

**Data Book**

T\_CRCX\_0521\_EN

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# CRCX

**4-68 kW**

**FULL INVERTER split-system air conditioners for IT Cooling.  
To be matched with outdoor unit.**



The picture of the unit is indicative and may vary depending on the model

- In-row / enclosure installation
- For high density rack and blade server
- Fully hermetic BLDC inverter compressors (on outdoor unit)
- Single refrigerant circuit
- Plug fans with EC electric motor
- Electronic expansion valve

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**CERTIFICATIONS**



**ISO 9001 CERTIFICATION**  
Quality Management System



**ISO 14001 CERTIFICATION**  
Environmental Management System



**BS OHSAS 18001 CERTIFICATION**  
Occupational Health and Safety Management System



**CE MARKING**



**CCC – CQC CERTIFICATION**  
(People's Republic of China)



**EAC CERTIFICATION**  
(Russian Federation, Belarus, Kazakhstan)

**GENERAL CHARACTERISTICS**



Model 0051, 0071, 0121



Model 0151, 0251

**FULL INVERTER split-system air conditioners for IT Cooling.**

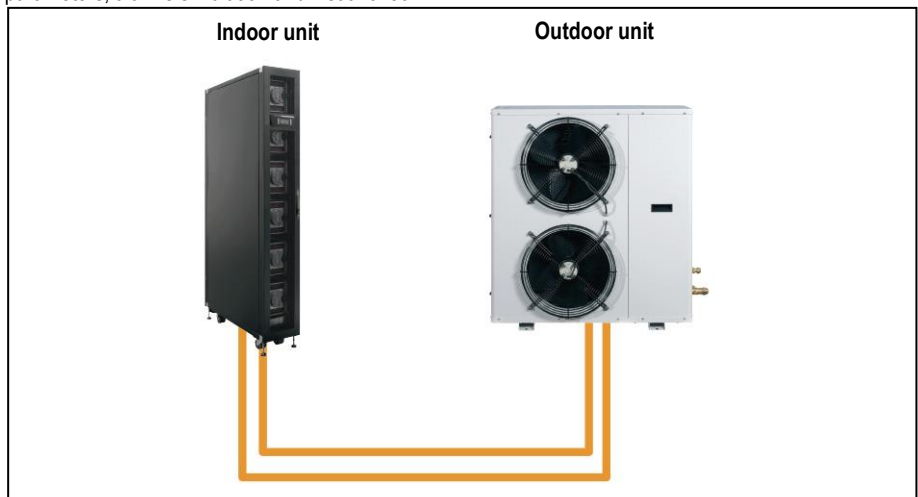
- Direct expansion
- Air cooled;
- Electronic expansion valve;
- Plug fans with EC electric motor;
- Single refrigerant circuit.

This series is offered in 5 models available in the following version:

- IN ROW "I" air flow: Frontal or side air delivery, back side air suction  
Cooling capacity: 4 ÷ 57 kW
- ENCLOSURE "E" air flow: Side air delivery, side air suction  
Cooling capacity: 6 ÷ 68 kW

**Indoor units**

The machines are made for indoor installation. The constructive solutions and the internal lay-out allow high application flexibility and the frontal access to the main components for the inspection and routine maintenance. The installation requires refrigerant charge, electrical, refrigerant and hydraulic connections. Final assembly on all machines before shipment including running test, reading and monitoring of operating parameters, alarms simulation and visual check.



**Outdoor units**

- Hermetic BLDC inverter compressor

The machines are made for outdoor installation. The constructive solutions and the internal lay-out allow high application flexibility and the frontal access to the main components for the inspection and routine maintenance. The installation requires refrigerant charge, electrical and refrigerant connections. Final assembly on all machines before shipment including running test, reading and monitoring of operating parameters, alarms simulation and visual check.



**INSTALLATION**

The series is particularly suitable for installation in Data Center with hot spot for high density racks and blade server cooling. It is able to cope the high density of the thermal load in a small space, **up to and over 40kW/m<sup>2</sup> per rack**.

For installation are not required underfloor plenum, ducts or false-ceilings; the installation foresees the direct insertion within the rows of racks to cool.

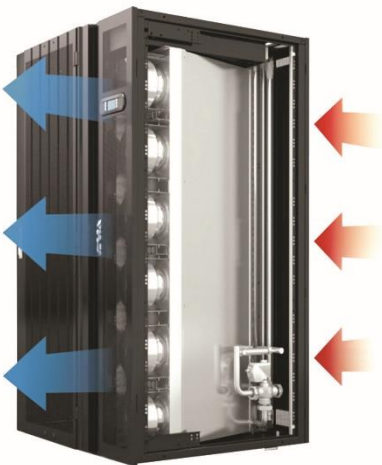
This allows to contrast the localized heat sources (hot spot) tailoring the installation to the actual situation of the plant. Another big advantage is the modularity and scalability of the system, characteristics that allow for quick adjustment and economic development of plant layout, according to the changing needs of the infrastructure.

**IN ROW COOLING SYSTEM FOR ROWS OF RACKS (hot/cold aisles)**

Units are placed in the rows of racks that are arranged so as to obtain alternate cold and hot aisles. Electronic equipment contained in racks independently provide to aspire the necessary air for cooling.

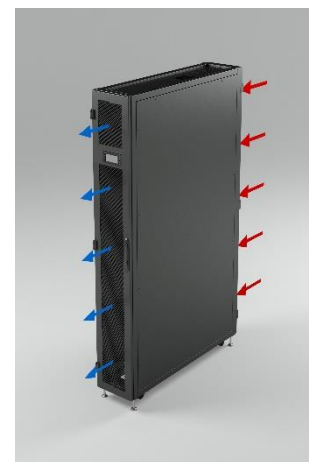
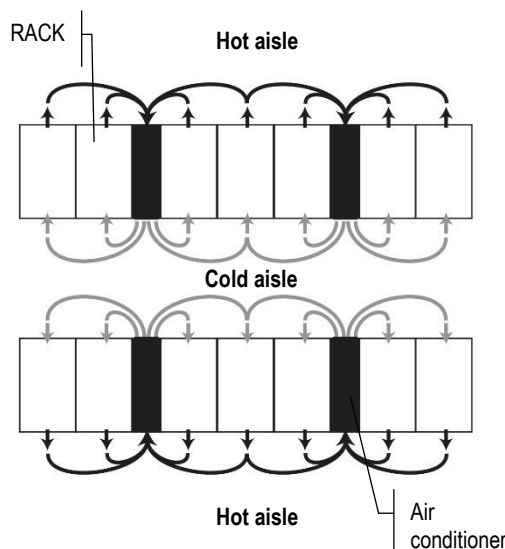
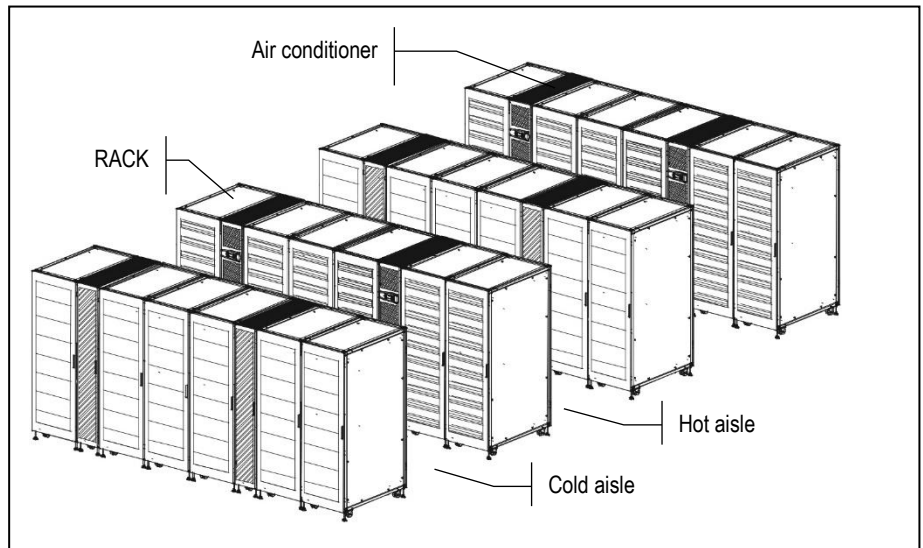
- In the hot aisle rack expels the hot air used to cool the electronic components while the air conditioner draws the hot air to be cooled.
- In the cold aisle the air conditioner blows the filtered and cooled air while the rack draws cold air to cool the electronic components.

**PLANT TYPE**



**"I" VERSION - IN ROW VERSION – FRONTAL AIR DELIVERY**

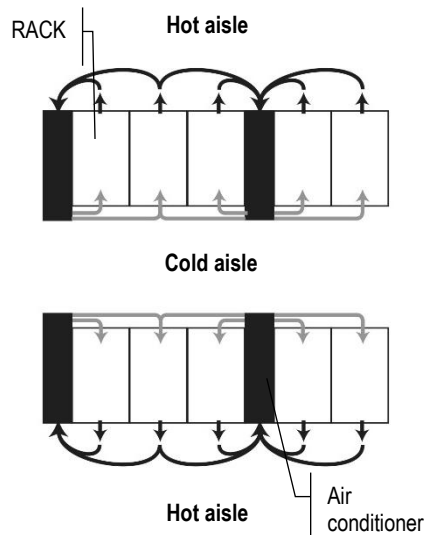
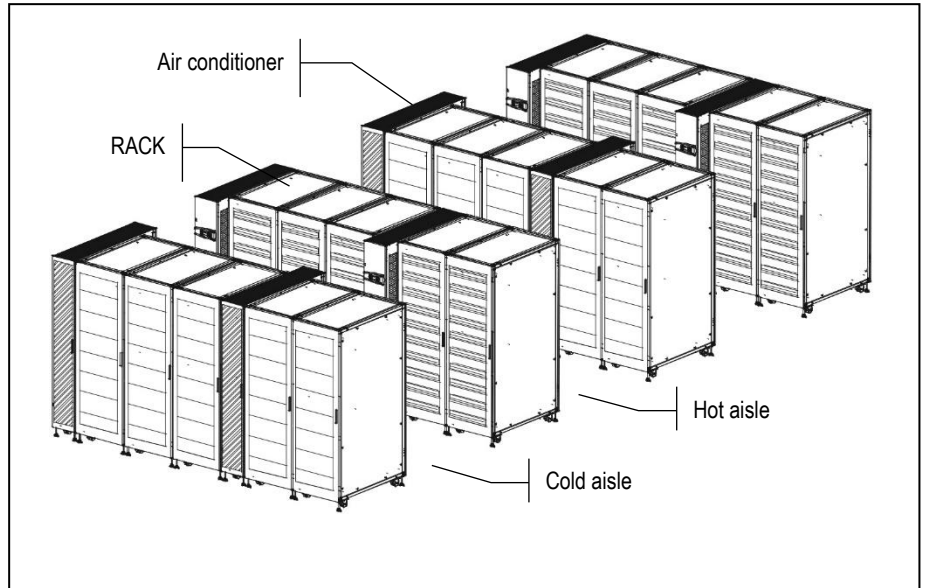
Frontal air delivery. Rear air suction.



Frontal air delivery  
Rear air suction

**"I" VERSION - INROW VERSION WITH SIDE AIR DELIVERY**

In the version with side outlet, the air is delivered directly to the front of the racks, reducing the risk of mixing between cold and hot air, and ensuring correct air distribution even when the rack cooler is installed at the start of the row.



Right + Left air delivery.  
Rear air suction.



Left air delivery.  
Rear air suction.



Right air delivery.  
Rear air suction.

**"E" VERSION - ENCLOSURE COOLING SYSTEM FOR DIRECT COOLING OF THE RACKS**

The rows of racks are arranged so as to insert an air conditioner between two racks.

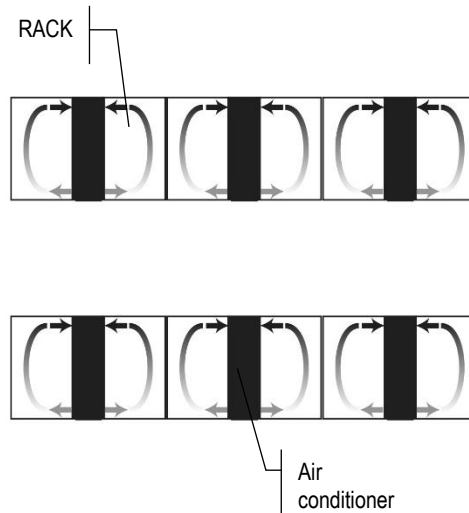
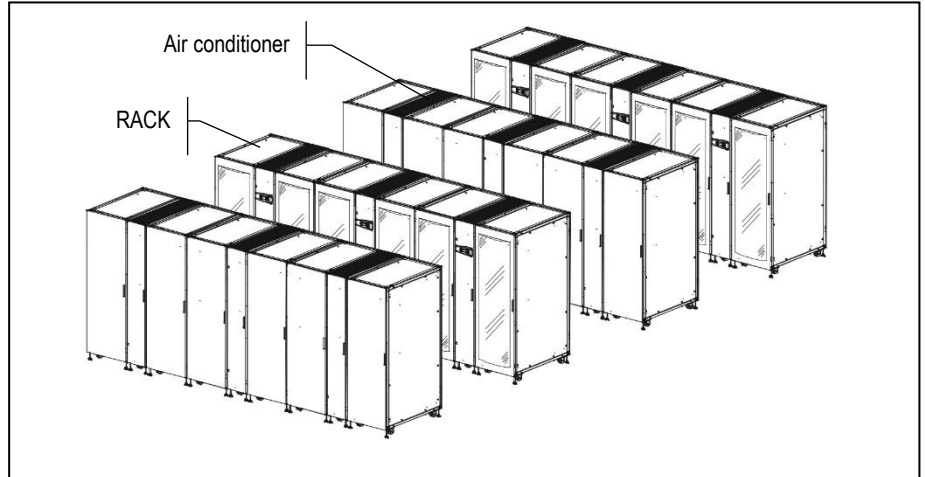
The racks are equipped with tight door for the containment of cooling air.

The air conditioner blows filtered and cooled air in the frontal side of the rack where the electronic equipment draws the cooled air.

Thanks to the "closed" cooling system the electronic equipment contained in racks do not require fans for air circulation.

In the back side of the rack, the hot air is drawn by the air conditioner that will repeat the cooling cycle.

**ENCLOSURE VERSION**



Right + left air outlet  
Right + left air intake.



Left air outlet.  
Left air intake.



Right air outlet.  
Right air intake.



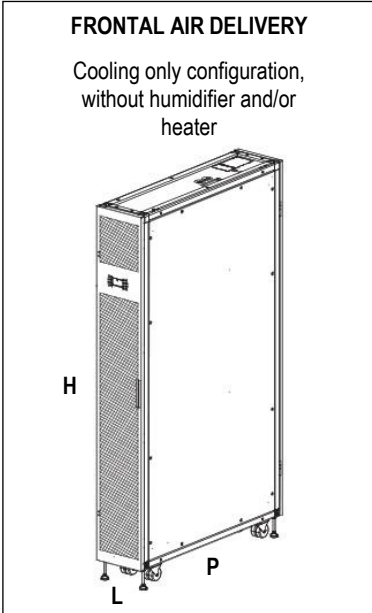
## CONFIGURATIONS

The desired configuration must be selected during the order phase.

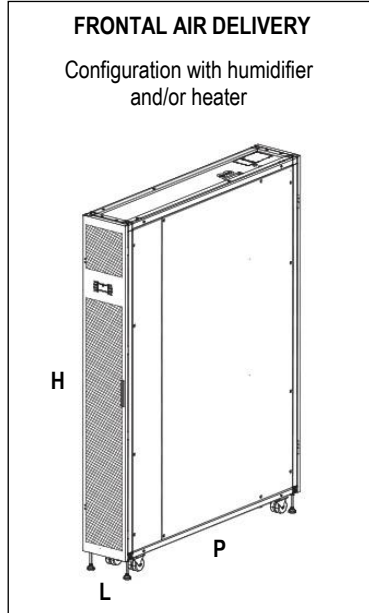
### “I” VERSION

IN ROW COOLING SYSTEM (hot/cold aisle)

FRONTAL air delivery; BACK SIDE air suction

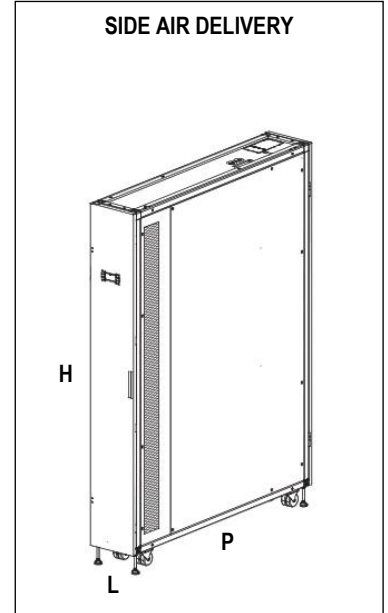


DIMENSIONS		
L (mm)	300	600
P (mm)	1000/1200(*)	
H (mm)	2085	



DIMENSIONS		
L (mm)	300	600
P (mm)	1200 (*)	1000/1200(*)
H (mm)	2085	

SIDE air delivery; BACK SIDE air suction



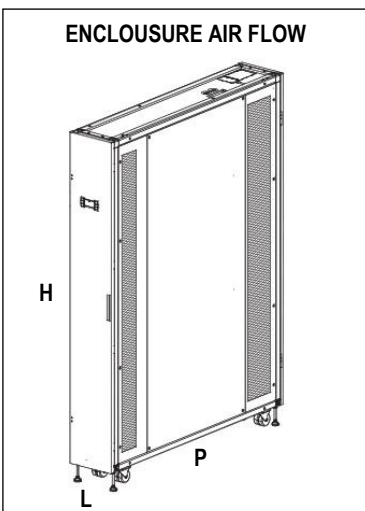
DIMENSIONS		
L (mm)	300	600
P (mm)	1200	
H (mm)	2085	

(\*) Increased frame dimensions for in-row version with frontal air delivery. Optional mandatory for in-row version with frontal air delivery with Humidifier (optional) and/or electric heater (optional) for models 0051, 0071, 0121.

### “E” VERSION

ENCLOSURE COOLING SYSTEM - IN RACK (close loop).

SIDE air delivery; SIDE air suction



DIMENSIONS		
L (mm)	300	600
P (mm)	1200	
H (mm)	2085	

**PRODUCT FEATURES AND BENEFITS**



**EFFICIENCY**

The unit combines the efficiency of the use of the last EC fans generation and a direct expansion system with inverter compressor (within outdoor unit) allowing a great EER value. Thanks to the adoption of BLDC inverter compressors, these units can reduce by 50% the consumption at partial load if compared to traditional ON/OFF compressor unit. This is made possible also thanks to the advantage of variable air flow enabled by EC fans.

**FLEXIBILITY**

The In-Row and Enclosure versions are both equipped with predisposition for passing refrigerant connections and power both from above and below, so as to allow a quick and easy installation in any condition, whether or not foreseen the presence of a raised floor.

**IDM - INTEGRATED DYNAMIC MANAGEMENT OF TEMPERATURE**

The units are supplied with a new management algorithm called IDM INTEGRAL DYNAMIC MANAGEMENT able to prevent stratification of temperature within the rack using 4 sensors (2 on the air suction and 2 on the air outlet) integrated and independent that, on the basis of the real load in the single stratified BLADE, work to optimize the ventilation only when required so as to maximize energy benefits. The IDM also provides the optimal management of the outlet treated air temperatures integrating the various resources in a DYNAMIC and INTELLIGENT way to avoid unpleasant condensation and ensuring (SHR = 1).

**MODULARITY**

The units, with their characteristics of dimensional standardization based on the rack, are ideal for all those Data Centers where SCALABILITY of the system is a strategic factor.

**COMPARTMENT**

Perfect integration with systems that minimize the mixing of air between the hot and cold aisles and that emphasize the efficiency of such systems.

The series represents the state of the art of the air conditioning of Data Center with hot spots for high density racks and blade server cooling. The modularity of the system together with the adaptive logic of microprocessor control, make it the best solution for racks and the latest generation equipment cooling.

