



Idola M 3.2

Reversible heat pump for outdoor installation with dc inverter compressor

This series of air-water heat pumps meets the needs of winter and summer air-conditioning of small and medium power residential and commercial installations. All the units are suitable for outdoor installation and being able to produce water up to 65°C they can be used in radiant systems, fan coils, radiators and for the indirect production of domestic hot water (DHW) via an external boiler.

The units are characterized by the use of a DC inverter compressor that modulates the supplied power and come complete with a hydronic kit composed of all the essential components for quick and safe installation. The units are characterised by high energy efficiency and reduced sound levels allowing them to be used as a single generator for the plant or integrated with other energy sources such as additional electric heating elements or boiler. All units are supplied as standard with a DHW water storage tank temperature probe (to be installed by the installer) and with an outdoor air temperature probe (already installed on the unit), to achieve climatic adjustment in heating and cooling. For specific applications, the units can be installed in multiple "cascade" configuration with a "MASTER" unit (directly managed by the controller) and up to 5 "SLAVE" units, also different in their output power. The preparation of the domestic hot water is left to the master unit, while in the event of a failure of one of the slave units the remaining ones may continue to work in a normal way.

All units are carefully built and individually tested in factory. Installation only requires electrical and hydraulic connections.

The control system

- The user interface consists of a remote wired controller (5 wires, max 50 mt length from the unit) that manages:
 - **HEATING AND COOLING SYSTEM** Where the unit is the only heater. If the unit is running in hot or cold mode, it works by modulating the compressor frequency to maintain the temperature of the produced water at the established setpoint value. By mean of a parametrization value, it is possible to use the remote controller (e.g. for single zone heating circuits) as a room thermostat.
 - **DOMESTIC HOT WATER PRODUCTION (DHW)** The unit starts in hot mode to maintain the temperature of a DHW storage tank at the established setpoint value. A 3-way diverter valve (not supplied) and a temperature probe (probe T5, supplied with cable length 10mt) are required to be inserted in a pit of the DHW tank.
 - **ADDITIONAL ENERGY SOURCES** (boiler or electric heating element) Depending from the set values of the parametrization, these sources can be started in integration or replacement of the heat pump during operation in heating or for DHW production and if the heat pump does not work.
 - **CASCADING FUNCTION** of multiple units. The master unit can control in cascade mode up to 6 different units (1 master, 5 slaves, also with different output power) with a single controller connected to the master unit. It is possible to assign the function of production of DHW to the master unit, while in the event of a failure of one of the 5 slave units, the remaining ones may continue to work normally.
 - **MANAGEMENT UP TO 2 HEATING CIRCUITS (1 DIRECT AND 1 MIXED)**. The unit is able to manage the circulation pumps (not supplied) of both 2 heating circuits and, only for the mixed circuit, the mixing valve (not supplied) and the water supply line temperature probe (not supplied).
 - **PHOTOVOLTAIC INPUT AND SMART GRID**. The unit is equipped with 2 digital inputs to be connected with the signal coming from the photovoltaic system and from the electrical grid.
 - The logic of the management is the following:
 - if the digital PV input is closed, the unit starts the DHW mode with DHW setpoint = 70°C and (if available) will start the electrical heating element of the DHW storage tank. The unit is running in cooling/heating mode with the normal logic.
 - if the digital PV input is open and the smart grid input is closed, the unit runs normally
 - if the digital PV input is open and the smart grid input is open, the unit deactivates the DHW mode and may run in cooling/heating mode for a limited period (set by a parameter), then will stop running
- **REMOTE CONTROL OF THE UNIT VIA APP.** (available for IOS and Android systems).
- **DHW STORAGE TANK ELECTRIC HEATING ELEMENT** In the DHW mode it is possible to manage an integration electric heating element in the DHW storage tank as integration of the heat pump, as antilegionella function, or as total backup in case of failure of the heat pump.
- **FAST DHW** This function can be started manually to prioritize DHW by bringing the DHW storage tank to the setpoint in the quickest possible time, by the use of all available energy sources (heat pump, electrical backup resistors, boiler).
- **ANTILEGIONELLA FUNCTION** Weekly anti-legionella cycles can be set. The heat pump must be integrated with DHW boiler or boiler electrical heating element.
- **SILENCED MODE** When on, according to a programmed schedule, it reduces the maximum frequency of the compressor and the fan speed, to reduce the noise generated and the power absorbed by the unit.
- **ON/OFF** with an external contact. The unit can be switched on and off by an external contact (e.g. by a room thermostat / remote switch). In this circumstance, the unit will run in the mode set by the control keyboard.
- **HOT/COLD** with 2 external contacts. The unit can be started and stopped in cold or hot mode by 2 external contacts (e.g. by a room thermostat / remote switch which manages the hot/cold request).
- **ECO/COMFORT** Possibility of defining time slots in hot and cold and relative setpoints for ECO and COMFORT modes
- **WEEKLY SCHEDULE PROGRAMMING** allows to set a different schedule for each day of the week defining the operating mode for each time slot (COLD/HOT/DHW) and the working setpoint.
- **ANTIFROST PROTECTION**. Guaranteed down to -20°C outdoor air temperature thanks to the heat pump itself working in hot mode, to the electric antifrost heating element (as per standard) and the electric booster (if installed).

