Subtype R290 monobloc 9, 12, 14 ,16kW 1 phase & 3phases

Certificate Holder	LG Electronics Inc.
Address	84, Wanam-ro, seongsan-gu
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Country	KR
Certification Body	DIN CERTCO Gesellschaft für Konformitätsbewertung mbH
Subtype title	R290 monobloc 9, 12, 14 ,16kW 1 phase & 3phases
Registration number	011-1W0689
Heat Pump Type	Outdoor Air/Water
Refrigerant	R290
Mass of Refrigerant	1.2 kg
Certification Date	25.09.2023
Testing basis	HP KEYMARK certification scheme rules V14

Model HM161HF UB60 / HN1616HC NK0	
Model name	HM161HF UB60 / HN1616HC NK0
Application	Heating (medium temp)
Units	Indoor, Outdoor
Climate zone (for heating)	n/a
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

General data	
Power supply	1x230V 50Hz
Off-peak product	n/a

Outdoor Air/Water	
EN 14511-4 | Heating	
Shutting off the heat transfer medium flow	passed
Complete power supply failure	passed
Defrost test	passed
Starting and operating test	passed

EN 14511-2 | Heating		
	Low temperature	Medium temperature
Heat output	16.00 kW	12.00 kW
El input	3.72 kW	3.64 kW
COP	4.30	3.30

EN 12102-1 | Average Climate		
	Low temperature	Medium temperature
Sound power level indoor	39 dB(A)	39 dB(A)
Sound power level outdoor	52 dB(A)	52 dB(A)

EN 14825 | Average Climate		
	Low temperature	Medium temperature
ηs	201 %	154 %
Prated	11.70 kW	11.70 kW
SCOP	5.11	3.92
Tbiv	-10 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	10.40 kW	10.40 kW
COP Tj = -7°C	3.12	2.34
Cdh Tj = -7 °C	0.900	0.900
Pdh Tj = +2°C	6.30 kW	6.30 kW
COP Tj = +2°C	5.02	3.90
Cdh Tj = +2 °C	0.900	0.900
Pdh Tj = +7°C	4.10 kW	4.20 kW

COP Tj = +7°C	6.70	5.05
Cdh Tj = +7 °C	0.900	0.900
Pdh Tj = 12°C	3.70 kW	3.60 kW
COP Tj = 12°C	8.45	6.75
Cdh Tj = +12 °C	0.900	0.900
Pdh Tj = Tbiv	11.70 kW	10.40 kW
COP Tj = Tbiv	2.80	2.34
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	11.70 kW	11.40 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.80	2.30
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.900	0.900
WTOL	75 °C	75 °C
Poff	10 W	10 W
PTO	30 W	30 W
PSB	10 W	10 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.30 kW
Annual energy consumption Qhe	4735 kWh	6162 kWh

Model HM141HF UB60 / HN1616HC NK0

Model name	HM141HF UB60 / HN1616HC NK0
Application	Heating (medium temp)
Units	Indoor, Outdoor
Climate zone (for heating)	n/a
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

General data

Power supply	1x230V 50Hz
Off-peak product	n/a

Outdoor Air/Water

EN 14511-4 | Heating

Shutting off the heat transfer medium flow	passed
Complete power supply failure	passed
Defrost test	passed
Starting and operating test	passed

EN 14511-2 | Heating

	Low temperature	Medium temperature
Heat output	14.00 kW	11.00 kW
El input	3.11 kW	3.38 kW
COP	4.50	3.25

EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level indoor	39 dB(A)	39 dB(A)
Sound power level outdoor	51 dB(A)	51 dB(A)

EN 14825 | Average Climate

	Low temperature	Medium temperature
ηs	212 %	155 %
Prated	11.00 kW	11.00 kW
SCOP	5.38	3.96
Tbiv	-7 °C	-10 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	9.70 kW	9.70 kW
COP Tj = -7°C	3.30	2.45
Cdh Tj = -7 °C	0.900	0.900
Pdh Tj = +2°C	5.90 kW	5.90 kW
COP Tj = +2°C	5.18	3.84
Cdh Tj = +2 °C	0.900	0.900
Pdh Tj = +7°C	3.80 kW	3.80 kW

COP Tj = +7°C	7.38	5.40
Cdh Tj = +7 °C	0.900	0.900
Pdh Tj = 12°C	3.60 kW	3.60 kW
COP Tj = 12°C	9.15	6.15
Cdh Tj = +12 °C	0.900	0.900
Pdh Tj = Tbiv	9.70 kW	11.00 kW
COP Tj = Tbiv	3.30	2.20
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	10.70 kW	11.00 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.95	2.20
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.900	0.900
WTOL	75 °C	75 °C
Poff	10 W	10 W
PTO	30 W	30 W
PSB	10 W	10 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.30 kW	0.00 kW
Annual energy consumption Qhe	4223 kWh	5741 kWh

Model HM121HF UB60 / HN1616HC NK0

Model name	HM121HF UB60 / HN1616HC NK0
Application	Heating (medium temp)
Units	Indoor, Outdoor
Climate zone (for heating)	n/a
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

General data

Power supply	1x230V 50Hz
Off-peak product	n/a

Outdoor Air/Water

EN 14511-4 | Heating

Shutting off the heat transfer medium flow	passed
Complete power supply failure	passed
Defrost test	passed
Starting and operating test	passed

EN 14511-2 | Heating

	Low temperature	Medium temperature
Heat output	12.00 kW	10.00 kW
El input	2.55 kW	3.23 kW
COP	4.70	3.10

EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level indoor	39 dB(A)	39 dB(A)
Sound power level outdoor	49 dB(A)	49 dB(A)

