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Summary of		NIMBUS/ARIANEXT/AEROTOP/ENERGION 80 M - Plus/LB		Reg. No.	ICIM-PDC-000117
Certificate Holder					
Name		Ariston Thermo Group			
Address		Viale Aristide Merloni 45		Zip	I-60044
City		Fabriano (AN)		Country	Italy
Certification Body		ICIM S.p.A.			
Subtype title		NIMBUS/ARIANEXT/AEROTOP/ENERGION 80 M - Plus/LB			
Heat Pump Type		Outdoor Air/Water			
Refrigerant		R32			
Mass of Refrigerant		1.4 kg			
Certification Date		05.07.2022			
Testing basis		Heat Pump KEYMARK rev9			

# Model: NIMBUS PLUS 80 M NET R32

Configure model	
Model name	NIMBUS PLUS 80 M NET R32
Application	Heating (medium temp)
Units	Indoor + Outdoor
Climate Zone	Colder Climate + Warmer Climate
Reversibility	Yes
Cooling mode application (optional)	+7°C/12°C

General Data	
Power supply	1x230V 50Hz

## Heating

EN 14511-2		
	Low temperature	Medium temperature
Heat output	8.00 kW	5.80 kW
El input	1.67 kW	1.97 kW
COP	4.80	2.95

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

## Cooling

**EN 14511-2**

	<b>+7°C/+12°C</b>	<b>+18°C/+23°C</b>
El input	2.26 kW	1.49 kW
Cooling capacity	7	7.00
EER	3.10	4.70

**EN 14825**

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	<b>+7°C/+12°C</b>
P <sub>designc</sub>	7 kW
SEER	4.64
P <sub>dc</sub> T <sub>j</sub> = 35°C	7 kW
EER T <sub>j</sub> = 35°C	3.1
P <sub>dc</sub> T <sub>j</sub> = 30°C	5.17 kW
EER T <sub>j</sub> = 30°C	4.13
C <sub>dc</sub> T <sub>j</sub> = 30 °C	0.99
P <sub>dc</sub> T <sub>j</sub> = 25°C	3.32 kW
EER T <sub>j</sub> = 25°C	4.89
C <sub>dc</sub> T <sub>j</sub> = 25 °C	0.98
P <sub>dc</sub> T <sub>j</sub> = 20°C	3.19 kW
EER T <sub>j</sub> = 20°C	6.85
C <sub>dc</sub> T <sub>j</sub> = 20 °C	0.97
P <sub>off</sub>	14 W
PTO	14 W
PSB	14 W
PCK	0 W
Annual energy consumption Q <sub>ce</sub>	1381 kWh

## Warmer Climate

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### EN 12102-1

	Low temperature	Medium temperature
Sound power level indoor	35 dB(A)	35 dB(A)
Sound power level outdoor	57 dB(A)	57 dB(A)

### EN 14825

	Low temperature	Medium temperature
P <sub>designh</sub>	4.93 kW	4.48 kW
$\eta_s$	242 %	151 %
P <sub>rated</sub>	4.93 kW	4.48 kW
SCOP	6.14	3.84
T <sub>biv</sub>	2 °C	2 °C
TOL	-20 °C	-20 °C
P <sub>dh</sub> T <sub>j</sub> = +2°C	4.93 kW	4.48 kW
COP T <sub>j</sub> = +2°C	4.05	2.53
C <sub>dh</sub> T <sub>j</sub> = +2 °C	0.989	0.992
P <sub>dh</sub> T <sub>j</sub> = +7°C	3.10 kW	2.81 kW
COP T <sub>j</sub> = +7°C	5.70	3.08
C <sub>dh</sub> T <sub>j</sub> = +7 °C	0.975	0.985
P <sub>dh</sub> T <sub>j</sub> = 12°C	3.28 kW	3.16 kW
COP T <sub>j</sub> = 12°C	7.86	5.45

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Cdh Tj = +12 °C	0.967	0.977
Pdh Tj = Tbiv	4.93 kW	4.48 kW
COP Tj = Tbiv	4.05	2.53
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	5.51 kW	4.90 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.22	1.51
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh		
WTOL	60 °C	60 °C
Poff	14 W	14 W
PTO	14 W	14 W
PSB	14 W	14 W
PCK	14 W	14 W
Supplementary Heater: Type of energy input	n/a	n/a
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Backup Heater	4.00 kW	4.00 kW
Annual energy consumption Qhe	1073 kWh	1557 kWh

## Colder Climate

<b>EN 12102-1</b>		
	<b>Low temperature</b>	<b>Medium temperature</b>
Sound power level indoor	35 dB(A)	35 dB(A)
Sound power level outdoor	57 dB(A)	57 dB(A)

This information was generated by the HP KEYMARK database on 5 Jul 2022

**EN 14825**

	Low temperature	Medium temperature
P <sub>designh</sub>	11.78 kW	11.53 kW
$\eta_s$	154 %	120 %
P <sub>rated</sub>	11.78 kW	11.53 kW
SCOP	3.93	3.08
T <sub>biv</sub>	-7 °C	-7 °C
TOL	-20 °C	-20 °C
P <sub>dh</sub> T <sub>j</sub> = -7°C	7.13 kW	6.98 kW
COP T <sub>j</sub> = -7°C	3.47	2.73
C <sub>dh</sub> T <sub>j</sub> = -7 °C	0.993	0.995
P <sub>dh</sub> T <sub>j</sub> = +2°C	4.51 kW	4.20 kW
COP T <sub>j</sub> = +2°C	5.32	4.07
C <sub>dh</sub> T <sub>j</sub> = +2 °C	0.984	0.987
P <sub>dh</sub> T <sub>j</sub> = +7°C	3.06 kW	2.84 kW
COP T <sub>j</sub> = +7°C	7.24	5.15
C <sub>dh</sub> T <sub>j</sub> = +7 °C	0.968	0.975
P <sub>dh</sub> T <sub>j</sub> = 12°C	3.18 kW	3.24 kW
COP T <sub>j</sub> = 12°C	8.02	6.47
C <sub>dh</sub> T <sub>j</sub> = +12 °C	0.966	0.973
P <sub>dh</sub> T <sub>j</sub> = T <sub>biv</sub>	7.13 kW	6.98 kW

This information was generated by the HP KEYMARK database on 5 Jul 2022

COP Tj = Tbiv	3.47	2.70
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	5.51 kW	4.90 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.22	1.51
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.993	0.995
WTOL	60 °C	60 °C
Poff	14 W	14 W
PTO	14 W	14 W
PSB	14 W	14 W
PCK	14 W	14 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	11.16 kW	10.93 kW
Backup Heater	4.00 kW	4.00 kW
Annual energy consumption Qhe	7398 kWh	9226 kWh
Pdh Tj = -15°C (if TOL<-20°C)		
COP Tj = -15°C (if TOL<-20°C)		
Cdh Tj = -15 °C		

## Average Climate

<b>EN 12102-1</b>		
	<b>Low temperature</b>	<b>Medium temperature</b>
Sound power level indoor	35 dB(A)	35 dB(A)
Sound power level outdoor	57 dB(A)	57 dB(A)



This information was generated by the HP KEYMARK database on 5 Jul 2022

## EN 14825

	Low temperature	Medium temperature
P <sub>designh</sub>	8.37 kW	7.62 kW
$\eta_s$	195 %	140 %
P <sub>rated</sub>	8.37 kW	7.62 kW
SCOP	4.95	3.57
T <sub>biv</sub>	-7 °C	-7 °C
TOL	-20 °C	-20 °C
P <sub>dh</sub> T <sub>j</sub> = -7°C	7.40 kW	6.74 kW
COP T <sub>j</sub> = -7°C	3.10	2.29
C <sub>dh</sub> T <sub>j</sub> = -7 °C	0.994	0.995
P <sub>dh</sub> T <sub>j</sub> = +2°C	4.54 kW	4.22 kW
COP T <sub>j</sub> = +2°C	4.80	3.51
C <sub>dh</sub> T <sub>j</sub> = +2 °C	0.986	0.989
P <sub>dh</sub> T <sub>j</sub> = +7°C	2.94 kW	2.74 kW
COP T <sub>j</sub> = +7°C	6.61	4.36
C <sub>dh</sub> T <sub>j</sub> = +7 °C	0.969	0.978
P <sub>dh</sub> T <sub>j</sub> = 12°C	3.16 kW	3.28 kW
COP T <sub>j</sub> = 12°C	8.15	6.50
C <sub>dh</sub> T <sub>j</sub> = +12 °C	0.965	0.973
P <sub>dh</sub> T <sub>j</sub> = T <sub>biv</sub>	7.40 kW	6.74 kW

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COP $T_j = T_{biv}$	3.10	2.29
$P_{dh} T_j = TOL$ or $P_{dh} T_j = T_{designh}$ if $TOL < T_{designh}$	5.51 kW	4.90 kW
COP $T_j = TOL$ or COP $T_j = T_{designh}$ if $TOL < T_{designh}$	2.22	1.51
$C_{dh} T_j = TOL$ or $P_{dh} T_j = T_{designh}$ if $TOL < T_{designh}$	0.994	0.995
WTOL	60 °C	60 °C
Poff	14 W	14 W
PTO	14 W	14 W
PSB	14 W	14 W
PCK	14 W	14 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	2.86 kW	2.72 kW
Backup Heater	4.00 kW	4.00 kW
Annual energy consumption $Q_{he}$	3490 kWh	4405 kWh

## Model: NIMBUS PLUS 80 M-T NET R32

### Configure model

Model name	NIMBUS PLUS 80 M-T NET R32
Application	Heating (medium temp)
Units	Indoor + Outdoor
Climate Zone	Colder Climate + Warmer Climate
Reversibility	Yes
Cooling mode application (optional)	+7°C/12°C

### General Data

Power supply	3x400V 50Hz
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## Heating

### EN 14511-2

	Low temperature	Medium temperature
Heat output	8.00 kW	5.80 kW
El input	1.67 kW	1.97 kW
COP	4.80	2.95

### EN 14511-4

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

## Cooling

This information was generated by the HP KEYMARK database on 5 Jul 2022

### EN 14511-2

	+7°C/+12°C	+18°C/+23°C
El input	2.26 kW	1.49 kW
Cooling capacity	7	7.00
EER	3.10	4.70

### EN 14825

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	<b>+7°C/+12°C</b>
P <sub>designc</sub>	7 kW
SEER	4.64
P <sub>dc</sub> T <sub>j</sub> = 35°C	7 kW
EER T <sub>j</sub> = 35°C	3.1
P <sub>dc</sub> T <sub>j</sub> = 30°C	5.17 kW
EER T <sub>j</sub> = 30°C	4.13
C <sub>dc</sub> T <sub>j</sub> = 30 °C	0.99
P <sub>dc</sub> T <sub>j</sub> = 25°C	3.32 kW
EER T <sub>j</sub> = 25°C	4.89
C <sub>dc</sub> T <sub>j</sub> = 25 °C	0.98
P <sub>dc</sub> T <sub>j</sub> = 20°C	3.19 kW
EER T <sub>j</sub> = 20°C	6.85
C <sub>dc</sub> T <sub>j</sub> = 20 °C	0.97
P <sub>off</sub>	14 W
PTO	14 W
PSB	14 W
PCK	0 W
Annual energy consumption Q <sub>ce</sub>	1381 kWh

## Warmer Climate

### EN 12102-1

	Low temperature	Medium temperature
Sound power level indoor	35 dB(A)	35 dB(A)
Sound power level outdoor	57 dB(A)	57 dB(A)

