

LG

TOTAL HVAC

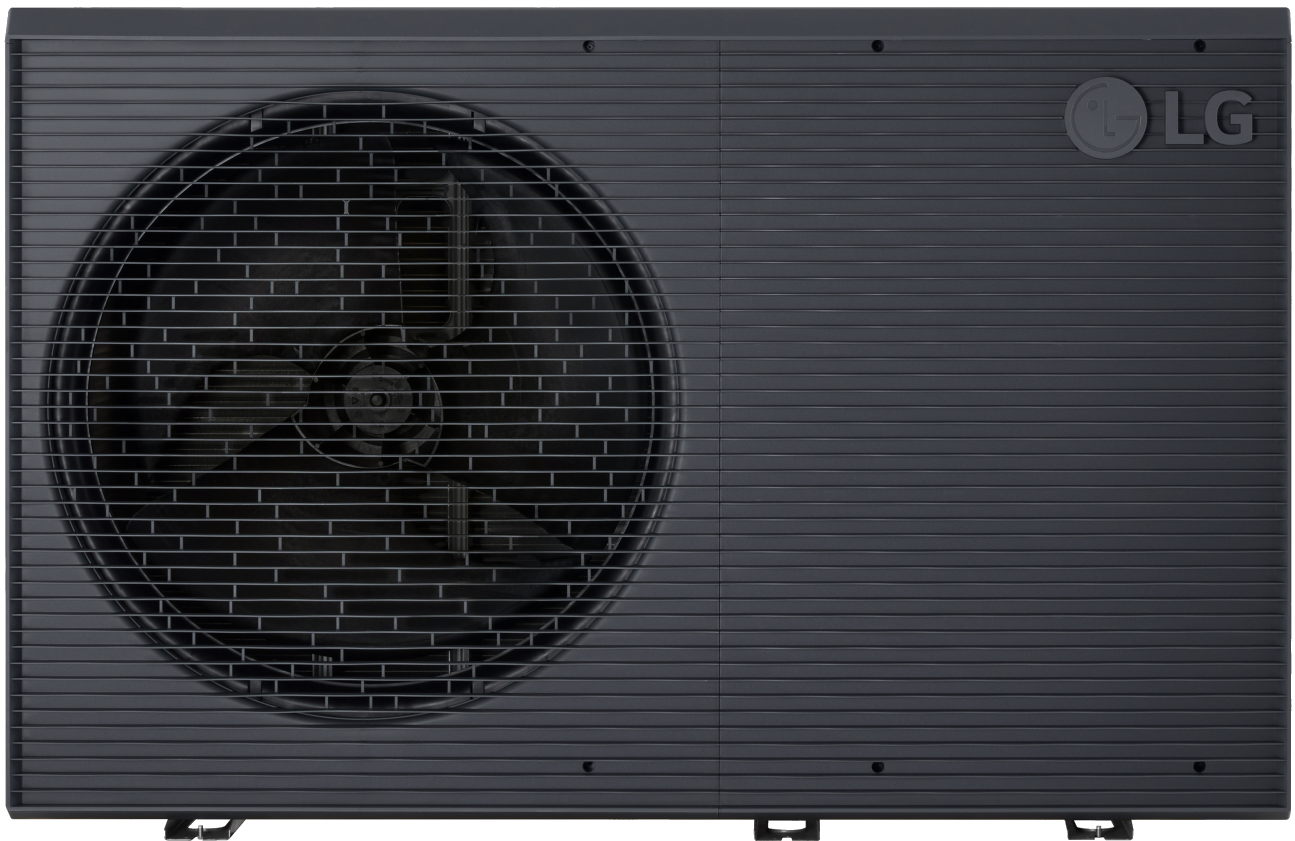
SOLUTION

PROVIDER

ENGINEERING PRODUCT DATA BOOK

Therma V

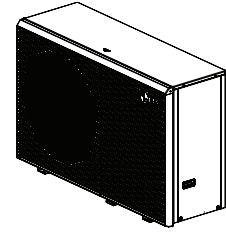
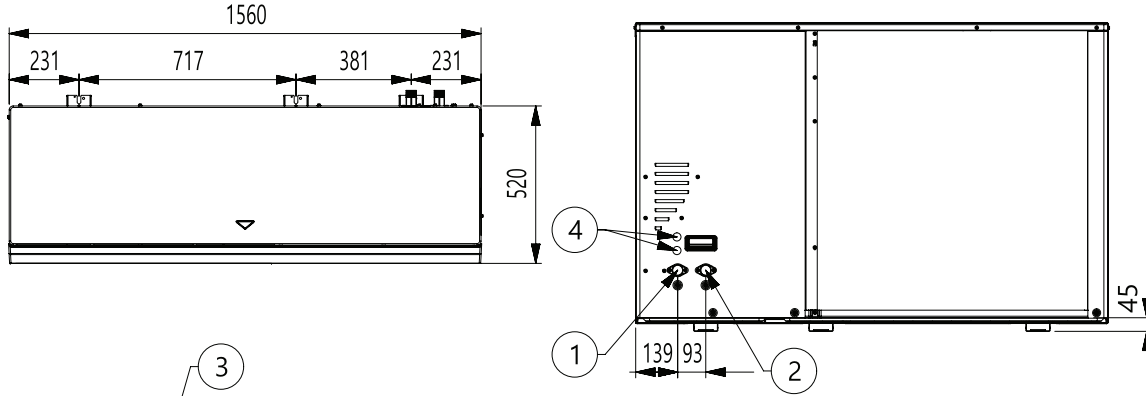
Monobloc, R290



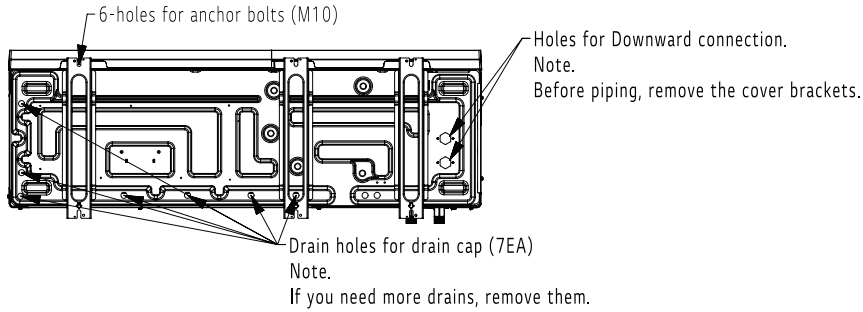
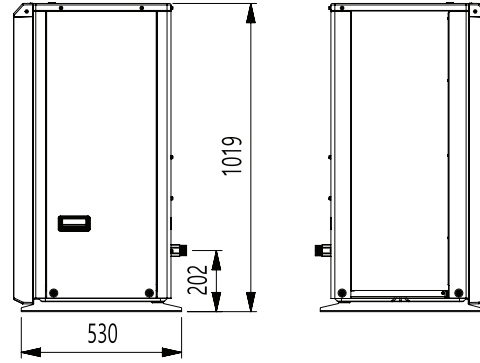
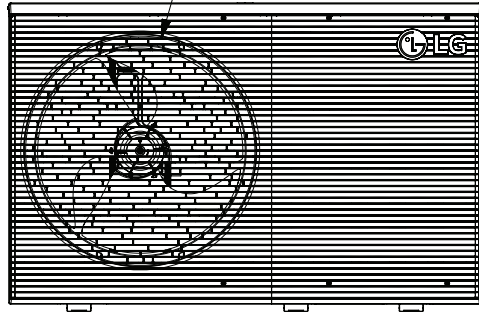
Region : EU

Published on Mar. 08, 2024

[Unit: mm]
 Chassis code : UN60B
 P/No. : TBW35993301_REV00



3D VIEW



No.	Part Name	Description
4	Access to electrical terminals	Power, Communication
3	Air discharge Grille	-
2	Entering Water Pipe	Male PT 1 inch
1	Leaving Water Pipe	Male PT 1 inch

4. Dimensions

ThERMA V Monobloc

1. Specifications

■ Combination with Hydro Unit type (3Φ)