Cooling circuit

This is contained inside the unit to facilitate maintenance operations, it is equipped with **COMPRESSOR** with twin rotary **DC INVERTER** motor to guarantee greater dynamic balancing and reduce vibrations. It is positioned on rubber antivibration supports and wrapped in a double layer of sound-absorbing material to reduce noise. The compressor is also equipped with oil casing heating element. The circuit is completed with **BRAZE-WELDED STAINLESS STEEL PLATE HEAT EXCHANGER** complete with antifrost heating element, **AXIAL FANS WITH BRUSHLESS DC MOTOR** complete with accident prevention safety grilles, finned coil made of copper tubes and aluminium fins. All units are equipped with variable fan speed control which allows operation at low outdoor temperatures in cooling and high outdoor temperatures in heating.

Hydraulic circuit

Contained inside the unit to facilitate maintenance operations, it is fitted as per standard with **LOW CONSUMPTION CIRCULATOR** with brushless DC motor, water flow switch, automatic air vent, water pressure gauge, expansion vessel, safety valve, Y water filter (installation by the installation technician). The plate heat exchanger and all the hydraulic circuit pipes are thermally insulated to prevent condensation and reduce heat loss.

Standard accessories

- **PROBE** for the integration of a supplementary heat source
- **REMOTE CONTROLLER**
- **Y FILTER**

Basic system code	Basic system model
2CP000AL	IDOLA M 3.2 04
2CP000BL	IDOLA M 3.2 06
2CP000CL	IDOLA M 3.2 08
2CP000DL	IDOLA M 3.2 10
2CP000EL	IDOLA M 3.2 12
2CP000FL	IDOLA M 3.2 14
2CP000GL	IDOLA M 3.2 16
2CP000HL	IDOLA M 3.2 12T
2CP000IL	IDOLA M 3.2 14T
2CP000JL	IDOLA M 3.2 16T

GENERAL DATA		4	6	8	10	12	14	16	12T	14T	16T	
ERP class in heating / Seasonal efficiency medium temperature (produced water 55°C)	(Class G - A+)	A++ 129	A++ 138	A++ 131	A++ 136	A++ 135	A++ 135	A++ 133	A++ 135	A++ 135	A++ 133	
ERP class in heating / Seasonal efficiency low temperature (produced water 35°C)	(Class G - A+)	A+++ 191	A+++ 195	A+++ 205	A+++ 204	A+++ 189	A+++ 185	A+++ 181	A+++ 189	A+++ 185	A+++ 182	
Electric power supply	V-ph-Hz	220/240-1-50						380/415-3-50				
SCOP low temperature (water temp. 35°C)	W/W	4,85	4,95	5,21	5,19	4,81	4,72	4,62	4,81	4,72	4,62	
SCOP medium temperature (water temp. 55°C)	W/W	3,31	3,52	3,36	3,49	3,45	3,47	3,41	3,45	3,47	3,41	
SEER water temp 7°C	W/W	4,99	5,34	5,83	5,98	4,89	4,86	4,69	4,86	4,83	4,67	
SEER water temp 18°C	W/W	7,77	8,21	8,95	8,78	7,10	6,90	6,75	7,04	6,85	6,71	
Type of compressor	-	Twin Rotary DC										
No. of compressors	no	1										
No. of cooling circuits	no	1										
Type of exchanger system side	-	brazed stainless steel plates										
Type of exchanger source side	-	finned coil										
Type of fans	-	DC axial										
No. of fans	no	1										
Expansion vessel volume	l	2				5						
Setup of the water pressure safety valve	bar	3										
Hydraulic fittings	"	1"				1-1/4"						
Minimum water content on the system	l	15				25						
DHW boiler - minimum surface of the coil (min / recommended)	steel	m ² 1,4 / 2,5				1,75 / 4,0						
	enamel	m ² 1,7 / 3,0				2,5 / 5,6						
Refrigerant type	type	R32										
GWP		675										
Refrigerant charge	kg	1,4					1,75					
Control type	-	with remote wire										
SWL - Sound power level Cooling *	A7W35	dB(A)	55	58	59	60	65	65	69	65	65	69
	Max	dB(A)	60	61	61	62	65	65	69	65	65	69
	Sil. 1	dB(A)	56	56	57	58	62	62	63	62	62	63
	Sil. 2	dB(A)	53	53	55	55	56	56	56	56	56	56
SWL - Sound power level Heating *	A35W18	dB(A)	56	58	60	60	64	64	69	64	64	69
	Max	dB(A)	60	61	61	62	65	65	69	65	65	69
	Sil. 1	dB(A)	55	57	57	58	62	62	63	62	62	63
	Sil. 2	dB(A)	52	54	54	54	56	56	56	56	56	56
Max current input	A	12	14	16	17	25	26	27	10	11	12	

