

**HEATING AND  
SANITARY HOT WATER**

Catalogue 2008 - 2009

AIR-TO-WATER HEAT PUMP  
**THERMAV™**

And the wellbeing settles in your house.

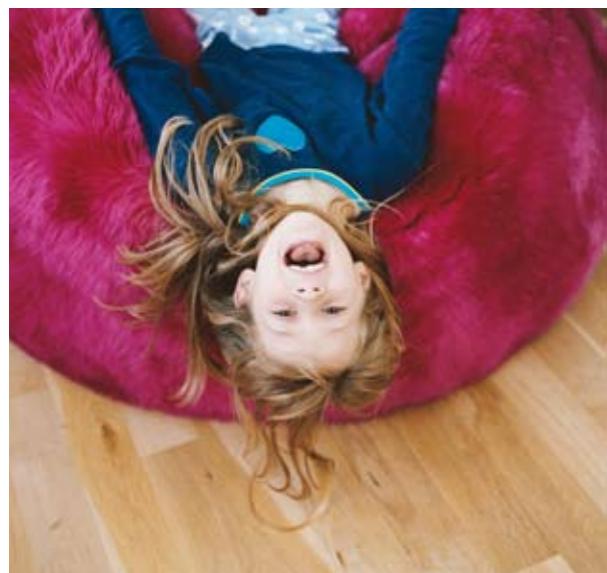


Life's Good

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<http://www.lge.com>  
<http://www.lge.com/airconditioner>





AIR-TO-WATER HEAT PUMP  
**THERMAV™**  
And the well-being settles in your house.

## THERMA V

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## ASSISTANT SOFTWARE AT THE SELECTION

ENTIRELY DEDICATED TO THE PROFESSIONALS, THE ASSISTANT SOFTWARE AT THE SELECTION OF THERMA V WILL BECOME THE INDISPENSABLE TOOL OF YOUR DAILY LIFE.

Thanks to its simple and intuitive interface, you will be able to choose the most suitable product from different criterions :

- Geographic situation of the installation,
- Housing structure : volume, isolation...,
- Installation type : new housing or boiler relief,
- Types of Transmitters : floorboard or low temperature radiator
- Use of additional electric resistances
- Operation speed
- Comfort temperature

Once these criterions are established, the software will allow you to visualize the operation curves of the range of Therma V, with its associated coefficients of performances.

THEN IT WILL BE EASY FOR YOU TO IDENTIFY THE IDEAL PRODUCT.

This tool will allow you to also easily access all the technical and commercial specifications :

- Installation manual
- Utilization manual
- Scheme of Recommended Installation
- Therma V catalogue
- Individual form of Therma V
- Final consumer brochure

THUS, YOU WILL HAVE IN YOUR POSSESSION A COMPLETE KIT DEDICATED TO THE RECOMMENDED INSTALLATION

The assistant software at the selection is available on simple demand to your regular distributor of Therma V.





## LG INNOVATION, AND THE WELLBEING SETTLES IN YOUR HOUSE

### THERMA V, A SOLUTION THAT MEETS THE PUBLIC'S EXPECTATIONS

57 % of French households today are the owners of their real estate\*.

In 2006, 85 % of the energy consumption of the general public was dedicated to the heating (compared to 75% in 1985)\*\*.

Nowadays, the percentage of heating related to the renewable energies is marginal in France. However, recent opinion surveys show that more and more consumers are prone to discover and use these new eco-aware sources. Particularly, in the situation related to the price increase of fossil energy and the current problems of purchasing power, it is said that 72 % are in favor of an investment in a heat pumping system or a sanitary hot water system using solar energy\*\*\*.

\* Source : INSEE \*\* Source : ADEME – Energy Observatory \*\*\* Source : EDF Research

### THERMA V, COMPLETE SOLUTION

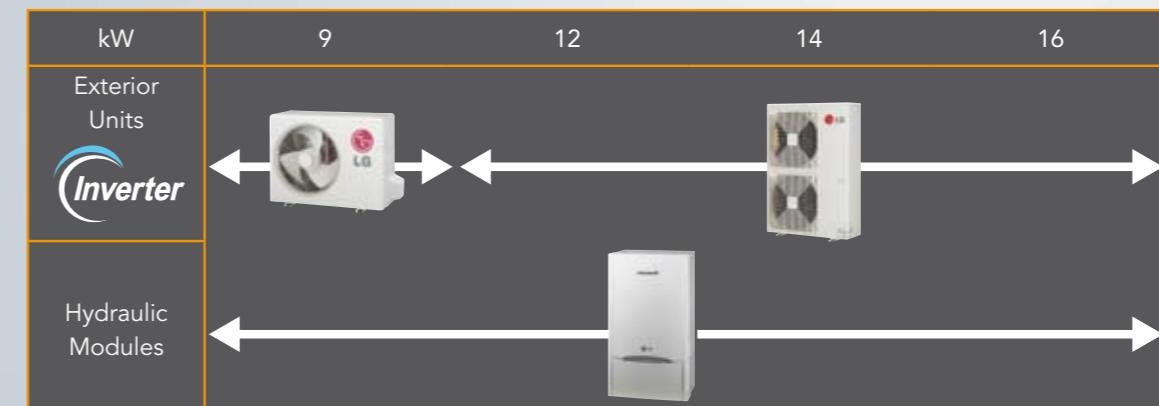
**Economic by nature :** Thanks to its innovating technology and its advanced coefficient of performance, Therma V is one of the heating systems that offers the lowest price in the market!

**Flexible :** A simple solution to install that does not require consistent reconstructions of the housing.

**Clean :** Therma V respects the environment by using 2 renewable energy sources which are the air and the sun, and by reducing the CO<sub>2</sub> emission.

**For a land and eco-citizen investment :** Thanks to the adoption of renewable energies, the heat pumps allow the consumers to obtain a tax credit under certain conditions.

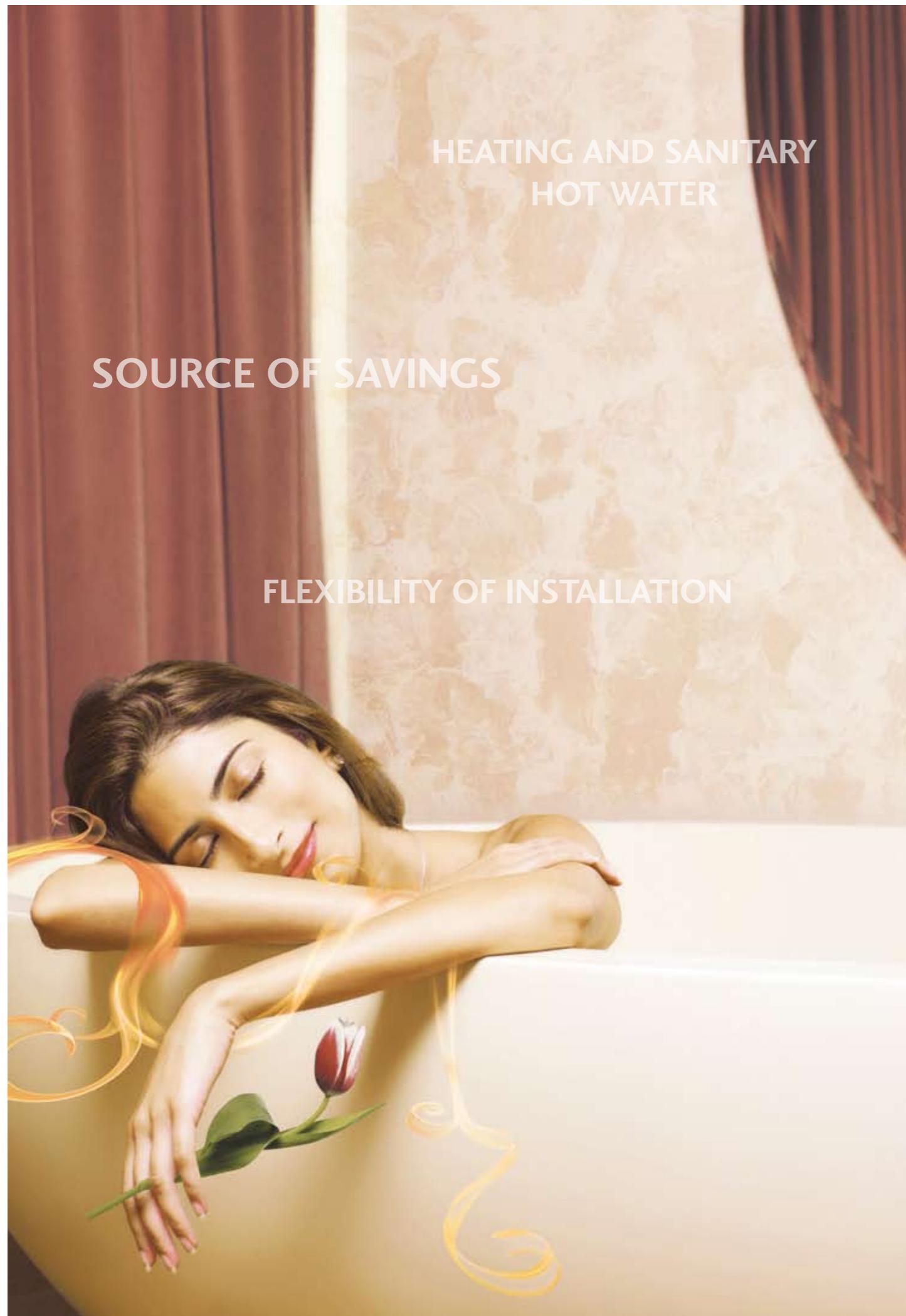
### THERMA V, A SOLUTION FOR HEATING AND SANITARY HOT WATER