Performance specifications					FHBW098X0 HM093HFX UB60	FHBW128B0 [HM123HF UB60]
-	-	Outdoor temp. (°CDB)	Leaving water temp. (°C)	-		
Capacity	Heating	7	35	kW	9.0	12.0
			55	kW	9.0	10.0
		2	35	kW	9.0	12.0
			55	kW	8.9	11.8
	-7	35	kW	7.0	9.3	
		55	kW	9.0	11.5	
Cooling	35	18	kW	9.0	10.5	
		7	kW	9.0	10.5	
Power input	Heating	7	35	kW	1.84	2.55
			55	kW	2.81	3.23
		2	35	kW	2.32	3.23
			55	kW	2.59	3.61
	-7	35	kW	2.88	4.01	
		55	kW	2.88	4.01	
	Cooling	35	18	kW	2.31	3.04
			7	kW	2.78	3.37
COP	Heating	7	35	W/W	4.90	4.70
			55	W/W	3.20	3.10
		2	35	W/W	3.88	3.72
			55	W/W	3.44	3.27
	-7	35	W/W	2.43	2.32	
		55	W/W	2.43	2.32	
	Cooling	35 / 24	18	W/W	3.90	3.78
			7	W/W	3.24	3.12
Seasonal space heating eff. class			35	-	A+++	A+++
Seasonal space heating efficiency (η _s)			55	-	A++	A+++
			35	-	206	215
SCOP(average climate)			55	-	147	156
			35	W/W	5.23	5.45
Water flow rate			55	W/W	3.75	3.97
			Rated(at ΔT 5°C)	ℓ /min	25.9	34.5
Operation range (outdoor temperature)		Cooling	Min.~Max.	°C(DB)	5~48	5~48
		Heating	Min.~Max.	°C(DB)	-28 ~ 35	-28 ~ 35

Electrical specifications			FHBW098X0 HM093HFX UB60	FHBW128B0 [HM123HF UB60]	
Power supply	Case 1	V, Ø, Hz	380-415, 3, 50	380-415, 3, 50	
	Limit range of voltage		V	342~457	342~457
Running current	Heating(Rated)		A	2.65	3.69
	Cooling(Rated)		A	3.21	4.20
Peak control running current	Heating		A	8	8
	Cooling		A	8	8
Recommended circuit breaker(ELCB)			A	16	16
Standby power consumption			W	10	10
Connecting cable	Power supply cable (included Earth, H07RN-F)		mm ² x cores	2.5 x 5C	2.5 x 5C
	Communication cable (H07RN-F)		mm ² x cores	0.75 x 2C	0.75 x 2C

Technical specifications			FHBW098X0 HM093HFX UB60	FHBW128B0 [HM123HF UB60]	
Refrigerant	Type		-	R290	R290
	Precharged amount		kg	1.2	1.2
	GWP		-	3	3
	t-CO ₂ eq.		-	0.0036	0.0036
	Control type		-	Electronic expansion valve	Electronic expansion valve
Compressor	Type		-	Hermetic motor compressor	Hermetic motor compressor
	Model x No.		-	PJQC062MAA x 1	PJQC062MAA x 1
	Piston displacement		cm ³ /rev	61.5	61.5
	Motor type		-	BLDC	BLDC
Refrigerant oil	Type		-	PZ68S	PZ68S
	Charged volume		cc x No.	1200	1200
Fan	Type		-	Propeller	Propeller
	Air flow rate (rated)		m ³ /min	110 x 1	110 x 1
Fan motor	Type		-	BLDC	BLDC
	Output		W x No.	250 x 1	250 x 1
Heat exchanger	Rows x columns x FPI		-	46 x 3 x 18	46 x 3 x 18
	No.		EA	1	1
	Fin type		-	Corrugate	Corrugate

1. Specifications

Technical specifications				FHBW098X0 HM093HFX UB60	FHBW128B0 [HM123HF UB60]
Water pump***	Type			Canned type for hot water circulation	Canned type for hot water circulation
	Model (maker, name)			GRUNDFOS, UPML GEO 20-105 CHBL	GRUNDFOS, UPML GEO 20-105 CHBL
	Motor type			BLDC	BLDC
	Steps of pumping performance			Variable speed 10% to 100%	Variable speed 10% to 100%
	Power input	Min.~Max.	W	17~152	17~152
		Rated	W	145	145
Max. head			m	11	
Water pump 2***	Type			Canned type for hot water circulation	Canned type for hot water circulation
	Model (maker, name)			OH SUNG, ODM-061P	OH SUNG, ODM-061P
	Motor type			BLDC	BLDC
	Steps of pumping performance			Variable speed 10% to 100%	Variable speed 10% to 100%
	Power input	Min.~Max.	W	17 ~ 152	17 ~ 152
		Rated	W	145	145
Max. head			m	11	
Heat exchanger (refrigerant to water)	Type			Brazed plate HEX	Brazed plate HEX
	No.			1	1
	Number of plate	EA		76	76
	Water volume	ℓ		1	1
Water strainer	Supply type			Loose supply (externally installed)	Loose supply (externally installed)
	Mesh size	mesh		30	30
	Max. particle size	mm		0.6	0.6
	Material			Stainless steel	Stainless steel
Safety valve (water cycle)	Pressure limit	Upper limit	bar	3.0	3.0
Flow sensor	Type			Vortex	Vortex
	Model(maker,name)			SIKA VVXC9SNBUC00252P	SIKA VVXC9SNBUC00252P
	Measuring range	Min. ~ Max.	ℓ /min	5 ~ 80	5 ~ 80
			Trigger point	ℓ /min	10
Water pressure sensor	Model (maker, name)			Sensata OFM(2HMP)	Sensata OFM(2HMP)
	Measuring range	Min. ~ Max.	bar	0 ~ 20	0 ~ 20
Sound pressure level	Heating(rated, @5m)		dB(A)	27	27
Sound power level	Heating	Low noise	dB(A)	48	48
		Rated	dB(A)	49	49
		Daytime max.	dB(A)	59	59
Water connecting pipes	Inlet	inch		Male PT 1" according to ISO 7-1 (tapered pipe threads)	Male PT 1" according to ISO 7-1 (tapered pipe threads)
	Outlet	inch		Male PT 1" according to ISO 7-1 (tapered pipe threads)	Male PT 1" according to ISO 7-1 (tapered pipe threads)
Dimensions	Net(W x H x D)	mm		1,560 x 1,019 x 520	1,560 x 1,019 x 520
	Shipping(W x H x D)	mm		1,620 x 1,180 x 625	1,620 x 1,180 x 625
Weight	Net	kg		181.0	181.0
	Shipping	kg		199.0	199.0
Exterior	Color of front grille			Dark dawn gray	Dark dawn gray
	RAL Code of front grille			RAL 7012	RAL 7012

Note

- Due to our policy of innovation, some specifications may be changed without notification.
- Wiring cable size must comply with the applicable local and national codes. And "Electric characteristics" chapter should be considered for electrical work and design. Especially the power cable and circuit breaker should be selected in accordance with that.
- Sound power level is measured in accordance with EN 12102-1 and ISO 9614.
 - Rated : This mode is measured on the rated condition in the semi-anechoic rooms. Therefore, these values may vary depending on operation conditions.
 - Daytime max : This mode is measured based on max. fan RPM and max. compressor Hz. that can be reached under outdoor air temperature 2°C.
 - Low noise : This mode lowers noise by limiting the compressor Hz. and fan RPM, and thus the performance may be limited.
- Performances are accordance with EN14511 and reflect ErP testing conditions. The values indicated above are the declared values at rated conditions acc. ErP regulation. For max. capacities, please refer to Performance Data.
- This product contains Fluorinated greenhouse gases.
- SCOP is in accordance with EN14825.
- Rated running currents are based on the declared values under the following conditions.
 - Heating : Outdoor Temp. 7°CDB / 6°CWB, Leaving Water Temp. 35°C
 - Cooling : Outdoor Temp. 35°C(DB) / 24°C(WB), Leaving Water Temp. 18°C
- All installation sites must be equipped with an earth leakage circuit breaker (ELCB).
 - * DHW 65~80°C Operating is available only when the booster heater is operating.
 - ** This is the power input i accordance with the 80% pump capacity setting at rated water flow rate. When the OH SUNG pump is set as 80% capacity, it's head is similar to that of the GRUNDFOS pump at rated water flow rate.
 - *** In the case of integrated water pump, either water pump or water pump 2 will be applied.