EN 14825 | Average Climate

	Low temperature	Medium temperature
ηs	215 %	156 %
Prated	10.00 kW	10.00 kW
SCOP	5.45	3.97
Tbiv	-10 °C	-10 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	8.90 kW	8.90 kW
COP Tj = -7°C	3.54	2.54
Cdh Tj = -7 °C	0.900	0.900
Pdh Tj = +2°C	5.40 kW	5.40 kW
COP Tj = +2°C	5.17	3.92
Cdh Tj = +2 °C	0.900	0.900
Pdh Tj = +7°C	3.50 kW	3.50 kW

COP Tj = +7°C	7.37	5.22
Cdh Tj = +7 °C	0.900	0.900
Pdh Tj = 12°C	3.60 kW	3.60 kW
COP Tj = 12°C	9.24	5.58
Cdh Tj = +12 °C	0.900	0.900
Pdh Tj = Tbiv	10.00 kW	10.00 kW
COP Tj = Tbiv	3.21	2.36
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	10.00 kW	10.00 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.21	2.36
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.900	0.900
WTOL	75 °C	75 °C
Poff	10 W	10 W
PTO	30 W	30 W
PSB	10 W	10 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	3789 kWh	5211 kWh

Model HM163HF UB60 / HN1639HC NK0	
Model name	HM163HF UB60 / HN1639HC NK0
Application	Heating (medium temp)
Units	Indoor, Outdoor
Climate zone (for heating)	n/a
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

General data	
Power supply	3x400V 50Hz
Off-peak product	n/a

Outdoor Air/Water EN 14511-4 | Heating	
Shutting off the heat transfer medium flow	passed
Complete power supply failure	passed
Defrost test	passed
Starting and operating test	passed

EN 14511-2 | Heating		
	Low temperature	Medium temperature
Heat output	16.00 kW	12.00 kW
El input	3.72 kW	3.64 kW
COP	4.30	3.30

EN 12102-1 | Average Climate		
	Low temperature	Medium temperature
Sound power level indoor	39 dB(A)	39 dB(A)
Sound power level outdoor	52 dB(A)	52 dB(A)

EN 14825 | Average Climate		
	Low temperature	Medium temperature
ηs	201 %	154 %
Prated	11.70 kW	11.70 kW
SCOP	5.11	3.92
Tbiv	-10 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	10.40 kW	10.40 kW
COP Tj = -7°C	3.12	2.34
Cdh Tj = -7 °C	0.900	0.900
Pdh Tj = +2°C	6.30 kW	6.30 kW
COP Tj = +2°C	5.02	3.90
Cdh Tj = +2 °C	0.900	0.900
Pdh Tj = +7°C	4.10 kW	4.20 kW

COP Tj = +7°C	6.70	5.05
Cdh Tj = +7 °C	0.900	0.900
Pdh Tj = 12°C	3.70 kW	3.60 kW
COP Tj = 12°C	8.45	6.75
Cdh Tj = +12 °C	0.900	0.900
Pdh Tj = Tbiv	11.70 kW	10.40 kW
COP Tj = Tbiv	2.80	2.34
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	11.70 kW	11.40 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.80	2.30
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.900	0.900
WTOL	75 °C	75 °C
Poff	10 W	10 W
PTO	30 W	30 W
PSB	10 W	10 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.30 kW
Annual energy consumption Qhe	4735 kWh	6162 kWh

Model HM143HF UB60 / HN1639HC NK0	
Model name	HM143HF UB60 / HN1639HC NK0
Application	Heating (medium temp)
Units	Indoor, Outdoor
Climate zone (for heating)	n/a
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

General data	
Power supply	3x400V 50Hz
Off-peak product	n/a

Outdoor Air/Water EN 14511-4 | Heating	
Shutting off the heat transfer medium flow	passed
Complete power supply failure	passed
Defrost test	passed
Starting and operating test	passed

EN 14511-2 | Heating		
	Low temperature	Medium temperature
Heat output	14.00 kW	11.00 kW
El input	3.11 kW	3.38 kW
COP	4.50	3.25

EN 12102-1 | Average Climate		
	Low temperature	Medium temperature
Sound power level indoor	39 dB(A)	39 dB(A)
Sound power level outdoor	51 dB(A)	51 dB(A)

EN 14825 | Average Climate		
	Low temperature	Medium temperature
ηs	212 %	155 %
Prated	11.00 kW	11.00 kW
SCOP	5.38	3.96
Tbiv	-7 °C	-10 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	9.70 kW	9.70 kW
COP Tj = -7°C	3.30	2.45
Cdh Tj = -7 °C	0.900	0.900
Pdh Tj = +2°C	5.90 kW	5.90 kW
COP Tj = +2°C	5.18	3.84
Cdh Tj = +2 °C	0.900	0.900
Pdh Tj = +7°C	3.80 kW	3.80 kW

COP Tj = +7°C	7.38	5.40
Cdh Tj = +7 °C	0.900	0.900
Pdh Tj = 12°C	3.60 kW	3.60 kW
COP Tj = 12°C	9.15	6.15
Cdh Tj = +12 °C	0.900	0.900
Pdh Tj = Tbiv	9.70 kW	11.00 kW
COP Tj = Tbiv	3.30	2.20
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	10.70 kW	11.00 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.95	2.20
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.900	0.900
WTOL	75 °C	75 °C
Poff	10 W	10 W
PTO	30 W	30 W
PSB	10 W	10 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.30 kW	0.00 kW
Annual energy consumption Qhe	4223 kWh	5741 kWh

Model HM123HF UB60 / HN1639HC NK0

Model name	HM123HF UB60 / HN1639HC NK0
Application	Heating (medium temp)
Units	Indoor, Outdoor
Climate zone (for heating)	n/a
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

General data

Power supply	3x400V 50Hz
Off-peak product	n/a

Outdoor Air/Water

EN 14511-4 | Heating

Shutting off the heat transfer medium flow	passed
Complete power supply failure	passed
Defrost test	passed
Starting and operating test	passed

EN 14511-2 | Heating

	Low temperature	Medium temperature
Heat output	12.00 kW	10.00 kW
El input	2.55 kW	3.23 kW
COP	4.70	3.10

EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level indoor	39 dB(A)	39 dB(A)
Sound power level outdoor	49 dB(A)	49 dB(A)

EN 14825 | Average Climate

	Low temperature	Medium temperature
ηs	215 %	156 %
Prated	10.00 kW	10.00 kW
SCOP	5.45	3.97
Tbiv	-10 °C	-10 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	8.90 kW	8.90 kW
COP Tj = -7°C	3.54	2.54
Cdh Tj = -7 °C	0.900	0.900
Pdh Tj = +2°C	5.40 kW	5.40 kW
COP Tj = +2°C	5.17	3.92
Cdh Tj = +2 °C	0.900	0.900
Pdh Tj = +7°C	3.50 kW	3.50 kW

COP Tj = +7°C	7.37	5.22
Cdh Tj = +7 °C	0.900	0.900
Pdh Tj = 12°C	3.60 kW	3.60 kW
COP Tj = 12°C	9.24	5.58
Cdh Tj = +12 °C	0.900	0.900
Pdh Tj = Tbiv	10.00 kW	10.00 kW
COP Tj = Tbiv	3.21	2.36
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	10.00 kW	10.00 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.21	2.36
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.900	0.900
WTOL	75 °C	75 °C
Poff	10 W	10 W
PTO	30 W	30 W
PSB	10 W	10 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	3789 kWh	5211 kWh

Model HM093HFX UB60 / HN1639HC NK0	
Model name	HM093HFX UB60 / HN1639HC NK0
Application	Heating (medium temp)
Units	Indoor, Outdoor
Climate zone (for heating)	n/a
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

General data	
Power supply	3x400V 50Hz
Off-peak product	n/a

Outdoor Air/Water EN 14511-4 | Heating	
Shutting off the heat transfer medium flow	passed
Complete power supply failure	passed
Defrost test	passed
Starting and operating test	passed

EN 14511-2 | Heating		
	Low temperature	Medium temperature
Heat output	9.00 kW	9.00 kW
El input	1.84 kW	2.81 kW
COP	4.90	3.20

EN 12102-1 | Average Climate		
	Low temperature	Medium temperature
Sound power level indoor	39 dB(A)	39 dB(A)
Sound power level outdoor	49 dB(A)	49 dB(A)

EN 14825 | Average Climate		
	Low temperature	Medium temperature
ηs	206 %	147 %
Prated	9.00 kW	9.00 kW
SCOP	5.23	3.75
Tbiv	-10 °C	-10 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	8.00 kW	8.00 kW
COP Tj = -7°C	3.48	2.50
Cdh Tj = -7 °C	0.900	0.900
Pdh Tj = +2°C	4.90 kW	4.90 kW
COP Tj = +2°C	5.04	3.72
Cdh Tj = +2 °C	0.900	0.900
Pdh Tj = +7°C	3.10 kW	3.10 kW

COP Tj = +7°C	6.75	4.85
Cdh Tj = +7 °C	0.900	0.900
Pdh Tj = 12°C	3.60 kW	3.60 kW
COP Tj = 12°C	8.80	5.00
Cdh Tj = +12 °C	0.900	0.900
Pdh Tj = Tbiv	9.00 kW	9.00 kW
COP Tj = Tbiv	3.20	2.28
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	9.00 kW	9.00 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.20	2.28
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.900	0.900
WTOL	75 °C	75 °C
Poff	10 W	10 W
PTO	30 W	30 W
PSB	10 W	10 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	3554 kWh	4965 kWh

Model HM161HF UB60/ PHCS0 ENCXLEU	
Model name	HM161HF UB60/ PHCS0 ENCXLEU
Application	Heating (medium temp)
Units	Indoor, Outdoor
Climate zone (for heating)	n/a
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

General data	
Power supply	1x230V 50Hz
Off-peak product	n/a

Outdoor Air/Water	
EN 14511-4 | Heating	
Shutting off the heat transfer medium flow	passed
Complete power supply failure	passed
Defrost test	passed
Starting and operating test	passed

EN 14511-2 | Heating		
	Low temperature	Medium temperature
Heat output	16.00 kW	12.00 kW
El input	3.72 kW	3.64 kW
COP	4.30	3.30

EN 12102-1 | Average Climate		
	Low temperature	Medium temperature
Sound power level indoor	0 dB(A)	0 dB(A)
Sound power level outdoor	52 dB(A)	52 dB(A)

EN 14825 | Average Climate		
	Low temperature	Medium temperature
ηs	201 %	154 %
Prated	11.70 kW	11.70 kW
SCOP	5.11	3.92
Tbiv	-10 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	10.40 kW	10.40 kW
COP Tj = -7°C	3.12	2.34
Cdh Tj = -7 °C	0.900	0.900
Pdh Tj = +2°C	6.30 kW	6.30 kW
COP Tj = +2°C	5.02	3.90
Cdh Tj = +2 °C	0.900	0.900
Pdh Tj = +7°C	4.10 kW	4.20 kW

COP Tj = +7°C	6.70	5.05
Cdh Tj = +7 °C	0.900	0.900
Pdh Tj = 12°C	3.70 kW	3.60 kW
COP Tj = 12°C	8.45	6.75
Cdh Tj = +12 °C	0.900	0.900
Pdh Tj = Tbiv	11.70 kW	10.40 kW
COP Tj = Tbiv	2.80	2.34
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	11.70 kW	11.40 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.80	2.30
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.900	0.900
WTOL	75 °C	75 °C
Poff	10 W	10 W
PTO	30 W	30 W
PSB	10 W	10 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	n/a	Electricity
Supplementary Heater: PSUP	0.00 kW	0.30 kW
Annual energy consumption Qhe	4735 kWh	6162 kWh

Model HM141HF UB60/ PHCS0 ENCXLEU	
Model name	HM141HF UB60/ PHCS0 ENCXLEU
Application	Heating (medium temp)
Units	Indoor, Outdoor
Climate zone (for heating)	n/a
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

