

**Subtype Scroll Split mid temperature 12 14 16 kW \_1&3ph**

Certificate Holder	LG Electronics Inc.
Address	84, Wanam-ro, seongsan-gu
ZIP	51554
City	Changwon-si
Country	KR
Certification Body	DIN CERTCO Gesellschaft für Konformitätsbewertung mbH
Subtype title	Scroll Split mid temperature 12 14 16 kW _1&3ph
Registration number	011-1W0190
Heat Pump Type	Outdoor Air/Water
Refrigerant	R410A
Mass of Refrigerant	2.5 kg
Certification Date	07.01.2020
Testing basis	HP KEYMARK certification scheme rules V8

**Model HU161MA U33 / HN1616 NK3**

Model name	HU161MA U33 / HN1616 NK3
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
EI input	3.76 kW	4.71 kW
COP	4.26	2.55

**EN 12102-1 | Average Climate**

	Low temperature	Medium temperature
Sound power level indoor	44 dB(A)	44 dB(A)
Sound power level outdoor	65 dB(A)	65 dB(A)

**EN 14825 | Average Climate**

	Low temperature	Medium temperature
$\eta_s$	179 %	130 %
Prated	10.00 kW	9.90 kW
SCOP	4.56	3.32
Tbiv	-10 °C	-10 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	8.90 kW	8.80 kW
COP Tj = -7°C	3.00	1.93
Cdh Tj = -7 °C	0.900	0.900
Pdh Tj = +2°C	5.40 kW	5.30 kW
COP Tj = +2°C	4.55	3.32
Cdh Tj = +2 °C	0.900	0.900
Pdh Tj = +7°C	3.60 kW	3.40 kW

COP Tj = +7°C	5.50	4.30
Cdh Tj = +7 °C	0.900	0.900
Pdh Tj = 12°C	4.20 kW	4.30 kW
COP Tj = 12°C	8.00	6.40
Cdh Tj = +12 °C	0.900	0.900
Pdh Tj = Tbiv	10.00 kW	9.90 kW
COP Tj = Tbiv	2.60	1.70
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	10.00 kW	9.90 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.60	1.70
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh		
WTOL	57 °C	57 °C
Poff	60 W	60 W
PTO	60 W	60 W
PSB	60 W	60 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	n/a	n/a
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	4531 kWh	6157 kWh

**Model HU141MA U33 / HN1616 NK3**

Model name	HU141MA U33 / HN1616 NK3
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	11.50 kW
EI input	3.15 kW	4.51 kW
COP	4.45	2.55

**EN 12102-1 | Average Climate**

	Low temperature	Medium temperature
Sound power level indoor	44 dB(A)	44 dB(A)
Sound power level outdoor	64 dB(A)	64 dB(A)

**EN 14825 | Average Climate**

	Low temperature	Medium temperature
$\eta_s$	182 %	132 %
Prated	9.50 kW	9.00 kW
SCOP	4.61	3.37
Tbiv	-10 °C	-10 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	8.40 kW	8.00 kW
COP Tj = -7°C	3.00	1.98
Cdh Tj = -7 °C	0.900	0.900
Pdh Tj = +2°C	5.10 kW	4.90 kW
COP Tj = +2°C	4.60	3.35
Cdh Tj = +2 °C	0.900	0.900
Pdh Tj = +7°C	3.60 kW	3.20 kW

COP Tj = +7°C	5.60	4.36
Cdh Tj = +7 °C	0.900	0.900
Pdh Tj = 12°C	4.40 kW	4.10 kW
COP Tj = 12°C	8.40	6.60
Cdh Tj = +12 °C	0.900	0.900
Pdh Tj = Tbiv	9.50 kW	9.00 kW
COP Tj = Tbiv	2.65	1.72
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	9.50 kW	9.00 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.65	1.72
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh		
WTOL	57 °C	57 °C
Poff	60 W	60 W
PTO	60 W	60 W
PSB	60 W	60 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	n/a	n/a
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	4254 kWh	5524 kWh

**Model HU121MA U33 / HN1616 NK3**

Model name	HU121MA U33 / HN1616 NK3
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	11.00 kW
EI input	2.64 kW	4.31 kW
COP	4.55	2.55

