



Idola H

Air-water reversible heat pumps for split installation

IDOLA H: SILENT OPERATION AND DESIGN EFFICIENCY

The IDOLA H series of split air-water heat pumps meets the needs of winter and summer air-conditioning of small and medium power residential and commercial installations. Able to produce water up to 60°C, they can be used in radiant systems, fan coils, radiators and for the indirect production of domestic hot water (DHW) via an external storage tank.



DATI GENERALI		4	6	8	10	12	16	12T	16T
ERP class in heating/Seasonal efficiency medium temperature (produced water 55°C)	(Class G - A ⁺⁺)	A ⁺⁺ 127	A ⁺⁺ 130	A ⁺⁺ 125	A ⁺⁺ 127	A ⁺⁺ 127	A ⁺⁺ 128	A ⁺⁺ 128	A ⁺⁺ 130
ERP class in heating/Seasonal efficiency low temperature (produced water 35°C)	(Class G - A ⁺⁺)	A ⁺⁺⁺ 183	A ⁺⁺⁺ 185	A ⁺⁺ 170	A ⁺⁺⁺ 177	A ⁺⁺⁺ 175	A ⁺⁺ 158	A ⁺⁺⁺ 184	A ⁺⁺ 172

GENERAL CHARACTERISTICS

- it consists of an external inverter unit available in various output sizes associated with an internal hydronic unit available in two variants with or without 3kW two-stage (1.5 + 1.5), or 6 kW electrical integration (models 12T and 16T) both equipped as per standard with integrated three-way valve for the production of domestic hot water via external storage tank.
- The system is very versatile and able to work at outdoor air temperatures of -20°C and to produce hot water up to 60°C with the aid of electrical integration.
- The split cooling circuit avoids the risk of freezing in particularly cold outdoor applications.
- The user interface consists of a remote digital controller (wired version max 50 m from the indoor unit)

CHARACTERISTICS OF IDOLA H-UE OUTDOOR UNIT:

- Reduced inrush current thanks to Inverter technology
- Compressor with twin rotary DC INVERTER motor on rubber vibration damping supports and wrapped in double layer of soundproofing material to reduce vibrations and noise to a minimum

