

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

Model(s):	HM141MRS UB40 / HM143MRS UB40	
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 heat pump:	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			
$T_j = -7\text{ °C}$	P_{dh}	10.62	kW
$T_j = +2\text{ °C}$	P_{dh}	6.46	kW
$T_j = +7\text{ °C}$	P_{dh}	4.60	kW
$T_j = +12\text{ °C}$	P_{dh}	5.30	kW
$T_j = \text{bivalent temperature}$	P_{dh}	12.00	kW
$T_j = \text{operation limit temperature}$	P_{dh}	12.00	kW
For air-to-water heat pumps: $T_j = -15\text{ °C}$ (if TOL < -20°C)	P_{dh}	x, x	kW
Bivalent temperature	T_{biv}	-10	°C
Cycling interval capacity for heat	P_{cyh}	x, x	kW
Degradation co-efficient(**)	C_{dh}	0.9	

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency η_s		182%	
Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T_j			
$T_j = -7\text{ °C}$	COPd or PERd	3.06	- or %
$T_j = +2\text{ °C}$	COPd or PERd	4.42	- or %
$T_j = +7\text{ °C}$	COPd or PERd	6.10	- or %
$T_j = +12\text{ °C}$	COPd or PERd	8.40	- or %
$T_j = \text{bivalent temperature}$	COPd or PERd	2.51	- or %
$T_j = \text{operation limit temperature}$	COPd or PERd	2.51	- or %
For air-to-water heat pumps: $T_j = -15\text{ °C}$ (if TOL < -20°C)	COPd or PERd	x, xx	- or %
Cycling interval efficiency	COPcyc or PERcyc	x, xx	- or %
Heating water operating limit temperature	T_{WOL}	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			
$T_j = -7\text{ °C}$	P_{dh}	10.39	kW
$T_j = +2\text{ °C}$	P_{dh}	6.33	kW
$T_j = +7\text{ °C}$	P_{dh}	4.65	kW
$T_j = +12\text{ °C}$	P_{dh}	4.60	kW
$T_j = \text{bivalent temperature}$	P_{dh}	10.39	kW
$T_j = \text{operation limit temperature}$	P_{dh}	10.90	kW
For air-to-water heat pumps: $T_j = -15\text{ °C}$ (if TOL < -20°C)	P_{dh}	x, x	kW
Bivalent temperature	T_{biv}	-7	°C
Cycling interval capacity for heat	P_{cyh}	x, x	kW
Degradation co-efficient(**)	C_{dh}	0.9	

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency η_s		135%	
Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T_j			
$T_j = -7\text{ °C}$	COPd or PERd	2.11	- or %
$T_j = +2\text{ °C}$	COPd or PERd	3.35	- or %
$T_j = +7\text{ °C}$	COPd or PERd	4.66	- or %
$T_j = +12\text{ °C}$	COPd or PERd	6.62	- or %
$T_j = \text{bivalent temperature}$	COPd or PERd	2.11	- or %
$T_j = \text{operation limit temperature}$	COPd or PERd	1.86	- or %
For air-to-water heat pumps: $T_j = -15\text{ °C}$ (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	T_{WOL}	65	°C

Power consumption in modes other than active mode			
Off mode	P_{OFF}	0.010	kW
Thermostat-off mode	P_{TO}	0.030	kW
Standby mode	P_{SB}	0.010	kW
Crankcase heater mode	P_{CK}	0.000	kW

Supplementary heater			
Rated heat output (*)	P_{sup}	5.4	kW
Type of energy input	Electric		

Other items			
Capacity control	Variable		
Sound power level, indoors/outdoor	$L_{WA, indoor}$		-dB
	$L_{WA, outdoor}$	61	dB
Annual electricity consumption (Low Temp)	$Q_{HE, (Low Temp)}$	5362	kWh
Annual electricity consumption (Mid Temp)	$Q_{HE, (Mid Temp)}$	7016	kWh

For air-to-water heat pumps: Rated air flow rate, outdoors (Low Temp)		2388	m ³ /h
For air-to-water heat pumps: Rated air flow rate, outdoors (Mid Temp)		3690	m ³ /h
For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger		x	
Water Pump EEI	≤	0.20	
"The benchmark for the most efficient circulators is EEI ≤ 0.20." ;			

For heat pump combination heater			
Declared load profile	x		
Daily electricity consumption	Q_{elec}	x, xxx	kWh
Annual electricity consumption	AEC	x	kWh

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

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(*) For heat pump space heaters and heat pump combination heaters, the rated heat output P_{rated} is equal to the design load for heating $P_{designh}$, and the rated heat output of a supplementary heater P_{sup} is equal to the supplementary capacity for heating $sup(T_j)$.