* : **SWL** = Sound power levels, with reference to 1x10-12 W with unit operating in conditions:
A7W35 = source : air in 7°C d.b. 6°C w.b. / plant : water in 30°C out 35°C
A35W18 = source : air in 35°C d.b. / plant : water in 23°C out 18°C
Max = at maximum conditions in heating / cooling mode

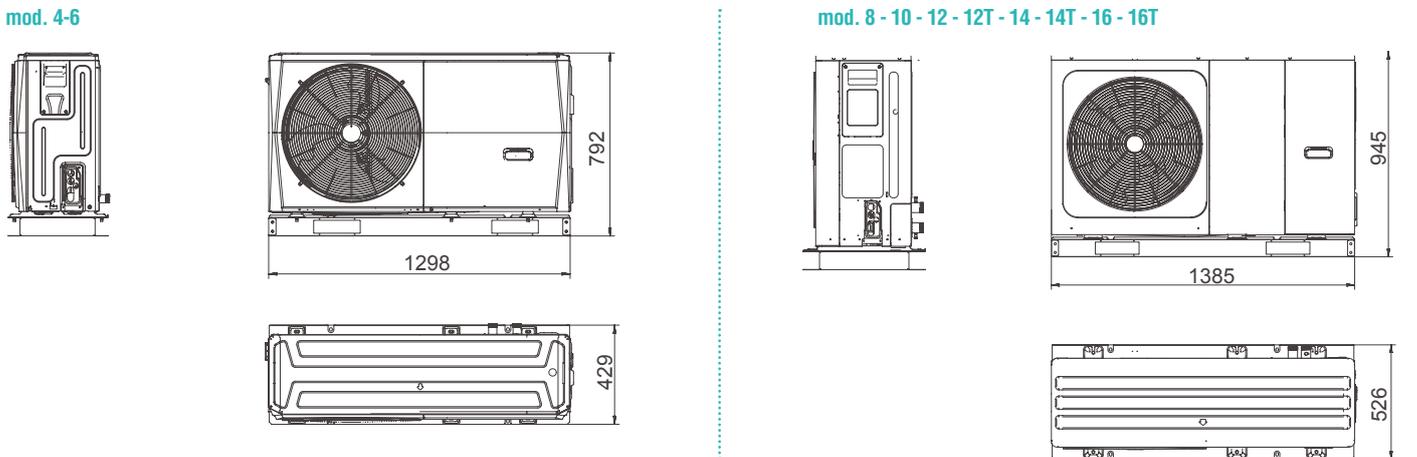
Sil. 1 = if silent level 1 active in heating / cooling mode
Sil. 2 = if silent level 2 active in heating / cooling mode
 The Total sound power level in dB(A) measured in compliance with ISO 9614 standards.