- EER up to 7,10 at nominal conditions.
- High cooling density, **up to and over 40kW/m<sup>2</sup> per rack.**
- Single BLDC scroll inverter compressor (within outdoor unit) in order to provide always the best efficiency;
- New plug fans with EC electric motors and impeller in composite material, which guarantees a reduction of power consumption;
- New fans electric motor that do not require maintenance;
- Total modulating, FULL INVERTER;
- Improvement of the control software with advanced control logic;
- Single refrigerant circuit;
- Total frontal access and lateral panels fully removable to facilitate the operations of extraordinary maintenance;

**F-GAS DIRECTIVE**

The units highlighted in this publication contain <HFC R410A [GWP<sub>100</sub> 2088]> fluorinated greenhouse gases.

## MODEL IDENTIFICATION

### CRCX I 0051 BASIC

<b>CRCX</b>	<b>Series</b>
I	IN-RROW air flow
E	ENCLOSURE air flow
<b>0051</b>	<b>Model</b>
<b>BASIC</b>	Single refrigerant circuit

### Outdoor units iHCAT LT 0051

<b>iHCAT</b>	<b>Series</b>
	With BLDC inverter compressor
<b>LT</b>	<b>Version</b>
	BASIC: standard version
	LT version for low outdoor temperature
<b>0051</b>	<b>Model</b>

## WORKING LIMITS

### ROOM AIR CONDITIONS

Room air temperature:  
 IN-RROW air flow: 23°C / 53% U.R. ÷ 40°C / 20% U.R.  
 ENCLOSURE air flow: 30°C / 35% U.R. ÷ 50°C / 12% U.R.

### AMBIENT AIR TEMPERATURE

With outdoor unit, BASIC version  
 +45°C Maximum ambient air temperature  
 -20°C Minimum ambient air temperature

With outdoor unit, LT version  
 +45°C Maximum ambient air temperature  
 -35°C Minimum ambient air temperature

All the values are indicative. The working temperatures are influenced by a series of variables as:

- Working conditions;
- Thermal load;
- Set of the microprocessor control.

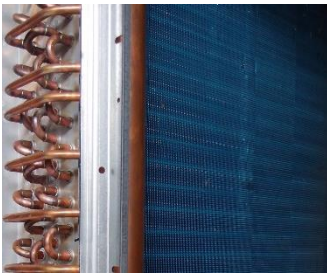
### POWER SUPPLY

± 10% Maximum tolerance of the supply voltage (V)  
 ± 2% Maximum unbalancing of the phases.

## TRANSPORT AND STORAGE TEMPERATURE

During transport and if the machine is not installed at the reception, do not remove the packaging and place the machine in an enclosed, dry and protected from sunlight site at temperatures ranging between -30°C and 50°C in absence of superficial condensation.

## MAIN COMPONENTS – INDOOR UNIT



### FRAMEWORK

- Framework in galvanized steel sheet externally painted with epoxy powders.
- Panel coated with a double layer of plastic and internally insulated with noise absorption material.
- Access doors. The doors are equipped with handle with security lock.
- Holders for unit height adjusting.
- Colour RAL 9005.
- Air flow:
  - IN ROW cooling system (for rows of racks) "I" VERSION:
    - Air intake from the back side and frontal or side air delivery through honeycomb type grilles.
  - IN RACK cooling system (direct cooling of racks) "E" VERSION:
    - Air intake from side and air delivery from side through honeycomb type grilles.

### FILTER SECTION

Models 0051, 0071, 0121:

- Washable air filters with COARSE 40% efficiency (according to ISO EN 16890), with cells in synthetic fibre, supported by a frame with protective metal mesh. The filtering media is flame retardant.

Models 0151, 0251:

- Washable air filters with COARSE 60% efficiency (according to ISO EN 16890), with cells in synthetic fibre, supported by a frame with protective metal mesh. The filtering media is flame retardant.

### COOLING SECTION

- Heat exchanger coil with internally corrugated copper tubes and high efficiency aluminium fins, specifically developed to provide high heat transfer and lower pressure drops.
- Finned pack with hydrophilic treatment that assure the condensate water drop, high thermal conductivity and does not favour the growth of micro-organisms.
- Condensate tray with connection (internal diameter Ø16) for a discharge tube or for a pump for condensate drain (option).

### FANS SECTION

- Centrifugal fans with backward curved blades, single suction and without scroll housings (Plug-fans), directly coupled to brushless type synchronous EC motor with integrated electronic commutated system and continuous variation of the rotation speed. The motor rotation control is obtained with the EC system (Electronic Commutation) that manage the motor according to the 0÷10V proportional signal coming from the microprocessor control.
- Fans quick installation system for a fast replacement.
- N+1 dynamic management of EC fans. Allows operation at reduced flowrate to optimise power consumption. Moreover, in the event of a fault on one fan, the other fans are operated at maximum speed to ensure the same cooling performance.
- Nr.2 temperature sensors on air delivery.
- Nr.2 temperature sensors on air intake.
- Current detector for loss of air flow alarm.

### REFRIGERANT CIRCUIT

The indoor unit is supplied with seal charge.

- Electronic expansion valve. The valve allows high performance and system efficiency thanks to a timely and accurate response to changes in temperature and pressure
- Refrigerant pressure transducer for expansion valve.
- Refrigerant temperature sensor for expansion valve.
- Low pressure safety switch with automatic reset.
- Valves on liquid and suction line for coupling to outdoor unit.
- Predisposition for refrigerant connections from the bottom or from the top of the unit.

### ELECTRICAL PANEL

Extractable electrical panel in accordance with EN60204-1 norms, complete with:

- Magnetothermic switches for supply fans.
- Terminals for smoke/fire alarm and LAN connection.
- Power supply: 230/1/50 or 400/3+N/50 according to the model (see TECHNICAL DATA)



## CONTROL SYSTEM

- Microprocessor system with graphic display for control and monitor of operating and alarms status. The system includes:
  - Built-in memory for the storing of the intervened events (up to 100 events recorded);
  - Predisposition for connectivity board housing (RS485, LON, Ethernet. The electronic cards are optional accessories;
  - Non-volatile "Flash" memory for data storage in case of power supply faulty;
  - Menu with protection password;
  - LAN connection (max 10 units).

**MAIN COMPONENTS – OUTDOOR UNIT 0051, 0071, 0121**



**BASIC version and LT version for low outdoor temperature FRAMEWORK**

- Frame and panels in galvanized steel sheet and painted with epoxy powders. Colour RAL 9010;
- Non-flammable closed cell polyethylene foam thermal insulation and soundproofing on the inside
- Screwed panels.
- Total front access for routine maintenance.
- Compartment for electrical panel on unit front for direct access to control and regulation devices;
- Packing unit on pallet with carton.

**CONDENSING SECTION**

- Heat exchanger coil with copper tubes and high efficiency aluminium fins, specifically developed to provide high heat transfer and lower pressure drops.
- Coil protection net.
- Frame in galvanized steel or peralluman.

**CONDENSER FAN SECTION**

- Axial fans with sickle-shaped blades, fan guard and optimized for low noise levels.
- AC electric motor
- Condensing control system with variation of fan speed through phase-cut electronic regulator directly driven by the condensing pressure proportional signal.
- Ambient air temperature probe.
- IP54 enclosure class.
- Rubber support

**COMPRESSOR SECTION**

Model 0051:

- Rotary BLDC inverter compressors optimized for R410A refrigerant:
- Synchronous brushless inverter driven motor.
- Inverter for modulating capacity control.
- Reactance for the reduction of electromagnetic noise and interference.
- Crankcase heater.
- Oil separator on refrigerant discharge
- Rubber supports.

Model 0071, 0121:

- Scroll BLDC inverter compressors with spiral profile optimized for R410A refrigerant:
- Synchronous brushless inverter driven motor.
- Inverter for modulating capacity control.
- Reactance for the reduction of electromagnetic noise and interference.
- Crankcase heater.
- Oil separator on refrigerant discharge
- Rubber supports.

**REFRIGERANT CIRCUIT**

The outdoor unit is supplied with a minimum R410A refrigerant charge.

- Sight glass.
- Filter dryer on liquid line.
- High pressure safety switch with manual reset.
- High pressure transducer for condensing control:
- Condenser fan with AC motor:
  - Condensing control with variation of fan speed through phase-cut electronic regulator.
- Liquid receiver with safety valve (see refrigerant circuit)
- Liquid separator on compressor suction line (mod. 0071, 0121)
- Check valve on condenser inlet
- Solenoid valve for bypass on compressor discharge / suction
- Check valve on liquid receiver inlet/outlet (LT version)
- 3-way pressostatic valve (LT version)
- Lubricant oil charge.
- External refrigerant connections with valves

**ELECTRICAL PANEL**

In accordance with EN60204-1 norms, suitable for indoor installation, complete with:

- Main switch with door lock safety on frontal panel.
- Magnetothermic switches for fan and compressor.
- Transformer for auxiliary circuit and microprocessor supply.
- Terminals for inlets / outlets.
- Power supply: 230/1/50 or 400/3+N/50 according to the model (see TECHNICAL DATA). The power supply is independent from the outdoor condensing unit.

## MAIN COMPONENTS – OUTDOOR UNIT 0151, 0251



### BASIC version and LT version for low outdoor temperature

#### FRAMEWORK

- Frame and panels in galvanized steel sheet and painted with epoxy powders. Colour RAL 9010;
- Containing box for compressors.
- Compartment for electrical panel on unit front for direct access to control and regulation devices.

#### CONDENSING SECTION

- Heat exchanger coil with copper tubes and high efficiency aluminium fins, specifically developed to provide high heat transfer and lower pressure drops.
- Frame in galvanized steel or peralluman.

#### CONDENSER FAN SECTION

- Axial fans with sickle-shaped blades, fan guard and optimized for low noise levels.
- AC electric motor
- Condensing control system with variation of fan speed through phase-cut electronic regulator directly driven by the condensing pressure proportional signal.
- Ambient air temperature probe.
- IP54 enclosure class.
- Rubber support

#### COMPRESSOR SECTION

- Scroll BLDC inverter compressors with spiral profile optimized for R410A refrigerant:
- Synchronous brushless inverter driven motor.
- Inverter for modulating capacity control.
- Reactance for the reduction of electromagnetic noise and interference.
- Crankcase heater.
- Oil separator on refrigerant discharge
- Rubber supports.

#### REFRIGERANT CIRCUIT

The outdoor unit is supplied with a minimum R410A refrigerant charge.

- Sight glass.
- Filter dryer on liquid line.
- High pressure safety switch with manual reset.
- High pressure transducer for condensing control:  
Condenser fan with AC motor:
  - Condensing control with variation of fan speed through phase-cut electronic regulator.
- Liquid receiver with safety valve
- Liquid separator on compressor suction line
- Check valve on condenser inlet
- Solenoid valve for bypass on compressor discharge / suction
- Check valve on liquid receiver inlet/outlet (LT version)
- 3-way pressostatic valve (LT version)
- Lubricant oil charge.
- External refrigerant connections, with valves.

#### ELECTRICAL PANEL

In accordance with EN60204-1 norms, suitable for indoor installation, complete with:

- Main switch with door lock safety on frontal panel.
- Magnetothermic switches for fan and compressor.
- Contactors for each load.
- Transformer for auxiliary circuit and microprocessor supply.
- Terminals for inlets / outlets.
- Power supply: 400/3+N/50  
The power supply is independent from the outdoor condensing unit.

**OPTIONAL ACCESSORIES – INDOOR UNIT**

- B031..... **Frame dimensions 42U 300 x 1200** for models 0051, 0071, 0121. The optional accessory is mandatory for In-Row version with frontal air delivery with Humidifier (optional) and/or Electric heating (optional).
- B033..... **Frame dimensions 42U 600 x 1200** for models 0151, 0251.
- A903..... **Enclosure version with air supply L + R** for models 0051, 0071, 0121.
- A906..... **InRow version with air supply L + R**. It is mandatory to use a frame with a depth of 1200mm.
- A557..... **460/3/60 power supply** for models 0071, 0121, 0151, 0251.
- A558..... **380/3/60 power supply** for models 0071, 0121, 0151, 0251.
- A559..... **230/1/60 power supply** for models 0051.
- 383 ..... **Numbered wirings + UK requests;**
- A431..... **Electric heater:** Electric heating system.
- A432..... **Enhanced electric heater:** Enhanced electric heating system.
- A801..... **Temperature/Humidity sensor only:** Combined room temperature / humidity probe. Only visualization of room humidity.
- A802..... **Humidifier:** Modulating steam humidifier with immersed electrodes with electronic control. The optional foresee the "Temperature / Humidity sensor on air intake" and control board.
- A803..... **Dehumidification.** The optional foresee the "Temperature / Humidity sensor on air intake".
- A804..... **Humidifier + Dehumidification:** Modulating steam humidifier with immersed electrodes with electronic control and dehumidification system. The optional foresee the "Temperature / Humidity sensor on air intake" and control board.
- A381..... **Standard condensate drain pump.** Installed on the unit. For low temperature water.
- A471 / A473 / A474 ..... **Serial card:**  
  - A471 – RS485 serial card;
  - A473 – Ethernet card;
  - A474 – LON card;
- A501..... **Clogged filter sensor.** Differential pressure switch on the air side for clogged filters alarm signal.
- A521..... **Fire detector.**
- A511..... **Smoke detector.**
- A491..... **Water leakage detector.** Under floor water alarm through sensor to be placed on the floor. Supplied in mounting kit.
- A842..... **Network analyzer:** multifunction utility for calculating and displaying the machine electrical measurements.
- A872..... **Double power supply** with automatic change-over. Supplied in mounting kit.
- A882..... **Clamping kits floor:** Floor brackets fixing kit
- 7387062800 ..... **H.T. condensate drain pump kit :** Humidifier and condensate drain pump kit. For high water temperature. Supplied in mounting kit.
- 7387012600 ..... **Remote terminal display.** for wall mounting
- 5587172400 ..... **Anti-mixing frontal/back panel L300mm.** Not compatible with optional "floor brackets fixing kit".
- 5587172500 ..... **Anti-mixing frontal/back panel L600mm.** Not compatible with optional "floor brackets fixing kit".
- 5587172800 ..... **Anti-mixing side panel W1000mm**
- 5587172900 ..... **Anti-mixing side panel W1200mm**
- 9973 ..... **Wooden cage packing:** Unit packing in wooden cage

**WARNING**

The manufacturer reserves the right to accept the matching of the optional installed on the machine.



## OPTIONAL ACCESSORIES – OUTDOOR UNIT

A557.....	<b>460/3/60 power supply</b> for models 0071, 0121, 0151, 0251.
A558.....	<b>380/3/60 power supply</b> for models 0071, 0121, 0151, 0251.
A559.....	<b>230/1/60 power supply</b> for models 0051.
A932.....	<b>EC fan with UPS VDC:</b> Axial fans with sickle-shaped blades, fan guard and optimized for low noise levels. <ul style="list-style-type: none"> <li>- EC type electric motor with external rotor</li> <li>- Integrated motor thermal protection</li> <li>- Protection grid on the fan air supply.</li> </ul>
881.....	<b>Copper/Copper external coil:</b> Condensing coil Cu/Cu execution
893.....	<b>Epoxy coated external coil:</b> Condensing coil with epoxy paint protection
896.....	<b>Cataphoresis coated external coil:</b> Condensing coil with cataphoresis paint protection.
A181.....	<b>Soundproof jacket:</b> Compressor soundproof cap for a sound level reduction of 2 dB(A). Only for Basic unit.
A842.....	<b>Network analyzer:</b> multifunction utility for calculating and displaying the machine electrical measurements.
A872 / A874 / A875.....	<b>Dual power supply with automatic switch.</b> Double power supply with automatic change-over.
7378005800.....	<b>Rubber insulators kit:</b> Rubber holders for installation on floor (for models 0051)
7378005900.....	<b>Rubber insulators kit:</b> Rubber holders for installation on floor (for models 0071, 0121)
F400500001.....	<b>Rubber insulators kit:</b> Rubber holders for installation on floor (for models 0151, 0251)
9973.....	<b>Wooden cage packing:</b> Unit packing in wooden cage

### WARNING

The Manufacturer reserves the right to accept the matching of the optional installed on the machine.

**TECHNICAL DATA – In Row “I” Version**

INDOOR UNIT									
MODEL	0051					0071			
COOLING CAPACITY (1)	100%	80%	60%	45%	100%	80%	60%	40%	
Total	kW	10,6	8,48	6,36	4,64	16,6	13,3	9,96	6,78
Sensible	kW	9,61	8,03	5,98	4,64	15,7	12,5	9,80	6,78
SHR (2)		0,91	0,94	0,94	1,00	0,94	0,94	0,99	1,00
<b>SUPPLY FAN</b>	n.	2			4				
Fan type		Plug Fan EC			Plug Fan EC				
Air flow	m³/h	1500	1287	1073	900	2700	2193	1686	1200
Fans power input (3)	kW	0,16	0,11	0,08	0,04	0,31	0,18	0,13	0,07
Nominal external static pressure	Pa	0			0				
<b>AIR FILTERS</b>	n.	1			1				
Efficiency		COARSE 40%			COARSE 40%				
<b>REFRIGERANT</b>		R410A			R410A				
Gas circuit	n	1			1				
<b>POWER SUPPLY</b>	V/Ph/Hz	230/1/50			230/1/50				
<b>ENERGY EFFICIENCY INDEX (1) (4)</b>									
EER Energy Efficiency Ratio	kW/kW	3,48	3,93	4,00	4,30	3,03	3,49	3,80	3,73
<b>DIMENSIONS INDOOR UNIT</b>									
Width	mm	300			300				
Length with frontal air delivery (5)	mm	1000			1000				
Length with side air delivery	mm	1200			1200				
Height	mm	2085			2085				
<b>NET WEIGHT</b>	kg	175			190				
<b>REFRIGERANT CONNECTIONS</b>									
Liquid line	Ø mm	12			16				
Suction line	Ø mm	18			22				
<b>HYDRAULIC CONNECTIONS</b>									
<b>CONDENSATE DISCHARGE</b>									
Rubber pipe – internal diameter	Ø mm	16			16				

OUTDOOR UNIT									
MODEL	0051					0071			
COOLING CAPACITY	100%	80%	60%	45%	100%	80%	60%	40%	
<b>BLDC INVERTER COMPRESSOR</b>		Rotativo			Scroll				
Quantity	n.	1			1				
Power input	kW	2,63	1,80	1,26	0,77	4,56	3,03	1,89	1,17
<b>CONDENSER FAN</b>	n.	2			1				
Fan type		Assiale AC			Assiale AC				
Air flow	m³/h	6400			8640				
Power input (3)	kW	0,26			0,6				
<b>REFRIGERANT</b>		R410A			R410A				
Refrigerant circuit	n	1			1				
<b>POWER SUPPLY</b>	V/Ph/Hz	230/1/50			400/3+N/50				
<b>OUTDOOR UNIT DIMENSIONS</b>									
Length	mm	900			1450				
Width	mm	420			550				
Height	mm	1240			1200				
<b>NET WEIGHT</b>	kg	108			182				
<b>REFRIGERANT CONNECTIONS</b>									
Liquid line	Ø	1/2" SAE – 12mm			5/8" SAE – 16mm				
Suction line	Ø	3/4" SAE – 18mm			7/8" SAE – 22mm				

**THE COOLING CAPACITY DOES NOT CONSIDER THE SUPPLY FAN MOTOR THERMAL LOAD**

1. Gross Value. Characteristics referred to entering air at 35°C with 27%RH and ambient air temperature 35°C. ESP=0Pa.
2. SHR = Sensible cooling capacity / Total cooling capacity.
3. Corresponding to the nominal external static pressure.
4. The Energy Efficiency Index consider the matched outdoor unit.
5. Unit in standard configuration, without optional accessories.

The units highlighted in this publication contain <HFC R410A [GWP100 2088]> fluorinated greenhouse gases

**NOTE:**

Below the indicated minimum cooling capacity, the inverter compressor enters the "cycling" area in which the compressor operates with ON / OFF cycles below the minimum modulation frequency (operation only for short periods).

