THERMA V AIR-TO-WATER HEAT PUMP

Please find below the required data for the SEAI Heat Pump Tool for DEAP 2016:
*Where information is blank, please enter project specific information.
LG declares compliance to the following EU Directives:

811/2013/EU
813/2013/EU

Section 4 – Heat Pump Data

Manufacturer of the installed heat pump(s)	LG Electronics
Model of the installed heat pump(s)	HU141MRB.U30
Type of Heat Pump	Air to water
Temperature control	Variable Outlet
Does the installation provide	Space Heating & Domestic Hot water
Space Heating Test Standard	I.S. EN 14825
Water Heating Test Standard	I.S. EN 16147
Operation Limit Temperature	-15.00
Heating water operating Limit Temperature	65°C

Section 5 – Heating

Annual space heating requirement taken from DEAP	
Is there a fixed secondary heater present?	
Is there a CHP present?	
Fraction of main space and water from CHP	
Annual space heating provided by Heat Pump	
Design Outdoor Temperature	-3
Indoor Design Temperature (Mean internal Temperature)	
Heat emission type served by Heat Pump within the dwelling	Select all that apply:
1 or more Radiators	
1 or more Fan Coil Units	
Underfloor Heating	
Air used as Emitter (to Air Units)	No
Design Flow Temperature	
Use "Default Supply Temperature" unless other evidence available	
Exponent n, characterising type of emission system	1.2
Emitter Temperature Drop	10
Return Temperature at design conditions	
No of hours per day Heat Pump in operation	24
Cut-out hours	8
Electricity Primary Energy Factor	2.08
Is a Back Up Space Heater Present within Dwelling	No
Back Up Space Heater Fuel	
Primary Energy Factor for Back Up Space Heater	
Efficiency of Back Up Space Heater	
Adjusted efficiency of Back Up Space Heater relative to Direct Electric Heating	No
Is there a water heater installed as back up for the Heat Pump?	
Back up Water Heater Fuel	
Primary Energy Factor for Back Up Water Heater	
Efficiency of Back up Water Heater	
Adjusted efficiency of Back Up Water Heater relative to Direct Electric Heating	

Section 6 – Domestic Hot Water

Output from Main Water Heater	
Type of DHW	Integral
Annual water heating provided by main water heating system	
Cold Water Inlet Temperature	10
Required Flow Temperature from Heat Pump to Hot Water Storage	60
Volume of DHW Storage	300

Section 6 – Product Perfromance Data

Test Condition EN 14825:2013						
Additional Test Points available at:				Low Temperature		Yes
				Medium Temperature		No
				Very High Temperature		No
Maximum Test Temperature allowed for in EN14825 testing						55
Low Temperature Application (35°C)	Test Conditions EN 14825:2013	A (88%)	B (54%)	C (35%)	D (15%)	E (100%)
	Source	A-7	A2	A7	A12	A-15
EN 14825:2013 – Table 12 (ASHP) or Table 24 (GSHP)	Sink	W34	W30	W27	W24	W35
	Heating Capacity (kW)	10.6	6.5	4.7	5.0	12.0
	Coefficient of Performance (kW/kW)	2.94	4.45	5.95	8.12	2.6
High Temperature Application (55°C)	Source	A-7	A2	A7	A12	A-15
	Sink	W52	W42	W36	W30	W55
EN 14825:2013 – Table 18 (ASHP) or Table 30 (GSHP)	Heating Capacity (kW)	10.4	6.3	4.7	4.6	10.9
	Coefficient of Performance (kW/kW)	2.16	3.35	4.66	6.62	1.86

Test Condition EN 16147:2017

Source of data	Water heating energy efficiency, nwh
Water heating energy efficiency, nwh	105.36%
Equivalent Coefficient of Performance	
Reference Hot Water Temperature	52°C
Required Source Temperature	N/A
Capacity of Heat Pump	14
Declared Load Profile	XL
Standby Heat Loss (kW)	2.09
Volume of DHW accounted for in test	300

THERMA V AIR-TO-WATER HEAT PUMP

Technical parameters for heat pump space heaters and heat pump combination heaters

Model(s):	HU141MRB U30 / HN1600MB NK0	
Air-to-water heat pump:	YES	~~NO~~
Water-to-water heat pump:	~~YES~~	NO
Brine-to-water heat pump:	~~YES~~	NO
Low-temperature heat pump:	~~YES~~	NO
Equipped with a supplementary heater:	YES	~~NO~~
Heat pump combination heater:	~~YES~~	NO

Parameters shall be declared for medium-temperature application, except for low-temperature heat pumps.
For low- temperature heat pumps, parameters shall be declared for low-temperature application.
Parameters shall be declared for average climate conditions.