### EN 14825

	Low temperature	Medium temperature
P <sub>designh</sub>	4.93 kW	4.48 kW
$\eta_s$	242 %	151 %
P <sub>rated</sub>	4.93 kW	4.48 kW
SCOP	6.14	3.84
T <sub>biv</sub>	2 °C	2 °C
TOL	-20 °C	-20 °C
P <sub>dh</sub> T <sub>j</sub> = +2°C	4.93 kW	4.48 kW
COP T <sub>j</sub> = +2°C	4.05	2.53
C <sub>dh</sub> T <sub>j</sub> = +2 °C	0.989	0.992
P <sub>dh</sub> T <sub>j</sub> = +7°C	3.10 kW	2.81 kW
COP T <sub>j</sub> = +7°C	5.70	3.08
C <sub>dh</sub> T <sub>j</sub> = +7 °C	0.975	0.985
P <sub>dh</sub> T <sub>j</sub> = 12°C	3.28 kW	3.16 kW
COP T <sub>j</sub> = 12°C	7.86	5.45

This information was generated by the HP KEYMARK database on 5 Jul 2022

Cdh Tj = +12 °C	0.967	0.977
Pdh Tj = Tbiv	4.93 kW	4.48 kW
COP Tj = Tbiv	4.05	2.53
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	5.51 kW	4.90 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.22	1.51
WTOL	60 °C	60 °C
Poff	14 W	14 W
PTO	14 W	14 W
PSB	14 W	14 W
PCK	14 W	14 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Backup Heater	4.00 kW	4.00 kW
Annual energy consumption Qhe	1073 kWh	1557 kWh

## Colder Climate

<b>EN 12102-1</b>		
	<b>Low temperature</b>	<b>Medium temperature</b>
Sound power level indoor	35 dB(A)	35 dB(A)
Sound power level outdoor	57 dB(A)	57 dB(A)

<b>EN 14825</b>
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	Low temperature	Medium temperature
P <sub>designh</sub>	11.78 kW	11.53 kW
$\eta_s$	154 %	120 %
P <sub>rated</sub>	11.78 kW	11.53 kW
SCOP	3.93	3.08
T <sub>biv</sub>	-7 °C	-7 °C
TOL	-20 °C	-20 °C
P <sub>dh</sub> T <sub>j</sub> = -7°C	7.13 kW	6.98 kW
COP T <sub>j</sub> = -7°C	3.47	2.73
C <sub>dh</sub> T <sub>j</sub> = -7 °C	0.993	0.995
P <sub>dh</sub> T <sub>j</sub> = +2°C	4.51 kW	4.20 kW
COP T <sub>j</sub> = +2°C	5.32	4.07
C <sub>dh</sub> T <sub>j</sub> = +2 °C	0.984	0.987
P <sub>dh</sub> T <sub>j</sub> = +7°C	3.06 kW	2.84 kW
COP T <sub>j</sub> = +7°C	7.24	5.15
C <sub>dh</sub> T <sub>j</sub> = +7 °C	0.968	0.975
P <sub>dh</sub> T <sub>j</sub> = 12°C	3.18 kW	3.24 kW
COP T <sub>j</sub> = 12°C	8.02	6.47
C <sub>dh</sub> T <sub>j</sub> = +12 °C	0.966	0.973
P <sub>dh</sub> T <sub>j</sub> = T <sub>biv</sub>	7.13 kW	6.98 kW



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COP $T_j = T_{biv}$	3.47	2.70
$P_{dh} T_j = TOL$ or $P_{dh} T_j = T_{designh}$ if $TOL < T_{designh}$	5.51 kW	4.90 kW
COP $T_j = TOL$ or COP $T_j = T_{designh}$ if $TOL < T_{designh}$	2.22	1.51
$C_{dh} T_j = TOL$ or $P_{dh} T_j = T_{designh}$ if $TOL < T_{designh}$	0.993	0.995
WTOL	60 °C	60 °C
Poff	14 W	14 W
PTO	14 W	14 W
PSB	14 W	14 W
PCK	14 W	14 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	11.16 kW	10.93 kW
Backup Heater	4.00 kW	4.00 kW
Annual energy consumption $Q_{he}$	7398 kWh	9226 kWh

## Average Climate

<b>EN 12102-1</b>		
	<b>Low temperature</b>	<b>Medium temperature</b>
Sound power level indoor	35 dB(A)	35 dB(A)
Sound power level outdoor	57 dB(A)	57 dB(A)

<b>EN 14825</b>
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This information was generated by the HP KEYMARK database on 5 Jul 2022

	<b>Low temperature</b>	<b>Medium temperature</b>
P <sub>designh</sub>	8.37 kW	7.62 kW
$\eta_s$	195 %	140 %
P <sub>rated</sub>	8.37 kW	7.62 kW
SCOP	4.95	3.57
T <sub>biv</sub>	-7 °C	-7 °C
TOL	-20 °C	-20 °C
P <sub>dh</sub> T <sub>j</sub> = -7°C	7.40 kW	6.74 kW
COP T <sub>j</sub> = -7°C	3.10	2.29
C <sub>dh</sub> T <sub>j</sub> = -7 °C	0.994	0.995
P <sub>dh</sub> T <sub>j</sub> = +2°C	4.54 kW	4.22 kW
COP T <sub>j</sub> = +2°C	4.80	3.51
C <sub>dh</sub> T <sub>j</sub> = +2 °C	0.986	0.989
P <sub>dh</sub> T <sub>j</sub> = +7°C	2.94 kW	2.74 kW
COP T <sub>j</sub> = +7°C	6.61	4.36
C <sub>dh</sub> T <sub>j</sub> = +7 °C	0.969	0.978
P <sub>dh</sub> T <sub>j</sub> = 12°C	3.16 kW	3.28 kW
COP T <sub>j</sub> = 12°C	8.15	6.50
C <sub>dh</sub> T <sub>j</sub> = +12 °C	0.965	0.973
P <sub>dh</sub> T <sub>j</sub> = T <sub>biv</sub>	7.40 kW	6.74 kW
COP T <sub>j</sub> = T <sub>biv</sub>	3.10	2.29

This information was generated by the HP KEYMARK database on 5 Jul 2022

Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	5.51 kW	4.90 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.22	1.51
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.994	0.995
WTOL	60 °C	60 °C
Poff	14 W	14 W
PTO	14 W	14 W
PSB	14 W	14 W
PCK	14 W	14 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	2.86 kW	2.72 kW
Backup Heater	4.00 kW	4.00 kW
Annual energy consumption Qhe	3490 kWh	4405 kWh

# Model: NIMBUS POCKET 80 M NET R32

Configure model	
Model name	NIMBUS POCKET 80 M NET R32
Application	Heating (medium temp)
Units	Indoor + Outdoor
Climate Zone	Colder Climate + Warmer Climate
Reversibility	Yes
Cooling mode application (optional)	+7°C/12°C

General Data	
Power supply	1x230V 50Hz

## Heating

EN 14511-2		
	Low temperature	Medium temperature
Heat output	8.00 kW	5.80 kW
El input	1.67 kW	1.97 kW
COP	4.80	2.95

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

## Cooling

This information was generated by the HP KEYMARK database on 5 Jul 2022

### EN 14511-2

	+7°C/+12°C	+18°C/+23°C
El input	2.26 kW	1.49 kW
Cooling capacity	7	7.00
EER	3.10	4.70

### EN 14825

This information was generated by the HP KEYMARK database on 5 Jul 2022

	<b>+7°C/+12°C</b>
P <sub>designc</sub>	7 kW
SEER	4.64
P <sub>dc</sub> T <sub>j</sub> = 35°C	7 kW
EER T <sub>j</sub> = 35°C	3.1
P <sub>dc</sub> T <sub>j</sub> = 30°C	5.17 kW
EER T <sub>j</sub> = 30°C	4.13
C <sub>dc</sub> T <sub>j</sub> = 30 °C	0.99
P <sub>dc</sub> T <sub>j</sub> = 25°C	3.32 kW
EER T <sub>j</sub> = 25°C	4.89
C <sub>dc</sub> T <sub>j</sub> = 25 °C	0.98
P <sub>dc</sub> T <sub>j</sub> = 20°C	3.19 kW
EER T <sub>j</sub> = 20°C	6.85
C <sub>dc</sub> T <sub>j</sub> = 20 °C	0.97
P <sub>off</sub>	14 W
PTO	14 W
PSB	14 W
PCK	0 W
Annual energy consumption Q <sub>ce</sub>	1381 kWh

## Warmer Climate

### EN 12102-1

	Low temperature	Medium temperature
Sound power level indoor	15 dB(A)	15 dB(A)
Sound power level outdoor	57 dB(A)	57 dB(A)

### EN 14825

	Low temperature	Medium temperature
P <sub>designh</sub>	4.93 kW	4.48 kW
$\eta_s$	242 %	151 %
P <sub>rated</sub>	4.93 kW	4.48 kW
SCOP	6.14	3.84
T <sub>biv</sub>	2 °C	2 °C
TOL	-20 °C	-20 °C
P <sub>dh</sub> T <sub>j</sub> = +2°C	4.93 kW	4.48 kW
COP T <sub>j</sub> = +2°C	4.05	2.53
C <sub>dh</sub> T <sub>j</sub> = +2 °C	0.989	0.992
P <sub>dh</sub> T <sub>j</sub> = +7°C	3.10 kW	2.81 kW
COP T <sub>j</sub> = +7°C	5.70	3.08
C <sub>dh</sub> T <sub>j</sub> = +7 °C	0.975	0.985
P <sub>dh</sub> T <sub>j</sub> = 12°C	3.28 kW	3.16 kW
COP T <sub>j</sub> = 12°C	7.86	5.45

This information was generated by the HP KEYMARK database on 5 Jul 2022

Cdh Tj = +12 °C	0.967	0.977
Pdh Tj = Tbiv	4.93 kW	4.48 kW
COP Tj = Tbiv	4.05	2.53
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	5.51 kW	4.90 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.22	1.51
WTOL	60 °C	60 °C
Poff	14 W	14 W
PTO	14 W	14 W
PSB	14 W	14 W
PCK	14 W	14 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Backup Heater	4.00 kW	4.00 kW
Annual energy consumption Qhe	1073 kWh	1557 kWh

## Colder Climate

<b>EN 12102-1</b>		
	<b>Low temperature</b>	<b>Medium temperature</b>
Sound power level indoor	15 dB(A)	15 dB(A)
Sound power level outdoor	57 dB(A)	57 dB(A)

<b>EN 14825</b>
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This information was generated by the HP KEYMARK database on 5 Jul 2022

	Low temperature	Medium temperature
P <sub>designh</sub>	11.78 kW	11.53 kW
$\eta_s$	154 %	120 %
P <sub>rated</sub>	11.78 kW	11.53 kW
SCOP	3.93	3.08
T <sub>biv</sub>	-7 °C	-7 °C
TOL	-20 °C	-20 °C
P <sub>dh</sub> T <sub>j</sub> = -7°C	7.13 kW	6.98 kW
COP T <sub>j</sub> = -7°C	3.47	2.73
C <sub>dh</sub> T <sub>j</sub> = -7 °C	0.993	0.995
P <sub>dh</sub> T <sub>j</sub> = +2°C	4.51 kW	4.20 kW
COP T <sub>j</sub> = +2°C	5.32	4.07
C <sub>dh</sub> T <sub>j</sub> = +2 °C	0.984	0.987
P <sub>dh</sub> T <sub>j</sub> = +7°C	3.06 kW	2.84 kW
COP T <sub>j</sub> = +7°C	7.24	5.15
C <sub>dh</sub> T <sub>j</sub> = +7 °C	0.968	0.975
P <sub>dh</sub> T <sub>j</sub> = 12°C	3.18 kW	3.24 kW
COP T <sub>j</sub> = 12°C	8.02	6.47
C <sub>dh</sub> T <sub>j</sub> = +12 °C	0.966	0.973
P <sub>dh</sub> T <sub>j</sub> = T <sub>biv</sub>	7.13 kW	6.98 kW