SELECT THE UNIT IN THE MODULATION FIELD.

## TECHNICAL DATA – In Row “I” Version

INDOOR UNIT									
MODEL		0121				0151			
<b>COOLING CAPACITY (1)</b>		<b>100%</b>	<b>80%</b>	<b>60%</b>	<b>40%</b>	<b>100%</b>	<b>80%</b>	<b>60%</b>	<b>50%</b>
Total	kW	28,6	22,9	17,2	11,8	37,2	29,8	22,3	18,5
Sensible	kW	27,4	21,9	16,7	11,7	37,2	29,7	21,6	18,5
SHR (2)		0,96	0,96	0,97	0,99	1,00	0,99	0,97	1,00
<b>SUPPLY FAN</b>		n.	5			2			
Fan type		Plug Fan EC				Plug Fan EC			
Air flow	m³/h	4200	3383	2566	1800	7000	5607	4215	3500
Fans power input (3)	kW	0,86	0,47	0,33	0,09	1,21	0,75	0,42	0,32
Nominal external static pressure	Pa	0				0			
<b>AIR FILTERS</b>		n.	1			1			
Efficiency		COARSE 40%				COARSE 60%			
<b>REFRIGERANT</b>			R410A			R410A			
Gas circuit	n	1				1			
<b>POWER SUPPLY</b>		V/Ph/Hz	230/1/50			400/3+N/50			
<b>ENERGY EFFICIENCY INDEX (1) (4)</b>									
EER Energy Efficiency Ratio	kW/kW	3,09	3,57	3,81	3,79	3,13	3,61	3,89	4,13
<b>DIMENSIONS INDOOR UNIT</b>									
Width	mm	300				600			
Length with frontal air delivery (5)	mm	1000				1000			
Length with side air delivery	mm	1200				1200			
Height	mm	2085				2085			
<b>NET WEIGHT</b>	kg	193				220			
<b>REFRIGERANT CONNECTIONS</b>									
Liquid line	Ø mm	18				18			
Suction line	Ø mm	28				28			
<b>HYDRAULIC CONNECTIONS</b>									
<b>CONDENSATE DISCHARGE</b>									
Rubber pipe – internal diameter	Ø mm	16				16			
<b>OUTDOOR UNIT</b>									
MODEL		0121				0151			
<b>COOLING CAPACITY</b>		<b>100%</b>	<b>80%</b>	<b>60%</b>	<b>40%</b>	<b>100%</b>	<b>80%</b>	<b>60%</b>	<b>50%</b>
<b>BLDC INVERTER COMPRESSOR</b>			Scroll			Scroll			
Quantity	n.	1				1			
Power input	kW	7,19	4,75	2,98	1,81	9,50	6,31	4,12	3,01
<b>CONDENSER FAN</b>		n.	2			4			
Fan type		Assiale AC				Assiale AC			
Air flow	m³/h	15768				13932			
Power input (3)	kW	1,2				1,2			
<b>REFRIGERANT</b>			R410A			R410A			
Refrigerant circuit	n	1				1			
<b>POWER SUPPLY</b>		V/Ph/Hz	400/3+N/50			400/3+N/50			
<b>OUTDOOR UNIT DIMENSIONS</b>									
Length	mm	1450				1825			
Width	mm	550				1195			
Height	mm	1700				1865			
<b>NET WEIGHT</b>	kg	247				440			
<b>REFRIGERANT CONNECTIONS</b>									
Liquid line	Ø mm	18				18			
Suction line	Ø mm	28				28			

### THE COOLING CAPACITY DOES NOT CONSIDER THE SUPPLY FAN MOTOR THERMAL LOAD

1. Gross Value. Characteristics referred to entering air at 35°C with 27%RH and ambient air temperature 35°C. ESP=0Pa.
2. SHR = Sensible cooling capacity / Total cooling capacity.
3. Corresponding to the nominal external static pressure.
4. The Energy Efficiency Index consider the matched outdoor unit.
5. Unit in standard configuration, without optional accessories.

The units highlighted in this publication contain <HFC R410A [GWP100 2088]> fluorinated greenhouse gases

### NOTE:

Below the indicated minimum cooling capacity, the inverter compressor enters the "cycling" area in which the compressor operates with ON / OFF cycles below the minimum modulation frequency (operation only for short periods).

SELECT THE UNIT IN THE MODULATION FIELD.

**TECHNICAL DATA – In Row “I” Version**

<b>INDOOR UNIT</b>					
<b>MODEL</b>			<b>0251</b>		
<b>COOLING CAPACITY (1)</b>		<b>100%</b>	<b>80%</b>	<b>60%</b>	<b>50%</b>
Total	<b>kW</b>	<b>57,5</b>	<b>46,0</b>	<b>34,5</b>	<b>27,3</b>
Sensible	<b>kW</b>	<b>57,5</b>	<b>45,9</b>	<b>34,0</b>	<b>27,3</b>
SHR (2)		1,00	0,99	0,98	1,00
<b>SUPPLY FAN</b>	n.	<b>3</b>			
Fan type		Plug Fan EC			
Air flow	<b>m³/h</b>	12000	9715	7430	6000
Fans power input (3)	<b>kW</b>	2,66	1,61	0,69	0,51
Nominal external static pressure	<b>Pa</b>	0			
<b>AIR FILTERS</b>	n.	<b>1</b>			
Efficiency		COARSE 60%			
<b>REFRIGERANT</b>		<b>R410A</b>			
Gas circuit	n	1			
<b>POWER SUPPLY</b>	V/Ph/Hz	400/3+N/50			
<b>ENERGY EFFICIENCY INDEX (1) (4)</b>					
EER Energy Efficiency Ratio	<b>kW/kW</b>	3,04	3,57	3,88	4,31
<b>DIMENSIONS INDOOR UNIT</b>					
Width	mm	600			
Length with frontal air delivery (5)	mm	1000			
Length with side air delivery	mm	1200			
Height	mm	2085			
<b>NET WEIGHT</b>	kg	232			
<b>REFRIGERANT CONNECTIONS</b>					
Liquid line	Ø mm	22			
Suction line	Ø mm	35			
<b>HYDRAULIC CONNECTIONS</b>					
<b>CONDENSATE DISCHARGE</b>					
Rubber pipe – internal diameter	Ø mm	16			
<b>OUTDOOR UNIT</b>					
<b>MODEL</b>			<b>0251</b>		
<b>COOLING CAPACITY</b>		<b>100%</b>	<b>80%</b>	<b>60%</b>	<b>50%</b>
<b>BLDC INVERTER COMPRESSOR</b>		Scroll			
Quantity	n.	1			
Power input	<b>kW</b>	14,4	9,54	6,42	4,05
<b>CONDENSER FAN</b>	n.	<b>6</b>			
Fan type		Assiale AC			
Air flow	<b>m³/h</b>	20920			
Power input (3)	<b>kW</b>	1,8			
<b>REFRIGERANT</b>		<b>R410A</b>			
Refrigerant circuit	n	1			
<b>POWER SUPPLY</b>	V/Ph/Hz	400/3+N/50			
<b>OUTDOOR UNIT DIMENSIONS</b>					
Length	mm	2395			
Width	mm	1195			
Height	mm	1865			
<b>NET WEIGHT</b>	kg	500			
<b>REFRIGERANT CONNECTIONS</b>					
Liquid line	Ø mm	22			
Suction line	Ø mm	35			

**THE COOLING CAPACITY DOES NOT CONSIDER THE SUPPLY FAN MOTOR THERMAL LOAD**

1. Gross Value. Characteristics referred to entering air at 35°C with 27%RH and ambient air temperature 35°C. ESP=0Pa.
2. SHR = Sensible cooling capacity / Total cooling capacity.
3. Corresponding to the nominal external static pressure.
4. The Energy Efficiency Index consider the matched outdoor unit.
5. Unit in standard configuration, without optional accessories.

The units highlighted in this publication contain <HFC R410A [GWP100 2088]> fluorinated greenhouse gases

**NOTE:**

Below the indicated minimum cooling capacity, the inverter compressor enters the "cycling" area in which the compressor operates with ON / OFF cycles below the minimum modulation frequency (operation only for short periods).

**SELECT THE UNIT IN THE MODULATION FIELD.**

**TECHNICAL DATA – Enclosure “E” Version**

INDOOR UNIT									
MODEL		0051				0071			
COOLING CAPACITY (1)		100%	80%	60%	40%	100%	80%	60%	45%
Total	kW	11,8	9,44	7,08	4,64	18,7	15,0	11,2	8,19
Sensible	kW	11,8	9,44	7,08	4,64	18,4	15,0	11,2	8,19
SHR (2)		1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00
<b>SUPPLY FAN</b>	n.	2				4			
Fan type		Plug Fan EC				Plug Fan EC			
Air flow	m³/h	1500	1302	1104	900	2700	2166	1632	1200
Fans power input (3)	kW	0,17	0,11	0,08	0,04	0,31	0,18	0,10	0,07
Nominal external static pressure	Pa	0				0			
<b>AIR FILTERS</b>	n.	1				1			
Efficiency		COARSE 40%				COARSE 40%			
<b>REFRIGERANT</b>		R410A				R410A			
Gas circuit	n	1				1			
<b>POWER SUPPLY</b>	V/Ph/Hz	230/1/50				230/1/50			
<b>ENERGY EFFICIENCY INDEX (1) (4)</b>									
EER Energy Efficiency Ratio	kW/kW	3,79	4,35	4,27	4,30	3,36	4,09	4,36	4,55
<b>DIMENSIONS INDOOR UNIT</b>									
Width	mm	300				300			
Length	mm	1200				1200			
Height	mm	2085				2085			
<b>NET WEIGHT</b>	kg	185				200			
<b>REFRIGERANT CONNECTIONS</b>									
Liquid line	Ø mm	12				16			
Suction line	Ø mm	18				22			
<b>HYDRAULIC CONNECTIONS</b>									
CONDENSATE DISCHARGE									
Rubber pipe – internal diameter	Ø mm	16				16			

OUTDOOR UNIT									
MODEL		0051				0071			
COOLING CAPACITY		100%	80%	60%	40%	100%	80%	60%	45%
<b>BLDC INVERTER COMPRESSOR</b>		Rotativo				Scroll			
Quantity	n.	1				1			
Power input	kW	2,68	1,79	1,31	0,73	4,65	2,89	1,87	1,15
<b>CONDENSER FAN</b>	n.	2				1			
Fan type		Assiale AC				Assiale AC			
Air flow	m³/h	6400				8640			
Power input (3)	kW	0,26				0,6			
<b>REFRIGERANT</b>		R410A				R410A			
Refrigerant circuit	n	1				1			
<b>POWER SUPPLY</b>	V/Ph/Hz	230/1/50				400/3+N/50			
<b>OUTDOOR UNIT DIMENSIONS</b>									
Length	mm	900				1450			
Width	mm	420				550			
Height	mm	1240				1200			
<b>NET WEIGHT</b>	kg	108				182			
<b>REFRIGERANT CONNECTIONS</b>									
Liquid line	Ø	1/2" SAE – 12mm				5/8" SAE – 16mm			
Suction line	Ø	3/4" SAE – 18mm				7/8" SAE – 22mm			

**THE COOLING CAPACITY DOES NOT CONSIDER THE SUPPLY FAN MOTOR THERMAL LOAD**

1. Gross Value. Characteristics referred to entering air at 46°C with 16%RH and ambient air temperature 35°C. ESP=0Pa.
2. SHR = Sensible cooling capacity / Total cooling capacity.
3. Corresponding to the nominal external static pressure.
4. The Energy Efficiency Index consider the matched outdoor unit.

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**NOTE:**

Below the indicated minimum cooling capacity, the inverter compressor enters the "cycling" area in which the compressor operates with ON / OFF cycles below the minimum modulation frequency (operation only for short periods).  
**SELECT THE UNIT IN THE MODULATION FIELD**

## TECHNICAL DATA – Enclosure “E” Version

INDOOR UNIT									
MODEL		0121				0151			
COOLING CAPACITY (1)		100%	80%	60%	45%	100%	80%	60%	50%
Total	kW	33,0	26,4	19,8	14,1	44,1	35,3	26,5	22,2
Sensible	kW	33,0	26,4	19,8	14,1	44,1	35,3	26,3	22,2
SHR (2)		1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00
SUPPLY FAN	n.	5				2			
Fan type		Plug Fan EC				Plug Fan EC			
Air flow	m <sup>3</sup> /h	4200	3362	2524	1800	7000	5590	4181	3500
Fans power input (3)	kW	0,87	0,46	0,24	0,09	1,22	0,75	0,41	0,32
Nominal external static pressure	Pa	0				0			
AIR FILTERS	n.	1				1			
Efficiency		COARSE 40%				COARSE 60%			
REFRIGERANT		R410A				R410A			
Gas circuit	n	1				1			
POWER SUPPLY	V/Ph/Hz	230/1/50				400/3+N/50			
ENERGY EFFICIENCY INDEX (1) (4)									
EER Energy Efficiency Ratio	kW/kW	3,48	4,11	4,38	4,53	3,61	4,24	4,57	5,00
DIMENSIONS INDOOR UNIT									
Width	mm	300				600			
Length	mm	1200				1200			
Height	mm	2085				2085			
NET WEIGHT	kg	203				245			
REFRIGERANT CONNECTIONS									
Liquid line	Ø mm	18				18			
Suction line	Ø mm	28				28			
HYDRAULIC CONNECTIONS									
CONDENSATE DISCHARGE									
Rubber pipe – internal diameter	Ø mm	16				16			

OUTDOOR UNIT									
MODEL		0121				0151			
COOLING CAPACITY		100%	80%	60%	45%	100%	80%	60%	50%
BLDC INVERTER COMPRESSOR		Scroll				Scroll			
Quantity	n.	1				1			
Power input	kW	7,40	4,75	3,07	1,81	9,80	6,36	4,19	2,97
CONDENSER FAN	n.	2				4			
Fan type		Assiale AC				Assiale AC			
Air flow	m <sup>3</sup> /h	15768				13832			
Power input (3)	kW	1,2				1,2			
REFRIGERANT		R410A				R410A			
Refrigerant circuit	n	1				1			
POWER SUPPLY	V/Ph/Hz	400/3+N/50				400/3+N/50			
OUTDOOR UNIT DIMENSIONS									
Length	mm	1450				1825			
Width	mm	550				1195			
Height	mm	1700				1865			
NET WEIGHT	kg	247				440			
REFRIGERANT CONNECTIONS									
Liquid line	Ø mm	18				18			
Suction line	Ø mm	28				28			

### THE COOLING CAPACITY DOES NOT CONSIDER THE SUPPLY FAN MOTOR THERMAL LOAD

1. Gross Value. Characteristics referred to entering air at 46°C with 16%RH and ambient air temperature 35°C. ESP=0Pa.
2. SHR = Sensible cooling capacity / Total cooling capacity.
3. Corresponding to the nominal external static pressure.
4. The Energy Efficiency Index consider the matched outdoor unit.

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### NOTE:

Below the indicated minimum cooling capacity, the inverter compressor enters the "cycling" area in which the compressor operates with ON / OFF cycles below the minimum modulation frequency (operation only for short periods).

SELECT THE UNIT IN THE MODULATION FIELD.

## TECHNICAL DATA – Enclosure “E” Version

INDOOR UNIT					
MODEL			0251		
COOLING CAPACITY (1)		100%	80%	60%	50%
Total	kW	68,4	54,7	41,0	33,1
Sensible	kW	68,4	54,7	41,0	33,1
SHR (2)		1,00	1,00	1,00	1,00
SUPPLY FAN	n.	3			
Fan type		Plug Fan EC			
Air flow	m³/h	12000	9675	7350	6000
Fans power input (3)	kW	2,68	1,60	0,85	0,51
Nominal external static pressure	Pa	0			
AIR FILTERS	n.	1			
Efficiency		COARSE 60%			
REFRIGERANT		R410A			
Gas circuit	n	1			
POWER SUPPLY	V/Ph/Hz	400/3+N/50			
ENERGY EFFICIENCY INDEX (1) (4)					
EER Energy Efficiency Ratio	kW/kW	3,53	4,21	4,57	5,26
DIMENSIONS INDOOR UNIT					
Width	mm	600			
Length	mm	1200			
Height	mm	2085			
NET WEIGHT	kg	257			
REFRIGERANT CONNECTIONS					
Liquid line	Ø mm	22			
Suction line	Ø mm	35			
HYDRAULIC CONNECTIONS					
CONDENSATE DISCHARGE					
Rubber pipe – internal diameter	Ø mm	16			

OUTDOOR UNIT					
MODEL			0251		
COOLING CAPACITY		100%	80%	60%	50%
BLDC INVERTER COMPRESSOR		Scroll			
Quantity	n.	1			
Power input	kW	14,9	9,57	6,31	3,99
CONDENSER FAN	n.	6			
Fan type		Assiale AC			
Air flow	m³/h	20920			
Power input (3)	kW	1,8			
REFRIGERANT		R410A			
Refrigerant circuit	n	1			
POWER SUPPLY	V/Ph/Hz	400/3+N/50			
OUTDOOR UNIT DIMENSIONS					
Length	mm	2395			
Width	mm	1195			
Height	mm	1865			
NET WEIGHT	kg	500			
REFRIGERANT CONNECTIONS					
Liquid line	Ø mm	22			
Suction line	Ø mm	35			

### THE COOLING CAPACITY DOES NOT CONSIDER THE SUPPLY FAN MOTOR THERMAL LOAD

1. Gross Value. Characteristics referred to entering air at 46°C with 16%RH and ambient air temperature 35°C. ESP=0Pa.
2. SHR = Sensible cooling capacity / Total cooling capacity.
3. Corresponding to the nominal external static pressure.
4. The Energy Efficiency Index consider the matched outdoor unit.

The units highlighted in this publication contain <HFC R410A [GWP100 2088]> fluorinated greenhouse gases.

### NOTE:

Below the indicated minimum cooling capacity, the inverter compressor enters the "cycling" area in which the compressor operates with ON / OFF cycles below the minimum modulation frequency (operation only for short periods).  
SELECT THE UNIT IN THE MODULATION FIELD

**REFRIGERANT CHARGE**

The indoor unit is supplied with seal charge. The outdoor unit is supplied with a minimum R410A refrigerant charge. **Refrigerant must be charged.** The following table shows the refrigerant charge that must be introduced, it's enough for connection of the outdoor unit to the corresponding indoor unit and for a maximum pipe length of 5m.

**OUTDOOR UNIT – BASIC VERSION**

MODEL		0051	0071	0121	0151	0251
SIZE		BASIC	BASIC	BASIC	BASIC	BASIC
REFRIGERANT		R410A	R410A	R410A	R410A	R410A
Refrigerant circuits x Refrigerant charge	n x kg	1 x 5,8	1 x 5,7	1 x 10,3	1 x 16,5	1 x 20,5
HFC R410A - F Gas - CO <sub>2</sub> equivalent	t	12,11	11,90	21,51	34,45	42,80

**OUTDOOR UNIT – LT VERSION, FOR LOW AMBIENT AIR TEMPERATURE**

MODEL		0051	0071	0121	0151	0251
SIZE		LT	LT	LT	LT	LT
REFRIGERANT		R410A	R410A	R410A	R410A	R410A
Refrigerant circuits x Refrigerant charge	n x kg	1 x 7,7	1 x 11,6	1 x 11,3	1 x 17,0	1 x 23,0
HFC R410A - F Gas - CO <sub>2</sub> equivalent	t	16,08	24,22	23,59	35,50	48,02

**RECOMMENDED REFRIGERANT LINES**

Please always refer to the "INSTALLATION DIAGRAM" to properly select all necessary components  
Verify the need to use pressure limiting devices (safety valves) where not already provided for by Directive 2014/68 / EU.

**Nominal diameter:** Refrigerant connection of the indoor unit. In some cases, the diameter of the refrigerant lines may not correspond with the nominal diameter. This is completely normal. It is enough to provide a reduction fitting to adjust the diameter.