**EN 12102-1 | Average Climate**

	Low temperature	Medium temperature
Sound power level indoor	44 dB(A)	44 dB(A)
Sound power level outdoor	63 dB(A)	63 dB(A)

**EN 14825 | Average Climate**

	Low temperature	Medium temperature
$\eta_s$	183 %	131 %
P <sub>rated</sub>	9.00 kW	8.50 kW
SCOP	4.65	3.36
T <sub>biv</sub>	-10 °C	-10 °C
T <sub>OL</sub>	-10 °C	-10 °C
P <sub>dh T<sub>j</sub> = -7°C</sub>	8.00 kW	7.60 kW
COP T <sub>j</sub> = -7°C	3.00	1.98
C <sub>dh T<sub>j</sub> = -7 °C</sub>	0.900	0.900
P <sub>dh T<sub>j</sub> = +2°C</sub>	4.80 kW	4.70 kW
COP T <sub>j</sub> = +2°C	4.65	3.35
C <sub>dh T<sub>j</sub> = +2 °C</sub>	0.900	0.900
P <sub>dh T<sub>j</sub> = +7°C</sub>	3.70 kW	3.20 kW

COP Tj = +7°C	5.70	4.37
Cdh Tj = +7 °C	0.900	0.900
Pdh Tj = 12°C	4.50 kW	4.10 kW
COP Tj = 12°C	8.80	6.70
Cdh Tj = +12 °C	0.900	0.900
Pdh Tj = Tbiv	9.00 kW	8.50 kW
COP Tj = Tbiv	2.70	1.74
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	9.00 kW	8.50 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.70	1.74
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh		
WTOL	57 °C	57 °C
Poff	60 W	60 W
PTO	60 W	60 W
PSB	60 W	60 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	n/a	n/a
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	4000 kWh	5229 kWh

**Model HU163MA U33 / HN1639 NK3**

Model name	HU163MA U33 / HN1639 NK3
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
EI input	3.76 kW	4.71 kW
COP	4.26	2.55

**EN 12102-1 | Average Climate**

	Low temperature	Medium temperature
Sound power level indoor	44 dB(A)	44 dB(A)
Sound power level outdoor	65 dB(A)	65 dB(A)

**EN 14825 | Average Climate**

	Low temperature	Medium temperature
$\eta_s$	179 %	130 %
Prated	10.00 kW	9.90 kW
SCOP	4.56	3.32
Tbiv	-10 °C	-10 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	8.90 kW	8.80 kW
COP Tj = -7°C	3.00	1.93
Cdh Tj = -7 °C	0.900	0.900
Pdh Tj = +2°C	5.40 kW	5.30 kW
COP Tj = +2°C	4.55	3.32
Cdh Tj = +2 °C	0.900	0.900
Pdh Tj = +7°C	3.60 kW	3.40 kW

COP Tj = +7°C	5.50	4.30
Cdh Tj = +7 °C	0.900	0.900
Pdh Tj = 12°C	4.20 kW	4.30 kW
COP Tj = 12°C	8.00	6.40
Cdh Tj = +12 °C	0.900	0.900
Pdh Tj = Tbiv	10.00 kW	9.90 kW
COP Tj = Tbiv	2.60	1.70
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	10.00 kW	9.90 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.60	1.70
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh		
WTOL	57 °C	57 °C
Poff	60 W	60 W
PTO	60 W	60 W
PSB	60 W	60 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	n/a	n/a
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	4531 kWh	6157 kWh

**Model HU143MA U33 / HN1639 NK3**

Model name	HU143MA U33 / HN1639 NK3
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	11.50 kW
EI input	3.15 kW	4.51 kW
COP	4.45	2.55

**EN 12102-1 | Average Climate**

	Low temperature	Medium temperature
Sound power level indoor	44 dB(A)	44 dB(A)
Sound power level outdoor	64 dB(A)	64 dB(A)

**EN 14825 | Average Climate**

	Low temperature	Medium temperature
$\eta_s$	182 %	132 %
Prated	9.50 kW	9.00 kW
SCOP	4.61	3.37
Tbiv	-10 °C	-10 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	8.40 kW	8.00 kW
COP Tj = -7°C	3.00	1.98
Cdh Tj = -7 °C	0.900	0.900
Pdh Tj = +2°C	5.10 kW	4.90 kW
COP Tj = +2°C	4.60	3.35
Cdh Tj = +2 °C	0.900	0.900
Pdh Tj = +7°C	3.60 kW	3.20 kW