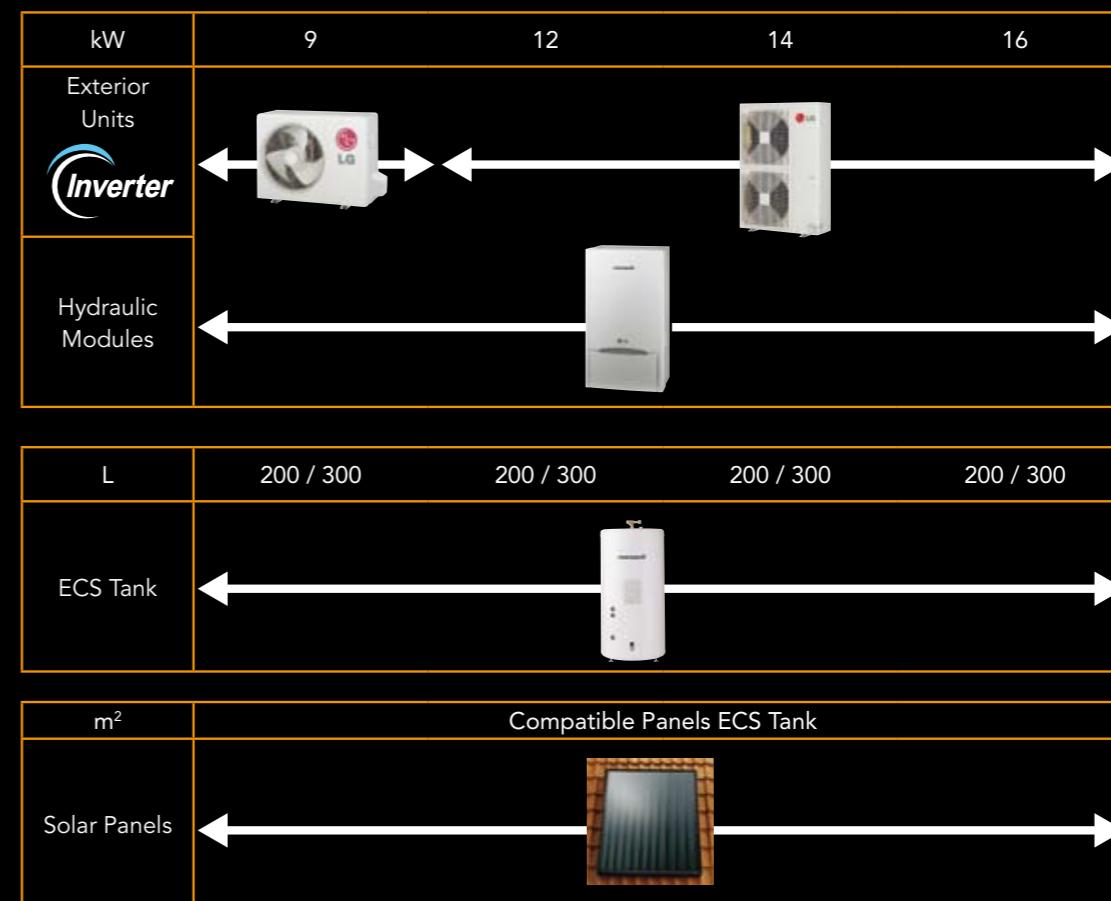
HEATING AND SANITARY  
HOT WATER

SOURCE OF SAVINGS

FLEXIBILITY OF INSTALLATION



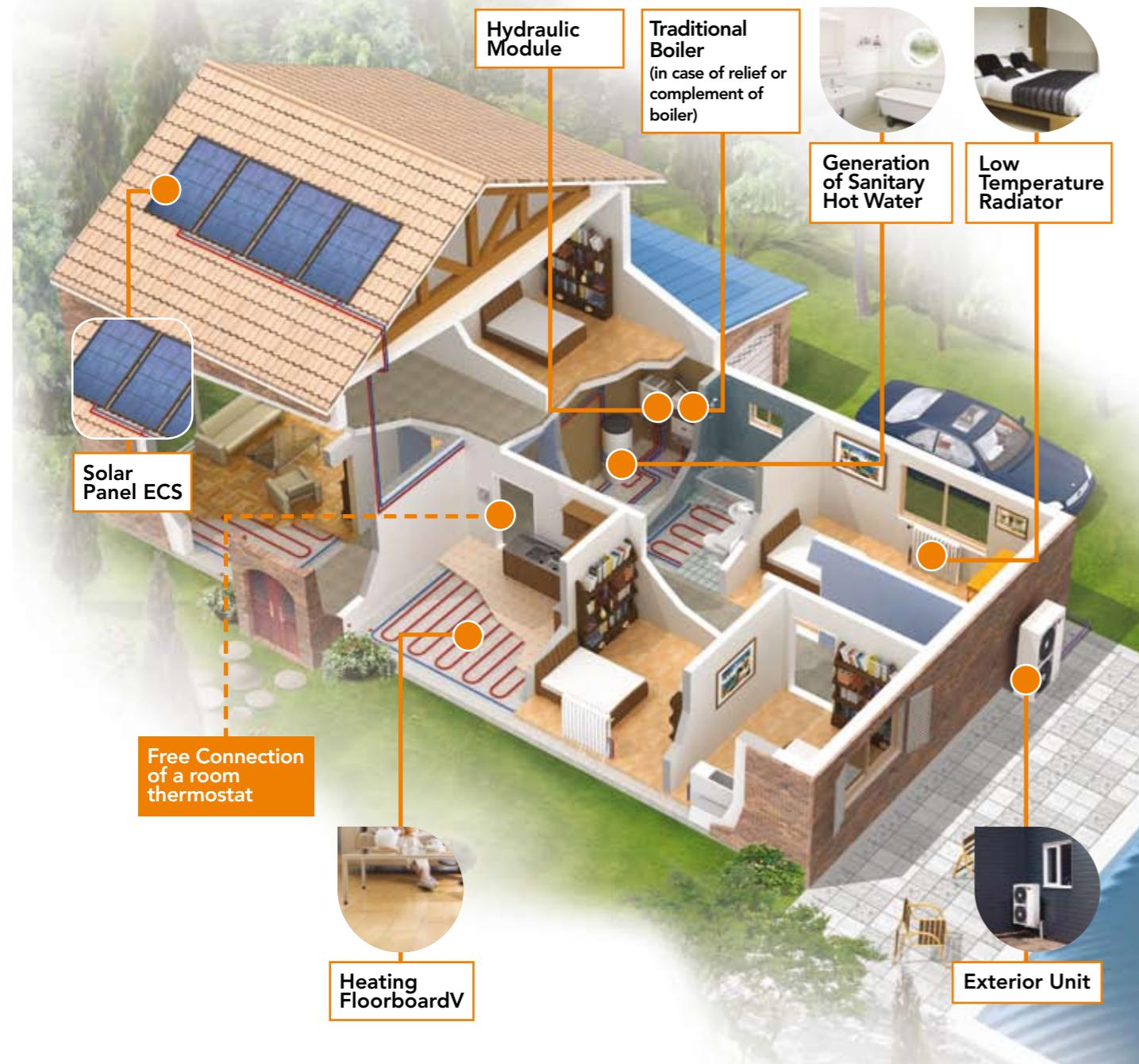
# THERMAV™ HEATING SOLUTION & SANITARY HOT WATER



Reliable and very efficient, the range of Therma V is eco-aware. The flexibility of the system does not require oversized installation, always guaranteeing you more comfort.

