Lamborghini
CALORECLIMA

Dora Tech

Air-water heat pump
for domestic hot water production

DORA TECH
INTRODUCTION

DORA TECH is a brand new range of storage heat pump water heaters for the production of domestic hot water, suitable for small residential applications.
It is a smart solution for heating domestic water, which uses electricity, air and possibly solar thermal and photovoltaic energy, without any use of traditional fuels. Efficiency, ecology, flexibility and the new aesthetics are the characteristics that distinguish DORA TECH and diversify it compared to a traditional electric water heater.

* The 90 and 120 LT models use R-290 gas, a valid "green" alternative to the more common refrigerants with high GWP (Global Warming Potential).
  This is a naturally occurring hydrocarbon (HC) with a GWP of 3 and an ODP (Ozone Depletion Potential) of 0.

eco friendly

THE RANGE			Capacity L	Heat output W	Absorbed electric power W	Solar thermal integration	Gas type	ERP class	Load profile	No. persons
LT	Wall Operation (-5/43°C)	90	89	833	270	NO	R290*	A	M	
		120	118	833	270	NO	R290*	A	M	
LT	Floor-standing Operation (-7/38°C)	200	192	1820	430	NO	R134A	A	L	
		260	250	1820	430	NO	R134A	A	XL	
LT-S	Floor-standing Operation (-7/38°C)	200	187	1820	430	YES	R134A	A	L	
		260	247	1820	430	YES	R134A	A	XL	
HT	Floor-standing Operation (4/43°C)	200	187	1600	370	NO	R134A	A	L	
		260	247	1600	370	NO	R134A	A	XL	

FEATURES
IN BRIEF...

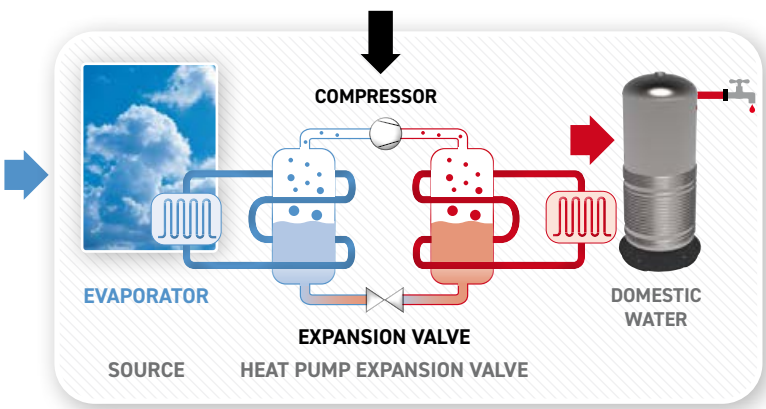
DORA TECH is an air-water heat pump for **domestic hot water** production, with storage in an enameled steel tank, and externally wound condenser for maximum safety and hygiene

- Max. temperature **62°C** obtained from renewable energy with heat pump only or via **Heating Element** (to 75°C)
- Cascade installation **up to 8 DORA Tech** units
- Integration via **Solar Thermal** (model **LT-S**) or **Heating Element** (to 75°C) on all models
- Integration with **Solar Photovoltaic** system
- Energy monitoring via display or App

DORA TECH		Energy monitoring	Installation in cascade	Optimization from photovoltaic	Integrated solar thermal control	Wi-Fi remote control	Anti legionella sanitization	Scheduling	Smart grid	Active defrost
LT Wall	90	✔	-	✔	-	✔	✔	✔	✔	✔
	120	✔	-	✔	-	✔	✔	✔	✔	✔
LT Floor-standing	200	✔	✔	✔	-	✔	✔	✔	✔	✔
	260	✔	✔	✔	-	✔	✔	✔	✔	✔
LT-S Floor-standing	200	✔	✔	✔	✔	✔	✔	✔	✔	✔
	260	✔	✔	✔	✔	✔	✔	✔	✔	✔
HT Floor-standing	200	✔	✔	✔	-	✔	✔	✔	✔	-
	260	✔	✔	✔	-	✔	✔	✔	✔	-

INCENTIVES...
WHEN SAVING IS A MUST

DORA TECH exploits all the characteristics and technology of air-water heat pumps for the production of **domestic hot water**.
Only 25% of the system's energy requirement comes from electricity



ELECTRONICS...
EASIER THAN THAT!

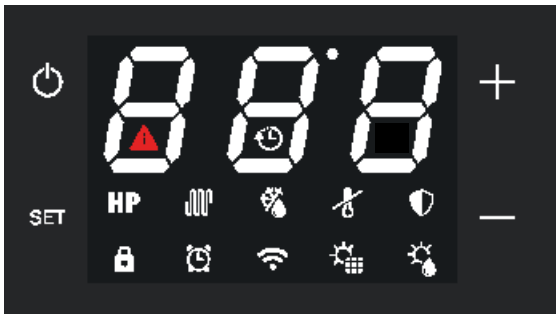
The **DORA TECH** user interface features a very simple and intuitive display

- **White** backlit LEDs for managing the temperature, functions and energy monitoring
- **Red** backlit LEDs for alarm warnings
- The 4 side touch buttons allow DORA Tech to be switched on/off (⏻); navigating the MENU (**SET**) and increase (**+**) or decrease (**-**) the setting values
- Energy monitoring via display or App

OPERATING MODES

To satisfy the widest range of needs, **DORA TECH** offers **5** different operating modes:

		RENEWABLE ENERGY ONLY
ECO MODE	HP	**DORA TECH** works ONLY in heat pump mode. The supplementary heater switches on as support only if the external temperature is outside the working range (Tmax 62°C)
		PREFERRED USE OF RENEWABLE ENERGY
AUTO MODE	HP +	**DORA TECH** favors heat pump operation. The supplementary heater switches on as support only if the tank temperature increases too slowly (>4°C/30 min) or if the external temperature is outside the working range (Tmax 62°C)
		COMBINED USE OF RENEWABLE ENERGY AND ELECTRICITY
BOOST MODE	HP + (FLASHING)	**DORA TECH** works simultaneously in heat pump mode and with the supplementary heater. Setpoint adjustable to 75°C
		USE OF ELECTRICITY ONLY
ELECTRIC MODE		**DORA TECH** works only with the supplementary heater. Setpoint adjustable to 75°C
		AIR RECIRCULATION ONLY
FAN MODE	FAn	**DORA TECH** works exclusively in ventilation mode (HT model only). Heat pump and supplementary heater are OFF



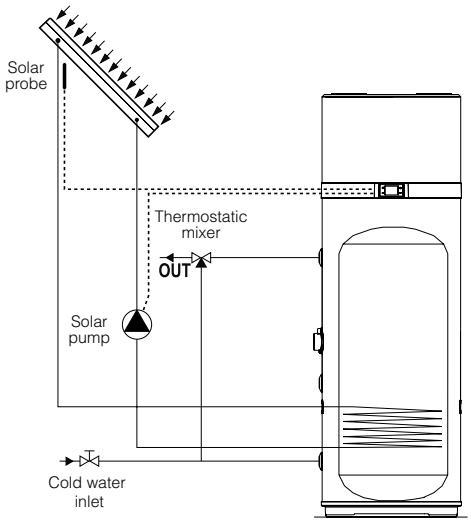
- ALARM
- HP HEAT PUMP
- HEATING ELEMENT ACTIVE
- DEFROST
- ANTIFREEZING
- ANTI LEGIONELLA
- BUTTON LOCK
- SCHEDULING
- WI FI
- PHOTOVOLTAIC
- SOLAR THERMAL / HOT WATER
- SMART GRID

INTEGRATION...
DORA TECH GETS ALONG WITH EVERYONE

All **DORA TECH** versions provide for the possibility of using renewable energy supplied by a **photovoltaic system** (electricity) or from a **solar thermal system** (thermal energy).
This last solution is possible ONLY for models **200 LT-S** and **260 LT-S**, whose tank houses a coil used as a solar exchanger.

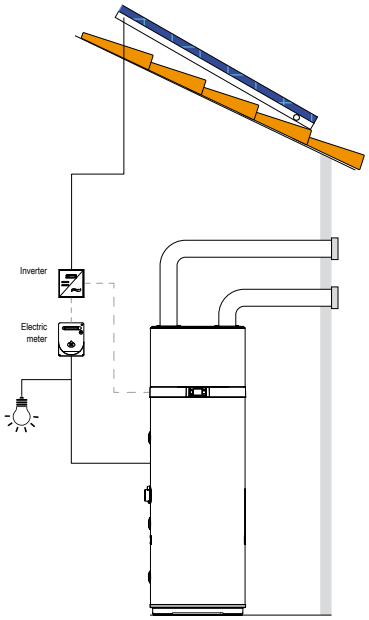
SOLAR SYSTEM
CONNECTION METHOD

DORA TECH manages all the components of the Solar Circuit directly with its **own** electronics, optimizing heat pump operation according to the availability of Solar Energy.



PHOTOVOLTAIC SYSTEM

DORA TECH is able to manage the surplus Electricity supplied by a Photovoltaic System through signaling of the Inverter via a voltage-free contact.
In this mode, **DORA TECH** will prepare the domestic hot water at a higher temperature Set Point (settable) than the ECO/AUTO modes, for exploiting the free energy available.



BUT FOR THOSE WHO WANT MORE
WI-FI AND APP

DORA TECH heat pump water heaters come **as standard with a WiFi module** integrated in the product in order to be connected to the home WiFi network (WiFi router) and therefore controlled via APP.

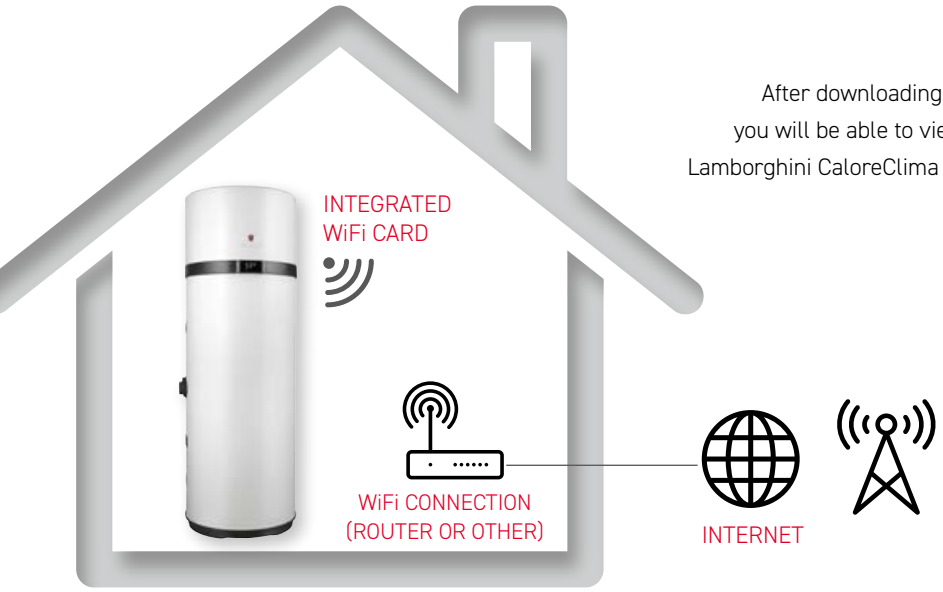
By downloading the dedicated **LAMBORGHINI CALORECLIMA HOME** App for free, DORA Tech can be fully managed at any time.

After quick and easy registration it will be possible to remotely manage the comfort of hot water in the home.