This information was generated by the HP KEYMARK database on 5 Jul 2022

COP $T_j = T_{biv}$	3.47	2.70
$P_{dh} T_j = TOL$ or $P_{dh} T_j = T_{designh}$ if $TOL < T_{designh}$	5.51 kW	4.90 kW
COP $T_j = TOL$ or COP $T_j = T_{designh}$ if $TOL < T_{designh}$	2.22	1.51
$C_{dh} T_j = TOL$ or $P_{dh} T_j = T_{designh}$ if $TOL < T_{designh}$	0.993	0.995
WTOL	60 °C	60 °C
Poff	14 W	14 W
PTO	14 W	14 W
PSB	14 W	14 W
PCK	14 W	14 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	11.16 kW	10.93 kW
Backup Heater	4.00 kW	4.00 kW
Annual energy consumption $Q_{he}$	7398 kWh	9226 kWh

## Average Climate

<b>EN 12102-1</b>		
	<b>Low temperature</b>	<b>Medium temperature</b>
Sound power level indoor	15 dB(A)	15 dB(A)
Sound power level outdoor	57 dB(A)	57 dB(A)

<b>EN 14825</b>
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This information was generated by the HP KEYMARK database on 5 Jul 2022

	<b>Low temperature</b>	<b>Medium temperature</b>
P <sub>designh</sub>	8.37 kW	7.62 kW
$\eta_s$	195 %	140 %
P <sub>rated</sub>	8.37 kW	7.62 kW
SCOP	4.95	3.57
T <sub>biv</sub>	-7 °C	-7 °C
TOL	-20 °C	-20 °C
P <sub>dh</sub> T <sub>j</sub> = -7°C	7.40 kW	6.74 kW
COP T <sub>j</sub> = -7°C	3.10	2.29
C <sub>dh</sub> T <sub>j</sub> = -7 °C	0.994	0.995
P <sub>dh</sub> T <sub>j</sub> = +2°C	4.54 kW	4.22 kW
COP T <sub>j</sub> = +2°C	4.80	3.51
C <sub>dh</sub> T <sub>j</sub> = +2 °C	0.986	0.989
P <sub>dh</sub> T <sub>j</sub> = +7°C	2.94 kW	2.74 kW
COP T <sub>j</sub> = +7°C	6.61	4.36
C <sub>dh</sub> T <sub>j</sub> = +7 °C	0.969	0.978
P <sub>dh</sub> T <sub>j</sub> = 12°C	3.16 kW	3.28 kW
COP T <sub>j</sub> = 12°C	8.15	6.50
C <sub>dh</sub> T <sub>j</sub> = +12 °C	0.965	0.973
P <sub>dh</sub> T <sub>j</sub> = T <sub>biv</sub>	7.40 kW	6.74 kW
COP T <sub>j</sub> = T <sub>biv</sub>	3.10	2.29

This information was generated by the HP KEYMARK database on 5 Jul 2022

Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	5.51 kW	4.90 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.22	1.51
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.994	0.995
WTOL	60 °C	60 °C
Poff	14 W	14 W
PTO	14 W	14 W
PSB	14 W	14 W
PCK	14 W	14 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	2.86 kW	2.72 kW
Backup Heater	4.00 kW	4.00 kW
Annual energy consumption Qhe	3490 kWh	4405 kWh

# Model: NIMBUS POCKET 80 M-T NET R32

## Configure model

Model name	NIMBUS POCKET 80 M-T NET R32
Application	Heating (medium temp)
Units	Indoor + Outdoor
Climate Zone	Colder Climate + Warmer Climate
Reversibility	Yes
Cooling mode application (optional)	+7°C/12°C

## General Data

Power supply	3x400V 50Hz
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## Heating

### EN 14511-2

	Low temperature	Medium temperature
Heat output	8.00 kW	5.80 kW
El input	1.67 kW	1.97 kW
COP	4.80	2.95

### EN 14511-4

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

## Cooling

### EN 14511-2

	+7°C/+12°C	+18°C/+23°C
El input	2.26 kW	1.49 kW
Cooling capacity	7	7.00
EER	3.10	4.70

### EN 14825

This information was generated by the HP KEYMARK database on 5 Jul 2022

	<b>+7°C/+12°C</b>
P <sub>designc</sub>	7 kW
SEER	4.64
P <sub>dc</sub> T <sub>j</sub> = 35°C	7 kW
EER T <sub>j</sub> = 35°C	3.1
P <sub>dc</sub> T <sub>j</sub> = 30°C	5.17 kW
EER T <sub>j</sub> = 30°C	4.13
C <sub>dc</sub> T <sub>j</sub> = 30 °C	0.99
P <sub>dc</sub> T <sub>j</sub> = 25°C	3.32 kW
EER T <sub>j</sub> = 25°C	4.89
C <sub>dc</sub> T <sub>j</sub> = 25 °C	0.98
P <sub>dc</sub> T <sub>j</sub> = 20°C	3.19 kW
EER T <sub>j</sub> = 20°C	6.85
C <sub>dc</sub> T <sub>j</sub> = 20 °C	0.97
P <sub>off</sub>	14 W
PTO	14 W
PSB	14 W
PCK	0 W
Annual energy consumption Q <sub>ce</sub>	1381 kWh

## Warmer Climate

### EN 12102-1

	Low temperature	Medium temperature
Sound power level indoor	15 dB(A)	15 dB(A)
Sound power level outdoor	57 dB(A)	57 dB(A)

### EN 14825

	Low temperature	Medium temperature
P <sub>designh</sub>	4.93 kW	4.48 kW
$\eta_s$	242 %	151 %
P <sub>rated</sub>	4.93 kW	4.48 kW
SCOP	6.14	3.84
T <sub>biv</sub>	2 °C	2 °C
TOL	-20 °C	-20 °C
P <sub>dh</sub> T <sub>j</sub> = +2°C	4.93 kW	4.48 kW
COP T <sub>j</sub> = +2°C	4.05	2.53
C <sub>dh</sub> T <sub>j</sub> = +2 °C	0.989	0.992
P <sub>dh</sub> T <sub>j</sub> = +7°C	3.10 kW	2.81 kW
COP T <sub>j</sub> = +7°C	5.70	3.08
C <sub>dh</sub> T <sub>j</sub> = +7 °C	0.975	0.985
P <sub>dh</sub> T <sub>j</sub> = 12°C	3.28 kW	3.16 kW
COP T <sub>j</sub> = 12°C	7.86	5.45



This information was generated by the HP KEYMARK database on 5 Jul 2022

Cdh Tj = +12 °C	0.967	0.977
Pdh Tj = Tbiv	4.93 kW	4.48 kW
COP Tj = Tbiv	4.05	2.53
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	5.51 kW	4.90 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.22	1.51
WTOL	60 °C	60 °C
Poff	14 W	14 W
PTO	14 W	14 W
PSB	14 W	14 W
PCK	14 W	14 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Backup Heater	4.00 kW	4.00 kW
Annual energy consumption Qhe	1073 kWh	1557 kWh

## Colder Climate

<b>EN 12102-1</b>		
	<b>Low temperature</b>	<b>Medium temperature</b>
Sound power level indoor	15 dB(A)	15 dB(A)
Sound power level outdoor	57 dB(A)	57 dB(A)

<b>EN 14825</b>
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This information was generated by the HP KEYMARK database on 5 Jul 2022

	Low temperature	Medium temperature
P <sub>designh</sub>	11.78 kW	11.53 kW
$\eta_s$	154 %	120 %
P <sub>rated</sub>	11.78 kW	11.53 kW
SCOP	3.93	3.08
T <sub>biv</sub>	-7 °C	-7 °C
TOL	-20 °C	-20 °C
P <sub>dh</sub> T <sub>j</sub> = -7°C	7.13 kW	6.98 kW
COP T <sub>j</sub> = -7°C	3.47	2.73
C <sub>dh</sub> T <sub>j</sub> = -7 °C	0.993	0.995
P <sub>dh</sub> T <sub>j</sub> = +2°C	4.51 kW	4.20 kW
COP T <sub>j</sub> = +2°C	5.32	4.07
C <sub>dh</sub> T <sub>j</sub> = +2 °C	0.984	0.987
P <sub>dh</sub> T <sub>j</sub> = +7°C	3.06 kW	2.84 kW
COP T <sub>j</sub> = +7°C	7.24	5.15
C <sub>dh</sub> T <sub>j</sub> = +7 °C	0.968	0.975
P <sub>dh</sub> T <sub>j</sub> = 12°C	3.18 kW	3.24 kW
COP T <sub>j</sub> = 12°C	8.02	6.47
C <sub>dh</sub> T <sub>j</sub> = +12 °C	0.966	0.973
P <sub>dh</sub> T <sub>j</sub> = T <sub>biv</sub>	7.13 kW	6.98 kW

This information was generated by the HP KEYMARK database on 5 Jul 2022

COP $T_j = T_{biv}$	3.47	2.70
$P_{dh} T_j = TOL$ or $P_{dh} T_j = T_{designh}$ if $TOL < T_{designh}$	5.51 kW	4.90 kW
COP $T_j = TOL$ or COP $T_j = T_{designh}$ if $TOL < T_{designh}$	2.22	1.51
$C_{dh} T_j = TOL$ or $P_{dh} T_j = T_{designh}$ if $TOL < T_{designh}$	0.993	0.995
WTOL	60 °C	60 °C
Poff	14 W	14 W
PTO	14 W	14 W
PSB	14 W	14 W
PCK	14 W	14 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	11.16 kW	10.93 kW
Backup Heater	4.00 kW	4.00 kW
Annual energy consumption $Q_{he}$	7398 kWh	9226 kWh

## Average Climate

<b>EN 12102-1</b>		
	<b>Low temperature</b>	<b>Medium temperature</b>
Sound power level indoor	15 dB(A)	15 dB(A)
Sound power level outdoor	57 dB(A)	57 dB(A)

<b>EN 14825</b>
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This information was generated by the HP KEYMARK database on 5 Jul 2022

	<b>Low temperature</b>	<b>Medium temperature</b>
P <sub>designh</sub>	8.37 kW	7.62 kW
$\eta_s$	195 %	140 %
P <sub>rated</sub>	8.37 kW	7.62 kW
SCOP	4.95	3.57
T <sub>biv</sub>	-7 °C	-7 °C
TOL	-20 °C	-20 °C
P <sub>dh</sub> T <sub>j</sub> = -7°C	7.40 kW	6.74 kW
COP T <sub>j</sub> = -7°C	3.10	2.29
C <sub>dh</sub> T <sub>j</sub> = -7 °C	0.994	0.995
P <sub>dh</sub> T <sub>j</sub> = +2°C	4.54 kW	4.22 kW
COP T <sub>j</sub> = +2°C	4.80	3.51
C <sub>dh</sub> T <sub>j</sub> = +2 °C	0.986	0.989
P <sub>dh</sub> T <sub>j</sub> = +7°C	2.94 kW	2.74 kW
COP T <sub>j</sub> = +7°C	6.61	4.36
C <sub>dh</sub> T <sub>j</sub> = +7 °C	0.969	0.978
P <sub>dh</sub> T <sub>j</sub> = 12°C	3.16 kW	3.28 kW
COP T <sub>j</sub> = 12°C	8.15	6.50
C <sub>dh</sub> T <sub>j</sub> = +12 °C	0.965	0.973
P <sub>dh</sub> T <sub>j</sub> = T <sub>biv</sub>	7.40 kW	6.74 kW
COP T <sub>j</sub> = T <sub>biv</sub>	3.10	2.29