# THE SOLUTION FOR NEW HOUSING AND RENOVATION

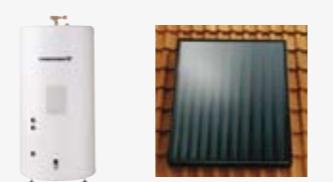
Product specially conceived to respond to the needs of the renovation market (in relief or replacement of boiler) and the new housing market, Therma V will adapt perfectly to the individual and collective residential applications. Moreover, this Air-Water heat pump makes up an eco-aware product that uses 2 renewable energy sources which are the air and the sun. Finally, it will prove itself economic with coefficients of performances (COP) among the most advanced ones of the market : up to 4,5 (COP).



## OPT FOR THE VERSATILE COMFORT!

- Different heat transmitters :
  - > Heating Floorboard
  - > Radiators

- Optional Accessories :
  - > Sanitary Hot Water Tank
  - > Solar Panels



## A COMPLETE SOLUTION

- Heating.
- Sanitary Hot Water.

## AN ECO-AWARE SOLUTION

- Economic Systems thanks to **advanced coefficients of performances** : COP = 4,5.
- Utilization of **2 renewable energies** : AIR + SOLEIL.
- **Little emission of CO<sub>2</sub>** compared to gas or fuel heating.

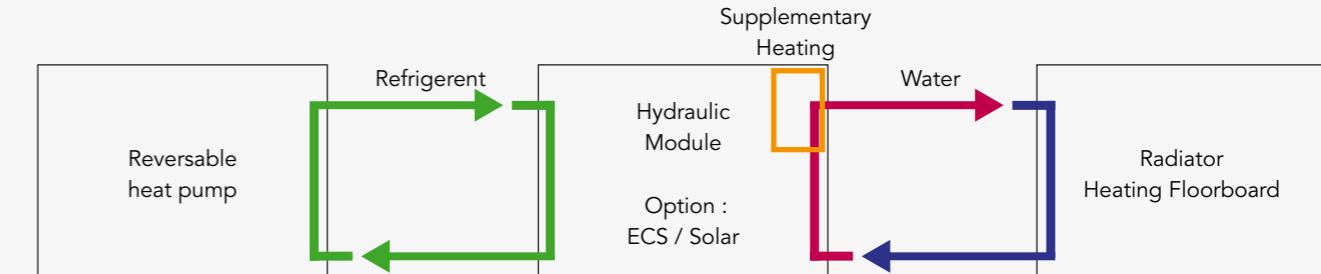
## A FLEXIBLE SOLUTION

### • Monovalent operation :

Today, new housing turns out less and less to be energy consuming. Covering 100% of the need of heating and sanitary hot water of a new house **does not actually require oversized installation anymore**.

**Thrifty and compact** technology, Therma V is capable of responding to 100% of needs of daily comfort. Moreover, should the outdoor temperature decreases below the seasonal temperature, a back-up will come as a complement to guarantee you an optimal wellbeing.

### Application : New Boiler or Replacement

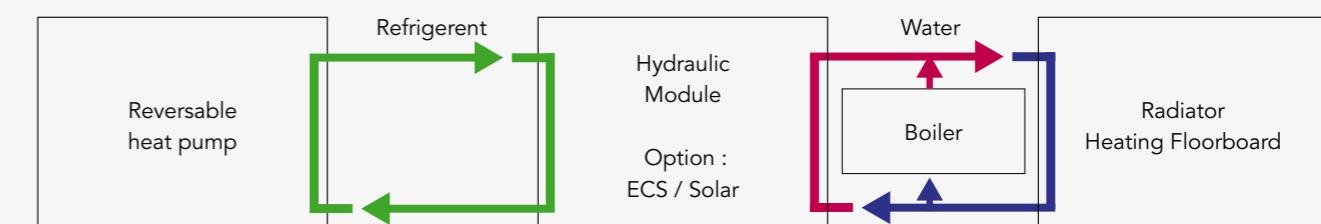


### • Alternative Bivalent Operation :

The Therma V heat pump **can also be integrated in an installation of existing central heating** (gas or fuel) without modification of the installation in place. At the moment of very low temperature, when the calories existing in the air are rare, and that they are not enough to heat, the boiler then takes the relay.

Other advantage is that one receives constantly **two energy sources completely independent**.

### Application : Boiler Relief



### • Simplicity of Installation :

Therma V includes a **discreet and compact exterior unit**, and an interior unit that is easy to install. Only one refrigerating link connects the 2 elements. The Hydraulic Module does not require any drilling, earthwork, storage unit (gas, fuel or wood), nor chimney. Opt for the facility with LG!

## The RELIABLE RESPONSE PAR LG

- Achievement of NF PAC Label (in progress).
- An operation guaranteed up to -20%.

# ENERGY PERFORMANCE

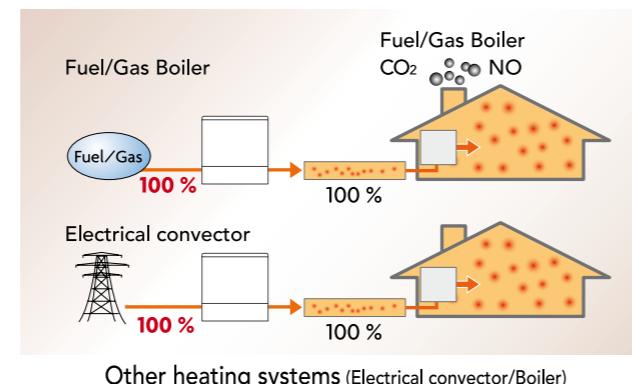
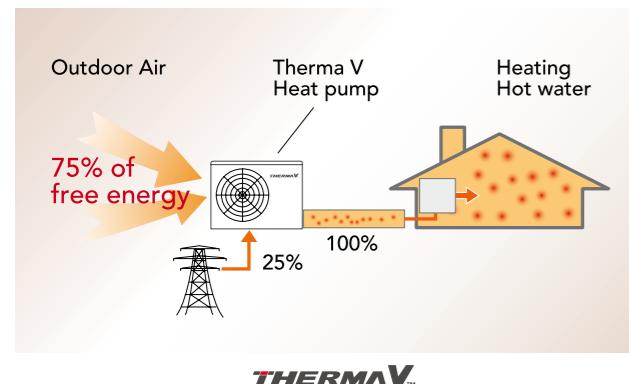
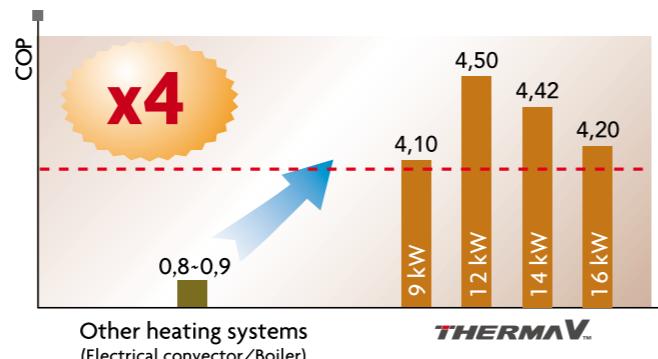


## ADVANCED COEFFICIENTS OF PERFORMANCES FOR MORE ENERGY SAVING

Thanks to the utilization of free calories existing in the outdoor air, even when the outdoor temperature is low, Therma V heat pumps make it possible to efficiently heat the inside of a house or an apartment.

The electricity used to make the heat pumps function is not used to generate heat, but to transport it. La chaleur qu'elle By combining the principle of the heat pump with the LG Inverter technology, the outputs (COP) of Therma V comes between 4,10 and 4,50. In other words, consuming 1 kW of energy of electrical network enables more than 4 kW of restitution.