1. Specifications

Performance specifications					FHBW148B0 [HM143HF UB60]	FHBW168B0 [HM163HF UB60]
-	-	Outdoor temp. (°CDB)	Leaving water temp. (°C)	-		
Capacity	Heating	7	35	kW	14.0	16.0
			55	kW	11.0	12.0
		2	35	kW	14.0	14.5
	Cooling	-7	35	kW	13.0	13.8
			55	kW	10.3	10.9
		35	18	kW	12.0	12.5
Power input	Heating	7	35	kW	3.11	3.72
			55	kW	3.38	3.63
		2	35	kW	3.88	4.15
	Cooling	-7	35	kW	4.05	4.35
			55	kW	4.52	4.82
		35	18	kW	3.24	3.38
COP	Heating	7	35	W/W	4.50	4.30
			55	W/W	3.25	3.30
		2	35	W/W	3.61	3.49
	Cooling	-7	35	W/W	3.21	3.17
			55	W/W	2.28	2.26
		35	18	W/W	3.70	3.70
EER	Cooling	35 / 24	7	W/W	2.99	2.95
Seasonal space heating eff. class			35	-	A+++	A+++
Seasonal space heating efficiency (η _s)			55	-	A+++	A+++
SCOP(average climate)			35	W/W	212	201
Water flow rate			55	-	155	154
Operation range (outdoor temperature)			35	W/W	5.38	5.11
Rated(at ΔT 5°C)			55	W/W	3.96	3.92
Water flow rate				ℓ /min	40.3	46.0
Cooling			Min.~Max.	°C(DB)	5~48	5~48
Heating			Min.~Max.	°C(DB)	-28 ~ 35	-28 ~ 35

Electrical specifications			FHBW148B0 [HM143HF UB60]	FHBW168B0 [HM163HF UB60]
Power supply	Case 1	V, Ø, Hz	380-415, 3, 50	380-415, 3, 50
	Limit range of voltage	V	342~457	342~457
Running current	Heating(Rated)	A	4.49	5.37
	Cooling(Rated)	A	4.44	4.75
Peak control running current	Heating	A	9	10
	Cooling	A	9	10
Recommended circuit breaker(ELCB)		A	16	16
Standby power consumption		W	10	10
Connecting cable	Power supply cable (included Earth, H07RN-F)	mm ² x cores	2.5 x 5C	2.5 x 5C
	Communication cable (H07RN-F)	mm ² x cores	0.75 x 2C	0.75 x 2C

Technical specifications			FHBW148B0 [HM143HF UB60]	FHBW168B0 [HM163HF UB60]
Refrigerant	Type	-	R290	R290
	Precharged amount	kg	1.2	1.2
	GWP	-	3	3
	t-CO ₂ eq.	-	0.0036	0.0036
Compressor	Control type	-	Electronic expansion valve	Electronic expansion valve
	Type	-	Hermetic motor compressor	Hermetic motor compressor
	Model x No.	-	PJQC062MAA x 1	PJQC062MAA x 1
	Piston displacement	cm ³ /rev	61.5	61.5
Refrigerant oil	Motor type	-	BLDC	BLDC
	Type	-	PZ68S	PZ68S
Fan	Charged volume	cc x No.	1200	1200
	Type	-	Propeller	Propeller
Fan motor	Air flow rate (rated)	m ³ /min	110 x 1	110 x 1
	Type	-	BLDC	BLDC
Heat exchanger	Output	W x No.	250 x 1	250 x 1
	Rows x columns x FPI	-	46 x 3 x 18	46 x 3 x 18
	No.	EA	1	1
	Fin type	-	Corrugate	Corrugate

1. Specifications

Technical specifications				FHBW148B0 [HM143HF UB60]	FHBW168B0 [HM163HF UB60]
Water pump***	Type			Canned type for hot water circulation	Canned type for hot water circulation
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	Motor type			BLDC	BLDC
	Steps of pumping performance			Variable speed 10% to 100%	Variable speed 10% to 100%
	Power input	Min.~Max.	W	17~152	17~152
		Rated	W	145	145
Max. head			m	11	
Water pump 2***	Type			Canned type for hot water circulation	Canned type for hot water circulation
	Model (maker, name)			OH SUNG, ODM-061P	OH SUNG, ODM-061P
	Motor type			BLDC	BLDC
	Steps of pumping performance			Variable speed 10% to 100%	Variable speed 10% to 100%
	Power input	Min.~Max.	W	17 ~ 152	17 ~ 152
		Rated	W	145	145
Max. head			m	11	
Heat exchanger (refrigerant to water)	Type			Brazed plate HEX	Brazed plate HEX
	No.			1	1
	Number of plate	EA		76	76
	Water volume	ℓ		1	1
Water strainer	Supply type			Loose supply (externally installed)	Loose supply (externally installed)
	Mesh size	mesh		30	30
	Max. particle size	mm		0.6	0.6
	Material			Stainless steel	Stainless steel
Safety valve (water cycle)	Pressure limit	Upper limit	bar	3.0	3.0
Flow sensor	Type			Vortex	Vortex
	Model(maker,name)			SIKA VVXC9SNBUC00252P	SIKA VVXC9SNBUC00252P
	Measuring range	Min. ~ Max.	ℓ /min	5 ~ 80	5 ~ 80
		Trigger point	ℓ /min		10
Water pressure sensor	Model (maker, name)			Sensata OFM(2HMP)	Sensata OFM(2HMP)
	Measuring range	Min. ~ Max.	bar	0 ~ 20	0 ~ 20
Sound pressure level	Heating(rated, @5m)		dB(A)	29	30
Sound power level	Heating	Low noise	dB(A)	50	51
		Rated	dB(A)	51	52
		Daytime max.	dB(A)	60	61
Water connecting pipes	Inlet	inch		Male PT 1" according to ISO 7-1 (tapered pipe threads)	Male PT 1" according to ISO 7-1 (tapered pipe threads)
	Outlet	inch		Male PT 1" according to ISO 7-1 (tapered pipe threads)	Male PT 1" according to ISO 7-1 (tapered pipe threads)
Dimensions	Net(W x H x D)	mm		1,560 x 1,019 x 520	1,560 x 1,019 x 520
	Shipping(W x H x D)	mm		1,620 x 1,180 x 625	1,620 x 1,180 x 625
Weight	Net	kg		181.0	181.0
	Shipping	kg		199.0	199.0
Exterior	Color of front grille			Dark dawn gray	Dark dawn gray
	RAL Code of front grille			RAL 7012	RAL 7012

Note

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- Sound power level is measured in accordance with EN 12102-1 and ISO 9614.
 - Rated : This mode is measured on the rated condition in the semi-anechoic rooms. Therefore, these values may vary depending on operation conditions.
 - Daytime max : This mode is measured based on max. fan RPM and max. compressor Hz. that can be reached under outdoor air temperature 2°C.
 - Low noise : This mode lowers noise by limiting the compressor Hz. and fan RPM, and thus the performance may be limited.
- Performances are accordance with EN14511 and reflect ErP testing conditions. The values indicated above are the declared values at rated conditions acc. ErP regulation. For max. capacities, please refer to Performance Data.
- This product contains Fluorinated greenhouse gases.
- SCOP is in accordance with EN14825.
- Rated running currents are based on the declared values under the following conditions.
 - Heating : Outdoor Temp. 7°CDB / 6°CWB, Leaving Water Temp. 35°C
 - Cooling : Outdoor Temp. 35°C(DB) / 24°C(WB), Leaving Water Temp. 18°C
- All installation sites must be equipped with an earth leakage circuit breaker (ELCB).
 - * DHW 65~80°C Operating is available only when the booster heater is operating.
 - ** This is the power input i accordance with the 80% pump capacity setting at rated water flow rate. When the OH SUNG pump is set as 80% capacity, it's head is similar to that of the GRUNDFOS pump at rated water flow rate.
 - *** In the case of integrated water pump, either water pump or water pump 2 will be applied.