Low temperature application

Item	Symbol	Value	Unit
Rated heat output (*)	P_{rated}	12	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	P_{dh}	10.6	kW
T j = + 2 °C	P_{dh}	6.5	kW
T j = + 7 °C	P_{dh}	4.7	kW
T j = + 12 °C	P_{dh}	5.0	kW
T j = bivalent temperature	P_{dh}	12.0	kW
T j = operation limit temperature	P_{dh}	12.0	kW
For air-to-water heat pumps: Tj=-15°C (if TOL < -20°C)	P_{dh}	x,x	kW
Bivalent temperature	T_{biv}	-10	°C
Cycling interval capacity for heating	P_{cych}	x,x	kW
Degradation co-efficient(**)	C_{dh}	0.9	

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η_S	180%	
Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	COPd or PERd	2.94	– or %
T j = + 2 °C	COPd or PERd	4.45	– or %
T j = + 7 °C	COPd or PERd	5.95	– or %
T j = + 12 °C	COPd or PERd	8.12	– or %
T j = bivalent temperature	COPd or PERd	2.60	– or %
T j = operation limit temperature	COPd or PERd	2.60	– or %
For air-to-water heat pumps: Tj=-15°C (if TOL < -20°C)	COPd or PERd	x,xx	– or %
Cycling interval efficiency	COPcyc or PERcyc	x,xx	– or %
Heating water operating limit temperature	WTOL	65	°C

Medium temperature application

Item	Symbol	Value	Unit
Rated heat output (*)	P_{rated}	12	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	P_{dh}	10.4	kW
T j = + 2 °C	P_{dh}	6.3	kW
T j = + 7 °C	P_{dh}	4.7	kW
T j = + 12 °C	P_{dh}	4.6	kW
T j = bivalent temperature	P_{dh}	10.4	kW
T j = operation limit temperature	P_{dh}	10.9	kW
For air-to-water heat pumps: Tj=-15°C (if TOL < -20°C)	P_{dh}	x,x	kW
Bivalent temperature	T_{biv}	-7	°C
Cycling interval capacity for heating	P_{cych}	x,x	kW
Degradation co-efficient(**)	C_{dh}	0.9	

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η_S	136%	
Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	COPd or PERd	2.16	– or %
T j = + 2 °C	COPd or PERd	3.35	– or %
T j = + 7 °C	COPd or PERd	4.66	– or %
T j = + 12 °C	COPd or PERd	6.62	– or %
T j = bivalent temperature	COPd or PERd	2.16	– or %
T j = operation limit temperature	COPd or PERd	1.86	– or %
For air-to-water heat pumps: Tj=-15°C (if TOL < -20°C)	COPd or PERd	x,xx	– or %
For air -to-water heat pumps: Operation limit temperature	TOL	-15	°C
Cycling interval efficiency	COPcyc or PERcyc	x,xx	– or %
Heating water operating limit temperature	WTOL	65	°C

Power consumption in modes other than active mode			
Off mode	P_{OFF}	0.060	kW
Thermostat-off mode	P_{TO}	0.060	kW
Standby mode	P_{SB}	0.060	kW
Crankcase heater mode	P_{CK}	0.000	kW

Supplementary heater			
Rated heat output (*)	Psup	5.4	kW
Type of energy input		Electric	

Other items			
Capacity control		Variable	
Sound power level, indoors/outdoors	$L_{WA,indoor}$	44	dB
	$L_{WA,Outdoor}$	62	dB
Annual electricity consumption (Low Temp)	Q HE, (Low Temp)	5425	kWh
Annual electricity consumption (Mid Temp)	Q HE (Mid Temp)	6992	kWh

For air-to-water heat pumps: Rated air flow rate, outdoors (Low Temp)		7279	m^3/h
For air-to-water heat pumps: Rated air flow rate, outdoors (Mid. Temp)		4578	m^3/h
For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger		x	
Water Pump EEI	≤	0.23	
"The benchmark for the most efficient circulators is EEI ≤ 0,20.";			