COP Tj = +7°C	5.60	4.36
Cdh Tj = +7 °C	0.900	0.900
Pdh Tj = 12°C	4.40 kW	4.10 kW
COP Tj = 12°C	8.40	6.60
Cdh Tj = +12 °C	0.900	0.900
Pdh Tj = Tbiv	9.50 kW	9.00 kW
COP Tj = Tbiv	2.65	1.72
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	9.50 kW	9.00 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.65	1.72
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh		
WTOL	57 °C	57 °C
Poff	60 W	60 W
PTO	60 W	60 W
PSB	60 W	60 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	n/a	n/a
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	4254 kWh	5524 kWh

**Model HU123MA U33 / HN1639 NK3**

Model name	HU123MA U33 / HN1639 NK3
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	11.00 kW
EI input	2.64 kW	4.31 kW
COP	4.55	2.55

**EN 12102-1 | Average Climate**

	Low temperature	Medium temperature
Sound power level indoor	44 dB(A)	44 dB(A)
Sound power level outdoor	63 dB(A)	63 dB(A)

**EN 14825 | Average Climate**

	Low temperature	Medium temperature
$\eta_s$	183 %	131 %
P <sub>rated</sub>	9.00 kW	8.50 kW
SCOP	4.65	3.36
T <sub>biv</sub>	-10 °C	-10 °C
T <sub>OL</sub>	-10 °C	-10 °C
P <sub>dh T<sub>j</sub></sub> = -7°C	8.00 kW	7.60 kW
COP T <sub>j</sub> = -7°C	3.00	1.98
C <sub>dh T<sub>j</sub></sub> = -7 °C	0.900	0.900
P <sub>dh T<sub>j</sub></sub> = +2°C	4.80 kW	4.70 kW
COP T <sub>j</sub> = +2°C	4.65	3.35
C <sub>dh T<sub>j</sub></sub> = +2 °C	0.900	0.900
P <sub>dh T<sub>j</sub></sub> = +7°C	3.70 kW	3.20 kW

COP Tj = +7°C	5.70	4.37
Cdh Tj = +7 °C	0.900	0.900
Pdh Tj = 12°C	4.50 kW	4.10 kW
COP Tj = 12°C	8.80	6.70
Cdh Tj = +12 °C	0.900	0.900
Pdh Tj = Tbiv	9.00 kW	8.50 kW
COP Tj = Tbiv	2.70	1.74
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	9.00 kW	8.50 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.70	1.74
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh		
WTOL	57 °C	57 °C
Poff	60 W	60 W
PTO	60 W	60 W
PSB	60 W	60 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	n/a	n/a
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	4000 kWh	5229 kWh

**Model HU161MA U33 / HN1616M NK5**

Model name	HU161MA U33 / HN1616M NK5
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
EI input	3.76 kW	4.71 kW
COP	4.26	2.55

**EN 12102-1 | Average Climate**

	Low temperature	Medium temperature
Sound power level indoor	44 dB(A)	44 dB(A)
Sound power level outdoor	65 dB(A)	65 dB(A)

**EN 14825 | Average Climate**

	Low temperature	Medium temperature
$\eta_s$	179 %	130 %
Prated	10.00 kW	9.90 kW
SCOP	4.56	3.32
Tbiv	-10 °C	-10 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	8.90 kW	8.80 kW
COP Tj = -7°C	3.00	1.93
Cdh Tj = -7 °C	0.900	0.900
Pdh Tj = +2°C	5.40 kW	5.30 kW
COP Tj = +2°C	4.55	3.32
Cdh Tj = +2 °C	0.900	0.900
Pdh Tj = +7°C	3.60 kW	3.40 kW

COP Tj = +7°C	5.50	4.30
Cdh Tj = +7 °C	0.900	0.900
Pdh Tj = 12°C	4.20 kW	4.30 kW
COP Tj = 12°C	8.00	6.40
Cdh Tj = +12 °C	0.900	0.900
Pdh Tj = Tbiv	10.00 kW	9.90 kW
COP Tj = Tbiv	2.60	1.70
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	10.00 kW	9.90 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.60	1.70
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh		
WTOL	57 °C	57 °C
Poff	60 W	60 W
PTO	60 W	60 W
PSB	60 W	60 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	n/a	n/a
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	4531 kWh	6157 kWh