Thus, the energy consumption is indeed inferior to that of other heating systems such as electrical convectors or the boilers functioning on fuel or gas.

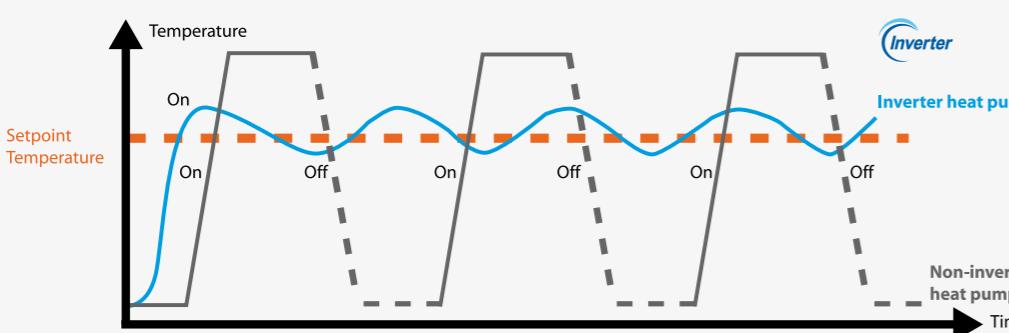


## THE INVERTER REGULATION, FOR MORE SERENITY

The LG Inverter technology make it possible to adapt the power restored, and so consumed, to the actual thermal loss of the room and to your needs. Needless to interfere with the adjustment, the temperature is constant regardless of the climatic changes. Thus, when the needs are important (for example, a decrease in temperature) the Therma V system will raise its power.

When the needs become lower, the system will automatically adjust the power.

The result: a constant temperature during all year and energy saving.



# ENVIRONMENT RESPECTING



## REDUCING CO<sub>2</sub> EMISSION : AN ECO-CITIZEN ATTITUDE

Installing the Therma V solution by LG, it is to adopt 2 renewable energies which are the air and the sun.

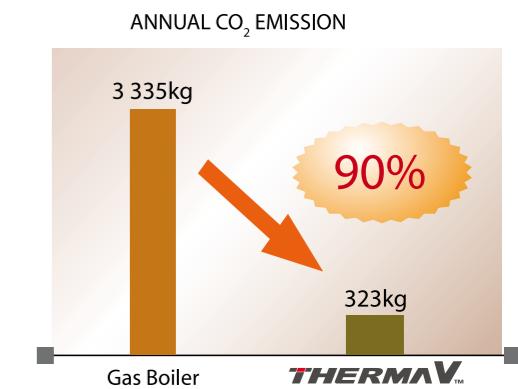
This eco-citizen system will decrease the CO<sub>2</sub> emission from the heating systems on fossil energies such as the gas and the fuel.



ECS Solar Panels



Therma V



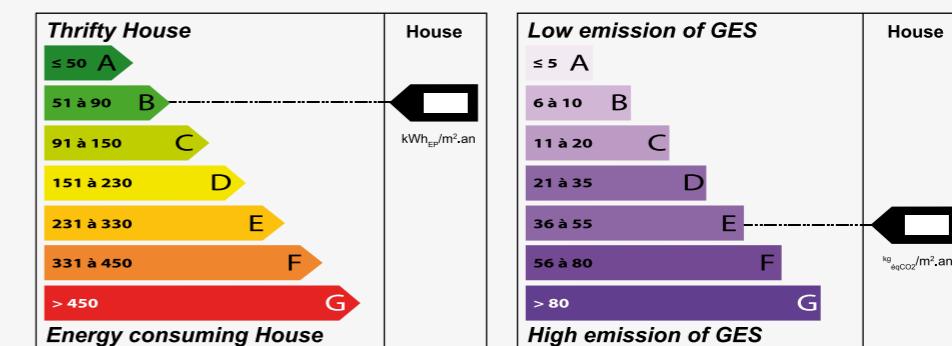
## A PRODUCT RESPONDING TO THE ENERGY PERFORMANCE DIAGNOSTICS (EPD)

Since the 1<sup>st</sup> July 2007, the Energy performance diagnostics is mandatory.

Performed by professionals, the EPD makes it possible to identify the projected energy consumption of houses and buildings put on sale or rent.

Reading of the diagnostics is facilitated by an estimation figured in euros, and by the utilization of the following double etiquette :

- an etiquette showing the energy consumption (as for the household appliance and new cars).
- an etiquette showing the impact of these consumptions on the greenhouse effects.



The heating represents almost 85% of the energy consumption of a house. Hence, it becomes the most important element of housing. Thanks to its energy performances, Therma V heat pump enables a significant improvement in not only the energy performance of a housing but also its gas emission to the greenhouse effect such as CO<sub>2</sub>. So Therma V is an land and eco-citizen investment for the owners and the tenants of a house.

## RENEWABLE ENERGIES = TAX CREDIT

Thanks to the adoption of renewable energies, the heat pumps allow you to obtain a tax credit under certain conditions. Pour plus de renseignements consultez

For more information, please consult the official publications on [www.industrie.gouv.fr](http://www.industrie.gouv.fr) or <http://impots.gouv.fr> (search « heat pumps »).

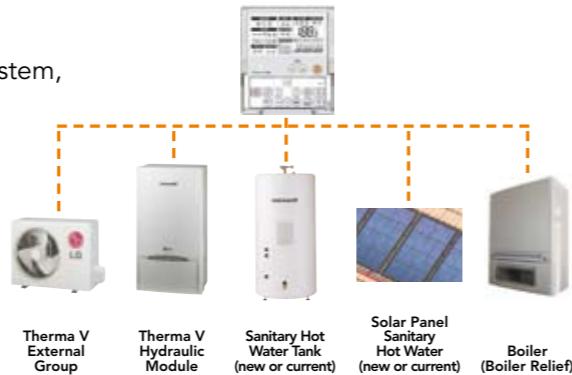


## CONVENIENT CONTROL

### CONTROL OF THE WHOLE ENERGY INSTALLATION

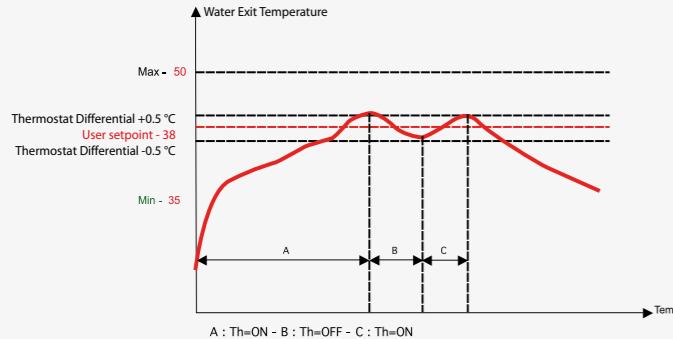
Thanks to the simple and intuitive control included in the Therma V system, the whole installation can be put under tension and controlled :

- Control of the generation of heating, sanitary hot water, ECS Solar panel
- Control of the weekly scheduling
- Control of the regulation modes
- Control of water temperature system
- Control of heating security mode

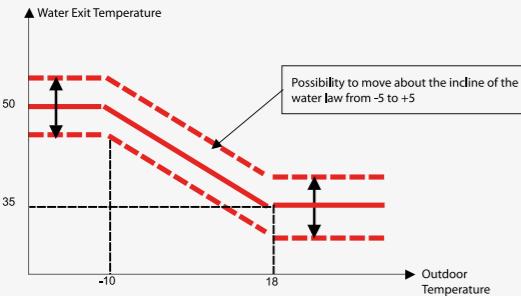


### 4 REGULATION MODES FOR AN OPTIMAL COMFORT

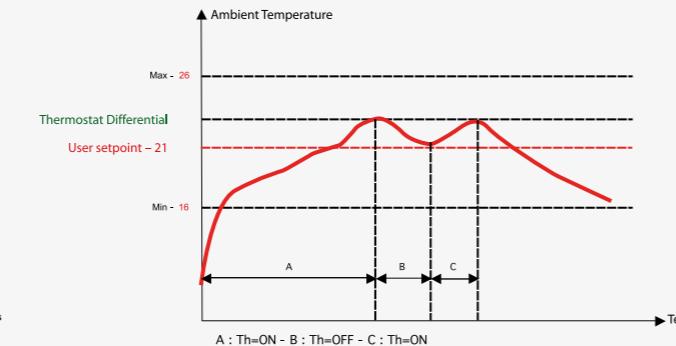
#### REGULATION OF THE WATER EXIT TEMPERATURE OF THERMA V