**"SI" INTERNATIONAL SYSTEM PIPES DIAMETERS**

SI system	Diameter	mm	6	8	10	12	16	18	22	28	35
	Thickness	mm	1	1	1	1	1	1	1	1	1,5

**INVERTER COMPRESSORS**

Model	Line	Nominal diameter Ø	EQUIVALENT LENGHT [m] FOR INVERTER COMPRESSORS R410A																			
			5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
0051	Gas	18mm	18	18	18	18	18	18	18	22	22	22	22	22	22	22	22	22	22	22	22	22
	Liquid	12mm	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
0071	Gas	22mm	18	18	18	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22
	Liquid	16mm	12	12	12	12	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16
0121	Gas	28mm	22	22	22	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28
	Liquid	18mm	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18
0151	Gas	28mm	22	22	28	28	28	28	28	35	35	35	35	35	35	35	35	35	35	35	35	35
	Liquid	18mm	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18
0251	Gas	35mm	28	28	28	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35
	Liquid	22mm	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22

For equivalent lengths over 100m, please contact the Manufacturer's Sales Office.

**"IMPERIAL" SYSTEM PIPES DIAMETERS**

IMPERIAL system	Diameter	inch	1/4"	3/8"	1/2"	5/8"	3/4"	7/8"	1"	1 1/8"	1 3/8"
	Thickness	mm	6,35	9,52	12,7	15,87	19,05	22,22	25,4	28,57	34,92
	Thickness	mm	1	1	1	1	1	1	1	1,25	1,25

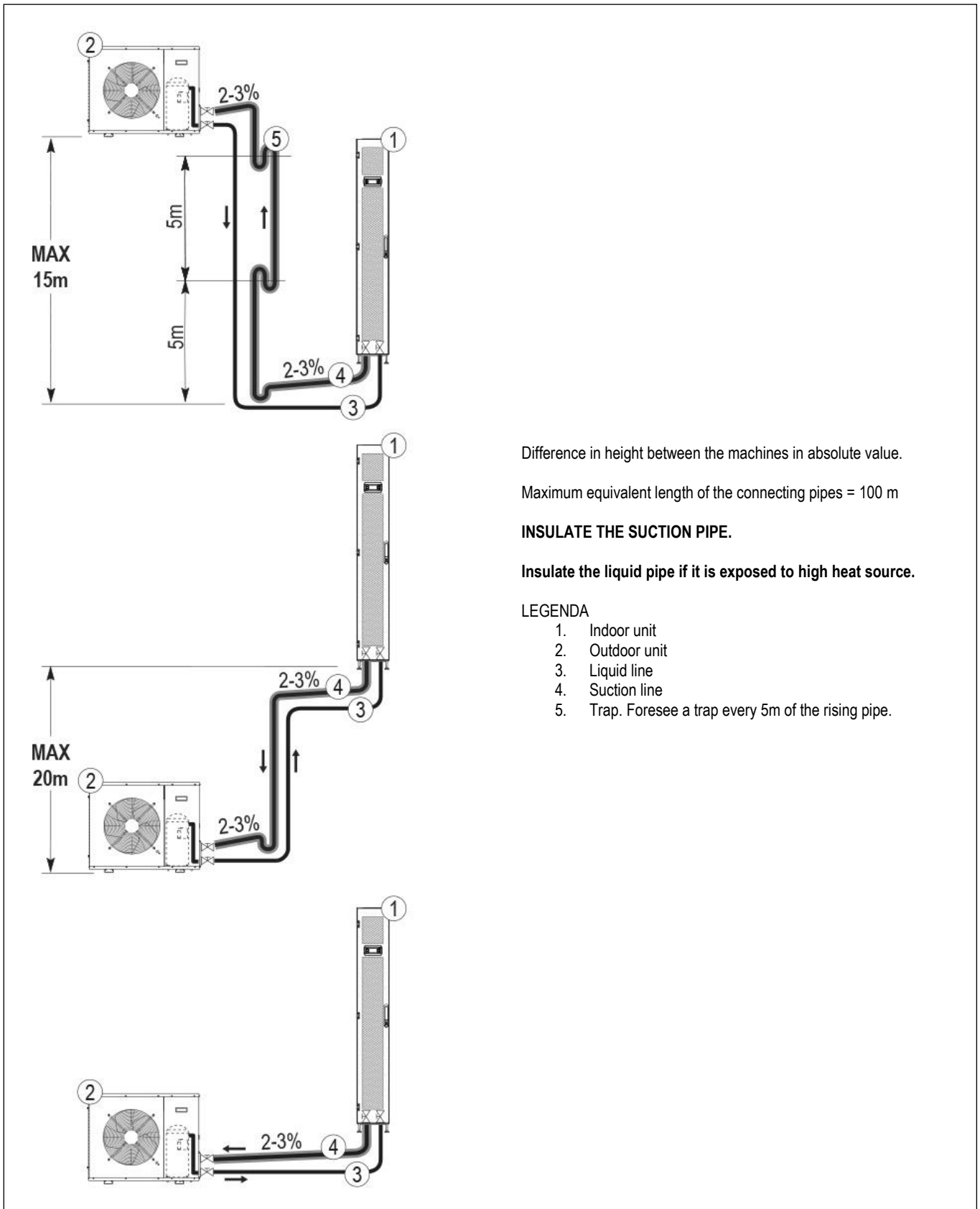
**INVERTER COMPRESSORS**

Model	Line	Nominal diameter Ø	EQUIVALENT LENGHT [ft] FOR INVERTER COMPRESSORS R410A																			
			15	35	50	65	80	100	115	130	150	165	180	195	215	230	245	260	280	295	310	330
0051	Gas	18mm	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	7/8"	7/8"	7/8"	7/8"	7/8"	7/8"	7/8"	7/8"	7/8"	7/8"	7/8"	7/8"
	Liquid	12mm	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"
0071	Gas	22mm	3/4"	3/4"	3/4"	3/4"	7/8"	7/8"	7/8"	7/8"	7/8"	7/8"	7/8"	7/8"	7/8"	7/8"	7/8"	7/8"	7/8"	7/8"	7/8"	7/8"
	Liquid	16mm	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	5/8"	5/8"	5/8"	5/8"	5/8"	5/8"	5/8"	5/8"	5/8"	5/8"	5/8"	5/8"	5/8"	5/8"
0121	Gas	28mm	7/8"	7/8"	7/8"	1 1/8"	1 1/8"	1 1/8"	1 1/8"	1 1/8"	1 1/8"	1 1/8"	1 1/8"	1 1/8"	1 1/8"	1 1/8"	1 1/8"	1 1/8"	1 1/8"	1 1/8"	1 1/8"	1 1/8"
	Liquid	18mm	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"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"
0151	Gas	28mm	7/8"	7/8"	1 1/8"	1 1/8"	1 1/8"	1 1/8"	1 3/8"	1 3/8"	1 3/8"	1 3/8"	1 3/8"	1 3/8"	1 3/8"	1 3/8"	1 3/8"	1 3/8"	1 3/8"	1 3/8"	1 3/8"	1 3/8"
	Liquid	18mm	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"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"
0251	Gas	35mm	1 1/8"	1 1/8"	1 1/8"	1 3/8"	1 3/8"	1 3/8"	1 3/8"	1 3/8"	1 3/8"	1 3/8"	1 3/8"	1 3/8"	1 3/8"	1 3/8"	1 3/8"	1 3/8"	1 3/8"	1 3/8"	1 3/8"	1 3/8"
	Liquid	22mm	7/8"	7/8"	7/8"	7/8"	7/8"	7/8"	7/8"	7/8"	7/8"	7/8"	7/8"	7/8"	7/8"	7/8"	7/8"	7/8"	7/8"	7/8"	7/8"	7/8"

For equivalent lengths over 330ft please contact the Manufacturer's Sales Office.



**INSTALLATION DIAGRAM**



Difference in height between the machines in absolute value.

Maximum equivalent length of the connecting pipes = 100 m

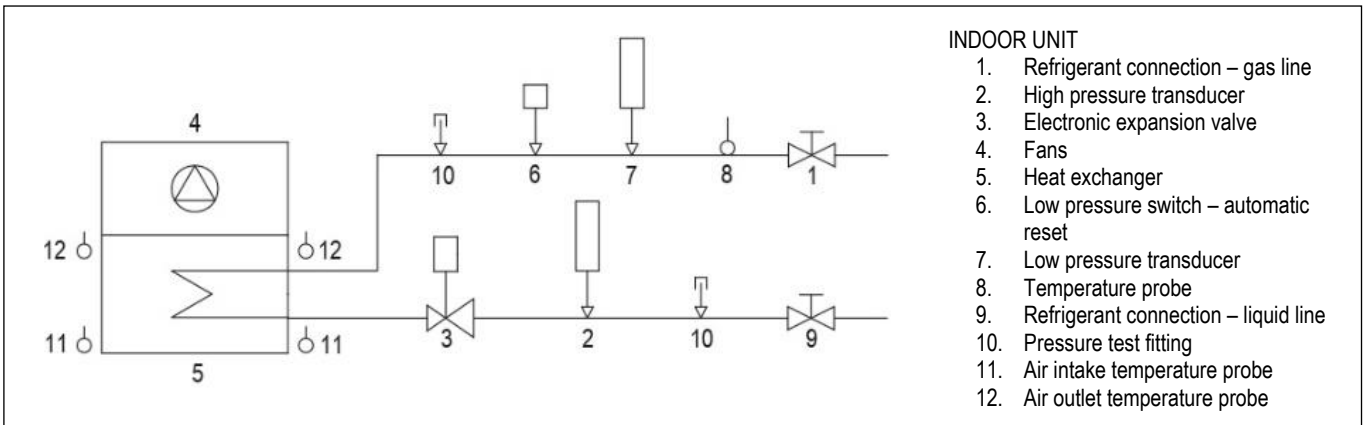
**INSULATE THE SUCTION PIPE.**

**Insulate the liquid pipe if it is exposed to high heat source.**

**WARNING - FOR THE CONNECTION PIPES WHEN EXCEEDING AN EQUIVALENT LENGTH OF 5 METRES**

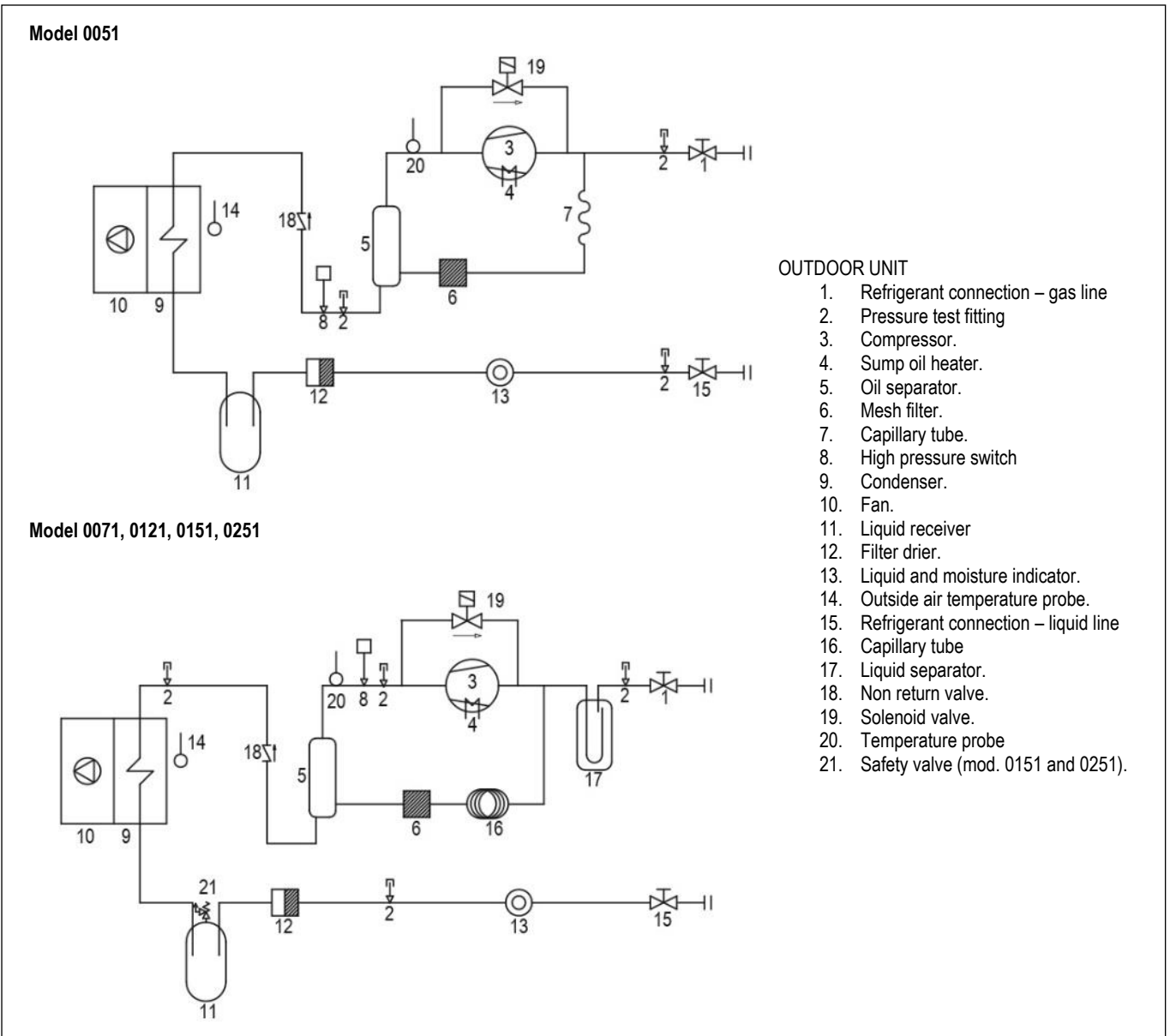
It is necessary to provide the refrigerant and lubricant oil charge for the connection pipes when exceeding an equivalent length of 5 metres. Create traps as shown in the figure, making sure to fill them with oil when commissioning the system. The liquid pipes must be protected against sunlight.

**REFRIGERANT DIAGRAM – INDOOR UNIT**



- INDOOR UNIT**
1. Refrigerant connection – gas line
  2. High pressure transducer
  3. Electronic expansion valve
  4. Fans
  5. Heat exchanger
  6. Low pressure switch – automatic reset
  7. Low pressure transducer
  8. Temperature probe
  9. Refrigerant connection – liquid line
  10. Pressure test fitting
  11. Air intake temperature probe
  12. Air outlet temperature probe

**REFRIGERANT DIAGRAM – BASIC OUTDOOR UNIT**



- OUTDOOR UNIT**
1. Refrigerant connection – gas line
  2. Pressure test fitting
  3. Compressor.
  4. Sump oil heater.
  5. Oil separator.
  6. Mesh filter.
  7. Capillary tube.
  8. High pressure switch
  9. Condenser.
  10. Fan.
  11. Liquid receiver
  12. Filter drier.
  13. Liquid and moisture indicator.
  14. Outside air temperature probe.
  15. Refrigerant connection – liquid line
  16. Capillary tube
  17. Liquid separator.
  18. Non return valve.
  19. Solenoid valve.
  20. Temperature probe
  21. Safety valve (mod. 0151 and 0251).

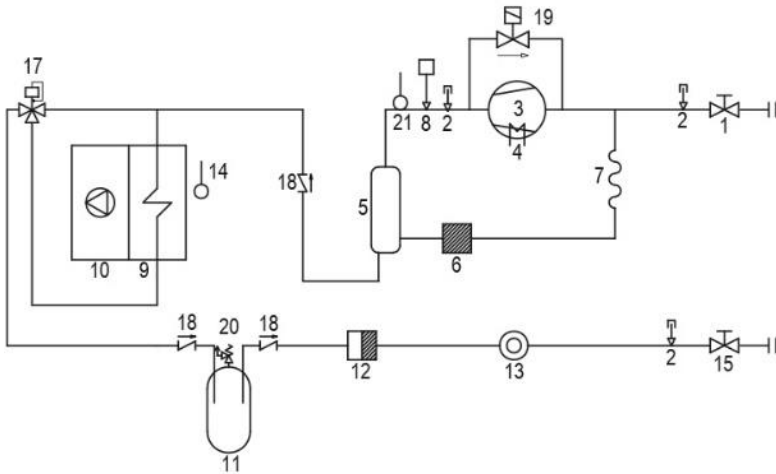
**REFRIGERANT DIAGRAM – LT VERSION OUTDOOR UNIT FOR OPERATION WITH AMBIENT AIR TEMPERATURE DOWN TO -35°C.**

The system is necessary for the correct machine start up and operation with very low ambient air temperatures: between -20°C and -35°C.

Components:

- Pressure regulating valve (17)
- Non-return valve upstream and downstream the liquid receiver (18)

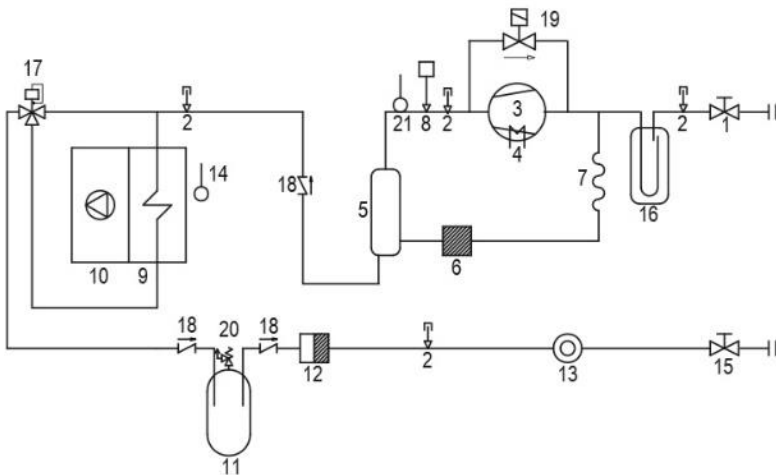
**Model 0051**



**OUTDOOR UNIT**

1. Refrigerant connection – gas line
2. Pressure test fitting
3. Compressor.
4. Sump oil heater.
5. Oil separator.
6. Mesh filter.
7. Capillary tube.
8. High pressure switch
9. Condenser.
10. Fan.
11. Liquid receiver
12. Filter drier.
13. Liquid and moisture indicator.
14. Outside air temperature probe.
15. Refrigerant connection – liquid line
16. Liquid separator.
17. Pressure regulating valve.
18. Non return valve.
19. Solenoid valve.
20. Safety valve.
21. Temperature probe

**Model 0071, 0121, 0151, 0251**



**ACOUSTIC DATA – INDOOR UNIT**

Acoustic data of the standard machine at full load working conditions.

**WARNING:**

In a closed room the noise produced by a sound source reaches the listener in two different ways:

- Directly
- Reflected from the surrounding walls, floor, ceiling, from furniture.

With the same sound source, the noise produced in a closed room is greater than that produced outdoors. In fact, the sound pressure level generated by the source, must be added to the one reflected from the room. Also, the shape of the room affects the sound.

MODEL		0051	0071	0121	0151	0251
<b>SOUND LEVEL ISO 3744 (1)</b>						
Sound pressure	dB(A)	63	64	70	62	66
Sound power	dB(A)	79	80	86	78	82

1. Noise pressure level at 1 meter in free field – ISO 3744

**ACOUSTIC DATA – OUTDOOR UNIT**

Acoustic data of the standard machine at full load working conditions

MODELLO		0051	0071	0121	0151	0251
<b>SOUND LEVEL ISO 3744 (1)</b>						
Sound pressure	dB(A)	54	61	63	62	65
Sound power	dB(A)	69	76	79	79	83

1. Noise pressure level at 1 meter in free field – ISO 3744

**ELECTRICAL DATA**

**INDOOR UNIT**

MODEL		0051	0071	0121	0151	0251
<b>POWER SUPPLY</b>						
		230/1/50	230/1/50	230/1/50	400/3+N/50	400/3+N/50
<b>STANDARD UNIT</b>						
Max power input (FLI)	kW	0,34	0,68	0,85	2,64	3,96
Max current input (FLA)	A	2,90	5,80	7,25	4,20	6,30
Power input (OI)	kW	0,16	0,31	0,86	1,21	2,66

**OUTDOOR UNIT**

MODEL		0051	0071	0121	0151	0251
<b>POWER SUPPLY</b>						
		230/1/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
<b>STANDARD UNIT</b>						
Max power input (FLI)	kW	5,86	10,70	17,90	14,50	20,80
Max current input (FLA)	A	18,30	18,00	30,80	26,40	38,50
Power input (OI)	kW	2,89	5,16	8,39	10,70	16,20

**WARNING:**

The electric data indicated refer only to the standard units, without optional accessories.