PERFORMANCE DATA				4	6	8	10	12	14	16	12T	14T	16T
A7W35	Heating capacity	kW	nom	4.20	6.35	8.40	10.0	12.1	14.5	15.9	12.1	14.5	15.9
	Power input	kW	nom	0.82	1.28	1.63	2.02	2.44	3.15	3.53	2.44	3.15	3.53
	COP	W/W		5.10	4.95	5.15	4.95	4.95	4.60	4.50	4.95	4.60	4.50
	Water flow rate	l/h		722	1092	1445	1720	2081	2494	2735	2081	2494	2735
	Available static pressure	kPa		85	84	79	71	61	46	40	61	46	40
A7W45	Heating capacity	kW	nom	4.30	6.30	8.30	10.0	12.3	14.1	16.0	12.3	14.1	16.0
	Power input	kW	nom	1.13	1.70	2.16	2.67	3.32	3.92	4.57	3.32	3.92	4.57
	COP	W/W		3.80	3.70	3.85	3.75	3.70	3.60	3.50	3.70	3.60	3.50
	Water flow rate	l/h		740	1084	1428	1720	2116	2425	2752	2116	2425	2752
	Available static pressure	kPa		85	84	79	71	60	47	40	60	47	40
A7W55	Heating capacity	kW	nom	4.40	6.00	7.50	9.50	11.9	13.8	16.0	11.9	13.8	16.0
	Power input	kW	nom	1.49	2.03	2.36	3.06	3.90	4.68	5.61	3.90	4.68	5.61
	COP	W/W		2.95	2.95	3.18	3.10	3.05	2.95	2.85	3.05	2.95	2.85
	Water flow rate	l/h		473	645	806	1021	1279	1484	1720	1279	1484	1720
	Available static pressure	kPa		85	85	85	84	84	80	71	84	80	71
A35W18	Cooling capacity	kW	nom	4.50	6.50	8.30	9.90	12.0	12.9	13.6	12.0	12.9	13.6
	Power input	kW	nom	0.82	1.35	1.64	2.18	3.04	3.49	3.77	3.04	3.49	3.77
	EER	W/W		5.50	4.80	5.05	4.55	3.95	3.70	3.61	3.95	3.70	3.61
	Water flow rate	l/h		774	1118	1428	1703	2064	2219	2339	2064	2219	2339
	Available static pressure	kPa		85	84	79	71	61	56	52	61	56	52
A35W7	Cooling capacity	kW	nom	4.70	6.50	7.45	8.20	11.5	12.4	14.0	11.5	12.4	14.0
	Power input	kW	nom	1.36	2.17	2.22	2.52	4.18	4.96	5.60	4.18	4.96	5.60
	EER	W/W		3.45	3.00	3.35	3.25	2.75	2.50	2.50	2.75	2.50	2.50
	Water flow rate	l/h		808	1118	1281	1410	1978	2133	2408	1978	2133	2408
	Available static pressure	kPa		85	84	81	79	63	60	49	63	60	49

The values are referred to units without options and accessories. Data declared according to EN 14511:
 EER (Energy Efficiency Ratio) = ratio of the total cooling capacity to the effective power input of the unit - COP (Coefficient Of Performance) = ratio of the total heating capacity to the effective power input of the unit - A7W35 = source : air in 7°C d.b. 6°C w.b. / plant : water in 30°C out 35°C - A7W45 = source : air in 7°C d.b. 6°C w.b. / plant : water in 40°C out 45°C - A7W55 = source : air in 7°C d.b. 6°C w.b. / plant : water in 47°C out 55°C - A35W18 = source : air in 35°C d.b. / plant : water in 23°C out 18°C - A35W7 = source : air in 35°C d.b. / plant : water in 12°C out 7°C

ACCESSORIES	DESCRIPTION
2C0970AF	3 kW 230-1-50 electric heating booster for internal installation - IDOLA M mod. 4 - 6
2CP000KF	3 kW 230-1-50 electric heating booster for internal installation - IDOLA M mod. 8 - 10 - 12 - 14 - 16
2CP000MF	4.5 kW 400-3-50 electric heating booster for internal installation - IDOLA M mod. 12T - 14T - 16T
2CP000NF	System flow temperature sensor
2CP000TF	IDOLA M 3.2 rubber vibration damping kit
2CP000UF	IDOLA M 3.2 KFI inertial tank 60 lt