(**) If C_{dh} is not determined by measurement then the default degradation coefficient is $C_{dh} = 0.9$.

Warmer climate

Low temperature application

Item	Symbol	Value	Unit
Rated heat output (*)	P_{rated}	11	kW
Declared capacity for heating for part load at indoor temperature 20 ° C and outdoor temperature T_j			
$T_j = +2\text{ ° C}$	P_{dh}	10.50	kW
$T_j = +7\text{ ° C}$	P_{dh}	6.80	kW
$T_j = +12\text{ ° C}$	P_{dh}	5.19	kW
T_j = bivalent temperature	P_{dh}	10.50	kW
T_j = operation limit temperature	P_{dh}	10.50	kW
For air-to-water heat pumps: $T_j = -15\text{ ° C}$ (if TOL < -20°C)	P_{dh}	x, x	kW
Bivalent temperature	T_{biv}	2	° C
Cycling interval capacity for heat	P_{cyc}	x, x	kW
Degradation co-efficient(**)	C_{dh}	0.9	

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency η_s		231%	
Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 ° C and outdoor temperature T_j			
$T_j = +2\text{ ° C}$	COPd or PERd	3.50	- or %
$T_j = +7\text{ ° C}$	COPd or PERd	5.35	- or %
$T_j = +12\text{ ° C}$	COPd or PERd	7.45	- or %
T_j = bivalent temperature	COPd or PERd	3.50	- or %
T_j = operation limit temperature	COPd or PERd	3.50	- or %
For air-to-water heat pumps: $T_j = -15\text{ ° C}$ (if TOL < -20°C)	COPd or PERd	x, xx	- or %
Cycling interval efficiency	COPcyc or PERcyc	x, xx	- or %

Medium temperature application

Item	Symbol	Value	Unit
Rated heat output (*)	P_{rated}	14	kW
Declared capacity for heating for part load at indoor temperature 20 ° C and outdoor temperature T_j			
$T_j = +2\text{ ° C}$	P_{dh}	14.10	kW
$T_j = +7\text{ ° C}$	P_{dh}	9.06	kW
$T_j = +12\text{ ° C}$	P_{dh}	4.75	kW
T_j = bivalent temperature	P_{dh}	14.10	kW
T_j = operation limit temperature	P_{dh}	14.10	kW
For air-to-water heat pumps: $T_j = -15\text{ ° C}$ (if TOL < -20°C)	P_{dh}	x, x	kW
Bivalent temperature	T_{biv}	2	° C
Cycling interval capacity for heat	P_{cyc}	x, x	kW
Degradation co-efficient(**)	C_{dh}	0.9	

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency η_s		170%	
Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 ° C and outdoor temperature T_j			
$T_j = +2\text{ ° C}$	COPd or PERd	2.34	- or %
$T_j = +7\text{ ° C}$	COPd or PERd	3.64	- or %
$T_j = +12\text{ ° C}$	COPd or PERd	5.70	- or %
T_j = bivalent temperature	COPd or PERd	2.34	- or %
T_j = operation limit temperature	COPd or PERd	2.34	- or %
For air-to-water heat pumps: $T_j = -15\text{ ° C}$ (if TOL < -20°C)	COPd or PERd	x, xx	- or %
Cycling interval efficiency	COPcyc or PERcyc	x, xx	- or %

Annual electricity consumption (Low Temp)	Q HE, (Low Temp)	2400	kWh
Annual electricity consumption (Mid Temp)	Q HE (Mid Temp)	4361	kWh

