1.13	1.21	1.26	1.32

# DIMENSIONS AND WEIGHTS

## PACKING - PLENUM - BASEFRAME - FLOOR HOLE

### SIZE (mm)

	061	071	091	101	131	151	082
<b>A</b>	900	900	900	900	900	900	900
<b>B</b>	900	1300	1300	1500	1950	2350	1300
<b>C</b>	2130	2130	2130	2130	2130	2130	2130
<b>D</b>	840	650	650	840	650	840	650
<b>E</b>	860	1258	1258	1448	1885	2265	1258
<b>F</b>	860	860	860	860	860	860	860
<b>G</b>	600	600	600	600	600	600	600
<b>H*</b>	150 700	150 700	150 700	150 700	150 700	150 700	150 700
<b>I</b>	780	1178	1178	1368	1805	2185	1178
<b>J</b>	780	780	780	780	780	780	780
<b>K</b>	740	1138	1138	1328	1765	2145	1138
<b>L</b>	720	720	720	720	720	720	720
<b>Kg**</b>	280	340	350	390	505	620	370



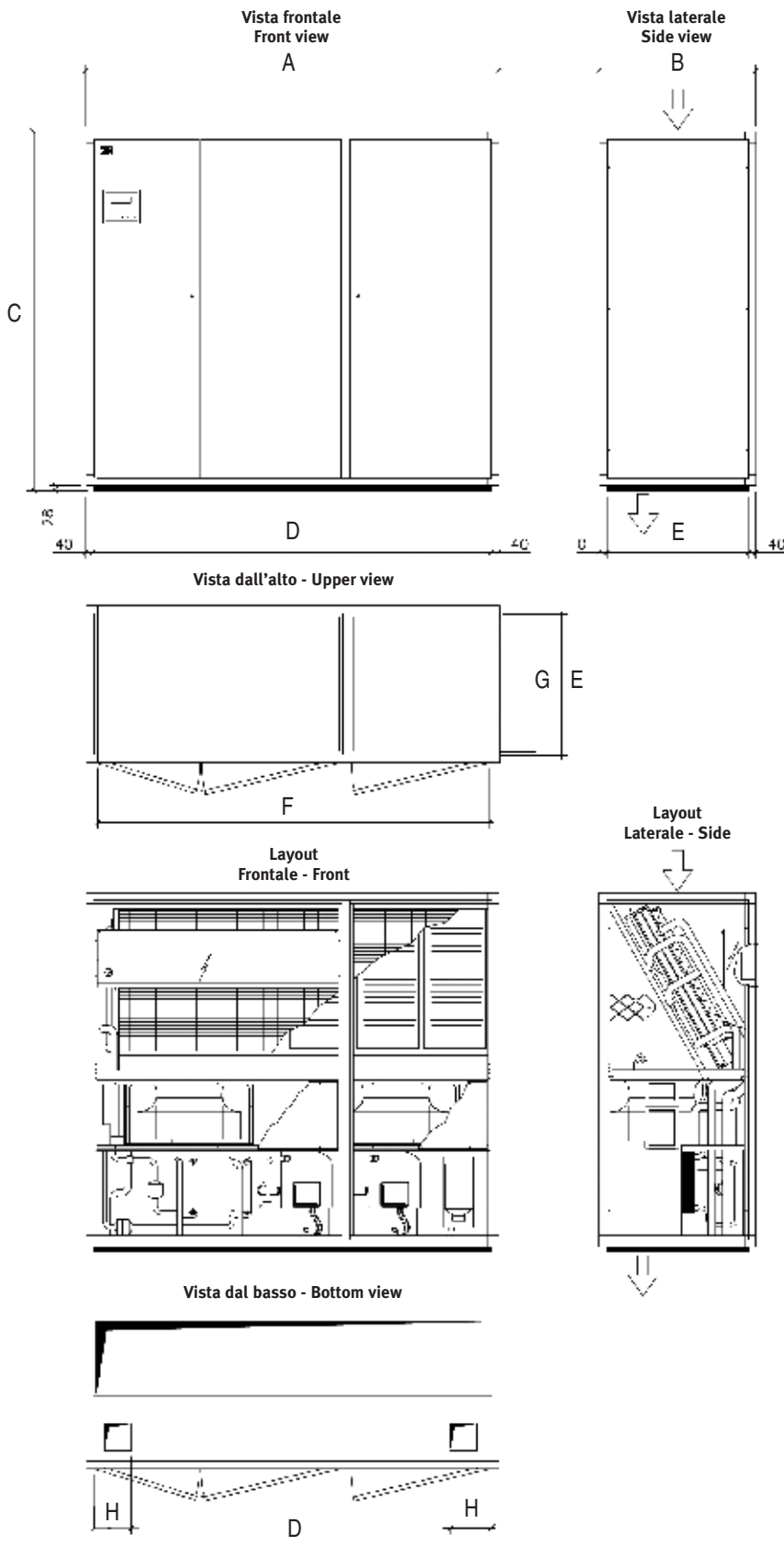
	102	132	152	182	202	262	302
<b>A</b>	900	900	900	900	900	900	900
<b>B</b>	1500	1950	2350	2350	2350	2950	2950
<b>C</b>	2130	2130	2130	2130	2130	2130	2130
<b>D</b>	840	650	840	840	840	840	840
<b>E</b>	1448	1885	2265	2265	2265	2853	2853
<b>F</b>	860	860	860	860	860	860	860
<b>G</b>	600	600	600	600	600	600	600
<b>H*</b>	150 700	150 700	150 700	150 700	150 700	150 700	150 700
<b>I</b>	1368	1805	2185	2185	2185	2773	2773
<b>J</b>	780	780	780	780	780	780	780
<b>K</b>	1328	1765	2145	2145	2145	2736	2736
<b>L</b>	720	720	720	720	720	720	720
<b>Kg**</b>	410	525	640	695	840	930	950

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

\*\* Shipping weight



# DOWN-FLOW VERSION



SIZES FOR DOWN-FLOW VERSION

	061	071	091	101	131	151	082
A	860	1258	1258	1448	1885	2265	1258
B	860	860	860	860	860	860	860
C	1980	1980	1980	1980	1980	1980	1980
D	780	1178	1178	1368	1805	2185	1178
E	780	780	780	780	780	780	780
F	740	1138	1138	1328	1765	2145	1138
G	740	740	740	740	740	740	740
H	150	150	150	150	150	150	150

# UP-FLOW VERSION

AND UP-FLOW VERSION (mm)							
	102	132	152	182	202	262	302
A	1448	1885	2265	2265	2265	2853	2853
B	860	860	860	860	860	860	860
C	1980	1980	1980	1980	1980	1980*	1980*
D	1368	1805	2185	2185	2185	2773	2773
E	780	780	780	780	780	780	780
F	1138	1765	2145	2145	2145	2733	2733
G	740	740	740	740	740	740	740
H	150	150	150	150	150	150	150