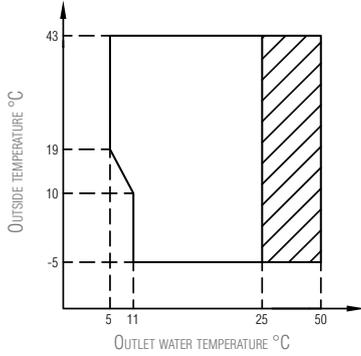
Overall dimensions of external unit



MODEL	4	6	8	10	12	14	16	12T	14T	16T
Packaging (WxHxD)	1384X945X526		1470X1115X565							
Weight Net \ Gross (kg)	98 / 121		121 / 148		144 / 170			160 / 188		

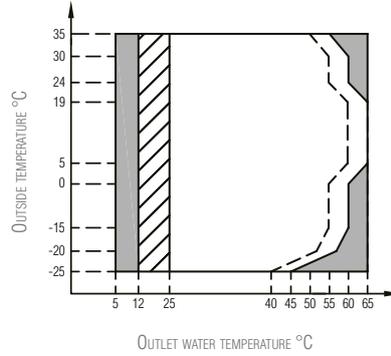
Operating limits

COOLING MODE



Operation range by heat pump with possible limitation and protection

HEATING MODE

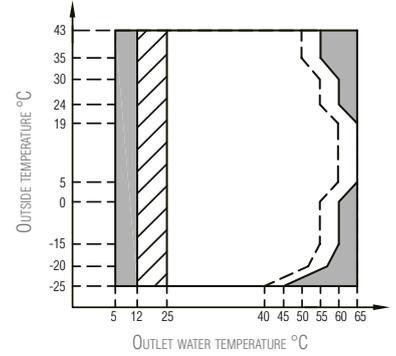


Operation range by heat pump with possible limitation and protection

If IBH (backup heater) /AHS (boiler) setting is valid, only IBH/AHS turns on. If IBH/AHS setting is invalid, only heat pump turns on.

Maximum inlet water temperature line for heat pump operation

DHW MODE



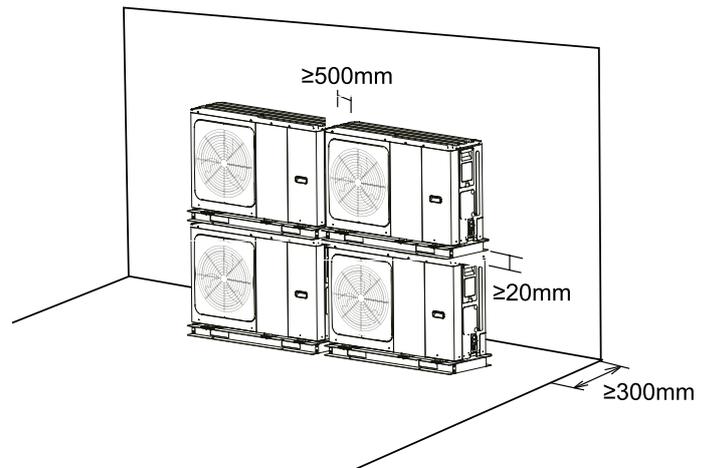
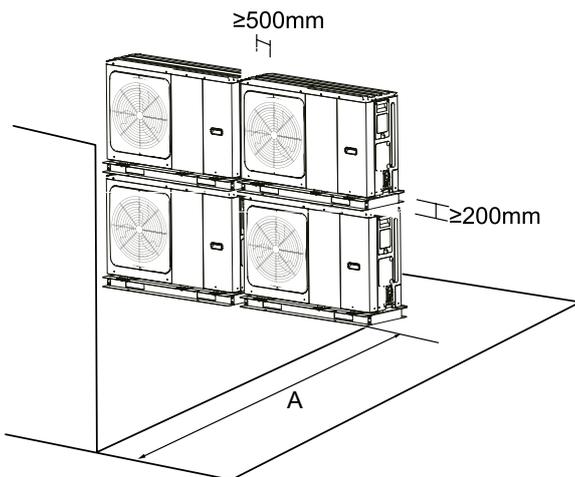
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Maximum inlet water temperature line for heat pump operation

NOTE FOR DHW MODE: outlet water temperature is the temperature of the water produced by the unit and not the DHW temperature available to the user; the DHW temperature is in fact a function of this parameter and of the coil surface of the DHW boiler.

Minimum operating area



MODEL	4	6	8	10	12	14	16	12T	14T	16T
A (mm)	1000			1500						