7. Capacity Tables

7.1 Heating Operation

■ Maximum Capacity (Include defrost effect)

◆ FHBW098X0 [HM093HFX UB60]

Outdoor Temp. [°C DB]	Water flow rate 25.9 LPM								Water flow rate 16.2 LPM				Water flow rate 12.9 LPM							
	LWT 30 °C		LWT 35 °C		LWT 40 °C		LWT 45 °C		LWT 50 °C		LWT 55 °C		LWT 60 °C		LWT 65 °C		LWT 70 °C		LWT 75 °C	
	TC	COP	TC	COP	TC	COP	TC	COP	TC	COP	TC	COP	TC	COP	TC	COP	TC	COP	TC	COP
-25	7.84	2.45	7.56	2.25	7.30	2.04	7.07	1.84	6.86	1.62	6.37	1.33								
-20	9.00	2.79	8.80	2.56	8.63	2.36	8.52	2.15	8.51	1.94	8.27	1.70	6.77	1.42						
-15	9.00	3.17	9.00	2.95	9.00	2.72	9.00	2.50	9.00	2.33	9.00	2.21	8.71	1.78	7.17	1.49				
-7	9.00	3.78	9.00	3.44	9.00	3.22	9.00	3.02	9.00	2.80	9.00	2.60	9.00	2.29	9.00	2.01	8.99	1.78		
-4	9.00	4.00	9.00	3.64	9.00	3.43	9.00	3.19	9.00	2.98	9.00	2.74	9.00	2.47	9.00	2.21	9.00	1.94	8.91	1.77
-2	9.00	4.16	9.00	3.79	9.00	3.56	9.00	3.33	9.00	3.08	9.00	2.84	9.00	2.58	9.00	2.33	9.00	2.07	9.00	1.85
2	9.00	4.82	9.00	3.88	9.00	3.94	9.00	3.67	9.00	3.40	9.00	3.09	9.00	2.72	8.08	1.68	6.84	1.44	6.36	1.34
7	9.00	5.56	9.00	4.90	9.00	4.47	9.00	4.15	9.00	3.80	9.00	3.52	9.00	2.99	9.00	2.13	8.03	1.74	7.67	1.60
10	9.00	6.00	9.00	5.19	9.00	4.81	9.00	4.44	9.00	4.05	9.00	3.64	9.00	3.13	9.00	2.35	9.00	2.05	8.95	1.82
15	9.00	6.59	9.00	5.90	9.00	5.39	9.00	4.92	9.00	4.46	9.00	3.98	9.00	3.51	9.00	2.67	9.00	2.49	9.00	2.25
18	9.00	6.94	9.00	6.28	9.00	5.73	9.00	5.22	9.00	4.71	9.00	4.15	9.00	3.74	9.00	2.90	9.00	2.66	9.00	2.37
20	9.00	7.17	9.00	6.54	9.00	5.95	9.00	5.42	9.00	4.89	9.00	4.36	9.00	3.88	9.00	3.05	9.00	2.78	9.00	2.46
35					9.00	7.66	9.00	6.71	9.00	6.11	9.00	5.51	9.00	4.92	9.00	4.32	9.00	3.63	9.00	3.06

Note

1. DB : Dry bulb temperature(°C), LWT : Leaving water temperature(°C), LPM : Liter per minute (ℓ /min)
2. TC : Total capacity(kW), EER: Energy efficiency ratio(kW/kW), COP : Coefficient of performance (kW/kW)
3. Direct interpolation is permissible. Do not extrapolate.
4. Measuring procedure follows EN14511.
 - Rated values are based on standard conditions, and it can be found on specifications.
 - Above table values may not be matched according to installation condition. Except for rated value, the performance is not guaranteed.
 - In accordance with the test standard(or nations), the results may vary.
5. The Shaded areas are not guaranteed continuous operation.

7. Capacity Tables

◆ FHBW126B0 [HM121HF UB60], FHBW128B0 [HM123HF UB60]

Outdoor Temp. [°C DB]	Water flow rate 34.5 LPM								Water flow rate 21.6 LPM				Water flow rate 17.3 LPM									
	LWT 30 °C		LWT 35 °C		LWT 40 °C		LWT 45 °C		LWT 50 °C		LWT 55 °C		LWT 60°C		LWT 65 °C		LWT 70°C		LWT 75 °C			
	TC	COP	TC	COP	TC	COP	TC	COP	TC	COP	TC	COP	TC	COP	TC	COP	TC	COP	TC	COP		
-25	8.36	2.42	8.07	2.23	7.79	2.02	7.54	1.82	7.32	1.60	6.37	1.33										
-20	9.60	2.76	9.39	2.53	9.20	2.33	9.09	2.13	9.08	1.92	8.27	1.70	6.77	1.42								
-15	10.84	3.09	10.69	2.88	10.55	2.66	10.55	2.44	10.84	2.27	10.76	2.14	8.71	1.78	7.17	1.49						
-7	12.00	3.62	12.00	3.30	12.00	3.08	12.00	2.88	12.00	2.66	12.00	2.48	11.27	2.19	10.00	1.97	8.99	1.78				
-4	12.00	3.84	12.00	3.49	12.00	3.29	12.00	3.05	12.00	2.84	12.00	2.60	12.00	2.35	10.88	2.13	9.65	1.91	8.91	1.77		
-2	12.00	3.98	12.00	3.63	12.00	3.41	12.00	3.19	12.00	2.95	12.00	2.70	12.00	2.45	11.45	2.22	10.29	2.01	9.32	1.84		
2	12.00	4.62	12.00	3.72	12.00	3.78	12.00	3.52	12.00	3.26	12.00	2.95	12.00	2.59	8.08	1.68	6.84	1.44	6.36	1.34		
7	12.00	5.32	12.00	4.70	12.00	4.28	12.00	3.97	12.00	3.64	12.00	3.37	12.00	2.86	10.28	2.08	8.34	1.73	7.67	1.60		
10	12.00	5.74	12.00	4.97	12.00	4.61	12.00	4.25	12.00	3.88	12.00	3.48	12.00	3.00	11.20	2.28	9.90	2.02	8.95	1.82		
15	12.00	6.31	12.00	5.65	12.00	5.16	12.00	4.72	12.00	4.27	12.00	3.81	12.00	3.36	12.00	2.55	12.00	2.37	11.09	2.17		
18	12.00	6.65	12.00	6.02	12.00	5.48	12.00	5.00	12.00	4.51	12.00	3.97	12.00	3.58	12.00	2.78	12.00	2.54	11.69	2.26		
20	12.00	6.87	12.00	6.26	12.00	5.70	12.00	5.19	12.00	4.68	12.00	4.17	12.00	3.72	12.00	2.93	12.00	2.65	12.00	2.32		
35					12.00	7.33	12.00	6.42	12.00	5.85	12.00	5.28	12.00	4.71	12.00	4.14	12.00	3.46	12.00	2.90		

Note

1. DB : Dry bulb temperature(°C), LWT : Leaving water temperature(°C), LPM : Liter per minute (ℓ /min)
2. TC : Total capacity(kW), EER: Energy efficiency ratio(kW/kW), COP : Coefficient of performance (kW/kW)
3. Direct interpolation is permissible. Do not extrapolate.
4. Measuring procedure follows EN14511.
 - Rated values are based on standard conditions, and it can be found on specifications.
 - Above table values may not be matched according to installation condition. Except for rated value, the performance is not guaranteed.
 - In accordance with the test standard(or nations), the results may vary.
5. The Shaded areas are not guaranteed continuous operation.