Optional accessory electric data are included within the dedicated chapters and must be added.




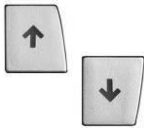

Please refer to ELCA WORLD selection program to calculate the electrical data of the air conditioner according to the requested optional accessories.

**MICROPROCESSOR CONTROL SYSTEM**



The microprocessor control system is equipped with 6 keys terminal and back lighted graphic display on which all information in different languages or easily identifiable symbols are displayed. The system disposes of a "flash" memory that preserves the information even in absence of power supply. Part of memory is dedicated to the registration of intervened events - up to 100 events.

**KEYBOARD FUNCTIONS**

	ALARM	Alarm, Back - red light active – alarm presence, push to deactivate and have alarm description. If more than one alarm(s) occurred, the others can be scrolled by Key UP / DOWN
	PRG	Menu list, scrolled by key UP/DOWN: Use the ENTER key to execute the mode.
	ESC	Home. Used to come back to the previous menu level or to the main screen.
	UP DOWN	Used to change the pages and values of sets. When display is in main screen (HOME), pressing one of them (UP/DOWN) will display the synoptic of the main controls.
	ENTER	Moving the cursor on adjustable Program(s) fields, press the key to confirm the changes, press the key to get out of the fields.

**CONNECTIVITY**

Through the optional serial port, the microprocessor control enables communication with the modern buildings BMS systems with the following protocols:

- RS485 serial card;
- LON Works serial card;
- Ethernet serial card;

**PASSWORD**

- Level 1: On request of the End User. Allowing to reach and modify USER parameters.
- Level 2: Asks to Service: Allowing to reach and modify MAINTENANCE parameters.
- Level 3: Asks to Service: Allowing to reach and modify MANUFACTURER parameters.

**LAN NETWORK**

The LAN is part of the control software and it is possible to connect 10 units. This type of connection allows to control the units in coherent way, moreover the units can be controlled and managed from a shared remote terminal.

**LAN ADDRESS LIST**

Unit #	1	2	3	4	5	6	7	8	9	10	Remote Terminal
Terminal address	11	12	13	14	15	16	17	18	19	20	32
Mother board address	1	2	3	4	5	6	7	8	9	10	-

**OPTIONAL ACCESSORIES: B031 – FRAME 42U 300x1200**

Optional for INROW version.  
 Frontal air delivery.  
 Frame 1200 mm depth for models 0051, 0071, 0121.  
 Mandatory for units equipped with Humidifier and / or Electric Heaters accessories.  
**The configuration must be selected when ordering.**

**OPTIONAL ACCESSORIES: B033 – FRAME 42U 600x1200**

Optional for INROW version.  
 Frontal air delivery.  
 Frame 1200 mm depth for models 0151, 0251.  
**The configuration must be selected when ordering.**

**OPTIONAL ACCESSORIES: A903 – ENCLOSURE VERSION AIR DELIVERY RIGHT + LEFT**

Optional for ENCLOSURE version.  
 Air delivery on Right and Left.  
 Frame 1000/1200 mm depth for models 0051, 0071, 0121.

**OPTIONAL ACCESSORIES: A906 – INROW VERSION AIR DELIVERY RIGHT + LEFT**

Optional for INROW version.  
 Air delivery on Right and Left.

**OPTIONAL ACCESSORIES: A557 – POWER SUPPLY 460/3/60**

INDOOR UNIT					
MODEL		0071	0121	0151	0251
POWER SUPPLY		460/3/60	460/3/60	460/3/60	460/3/60
STANDARD UNIT					
Max power input (FLI)	kW	0,68	0,85	2,64	3,96
Max current input (FLA)	A	5,80	7,25	4,20	6,30

**WARNING:**  
 The electric data indicated refer only to the standard units, without optional accessories.

**OPTIONAL ACCESSORIES: A558 – POWER SUPPLY 380/3/60**

INDOOR UNIT					
MODEL		0071	0121	0151	0251
POWER SUPPLY		380/3/60	380/3/60	380/3/60	380/3/60
STANDARD UNIT					
Max power input (FLI)	kW	0,68	0,85	2,64	3,96
Max current input (FLA)	A	5,80	7,25	4,20	6,30

**WARNING:**  
 The electric data indicated refer only to the standard units, without optional accessories.

**OPTIONAL ACCESSORIES: A559 – POWER SUPPLY 230/1/60**

INDOOR UNIT		
MODEL		0051
POWER SUPPLY		230/1/60
STANDARD UNIT		
Max power input (FLI)	kW	0,34
Max current input (FLA)	A	2,90

**WARNING:**  
 The electric data indicated refer only to the standard units, without optional accessories.

**OPTIONAL ACCESSORIES: 383 – NUMBERED WIRINGS + UK REQUESTS**

The machine's electrical cables are all numbered for easy identification. For the power section it is possible to change the colour for the UK market.

CABLE	383 – COLOUR FOR UK
EARTH	YELLOW / GREEN
NEUTRAL	BLUE SKY
PHASE 1 (L1)	BROWN
PHASE 2 (L2)	BLACK
PHASE 3 (L3)	GREY
AUXILIARIES	RED

**OPTIONAL ACCESSORIES: A431 – ELECTRIC HEATERS**



Tubular electric heater with steel fins. The optional is installed downstream the main cooling coil. Electric heaters have a three-stage control. The optional accessory requires increased frame dimensions (optional) for in-row version with frontal air delivery, models 0051, 0071, 0121.

Components:

- Tubular electric heater with steel fins.
- Electrical control
- Safety thermostat.

MODEL		0051	0071	0121	0151	0251
<b>POWER SUPPLY</b>		230/1/50	230/1/50	230/1/50	400/3+N/50	400/3+N/50
<b>THERMAL CAPACITY</b>	<b>kW</b>	<b>2,4</b>	<b>2,4</b>	<b>3,6</b>	<b>5,4</b>	<b>7,2</b>
Absorbed current (OA)	A	10,4	10,4	15,7	7,79	10,4
Capacity steps	n	3	3	3	3	3

Optional accessory modifies the weight of the standard unit.

**OPTIONAL ACCESSORIES: A432 – ENHANCED ELECTRIC HEATERS**

The components are the same as for the standard accessory. The optional accessory requires increased frame dimensions (optional) for in-row version with frontal air delivery, models 0051, 0071, 0121.

MODEL		0051	0071	0121	0151	0251
<b>POWER SUPPLY</b>		230/1/50	230/1/50	230/1/50	400/3+N/50	400/3+N/50
<b>THERMAL CAPACITY</b>	<b>kW</b>	<b>3,6</b>	<b>3,6</b>	<b>4,8</b>	<b>7,2</b>	<b>10,8</b>
Absorbed current (OA)	A	15,7	15,7	20,9	10,4	15,6
Capacity steps	n	3	3	3	3	3

Optional accessory modifies the weight of the standard unit.

**OPTIONAL ACCESSORIES: A801 – HUMIDITY SENSOR ONLY**

Temperature and humidity probe. Display only the ambient humidity value.

**OPTIONAL ACCESSORIES: A802 – HUMIDIFIER**



Modulating steam humidifier with immersed electrodes fitted with safety and running accessories. The accessory is factory installed and requires water filling connection. The optional accessory requires increased frame dimensions (optional) for in-row version with frontal air delivery, models 0021, 0051, 0071, 0121. It is recommended to install a filter and a shut-off valve on the pipe to the water inlet. This humidifier produces non-pressurized steam by electrodes immersed in the water inside the cylinder: they bring the electric phase in the water that works as an electrical resistance and overheats. The steam so produced is distributed with dedicated distributors and used for ambient humidification or for industrial processes.

**CHARACTERISTICS OF THE SUPPLY WATER**

The quality of the used water influences the evaporation process, so the humidifier can be fed with **not-treated water, only when potable and non-demineralised**.

LIMIT VALUES FOR FEED WATER			Normal water		Water with low salt content	
			Min	Max	Min	Max
Mains pressure	bar	1	8	1	8	
Hydrogen ions	pH	7	8,5	7	8,5	
Specific conductivity at 20°C	$\sigma_{R, 20^\circ C}$ $\mu S/cm$	350	1250	75	350	
Total dissolved solids	TDS mg/l	(1)	(1)	(1)	(1)	
Dry residue at 180°C	R <sub>180</sub> mg/l	(1)	(1)	(1)	(1)	
Total hardness	TH mg/l CaCO <sub>3</sub>	100 (2)	400	50 (2)	160	
Temporary hardness	mg/l CaCO <sub>3</sub>	60 (3)	300	30 (3)	100	
Iron + Manganese	mg/l Fe + Mn	0	0,2	0	0,2	
Chlorides	ppm Cl	0	30	0	20	
Silica	mg/l SiO <sub>2</sub>	0	20	0	20	
Residual chlorine	mg/l Cl <sup>-</sup>	0	0,2	0	0,2	
Calcium sulphate	mg/l CaSO <sub>4</sub>	0	100	0	60	
Metallic impurities	mg/l	0	0	0	0	
Solvents, diluents, soaps, lubricants	mg/l	0	0	0	0	

- (1) Values depending on specific conductivity; in general: TDS  $\cong$  0,93 \*  $\sigma_{R, 20^\circ C}$ ; R<sub>180</sub>  $\cong$  0,65 \*  $\sigma_{R, 20^\circ C}$
- (2) Not lower than 200% of the chloride content in mg/l di Cl<sup>-</sup>
- (3) Not lower than 300% of the chloride content in mg/l di Cl<sup>-</sup>

CYLINDER CONDUCTIVITY	LOW CONDUCTIVITY CILINDER		MEDIUM CONDUCTIVITY CILINDER		HIGH CONDUCTIVITY CILINDER	
	Min	Max	Min	Max	Min	Max
Function						
Specific conductivity at 20°C ( $\sigma_{R, 20^\circ C}$ )	75	350	350	750	750	1250

**WARNING:**

- No relation can be demonstrated between water hardness and conductivity.
- **Do not treat water with softeners!** This could cause corrosion of the electrodes or the formation of foam, leading to potential operating problems or failures.
- Do not add disinfectants or corrosion inhibitors to water, as these substances are potentially irritant.
- Is absolutely forbidden to use well water, industrial water or water drawn from cooling circuits; in general, avoid using potentially contaminated water, either from a chemical or bacteriological point of view
- **The water exiting the steam cylinder is very hot. Operating temperature up to 100°C.**



## TECHNICAL DATA

MODEL		0051	0071	0121	0151	0251
POWER SUPPLY		230/1/50	230/1/50	230/1/50	400/3+N/50	400/3+N/50
<b>STEAM PRODUCTION</b>	<b>kg/h</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>
Power input	kW	2,25	2,25	2,25	2,25	2,25
Max absorbed current (FLA)	A	9,8	9,8	9,8	3,2	3,2
Water content	l	3,9	3,9	3,9	3,9	3,9
<b>HYDRAULIC CONNECTION</b>						
WATER INLET - ISO 228/1 – G M (1)	Ø	3/4"	3/4"	3/4"	3/4"	3/4"
WATER OUTLET - internal diameter	Ø mm	32	32	32	32	32

(1) The humidifier water supply threaded male fitting is already fitted with a plastic hose, diameter 6mm, for connection to the building's water supply. Optional accessory modifies the weight of the standard unit. Consider the weight of the water content.

## OPTIONAL ACCESSORIES: A803 – DEHUMIDIFICATION ONLY (SENSOR INCLUDED)

The system controls the ambient humidity value allowing dehumidification.

Component:

- T / rH probe on air return.

## OPTIONAL ACCESSORIES: A804 – HUMIDIFIER & DEHUMIDIFICATION

Combination of the two accessories A802+A833

The system controls the ambient humidity value allowing humidification and dehumidification.

## OPTIONAL ACCESSORIES: A381 – STANDARD DRAIN PUMP



Optional accessory installed within the indoor unit.

A plastic case contains the pump motor, the thermal protection with automatic reset, the float with the trigger threshold and alarm threshold overflow and hydraulic and electric connection.

The condensate discharge pump operation is fully automatic.

### TECHNICAL SPECIFICATION

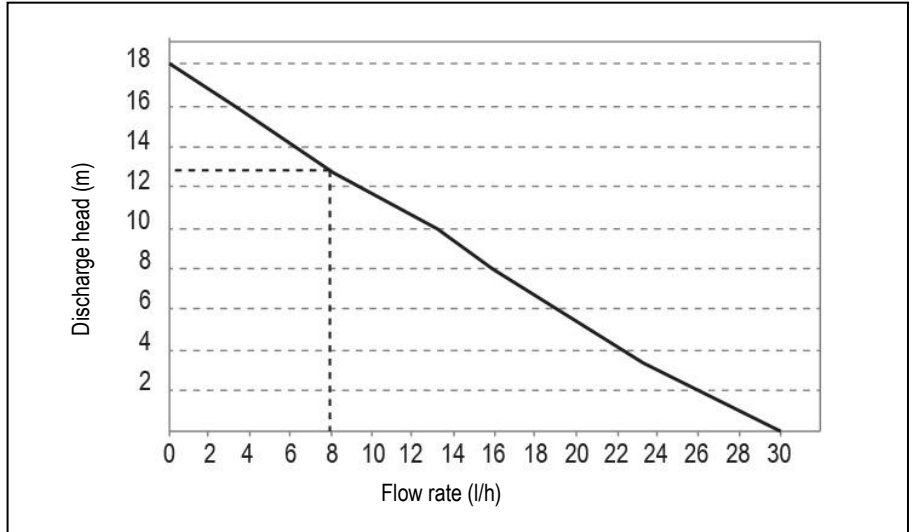
Maximum flow-rate	30 l/h
Maximum suction height	4 m
Maximum discharge height	13 m (flow rate 8 l/h)
Maximum pressure	18 m (flow rate 0 l/h)

### TABLE OF EFFECTIVE FLOW RATES (l/h)

		Total pipe length with 6mm ID pipe (C)			
Suction (A)	Discharge (B)	5 m	10 m	20 m	30m
0 m	0 m	30	27	26	25
	2 m	26	24	23	22
	4 m	22	21	20	19
	6 m	-	18	17	16
	8 m	-	15	14	13
	10 m	-	12	11	10
	12 m	-	-	8	7
1 m	0 m	24	23	22	21
	2 m	20	19	18	17
	4 m	17	16	15	14
	6 m	-	13	12	11
	8 m	-	10	9	8
2 m	0 m	21	20	19	18
	2 m	17	16	15	14
	4 m	14	13	12	11
	6 m	-	10	9	8
	8 m	-	7	6	5

TABLE OF EFFECTIVE FLOW RATES (l/h)					
3 m	0 m	18	17	16	15
	2 m	15	14	13	12
	4 m	-	10	9	8
	6 m	-	6	5	4

**PERFORMANCE OF STANDARD CONDENSATE DRAIN PUMP**



**OPTIONAL ACCESSORIES: A471 – SERIAL CARD RS485**



The card is factory installed.  
Consult the Interface Manual for all technical information.

**OPTIONAL ACCESSORIES: A473 - CARD ETHERNET**



The card is factory installed.  
Consult the Interface Manual for all technical information.

**OPTIONAL ACCESSORIES: A474 – SERIAL CARD LON**



The card is factory installed. The manufacturer will supply the serial card and .NXE file and a .XIF files necessary for LonWorks technicians to configure the network.  
The board is programmed by the technician in charge of the integration.  
Consult the Interface Manual for all technical information.

**OPTIONAL ACCESSORIES: A501 – CLOGGED FILTER SENSOR**



The system includes a differential pressure switch installed in the electrical panel or in the front of the indoor unit and the plastic hoses for the relief of the pressure upstream and downstream the air filters.

Control range: 0,5 ... 6,0 mbar (50 ... 600 Pa)  
 Differential for intervention: 0,30 mbar (30 Pa)

**OPTIONAL ACCESSORIES: A521 – FIRE DETECTOR**



The heat detector has been designed to identify temperatures at which fires may start. When the temperature exceeds the set threshold the relay is activated to signal an alarm.

Technical features:

Operating voltage	20 Vdc (-15%, +10%)
Average power consumption (normal condition)	40 $\mu$ A @ 20Vdc
Average power consumption (alarm condition)	23 mA @ 20Vdc
Static alarm threshold	58°C $\pm$ 5%
Three colours LED	Red steady: alarm condition Green slow blinking (2s): normal condition Green flash and yellow sequence: fault condition
Minimum reset time	300mS
Operating temperature	-10° ÷ 50°C $\pm$ 2°C
Relative humidity	93% $\pm$ 2%, non-condensing
Storage/shipping temperature	-30 ÷ 70°C
Dimensions	Diameter $\Phi$ 90 x 40mm height
Weight	70g
Enclosure material	ABS V0

**OPTIONAL ACCESSORIES: A511 – SMOKE DETECTOR**



The optical smoke detector senses the presence of combustion by-products (visible smoke) and activates an alarm. The operating principle is based on the light scattering technique (Tyndall effect).

Technical features:

Light source	GaAlAs infrared emitting diode
Operating voltage	20 Vdc (-15%, +10%)
Average power consumption (normal condition)	65 $\mu$ A @ 20Vdc
Average power consumption (alarm condition)	23 mA @ 20Vdc
Three colours LED	Red steady: alarm condition Green slow blinking (2s): normal condition Yellow blinking (2s) normal condition, it needs maintenance. Green flash and yellow sequence: fault condition
Minimum reset time	300mS
Operating temperature	-10° ÷ 55°C $\pm$ 2°C
Relative humidity	93% $\pm$ 2%, non-condensing
Storage/shipping temperature	-30 ÷ 70°C
Dimensions	Diameter $\Phi$ 90 x 31mm height
Weight	70g
Enclosure material	ABS V0

**OPTIONAL ACCESSORIES: A491 – FLOOD SENSOR**



The system includes an electronic relay installed in the electrical panel of the machine and a water detector. The electrical connections for the probe and the alarm contact are present in the machine's terminal board. Sensor is supplied to be connected and installed at customer care.

**OPTIONAL ACCESSORIES: A842 – NETWORK ANALYZER**



The accessory is available for both the outdoor unit and the outdoor condensing unit.

The accessory includes:

- A network transducer;
- One current transformer for each power phase cable.

The system allows the continuous detection of electrical consumptions, split into current, voltage and power. The values are made available to the microprocessor of the unit through an RS485 serial line cable connection, as indicated in the wiring diagram on board of the machine.

**On the indoor units models 51, 71, 121, the component is supplied in a 300x220x120mm box, to be mounted externally to the unit.**

The displayed variables are:

- Phase to phase voltage, only for three-phase units;
- Phase voltage (phase-neutral);
- Phase current;
- Neutral current only for three-phase units;
- Active phase power, only for three-phase units;
- Total active power;
- Active energy;
- Hour counts.

**OPTIONAL ACCESSORIES: A872 – DUAL POWER SUPPLY WITH AUTOMATIC TRANSFER SWITCH**



The accessory is available for both the indoor unit and the outdoor condensing unit. The system consists of two timers, relays and contactors. In case of main line power failure, the system switches to the secondary line.

When the main line is reconnected, the system returns to its initial state.

During the switch, the power supply is interrupted for 5 seconds.

The system is installed inside the cabinet or externally in a separate box, depending on the size of the unit and the presence of accessories: electric heater and/or proportional steam humidifier.

**The sizes of the external kit box are as follows: 300x220x120mm.**

**ATS INSTALLATION - INTERNAL UNIT**

Model	Power Supply	Base unit	Presence if humidifier accessories and/or
51	230/1/50	internal	external kit
71	230/1/50	internal	external kit
121	230/1/50	internal	external kit
151	400/3+N/50	internal	internal
251	400/3+N/50	internal	internal

**OPTIONAL ACCESSORIES: A882 – FLOOR BRACKETS FIXING KIT**

Not compatible with 5587172400 / 5587172500 – Anti-mixing Frontal / Back panels  
Kit for fixing the machine to the floor.