GET IT ON Google Play

Download on the App Store

LAMBORGHINI CALORECLIMA HOME



After downloading the app and logging in, you will be able to view and manage all your Lamborghini CaloreClima heat pumps and hybrid systems

With **LAMBORGHINI CALORECLIMA HOME** it is possible to modify the operating parameters, and program switching off and on.
It is a very intuitive and easy to use App. Here are some examples:

SCHEDULING

ENERGY MONITORING

INSTALLATIONS

TYPES OF INSTALLATION

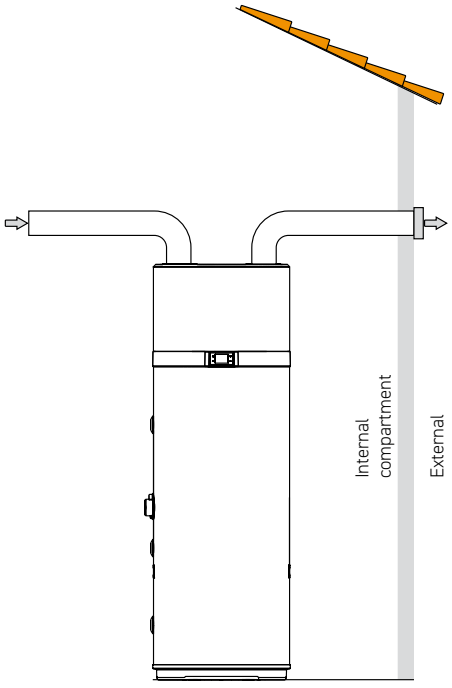


Fig. 1
Example of air discharge connection (this type of installation can only be made with models 200 and 260)

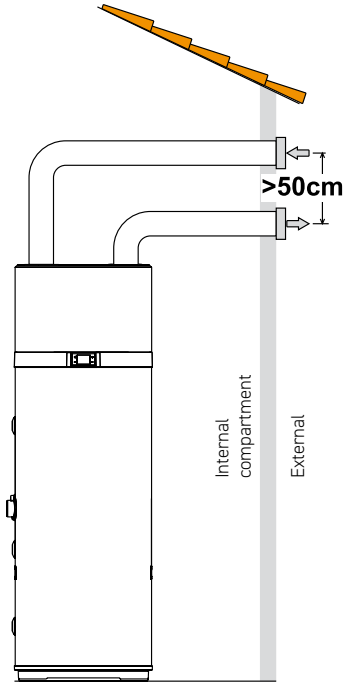


Fig. 2
Example of air discharge connection (this type of installation can only be made with models 200 and 260)

INTAKE AND EXPULSION
EXCLUSIVELY VERTICAL

The heat pump.requires adequate air ventilation. A possible dedicated air duct is shown in Fig. 1. It is also important to ensure adequate ventilation of the room containing the unit. An alternative solution is shown in the figure below (Fig. 2): it provides for a second ducting that draws air from the outside instead of directly from the inside room.

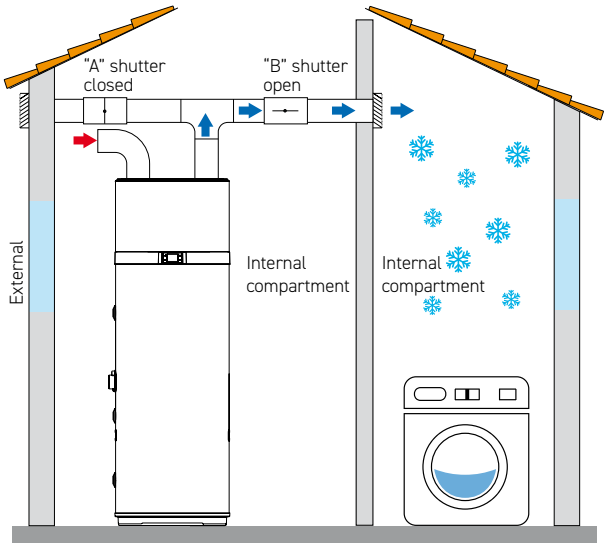


Fig. 3
Example of installation in the summer period (this type of installation can only be done with models 200 and 260).

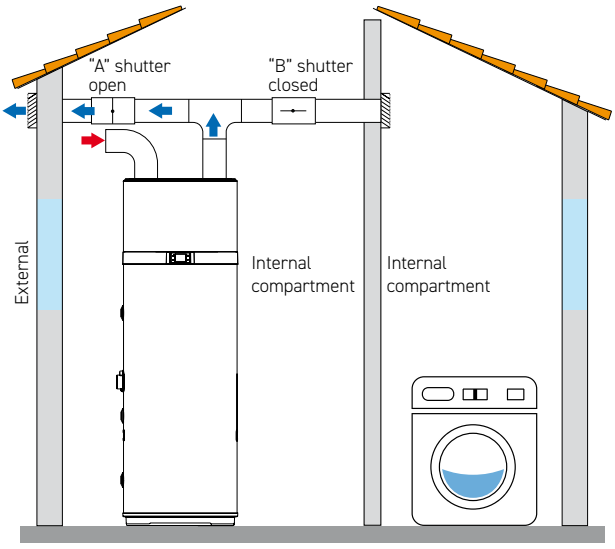


Fig. 4
Example of installation in the winter period (this type of installation can only be done with models 200 and 260).