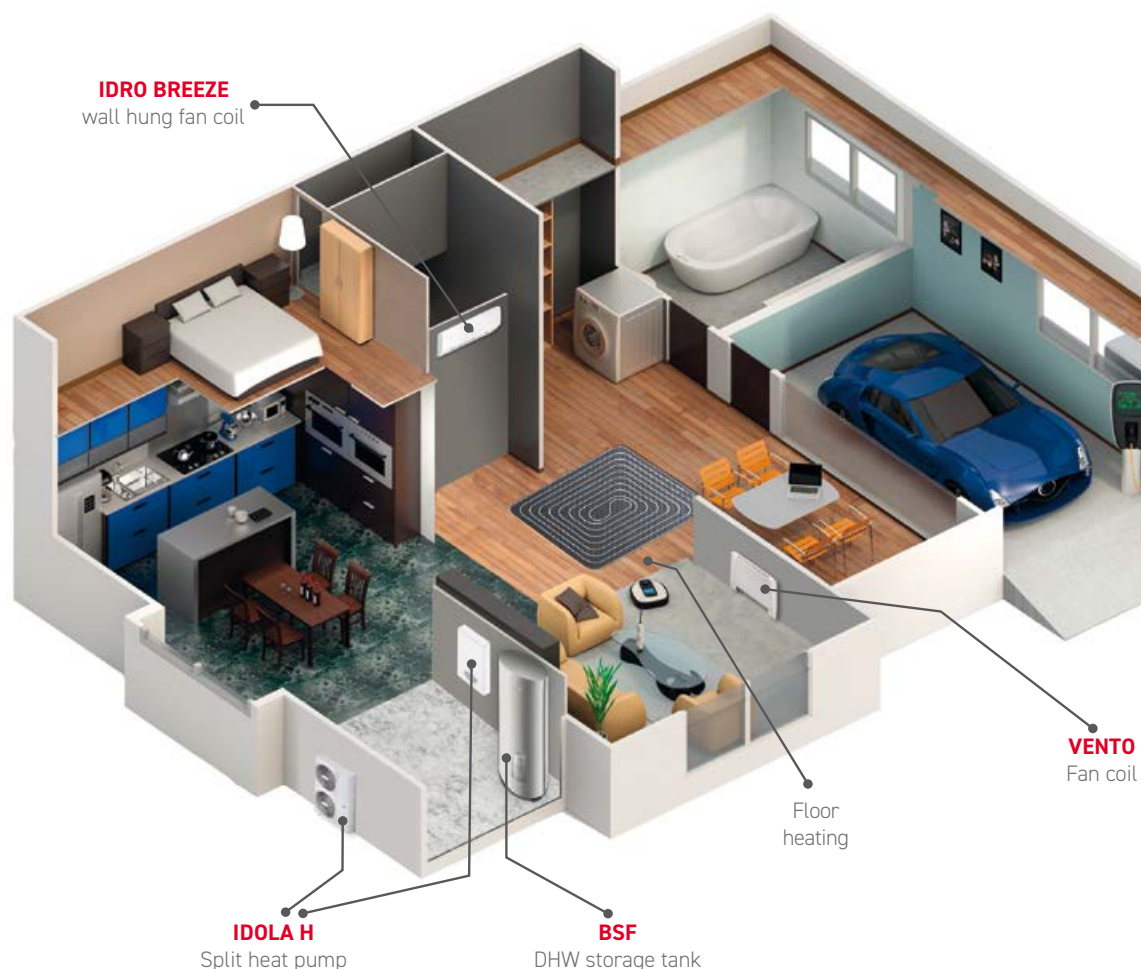
- The compressor is also equipped with crankcase oil heating element
- Two-flow electronic expansion valve, cycle inversion valve, axial fans with brushless DC motor complete with protective safety grills
- Finned coil made with copper pipes and aluminium fins
- Outdoor air temperature probe already installed on the unit, DHW storage tank water temperature probe supplied as per standard (mounted by installer)

CHARACTERISTICS OF IDOLA H-UI INDOOR UNIT:

- Available with 3 kW electrical integration (OMNIA HI-UI) or without integration (OMNIA H-UI)
- Hydraulic unit with 3-way diverter valve for DHW production supplied as per standard
- Water/gas heat exchanger with brazed stainless steel plates
- Low consumption system circulator with brushless DC motor
- Automatic air vent, water differential pressure switch
- Water pressure gauge, expansion vessel, safety valve
- Y water filter supplied as per standard (mounted by installer)

SYSTEM DIAGRAM WITH IDOLA H

AEROTHERMAL TECHNOLOGY ACCORDING TO LAMBORGHINI PHILOSOPHY



BSF TANK

This tank for storing and supplying domestic hot water helps save even more energy. The configuration, the components used (high quality enamelled steel), the position of the various components, all contribute to optimising energy efficiency. Through a heat exchanger, the heat pump connects to this tank and heats the water with thermal energy drawn from outdoor air. Thanks to the 200/500 litre capacity it is able to supply enough hot water for a medium/large family, with minimal energy costs. The Lamborghini range also offers other specific storage tanks for operation with the heat pump in combination with both solar thermal systems (iXWATER H-2 SP) and boilers (iXWATER H-2 PC)

IDRO BREEZE WALL-HUNG FAN COIL

Series of wall-hung fan coil units.
Terminal units for air handling which, in combination with a

chiller, a heat pump or a boiler, can be used either in the winter or in the summer.

Particularly flexible, they are suitable for meeting air climate control and air conditioning requirements for both hotel applications and a wide range of commercial and residential uses.

VENTO FAN COIL

Compact and elegant design obtained by integrating plastic parts and galvanised sheet metal parts, coated with epoxy powder. Supporting structure made of galvanised steel. Finned pack heat exchange coil with aluminium fins and copper pipes, brass manifolds specially designed to minimise pressure drops. Fan unit with three-speed motor and aluminium fans. Wide range of controls both to be installed on the machine and remotely on the wall.