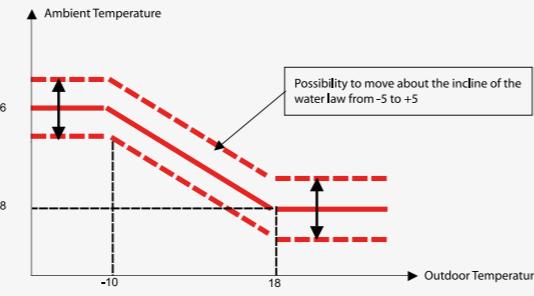
#### REGULATION ACCORDING TO THE WATER LAW



#### REGULATION OF AMBIENT TEMPERATURE OF LOCALE



#### REGULATION ACCORDING TO THE AIR LAW



### HEATING SECURITY MODE

Assuring the heating during the winter is essential. Thus, Therma V is equipped with a security mode that allows the maintenance of the heating in case of possible failure. The heating security mode is constituted of 2 levels of control :

- **Level 1** : Signage of a minor failure that does not involve disconnection of the system. This mode has been created to allow the user to contact a professional who could check the overall system.
- **Level 2** : Signage of a considerable failure. Shutdown of the Therma V external group and engaging of supplementary electrical resistances of hydraulic module to continue the generation of heat.



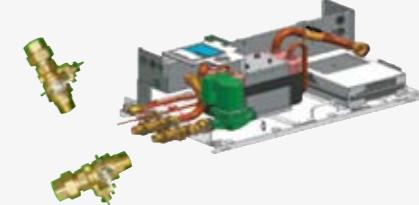
## FACILITY OF INSTALLATION AND DURABILITY

### A PRODUCT EASY TO INSTALL

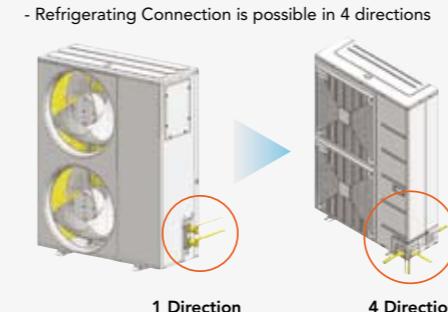
#### HYDRAULIC MODULE



Isolation gate with purging gate.



#### EXTERNAL GROUP



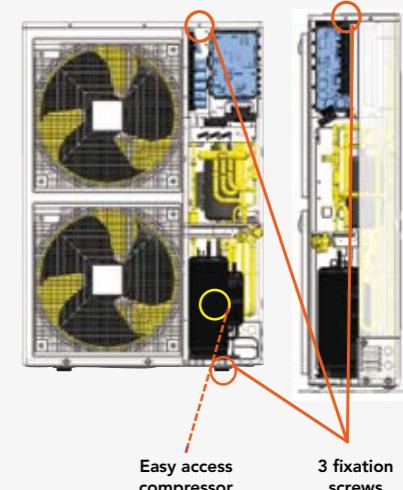
#### Jacking-up Grips

- Easily manipulable thanks to the integrated grips



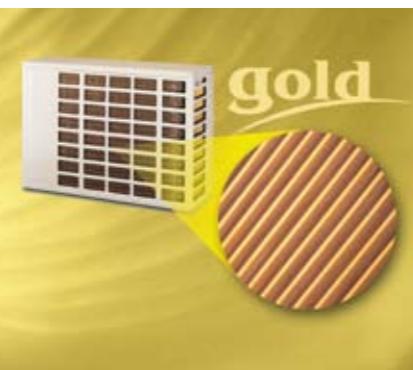
#### Facilitated maintenance

- Access to vital parts of the machine thanks to the new removable frontal panel fixed with 3 screws.



### ANTI-CORROSION GOLD FIN™

The exchangers of our external groups are treated against the corrosion and pollution. This treatment guarantees the durability of the systems and a performance of high level.



#### > Salt Spray Test for 15 Days



#### After 15 days



#### After 15 days



# AN EFFICIENT HEAT PUMP SYSTEM

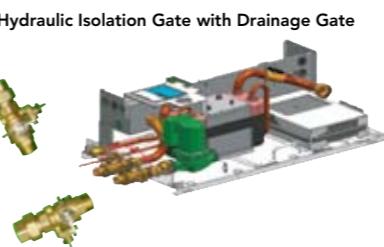
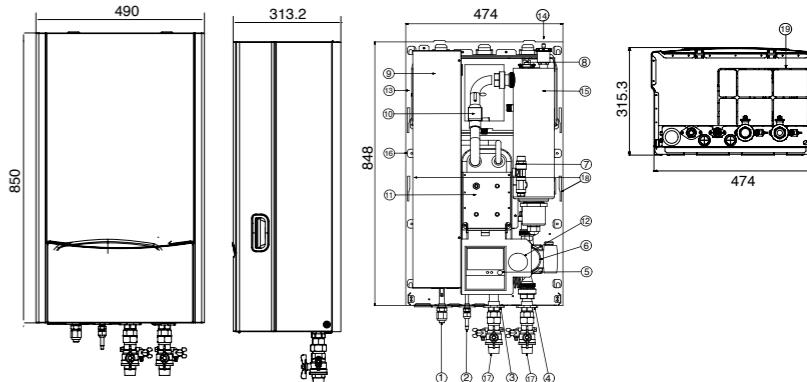
	H09SNE (NH1)	H12SNE (N31)	H14SNE (N31)	H16SNE (N31)	
<b>HYDRAULIC MODULE</b>					
External Group	H09SNE (UE1)	H12SNE (U31)	H14SNE (U31)	H16SNE (U31)	
<b>MAIN CHARACTERISTICS</b>					
<b>HEATING FLOORBOARD</b>					
Calorific Power +7°C / +35°C – Heating Floorboard	W	9000	12000	14000	16000
Absorbed Power +7°C / +35°C – Heating Floorboard	W	2200	2670	3170	3800
COP +7°C / +35°C - Heating Floorboard	W / W	4,10	4,50	4,42	4,20
Energy Label		A	A	A	A
Calorific Power -7°C / +35°C – Heating Floorboard	W	8440	11230	13100	15000
Absorbed Power -7°C / +35°C – Heating Floorboard	W	3070	3730	4430	5310
COP -7°C / +35°C - Heating Floorboard	W / W	2,75	3,01	2,96	2,82
<b>LOW TEMPERATURE RADIATOR</b>					
Calorific Power +7°C / +45°C – Low Temperature Radiator	W	7490	9990	11700	13300
Absorbed Power +7°C / +45°C – Low Temperature Radiator	W	2300	2790	3410	4010
COP +7°C / +45°C - Low Temperature Radiator	W / W	3,26	3,58	3,43	3,32
Calorific Power -7°C / +45°C – Low Temperature Radiator	W	7050	9390	10930	12500
Absorbed Power -7°C / +45°C – Low Temperature Radiator	W	3040	3690	4520	5320
COP -7°C / +45°C - Low Temperature Radiator	W	2,32	2,54	2,42	2,35
<b>PERFORMANCES MAXIMALES</b>					
Calorific Power +7°C / +50°C	W	6140	8180	9550	10900
Absorbed Power +7°C / +50°C	W	2120	2570	3150	3700
COP +7°C / +50°C	W / W	2,90	3,18	3,03	2,95
Calorific Power -7°C / +50°C	W	5690	7590	8850	10100
Absorbed Power -7°C / +50°C	W	2690	3260	3990	4690
COP -7°C / +50°C	W / W	2,12	2,33	2,22	2,15
Electrical Back-up Batch Power (to choose during the installation)	W	2000 ou 4000	3000 ou 6000	3000 ou 6000	3000 ou 6000
<b>HYDRAULIC MODULE</b>	H09SNE (NH1)	H12SNE (N31)	H14SNE (N31)	H16SNE (N31)	
Noise Level at 1m	dB(A)	28	28	28	28
Dimensions - HxWxD	mm	850*490*315	850*490*315	850*490*315	850*490*315
Empty Weight	kg	52	53	54,5	54,5
Weight in Water	kg	61	62	64,5	64,5
<b>HYDRAULIC CHARACTERISTICS</b>					
Type of Exchanger		Exchanger in pane			
Expansion Capacity Vase	I	8	8	8	8
water flow Mini / Maxi	m³/h	0,54 / 4,5	0,72 / 4,5	0,72 / 6,66	0,72 / 6,66
<b>ELECTRICAL CONNECTION</b>					
Supply	V / Hz	1Φ 220-240V, 50Hz	1Φ 220-240V, 50Hz	1Φ 220-240V, 50Hz	1Φ 220-240V, 50Hz
Nominal Intensity beside electrical back-up	A	0,59	0,59	0,89	0,89
Electrical Resistance Intensity	A	16,7	25	25	25
Hydraulic Interconnection Kit / Exterior unit	mm²	4x1,5	4x1,5	4x1,5	4x1,5
<b>HYDRAULIC CONNECTION</b>					
Entry and Exit Diameter of Heating Circuit - Male Thread	mm-(inch)	25-25 (1-1)	25-25 (1-1)	25-25 (1-1)	25-25 (1-1)
<b>PUMP</b>					
Absorbed Power	W	135	135	205	205
Maximum Manometric Height	mCE	6,4	6,4	7	7
Control		Wired	Wired	Wired	Wired
Hydraulic Isolation Gate with Drainage Gate		Included	Included	Included	Included
<b>EXTERIOR UNIT</b>	H09SNE (UE1)	H12SNE (U31)	H14SNE (U31)	H16SNE (U31)	
Operation Deck – Exterior Temp. Min/Max - Hot	°C	-20 ~ 30	-20 ~ 30	-20 ~ 30	-20 ~ 30
Noise Level - Min / Max	dB(A)	51/53	54/55	55/57	55/57
Dimensions - HxWxD	mm	870*808*320	950*1355*330	950*1355*330	950*1355*330
Weight	kg	56	105	105	105
Air Output	m³/h	3480	3600	3600	3600
<b>ELECTRICAL CONNECTION</b>					
Supply	V / Hz	1Φ 220-240V, 50Hz	1Φ 220-240V, 50Hz	1Φ 220-240V, 50Hz	1Φ 220-240V, 50Hz
<b>REFRIGERATING CHARACTERISTICS</b>					
Diameter Gas / Liquid Inch	Pouce	3/8 - 5/8	3/8 - 5/8	3/8 - 5/8	3/8 - 5/8
Precharged length	m	7,5	7,5	7,5	7,5
Length minimum / maximum	m	3 / 50	3 / 50	3 / 50	3 / 50
Difference in height maximum	m	30	30	30	30
Refrigerant		R410A	R410A	R410A	R410A
Refrigerant Load	g	1800	3000	3000	3000
Complement of Load	g/m	35	40	60	60
<b>OPTIONAL ACCESSORIES</b>					
Offset Sensor of Ambient Temperature		PQRSTA0	PQRSTA0	PQRSTA0	PQRSTA0
Dry Contact Card for Boiler Relief		PQDSA	PQDSA	PQDSA	PQDSA