7. Capacity Tables

◆ FHBW146B0 [HM141HF UB60], FHBW148B0 [HM143HF UB60]

Outdoor Temp. [°C DB]	Water flow rate 40.3 LPM								Water flow rate 25.2 LPM				Water flow rate 20.1 LPM									
	LWT 30 °C		LWT 35 °C		LWT 40 °C		LWT 45 °C		LWT 50 °C		LWT 55 °C		LWT 60°C		LWT 65 °C		LWT 70°C		LWT 75 °C			
	TC	COP	TC	COP	TC	COP	TC	COP	TC	COP	TC	COP	TC	COP	TC	COP	TC	COP	TC	COP		
-25	8.88	2.40	8.57	2.20	8.28	2.00	8.01	1.80	7.78	1.59	6.37	1.33										
-20	10.20	2.73	9.97	2.50	9.78	2.31	9.66	2.11	9.48	1.91	8.27	1.70	6.77	1.42								
-15	12.06	3.03	11.99	2.82	11.79	2.60	11.59	2.40	11.29	2.25	10.76	2.14	8.71	1.78	7.17	1.49						
-7	14.00	3.51	14.00	3.19	13.82	2.99	13.63	2.80	13.45	2.60	12.58	2.45	11.27	2.19	10.00	1.97	8.99	1.78				
-4	14.00	3.72	14.00	3.39	13.90	3.20	13.83	2.96	13.83	2.76	13.23	2.55	12.06	2.34	10.88	2.13	9.65	1.91	8.91	1.77		
-2	14.00	3.86	14.00	3.52	13.96	3.31	13.95	3.10	14.00	2.85	13.71	2.62	12.59	2.42	11.45	2.22	10.29	2.01	9.32	1.84		
2	14.00	4.48	14.00	3.61	14.00	3.67	14.00	3.41	14.00	3.16	14.00	2.86	13.16	2.54	8.08	1.68	6.84	1.44	6.36	1.34		
7	14.00	5.16	14.00	4.50	14.00	4.16	14.00	3.85	14.00	3.54	14.00	3.27	14.00	2.78	10.28	2.08	8.34	1.73	7.67	1.60		
10	14.00	5.57	14.00	4.82	14.00	4.48	14.00	4.12	14.00	3.76	14.00	3.38	14.00	2.91	11.20	2.28	9.90	2.02	8.95	1.82		
15	14.00	6.12	14.00	5.48	14.00	5.01	14.00	4.58	14.00	4.14	14.00	3.70	14.00	3.26	12.72	2.53	12.02	2.37	11.09	2.17		
18	14.00	6.45	14.00	5.84	14.00	5.32	14.00	4.85	14.00	4.38	14.00	3.86	14.00	3.47	13.82	2.70	12.89	2.50	11.69	2.26		
20	14.00	6.67	14.00	6.08	14.00	5.53	14.00	5.04	14.00	4.54	14.00	4.05	14.00	3.61	14.00	2.84	13.47	2.59	12.09	2.32		
35					14.00	7.12	14.00	6.23	14.00	5.68	14.00	5.12	14.00	4.57	14.00	4.01	14.00	3.34	12.80	2.85		

Note

1. DB : Dry bulb temperature(°C), LWT : Leaving water temperature(°C), LPM : Liter per minute (ℓ /min)
2. TC : Total capacity(kW), EER: Energy efficiency ratio(kW/kW), COP : Coefficient of performance (kW/kW)
3. Direct interpolation is permissible. Do not extrapolate.
4. Measuring procedure follows EN14511.
 - Rated values are based on standard conditions, and it can be found on specifications.
 - Above table values may not be matched according to installation condition. Except for rated value, the performance is not guaranteed.
 - In accordance with the test standard(or nations), the results may vary.
5. The Shaded areas are not guaranteed continuous operation.

7. Capacity Tables

◆ FHBW166B0 [HM161HF UB60], FHBW168B0 [HM163HF UB60]

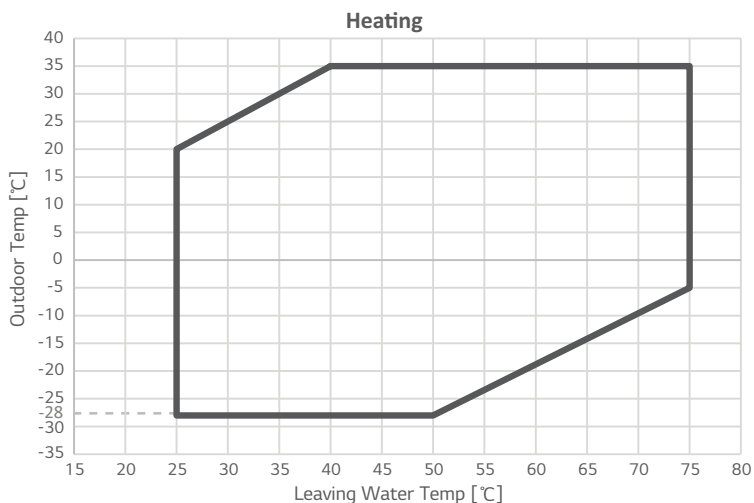
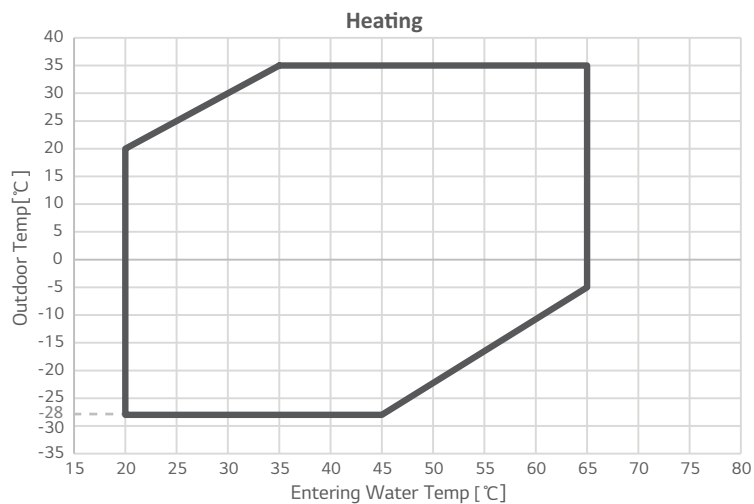
Outdoor Temp. [°C DB]	Water flow rate 46.0 LPM								Water flow rate 28.8 LPM				Water flow rate 23.0 LPM									
	LWT 30 °C		LWT 35 °C		LWT 40 °C		LWT 45 °C		LWT 50 °C		LWT 55 °C		LWT 60 °C		LWT 65 °C		LWT 70 °C		LWT 75 °C			
	TC	COP	TC	COP	TC	COP	TC	COP	TC	COP	TC	COP	TC	COP	TC	COP	TC	COP	TC	COP	TC	COP
-25	9.41	2.37	9.08	2.18	8.76	1.98	8.48	1.78	7.81	1.59	6.37	1.33										
-20	10.80	2.70	10.56	2.48	10.35	2.28	10.23	2.09	9.48	1.91	8.27	1.70	6.77	1.42								
-15	13.36	2.96	13.28	2.75	12.74	2.56	12.15	2.38	11.29	2.25	10.76	2.14	8.71	1.78	7.17	1.49						
-7	16.00	3.39	16.00	3.09	15.17	2.92	14.35	2.77	13.52	2.59	12.58	2.45	11.27	2.19	10.00	1.97	8.99	1.78				
-4	16.00	3.61	16.00	3.28	15.43	3.12	14.85	2.91	14.29	2.74	13.23	2.55	12.06	2.34	10.88	2.13	9.65	1.91	8.91	1.77		
-2	16.00	3.75	16.00	3.41	15.69	3.22	15.34	3.03	14.81	2.82	13.71	2.62	12.59	2.42	11.45	2.22	10.29	2.01	9.32	1.84		
2	16.00	4.34	16.00	3.50	16.00	3.55	16.00	3.31	16.00	3.06	14.84	2.82	13.16	2.54	8.08	1.68	6.84	1.44	6.36	1.34		
7	16.00	5.01	16.00	4.30	16.00	4.03	16.00	3.74	16.00	3.43	16.00	3.17	14.25	2.77	10.28	2.08	8.34	1.73	7.67	1.60		
10	16.00	5.41	16.00	4.68	16.00	4.34	16.00	4.00	16.00	3.65	16.00	3.28	14.92	2.87	11.20	2.28	9.90	2.02	8.95	1.82		
15	16.00	5.94	16.00	5.32	16.00	4.86	16.00	4.44	16.00	4.02	16.00	3.58	16.00	3.16	12.72	2.53	12.02	2.37	11.09	2.17		
18	16.00	6.25	16.00	5.66	16.00	5.16	16.00	4.71	16.00	4.25	16.00	3.74	16.00	3.37	13.82	2.70	12.89	2.50	11.69	2.26		
20	16.00	6.47	16.00	5.90	16.00	5.37	16.00	4.88	16.00	4.40	16.00	3.93	16.00	3.50	14.56	2.81	13.47	2.59	12.09	2.32		
35					16.00	6.90	16.00	6.05	16.00	5.51	16.00	4.97	16.00	4.43	16.00	3.89	14.40	3.32	12.80	2.85		

Note

1. DB : Dry bulb temperature(°C), LWT : Leaving water temperature(°C), LPM : Liter per minute (ℓ /min)
2. TC : Total capacity(kW), EER: Energy efficiency ratio(kW/kW), COP : Coefficient of performance (kW/kW)
3. Direct interpolation is permissible. Do not extrapolate.
4. Measuring procedure follows EN14511.
 - Rated values are based on standard conditions, and it can be found on specifications.
 - Above table values may not be matched according to installation condition. Except for rated value, the performance is not guaranteed.
 - In accordance with the test standard(or nations), the results may vary.
5. The Shaded areas are not guaranteed continuous operation.