THE CONTROL SYSTEM

OPERATING PRINCIPLE



The general control system monitors all the functions of the inverter system and correct compressor operation. It also incorporates regulation algorithms with predefined climatic curves that can be selected by the customer, the management of a DHW circuit, the setting of time slots for noise reduction at night, alarm signalling, pump block prevention and integration with external heat generators. The user interface consists of a remote wired controller that manages:

> HEATING AND COOLING SYSTEM

If the unit is running in heating or cooling mode, it works by modulating the compressor frequency to maintain the temperature of the produced water at the established setpoint value.

> DOMESTIC HOT WATER (DHW) PRODUCTION

The unit starts in heating 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 (supplied) are required to be inserted in a pit of the DHW tank.

> ADDITIONAL ENERGY SOURCES

(boiler or electric heating element) 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.

> DHW STORAGE TANK ELECTRICAL HEATER

it is possible to manage an integrating electric heating element and for the antilegionella function

> FAST DHW

This function can be started manually to prioritise DHW by bringing the DHW storage tank to the setpoint in the quickest possible amount of time.

> ANTILEGIONELLA FUNCTION

Weekly antilegionella cycles can be set. The heat pump must be integrated with DHW storage tank or boiler electrical heater.

> SILENCED MODE

When active, according to a programmed schedule, this reduces the maximum frequency of the compressor and the fan speed, to reduce the generated noise and the power absorbed by the unit.

> ON/OFF

Through an external contact. The unit can be switched on and off by an external contact.

> HOT/COLD

Through external contacts. The unit can be started and stopped in cooling or heating mode by 2 external contacts (e.g. the thermostat for the zone that manages the request for heating and cooling / remote switch).

> ECO/COMFORT

Possibility of defining time slots in heating and cooling mode and relative setpoints for ECO and COMFORT modes

> WEEKLY SCHEDULE PROGRAMMING

This makes it possible to set a different schedule for each day of the week defining the mode and work setpoint for each time slot (COOLING/HEATING/DHW).

> ANTIFROST PROTECTION

Guaranteed down to -20°C outdoor air temperature thanks to the heat pump itself working in heating mode, to the electric antifrost heating element (as per standard) and the electric booster (if installed).

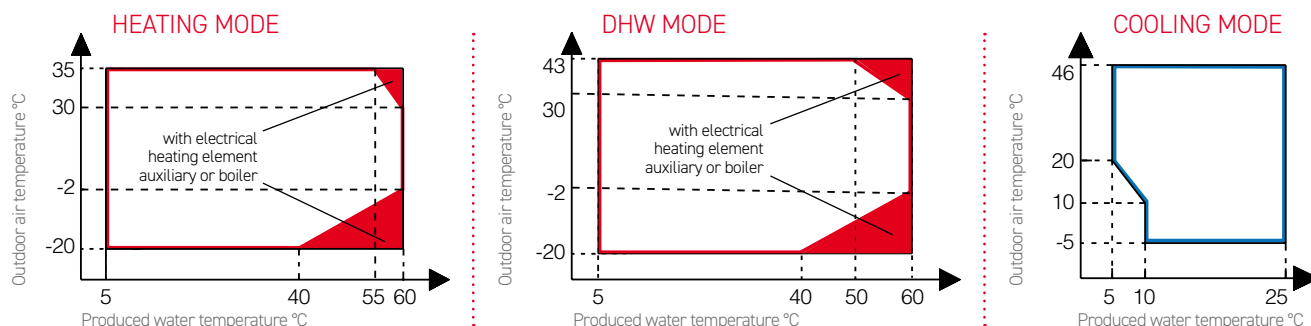
The values refer to units without any optional features or accessories. Data declared according to **EN 14511: EER** (Energy Efficiency Ratio) = ratio of cooling capacity in relation to absorbed power

COP (Coefficient Of Performance) = ratio of heat output in relation to absorbed power
A7W35 = source : air in 7°CDB 6°CWB / system : water in 30°C out 35°C
A7W45 = source : air in 7°CDB 6°CWB / system : water in 40°C out 45°C
A35W18 = source : air in 35°CDB / system : water in 23°C out 18°C
A35W7 = source : air in 35°CDB / system : water in 12°C out 7°C

NOTE: Efficiency class calculated according to European regulation 811/2013. The values refer to units without any optional features or accessories.