Colder climate

Low temperature application

Item	Symbol	Value	Unit
Rated heat output (*)	P_{rated}	15	kW
Declared capacity for heating for part load at indoor temperature 20 ° C and outdoor temperature T_j			
$T_j = -7\text{ ° C}$	P_{dh}	8.78	kW
$T_j = +2\text{ ° C}$	P_{dh}	5.35	kW
$T_j = +7\text{ ° C}$	P_{dh}	4.85	kW
$T_j = +12\text{ ° C}$	P_{dh}	5.10	kW
T_j = bivalent temperature	P_{dh}	8.78	kW
T_j = operation limit temperature	P_{dh}	9.80	kW
For air-to-water heat pumps: $T_j = -15\text{ ° C}$ (if TOL < -20°C)	P_{dh}	x, x	kW
Bivalent temperature	T_{biv}	-7	° C
Cycling interval capacity for heat	P_{cyc}	x, x	kW
Degradation co-efficient(**)	C_{dh}	0.9	

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency η_s		132%	
Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 ° C and outdoor temperature T_j			
$T_j = -7\text{ ° C}$	COPd or PERd	3.05	- or %
$T_j = +2\text{ ° C}$	COPd or PERd	4.40	- or %
$T_j = +7\text{ ° C}$	COPd or PERd	6.25	- or %
$T_j = +12\text{ ° C}$	COPd or PERd	7.87	- or %
T_j = bivalent temperature	COPd or PERd	3.05	- or %
T_j = operation limit temperature	COPd or PERd	2.47	- or %
For air-to-water heat pumps: $T_j = -15\text{ ° C}$ (if TOL < -20°C)	COPd or PERd	x, xx	- or %
Cycling interval efficiency	COPcyc or PERcyc	x, xx	- or %

Medium temperature application

Item	Symbol	Value	Unit
Rated heat output (*)	P_{rated}	15	kW
Declared capacity for heating for part load at indoor temperature 20 ° C and outdoor temperature T_j			
$T_j = -7\text{ ° C}$	P_{dh}	9.08	kW
$T_j = +2\text{ ° C}$	P_{dh}	5.54	kW
$T_j = +7\text{ ° C}$	P_{dh}	5.00	kW
$T_j = +12\text{ ° C}$	P_{dh}	4.50	kW
T_j = bivalent temperature	P_{dh}	9.08	kW
T_j = operation limit temperature	P_{dh}	9.60	kW
For air-to-water heat pumps: $T_j = -15\text{ ° C}$ (if TOL < -20°C)	P_{dh}	x, x	kW
Bivalent temperature	T_{biv}	-7	° C
Cycling interval capacity for heat	P_{cyc}	x, x	kW
Degradation co-efficient(**)	C_{dh}	0.9	

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency η_s		101%	
Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 ° C and outdoor temperature T_j			
$T_j = -7\text{ ° C}$	COPd or PERd	2.28	- or %
$T_j = +2\text{ ° C}$	COPd or PERd	3.10	- or %
$T_j = +7\text{ ° C}$	COPd or PERd	4.80	- or %
$T_j = +12\text{ ° C}$	COPd or PERd	6.56	- or %
T_j = bivalent temperature	COPd or PERd	2.28	- or %
T_j = operation limit temperature	COPd or PERd	1.82	- or %
For air-to-water heat pumps: $T_j = -15\text{ ° C}$ (if TOL < -20°C)	COPd or PERd	x, xx	- or %
Cycling interval efficiency	COPcyc or PERcyc	x, xx	- or %

Annual electricity consumption (Low Temp)	Q HE, (Low Temp)	10578	kWh
Annual electricity consumption (Mid Temp)	Q HE (Mid Temp)	14258	kWh

- Commission regulation 327/2011 EU
- Reference standard ISO 12759:2010

1. Product model information

Requirements	Information
Overall efficiency (η)	45.7
Measurement category	A
Efficiency category	Static
Efficiency grade at optimum efficiency point	40
VSD (variable speed drives)	Yes
Year of manufacture	2025
Manufacturer's name or Trade Mark	LG Electronics Inc.
Commercial registration number	107-86-14075
Place of manufacturer	China
Product's model number	HM1**MRS UB4*
Rated power input(s) (kW)	0.17
Flow rate (m ³ /s)	1.732
Pressure (Pa)	40
Rotations per minute	550
The specific ratio	3.0

2. Disassembly, recycling or disposal at end-of-life

This product shall be disposed of separately from household-waste based on each local laws. When this product reaches its end of life, dispose of it at your local waste collection or recycling center.

3. Installing, using and maintaining the fan

Periodic maintenance and checks by a skilled & trained personnel are required to ensure that the product is maintained in good condition. In details, see the end product installation and owner's manual included in the end-product.