General data	
Power supply	1x230V 50Hz
Off-peak product	n/a

Outdoor Air/Water	
EN 14511-4 | Heating	
Shutting off the heat transfer medium flow	passed
Complete power supply failure	passed
Defrost test	passed
Starting and operating test	passed

EN 14511-2 | Heating		
	Low temperature	Medium temperature
Heat output	14.00 kW	11.00 kW
El input	3.11 kW	3.38 kW
COP	4.50	3.25

EN 12102-1 | Average Climate		
	Low temperature	Medium temperature
Sound power level indoor	0 dB(A)	0 dB(A)
Sound power level outdoor	51 dB(A)	51 dB(A)

EN 14825 | Average Climate		
	Low temperature	Medium temperature
ηs	212 %	155 %
Prated	11.00 kW	11.00 kW
SCOP	5.38	3.96
Tbiv	-7 °C	-10 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	9.70 kW	9.70 kW
COP Tj = -7°C	3.30	2.45
Cdh Tj = -7 °C	0.900	0.900
Pdh Tj = +2°C	5.90 kW	5.90 kW
COP Tj = +2°C	5.18	3.84
Cdh Tj = +2 °C	0.900	0.900
Pdh Tj = +7°C	3.80 kW	3.80 kW

COP Tj = +7°C	7.38	5.40
Cdh Tj = +7 °C	0.900	0.900
Pdh Tj = 12°C	3.60 kW	3.60 kW
COP Tj = 12°C	9.15	6.15
Cdh Tj = +12 °C	0.900	0.900
Pdh Tj = Tbiv	9.70 kW	11.00 kW
COP Tj = Tbiv	3.30	2.20
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	10.70 kW	11.00 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.95	2.20
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.900	0.900
WTOL	75 °C	75 °C
Poff	10 W	10 W
PTO	30 W	30 W
PSB	10 W	10 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.30 kW	0.00 kW
Annual energy consumption Qhe	4223 kWh	5741 kWh

Model HM121HF UB60/ PHCS0 ENCXLEU	
Model name	HM121HF UB60/ PHCS0 ENCXLEU
Application	Heating (medium temp)
Units	Indoor, Outdoor
Climate zone (for heating)	n/a
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

General data	
Power supply	1x230V 50Hz
Off-peak product	n/a

Outdoor Air/Water	
EN 14511-4 | Heating	
Shutting off the heat transfer medium flow	passed
Complete power supply failure	passed
Defrost test	passed
Starting and operating test	passed

EN 14511-2 | Heating		
	Low temperature	Medium temperature
Heat output	12.00 kW	10.00 kW
El input	2.55 kW	3.23 kW
COP	4.70	3.10

EN 12102-1 | Average Climate		
	Low temperature	Medium temperature
Sound power level indoor	0 dB(A)	0 dB(A)
Sound power level outdoor	49 dB(A)	49 dB(A)

EN 14825 | Average Climate		
	Low temperature	Medium temperature
ηs	215 %	156 %
Prated	10.00 kW	10.00 kW
SCOP	5.45	3.97
Tbiv	-10 °C	-10 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	8.90 kW	8.90 kW
COP Tj = -7°C	3.54	2.54
Cdh Tj = -7 °C	0.900	0.900
Pdh Tj = +2°C	5.40 kW	5.40 kW
COP Tj = +2°C	5.17	3.92
Cdh Tj = +2 °C	0.900	0.900
Pdh Tj = +7°C	3.50 kW	3.50 kW

COP Tj = +7°C	7.37	5.22
Cdh Tj = +7 °C	0.900	0.900
Pdh Tj = 12°C	3.60 kW	3.60 kW
COP Tj = 12°C	9.24	5.58
Cdh Tj = +12 °C	0.900	0.900
Pdh Tj = Tbiv	10.00 kW	10.00 kW
COP Tj = Tbiv	3.21	2.36
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	10.00 kW	10.00 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.21	2.36
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.900	0.900
WTOL	75 °C	75 °C
Poff	10 W	10 W
PTO	30 W	30 W
PSB	10 W	10 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	3789 kWh	5211 kWh

Model HM163HF UB60/ PHCS0 ENCXLEU	
Model name	HM163HF UB60/ PHCS0 ENCXLEU
Application	Heating (medium temp)
Units	Indoor, Outdoor
Climate zone (for heating)	n/a
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

General data	
Power supply	3x400V 50Hz
Off-peak product	n/a

Outdoor Air/Water	
EN 14511-4 | Heating	
Shutting off the heat transfer medium flow	passed
Complete power supply failure	passed
Defrost test	passed
Starting and operating test	passed

EN 14511-2 | Heating		
	Low temperature	Medium temperature
Heat output	16.00 kW	12.00 kW
El input	3.72 kW	3.64 kW
COP	4.30	3.30

EN 12102-1 | Average Climate		
	Low temperature	Medium temperature
Sound power level indoor	0 dB(A)	0 dB(A)
Sound power level outdoor	52 dB(A)	52 dB(A)

EN 14825 | Average Climate		
	Low temperature	Medium temperature
ηs	201 %	154 %
Prated	11.70 kW	11.70 kW
SCOP	5.11	3.92
Tbiv	-10 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	10.40 kW	10.40 kW
COP Tj = -7°C	3.12	2.34
Cdh Tj = -7 °C	0.900	0.900
Pdh Tj = +2°C	6.30 kW	6.30 kW
COP Tj = +2°C	5.02	3.90
Cdh Tj = +2 °C	0.900	0.900
Pdh Tj = +7°C	4.10 kW	4.20 kW