This information was generated by the HP KEYMARK database on 5 Jul 2022

$P_{dh} T_j = TOL$ or $P_{dh} T_j = T_{designh}$ if $TOL < T_{designh}$	5.51 kW	4.90 kW
$COP T_j = TOL$ or $COP T_j = T_{designh}$ if $TOL < T_{designh}$	2.22	1.51
$C_{dh} T_j = TOL$ or $P_{dh} T_j = T_{designh}$ if $TOL < T_{designh}$	0.994	0.995
WTOL	60 °C	60 °C
Poff	14 W	14 W
PTO	14 W	14 W
PSB	14 W	14 W
PCK	14 W	14 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	2.86 kW	2.72 kW
Backup Heater	4.00 kW	4.00 kW
Annual energy consumption $Q_{he}$	3490 kWh	4405 kWh

# Model: ARIANEXT PLUS 80 M LINK R32

Configure model	
Model name	ARIANEXT PLUS 80 M LINK R32
Application	Heating (medium temp)
Units	Indoor + Outdoor
Climate Zone	Colder Climate + Warmer Climate
Reversibility	Yes
Cooling mode application (optional)	+7°C/12°C

General Data	
Power supply	1x230V 50Hz

## Heating

EN 14511-2		
	Low temperature	Medium temperature
Heat output	8.00 kW	5.80 kW
El input	1.67 kW	1.97 kW
COP	4.80	2.95

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

## Cooling

### EN 14511-2

	+7°C/+12°C	+18°C/+23°C
El input	2.26 kW	1.49 kW
Cooling capacity	7	7.00
EER	3.10	4.70

### EN 14825

This information was generated by the HP KEYMARK database on 5 Jul 2022

	<b>+7°C/+12°C</b>
P <sub>designc</sub>	7 kW
SEER	4.64
P <sub>dc</sub> T <sub>j</sub> = 35°C	7 kW
EER T <sub>j</sub> = 35°C	3.1
P <sub>dc</sub> T <sub>j</sub> = 30°C	5.17 kW
EER T <sub>j</sub> = 30°C	4.13
C <sub>dc</sub> T <sub>j</sub> = 30 °C	0.99
P <sub>dc</sub> T <sub>j</sub> = 25°C	3.32 kW
EER T <sub>j</sub> = 25°C	4.89
C <sub>dc</sub> T <sub>j</sub> = 25 °C	0.98
P <sub>dc</sub> T <sub>j</sub> = 20°C	3.19 kW
EER T <sub>j</sub> = 20°C	6.85
C <sub>dc</sub> T <sub>j</sub> = 20 °C	0.97
P <sub>off</sub>	14 W
PTO	14 W
PSB	14 W
PCK	0 W
Annual energy consumption Q <sub>ce</sub>	1381 kWh

## Warmer Climate



This information was generated by the HP KEYMARK database on 5 Jul 2022

### EN 12102-1

	Low temperature	Medium temperature
Sound power level indoor	35 dB(A)	35 dB(A)
Sound power level outdoor	57 dB(A)	57 dB(A)

### EN 14825

	Low temperature	Medium temperature
P <sub>designh</sub>	4.93 kW	4.48 kW
$\eta_s$	242 %	151 %
P <sub>rated</sub>	4.93 kW	4.48 kW
SCOP	6.14	3.84
T <sub>biv</sub>	2 °C	2 °C
TOL	-20 °C	-20 °C
P <sub>dh</sub> T <sub>j</sub> = +2°C	4.93 kW	4.48 kW
COP T <sub>j</sub> = +2°C	4.05	2.53
C <sub>dh</sub> T <sub>j</sub> = +2 °C	0.989	0.992
P <sub>dh</sub> T <sub>j</sub> = +7°C	3.10 kW	2.81 kW
COP T <sub>j</sub> = +7°C	5.70	3.08
C <sub>dh</sub> T <sub>j</sub> = +7 °C	0.975	0.985
P <sub>dh</sub> T <sub>j</sub> = 12°C	3.28 kW	3.16 kW
COP T <sub>j</sub> = 12°C	7.86	5.45

This information was generated by the HP KEYMARK database on 5 Jul 2022

Cdh Tj = +12 °C	0.967	0.977
Pdh Tj = Tbiv	4.93 kW	4.48 kW
COP Tj = Tbiv	4.05	2.53
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	5.51 kW	4.90 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.22	1.51
WTOL	60 °C	60 °C
Poff	14 W	14 W
PTO	14 W	14 W
PSB	14 W	14 W
PCK	14 W	14 W
Supplementary Heater: Type of energy input	n/a	n/a
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Backup Heater	4.00 kW	4.00 kW
Annual energy consumption Qhe	1073 kWh	1557 kWh

## Colder Climate

<b>EN 12102-1</b>		
	<b>Low temperature</b>	<b>Medium temperature</b>
Sound power level indoor	35 dB(A)	35 dB(A)
Sound power level outdoor	57 dB(A)	57 dB(A)

<b>EN 14825</b>
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This information was generated by the HP KEYMARK database on 5 Jul 2022

	Low temperature	Medium temperature
P <sub>designh</sub>	11.78 kW	11.53 kW
$\eta_s$	154 %	120 %
P <sub>rated</sub>	11.78 kW	11.53 kW
SCOP	3.93	3.08
T <sub>biv</sub>	-7 °C	-7 °C
TOL	-20 °C	-20 °C
P <sub>dh</sub> T <sub>j</sub> = -7°C	7.13 kW	6.98 kW
COP T <sub>j</sub> = -7°C	3.47	2.73
C <sub>dh</sub> T <sub>j</sub> = -7 °C	0.993	0.995
P <sub>dh</sub> T <sub>j</sub> = +2°C	4.51 kW	4.20 kW
COP T <sub>j</sub> = +2°C	5.32	4.07
C <sub>dh</sub> T <sub>j</sub> = +2 °C	0.984	0.987
P <sub>dh</sub> T <sub>j</sub> = +7°C	3.06 kW	2.84 kW
COP T <sub>j</sub> = +7°C	7.24	5.15
C <sub>dh</sub> T <sub>j</sub> = +7 °C	0.968	0.975
P <sub>dh</sub> T <sub>j</sub> = 12°C	3.18 kW	3.24 kW
COP T <sub>j</sub> = 12°C	8.02	6.47
C <sub>dh</sub> T <sub>j</sub> = +12 °C	0.966	0.973
P <sub>dh</sub> T <sub>j</sub> = T <sub>biv</sub>	7.13 kW	6.98 kW

This information was generated by the HP KEYMARK database on 5 Jul 2022

COP $T_j = T_{biv}$	3.47	2.70
$P_{dh} T_j = TOL$ or $P_{dh} T_j = T_{designh}$ if $TOL < T_{designh}$	5.51 kW	4.90 kW
COP $T_j = TOL$ or COP $T_j = T_{designh}$ if $TOL < T_{designh}$	2.22	1.51
$C_{dh} T_j = TOL$ or $P_{dh} T_j = T_{designh}$ if $TOL < T_{designh}$	0.993	0.995
WTOL	60 °C	60 °C
Poff	14 W	14 W
PTO	14 W	14 W
PSB	14 W	14 W
PCK	14 W	14 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	11.16 kW	10.93 kW
Backup Heater	4.00 kW	4.00 kW
Annual energy consumption $Q_{he}$	7398 kWh	9226 kWh

## Average Climate

<b>EN 12102-1</b>		
	<b>Low temperature</b>	<b>Medium temperature</b>
Sound power level indoor	35 dB(A)	35 dB(A)
Sound power level outdoor	57 dB(A)	57 dB(A)

<b>EN 14825</b>
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This information was generated by the HP KEYMARK database on 5 Jul 2022

	<b>Low temperature</b>	<b>Medium temperature</b>
P <sub>designh</sub>	8.37 kW	7.62 kW
$\eta_s$	195 %	140 %
P <sub>rated</sub>	8.37 kW	7.62 kW
SCOP	4.95	3.57
T <sub>biv</sub>	-7 °C	-7 °C
TOL	-20 °C	-20 °C
P <sub>dh</sub> T <sub>j</sub> = -7°C	7.40 kW	6.74 kW
COP T <sub>j</sub> = -7°C	3.10	2.29
C <sub>dh</sub> T <sub>j</sub> = -7 °C	0.994	0.995
P <sub>dh</sub> T <sub>j</sub> = +2°C	4.54 kW	4.22 kW
COP T <sub>j</sub> = +2°C	4.80	3.51
C <sub>dh</sub> T <sub>j</sub> = +2 °C	0.986	0.989
P <sub>dh</sub> T <sub>j</sub> = +7°C	2.94 kW	2.74 kW
COP T <sub>j</sub> = +7°C	6.61	4.36
C <sub>dh</sub> T <sub>j</sub> = +7 °C	0.969	0.978
P <sub>dh</sub> T <sub>j</sub> = 12°C	3.16 kW	3.28 kW
COP T <sub>j</sub> = 12°C	8.15	6.50
C <sub>dh</sub> T <sub>j</sub> = +12 °C	0.965	0.973
P <sub>dh</sub> T <sub>j</sub> = T <sub>biv</sub>	7.40 kW	6.74 kW
COP T <sub>j</sub> = T <sub>biv</sub>	3.10	2.29

This information was generated by the HP KEYMARK database on 5 Jul 2022

$P_{dh} T_j = TOL$ or $P_{dh} T_j = T_{designh}$ if $TOL < T_{designh}$	5.51 kW	4.90 kW
$COP T_j = TOL$ or $COP T_j = T_{designh}$ if $TOL < T_{designh}$	2.22	1.51
$C_{dh} T_j = TOL$ or $P_{dh} T_j = T_{designh}$ if $TOL < T_{designh}$	0.994	0.995
WTOL	60 °C	60 °C
Poff	14 W	14 W
PTO	14 W	14 W
PSB	14 W	14 W
PCK	14 W	14 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	2.86 kW	2.72 kW
Backup Heater	4.00 kW	4.00 kW
Annual energy consumption $Q_{he}$	3490 kWh	4405 kWh

# Model: ARIANEXT PLUS 80 M-T LINK R32

## Configure model

Model name	ARIANEXT PLUS 80 M-T LINK R32
Application	Heating (medium temp)
Units	Indoor + Outdoor
Climate Zone	Colder Climate + Warmer Climate
Reversibility	Yes
Cooling mode application (optional)	+7°C/12°C

## General Data

Power supply	3x400V 50Hz
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## Heating

### EN 14511-2

	Low temperature	Medium temperature
Heat output	8.00 kW	5.80 kW
El input	1.67 kW	1.97 kW
COP	4.80	2.95

### EN 14511-4

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

## Cooling

### EN 14511-2

	+7°C/+12°C	+18°C/+23°C
El input	2.26 kW	1.49 kW
Cooling capacity	7	7.00
EER	3.10	4.70

### EN 14825



This information was generated by the HP KEYMARK database on 5 Jul 2022

	<b>+7°C/+12°C</b>
P <sub>designc</sub>	7 kW
SEER	4.64
P <sub>dc</sub> T <sub>j</sub> = 35°C	7 kW
EER T <sub>j</sub> = 35°C	3.1
P <sub>dc</sub> T <sub>j</sub> = 30°C	5.17 kW
EER T <sub>j</sub> = 30°C	4.13
C <sub>dc</sub> T <sub>j</sub> = 30 °C	0.99
P <sub>dc</sub> T <sub>j</sub> = 25°C	3.32 kW
EER T <sub>j</sub> = 25°C	4.89
C <sub>dc</sub> T <sub>j</sub> = 25 °C	0.98
P <sub>dc</sub> T <sub>j</sub> = 20°C	3.19 kW
EER T <sub>j</sub> = 20°C	6.85
C <sub>dc</sub> T <sub>j</sub> = 20 °C	0.97
P <sub>off</sub>	14 W
PTO	14 W
PSB	14 W
PCK	0 W
Annual energy consumption Q <sub>ce</sub>	1381 kWh