8. Operation Limits

8.1 Heating

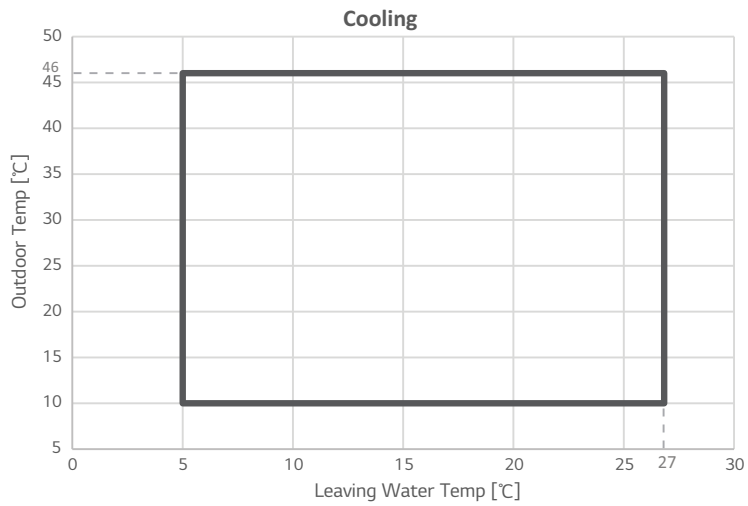
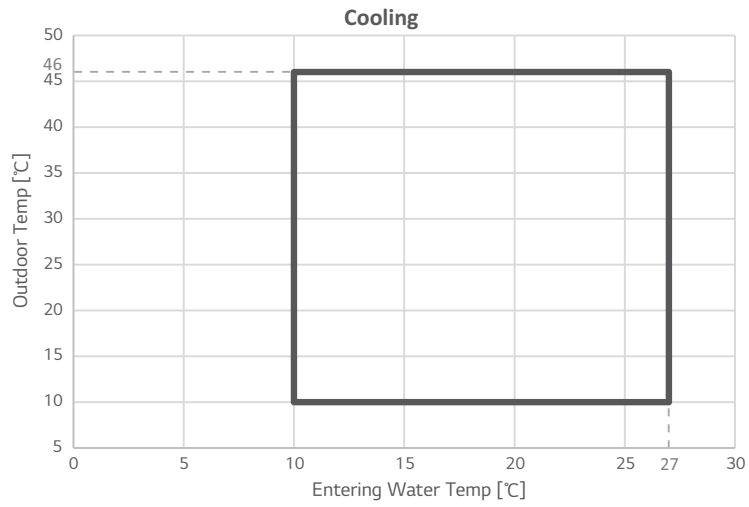


Note

- DHW operation without electric heater : max. 65 °C
- DHW operation with electric heater : max. 80 °C

8. Operation Limits

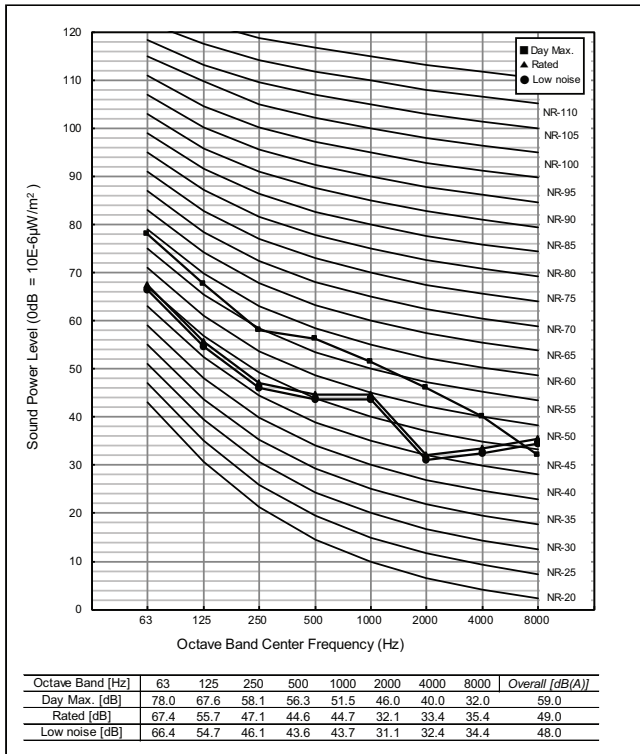
8.2 Cooling



9. Sound levels

9.1 Sound Power Level

FHBW098X0 [HM093HFX UB60]



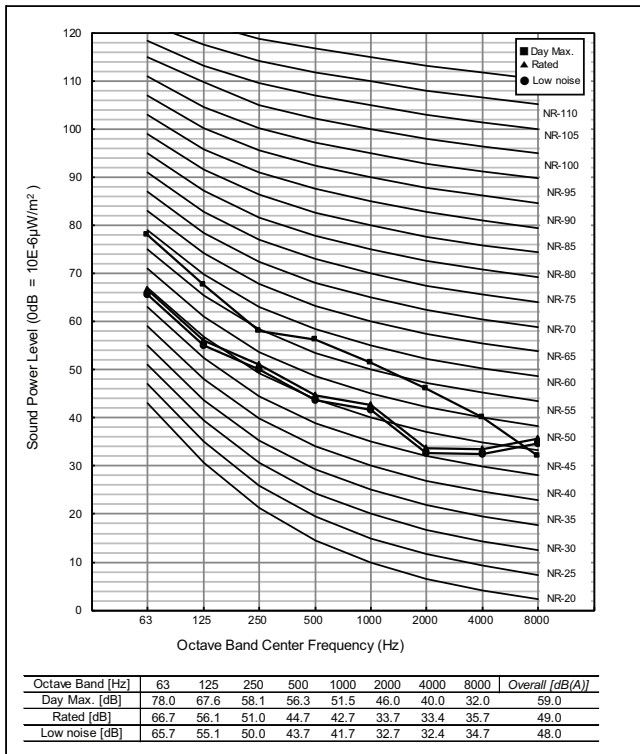
Model		Heating [dB(A)]		
Outdoor Unit	Indoor Unit	Rated	Low Noise	Daytime Max
FHBW098X0 [HM093HFX UB60]	FHNW16809C0 [HN1639HC NK0]	49.0	48.0	59.0

Note

- Data is valid at diffuse field condition.
- Reference acoustic intensity $0dB = 10E-6\mu W/m^2$
- Sound power level is measured on the rated condition in the reverberation rooms. Refer to the Model Specifications for nominal conditions(Power source and Ambient temperature, etc)
- Sound levels can be increased in accordance with installation and operating conditions.
- Sound level will vary depending on a range of factors such as the construction (acoustic absorption coefficient) of particular installed place in which the equipment in installed.
- Sound power level is measured in accordance with EN 12102-1 and ISO 9614.
 - Rated : This mode is measured on the rated condition in the semi-anechoic rooms. Therefore, these values may vary depending on operation conditions.
 - Daytime max : This mode is measured based on max. fan RPM and max. compressor Hz. that can be reached under outdoor air temperature 2°C.
 - Low noise : This mode lowers noise by limiting the compressor Hz. and fan RPM, and thus the performance may be limited.