**OPTIONAL ACCESSORIES: 7387062800 – HIGH TEMPERATURE CONDENSATE DRAIN PUMP**

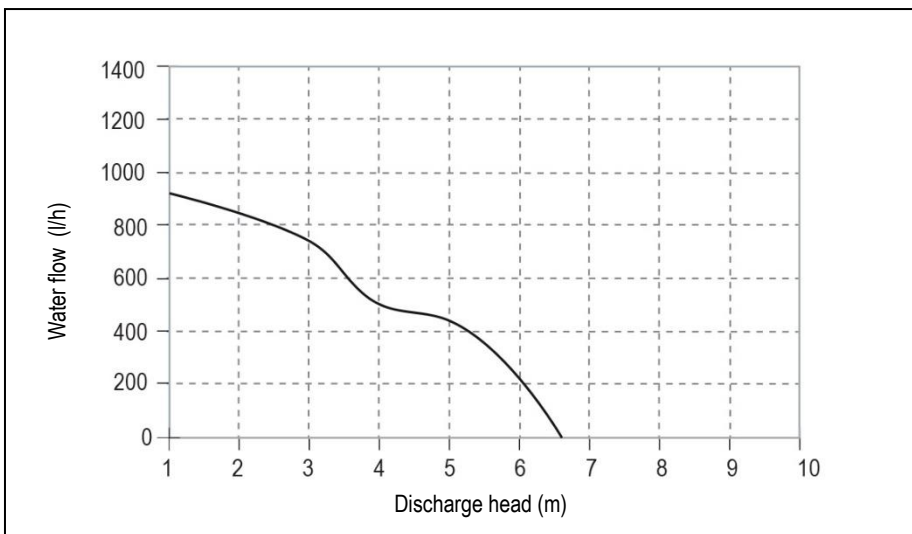


Optional accessory supplied in mounting kit to be installed outside of the unit. These pumps are designed to collect the hot water produced by the humidifier drain cycles, as well as the condensate produced. These pumps have mechanical features capable to resist to the high temperatures of the water exiting the steam cylinder.

The pump body is made from Cycoloy, a heat-resistant material, the pre-wired safety float is a low voltage switch used to stop the drain cycle in the unlikely event where the pump malfunctions.

<b>TECHNICAL SPECIFICATIONS</b>	
Tank capacity	4 liters
Recommended maximum head	6 m
Maximum water flow-rate	900 l/h with zero head
Rated power	0.6 A, 230 VAC
Power cable	(2 m long)
Safety switch	max 4 A
Power supply voltage	220/240 VAC
Current draw	0.7 A
Power consumption	175 W
<b>Dimensions</b>	
Height	205 mm
Width	300 mm
Depth	150 mm
Weight	3.6 kg
<b>Electrical connections</b>	
Brown	Line
Blue	Neutral
Green/yellow	Earth
2 x black	Safety switch

**PERFORMANCE OF HUMIDIFIER AND CONDENSATE DRAIN PUMP KIT**



## OPTIONAL ACCESSORIES: 7387012600 – DISPLAY

Remote terminal prepared for wall installation - supplied in assembly kit.

## OPTIONAL ACCESSORIES: 5587172400 / 5587172500 – ANTI-MIXING PANELS



Optional accessory supplied in mounting kit.  
Not compatible with optional "floor brackets fixing kit".  
Anti-mixing panels in galvanized steel sheet externally painted with epoxy powders. Colour RAL 9005.  
They close the lower part of the unit hiding the holders for height adjusting.  
The optional is useful to avoid the by-pass between cold-aisle and hot-aisle below the air conditioners and the server racks.

- 5587172400: Anti-mixing frontal/back panel L 300mm.
- 5587172500: Anti-mixing frontal/back panel L 600mm.

## OPTIONAL ACCESSORIES: 5587172800 / 5587172900 – ANTI-MIXING PANELS



Optional accessory supplied in mounting kit.  
Not compatible with optional "floor brackets fixing kit".  
Anti-mixing panels in galvanized steel sheet externally painted with epoxy powders. Colour RAL 9005.  
They close the lower part of the unit hiding the holders for height adjusting.  
The optional is useful to avoid the by-pass between cold-aisle and hot-aisle below the air conditioners and the server racks.

- 5587172800: Anti-mixing side panel L 1000mm
- 5587172900: Anti-mixing side panel L 1200mm

## OPTIONAL ACCESSORIES: A557 – POWER SUPPLY 460/3/60

### OUTDOOR UNIT

MODEL		0071	0121	0151	0251
POWER SUPPLY		460/3/60	460/3/60	460/3/60	460/3/60
STANDARD UNIT					
Max power input (FLI)	kW	10,9	18,6	14,8	21,3
Max current input (FLA)	A	16,4	28,7	27,5	40,2

**WARNING:**

The electric data indicated refer only to the standard units, without optional accessories.

## OPTIONAL ACCESSORIES: A558 – POWER SUPPLY 380/3/60

### OUTDOOR UNIT

MODEL		0071	0121	0151	0251
POWER SUPPLY		380/3/60	380/3/60	380/3/60	380/3/60
STANDARD UNIT					
Max power input (FLI)	kW	10,8	17,6	14,8	21,3
Max current input (FLA)	A	22,9	31,6	27,5	40,2

**WARNING:**

The electric data indicated refer only to the standard units, without optional accessories.

## OPTIONAL ACCESSORIES: A559 – POWER SUPPLY 230/1/60

### OUTDOOR UNIT

MODEL		0051
POWER SUPPLY		230/1/60
STANDARD UNIT		
Max power input (FLI)	kW	6,12
Max current input (FLA)	A	19,52

**WARNING:**

The electric data indicated refer only to the standard units, without optional accessories.

**OPTIONAL ACCESSORIES: A932 – AXIAL FANS WITH “EC” ELECTRIC MOTORS FOR OUTDOOR UNIT**



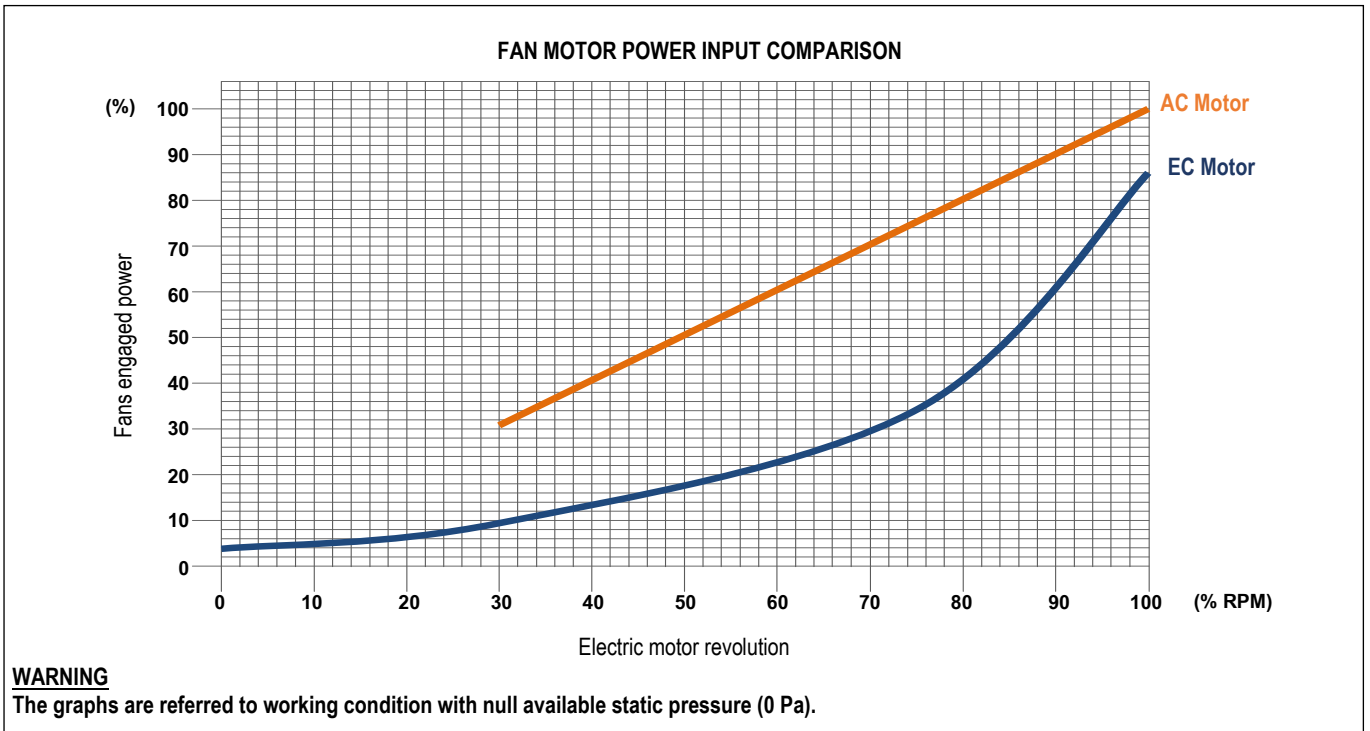
The “EC” axial fans are equipped with a brushless type synchronous motor with integrated electronic commutated system.

The motor rotation control is obtained with the EC system (Electronic Commutation) that manage the motor according to the 0÷10V proportional signal coming from the microprocessor control.

Characteristics of “EC” motors:

- no electromagnetic noise
- efficiency 83÷86%
- minimum power input

Characteristics comparison between an “AC” asynchronous electric motor with phase-cut control (voltage controller) and “EC” brushless type synchronous motor.



**TECHNICAL DATA**

OUTDOOR UNIT			
MODEL		0051	0071
<b>COOLING CAPACITY</b>		<b>MAX</b>	<b>MAX</b>
<b>CONDENSER FAN</b>	n.	2	1
Fan type		Axial EC	Axial EC
Max power input (FLI)	kW	0,2	0,72
Max current input (FLA)	A	1,6	3,2
<b>POWER SUPPLY</b>	V/Ph/Hz	230/1/50	400/3+N/50

OUTDOOR UNIT				
MODEL		0121	0151	0251
<b>COOLING CAPACITY</b>		<b>MAX</b>	<b>MAX</b>	<b>MAX</b>
<b>CONDENSER FAN</b>	n.	2	4	6
Fan type		Axial EC	Axial EC	Axial EC
Max power input (FLI)	kW	1,44	1,4	2,1
Max current input (FLA)	A	6,4	8,8	13,2
<b>POWER SUPPLY</b>	V/Ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50



## OPTIONAL ACCESSORIES: 881 – CU/CU CONDENSING COIL

Finned pack and tubes made of copper.

This type of heat exchanger is free from galvanic corrosion thanks to the use of a single material used for its construction.

Advantages of the Cu/Cu heat exchanger:

- High thermal conductivity;
- High corrosion resistance;

To ensure correct machine operation and the best operating conditions, it is important to keep the exchangers clean and efficient as indicated in the Installation, Use and Maintenance manuals.

The special Cu/Cu execution does not exclude maintenance and cleaning operations of the exchangers.

## OPTIONAL ACCESSORIES: 893 – EPOXY PAINTED CONDENSING COIL

Process with epoxy paint.

Advantages of the protective treatment:

- 100% coating of the exchanger;
- 1-2%; exchanger efficiency loss
- Thick protective film thickness at each point of the exchanger;
- Flexible and resistant protective film;

To ensure correct machine operation and the best operating conditions, it is important to keep the exchangers clean and efficient as indicated in the Installation, Use and Maintenance manuals.

The protective treatment does not exclude maintenance and cleaning operations of the exchangers.

## OPTIONAL ACCESSORIES: 896 - CATAPHORESIS CONDENSING COIL

The coating is applied through a complete immersion in the tank, in which the coil behaves like a magnet, attracting the coating on every point of its surface.

Advantages of the protective treatment:

- 100% coating of the exchanger;
- 1-2%; exchanger efficiency loss
- Thick protective film thickness at each point of the exchanger;
- Flexible and resistant protective film;

To ensure correct machine operation and the best operating conditions, it is important to keep the exchangers clean and efficient as indicated in the Installation, Use and Maintenance manuals.

The protective treatment does not exclude maintenance and cleaning operations of the exchangers.

## OPTIONAL ACCESSORIES: A181 - COMPRESSOR SOUNDPROOF JACKET



The system includes a soundproof jacket for each compressor to obtain a reduction of the sound level of the unit.

**OPTIONAL ACCESSORIES: A842 – NETWORK ANALYZER**



The accessory is available for both the outdoor unit and the outdoor condensing unit.

The accessory includes:

- A network transducer;
- One current transformer for each power phase cable.

The system allows the continuous detection of electrical consumptions, split into current, voltage and power. The values are made available to the microprocessor of the unit through an RS485 serial line cable connection, as indicated in the wiring diagram on board of the machine.

**On the indoor units models 51, 71, 121, the component is supplied in a 300x220x120mm box, to be mounted externally to the unit.**

The displayed variables are:

- Phase to phase voltage, only for three-phase units;
- Phase voltage (phase-neutral);
- Phase current;
- Neutral current only for three-phase units;
- Active phase power, only for three-phase units;
- Total active power;
- Active energy;
- Hour counts.

**OPTIONAL ACCESSORIES: A872 / A874 / A875 – DOUBLE POWER SUPPLY WITH AUTOMATIC TRANSFER SWITCH**



The accessory is available for both the indoor unit and the outdoor condensing unit.

The system consists of two timers, relays and contactors. In case of main line power failure, the system switches to the secondary line.

When the main line is reconnected, the system returns to its initial state.

During the switch, the power supply is interrupted for 5 seconds.

The system is installed inside the cabinet or externally in a separate box, depending on the size of the unit and the presence of accessories: electric heater and/or proportional steam humidifier.

**The sizes of the external kit box are as follows: 300x220x120mm.**

**ATS INSTALLATION - EXTERNAL CONDENSING UNIT**

Model	Power Supply	Base unit
51	230/1/50	Internal
71	400/3+N/50	Internal
121	400/3+N/50	Internal
151	400/3+N/50	Internal electronics ATS
251	400/3+N/50	Internal electronics ATS

Models 151 and 251 feature electronic ATS

The accessory is also available on request for the following power supplies:

- 380/3/60Hz (power supply available as an accessory);
- 460/3/60Hz (power supply available as an accessory).

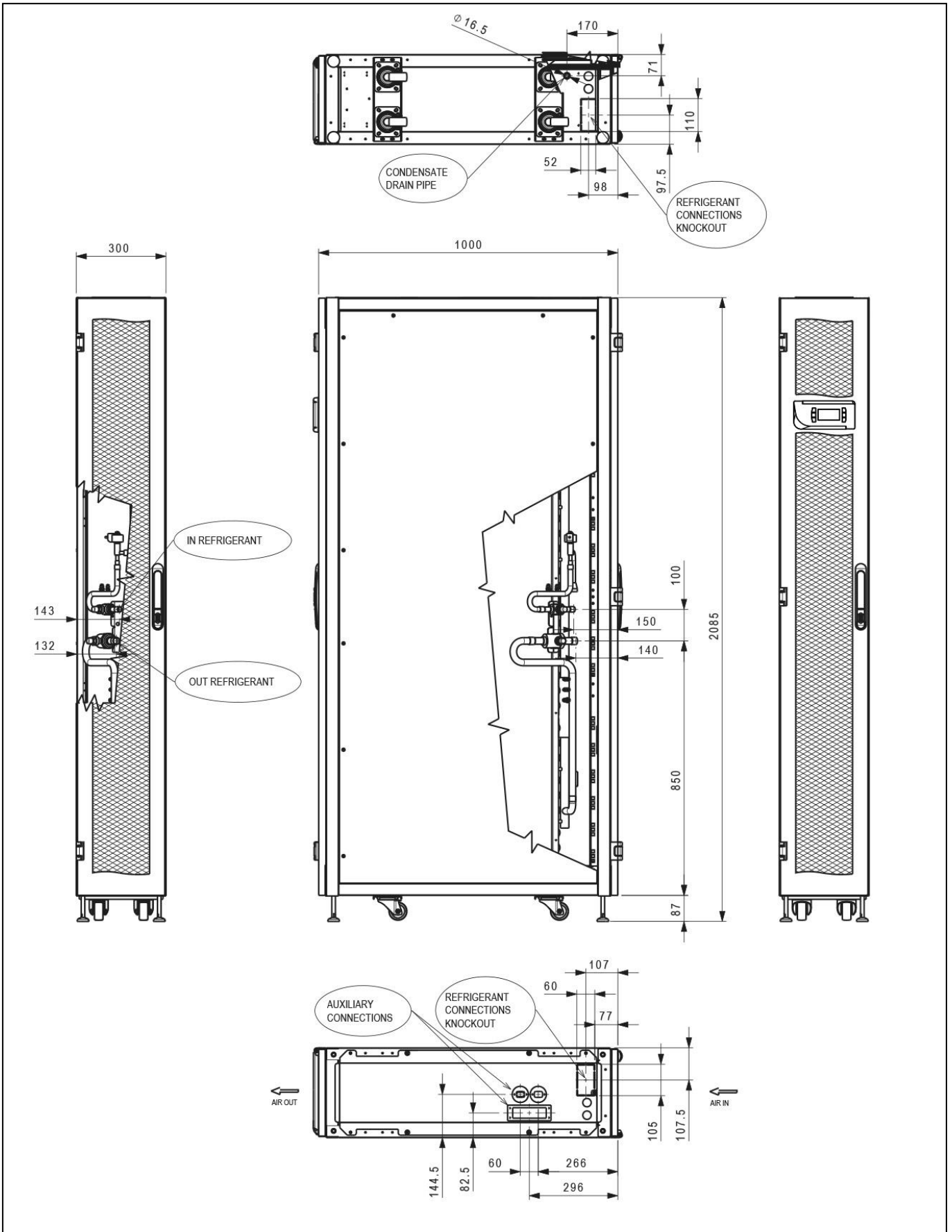
**OPTIONAL ACCESSORIES: 7378005800 – FLOOR BRACKETS FIXING KIT mod. 0051**