**Model HU141MA U33 / HN1616M NK5**

Model name	HU141MA U33 / HN1616M NK5
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	11.50 kW
EI input	3.15 kW	4.51 kW
COP	4.45	2.55

**EN 12102-1 | Average Climate**

	Low temperature	Medium temperature
Sound power level indoor	44 dB(A)	44 dB(A)
Sound power level outdoor	64 dB(A)	64 dB(A)

**EN 14825 | Average Climate**

	Low temperature	Medium temperature
$\eta_s$	182 %	132 %
Prated	9.50 kW	9.00 kW
SCOP	4.61	3.37
Tbiv	-10 °C	-10 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	8.40 kW	8.00 kW
COP Tj = -7°C	3.00	1.98
Cdh Tj = -7 °C	0.900	0.900
Pdh Tj = +2°C	5.10 kW	4.90 kW
COP Tj = +2°C	4.60	3.35
Cdh Tj = +2 °C	0.900	0.900
Pdh Tj = +7°C	3.60 kW	3.20 kW

COP Tj = +7°C	5.60	4.36
Cdh Tj = +7 °C	0.900	0.900
Pdh Tj = 12°C	4.40 kW	4.10 kW
COP Tj = 12°C	8.40	6.60
Cdh Tj = +12 °C	0.900	0.900
Pdh Tj = Tbiv	9.50 kW	9.00 kW
COP Tj = Tbiv	2.65	1.72
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	9.50 kW	9.00 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.65	1.72
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh		
WTOL	57 °C	57 °C
Poff	60 W	60 W
PTO	60 W	60 W
PSB	60 W	60 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	n/a	n/a
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	4254 kWh	5524 kWh

**Model HU121MA U33 / HN1616M NK5**

Model name	HU121MA U33 / HN1616M NK5
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	11.00 kW
EI input	2.64 kW	4.31 kW
COP	4.55	2.55

**EN 12102-1 | Average Climate**

	Low temperature	Medium temperature
Sound power level indoor	44 dB(A)	44 dB(A)
Sound power level outdoor	63 dB(A)	63 dB(A)

**EN 14825 | Average Climate**

	Low temperature	Medium temperature
$\eta_s$	183 %	131 %
Prated	9.00 kW	8.50 kW
SCOP	4.65	3.36
Tbiv	-10 °C	-10 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	8.00 kW	7.60 kW
COP Tj = -7°C	3.00	1.98
Cdh Tj = -7 °C	0.900	0.900
Pdh Tj = +2°C	4.80 kW	4.70 kW
COP Tj = +2°C	4.65	3.35
Cdh Tj = +2 °C	0.900	0.900
Pdh Tj = +7°C	3.70 kW	3.20 kW

COP Tj = +7°C	5.70	4.37
Cdh Tj = +7 °C	0.900	0.900
Pdh Tj = 12°C	4.50 kW	4.10 kW
COP Tj = 12°C	8.80	6.70
Cdh Tj = +12 °C	0.900	0.900
Pdh Tj = Tbiv	9.00 kW	8.50 kW
COP Tj = Tbiv	2.70	1.74
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	9.00 kW	8.50 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.70	1.74
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh		
WTOL	57 °C	57 °C
Poff	60 W	60 W
PTO	60 W	60 W
PSB	60 W	60 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	n/a	n/a
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	4000 kWh	5229 kWh

**Model HU163MA U33 / HN1636M NK5**

Model name	HU163MA U33 / HN1636M NK5
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
EI input	3.76 kW	4.71 kW
COP	4.26	2.55

**EN 12102-1 | Average Climate**

	Low temperature	Medium temperature
Sound power level indoor	44 dB(A)	44 dB(A)
Sound power level outdoor	65 dB(A)	65 dB(A)

**EN 14825 | Average Climate**

	Low temperature	Medium temperature
$\eta_s$	179 %	130 %
Prated	10.00 kW	9.90 kW
SCOP	4.56	3.32
Tbiv	-10 °C	-10 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	8.90 kW	8.80 kW
COP Tj = -7°C	3.00	1.93
Cdh Tj = -7 °C	0.900	0.900
Pdh Tj = +2°C	5.40 kW	5.30 kW
COP Tj = +2°C	4.55	3.32
Cdh Tj = +2 °C	0.900	0.900
Pdh Tj = +7°C	3.60 kW	3.40 kW