TECHNICAL DATA

OPERATING LIMITS / SUMMARY TABLES



NOTE ON DHW MODE: Produced water temperature means the water temperature produced by the unit and not the DHW temperature available to the user which is a function of this parameter and of the surface of the coil of the DHW tank.

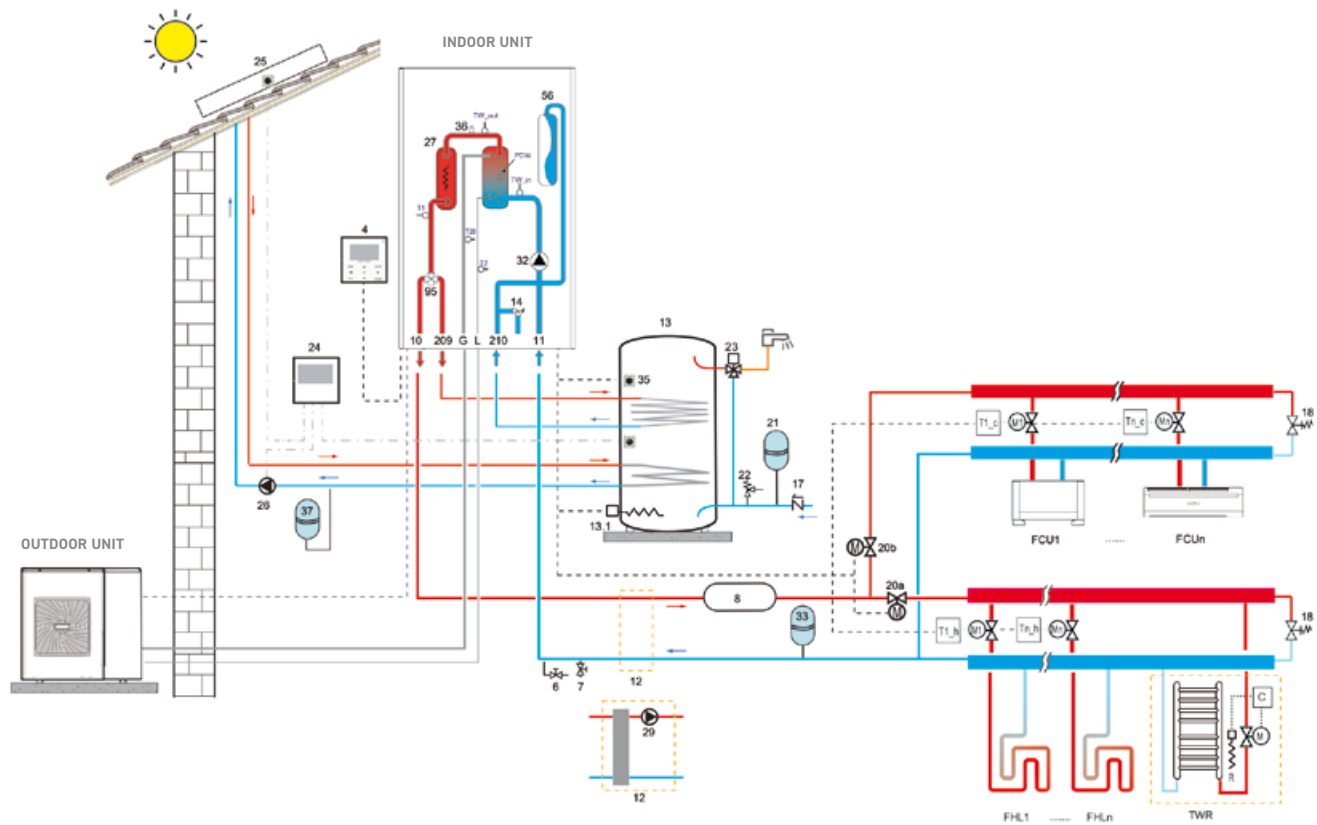
GENERAL DATA		4	6	8	10	12	16	12T	16T
Electric power supply	V-ph-Hz	220-240V ~ 50 Hz						380-400V - 3N ~ 50 Hz	
Type of compressor	-	Twin Rotary							
No. of compressors / No. of cooling circuits	no.	1/1							
Type of system side exchanger	-	brazed stainless steel plates							
Type of source side exchanger	-	finned coil							
Type of fans	-	brushless DC							
No. of fans	no.	1			2				
Cooling fittings - liquid line	ø	9,52							
Cooling fittings - gas line	ø	15,88							
Indoor unit expansion vessel volume	l	10							
Indoor unit safety valve calibration	bar	3							
Two-stage integrative electrical heaters *	kW	3 (1,5 + 1,5)						6 (4 + 2)	
SWL - Sound power level*	dB(A)	62	66	69	67	68	72	70	72
SWL - Indoor unit sound power level*	dB(A)	43			45				
Outdoor unit weight	kg	60	60	76	99	99	99	115	115
Indoor unit weight of base unit	kg	31,5			33,5				
Indoor unit weight of unit with integrative electrical heaters	kg	33			35			36	