**OPTIONAL ACCESSORIES: 7378005900 – FLOOR BRACKETS FIXING KIT mod. 0071, 0121**

**OPTIONAL ACCESSORIES: F400500001 – FLOOR BRACKETS FIXING KIT mod. 0151, 0251**

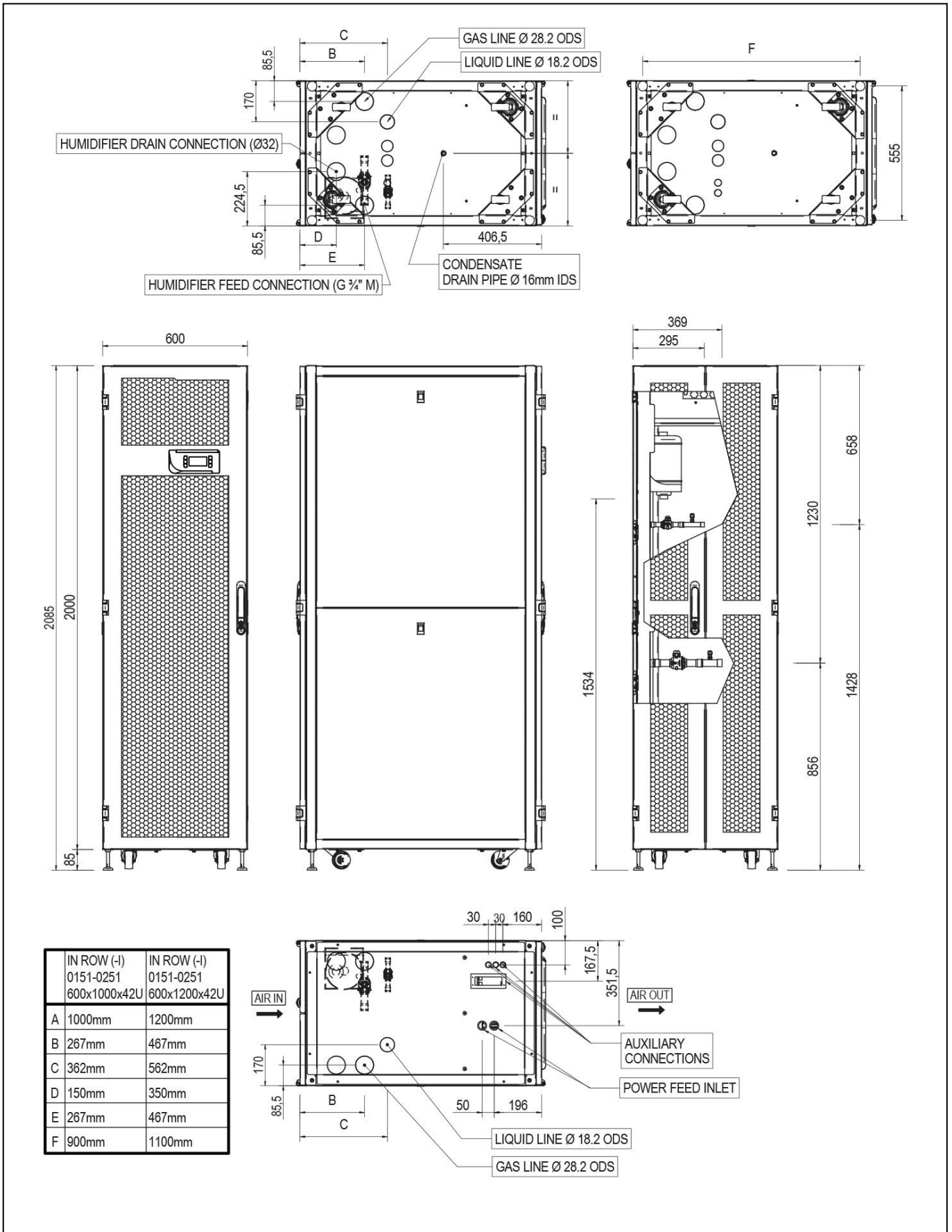
**MACHINE DRAWINGS – INDOOR UNITS**

Dimensions in mm – In-Row “I” Version – 0051, 0071, 0121 (300 x 1000 x 42U FRAME)



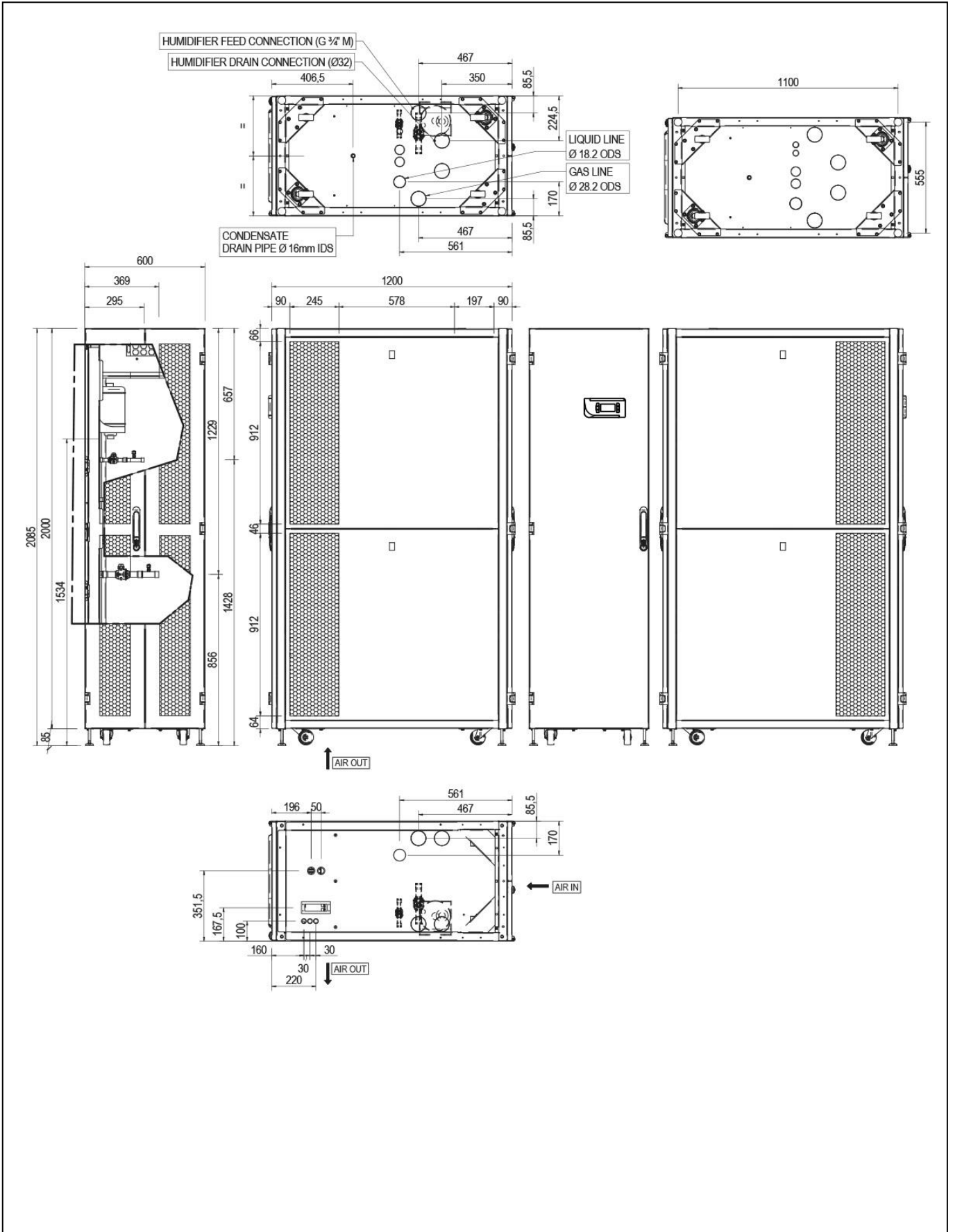
## MACHINE DRAWINGS

Dimensions in mm – In-Row “I” Version – 0151, 0251 (600 x 1000/1200 x 42U FRAME)



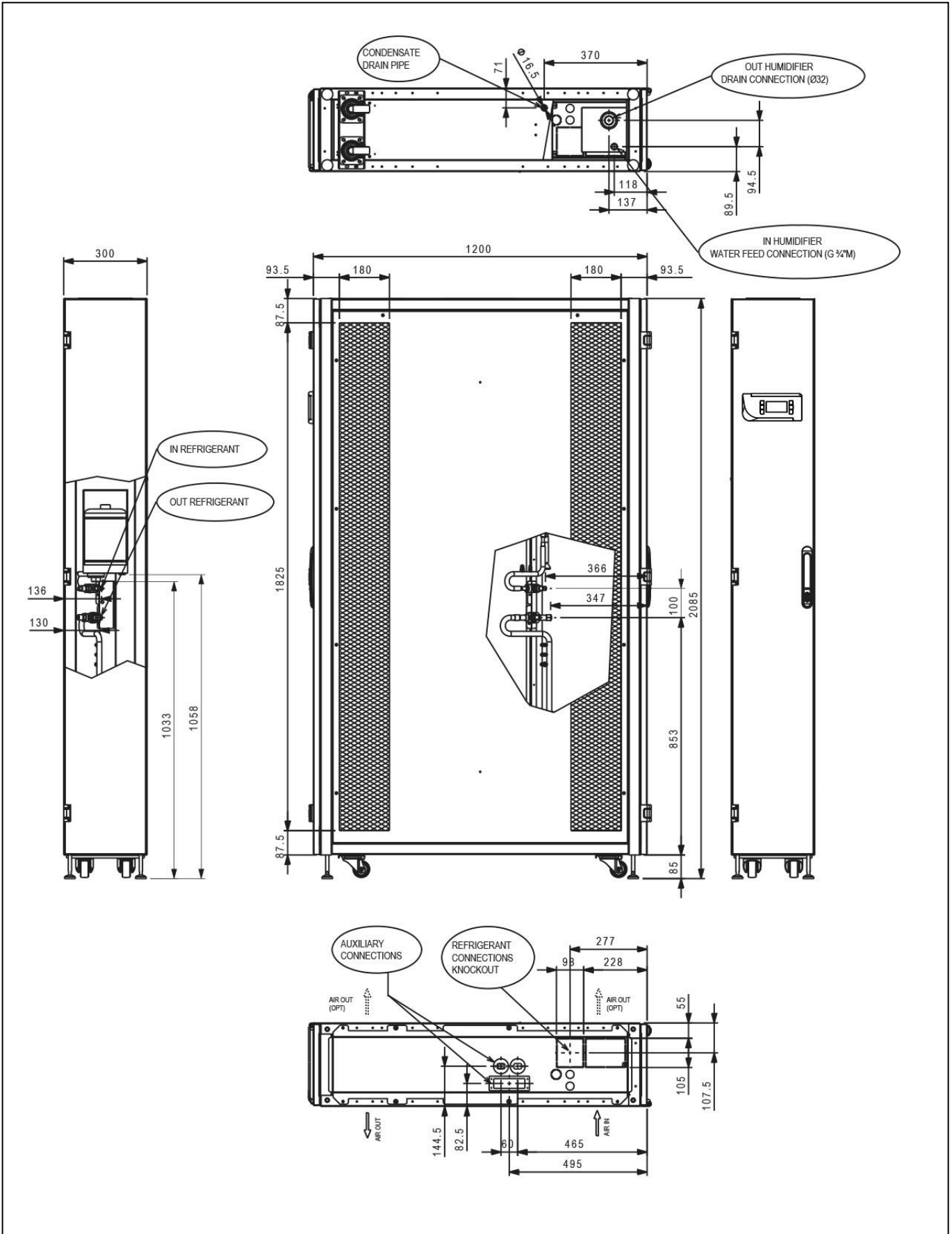
**MACHINE DRAWINGS**

Dimensions in mm – In-Row “I” Version – 0151, 0251 (600 x 1000 x 42U FRAME)



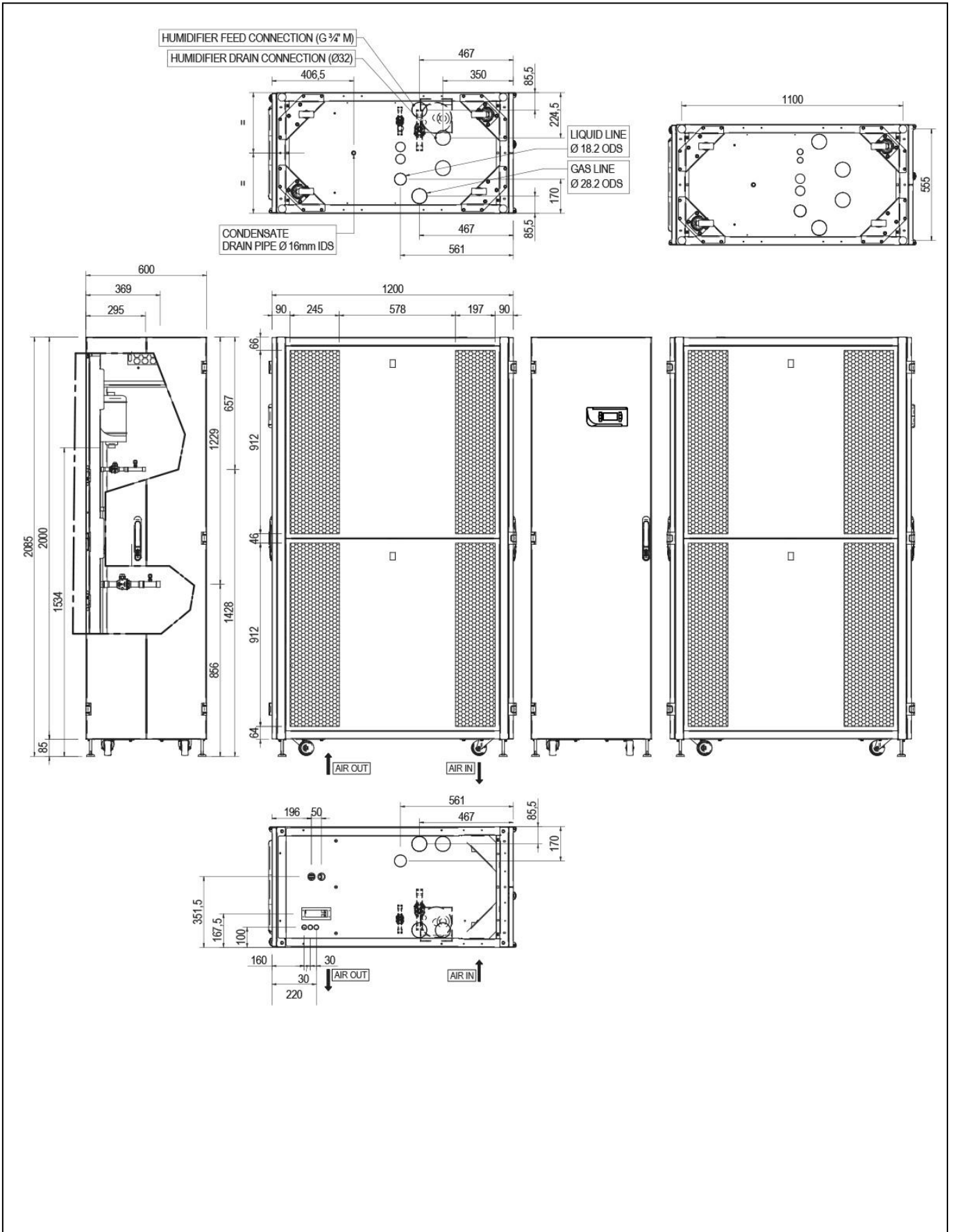
**MACHINE DRAWINGS**

Dimensions in mm – In-Row “I” Version – 0051, 0071, 0121 (300 x 1200 x 42U FRAME)



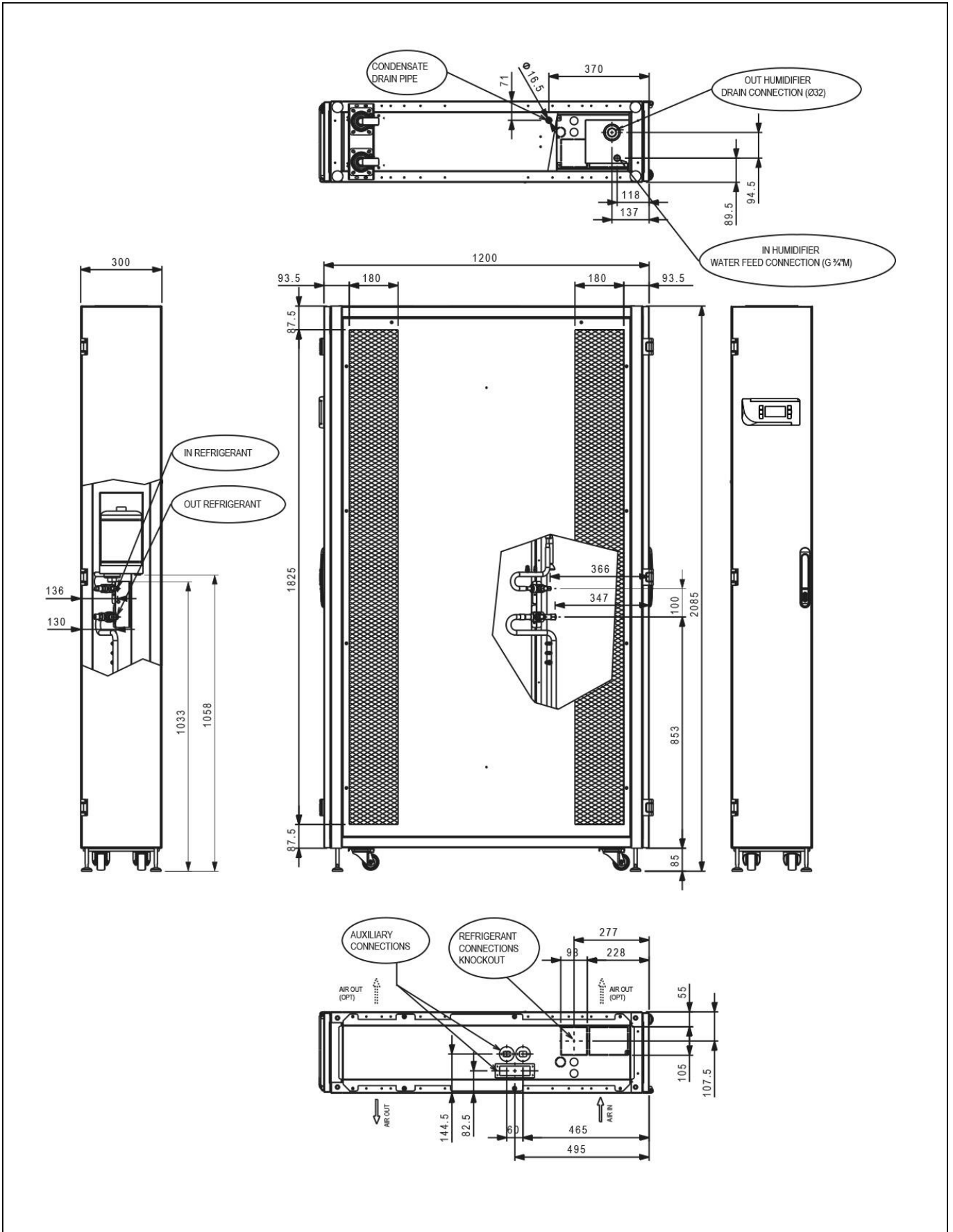
## MACHINE DRAWINGS

Dimensions in mm – Enclosure “E” Version – 0151, 0251 (600 x 1200 x 42U FRAME)



**MACHINE DRAWINGS**

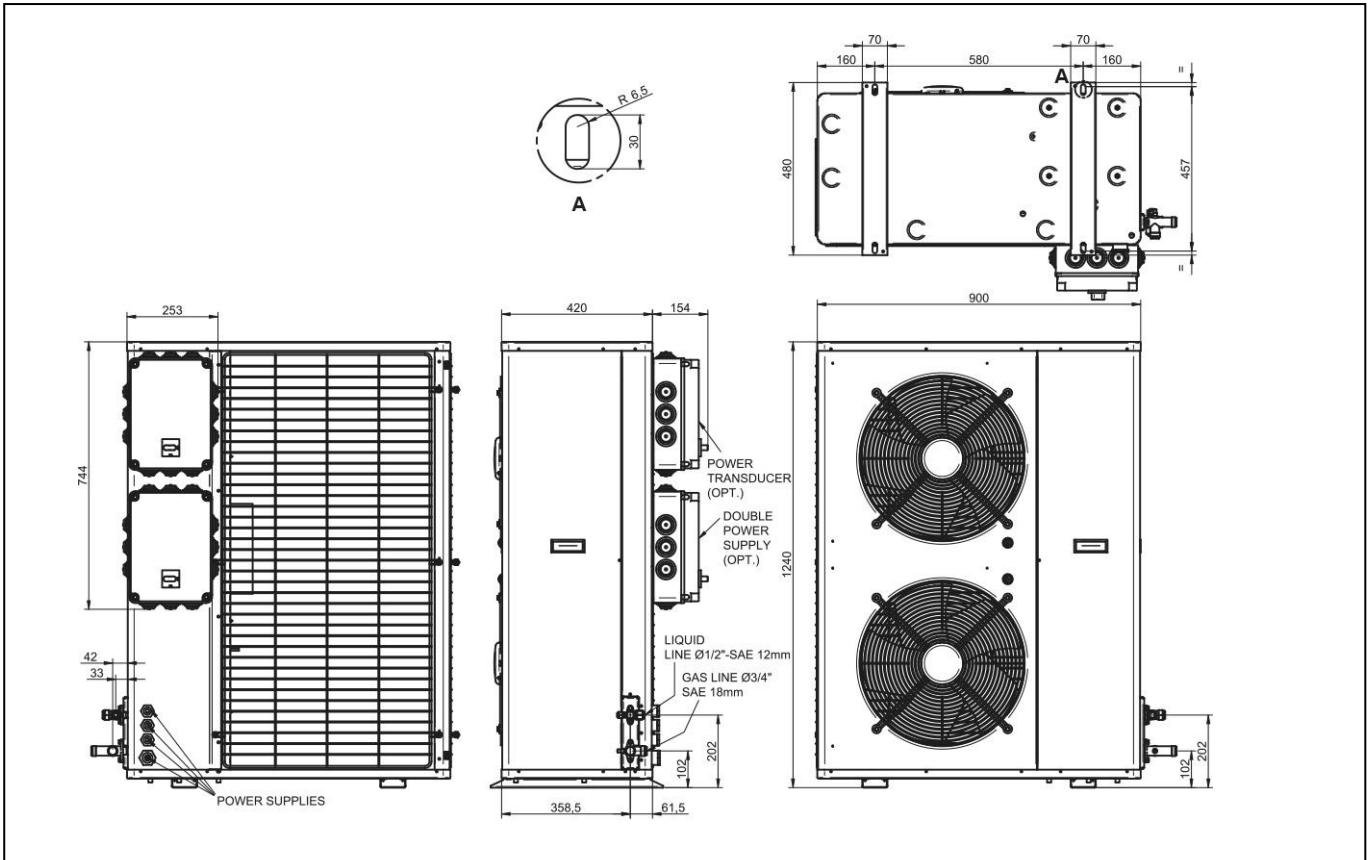
Dimensions in mm – Enclosure “E” Version – 0051, 0071, 0121 (300 x 1200 x 42U FRAME)