COP Tj = +7°C	6.70	5.05
Cdh Tj = +7 °C	0.900	0.900
Pdh Tj = 12°C	3.70 kW	3.60 kW
COP Tj = 12°C	8.45	6.75
Cdh Tj = +12 °C	0.900	0.900
Pdh Tj = Tbiv	11.70 kW	10.40 kW
COP Tj = Tbiv	2.80	2.34
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	11.70 kW	11.40 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.80	2.30
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.900	0.900
WTOL	75 °C	75 °C
Poff	10 W	10 W
PTO	30 W	30 W
PSB	10 W	10 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.30 kW
Annual energy consumption Qhe	4735 kWh	6162 kWh

Model HM143HF UB60/ PHCS0 ENCXLEU	
Model name	HM143HF UB60/ PHCS0 ENCXLEU
Application	Heating (medium temp)
Units	Indoor, Outdoor
Climate zone (for heating)	n/a
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

General data	
Power supply	3x400V 50Hz
Off-peak product	n/a

Outdoor Air/Water	
EN 14511-4 | Heating	
Shutting off the heat transfer medium flow	passed
Complete power supply failure	passed
Defrost test	passed
Starting and operating test	passed

EN 14511-2 | Heating		
	Low temperature	Medium temperature
Heat output	14.00 kW	11.00 kW
El input	3.11 kW	3.38 kW
COP	4.50	3.25

EN 12102-1 | Average Climate		
	Low temperature	Medium temperature
Sound power level indoor	0 dB(A)	0 dB(A)
Sound power level outdoor	51 dB(A)	51 dB(A)

EN 14825 | Average Climate		
	Low temperature	Medium temperature
ηs	212 %	155 %
Prated	11.00 kW	11.00 kW
SCOP	5.38	3.96
Tbiv	-7 °C	-10 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	9.70 kW	9.70 kW
COP Tj = -7°C	3.30	2.45
Cdh Tj = -7 °C	0.900	0.900
Pdh Tj = +2°C	5.90 kW	5.90 kW
COP Tj = +2°C	5.18	3.84
Cdh Tj = +2 °C	0.900	0.900
Pdh Tj = +7°C	3.80 kW	3.80 kW

COP Tj = +7°C	7.38	5.40
Cdh Tj = +7 °C	0.900	0.900
Pdh Tj = 12°C	3.60 kW	3.60 kW
COP Tj = 12°C	9.15	6.15
Cdh Tj = +12 °C	0.900	0.900
Pdh Tj = Tbiv	9.70 kW	11.00 kW
COP Tj = Tbiv	3.30	2.20
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	10.70 kW	11.00 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.95	2.20
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.900	0.900
WTOL	75 °C	75 °C
Poff	10 W	10 W
PTO	30 W	30 W
PSB	10 W	10 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.30 kW	0.00 kW
Annual energy consumption Qhe	4223 kWh	5741 kWh

Model HM123HF UB60/ PHCS0 ENCXLEU	
Model name	HM123HF UB60/ PHCS0 ENCXLEU
Application	Heating (medium temp)
Units	Indoor, Outdoor
Climate zone (for heating)	n/a
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

General data	
Power supply	3x400V 50Hz
Off-peak product	n/a

Outdoor Air/Water EN 14511-4 | Heating	
Shutting off the heat transfer medium flow	passed
Complete power supply failure	passed
Defrost test	passed
Starting and operating test	passed

EN 14511-2 | Heating		
	Low temperature	Medium temperature
Heat output	12.00 kW	10.00 kW
El input	2.55 kW	3.23 kW
COP	4.70	3.10

EN 12102-1 | Average Climate		
	Low temperature	Medium temperature
Sound power level indoor	0 dB(A)	0 dB(A)
Sound power level outdoor	49 dB(A)	49 dB(A)

EN 14825 | Average Climate		
	Low temperature	Medium temperature
ηs	215 %	156 %
Prated	10.00 kW	10.00 kW
SCOP	5.45	3.97
Tbiv	-10 °C	-10 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	8.90 kW	8.90 kW
COP Tj = -7°C	3.54	2.54
Cdh Tj = -7 °C	0.900	0.900
Pdh Tj = +2°C	5.40 kW	5.40 kW
COP Tj = +2°C	5.17	3.92
Cdh Tj = +2 °C	0.900	0.900
Pdh Tj = +7°C	3.50 kW	3.50 kW

COP Tj = +7°C	7.37	5.22
Cdh Tj = +7 °C	0.900	0.900
Pdh Tj = 12°C	3.60 kW	3.60 kW
COP Tj = 12°C	9.24	5.58
Cdh Tj = +12 °C	0.900	0.900
Pdh Tj = Tbiv	10.00 kW	10.00 kW
COP Tj = Tbiv	3.21	2.36
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	10.00 kW	10.00 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.21	2.36
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.900	0.900
WTOL	75 °C	75 °C
Poff	10 W	10 W
PTO	30 W	30 W
PSB	10 W	10 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	3789 kWh	5211 kWh

Model HM093HFX UB60/ PHCS0 ENCXLEU	
Model name	HM093HFX UB60/ PHCS0 ENCXLEU
Application	Heating (medium temp)
Units	Indoor, Outdoor
Climate zone (for heating)	n/a
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

General data	
Power supply	3x400V 50Hz
Off-peak product	n/a

Outdoor Air/Water EN 14511-4 | Heating	
Shutting off the heat transfer medium flow	passed
Complete power supply failure	passed
Defrost test	passed
Starting and operating test	passed

EN 14511-2 | Heating		
	Low temperature	Medium temperature
Heat output	9.00 kW	9.00 kW
El input	1.84 kW	2.81 kW
COP	4.90	3.20

EN 12102-1 | Average Climate		
	Low temperature	Medium temperature
Sound power level indoor	0 dB(A)	0 dB(A)
Sound power level outdoor	49 dB(A)	49 dB(A)