NOTE: Efficiency class calculated according to European regulation 811/2013. The values refer to units without any optional features or accessories. * **SWL** = Sound power levels, referring to 1x10-12 W with unit operating in **A7W55** conditions. The Total sound power level in dB(A) is measured in accordance with ISO 9614. The Total Sound Power in dB(A) which is therefore the only binding sound data. The sound pressure levels are values calculated from the sound power level (SWL) by applying the relations of ISO-3744.

PERFORMANCE DATA			4	6	8	10	12	16	12T	16T
A7W35	Heat output	W	4,10	6,10	8,00	10,00	12,10	15,50	12,00	15,50
	Absorbed power	W	0,82	1,29	1,73	2,17	2,74	3,82	2,66	3,79
	COP	W/W	5,00	4,73	4,62	4,61	4,42	4,06	4,51	4,09
	Water flow rate	l/h	705	1049	1376	1720	2081	2666	2064	2666
	Effective head	kPa	79	68	53	42	21	0	22	0
A7W45	Heat output	W	4,01	5,96	7,34	10,12	11,85	16,05	11,97	15,48
	Absorbed power	W	1,13	1,68	2,13	2,93	3,48	5,03	3,5	4,87
	COP	W/W	3,55	3,55	3,45	3,45	3,41	3,19	3,42	3,18
	Water flow rate	l/h	690	1025	1262	1741	2038	2761	2059	2663
	Effective head	kPa	79	69	58	41	24	0	23	0
A35W18	Cooling capacity	W	4,10	6,20	8,00	10,50	11,70	13,80	12,00	14,50
	Absorbed power	W	0,84	1,43	1,93	2,30	2,79	3,77	2,8	3,94
	EER	W/W	4,88	4,34	4,15	4,57	4,19	3,66	4,29	3,68
	Water flow rate	l/h	705	1066	1376	1806	2012	2374	2064	2494
	Effective head	kPa	79	67	53	37	26	3	22	0
A35W7	Cooling capacity	W	4,12	6,15	6,44	9,39	11,02	12,85	11,7	12,91
	Absorbed power	W	1,30	2,08	2,24	3,26	4,17	5,39	4,65	5,52
	EER	W/W	3,17	2,96	2,88	2,88	2,64	2,38	2,52	2,34
	Water flow rate	l/h	709	1058	1108	1615	1895	2210	2012	2221
	Effective head	kPa	79	67	65	47	32	13	26	13