**THERMAV™**



## HYDRAULIC MODULES

H09SNE (NH1)	9000W
H12SNE (N31)	12000W
H14SNE (N31)	14000W
H16SNE (N31)	16000W

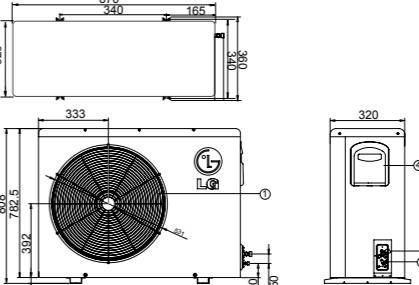


N°	ITEM
1	Refrigerating Pipe - Gas
2	Refrigerating Pipe - Liquid
3	Water Connection - Entry - 1 inch
4	Water Connection - Exit - 1 inch
5	Control Panel
6	Hydraulique pump
7	Discharge Gate - Open when pressed > 3 bars
8	Security Sensor - Max. Water Temperature 90°C
9	Control Box
10	Output Control - Minimum Output : 900 L/h

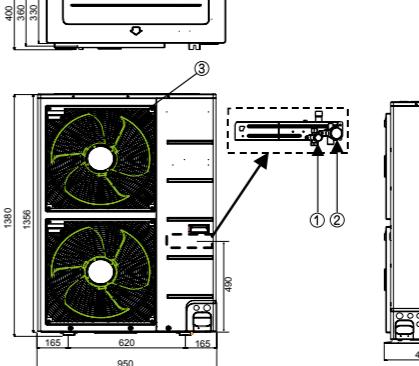
N°	ITEM
11	Exchanger in pane
12	Hydraulic Pressure Manometer
13	Expansion Vase
14	Drain-cock
15	Electrical Resistance
16	Filter
17	Isolation gate - with pressure intake
18	Grip
19	Pre-cut Tole for Technical Access

## EXTERIOR UNIT

H09SNE (UE1)	9000W
H12SNE (U31)	12000W
H14SNE (U31)	14000W



H16SNE (U31)	16000W
H09SNE (UE1)	9000W
H12SNE (U31)	12000W



N°	ITEM
1	Refrigerating Pipe - Gas
2	Refrigerating Pipe - Liquid
3	Air Discharge Grille

# GENERATION OF SANITARY HOT WATER THERMODYNAMICS

- Thanks to the combination of a heat pump and an electrical battery, the heating of sanitary hot water is assured throughout the year.
- As a reliable and economic solution, the heating is assured at 70% by the heat pump and at 30% by the electrical battery.
- Anti-Legionellosis device.
- Possibility to connect a solar panel for more energy saving.

## ECS TANK - SIMPLE EXCHANGER

	REF ECS TANK	LGRTV200E	LGRTV300E
<b>GENERAL CHARACTERISTICS</b>			
Water Volume	L	198	287
Diameter	mm	580	580
Height	mm	1230	1680
Empty Weight	kg	45	59
Tank – Materials		Stainless steel	Stainless steel
Outer Skin – Materials		Paint Epoxy	Paint Epoxy
Color – White RAL		White NC	White NC
<b>CHARACTERISTICS OF ELECTRICAL BACK-UP</b>			
Additional Electric Battery	kW	3	3
Adjustable Thermostat	°C	60 ~ 90	60 ~ 90
<b>CHARACTERISTICS OF EXCHANGER</b>			
Exchanger Type		Simple	Simple
Material Exchanger		LDX 2101 – Stainless steel	LDX 2101 – Stainless steel
Maximum Water Temperature	°C	80	80
<b>HYDRAULIC CONNECTIONS – HEAT PUMP</b>			
Therma V Entry	mm	25	25
Therma V Exit	mm	25	25
<b>HYDRAULIC CONNECTIONS – SANITARY WATER</b>			
City Water Entry	mm	22	22
ECS Departure	mm	22	22
<b>ELECTRIC CONNECTION</b>			
Supply	V / Hz	1Φ220-240V, 50H	1Φ220-240V, 50H
<b>MANDATORY OPTIONAL ACCESSORIES</b>			
ECS kit for Hydraulic Module of Therma V (Sensor+Relay+Circuit Breaker)		NC	NC

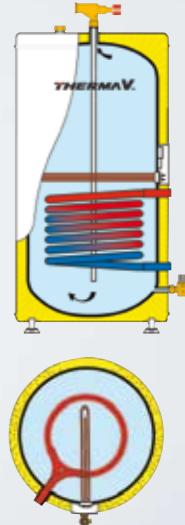
## ECS TANK – DOUBLE EXCHANGER TO CONNECT A SOLAR PANEL

	REF ECS TANK	LGRTV200VE	LGRTV300VE
<b>GENERAL CHARACTERISTICS</b>			
Water Volume	L	198	287
Diameter	mm	580	580
Height	mm	1230	1680
Empty Weight	kg	49	63
Tank – Materials		Stainless steel	Stainless steel
Outer Skin – Materials		Paint Epoxy	Paint Epoxy
Color – White RAL		White NC	White NC
<b>CHARACTERISTICS OF ELECTRICAL BACK-UP</b>			
Additional Electric Battery	kW	3	3
Adjustable Thermostat	°C	60 ~ 90	60 ~ 90
<b>CHARACTERISTICS OF EXCHANGER</b>			
Exchanger Type		Double	Double
Material Exchanger		LDX 2101 – Stainless steel	LDX 2101 – Stainless steel
Maximum Water Temperature	°C	80	80
<b>HYDRAULIC CONNECTIONS – HEAT PUMP</b>			
Therma V Entry	mm	25	25
Therma V Exit	mm	25	25
<b>HYDRAULIC CONNECTIONS – SANITARY WATER</b>			
City Water Entry	mm	22	22
ECS Departure	mm	22	22
<b>ELECTRIC CONNECTION</b>			
Supply	V / Hz	1Φ220-240V, 50H	1Φ220-240V, 50H
<b>MANDATORY OPTIONAL ACCESSORIES</b>			
ECS kit for Hydraulic Module of Therma V (Sensor+Relay+Circuit Breaker)		NC	NC