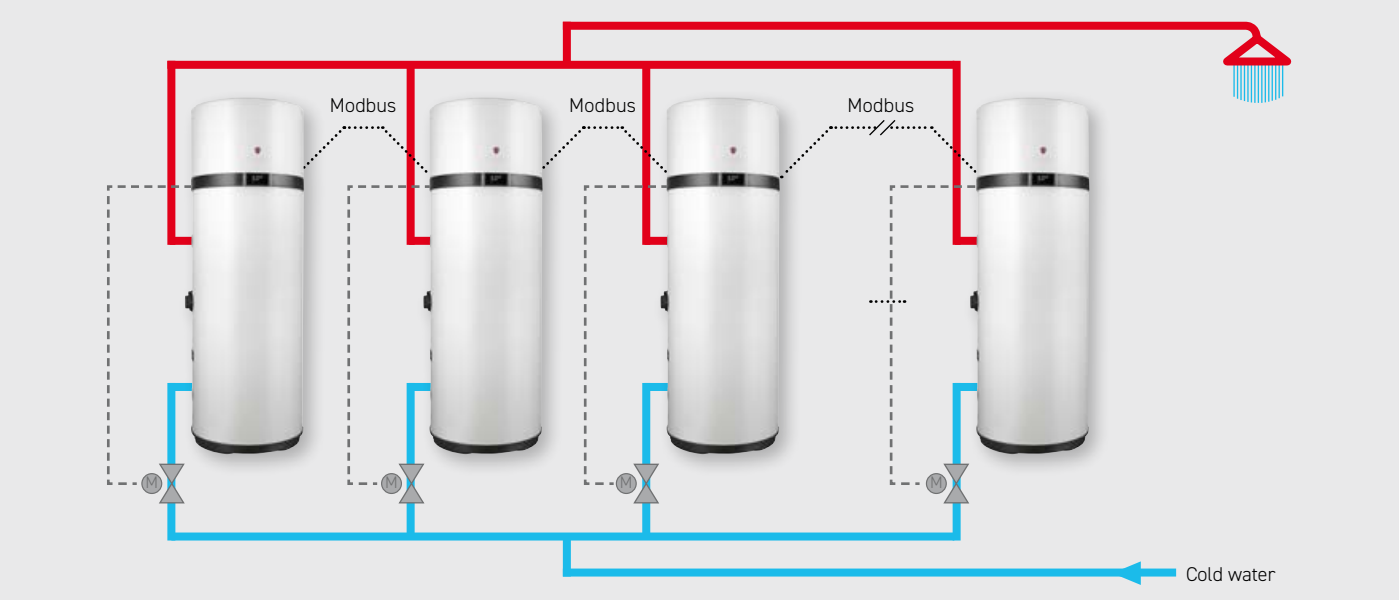
One of the peculiarities of heat pump heating systems is that these units produce a considerable lowering of the air temperature, generally expelled to the outside of the home. As well as being colder than the ambient air, the expelled air is also completely dehumidified, therefore the air flow can be returned inside for the summer cooling of specific rooms or areas. Installation provides for splitting of the extraction pipe, which is fitted with two dampers ("A" and "B") for directing the air flow to the outside (fig. 3) or the inside of the home (fig. 4).

INSTALLATION - COMPONENTS

INSTALLATION IN CASCADE

To best satisfy users requiring lots of domestic hot water, we have designed the electronic control system so that **a cascade of up to 8 floor standing DORA TECH units can be created and managed**. The DORA TECH array does not need any external regulator and is able to **self-configure** itself with "master/slave" logic to manage any dynamic linked to cascade operation. The array parameters can be read or modified from the MASTER display or remotely via the Lamborghini CaloreClima HOME App. The various features of the DORA TECH cascade system include:

- Management of operating cycles with rotation of rotation sequences
- Smart draw-off of DHW from the highest potential water heater
- Continuity of service in case of an array water heater failure



DORA TECH IN PILLS

Photovoltaic optimization
When the symbol on the display is lit up, the energy produced by the photovoltaic system is used to heat the water inside the tank

Scheduling
For setting the activation and/or deactivation time bands

Wi-Fi remote control
Light on when the connection status between the unit and an external Wi-Fi router is satisfied

Smart grid
When this symbol is lit up on the display, the unit works during the reduced rate time band

Integrated solar thermal control
When the symbol is lit up, solar energy is used to heat the tank water (models LT-S)

Anti-legionella sanitization
A heating/sanitization cycle of the water inside the tank is done by means of an electrical heating element

Active defrost
When the unit detects a defrost temperature ≤1°C, all the procedures are activated to restore optimal operating conditions

SET button
For selecting the various functions/operating modes, selecting parameters and confirming the modified value

Heat pump operation
With this mode only the heat pump is used within the product operating limits

Operation with heating element
With this mode only the electrical heating element is used

Active button lock
In any status, the button lock function is activated 60 seconds after the last press

Frost protection
The frost protection function is activated when the water temperature is below/equal to 5°C. It switches on the heating element until 12°C is reached

ON/OFF button
For switching the unit on and off, putting it in standby, locking the buttons and saving the modified parameters

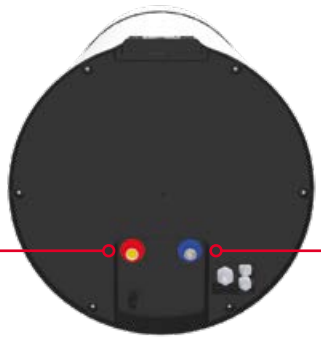
Alarm
It signals a unit fault or "protection active" status

Energy monitoring
"Energy monitoring" function available via display or via the App

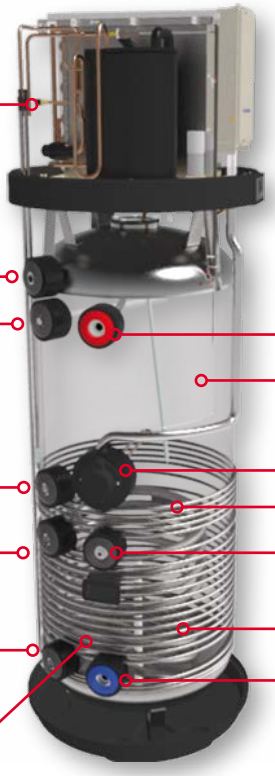
Operation in cascade
It is possible to create/manage a cascade of up to 8 DORATech units without any external regulator and is self-configurable

