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

Model(s):	HM161MRS UB40 / HM163MRS 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	~~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}	10.88	kW
T j = + 2 ° C	P_{dh}	6.62	kW
T j = + 7 ° C	P_{dh}	5.00	kW
T j = + 12 ° C	P_{dh}	5.27	kW
T j = bivalent temperature	P_{dh}	12.30	kW
T j = operation limit temperature	P_{dh}	12.30	kW
For air-to-water heat pumps: Tj=-15℃ (if TOL < -20℃)	P_{dh}	x,x	kW
Bivalent temperature	T_{biv}	-10	℃
Cycling interval capacity for heat	P_{cych}	x,x	kW
Degradation co-efficient(**)	C_{dh}	0.9	

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η_S	178%	
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	3.03	- or %
T j = + 2 ° C	COPd or PERd	4.36	- or %
T j = + 7 ° C	COPd or PERd	5.90	- or %
T j = + 12 ° C	COPd or PERd	8.15	- or %
T j = bivalent temperature	COPd or PERd	2.50	- or %
T j = operation limit temperature	COPd or PERd	2.50	- or %
For air-to-water heat pumps: Tj=-15℃ (if TOL < -20℃)	COPd or PERd	x,xx	- or %
Cycling interval efficiency	COPcyc or PERcyc	x,xx	- or %
Heating water operating limit temperature	WTOL	65	℃

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}	10.65	kW
T j = + 2 ° C	P_{dh}	6.50	kW
T j = + 7 ° C	P_{dh}	5.20	kW
T j = + 12 ° C	P_{dh}	4.60	kW
T j = bivalent temperature	P_{dh}	10.65	kW
T j = operation limit temperature	P_{dh}	11.10	kW
For air-to-water heat pumps: Tj=-15℃ (if TOL < -20℃)	P_{dh}	x,x	kW
Bivalent temperature	T_{biv}	-7	℃
Cycling interval capacity for heat	P_{cych}	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 ° C	COPd or PERd	2.13	- or %
T j = + 2 ° C	COPd or PERd	3.34	- or %
T j = + 7 ° C	COPd or PERd	4.65	- or %
T j = + 12 ° C	COPd or PERd	6.58	- or %
T j = bivalent temperature	COPd or PERd	2.13	- or %
T j = operation limit temperature	COPd or PERd	1.85	- or %
For air-to-water heat pumps: Tj=-15℃ (if TOL < -20℃)	COPd or PERd	x,xx	- or %
For air -to-water heat pumps: Operation limit temperature	TOL	-15	℃
Cycling interval efficiency	COPcyc or PERcyc	x,xx	- or %
Heating water operating limit temperature	WTOL	65	℃

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 (*)	Psup	5.2	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)	5604	kWh
Annual electricity consumption (Mid Temp)	Q HE (Mid Temp)	7213	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 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

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(*) 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.

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 ° C	P_{dh}	10.70	kW
T j = + 7 ° C	P_{dh}	6.90	kW
T j = + 12 ° C	P_{dh}	5.40	kW
T j = bivalent temperature	P_{dh}	10.70	kW
T j = operation limit temperature	P_{dh}	10.70	kW
For air-to-water heat pumps: Tj=-15℃ (if TOL < -20℃)	P_{dh}	x,x	kW
Bivalent temperature	T_{biv}	2	℃
Cycling interval capacity for heat	P_{cych}	x,x	kW
Degradation co-efficient(**)	C_{dh}	0.9	

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η_S	228%	
Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 ° C and outdoor temperature T j			
T j = + 2 ° C	COPd or PERd	3.40	- or %
T j = + 7 ° C	COPd or PERd	5.30	- or %
T j = + 12 ° C	COPd or PERd	7.40	- or %
T j = bivalent temperature	COPd or PERd	3.40	- or %
T j = operation limit temperature	COPd or PERd	3.40	- or %
For air-to-water heat pumps: Tj=-15℃ (if TOL < -20℃)	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 ° C	P_{dh}	14.10	kW
T j = + 7 ° C	P_{dh}	9.06	kW
T j = + 12 ° C	P_{dh}	4.95	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: Tj=-15℃ (if TOL < -20℃)	P_{dh}	x,x	kW
Bivalent temperature	T_{biv}	2	℃
Cycling interval capacity for heat	P_{cych}	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 ° C	COPd or PERd	2.34	- or %
T j = + 7 ° C	COPd or PERd	3.64	- or %
T j = + 12 ° C	COPd or PERd	5.72	- 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: Tj=-15℃ (if TOL < -20℃)	COPd or PERd	x,xx	- or %
Cycling interval efficiency	COPcyc or PERcyc	x,xx	- or %

Annual electricity consumption (Low Temp)	Q HE, (Low Temp)	2473	kWh
Annual electricity consumption (Mid Temp)	Q HE (Mid Temp)	4364	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 ° C	P_{dh}	9.08	kW
T j = + 2 ° C	P_{dh}	5.60	kW
T j = + 7 ° C	P_{dh}	5.00	kW
T j = + 12 ° C	P_{dh}	5.30	kW
T j = bivalent temperature	P_{dh}	9.08	kW
T j = operation limit temperature	P_{dh}	10.00	kW
For air-to-water heat pumps: Tj=-15℃ (if TOL < -20℃)	P_{dh}	x,x	kW
Bivalent temperature	T_{biv}	-7	℃
Cycling interval capacity for heat	P_{cych}	x,x	kW
Degradation co-efficient(**)	C_{dh}	0.9	

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η_S	131%	
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	3.00	- or %
T j = + 2 ° C	COPd or PERd	4.40	- or %
T j = + 7 ° C	COPd or PERd	6.00	- or %
T j = + 12 ° C	COPd or PERd	7.85	- or %
T j = bivalent temperature	COPd or PERd	3.00	- or %
T j = operation limit temperature	COPd or PERd	2.45	- or %
For air-to-water heat pumps: Tj=-15℃ (if TOL < -20℃)	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 ° C	P_{dh}	9.32	kW
T j = + 2 ° C	P_{dh}	5.70	kW
T j = + 7 ° C	P_{dh}	5.20	kW
T j = + 12 ° C	P_{dh}	4.70	kW
T j = bivalent temperature	P_{dh}	9.32	kW
T j = operation limit temperature	P_{dh}	9.80	kW
For air-to-water heat pumps: Tj=-15℃ (if TOL < -20℃)	P_{dh}	x,x	kW
Bivalent temperature	T_{biv}	-7	℃
Cycling interval capacity for heat	P_{cych}	x,x	kW
Degradation co-efficient(**)	C_{dh}	0.9	

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η_S	100%	
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	2.23	- or %
T j = + 2 ° C	COPd or PERd	3.10	- or %
T j = + 7 ° C	COPd or PERd	4.80	- or %
T j = + 12 ° C	COPd or PERd	6.56	- or %
T j = bivalent temperature	COPd or PERd	2.23	- or %
T j = operation limit temperature	COPd or PERd	1.80	- or %
For air-to-water heat pumps: Tj=-15℃ (if TOL < -20℃)	COPd or PERd	x,xx	- or %
Cycling interval efficiency	COPcyc or PERcyc	x,xx	- or %

Annual electricity consumption (Low Temp)	Q HE, (Low Temp)	11048	kWh
Annual electricity consumption (Mid Temp)	Q HE (Mid Temp)	14752	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.