\*Available in the 1st semester of 2009

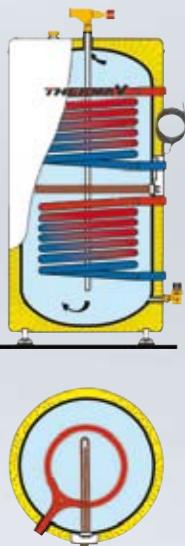
## ECS TANKS – SIMPLE EXCHANGER

LGRTV200E	198 LITRES
LGRTV300E	287 LITRES



## ECS TANKS - DOUBLE EXCHANGER TO CONNECT A SOLAR PANEL

LGRTV200VE	198 LITRES
LGRTV300VE	287 LITRES



## SOLAR PANELS FOR DOUBLE EXCHANGER TANK

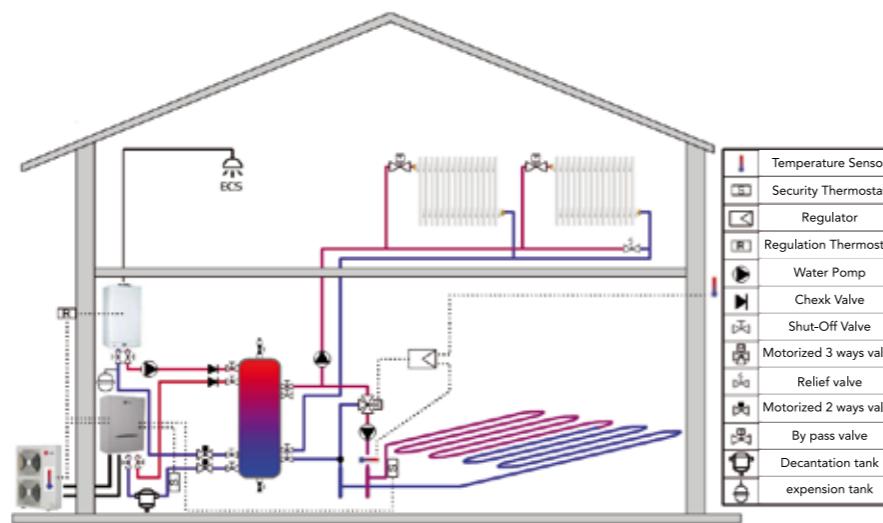
For more performances and energy saving, the association of Therma V heat pump and solar panels is possible. Thus, **60% of the energy needed for the generation of sanitary hot water can be provided by free solar energy and transmitted to the double exchanger ECS tank of Therma V**. The list of manufacturers of solar panels, compatible with Therma V's tanks, will be available in the 1st semester of 2009.

For further information, please contact as of now, your habitual sales person of LG Therma V.



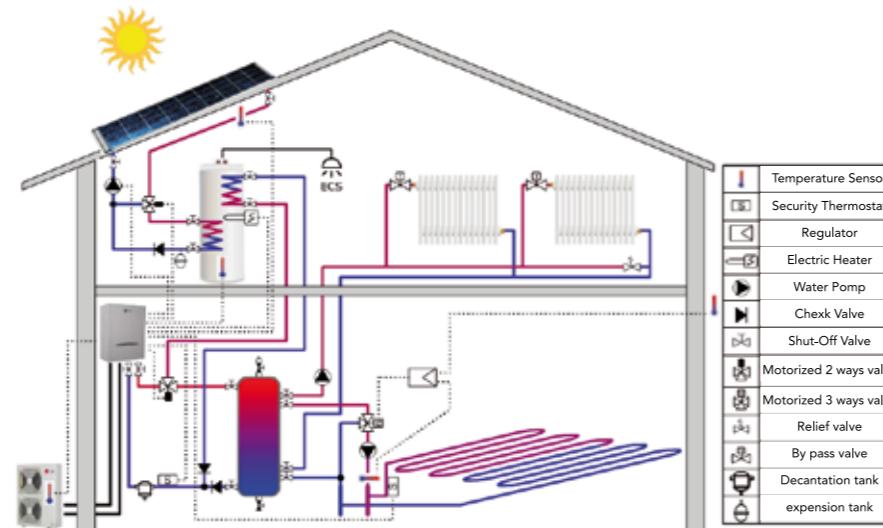
# OPT FOR THE FLEXIBILITY OF ITS INTERGRATION INTO THE HOUSING

## SCHEMES OF RECOMMENDED INSTALLATION



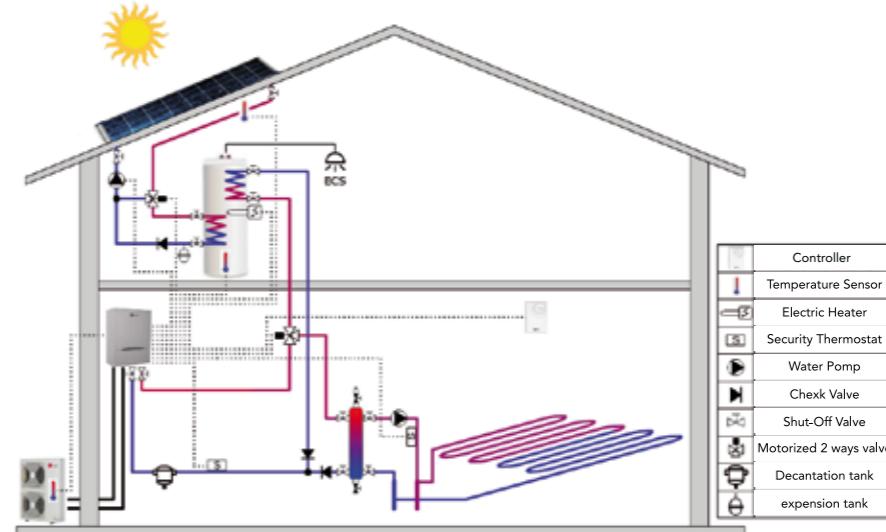
### APPLICATION FOR NEW HOUSING 1

- > Monovalent operation mode
- > Functions :
- Heating Floorboard.
- Low Temperature Radiators.
- Generation of Sanitary Hot Water : Heat pump + Additional Electric Tank + Solar Panels.



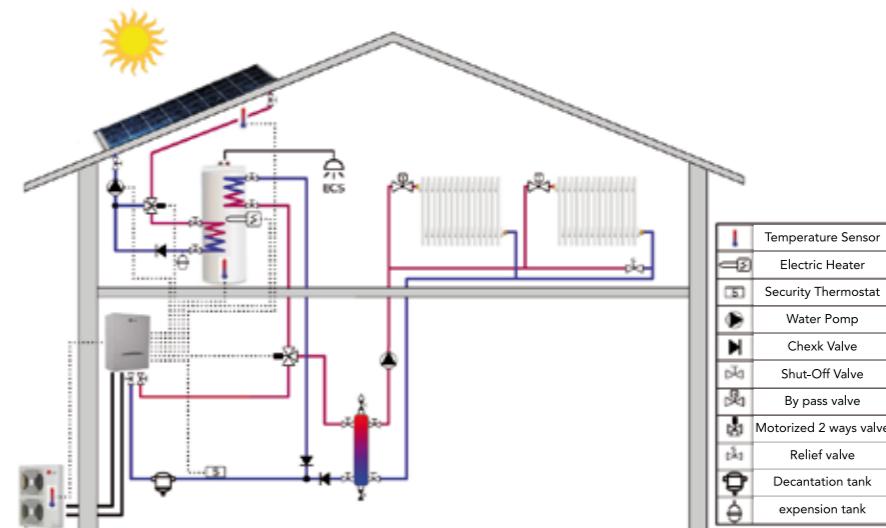
### APPLICATION FOR NEW HOUSING 2

- > Monovalent operation mode
- > Functions :
- Heating Floorboard.
- Generation of Sanitary Hot Water : Heat pump + Additional Electric Tank + Solar Panels.