## Warmer Climate

### EN 12102-1

	Low temperature	Medium temperature
Sound power level indoor	35 dB(A)	35 dB(A)
Sound power level outdoor	57 dB(A)	57 dB(A)

### EN 14825

	Low temperature	Medium temperature
P <sub>designh</sub>	4.93 kW	4.48 kW
$\eta_s$	242 %	151 %
P <sub>rated</sub>	4.93 kW	4.48 kW
SCOP	6.14	3.84
T <sub>biv</sub>	2 °C	2 °C
TOL	-20 °C	-20 °C
P <sub>dh</sub> T <sub>j</sub> = +2°C	4.93 kW	4.48 kW
COP T <sub>j</sub> = +2°C	4.05	2.53
C <sub>dh</sub> T <sub>j</sub> = +2 °C	0.989	0.992
P <sub>dh</sub> T <sub>j</sub> = +7°C	3.10 kW	2.81 kW
COP T <sub>j</sub> = +7°C	5.70	3.08
C <sub>dh</sub> T <sub>j</sub> = +7 °C	0.975	0.985
P <sub>dh</sub> T <sub>j</sub> = 12°C	3.28 kW	3.16 kW
COP T <sub>j</sub> = 12°C	7.86	5.45

This information was generated by the HP KEYMARK database on 5 Jul 2022

Cdh Tj = +12 °C	0.967	0.977
Pdh Tj = Tbiv	4.93 kW	4.48 kW
COP Tj = Tbiv	4.05	2.53
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	5.51 kW	4.90 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.22	1.51
WTOL	60 °C	60 °C
Poff	14 W	14 W
PTO	14 W	14 W
PSB	14 W	14 W
PCK	14 W	14 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Backup Heater	4.00 kW	4.00 kW
Annual energy consumption Qhe	1073 kWh	1557 kWh

## Colder Climate

<b>EN 12102-1</b>		
	<b>Low temperature</b>	<b>Medium temperature</b>
Sound power level indoor	35 dB(A)	35 dB(A)
Sound power level outdoor	57 dB(A)	57 dB(A)

<b>EN 14825</b>
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This information was generated by the HP KEYMARK database on 5 Jul 2022

	Low temperature	Medium temperature
P <sub>designh</sub>	11.78 kW	11.53 kW
$\eta_s$	154 %	120 %
P <sub>rated</sub>	11.78 kW	11.53 kW
SCOP	3.93	3.08
T <sub>biv</sub>	-7 °C	-7 °C
TOL	-20 °C	-20 °C
P <sub>dh</sub> T <sub>j</sub> = -7°C	7.13 kW	6.98 kW
COP T <sub>j</sub> = -7°C	3.47	2.73
C <sub>dh</sub> T <sub>j</sub> = -7 °C	0.993	0.995
P <sub>dh</sub> T <sub>j</sub> = +2°C	4.51 kW	4.20 kW
COP T <sub>j</sub> = +2°C	5.32	4.07
C <sub>dh</sub> T <sub>j</sub> = +2 °C	0.984	0.987
P <sub>dh</sub> T <sub>j</sub> = +7°C	3.06 kW	2.84 kW
COP T <sub>j</sub> = +7°C	7.24	5.15
C <sub>dh</sub> T <sub>j</sub> = +7 °C	0.968	0.975
P <sub>dh</sub> T <sub>j</sub> = 12°C	3.18 kW	3.24 kW
COP T <sub>j</sub> = 12°C	8.02	6.47
C <sub>dh</sub> T <sub>j</sub> = +12 °C	0.966	0.973
P <sub>dh</sub> T <sub>j</sub> = T <sub>biv</sub>	7.13 kW	6.98 kW

This information was generated by the HP KEYMARK database on 5 Jul 2022

COP Tj = Tbiv	3.47	2.70
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	5.51 kW	4.90 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.22	1.51
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.993	0.995
WTOL	60 °C	60 °C
Poff	14 W	14 W
PTO	14 W	14 W
PSB	14 W	14 W
PCK	14 W	14 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	11.16 kW	10.93 kW
Backup Heater	4.00 kW	4.00 kW
Annual energy consumption Qhe	7398 kWh	9226 kWh

## Average Climate

<b>EN 12102-1</b>		
	<b>Low temperature</b>	<b>Medium temperature</b>
Sound power level indoor	35 dB(A)	35 dB(A)
Sound power level outdoor	57 dB(A)	57 dB(A)

<b>EN 14825</b>
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This information was generated by the HP KEYMARK database on 5 Jul 2022

	<b>Low temperature</b>	<b>Medium temperature</b>
P <sub>designh</sub>	8.37 kW	7.62 kW
$\eta_s$	195 %	140 %
P <sub>rated</sub>	8.37 kW	7.62 kW
SCOP	4.95	3.57
T <sub>biv</sub>	-7 °C	-7 °C
TOL	-20 °C	-20 °C
P <sub>dh</sub> T <sub>j</sub> = -7°C	7.40 kW	6.74 kW
COP T <sub>j</sub> = -7°C	3.10	2.29
C <sub>dh</sub> T <sub>j</sub> = -7 °C	0.994	0.995
P <sub>dh</sub> T <sub>j</sub> = +2°C	4.54 kW	4.22 kW
COP T <sub>j</sub> = +2°C	4.80	3.51
C <sub>dh</sub> T <sub>j</sub> = +2 °C	0.986	0.989
P <sub>dh</sub> T <sub>j</sub> = +7°C	2.94 kW	2.74 kW
COP T <sub>j</sub> = +7°C	6.61	4.36
C <sub>dh</sub> T <sub>j</sub> = +7 °C	0.969	0.978
P <sub>dh</sub> T <sub>j</sub> = 12°C	3.16 kW	3.28 kW
COP T <sub>j</sub> = 12°C	8.15	6.50
C <sub>dh</sub> T <sub>j</sub> = +12 °C	0.965	0.973
P <sub>dh</sub> T <sub>j</sub> = T <sub>biv</sub>	7.40 kW	6.74 kW
COP T <sub>j</sub> = T <sub>biv</sub>	3.10	2.29

This information was generated by the HP KEYMARK database on 5 Jul 2022

Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	5.51 kW	4.90 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.22	1.51
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.994	0.995
WTOL	60 °C	60 °C
Poff	14 W	14 W
PTO	14 W	14 W
PSB	14 W	14 W
PCK	14 W	14 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	2.86 kW	2.72 kW
Backup Heater	4.00 kW	4.00 kW
Annual energy consumption Qhe	3490 kWh	4405 kWh

## Model: ARIANEXT LITE 80 M LINK R32

Configure model	
Model name	ARIANEXT LITE 80 M LINK R32
Application	Heating (medium temp)
Units	Indoor + Outdoor
Climate Zone	Colder Climate + Warmer Climate
Reversibility	Yes
Cooling mode application (optional)	+7°C/12°C

General Data	
Power supply	1x230V 50Hz

### Heating

EN 14511-2		
	Low temperature	Medium temperature
Heat output	8.00 kW	5.80 kW
El input	1.67 kW	1.97 kW
COP	4.80	2.95

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

### Cooling



### EN 14511-2

	+7°C/+12°C	+18°C/+23°C
El input	2.26 kW	1.49 kW
Cooling capacity	7	7.00
EER	3.10	4.70

### EN 14825

This information was generated by the HP KEYMARK database on 5 Jul 2022

	<b>+7°C/+12°C</b>
P <sub>designc</sub>	7 kW
SEER	4.64
P <sub>dc</sub> T <sub>j</sub> = 35°C	7 kW
EER T <sub>j</sub> = 35°C	3.1
P <sub>dc</sub> T <sub>j</sub> = 30°C	5.17 kW
EER T <sub>j</sub> = 30°C	4.13
C <sub>dc</sub> T <sub>j</sub> = 30 °C	0.99
P <sub>dc</sub> T <sub>j</sub> = 25°C	3.32 kW
EER T <sub>j</sub> = 25°C	4.89
C <sub>dc</sub> T <sub>j</sub> = 25 °C	0.98
P <sub>dc</sub> T <sub>j</sub> = 20°C	3.19 kW
EER T <sub>j</sub> = 20°C	6.85
C <sub>dc</sub> T <sub>j</sub> = 20 °C	0.97
P <sub>off</sub>	14 W
PTO	14 W
PSB	14 W
PCK	0 W
Annual energy consumption Q <sub>ce</sub>	1381 kWh

## Warmer Climate

### EN 12102-1

	Low temperature	Medium temperature
Sound power level indoor	15 dB(A)	15 dB(A)
Sound power level outdoor	57 dB(A)	57 dB(A)

### EN 14825

	Low temperature	Medium temperature
P <sub>designh</sub>	4.93 kW	4.48 kW
$\eta_s$	242 %	151 %
P <sub>rated</sub>	4.93 kW	4.48 kW
SCOP	6.14	3.84
T <sub>biv</sub>	2 °C	2 °C
TOL	-20 °C	-20 °C
P <sub>dh</sub> T <sub>j</sub> = +2°C	4.93 kW	4.48 kW
COP T <sub>j</sub> = +2°C	4.05	2.53
C <sub>dh</sub> T <sub>j</sub> = +2 °C	0.989	0.992
P <sub>dh</sub> T <sub>j</sub> = +7°C	3.10 kW	2.81 kW
COP T <sub>j</sub> = +7°C	5.70	3.08
C <sub>dh</sub> T <sub>j</sub> = +7 °C	0.975	0.985
P <sub>dh</sub> T <sub>j</sub> = 12°C	3.28 kW	3.16 kW
COP T <sub>j</sub> = 12°C	7.86	5.45

This information was generated by the HP KEYMARK database on 5 Jul 2022

Cdh Tj = +12 °C	0.967	0.977
Pdh Tj = Tbiv	4.93 kW	4.48 kW
COP Tj = Tbiv	4.05	2.53
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	5.51 kW	4.90 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.22	1.51
WTOL	60 °C	60 °C
Poff	14 W	14 W
PTO	14 W	14 W
PSB	14 W	14 W
PCK	14 W	14 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Backup Heater	4.00 kW	4.00 kW
Annual energy consumption Qhe	1073 kWh	1557 kWh

## Colder Climate

<b>EN 12102-1</b>		
	<b>Low temperature</b>	<b>Medium temperature</b>
Sound power level indoor	15 dB(A)	15 dB(A)
Sound power level outdoor	57 dB(A)	57 dB(A)

<b>EN 14825</b>
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This information was generated by the HP KEYMARK database on 5 Jul 2022

	Low temperature	Medium temperature
P <sub>designh</sub>	11.78 kW	11.53 kW
$\eta_s$	154 %	120 %
P <sub>rated</sub>	11.78 kW	11.53 kW
SCOP	3.93	3.08
T <sub>biv</sub>	-7 °C	-7 °C
TOL	-20 °C	-20 °C
P <sub>dh</sub> T <sub>j</sub> = -7°C	7.13 kW	6.98 kW
COP T <sub>j</sub> = -7°C	3.47	2.73
C <sub>dh</sub> T <sub>j</sub> = -7 °C	0.993	0.995
P <sub>dh</sub> T <sub>j</sub> = +2°C	4.51 kW	4.20 kW
COP T <sub>j</sub> = +2°C	5.32	4.07
C <sub>dh</sub> T <sub>j</sub> = +2 °C	0.984	0.987
P <sub>dh</sub> T <sub>j</sub> = +7°C	3.06 kW	2.84 kW
COP T <sub>j</sub> = +7°C	7.24	5.15
C <sub>dh</sub> T <sub>j</sub> = +7 °C	0.968	0.975
P <sub>dh</sub> T <sub>j</sub> = 12°C	3.18 kW	3.24 kW
COP T <sub>j</sub> = 12°C	8.02	6.47
C <sub>dh</sub> T <sub>j</sub> = +12 °C	0.966	0.973
P <sub>dh</sub> T <sub>j</sub> = T <sub>biv</sub>	7.13 kW	6.98 kW