9. Sound levels

FHBW126B0 [HM121HF UB60], FHBW128B0 [HM123HF UB60]



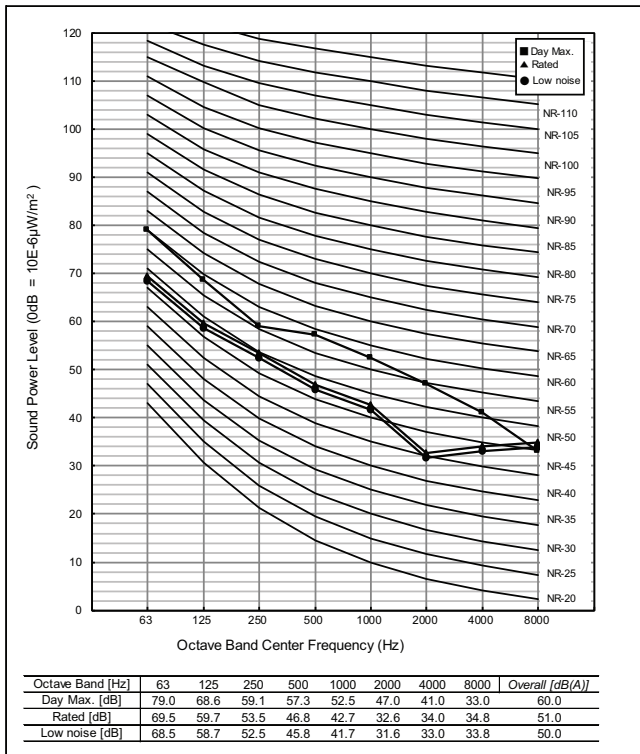
Model		Heating [dB(A)]		
Outdoor Unit	Indoor Unit	Rated	Low Noise	Daytime Max
FHBW126B0 [HM121HF UB60]	FHNW16606C0 [HN1616HC NK0]	49.0	48.0	59.0
FHBW128B0 [HM123HF UB60]	FHNW16809C0 [HN1639HC NK0]	49.0	48.0	59.0

Note

1. Data is valid at diffuse field condition.
2. Reference acoustic intensity 0dB = 10E-6µW/m²
3. Sound power level is measured on the rated condition in the reverberation rooms. Refer to the Model Specifications for nominal conditions(Power source and Ambient temperature, etc)
4. Sound levels can be increased in accordance with installation and operating conditions.
5. Sound level will vary depending on a range of factors such as the construction (acoustic absorption coefficient) of particular installed place in which the equipment is installed.
6. Sound power level is measured in accordance with EN 12102-1 and ISO 9614.
 - Rated : This mode is measured on the rated condition in the semi-anechoic rooms. Therefore, these values may vary depending on operation conditions.
 - Daytime max : This mode is measured based on max. fan RPM and max. compressor Hz. that can be reached under outdoor air temperature 2°C.
 - Low noise : This mode lowers noise by limiting the compressor Hz. and fan RPM, and thus the performance may be limited.

9. Sound levels

FHBW146B0 [HM141HF UB60], FHBW148B0 [HM143HF UB60]



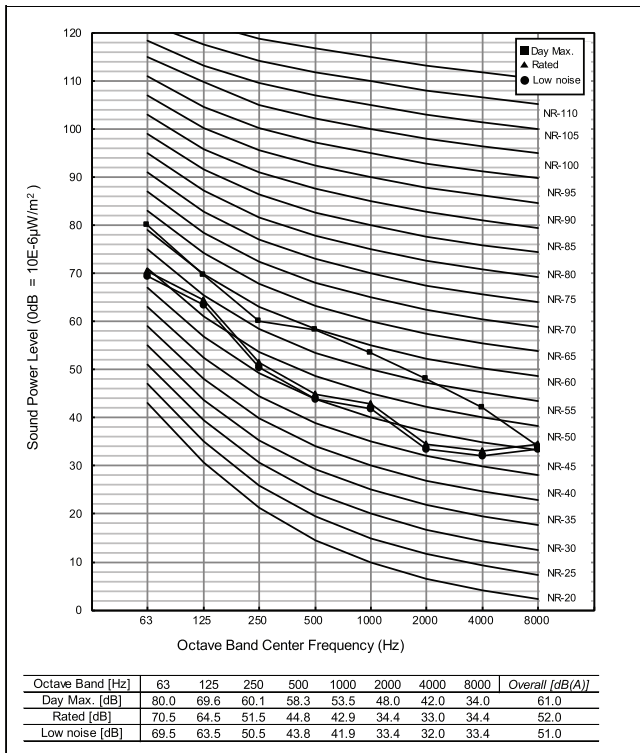
Model		Heating [dB(A)]		
Outdoor Unit	Indoor Unit	Rated	Low Noise	Daytime Max
FHBW146B0 [HM141HF UB60]	FHNW16606C0 [HN1616HC NK0]	51.0	50.0	60.0
FHBW148B0 [HM143HF UB60]	FHNW16809C0 [HN1639HC NK0]	51.0	50.0	60.0

Note

1. Data is valid at diffuse field condition.
2. Reference acoustic intensity 0dB = 10E-6µW/m²
3. Sound power level is measured on the rated condition in the reverberation rooms. Refer to the Model Specifications for nominal conditions(Power source and Ambient temperature, etc)
4. Sound levels can be increased in accordance with installation and operating conditions.
5. Sound level will vary depending on a range of factors such as the construction (acoustic absorption coefficient) of particular installed place in which the equipment is installed.
6. Sound power level is measured in accordance with EN 12102-1 and ISO 9614.
 - Rated : This mode is measured on the rated condition in the semi-anechoic rooms. Therefore, these values may vary depending on operation conditions.
 - Daytime max : This mode is measured based on max. fan RPM and max. compressor Hz. that can be reached under outdoor air temperature 2°C.
 - Low noise : This mode lowers noise by limiting the compressor Hz. and fan RPM, and thus the performance may be limited.

9. Sound levels

FHBW166B0 [HM161HF UB60], FHBW168B0 [HM163HF UB60]



Model		Heating [dB(A)]		
Outdoor Unit	Indoor Unit	Rated	Low Noise	Daytime Max
FHBW166B0 [HM161HF UB60]	FHNW16606C0 [HN1616HC NK0]	52.0	51.0	61.0
FHBW168B0 [HM163HF UB60]	FHNW16809C0 [HN1639HC NK0]	52.0	51.0	61.0

Note

1. Data is valid at diffuse field condition.
2. Reference acoustic intensity $OdB = 10E-6\mu W/m^2$
3. Sound power level is measured on the rated condition in the reverberation rooms. Refer to the Model Specifications for nominal conditions(Power source and Ambient temperature, etc)
4. Sound levels can be increased in accordance with installation and operating conditions.
5. Sound level will vary depending on a range of factors such as the construction (acoustic absorption coefficient) of particular installed place in which the equipment in installed.
6. Sound power level is measured in accordance with EN 12102-1 and ISO 9614.
 - Rated : This mode is measured on the rated condition in the semi-anechoic rooms. Therefore, these values may vary depending on operation conditions.
 - Daytime max : This mode is measured based on max. fan RPM and max. compressor Hz. that can be reached under outdoor air temperature 2°C.
 - Low noise : This mode lowers noise by limiting the compressor Hz. and fan RPM, and thus the performance may be limited.