EN 14825 | Average Climate		
	Low temperature	Medium temperature
ηs	206 %	147 %
Prated	9.00 kW	9.00 kW
SCOP	5.23	3.75
Tbiv	-10 °C	-10 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	8.00 kW	8.00 kW
COP Tj = -7°C	3.48	2.50
Cdh Tj = -7 °C	0.900	0.900
Pdh Tj = +2°C	4.90 kW	4.90 kW
COP Tj = +2°C	5.04	3.72
Cdh Tj = +2 °C	0.900	0.900
Pdh Tj = +7°C	3.10 kW	3.10 kW

COP Tj = +7°C	6.75	4.85
Cdh Tj = +7 °C	0.900	0.900
Pdh Tj = 12°C	3.60 kW	3.60 kW
COP Tj = 12°C	8.80	5.00
Cdh Tj = +12 °C	0.900	0.900
Pdh Tj = Tbiv	9.00 kW	9.00 kW
COP Tj = Tbiv	3.20	2.28
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	9.00 kW	9.00 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.20	2.28
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.900	0.900
WTOL	75 °C	75 °C
Poff	10 W	10 W
PTO	30 W	30 W
PSB	10 W	10 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	3554 kWh	4965 kWh

Model HM123HF UB60 / HN1639HY NK0	
Model name	HM123HF UB60 / HN1639HY NK0
Application	Heating + DHW + low temp
Units	Indoor, Outdoor
Climate zone (for heating)	n/a
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

General data	
Power supply	3x400V 50Hz
Off-peak product	n/a

Outdoor Air/Water EN 16147 | Average Climate	
Declared load profile	L
Efficiency ηDHW	130 %
COP	3.00
Heating up time	1:25 h:min
Standby power input	6.5 W
Reference hot water temperature	51.0 °C
Mixed water at 40°C	240 l

EN 14511-4 | Heating	
Shutting off the heat transfer medium flow	passed
Complete power supply failure	passed
Defrost test	passed
Starting and operating test	passed

EN 14511-2 | Heating		
	Low temperature	Medium temperature
Heat output	12.00 kW	10.00 kW
El input	2.55 kW	3.23 kW
COP	4.70	3.10

EN 12102-1 | Average Climate		
	Low temperature	Medium temperature
Sound power level indoor	39 dB(A)	39 dB(A)
Sound power level outdoor	49 dB(A)	49 dB(A)

EN 14825 | Average Climate		
	Low temperature	Medium temperature
ηs	215 %	156 %
Prated	10.00 kW	10.00 kW

SCOP	5.45	3.97
Tbiv	-10 °C	-10 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	8.90 kW	8.90 kW
COP Tj = -7°C	3.54	2.54
Cdh Tj = -7 °C	0.900	0.900
Pdh Tj = +2°C	5.40 kW	5.40 kW
COP Tj = +2°C	5.17	3.92
Cdh Tj = +2 °C	0.900	0.900
Pdh Tj = +7°C	3.50 kW	3.50 kW
COP Tj = +7°C	7.37	5.22
Cdh Tj = +7 °C	0.900	0.900
Pdh Tj = 12°C	3.60 kW	3.60 kW
COP Tj = 12°C	9.24	5.58
Cdh Tj = +12 °C	0.900	0.900
Pdh Tj = Tbiv	10.00 kW	10.00 kW
COP Tj = Tbiv	3.21	2.36
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	10.00 kW	10.00 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.21	2.36
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.900	0.900
WTOL	75 °C	75 °C
Poff	10 W	10 W
PTO	30 W	30 W
PSB	10 W	10 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	3789 kWh	5211 kWh

Model HM143HF UB60 / HN1639HY NK0	
Model name	HM143HF UB60 / HN1639HY NK0
Application	Heating + DHW + low temp
Units	Indoor, Outdoor
Climate zone (for heating)	n/a
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

General data	
Power supply	3x400V 50Hz
Off-peak product	n/a

Outdoor Air/Water EN 16147 | Average Climate	
Declared load profile	L
Efficiency ηDHW	130 %
COP	3.00
Heating up time	1:25 h:min
Standby power input	6.5 W
Reference hot water temperature	51.0 °C
Mixed water at 40°C	240 l

EN 14511-4 | Heating	
Shutting off the heat transfer medium flow	passed
Complete power supply failure	passed
Defrost test	passed
Starting and operating test	passed

EN 14511-2 | Heating		
	Low temperature	Medium temperature
Heat output	14.00 kW	11.00 kW
El input	3.11 kW	3.38 kW
COP	4.50	3.25

EN 12102-1 | Average Climate		
	Low temperature	Medium temperature
Sound power level indoor	39 dB(A)	39 dB(A)
Sound power level outdoor	51 dB(A)	51 dB(A)

EN 14825 | Average Climate		
	Low temperature	Medium temperature
ηs	212 %	155 %
Prated	11.00 kW	11.00 kW

SCOP	5.38	3.96
Tbiv	-7 °C	-10 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	9.70 kW	9.70 kW
COP Tj = -7°C	3.30	2.45
Cdh Tj = -7 °C	0.900	0.900
Pdh Tj = +2°C	5.90 kW	5.90 kW
COP Tj = +2°C	5.18	3.84
Cdh Tj = +2 °C	0.900	0.900
Pdh Tj = +7°C	3.80 kW	3.80 kW
COP Tj = +7°C	7.38	5.40
Cdh Tj = +7 °C	0.900	0.900
Pdh Tj = 12°C	3.60 kW	3.60 kW
COP Tj = 12°C	9.15	6.15
Cdh Tj = +12 °C	0.900	0.900
Pdh Tj = Tbiv	9.70 kW	11.00 kW
COP Tj = Tbiv	3.30	2.20
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	10.70 kW	11.00 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.95	2.20
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.900	0.900
WTOL	75 °C	75 °C
Poff	10 W	10 W
PTO	30 W	30 W
PSB	10 W	10 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.30 kW	0.00 kW
Annual energy consumption Qhe	4223 kWh	5741 kWh

Model HM163HF UB60 / HN1639HY NK0	
Model name	HM163HF UB60 / HN1639HY NK0
Application	Heating + DHW + low temp
Units	Indoor, Outdoor
Climate zone (for heating)	n/a
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