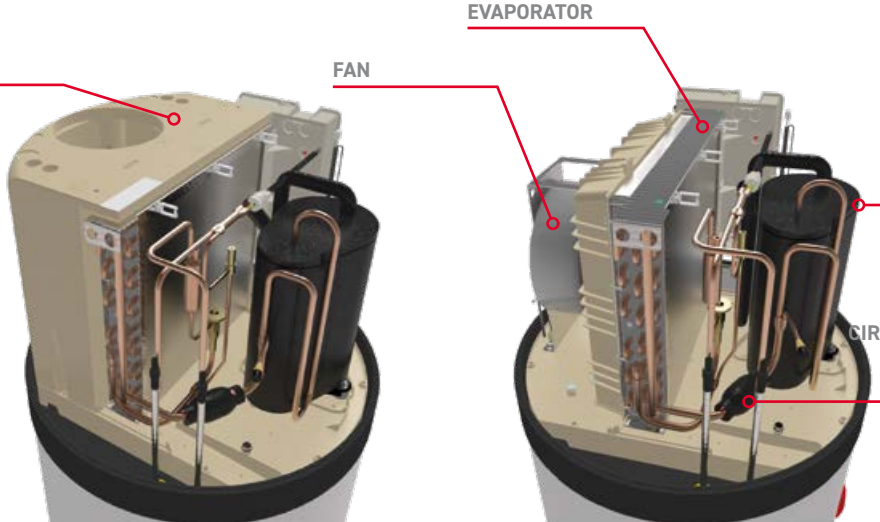
COMPONENTS

WALL VERSION CONNECTIONS (90 - 120 LT)



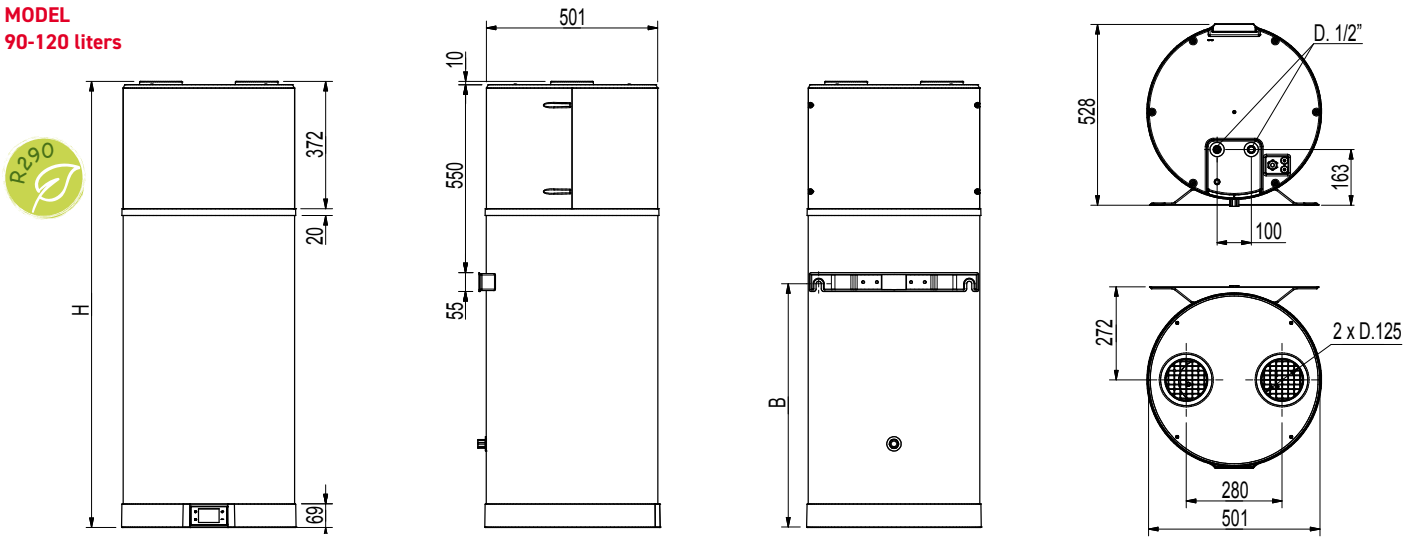
FLOOR-STANDING VERSION CONNECTIONS (200 - 260 LT)