This information was generated by the HP KEYMARK database on 5 Jul 2022

COP $T_j = T_{biv}$	3.47	2.70
$P_{dh} T_j = TOL$ or $P_{dh} T_j = T_{designh}$ if $TOL < T_{designh}$	5.51 kW	4.90 kW
COP $T_j = TOL$ or COP $T_j = T_{designh}$ if $TOL < T_{designh}$	2.22	1.51
$C_{dh} T_j = TOL$ or $P_{dh} T_j = T_{designh}$ if $TOL < T_{designh}$	0.993	0.995
WTOL	60 °C	60 °C
Poff	14 W	14 W
PTO	14 W	14 W
PSB	14 W	14 W
PCK	14 W	14 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	11.16 kW	10.93 kW
Backup Heater	4.00 kW	4.00 kW
Annual energy consumption $Q_{he}$	7398 kWh	9226 kWh

## Average Climate

<b>EN 12102-1</b>		
	<b>Low temperature</b>	<b>Medium temperature</b>
Sound power level indoor	15 dB(A)	15 dB(A)
Sound power level outdoor	57 dB(A)	57 dB(A)

<b>EN 14825</b>
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This information was generated by the HP KEYMARK database on 5 Jul 2022

	<b>Low temperature</b>	<b>Medium temperature</b>
P <sub>designh</sub>	8.37 kW	7.62 kW
$\eta_s$	195 %	140 %
P <sub>rated</sub>	8.37 kW	7.62 kW
SCOP	4.95	3.57
T <sub>biv</sub>	-7 °C	-7 °C
TOL	-20 °C	-20 °C
P <sub>dh</sub> T <sub>j</sub> = -7°C	7.40 kW	6.74 kW
COP T <sub>j</sub> = -7°C	3.10	2.29
C <sub>dh</sub> T <sub>j</sub> = -7 °C	0.994	0.995
P <sub>dh</sub> T <sub>j</sub> = +2°C	4.54 kW	4.22 kW
COP T <sub>j</sub> = +2°C	4.80	3.51
C <sub>dh</sub> T <sub>j</sub> = +2 °C	0.986	0.989
P <sub>dh</sub> T <sub>j</sub> = +7°C	2.94 kW	2.74 kW
COP T <sub>j</sub> = +7°C	6.61	4.36
C <sub>dh</sub> T <sub>j</sub> = +7 °C	0.969	0.978
P <sub>dh</sub> T <sub>j</sub> = 12°C	3.16 kW	3.28 kW
COP T <sub>j</sub> = 12°C	8.15	6.50
C <sub>dh</sub> T <sub>j</sub> = +12 °C	0.965	0.973
P <sub>dh</sub> T <sub>j</sub> = T <sub>biv</sub>	7.40 kW	6.74 kW
COP T <sub>j</sub> = T <sub>biv</sub>	3.10	2.29

This information was generated by the HP KEYMARK database on 5 Jul 2022

Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	5.51 kW	4.90 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.22	1.51
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.994	0.995
WTOL	60 °C	60 °C
Poff	14 W	14 W
PTO	14 W	14 W
PSB	14 W	14 W
PCK	14 W	14 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	2.86 kW	2.72 kW
Backup Heater	4.00 kW	4.00 kW
Annual energy consumption Qhe	3490 kWh	4405 kWh



# Model: ARIANEXT LITE 80 M-T LINK R32

Configure model	
Model name	ARIANEXT LITE 80 M-T LINK R32
Application	Heating (medium temp)
Units	Indoor + Outdoor
Climate Zone	Colder Climate + Warmer Climate
Reversibility	Yes
Cooling mode application (optional)	+7°C/12°C

General Data	
Power supply	3x400V 50Hz

## Heating

EN 14511-2		
	Low temperature	Medium temperature
Heat output	8.00 kW	5.80 kW
El input	1.67 kW	1.97 kW
COP	4.80	2.95

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

## Cooling

### EN 14511-2

	+7°C/+12°C	+18°C/+23°C
El input	2.26 kW	1.49 kW
Cooling capacity	7	7.00
EER	3.10	4.70

### EN 14825

This information was generated by the HP KEYMARK database on 5 Jul 2022

	<b>+7°C/+12°C</b>
P <sub>designc</sub>	7 kW
SEER	4.64
P <sub>dc</sub> T <sub>j</sub> = 35°C	7 kW
EER T <sub>j</sub> = 35°C	3.1
P <sub>dc</sub> T <sub>j</sub> = 30°C	5.17 kW
EER T <sub>j</sub> = 30°C	4.13
C <sub>dc</sub> T <sub>j</sub> = 30 °C	0.99
P <sub>dc</sub> T <sub>j</sub> = 25°C	3.32 kW
EER T <sub>j</sub> = 25°C	4.89
C <sub>dc</sub> T <sub>j</sub> = 25 °C	0.98
P <sub>dc</sub> T <sub>j</sub> = 20°C	3.19 kW
EER T <sub>j</sub> = 20°C	6.85
C <sub>dc</sub> T <sub>j</sub> = 20 °C	0.97
P <sub>off</sub>	14 W
PTO	14 W
PSB	14 W
PCK	0 W
Annual energy consumption Q <sub>ce</sub>	1381 kWh

## Warmer Climate

### EN 12102-1

	Low temperature	Medium temperature
Sound power level indoor	15 dB(A)	15 dB(A)
Sound power level outdoor	57 dB(A)	57 dB(A)

### EN 14825

	Low temperature	Medium temperature
P <sub>designh</sub>	4.93 kW	4.48 kW
$\eta_s$	242 %	151 %
P <sub>rated</sub>	4.93 kW	4.48 kW
SCOP	6.14	3.84
T <sub>biv</sub>	2 °C	2 °C
TOL	-20 °C	-20 °C
P <sub>dh</sub> T <sub>j</sub> = +2°C	4.93 kW	4.48 kW
COP T <sub>j</sub> = +2°C	4.05	2.53
C <sub>dh</sub> T <sub>j</sub> = +2 °C	0.989	0.992
P <sub>dh</sub> T <sub>j</sub> = +7°C	3.10 kW	2.81 kW
COP T <sub>j</sub> = +7°C	5.70	3.08
C <sub>dh</sub> T <sub>j</sub> = +7 °C	0.975	0.985
P <sub>dh</sub> T <sub>j</sub> = 12°C	3.28 kW	3.16 kW
COP T <sub>j</sub> = 12°C	7.86	5.45

This information was generated by the HP KEYMARK database on 5 Jul 2022

Cdh Tj = +12 °C	0.967	0.977
Pdh Tj = Tbiv	4.93 kW	4.48 kW
COP Tj = Tbiv	4.05	2.53
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	5.51 kW	4.90 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.22	1.51
WTOL	60 °C	60 °C
Poff	14 W	14 W
PTO	14 W	14 W
PSB	14 W	14 W
PCK	14 W	14 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Backup Heater	4.00 kW	4.00 kW
Annual energy consumption Qhe	1073 kWh	1557 kWh

## Colder Climate

<b>EN 12102-1</b>		
	<b>Low temperature</b>	<b>Medium temperature</b>
Sound power level indoor	15 dB(A)	15 dB(A)
Sound power level outdoor	57 dB(A)	57 dB(A)

<b>EN 14825</b>
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This information was generated by the HP KEYMARK database on 5 Jul 2022

	Low temperature	Medium temperature
P <sub>designh</sub>	11.78 kW	11.53 kW
$\eta_s$	154 %	120 %
P <sub>rated</sub>	11.78 kW	11.53 kW
SCOP	3.93	3.08
T <sub>biv</sub>	-7 °C	-7 °C
TOL	-20 °C	-20 °C
P <sub>dh</sub> T <sub>j</sub> = -7°C	7.13 kW	6.98 kW
COP T <sub>j</sub> = -7°C	3.47	2.73
C <sub>dh</sub> T <sub>j</sub> = -7 °C	0.993	0.995
P <sub>dh</sub> T <sub>j</sub> = +2°C	4.51 kW	4.20 kW
COP T <sub>j</sub> = +2°C	5.32	4.07
C <sub>dh</sub> T <sub>j</sub> = +2 °C	0.984	0.987
P <sub>dh</sub> T <sub>j</sub> = +7°C	3.06 kW	2.84 kW
COP T <sub>j</sub> = +7°C	7.24	5.15
C <sub>dh</sub> T <sub>j</sub> = +7 °C	0.968	0.975
P <sub>dh</sub> T <sub>j</sub> = 12°C	3.18 kW	3.24 kW
COP T <sub>j</sub> = 12°C	8.02	6.47
C <sub>dh</sub> T <sub>j</sub> = +12 °C	0.966	0.973
P <sub>dh</sub> T <sub>j</sub> = T <sub>biv</sub>	7.13 kW	6.98 kW

This information was generated by the HP KEYMARK database on 5 Jul 2022

COP $T_j = T_{biv}$	3.47	2.70
$P_{dh} T_j = TOL$ or $P_{dh} T_j = T_{designh}$ if $TOL < T_{designh}$	5.51 kW	4.90 kW
COP $T_j = TOL$ or COP $T_j = T_{designh}$ if $TOL < T_{designh}$	2.22	1.51
$C_{dh} T_j = TOL$ or $P_{dh} T_j = T_{designh}$ if $TOL < T_{designh}$	0.993	0.995
WTOL	60 °C	60 °C
Poff	14 W	14 W
PTO	14 W	14 W
PSB	14 W	14 W
PCK	14 W	14 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	11.16 kW	10.93 kW
Backup Heater	4.00 kW	4.00 kW
Annual energy consumption $Q_{he}$	7398 kWh	9226 kWh

## Average Climate

<b>EN 12102-1</b>		
	<b>Low temperature</b>	<b>Medium temperature</b>
Sound power level indoor	15 dB(A)	15 dB(A)
Sound power level outdoor	57 dB(A)	57 dB(A)

<b>EN 14825</b>
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This information was generated by the HP KEYMARK database on 5 Jul 2022

	<b>Low temperature</b>	<b>Medium temperature</b>
P <sub>designh</sub>	8.37 kW	7.62 kW
$\eta_s$	195 %	140 %
P <sub>rated</sub>	8.37 kW	7.62 kW
SCOP	4.95	3.57
T <sub>biv</sub>	-7 °C	-7 °C
TOL	-20 °C	-20 °C
P <sub>dh</sub> T <sub>j</sub> = -7°C	7.40 kW	6.74 kW
COP T <sub>j</sub> = -7°C	3.10	2.29
C <sub>dh</sub> T <sub>j</sub> = -7 °C	0.994	0.995
P <sub>dh</sub> T <sub>j</sub> = +2°C	4.54 kW	4.22 kW
COP T <sub>j</sub> = +2°C	4.80	3.51
C <sub>dh</sub> T <sub>j</sub> = +2 °C	0.986	0.989
P <sub>dh</sub> T <sub>j</sub> = +7°C	2.94 kW	2.74 kW
COP T <sub>j</sub> = +7°C	6.61	4.36
C <sub>dh</sub> T <sub>j</sub> = +7 °C	0.969	0.978
P <sub>dh</sub> T <sub>j</sub> = 12°C	3.16 kW	3.28 kW
COP T <sub>j</sub> = 12°C	8.15	6.50
C <sub>dh</sub> T <sub>j</sub> = +12 °C	0.965	0.973
P <sub>dh</sub> T <sub>j</sub> = T <sub>biv</sub>	7.40 kW	6.74 kW
COP T <sub>j</sub> = T <sub>biv</sub>	3.10	2.29