General data	
Power supply	3x400V 50Hz
Off-peak product	n/a

Outdoor Air/Water EN 16147 | Average Climate	
Declared load profile	L
Efficiency ηDHW	130 %
COP	3.00
Heating up time	1:25 h:min
Standby power input	6.5 W
Reference hot water temperature	51.0 °C
Mixed water at 40°C	240 l

EN 14511-4 | Heating	
Shutting off the heat transfer medium flow	passed
Complete power supply failure	passed
Defrost test	passed
Starting and operating test	passed

EN 14511-2 | Heating	Low temperature	Medium temperature
Heat output	16.00 kW	12.00 kW
El input	3.72 kW	3.64 kW
COP	4.30	3.30

EN 12102-1 | Average Climate	Low temperature	Medium temperature
Sound power level indoor	39 dB(A)	39 dB(A)
Sound power level outdoor	52 dB(A)	52 dB(A)

EN 14825 | Average Climate	Low temperature	Medium temperature
ηs	201 %	154 %
Prated	11.70 kW	11.70 kW

SCOP	5.11	3.92
Tbiv	-10 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	10.40 kW	10.40 kW
COP Tj = -7°C	3.12	2.34
Cdh Tj = -7 °C	0.900	0.900
Pdh Tj = +2°C	6.30 kW	6.30 kW
COP Tj = +2°C	5.02	3.90
Cdh Tj = +2 °C	0.900	0.900
Pdh Tj = +7°C	4.10 kW	4.20 kW
COP Tj = +7°C	6.70	5.05
Cdh Tj = +7 °C	0.900	0.900
Pdh Tj = 12°C	3.70 kW	3.60 kW
COP Tj = 12°C	8.45	6.75
Cdh Tj = +12 °C	0.900	0.900
Pdh Tj = Tbiv	11.70 kW	10.40 kW
COP Tj = Tbiv	2.80	2.34
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	11.70 kW	11.40 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.80	2.30
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.900	0.900
WTOL	75 °C	75 °C
Poff	10 W	10 W
PTO	30 W	30 W
PSB	10 W	10 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.30 kW
Annual energy consumption Qhe	4735 kWh	6162 kWh

Model HM093HFX UB60 / HN1639HY NK0	
Model name	HM093HFX UB60 / HN1639HY NK0
Application	Heating + DHW + low temp
Units	Indoor, Outdoor
Climate zone (for heating)	n/a
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

General data	
Power supply	3x400V 50Hz
Off-peak product	n/a

Outdoor Air/Water EN 16147 | Average Climate	
Declared load profile	L
Efficiency ηDHW	130 %
COP	3.00
Heating up time	1:25 h:min
Standby power input	6.5 W
Reference hot water temperature	51.0 °C
Mixed water at 40°C	240 l

EN 14511-4 | Heating	
Shutting off the heat transfer medium flow	passed
Complete power supply failure	passed
Defrost test	passed
Starting and operating test	passed

EN 14511-2 | Heating	Low temperature	Medium temperature
Heat output	9.00 kW	9.00 kW
El input	1.84 kW	2.81 kW
COP	4.90	3.20

EN 12102-1 | Average Climate	Low temperature	Medium temperature
Sound power level indoor	39 dB(A)	39 dB(A)
Sound power level outdoor	49 dB(A)	49 dB(A)

EN 14825 | Average Climate	Low temperature	Medium temperature
ηs	206 %	147 %
Prated	9.00 kW	9.00 kW

SCOP	5.23	3.75
Tbiv	-10 °C	-10 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	8.00 kW	8.00 kW
COP Tj = -7°C	3.48	2.50
Cdh Tj = -7 °C	0.900	0.900
Pdh Tj = +2°C	4.90 kW	4.90 kW
COP Tj = +2°C	5.04	3.72
Cdh Tj = +2 °C	0.900	0.900
Pdh Tj = +7°C	3.10 kW	3.10 kW
COP Tj = +7°C	6.75	4.85
Cdh Tj = +7 °C	0.900	0.900
Pdh Tj = 12°C	3.60 kW	3.60 kW
COP Tj = 12°C	8.80	5.00
Cdh Tj = +12 °C	0.900	0.900
Pdh Tj = Tbiv	9.00 kW	9.00 kW
COP Tj = Tbiv	3.20	2.28
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	9.00 kW	9.00 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.20	2.28
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.900	0.900
WTOL	75 °C	75 °C
Poff	10 W	10 W
PTO	30 W	30 W
PSB	10 W	10 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	3554 kWh	4965 kWh

Model HM121HF UB60 / HN1616HY NK0	
Model name	HM121HF UB60 / HN1616HY NK0
Application	Heating + DHW + low temp
Units	Indoor, Outdoor
Climate zone (for heating)	n/a
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

General data	
Power supply	1x230V 50Hz
Off-peak product	n/a

Outdoor Air/Water EN 16147 | Average Climate	
Declared load profile	L
Efficiency ηDHW	130 %
COP	3.00
Heating up time	1:25 h:min
Standby power input	6.5 W
Reference hot water temperature	51.0 °C
Mixed water at 40°C	240 l

EN 14511-4 | Heating	
Shutting off the heat transfer medium flow	passed
Complete power supply failure	passed
Defrost test	passed
Starting and operating test	passed

EN 14511-2 | Heating		
	Low temperature	Medium temperature
Heat output	12.00 kW	10.00 kW
El input	2.55 kW	3.23 kW
COP	4.70	3.10

EN 12102-1 | Average Climate		
	Low temperature	Medium temperature
Sound power level indoor	39 dB(A)	39 dB(A)
Sound power level outdoor	49 dB(A)	49 dB(A)

EN 14825 | Average Climate		
	Low temperature	Medium temperature
ηs	215 %	156 %
Prated	10.00 kW	10.00 kW