EXAMPLE SYSTEM DIAGRAM

HEATING / CONDITIONING / DHW PRODUCTION WITH SOLAR INTEGRATION



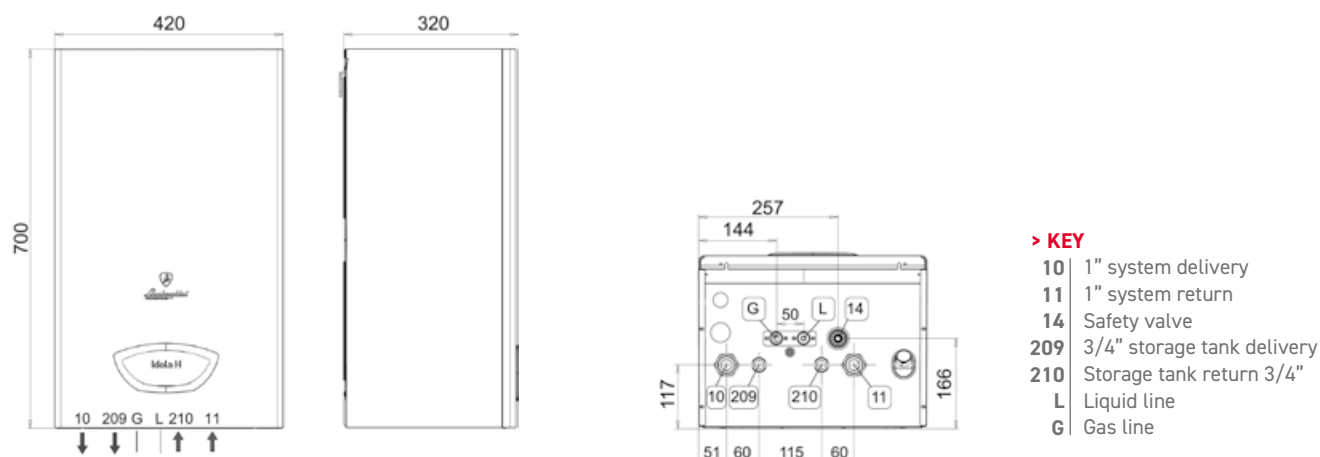
KEY

2 Y water filter (supplied, mounted by the installer) **3** Tap (not supplied) **4** Remote wired controller (supplied as standard with heat pump) **6** Water drain (not supplied) **7** Water filling (not supplied) **8** Inertial tank (available as an accessory): required if air terminals are used for cooling or if the system water content (excluding heat pump water content) is less than 20 litres **10** System delivery **11** System return **12** Hydraulic separator and booster pump (not supplied), to evaluate possible installation requirements in relation to plant pressure drops **13** DHW storage tank (not supplied), minimum heat pump exchange surface (1.4 m² for mod. 5-7, 1.7 m² for mod. 10-14-14T) **13.1** Electric DHW storage tank heater (not supplied) **14** Safety valve **15** Storage tank temperature probe (available as boiler accessory) **17** Non-return valve (not supplied) **18** Bypass valve (not supplied) **20a** SV2 two-way valve (not supplied) - **20b** Two-way valve (not supplied), controlled by SV2 in denied logic **21** DHW expansion vessel (not supplied) **22** DHW safety valve (not supplied) **23** Thermostatic mixing valve (not supplied) **24** Solar system control unit with relative probes (not supplied) **25** Solar panel (not supplied) **26** Solar system pump (not supplied) **27** Electric booster (available as accessory) **28** Temperature probe T1B (available as an accessory to the heat pump) **29** Outdoor unit pump (P_o), (not supplied), to be evaluated for possible installation based on system pressure drops, managed by the heat pump **30** Heat pump water heater for floor installation **31** Heat pump water heater for hanging installation **32** Circulator **33** Expansion vessel **34** Heating temperature sensor **35** Temperature probe T5 (supplied, mounted by the installer) **36** Automatic air vent **37** Solar expansion vessel **56** Expansion vessel **74** System filling tap **95** Diverter valve **114** Water pressure switch **186** Return sensor **193** Siphon **209** Storage tank delivery **210** Storage tank return **241** Automatic bypass (inside circulator unit) **AHS** Boiler with heating and domestic hot water integration (with antilegionella management in the heating-only versions) - electrical connections to heat pump - electrical connections to the solar plant management control unit - connection to the boiler of the DHW storage tank temperature probe (not supplied) **FCU 1...n** Air terminal: it can be used for cooling only with radiant floor heating or for cooling and heating without radiant floor heating only in n zones **T1** System delivery water temperature probe (installed as standard on the unit) **T1_c - Tn_c** Cooling request room thermostat (not supplied) **T1_h - Tn_h** Heating request room thermostat (not supplied) **TWR** Bathroom integration towel warmer: if connected to the heating system it must be integrated with an electric resistor (R) activated by the control (C) which simultaneously closes the valve (M); if not connected to the system, heating is provided only by the electric resistor (R) activated by the control (C) **TW_in** plate heat exchanger inlet water temperature probe **TW_out** plate heat exchanger outlet water temperature probe **UE** Outdoor unit **UI** Indoor unit **PDW** Differential water pressure switch **xx** 60-litre inertial tank (available as an accessory): necessary if air terminals are used for cooling or if the system water content (excluding the heat pump water content) is less than 20 litres.