For heat pump combination heater			
Declared load profile		x	
Daily elecrictiy consumption	Qelec	x.xxx	kWh
Annual electricity consumption	AEC	x	kWh

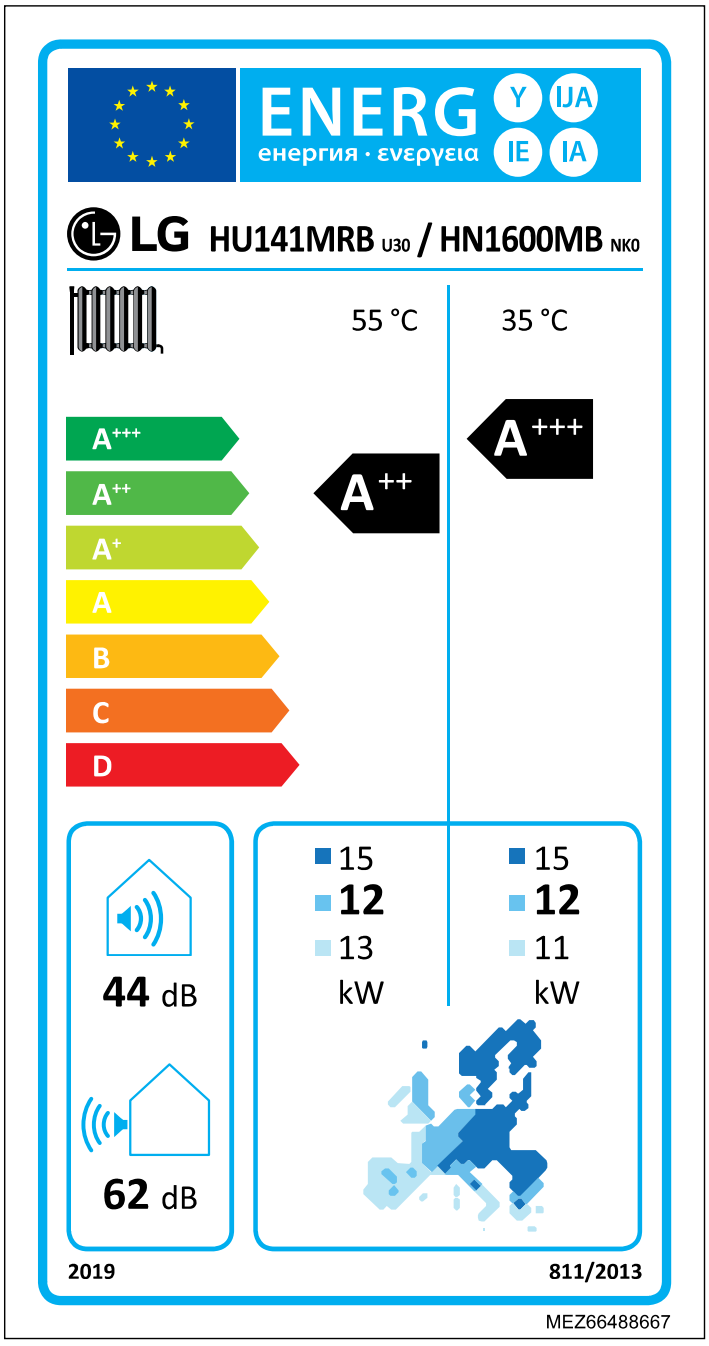
Water heating energy efficiency	η_{wh}	x	%
Daily fuel consumption	Qfuel	x,xxx	kWh
Annual fuel consumption	AFC	x	GJ

Contact details

Name : Christianna Papazahariou
Position : European Regulatory Manager
E-mail address : chris.papazahariou@lge.com Tel. 01 49 89 57 41 – 06 83 077 455
Postal address : Paris Nord II – 117 avenue des Nations BP 59372
Villepinte – 95942 Roissy CDG Cedex
www.lg.com

(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj).

(**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.


ENERG
енергия · ενεργεια
Y
IJA
IE
IA
LG HU141MRB U30 / HN1600MB NK0
55 °C
35 °C
A+++
A++
A+
A
B
C
D
A++
A+++
44 dB
62 dB
15
12
13
kW
15
12
11
kW
2019
811/2013
MEZ66488667