### APPLICATION FOR NEW HOUSING 3

- > Monovalent operation mode
- > Functions :
- Low Temperature Radiators.
- Generation of Sanitary Hot Water : Heat pump + Additional Electric Tank + Solar Panels.



#### Warning :

The schemes of recommended installation are uniquely given as a rough guide and won't be able to take the place of a complete hydraulic research performed by a professional on the basis of characteristics of the housing to set up. LG won't be responsible for the damages occurred from the disrespect of this warning.

#### Warning :

The schemes of recommended installation are uniquely given as a rough guide and won't be able to take the place of a complete hydraulic research performed by a professional on the basis of characteristics of the housing to set up. LG won't be responsible for the damages occurred from the disrespect of this warning.

# CHARACTERISTICS TABLE TO MADE THE GOOD CHOICE

## HEATING CAPACITY TABLE - FLOOR HEATING APPLICATION

### Application for Heating Floorboard

MODEL	OUTDOOR AIR TEMPERATURE (°C)	Water Exit Temperature (°C)													
		20°C		25°C		30°C		35°C		40°C		45°C		50°C	
		PC (kW)	PA (kW)	PC (kW)	PA (kW)	PC (kW)	PA (kW)	PC (kW)	PA (kW)	PC (kW)	PA (kW)	PC (kW)	PA (kW)		
H 09 SNE	-15	7,11	2,52	7,13	2,67	7,09	2,83	6,88	2,92	6,41	2,90	5,54	2,69	4,19	2,18
	-12	7,95	2,64	7,93	2,80	7,86	2,96	7,64	3,08	7,14	3,09	6,28	2,92	4,92	2,48
	-9	8,60	2,65	8,54	2,82	8,44	2,99	8,19	3,12	7,68	3,15	6,81	3,03	5,45	2,64
	-6	9,07	2,58	8,97	2,74	8,84	2,91	8,57	3,05	8,05	3,11	7,16	3,02	5,81	2,68
	-3	9,41	2,44	9,27	2,60	9,11	2,77	8,81	2,91	8,27	2,98	7,38	2,92	6,03	2,63
	0	9,63	2,27	9,46	2,41	9,26	2,57	8,95	2,72	8,39	2,80	7,49	2,76	6,14	2,52
	3	9,78	2,07	9,57	2,21	9,34	2,36	9,00	2,50	8,43	2,58	7,52	2,56	6,17	2,35
	7	9,91	1,81	9,64	1,93	9,37	2,07	9,00	2,20	8,41	2,29	7,49	2,28	6,14	2,10
	10	10,0	1,64	9,68	1,75	9,39	1,88	8,99	2,00	8,38	2,08	7,45	2,08	6,10	1,93
	13	10,1	1,50	9,75	1,60	9,42	1,72	9,00	1,83	8,38	1,91	7,44	1,91	6,09	1,77
	17	10,3	1,38	9,93	1,47	9,56	1,58	9,10	1,68	8,46	1,75	7,51	1,75	6,16	1,63
	20	10,6	1,35	10,2	1,43	9,77	1,53	9,29	1,62	8,63	1,69	7,67	1,69	6,32	1,58
	24	11,2	1,39	10,7	1,47	10,2	1,56	9,74	1,65	9,05	1,71	8,08	1,71	6,73	1,60
H 12 SNE	-15	9,48	3,06	9,50	3,25	9,45	3,43	9,18	3,54	8,54	3,52	7,39	3,26	5,59	2,65
	-12	10,6	3,21	10,6	3,40	10,5	3,60	10,2	3,74	9,53	3,75	8,37	3,55	6,56	3,01
	-9	11,5	3,22	11,4	3,42	11,3	3,62	10,9	3,78	10,2	3,83	9,07	3,67	7,27	3,20
	-6	12,1	3,13	12,0	3,33	11,8	3,53	11,4	3,70	10,7	3,77	9,55	3,66	7,75	3,26
	-3	12,5	2,96	12,4	3,15	12,1	3,36	11,8	3,53	11,0	3,62	9,84	3,55	8,04	3,20
	0	12,8	2,75	12,6	2,93	12,4	3,12	11,9	3,30	11,2	3,40	9,99	3,35	8,19	3,05
	3	13,0	2,51	12,8	2,68	12,5	2,86	12,0	3,03	11,2	3,14	10,0	3,11	8,22	2,85
	7	13,2	2,20	12,9	2,35	12,5	2,51	12,0	2,67	11,2	2,77	9,99	2,77	8,18	2,55
	10	13,3	1,99	12,9	2,13	12,5	2,28	12,0	2,42	11,2	2,52	9,94	2,52	8,13	2,34
	13	13,5	1,82	13,0	1,95	12,6	2,09	12,0	2,22	11,2	2,31	9,92	2,32	8,12	2,15
	17	13,8	1,68	13,2	1,79	12,7	1,91	12,1	2,03	11,3	2,12	10,0	2,12	8,21	1,98
	20	14,2	1,64	13,6	1,74	13,0	1,86	12,4	1,97	11,5	2,05	10,2	2,05	8,42	1,92
	24	14,9	1,69	14,3	1,79	13,7	1,90	13,0	2,00	12,1	2,07	10,8	2,08	8,97	1,95
H 14 SNE	-15	11,1	3,63	11,1	3,85	11,0	4,07	10,7	4,21	9,97	4,18	8,63	3,87	6,52	3,14
	-12	12,4	3,81	12,3	4,04	12,2	4,27	11,9	4,44	11,1	4,46	9,76	4,21	7,66	3,57
	-9	13,4	3,82	13,3	4,06	13,1	4,30	12,7	4,49	11,9	4,54	10,6	4,36	8,48	3,80
	-6	14,1	3,72	14,0	3,95	13,8	4,19	13,3	4,40	12,5	4,48	11,1	4,35	9,04	3,87
	-3	14,6	3,52	14,4	3,74	14,2	3,99	13,7	4,19	12,9	4,30	11,5	4,21	9,38	3,80
	0	15,0	3,26	14,7	3,48	14,4	3,71	13,9	3,92	13,1	4,03	11,7	3,98	9,55	3,62
	3	15,2	2,98	14,9	3,18	14,5	3,40	14,0	3,60	13,1	3,72	11,7	3,69	9,60	3,39
	7	15,4	2,61	15,0	2,79	14,6	2,98	14,0	3,17	13,1	3,29	11,7	3,28	9,55	3,03
	10	15,5	2,36	15,1	2,52	14,6	2,71	14,0	2,88	13,0	3,00	11,6	3,00	9,49	2,78
	13	15,7	2,16	15,2	2,31	14,7	2,48	14,0	2,64	13,0	2,75	11,6	2,75	9,47	2,55
	17	16,1	1,99	15,5	2,12	14,9	2,27	14,2	2,42	13,2	2,52	11,7	2,52	9,58	2,35
	20	16,5	1,95	15,8	2,07	15,2	2,21	14,5	2,34	13,4	2,44	11,9	2,44	9,82	2,28
	24	17,4	2,01	16,6	2,12	15,9	2,25	15,1	2,38	14,1	2,46	12,6	2,46	10,5	2,31
H 16 SNE	-15	12,6	4,35	12,7	4,62	12,6	4,88	12,2	5,05	11,4	5,01	9,86	4,64	7,45	3,84
	-12	14,1	4,56	14,1	4,84	14,0	5,12	13,6	5,32	12,7	5,34	11,2	5,05	8,75	4,36
	-9	15,3	4,58	15,2	4,87	15,0	5,16	14,6	5,38	13,7	5,45	12,1	5,23	9,69	4,64
	-6	16,1	4,46	16,0	4,74	15,7	5,03	15,2	5,27	14,3	5,37	12,7	5,21	10,3	4,63
	-3	16,7	4,22	16,5	4,49	16,2	4,78	15,7	5,03	14,7	5,15	13,1	5,05	10,7	4,55
	0	17,1	3,91	16,8	4,17	16,5	4,45	15,9	4,69	14,9	4,84	13,3	4,77	10,9	4,34
	3	17,4	3,57	17,0	3,81	16,6	4,07	16,0	4,31	15,0					

## Notes

## Notes