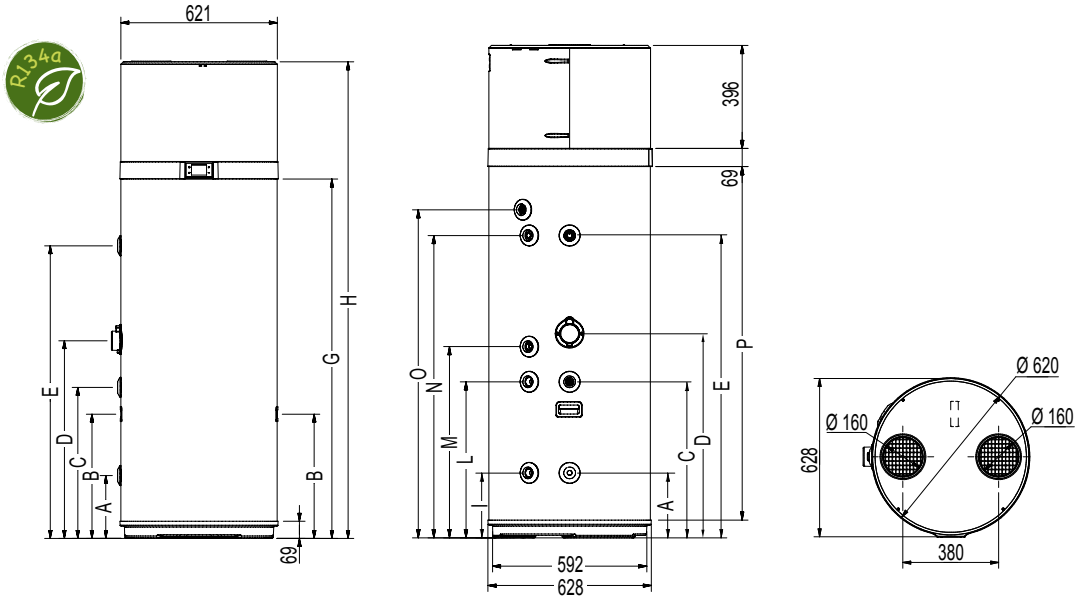


DIMENSIONS
TECHNICAL DRAWINGS

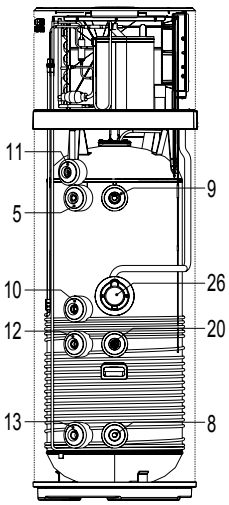
MODEL
90-120 liters



MODEL 200-260 liters



CONNECTIONS



MOD.		Ø	LT		LT		LT-S		HT	
			90	120	200	260	200	260	200	260
A	mm	1"G	-	-	250	250	250	250	250	250
B	mm	-	711	963	-	-	490	493	-	-
C	mm	1/2"G	-	-	600	600	600	600	600	600
D	mm	-	-	-	705	785	705	785	705	785
E	mm	1"G	-	-	876,5	1162	876,5	1162	876,5	1162
G	mm	-	-	-	1142	1427	1142	1427	1142	1427
H	mm	-	1303	1555	1607	1892	1607	1892	1607	1892
I	mm	3/4"G	-	-	-	-	250	250	-	-
L	mm	3/4"G	-	-	-	-	599	600	-	-
M	mm	3/4"G	-	-	705	735	705	735	705	735
N	mm	3/4"G	-	-	877	1162	877	1162	877	1162
O*	mm	1/2"G	-	-	976	1261	976	1261	976	1261
P	mm	-	-	-	1073	1358	1073	1358	1073	1358

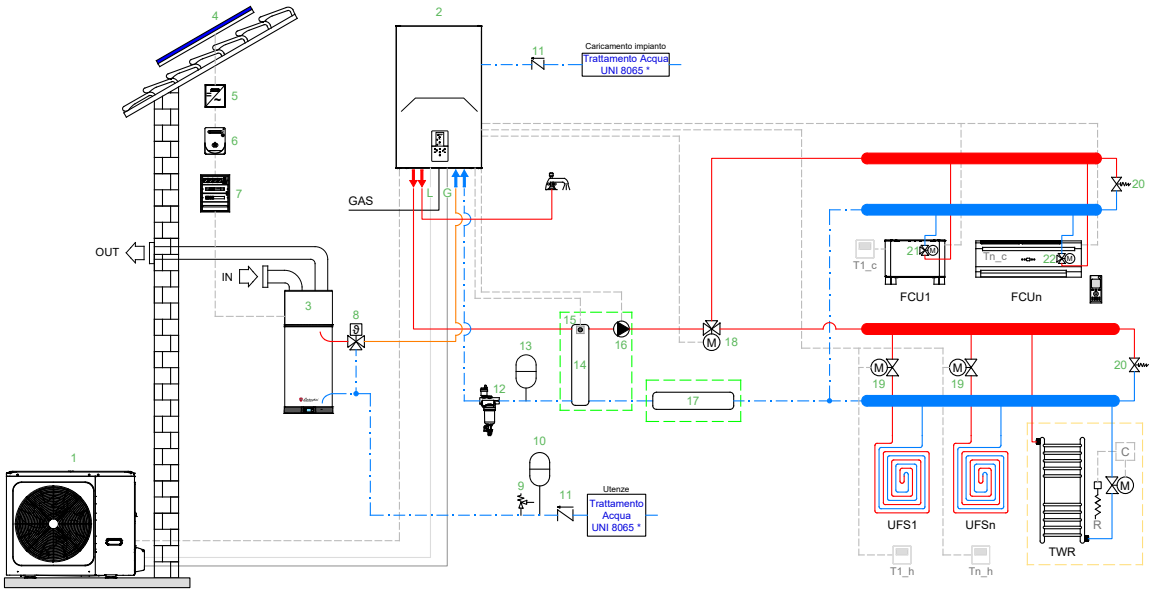
***** Outlet connection in plastic material

LEGEND

8 Cold water inlet connection
9 Hot water outlet connection
10 Recirculation arrangement
11 Condensate drain
12 Inlet thermal coil arrangement (only for **LT-S** models)
13 Arrangement for outlet thermal coil (only for **LT-S** models)
20 Solar probe holder well (only for **LT-S** models)
23 Tube for safety thermostat bulb
26 Compartment for accessing heating element and safety thermostat bulb