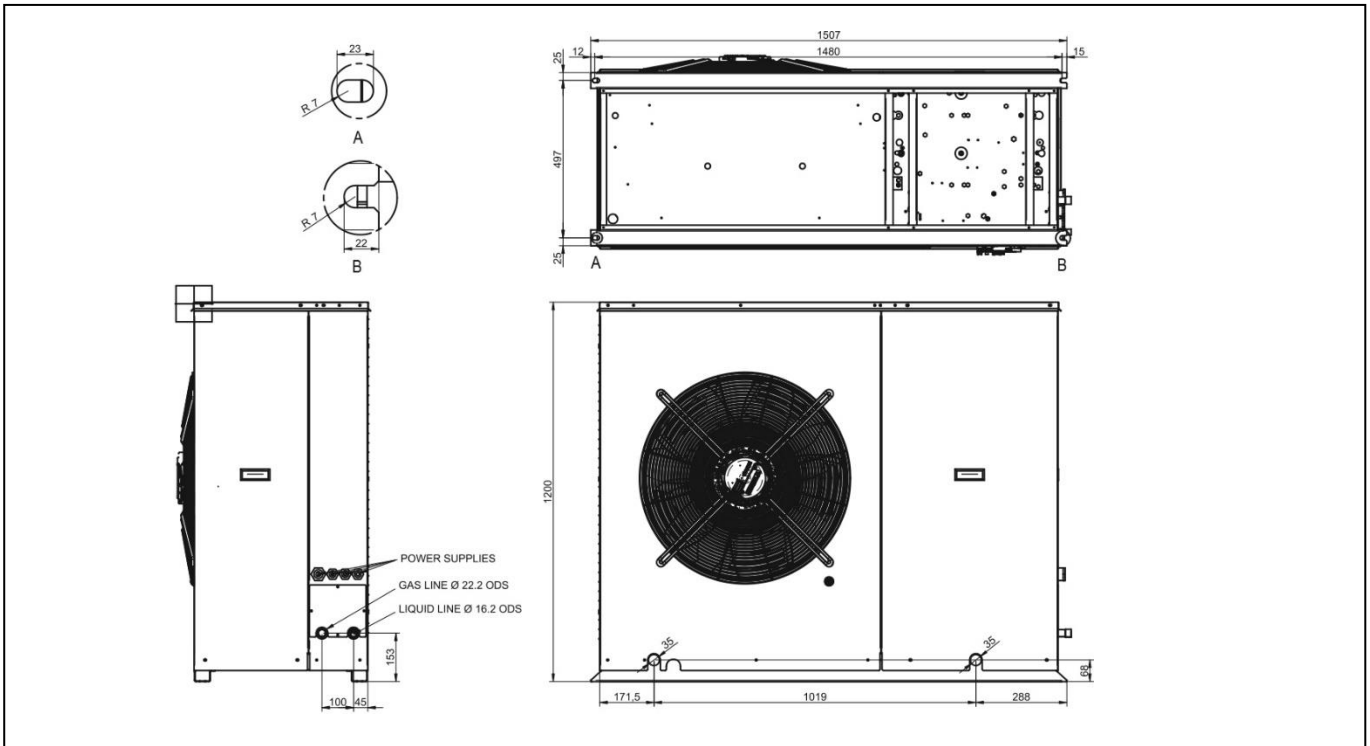


**MACHINE DRAWINGS – OUTDOOR MOTO-CONDENSING UNITS**

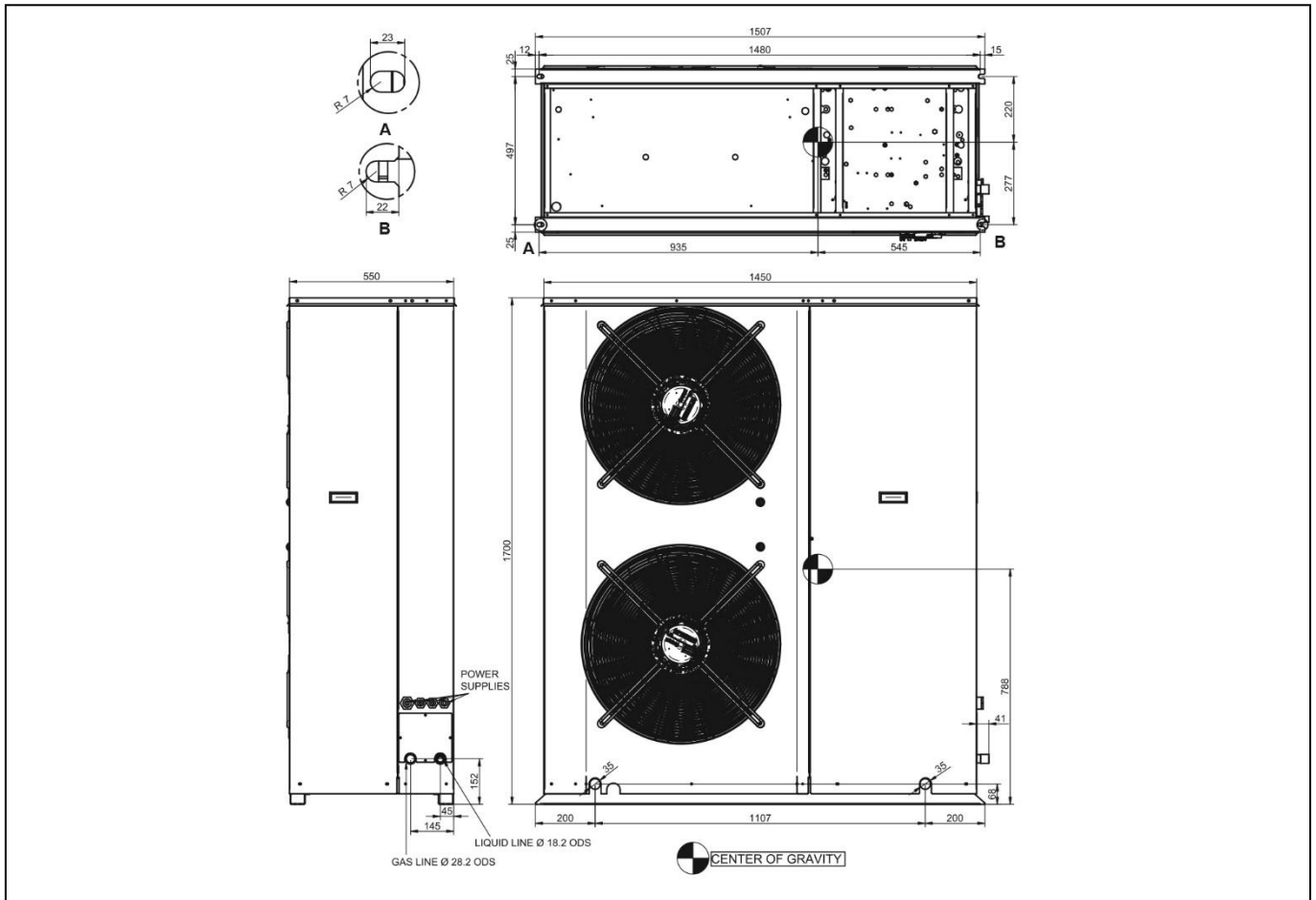
Dimensions in mm – Model 0051



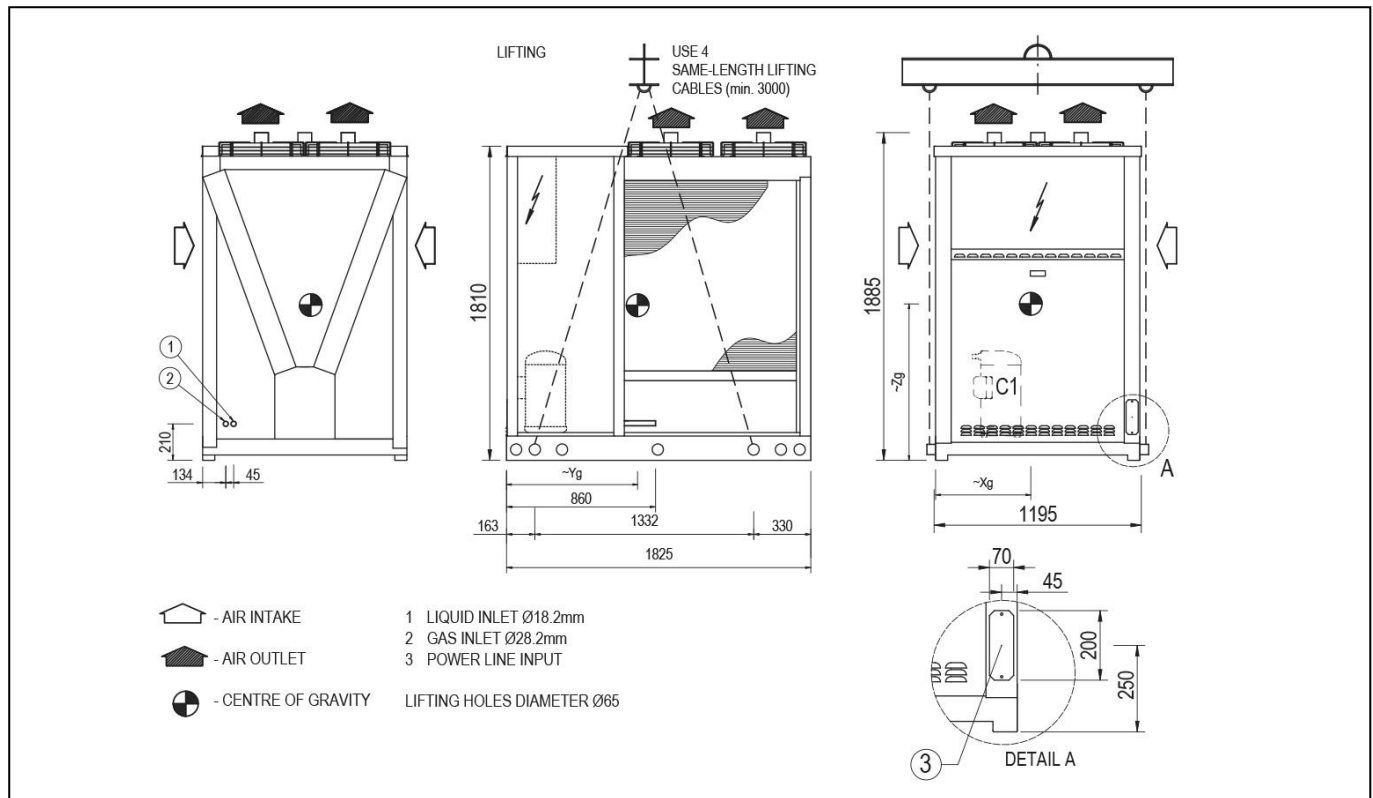
Dimensions in mm – Model 0071



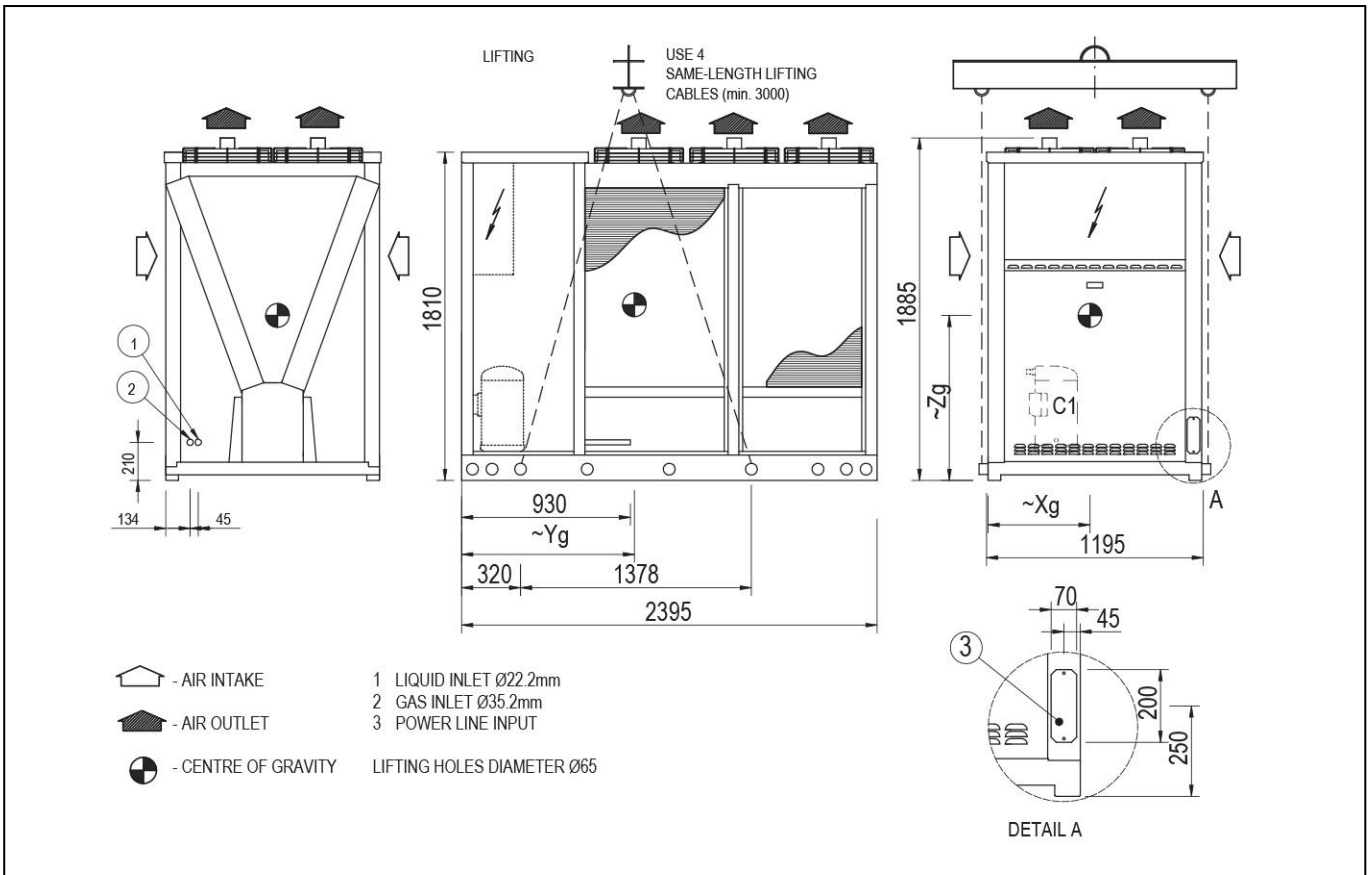
## Dimensions in mm – Model 0121



## Dimensions in mm – Model 0151



**Dimensions in mm – Model 0251**



**SHIPMENT: PACKING DIMENSIONS**

Values referred to basic machine. The presence of some accessories increases the weight of machine.  
 The machines are shipped on pallet and covered with shrink wrap.  
 On request packing on pallet covered with shrink wrap and wooden cage.

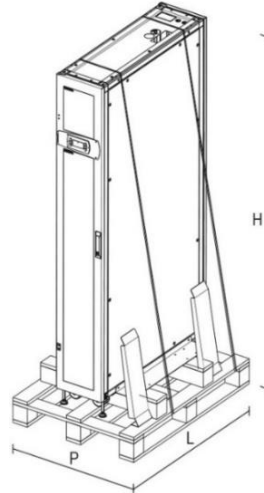
**INDOOR UNIT - STANDARD PACKING**

**FRAME X 1000 X 42U**

CRCX-I		0051	0071	0121	0151	0251
L	mm	1100	1100	1100	1100	1100
H	mm	2248	2248	2248	2248	2248
P	mm	800	800	800	800	800
Weight	Kg	190	205	207	235	247

**FRAME X 1200 X 42U**

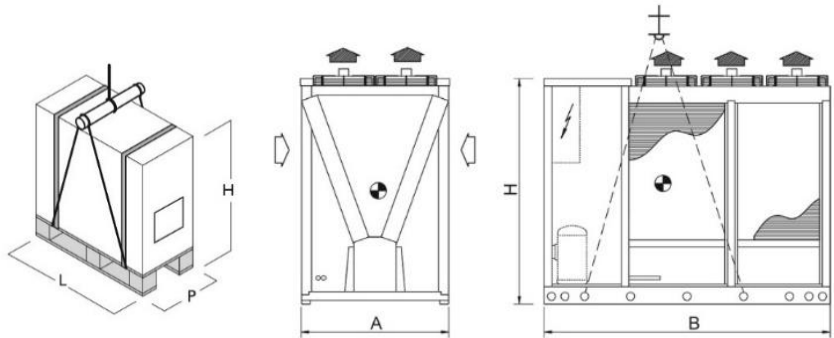
CRCX-I / CRCX-E		0051	0071	0121	0151	0251
L	mm	1300	1300	1300	1300	1300
H	mm	2248	2248	2248	2248	2248
P	mm	800	800	800	800	800
Weight	Kg	200	215	218	260	272



**OUTDOOR UNIT - STANDARD PACKING**

Size		0051	0071	0121
L	mm	1035	1630	1630
P	mm	485	650	650
H	mm	1390	1400	1900
Weight	Kg	123	205	270

Size		0151	0251
B	mm	1825	2395
A	mm	1195	1195
H	mm	1865	1865
Weight	Kg	440	500



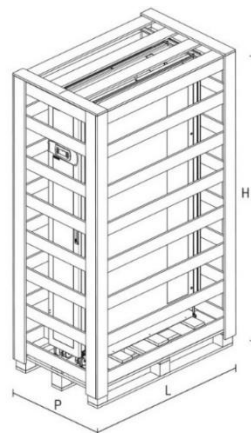
**INDOOR UNIT - WOODEN CAGE PACKING (OPTIONAL)**

**FRAME X 1000 X 42U**

CRCX-I		0051	0071	0121	0151	0251
L	mm	1130	1130	1130	1130	1130
H	mm	2320	2320	2320	2320	2320
P	mm	830	830	830	830	830
Weight	Kg	235	250	253	280	292

**FRAME X 1200 X 42U**

CRCX-I / CRCX-E		0051	0071	0121	0151	0251
L	mm	1330	1330	1330	1330	1330
H	mm	2320	2320	2320	2320	2320
P	mm	830	830	830	830	830
Weight	Kg	245	260	263	305	317











for a greener tomorrow

Eco Changes is the Mitsubishi Electric Group's environmental statement, and expresses the Group's stance on environmental management. Through a wide range of businesses, we are helping contribute to the realization of a sustainable society.



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