SCOP	5.45	3.97
Tbiv	-10 °C	-10 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	8.90 kW	8.90 kW
COP Tj = -7°C	3.54	2.54
Cdh Tj = -7 °C	0.900	0.900
Pdh Tj = +2°C	5.40 kW	5.40 kW
COP Tj = +2°C	5.17	3.92
Cdh Tj = +2 °C	0.900	0.900
Pdh Tj = +7°C	3.50 kW	3.50 kW
COP Tj = +7°C	7.37	5.22
Cdh Tj = +7 °C	0.900	0.900
Pdh Tj = 12°C	3.60 kW	3.60 kW
COP Tj = 12°C	9.24	5.58
Cdh Tj = +12 °C	0.900	0.900
Pdh Tj = Tbiv	10.00 kW	10.00 kW
COP Tj = Tbiv	3.21	2.36
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	10.00 kW	10.00 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.21	2.36
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.900	0.900
WTOL	75 °C	75 °C
Poff	10 W	10 W
PTO	30 W	30 W
PSB	10 W	10 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	3789 kWh	5211 kWh

Model HM141HF UB60 / HN1616HY NK0	
Model name	HM141HF UB60 / HN1616HY NK0
Application	Heating + DHW + low temp
Units	Indoor, Outdoor
Climate zone (for heating)	n/a
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

General data	
Power supply	1x230V 50Hz
Off-peak product	n/a

Outdoor Air/Water EN 16147 | Average Climate	
Declared load profile	L
Efficiency ηDHW	130 %
COP	3.00
Heating up time	1:25 h:min
Standby power input	6.5 W
Reference hot water temperature	51.0 °C
Mixed water at 40°C	240 l

EN 14511-4 | Heating	
Shutting off the heat transfer medium flow	passed
Complete power supply failure	passed
Defrost test	passed
Starting and operating test	passed

EN 14511-2 | Heating		
	Low temperature	Medium temperature
Heat output	14.00 kW	11.00 kW
El input	3.11 kW	3.38 kW
COP	4.50	3.25

EN 12102-1 | Average Climate		
	Low temperature	Medium temperature
Sound power level indoor	39 dB(A)	39 dB(A)
Sound power level outdoor	51 dB(A)	51 dB(A)

EN 14825 | Average Climate		
	Low temperature	Medium temperature
ηs	212 %	155 %
Prated	11.00 kW	11.00 kW

SCOP	5.38	3.96
Tbiv	-7 °C	-10 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	9.70 kW	9.70 kW
COP Tj = -7°C	3.30	2.45
Cdh Tj = -7 °C	0.900	0.900
Pdh Tj = +2°C	5.90 kW	5.90 kW
COP Tj = +2°C	5.18	3.84
Cdh Tj = +2 °C	0.900	0.900
Pdh Tj = +7°C	3.80 kW	3.80 kW
COP Tj = +7°C	7.38	5.40
Cdh Tj = +7 °C	0.900	0.900
Pdh Tj = 12°C	3.60 kW	3.60 kW
COP Tj = 12°C	9.15	6.15
Cdh Tj = +12 °C	0.900	0.900
Pdh Tj = Tbiv	9.70 kW	11.00 kW
COP Tj = Tbiv	3.30	2.20
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	10.70 kW	11.00 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.95	2.20
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.900	0.900
WTOL	75 °C	75 °C
Poff	10 W	10 W
PTO	30 W	30 W
PSB	10 W	10 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.30 kW	0.00 kW
Annual energy consumption Qhe	4223 kWh	5741 kWh

Model HM161HF UB60 / HN1616HY NK0	
Model name	HM161HF UB60 / HN1616HY NK0
Application	Heating + DHW + low temp
Units	Indoor, Outdoor
Climate zone (for heating)	n/a
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

General data	
Power supply	1x230V 50Hz
Off-peak product	n/a

Outdoor Air/Water EN 16147 | Average Climate	
Declared load profile	L
Efficiency ηDHW	130 %
COP	3.00
Heating up time	1:25 h:min
Standby power input	6.5 W
Reference hot water temperature	51.0 °C
Mixed water at 40°C	240 l

EN 14511-4 | Heating	
Shutting off the heat transfer medium flow	passed
Complete power supply failure	passed
Defrost test	passed
Starting and operating test	passed

EN 14511-2 | Heating		
	Low temperature	Medium temperature
Heat output	16.00 kW	12.00 kW
El input	3.72 kW	3.64 kW
COP	4.30	3.30

EN 12102-1 | Average Climate		
	Low temperature	Medium temperature
Sound power level indoor	39 dB(A)	39 dB(A)
Sound power level outdoor	52 dB(A)	52 dB(A)

EN 14825 | Average Climate		
	Low temperature	Medium temperature
ηs	201 %	154 %
Prated	11.70 kW	11.70 kW

SCOP	5.11	3.92
Tbiv	-10 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	10.40 kW	10.40 kW
COP Tj = -7°C	3.12	2.34
Cdh Tj = -7 °C	0.900	0.900
Pdh Tj = +2°C	6.30 kW	6.30 kW
COP Tj = +2°C	5.02	3.90
Cdh Tj = +2 °C	0.900	0.900
Pdh Tj = +7°C	4.10 kW	4.20 kW
COP Tj = +7°C	6.70	5.05
Cdh Tj = +7 °C	0.900	0.900
Pdh Tj = 12°C	3.70 kW	3.60 kW
COP Tj = 12°C	8.45	6.75
Cdh Tj = +12 °C	0.900	0.900
Pdh Tj = Tbiv	11.70 kW	10.40 kW
COP Tj = Tbiv	2.80	2.34
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	11.70 kW	11.40 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.80	2.30
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.900	0.900
WTOL	75 °C	75 °C
Poff	10 W	10 W
PTO	30 W	30 W
PSB	10 W	10 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.30 kW
Annual energy consumption Qhe	4735 kWh	6162 kWh