This information was generated by the HP KEYMARK database on 5 Jul 2022

Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	5.51 kW	4.90 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.22	1.51
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.994	0.995
WTOL	60 °C	60 °C
Poff	14 W	14 W
PTO	14 W	14 W
PSB	14 W	14 W
PCK	14 W	14 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	2.86 kW	2.72 kW
Backup Heater	4.00 kW	4.00 kW
Annual energy consumption Qhe	3490 kWh	4405 kWh

## Model: AEROTOP MONO 08.2 M-RX

Configure model	
Model name	AEROTOP MONO 08.2 M-RX
Application	Heating (medium temp)
Units	Indoor + Outdoor
Climate Zone	Colder Climate + Warmer Climate
Reversibility	Yes
Cooling mode application (optional)	+7°C/12°C

General Data	
Power supply	1x230V 50Hz

### Heating

EN 14511-2		
	Low temperature	Medium temperature
Heat output	8.00 kW	5.80 kW
El input	1.67 kW	1.97 kW
COP	4.80	2.95

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

### Cooling

### EN 14511-2

	+7°C/+12°C	+18°C/+23°C
El input	2.26 kW	1.49 kW
Cooling capacity	7	7.00
EER	3.10	4.70

### EN 14825

This information was generated by the HP KEYMARK database on 5 Jul 2022

	<b>+7°C/+12°C</b>
P <sub>designc</sub>	7 kW
SEER	4.64
P <sub>dc</sub> T <sub>j</sub> = 35°C	7 kW
EER T <sub>j</sub> = 35°C	3.1
P <sub>dc</sub> T <sub>j</sub> = 30°C	5.17 kW
EER T <sub>j</sub> = 30°C	4.13
C <sub>dc</sub> T <sub>j</sub> = 30 °C	0.99
P <sub>dc</sub> T <sub>j</sub> = 25°C	3.32 kW
EER T <sub>j</sub> = 25°C	4.89
C <sub>dc</sub> T <sub>j</sub> = 25 °C	0.98
P <sub>dc</sub> T <sub>j</sub> = 20°C	3.19 kW
EER T <sub>j</sub> = 20°C	6.85
C <sub>dc</sub> T <sub>j</sub> = 20 °C	0.97
P <sub>off</sub>	14 W
PTO	14 W
PSB	14 W
PCK	0 W
Annual energy consumption Q <sub>ce</sub>	1381 kWh

## Warmer Climate

### EN 12102-1

	Low temperature	Medium temperature
Sound power level indoor	35 dB(A)	35 dB(A)
Sound power level outdoor	57 dB(A)	57 dB(A)

### EN 14825

	Low temperature	Medium temperature
P <sub>designh</sub>	4.93 kW	4.48 kW
$\eta_s$	242 %	151 %
P <sub>rated</sub>	4.93 kW	4.48 kW
SCOP	6.14	3.84
T <sub>biv</sub>	2 °C	2 °C
TOL	-20 °C	-20 °C
P <sub>dh</sub> T <sub>j</sub> = +2°C	4.93 kW	4.48 kW
COP T <sub>j</sub> = +2°C	4.05	2.53
C <sub>dh</sub> T <sub>j</sub> = +2 °C	0.989	0.992
P <sub>dh</sub> T <sub>j</sub> = +7°C	3.10 kW	2.81 kW
COP T <sub>j</sub> = +7°C	5.70	3.08
C <sub>dh</sub> T <sub>j</sub> = +7 °C	0.975	0.985
P <sub>dh</sub> T <sub>j</sub> = 12°C	3.28 kW	3.16 kW
COP T <sub>j</sub> = 12°C	7.86	5.45

This information was generated by the HP KEYMARK database on 5 Jul 2022

Cdh Tj = +12 °C	0.967	0.977
Pdh Tj = Tbiv	4.93 kW	4.48 kW
COP Tj = Tbiv	4.05	2.53
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	5.51 kW	4.90 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.22	1.51
WTOL	60 °C	60 °C
Poff	14 W	14 W
PTO	14 W	14 W
PSB	14 W	14 W
PCK	14 W	14 W
Supplementary Heater: Type of energy input	n/a	n/a
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Backup Heater	4.00 kW	4.00 kW
Annual energy consumption Qhe	1073 kWh	1557 kWh

## Colder Climate

<b>EN 12102-1</b>		
	<b>Low temperature</b>	<b>Medium temperature</b>
Sound power level indoor	35 dB(A)	35 dB(A)
Sound power level outdoor	57 dB(A)	57 dB(A)

<b>EN 14825</b>
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This information was generated by the HP KEYMARK database on 5 Jul 2022

	Low temperature	Medium temperature
P <sub>designh</sub>	11.78 kW	11.53 kW
$\eta_s$	154 %	120 %
P <sub>rated</sub>	11.78 kW	11.53 kW
SCOP	3.93	3.08
T <sub>biv</sub>	-7 °C	-7 °C
TOL	-20 °C	-20 °C
P <sub>dh</sub> T <sub>j</sub> = -7°C	7.13 kW	6.98 kW
COP T <sub>j</sub> = -7°C	3.47	2.73
C <sub>dh</sub> T <sub>j</sub> = -7 °C	0.993	0.995
P <sub>dh</sub> T <sub>j</sub> = +2°C	4.51 kW	4.20 kW
COP T <sub>j</sub> = +2°C	5.32	4.07
C <sub>dh</sub> T <sub>j</sub> = +2 °C	0.984	0.987
P <sub>dh</sub> T <sub>j</sub> = +7°C	3.06 kW	2.84 kW
COP T <sub>j</sub> = +7°C	7.24	5.15
C <sub>dh</sub> T <sub>j</sub> = +7 °C	0.968	0.975
P <sub>dh</sub> T <sub>j</sub> = 12°C	3.18 kW	3.24 kW
COP T <sub>j</sub> = 12°C	8.02	6.47
C <sub>dh</sub> T <sub>j</sub> = +12 °C	0.966	0.973
P <sub>dh</sub> T <sub>j</sub> = T <sub>biv</sub>	7.13 kW	6.98 kW

This information was generated by the HP KEYMARK database on 5 Jul 2022

COP Tj = Tbiv	3.47	2.70
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	5.51 kW	4.90 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.22	1.51
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.993	0.995
WTOL	60 °C	60 °C
Poff	14 W	14 W
PTO	14 W	14 W
PSB	14 W	14 W
PCK	14 W	14 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	11.16 kW	10.93 kW
Backup Heater	4.00 kW	4.00 kW
Annual energy consumption Qhe	7398 kWh	9226 kWh

## Average Climate

<b>EN 12102-1</b>		
	<b>Low temperature</b>	<b>Medium temperature</b>
Sound power level indoor	35 dB(A)	35 dB(A)
Sound power level outdoor	57 dB(A)	57 dB(A)

<b>EN 14825</b>
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This information was generated by the HP KEYMARK database on 5 Jul 2022

	<b>Low temperature</b>	<b>Medium temperature</b>
P <sub>designh</sub>	8.37 kW	7.62 kW
$\eta_s$	195 %	140 %
P <sub>rated</sub>	8.37 kW	7.62 kW
SCOP	4.95	3.57
T <sub>biv</sub>	-7 °C	-7 °C
TOL	-20 °C	-20 °C
P <sub>dh</sub> T <sub>j</sub> = -7°C	7.40 kW	6.74 kW
COP T <sub>j</sub> = -7°C	3.10	2.29
C <sub>dh</sub> T <sub>j</sub> = -7 °C	0.994	0.995
P <sub>dh</sub> T <sub>j</sub> = +2°C	4.54 kW	4.22 kW
COP T <sub>j</sub> = +2°C	4.80	3.51
C <sub>dh</sub> T <sub>j</sub> = +2 °C	0.986	0.989
P <sub>dh</sub> T <sub>j</sub> = +7°C	2.94 kW	2.74 kW
COP T <sub>j</sub> = +7°C	6.61	4.36
C <sub>dh</sub> T <sub>j</sub> = +7 °C	0.969	0.978
P <sub>dh</sub> T <sub>j</sub> = 12°C	3.16 kW	3.28 kW
COP T <sub>j</sub> = 12°C	8.15	6.50
C <sub>dh</sub> T <sub>j</sub> = +12 °C	0.965	0.973
P <sub>dh</sub> T <sub>j</sub> = T <sub>biv</sub>	7.40 kW	6.74 kW
COP T <sub>j</sub> = T <sub>biv</sub>	3.10	2.29

This information was generated by the HP KEYMARK database on 5 Jul 2022

Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	5.51 kW	4.90 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.22	1.51
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.994	0.995
WTOL	60 °C	60 °C
Poff	14 W	14 W
PTO	14 W	14 W
PSB	14 W	14 W
PCK	14 W	14 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	2.86 kW	2.72 kW
Backup Heater	4.00 kW	4.00 kW
Annual energy consumption Qhe	3490 kWh	4405 kWh

## Model: AEROTOP MONO 08.2 M-R

Configure model	
Model name	AEROTOP MONO 08.2 M-R
Application	Heating (medium temp)
Units	Indoor + Outdoor
Climate Zone	Colder Climate + Warmer Climate
Reversibility	Yes
Cooling mode application (optional)	+7°C/12°C

General Data	
Power supply	3x400V 50Hz

### Heating

EN 14511-2		
	Low temperature	Medium temperature
Heat output	8.00 kW	5.80 kW
El input	1.67 kW	1.97 kW
COP	4.80	2.95

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

### Cooling

### EN 14511-2

	+7°C/+12°C	+18°C/+23°C
El input	2.26 kW	1.49 kW
Cooling capacity	7	7.00
EER	3.10	4.70

### EN 14825

This information was generated by the HP KEYMARK database on 5 Jul 2022

	<b>+7°C/+12°C</b>
P <sub>designc</sub>	7 kW
SEER	4.64
P <sub>dc</sub> T <sub>j</sub> = 35°C	7 kW
EER T <sub>j</sub> = 35°C	3.1
P <sub>dc</sub> T <sub>j</sub> = 30°C	5.17 kW
EER T <sub>j</sub> = 30°C	4.13
C <sub>dc</sub> T <sub>j</sub> = 30 °C	0.99
P <sub>dc</sub> T <sub>j</sub> = 25°C	3.32 kW
EER T <sub>j</sub> = 25°C	4.89
C <sub>dc</sub> T <sub>j</sub> = 25 °C	0.98
P <sub>dc</sub> T <sub>j</sub> = 20°C	3.19 kW
EER T <sub>j</sub> = 20°C	6.85
C <sub>dc</sub> T <sub>j</sub> = 20 °C	0.97
P <sub>off</sub>	14 W
PTO	14 W
PSB	14 W
PCK	0 W
Annual energy consumption Q <sub>ce</sub>	1381 kWh

## Warmer Climate

This information was generated by the HP KEYMARK database on 5 Jul 2022

### EN 12102-1

	Low temperature	Medium temperature
Sound power level indoor	35 dB(A)	35 dB(A)
Sound power level outdoor	57 dB(A)	57 dB(A)