COP Tj = +7°C	5.50	4.30
Cdh Tj = +7 °C	0.900	0.900
Pdh Tj = 12°C	4.20 kW	4.30 kW
COP Tj = 12°C	8.00	6.40
Cdh Tj = +12 °C	0.900	0.900
Pdh Tj = Tbiv	10.00 kW	9.90 kW
COP Tj = Tbiv	2.60	1.70
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	10.00 kW	9.90 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.60	1.70
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh		
WTOL	57 °C	57 °C
Poff	60 W	60 W
PTO	60 W	60 W
PSB	60 W	60 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	n/a	n/a
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	4531 kWh	6157 kWh

**Model HU143MA U33 / HN1636M NK5**

Model name	HU143MA U33 / HN1636M NK5
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	11.50 kW
EI input	3.15 kW	4.51 kW
COP	4.45	2.55

**EN 12102-1 | Average Climate**

	Low temperature	Medium temperature
Sound power level indoor	44 dB(A)	44 dB(A)
Sound power level outdoor	64 dB(A)	64 dB(A)

**EN 14825 | Average Climate**

	Low temperature	Medium temperature
$\eta_s$	182 %	132 %
Prated	9.50 kW	9.00 kW
SCOP	4.61	3.37
Tbiv	-10 °C	-10 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	8.40 kW	8.00 kW
COP Tj = -7°C	3.00	1.98
Cdh Tj = -7 °C	0.900	0.900
Pdh Tj = +2°C	5.10 kW	4.90 kW
COP Tj = +2°C	4.60	3.35
Cdh Tj = +2 °C	0.900	0.900
Pdh Tj = +7°C	3.60 kW	3.20 kW

COP Tj = +7°C	5.60	4.36
Cdh Tj = +7 °C	0.900	0.900
Pdh Tj = 12°C	4.40 kW	4.10 kW
COP Tj = 12°C	8.40	6.60
Cdh Tj = +12 °C	0.900	0.900
Pdh Tj = Tbiv	9.50 kW	9.00 kW
COP Tj = Tbiv	2.65	1.72
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	9.50 kW	9.00 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.65	1.72
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh		
WTOL	57 °C	57 °C
Poff	60 W	60 W
PTO	60 W	60 W
PSB	60 W	60 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	n/a	n/a
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	4254 kWh	5524 kWh

**Model HU123MA U33 / HN1636M NK5**

Model name	HU123MA U33 / HN1636M NK5
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	11.00 kW
EI input	2.64 kW	4.31 kW
COP	4.55	2.55

**EN 12102-1 | Average Climate**

	Low temperature	Medium temperature
Sound power level indoor	44 dB(A)	44 dB(A)
Sound power level outdoor	63 dB(A)	63 dB(A)

**EN 14825 | Average Climate**

	Low temperature	Medium temperature
$\eta_s$	183 %	131 %
Prated	9.00 kW	8.50 kW
SCOP	4.65	3.36
Tbiv	-10 °C	-10 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	8.00 kW	7.60 kW
COP Tj = -7°C	3.00	1.98
Cdh Tj = -7 °C	0.900	0.900
Pdh Tj = +2°C	4.80 kW	4.70 kW
COP Tj = +2°C	4.65	3.35
Cdh Tj = +2 °C	0.900	0.900
Pdh Tj = +7°C	3.70 kW	3.20 kW

COP Tj = +7°C	5.70	4.37
Cdh Tj = +7 °C	0.900	0.900
Pdh Tj = 12°C	4.50 kW	4.10 kW
COP Tj = 12°C	8.80	6.70
Cdh Tj = +12 °C	0.900	0.900
Pdh Tj = Tbiv	9.00 kW	8.50 kW
COP Tj = Tbiv	2.70	1.74
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	9.00 kW	8.50 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.70	1.74
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh		
WTOL	57 °C	57 °C
Poff	60 W	60 W
PTO	60 W	60 W
PSB	60 W	60 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	n/a	n/a
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	4000 kWh	5229 kWh