SWITZERLAND DECLARATION OF CONFORMITY¹ LG Electronics

Number²

W_DMZ_HM123HF_DOC_20231012000008

Name and address of the Manufacturer³

LG Electronics Inc.
LG Twin Towers, 128 Yeoui-daero, Yeongdeungpo-gu, Seoul, 07336, Korea

This declaration of conformity is issued under the sole responsibility of the manufacturer.⁴

Object of the declaration⁵

Product information⁶

Product Name
Air to Water Heat Pump

Model Name
HM123HF UB60

Additional information⁷

Serial number is marked in the bar code label on the product

The object of the declaration described above is in conformity with the relevant Union harmonisation legislation:⁸

- References to the relevant harmonised standards used or references to the technical specifications in relation to which conformity is declared⁹

EMC Directive 2014/30/EU

EN IEC 55014-2:2021

EN IEC 55014-1:2021

EN 61000-3-3:2013+A1:2019+A2:2021

EN 61000-3-12:2011

Low Voltage Directive 2014/35/EU

EN 62233:2008

EN 60335-2-40:2003+A11:2004+A12:2005+A1:2006+A2:2009+A13:2012

EN 60335-1:2012+A11:2014+A13:2017+A1:2019+A14:2019+A2:2019+A15:2021

Swiss Energy - Verordnung über die Anforderungen an serienmässig hergestellter Anlagen, Fahrzeuge und Geräte

EN 12102-1:2022

EN 14511:2022

EN 14825:2022

RoHS Directive 2011/65/EU (as amended by EU 2015/863)

EN IEC 63000:2018

Pressure Equipment Directive 2014/68/EU

EN 378-2:2016

The notified body¹⁰

Name : TÜV NORD Systems GmbH & Co. KG Number : 0045

performed

a conformity assessment of the technical construction file

and issued the certificate

0045/202/9160/Z/00111/23/D/000(00)

Address

Große Bahnstraße 31, 22525 Hamburg, Germany

Conformity Assessment Procedure

Module A2

Additional information⁷

[Accumulator] SEP - Article 4, 3. [Compressor] PED Category II - Module A2 [Fin type heat exchanger] SEP - Article 4, 3. [Oil Separator] PED Category II - Module A2 [Pipe] SEP - Article 4, 3. [Plate heat exchanger] PED Category II - Module H [Pressure switch] PED Category IV - Module B(Production type) + D

Signed for and on behalf of:¹¹

LG Electronics Inc.

LG Electronics European Shared Service Center B.V.

Place and date of issue:

Krijgsman 1, 1186 DM Amstelveen, The Netherlands

12th. October. 2023

Name and Surname / Function:

Kwang Hoon Ko / Director



SWITZERLAND DECLARATION OF CONFORMITY¹ LG Electronics

Number²

W_DMZ_HM143HF_DOC_20231012000008

Name and address of the Manufacturer³

LG Electronics Inc.
LG Twin Towers, 128 Yeoui-daero, Yeongdeungpo-gu, Seoul, 07336, Korea

This declaration of conformity is issued under the sole responsibility of the manufacturer.⁴

Object of the declaration⁵

Product information⁶

Product Name
Air to Water Heat Pump

Model Name
HM143HF UB60

Additional information⁷

Serial number is marked in the bar code label on the product

The object of the declaration described above is in conformity with the relevant Union harmonisation legislation:⁸

- References to the relevant harmonised standards used or references to the technical specifications in relation to which conformity is declared⁹

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EN 61000-3-3:2013+A1:2019+A2:2021

EN 61000-3-12:2011

Low Voltage Directive 2014/35/EU

EN 62233:2008

EN 60335-2-40:2003+A11:2004+A12:2005+A1:2006+A2:2009+A13:2012

EN 60335-1:2012+A11:2014+A13:2017+A1:2019+A14:2019+A2:2019+A15:2021

Swiss Energy - Verordnung über die Anforderungen an serienmässig hergestellter Anlagen, Fahrzeuge und Geräte

EN 12102-1:2022

EN 14511:2022

EN 14825:2022

RoHS Directive 2011/65/EU (as amended by EU 2015/863)

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Pressure Equipment Directive 2014/68/EU

EN 378-2:2016

The notified body¹⁰

Name : TÜV NORD Systems GmbH & Co. KG Number : 0045

performed

a conformity assessment of the technical construction file

and issued the certificate

0045/202/9160/Z/00111/23/D/000(00)

Address

Große Bahnstraße 31, 22525 Hamburg, Germany

Conformity Assessment Procedure

Module A2

Additional information⁷

[Accumulator] SEP - Article 4, 3. [Compressor] PED Category II - Module A2 [Fin type heat exchanger] SEP - Article 4, 3. [Oil Separator] PED Category II - Module A2 [Pipe] SEP - Article 4, 3. [Plate heat exchanger] PED Category II - Module H [Pressure switch] PED Category IV - Module B(Production type) + D

Signed for and on behalf of:¹¹

LG Electronics Inc.

LG Electronics European Shared Service Center B.V.

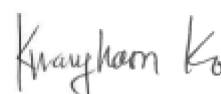
Place and date of issue:

Krijgsman 1, 1186 DM Amstelveen, The Netherlands

12th. October. 2023

Name and Surname / Function:

Kwang Hoon Ko / Director



SWITZERLAND DECLARATION OF CONFORMITY¹ LG Electronics

Number²

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Object of the declaration⁵

Product information⁶

Product Name
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Model Name
HM163HF UB60

Additional information⁷

Serial number is marked in the bar code label on the product

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EN IEC 55014-2:2021

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EN 61000-3-12:2011

Low Voltage Directive 2014/35/EU

EN 62233:2008

EN 60335-2-40:2003+A11:2004+A12:2005+A1:2006+A2:2009+A13:2012

EN 60335-1:2012+A11:2014+A13:2017+A1:2019+A14:2019+A2:2019+A15:2021

Swiss Energy - Verordnung über die Anforderungen an serienmässig hergestellter Anlagen, Fahrzeuge und Geräte

EN 12102-1:2022

EN 14511:2022

EN 14825:2022

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The notified body¹⁰

Name : TÜV NORD Systems GmbH & Co. KG Number : 0045

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a conformity assessment of the technical construction file

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0045/202/9160/Z/00111/23/D/000(00)

Address

Große Bahnstraße 31, 22525 Hamburg, Germany

Conformity Assessment Procedure

Module A2

Additional information⁷

[Accumulator] SEP - Article 4, 3. [Compressor] PED Category II - Module A2 [Fin type heat exchanger] SEP - Article 4, 3. [Oil Separator] PED Category II - Module A2 [Pipe] SEP - Article 4, 3. [Plate heat exchanger] PED Category II - Module H [Pressure switch] PED Category IV - Module B(Production type) + D

Signed for and on behalf of:¹¹

LG Electronics Inc.

LG Electronics European Shared Service Center B.V.

Place and date of issue:

Krijgsman 1, 1186 DM Amstelveen, The Netherlands

12th. October. 2023

Name and Surname / Function:

Kwang Hoon Ko / Director



SWITZERLAND DECLARATION OF CONFORMITY¹ LG Electronics

Number²

W_DMZ_HM093HFX_DOC_20231012000008

Name and address of the Manufacturer³

LG Electronics Inc.
LG Twin Towers, 128 Yeoui-daero, Yeongdeungpo-gu, Seoul, 07336, Korea

This declaration of conformity is issued under the sole responsibility of the manufacturer.⁴

Object of the declaration⁵

Product information⁶

Product Name
Air to Water Heat Pump

Model Name
HM093HFX UB60

Additional information⁷

Serial number is marked in the bar code label on the product

The object of the declaration described above is in conformity with the relevant Union harmonisation legislation:⁸

- References to the relevant harmonised standards used or references to the technical specifications in relation to which conformity is declared⁹

EMC Directive 2014/30/EU

EN IEC 55014-2:2021

EN IEC 55014-1:2021

EN 61000-3-3:2013+A1:2019+A2:2021

EN 61000-3-12:2011

Low Voltage Directive 2014/35/EU

EN 62233:2008

EN 60335-2-40:2003+A11:2004+A12:2005+A1:2006+A2:2009+A13:2012

EN 60335-1:2012+A11:2014+A13:2017+A1:2019+A14:2019+A2:2019+A15:2021

Swiss Energy - Verordnung über die Anforderungen an serienmässig hergestellter Anlagen, Fahrzeuge und Geräte

EN 12102-1:2022

EN 14511:2022

EN 14825:2022

RoHS Directive 2011/65/EU (as amended by EU 2015/863)

EN IEC 63000:2018

Pressure Equipment Directive 2014/68/EU

EN 378-2:2016

The notified body¹⁰

Name : TÜV NORD Systems GmbH & Co. KG Number : 0045

performed

a conformity assessment of the technical construction file

and issued the certificate

0045/202/9160/Z/00111/23/D/000(00)

Address

Große Bahnstraße 31, 22525 Hamburg, Germany

Conformity Assessment Procedure

Module A2

Additional information⁷

[Accumulator] SEP - Article 4, 3. [Compressor] PED Category II - Module A2 [Fin type heat exchanger] SEP - Article 4, 3. [Oil Separator] PED Category II - Module A2 [Pipe] SEP - Article 4, 3. [Plate heat exchanger] PED Category II - Module H [Pressure switch] PED Category IV - Module B(Production type) + D

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