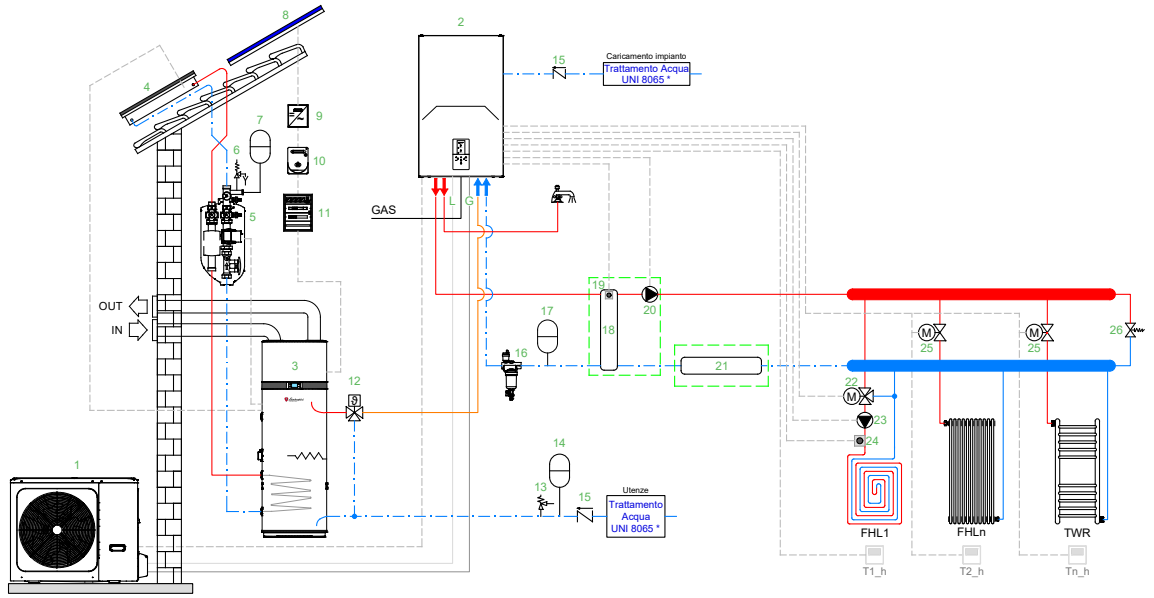
EXAMPLE DIAGRAMS OF NEW SYSTEMS

DORA TECH, IDOLA S HYBRID C, PHOTOVOLTAIC



LEGEND 1 Outdoor unit **2** Indoor unit **3** Heat pump water heater **4** Photovoltaic panel **5** Inverter **6** Counter **7** Electrical panel **8** Thermostatic mixing valve **9** DHW safety valve **10** DHW expansion vessel **11** Non-return valve **12** Dirt separator **13** Expansion vessel **14** Parallel inertial storage, hydraulic separation **15** Inertial storage top probe Tbt1 **16** Circulating pump P_o **17** Inertial storage in series **18** Two-way diverter valve SV2 **19** Motorized zone valve **20** Bypass valve **21** Three-way valve (accessory, to be installed inside the fan coil) **22** Integrated three-way valve **T1...n_c** Cooling request room thermostat **T1...n_h** Heating request room thermostat **FCU1...n** Cooling only air terminal **FHL1...n** Radiant floor/radiator heating only in n zones **TWR** Towel warmer for bathroom integration: if connected to the heating system it must be integrated with heating element (R) activated by the command (C) which simultaneously closes the valve (M); if not connected to the system, heating is provided only by the heating element (R) activated by the command (C) **G** Gas Line **L** Liquid line * OPTIONAL * See Water treatment diagram according to UNI 8065

DORA TECH, IDOLA S HYBRID C, SOLAR THERMAL, PHOTOVOLTAIC



LEGEND 1 Outdoor unit **2** Indoor unit **3** Heat pump water heater **4** Solar collector **5** Solar thermal circulating unit **6** Safety valve **7** Solar thermal circuit expansion vessel **8** Photovoltaic panel **9** Inverter **10** Counter **11** Electrical panel **12** Thermostatic mixing valve **13** DHW safety valve **14** DHW expansion vessel **15** Non-return valve **16** Dirt separator **17** Expansion vessel **18** Parallel inertial storage, hydraulic separation **19** Inertial storage top probe Tbt1 **20** Circulating pump P_o **21** Inertial storage in series **22** Three-way mixing valve SV3 **23** Mixed zone circulating pump P_c **24** Mixed zone probe TW2 **25** Motorized zone valve **26** Bypass valve **T1...n_c** Cooling request room thermostat **T1...n_h** Heating request room thermostat **FCU1...n** Cooling only air terminal **FHL1...n** Radiant floor/radiator heating only in n zones **TWR** Towel warmer for bathroom integration **G** Gas line **L** Liquid line * OPTIONAL * See Water treatment diagram according to UNI 8065

DORA TECH LT 90-120
PERFORMANCE

R290

A+

Energy Monitoring	Installation in cascade	Optimization from Photovoltaic	Wi-Fi Remote Control	Anti Legionella Sanitization	Scheduling	Smart grid	Active defrost

MODEL		90 LT	120 LT
Nominal storage capacity	L	89	118
Max. hot water capacity at 40°C	L	102	145
Storage dispersion	W	40	46
Max. DHW temperature with heat pump only	°C	62	62
Max. DHW temperature with supplementary electric booster	°C	75	75
Integrated heating element power	W	1200	1200
Average absorbed power in heating	W	270	270
Heat output from pump	W	607	613
Dimensions (Ø x H)	mm	510 x 1333	510 x 1555
Empty weight	kg	49	55
Max. water pressure	bar	7	7
Max. air temperature	°C	43	43
Min. air temperature	°C	-5	-5
Nominal air flow	m^3/h	170	170
Cold air outlet max. available head	Pa	110	110
Duct diameter	mm	125	125
Required room volume	m^3	15	15
Power supply parameters	V-Hz	230V - 50Hz	230V - 50Hz
Protection rating		IP24	IP24
Indoor sound power Lw(A)	dB(A)	54	53
Gas type		R290	R290
Charge quantity	g	150	150
Heating time 7°C in ECO mode	hh:mm	05:52*	08:15*
COP DHW 7°C		3.12	2.75
Internal coil for solar		--	--
Energy efficiency class for heating water in average climatic conditions		A	A
Water heating energy efficiency % in average climatic conditions	%	134	119
Annual energy consumption in average climatic conditions	kW/h	383	430
Declared load profile		M	M

* Test in accordance with EN16147-2017 with air inlet temperature at 7°C (6°C), boiler storage ambient temperature 20°C, water heating from 10°C to 55°C

** Test in accordance with EN16147-2017 with air inlet temperature at 14°C (13°C), boiler storage ambient temperature 20°C, water heating from 10°C to 55°C