TECHNICAL DATA

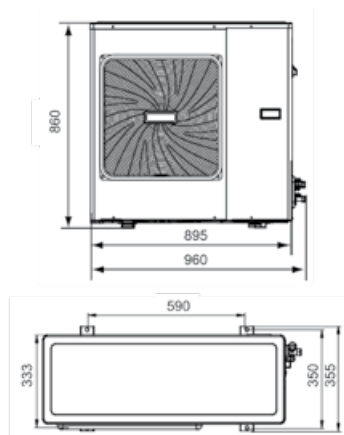
OVERALL DIMENSIONS / MINIMUM OPERATING SPACES

INDOOR UNIT

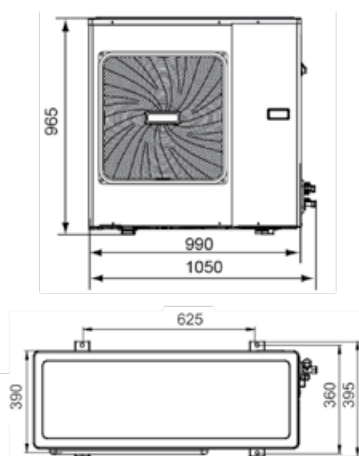


OUTDOOR UNIT

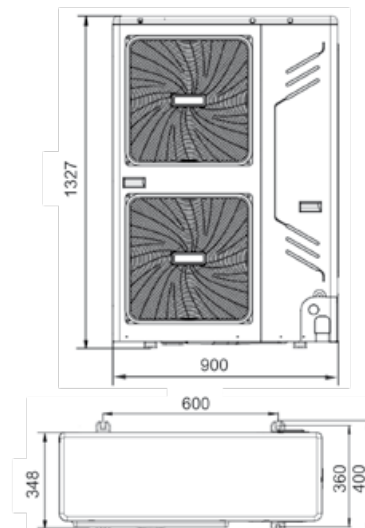
mod. 4 - 6



mod. 8

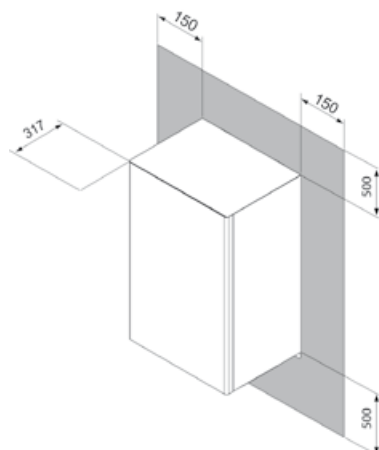


mod. 10 - 12 - 16 - 12T - 16T



MINIMUM OPERATING SPACES

INDOOR UNIT



OUTDOOR UNIT