DORA TECH LT 200-260
PERFORMANCE

R134a

A+

Energy Monitoring	Installation in cascade	Optimization from Photovoltaic	Integrated solar thermal control	Wi-Fi Remote Control	Anti Legionella Sanitization	Scheduling	Smart grid	Active defrost

MODEL		200 LT	260 LT
Nominal storage capacity	L	192	250
Max. hot water capacity at 40°C	L	247	340
Storage dispersion	W	60	70
Max. DHW temperature with heat pump only	°C	62	62
Max. DHW temperature with supplementary electric booster	°C	75	75
Integrated heating element power	W	1500	1500
Average absorbed power in heating	W	430	430
Heat output from pump	W	1339	1249
Dimensions (Ø x H)	mm	621 x 1607	621 x 1892
Empty weight	kg	88	100
Max. water pressure	bar	7	7
Max. air temperature	°C	43	43
Min. air temperature	°C	-7	-7
Nominal air flow	m^3/h	450	450
Cold air outlet max. available head	Pa	117	117
Duct diameter	mm	160	160
Required room volume	m^3	>20	>20
Power supply parameters	V-Hz	230V - 50Hz	230V - 50Hz
Protection rating		IP24	IP24
Indoor sound power Lw(A)	dB(A)	53	51
Gas type		R134a	R134a
Charge quantity	g	1000	1000
Heating time 7°C in ECO mode	hh:mm	06:27*	09:29*
COP DHW 7°C		3.23	3.37
Internal coil for solar		--	--
Energy efficiency class for heating water in average climatic conditions		A	A
Water heating energy efficiency % in average climatic conditions	%	135	138
Annual energy consumption in average climatic conditions	kW/h	761	1210
Declared load profile		L	XL

* Test in accordance with EN16147-2017 with air inlet temperature at 7°C (6°C), boiler storage ambient temperature 20°C, water heating from 10°C to 55°C

** Test in accordance with EN16147-2017 with air inlet temperature at 14°C (13°C), boiler storage ambient temperature 20°C, water heating from 10°C to 55°C

DORA TECH LT-S 200-260
PERFORMANCE

Energy Monitoring	Installation in cascade	Optimization from Photovoltaic	Integrated solar thermal control	Wi-Fi Remote Control	Anti Legionella Sanitization	Scheduling	Smart grid	Active defrost

MODEL		200 LT-S	260 LT-S
Nominal storage capacity	L	187	247
Max. hot water capacity at 40°C	L	241	335
Storage dispersion	W	60	70
Max. DHW temperature with heat pump only	°C	62	62
Max. DHW temperature with supplementary electric booster	°C	75	75
Integrated heating element power	W	1500	1500
Average absorbed power in heating	W	430	430
Heat output from pump	W	1339	1249
Dimensions (Ø x H)	mm	621 x 1607	621 x 1892
Empty weight	kg	97	109
Max. water pressure	bar	7	7
Max. air temperature	°C	43	43
Min. air temperature	°C	-7	-7
Nominal air flow	m^3/h	450	450
Cold air outlet max. available head	Pa	117	117
Duct diameter	mm	160	160
Required room volume	m^3	>20	>20
Power supply parameters	V-Hz	230V - 50Hz	230V - 50Hz
Protection rating		IP24	IP24
Indoor sound power Lw(A)	dB(A)	53	51
Gas type		R134a	R134a
Charge quantity	g	1000	1000
Heating time 7°C in ECO mode	hh:mm	06:27*	09:29*
COP DHW 7°C		3.23	3.37
Internal coil for solar		0.72	0.72
Energy efficiency class for heating water in average climatic conditions		A	A
Water heating energy efficiency % in average climatic conditions	%	135	138
Annual energy consumption in average climatic conditions	kW/h	761	1210
Declared load profile		L	XL

* Test in accordance with EN16147-2017 with air inlet temperature at 7°C (6°C), boiler storage ambient temperature 20°C, water heating from 10°C to 55°C

** Test in accordance with EN16147-2017 with air inlet temperature at 14°C (13°C), boiler storage ambient temperature 20°C, water heating from 10°C to 55°C

DORA TECH HT 200-260
PERFORMANCE

R134a

A+

Energy Monitoring	Installation in cascade	Optimization from Photovoltaic	Integrated solar thermal control	Wi-Fi Remote Control	Anti Legionella Sanitization	Scheduling	Smart grid	Active defrost

MODEL		200 HT	260 HT
Nominal storage capacity	L	192	250
Max. hot water capacity at 40°C	L	260	358
Storage dispersion	W	60	70
Max. DHW temperature with heat pump only	°C	62	62
Max. DHW temperature with supplementary electric booster	°C	75	75
Integrated heating element power	W	1500	1500
Average absorbed power in heating	W	370	370
Heat output from pump	W	1248	1283
Dimensions (Ø x H)	mm	621 x 1607	621 x 1892
Empty weight	kg	86	98
Max. water pressure	bar	7	7
Max. air temperature	°C	43	43
Min. air temperature	°C	4	4
Nominal air flow	m^3/h	350	350
Cold air outlet max. available head	Pa	100	100
Duct diameter	mm	160	160
Required room volume	m^3	>20	>20
Power supply parameters	V-Hz	230V - 50Hz	230V - 50Hz
Protection rating		IP24	IP24
Indoor sound power Lw(A)	dB(A)	52	52
Gas type		R134a	R134a
Charge quantity	g	1000	1000
Heating time 7°C in ECO mode	hh:mm	07:16	09:44
COP		2.8	3.1
Internal coil for solar		--	--
Energy efficiency class for heating water in average climatic conditions		A	A
Water heating energy efficiency % in average climatic conditions	%	116	127
Annual energy consumption in average climatic conditions	kW/h	883	1315
Declared load profile		L	XL

* Test in accordance with EN16147-2017 with air inlet temperature at 20°C, boiler storage ambient temperature 20°C, water heating from 10°C to 55°C

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www.lamborghinicalor.com
info@lamborghinicalor.com