### EN 14825

	Low temperature	Medium temperature
P <sub>designh</sub>	4.93 kW	4.48 kW
$\eta_s$	242 %	151 %
P <sub>rated</sub>	4.93 kW	4.48 kW
SCOP	6.14	3.84
T <sub>biv</sub>	2 °C	2 °C
TOL	-20 °C	-20 °C
P <sub>dh</sub> T <sub>j</sub> = +2°C	4.93 kW	4.48 kW
COP T <sub>j</sub> = +2°C	4.05	2.53
C <sub>dh</sub> T <sub>j</sub> = +2 °C	0.989	0.992
P <sub>dh</sub> T <sub>j</sub> = +7°C	3.10 kW	2.81 kW
COP T <sub>j</sub> = +7°C	5.70	3.08
C <sub>dh</sub> T <sub>j</sub> = +7 °C	0.975	0.985
P <sub>dh</sub> T <sub>j</sub> = 12°C	3.28 kW	3.16 kW
COP T <sub>j</sub> = 12°C	7.86	5.45

This information was generated by the HP KEYMARK database on 5 Jul 2022

Cdh Tj = +12 °C	0.967	0.977
Pdh Tj = Tbiv	4.93 kW	4.48 kW
COP Tj = Tbiv	4.05	2.53
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	5.51 kW	4.90 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.22	1.51
WTOL	60 °C	60 °C
Poff	14 W	14 W
PTO	14 W	14 W
PSB	14 W	14 W
PCK	14 W	14 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Backup Heater	4.00 kW	4.00 kW
Annual energy consumption Qhe	1073 kWh	1557 kWh

## Colder Climate

<b>EN 12102-1</b>		
	<b>Low temperature</b>	<b>Medium temperature</b>
Sound power level indoor	35 dB(A)	35 dB(A)
Sound power level outdoor	57 dB(A)	57 dB(A)

<b>EN 14825</b>
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This information was generated by the HP KEYMARK database on 5 Jul 2022

	Low temperature	Medium temperature
P <sub>designh</sub>	11.78 kW	11.53 kW
$\eta_s$	154 %	120 %
P <sub>rated</sub>	11.78 kW	11.53 kW
SCOP	3.93	3.08
T <sub>biv</sub>	-7 °C	-7 °C
TOL	-20 °C	-20 °C
P <sub>dh</sub> T <sub>j</sub> = -7°C	7.13 kW	6.98 kW
COP T <sub>j</sub> = -7°C	3.47	2.73
C <sub>dh</sub> T <sub>j</sub> = -7 °C	0.993	0.995
P <sub>dh</sub> T <sub>j</sub> = +2°C	4.51 kW	4.20 kW
COP T <sub>j</sub> = +2°C	5.32	4.07
C <sub>dh</sub> T <sub>j</sub> = +2 °C	0.984	0.987
P <sub>dh</sub> T <sub>j</sub> = +7°C	3.06 kW	2.84 kW
COP T <sub>j</sub> = +7°C	7.24	5.15
C <sub>dh</sub> T <sub>j</sub> = +7 °C	0.968	0.975
P <sub>dh</sub> T <sub>j</sub> = 12°C	3.18 kW	3.24 kW
COP T <sub>j</sub> = 12°C	8.02	6.47
C <sub>dh</sub> T <sub>j</sub> = +12 °C	0.966	0.973
P <sub>dh</sub> T <sub>j</sub> = T <sub>biv</sub>	7.13 kW	6.98 kW



This information was generated by the HP KEYMARK database on 5 Jul 2022

COP Tj = Tbiv	3.47	2.70
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	5.51 kW	4.90 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.22	1.51
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.993	0.995
WTOL	60 °C	60 °C
Poff	14 W	14 W
PTO	14 W	14 W
PSB	14 W	14 W
PCK	14 W	14 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	11.16 kW	10.93 kW
Backup Heater	4.00 kW	4.00 kW
Annual energy consumption Qhe	7398 kWh	9226 kWh

## Average Climate

<b>EN 12102-1</b>		
	<b>Low temperature</b>	<b>Medium temperature</b>
Sound power level indoor	35 dB(A)	35 dB(A)
Sound power level outdoor	57 dB(A)	57 dB(A)

<b>EN 14825</b>
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This information was generated by the HP KEYMARK database on 5 Jul 2022

	<b>Low temperature</b>	<b>Medium temperature</b>
P <sub>designh</sub>	8.37 kW	7.62 kW
$\eta_s$	195 %	140 %
P <sub>rated</sub>	8.37 kW	7.62 kW
SCOP	4.95	3.57
T <sub>biv</sub>	-7 °C	-7 °C
TOL	-20 °C	-20 °C
P <sub>dh</sub> T <sub>j</sub> = -7°C	7.40 kW	6.74 kW
COP T <sub>j</sub> = -7°C	3.10	2.29
C <sub>dh</sub> T <sub>j</sub> = -7 °C	0.994	0.995
P <sub>dh</sub> T <sub>j</sub> = +2°C	4.54 kW	4.22 kW
COP T <sub>j</sub> = +2°C	4.80	3.51
C <sub>dh</sub> T <sub>j</sub> = +2 °C	0.986	0.989
P <sub>dh</sub> T <sub>j</sub> = +7°C	2.94 kW	2.74 kW
COP T <sub>j</sub> = +7°C	6.61	4.36
C <sub>dh</sub> T <sub>j</sub> = +7 °C	0.969	0.978
P <sub>dh</sub> T <sub>j</sub> = 12°C	3.16 kW	3.28 kW
COP T <sub>j</sub> = 12°C	8.15	6.50
C <sub>dh</sub> T <sub>j</sub> = +12 °C	0.965	0.973
P <sub>dh</sub> T <sub>j</sub> = T <sub>biv</sub>	7.40 kW	6.74 kW
COP T <sub>j</sub> = T <sub>biv</sub>	3.10	2.29

This information was generated by the HP KEYMARK database on 5 Jul 2022

$P_{dh} T_j = TOL$ or $P_{dh} T_j = T_{designh}$ if $TOL < T_{designh}$	5.51 kW	4.90 kW
$COP T_j = TOL$ or $COP T_j = T_{designh}$ if $TOL < T_{designh}$	2.22	1.51
$C_{dh} T_j = TOL$ or $P_{dh} T_j = T_{designh}$ if $TOL < T_{designh}$	0.994	0.995
WTOL	60 °C	60 °C
Poff	14 W	14 W
PTO	14 W	14 W
PSB	14 W	14 W
PCK	14 W	14 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	2.86 kW	2.72 kW
Backup Heater	4.00 kW	4.00 kW
Annual energy consumption $Q_{he}$	3490 kWh	4405 kWh

## Model: AEROTOP MONO 08.2 M-RXL

Configure model	
Model name	AEROTOP MONO 08.2 M-RXL
Application	Heating (medium temp)
Units	Indoor + Outdoor
Climate Zone	Colder Climate + Warmer Climate
Reversibility	Yes
Cooling mode application (optional)	+7°C/12°C

General Data	
Power supply	1x230V 50Hz

### Heating

EN 14511-2		
	Low temperature	Medium temperature
Heat output	8.00 kW	5.80 kW
El input	1.67 kW	1.97 kW
COP	4.80	2.95

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

### Cooling

### EN 14511-2

	+7°C/+12°C	+18°C/+23°C
El input	2.26 kW	1.49 kW
Cooling capacity	7	7.00
EER	3.10	4.70

### EN 14825

This information was generated by the HP KEYMARK database on 5 Jul 2022

	<b>+7°C/+12°C</b>
P <sub>designc</sub>	7 kW
SEER	4.64
P <sub>dc</sub> T <sub>j</sub> = 35°C	7 kW
EER T <sub>j</sub> = 35°C	3.1
P <sub>dc</sub> T <sub>j</sub> = 30°C	5.17 kW
EER T <sub>j</sub> = 30°C	4.13
C <sub>dc</sub> T <sub>j</sub> = 30 °C	0.99
P <sub>dc</sub> T <sub>j</sub> = 25°C	3.32 kW
EER T <sub>j</sub> = 25°C	4.89
C <sub>dc</sub> T <sub>j</sub> = 25 °C	0.98
P <sub>dc</sub> T <sub>j</sub> = 20°C	3.19 kW
EER T <sub>j</sub> = 20°C	6.85
C <sub>dc</sub> T <sub>j</sub> = 20 °C	0.97
P <sub>off</sub>	14 W
PTO	14 W
PSB	14 W
PCK	0 W
Annual energy consumption Q <sub>ce</sub>	1381 kWh

## Warmer Climate

This information was generated by the HP KEYMARK database on 5 Jul 2022

### EN 12102-1

	Low temperature	Medium temperature
Sound power level indoor	15 dB(A)	15 dB(A)
Sound power level outdoor	57 dB(A)	57 dB(A)

### EN 14825

	Low temperature	Medium temperature
P <sub>designh</sub>	4.93 kW	4.48 kW
$\eta_s$	242 %	151 %
P <sub>rated</sub>	4.93 kW	4.48 kW
SCOP	6.14	3.84
T <sub>biv</sub>	2 °C	2 °C
TOL	-20 °C	-20 °C
P <sub>dh</sub> T <sub>j</sub> = +2°C	4.93 kW	4.48 kW
COP T <sub>j</sub> = +2°C	4.05	2.53
C <sub>dh</sub> T <sub>j</sub> = +2 °C	0.989	0.992
P <sub>dh</sub> T <sub>j</sub> = +7°C	3.10 kW	2.81 kW
COP T <sub>j</sub> = +7°C	5.70	3.08
C <sub>dh</sub> T <sub>j</sub> = +7 °C	0.975	0.985
P <sub>dh</sub> T <sub>j</sub> = 12°C	3.28 kW	3.16 kW
COP T <sub>j</sub> = 12°C	7.86	5.45

This information was generated by the HP KEYMARK database on 5 Jul 2022

Cdh Tj = +12 °C	0.967	0.977
Pdh Tj = Tbiv	4.93 kW	4.48 kW
COP Tj = Tbiv	4.05	2.53
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	5.51 kW	4.90 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.22	1.51
WTOL	60 °C	60 °C
Poff	14 W	14 W
PTO	14 W	14 W
PSB	14 W	14 W
PCK	14 W	14 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Backup Heater	4.00 kW	4.00 kW
Annual energy consumption Qhe	1073 kWh	1557 kWh

## Colder Climate

<b>EN 12102-1</b>		
	<b>Low temperature</b>	<b>Medium temperature</b>
Sound power level indoor	15 dB(A)	15 dB(A)
Sound power level outdoor	57 dB(A)	57 dB(A)

<b>EN 14825</b>
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This information was generated by the HP KEYMARK database on 5 Jul 2022

	Low temperature	Medium temperature
P <sub>designh</sub>	11.78 kW	11.53 kW
$\eta_s$	154 %	120 %
P <sub>rated</sub>	11.78 kW	11.53 kW
SCOP	3.93	3.08
T <sub>biv</sub>	-7 °C	-7 °C
TOL	-20 °C	-20 °C
P <sub>dh</sub> T <sub>j</sub> = -7°C	7.13 kW	6.98 kW
COP T <sub>j</sub> = -7°C	3.47	2.73
C <sub>dh</sub> T <sub>j</sub> = -7 °C	0.993	0.995
P <sub>dh</sub> T <sub>j</sub> = +2°C	4.51 kW	4.20 kW
COP T <sub>j</sub> = +2°C	5.32	4.07
C <sub>dh</sub> T <sub>j</sub> = +2 °C	0.984	0.987
P <sub>dh</sub> T <sub>j</sub> = +7°C	3.06 kW	2.84 kW
COP T <sub>j</sub> = +7°C	7.24	5.15
C <sub>dh</sub> T <sub>j</sub> = +7 °C	0.968	0.975
P <sub>dh</sub> T <sub>j</sub> = 12°C	3.18 kW	3.24 kW
COP T <sub>j</sub> = 12°C	8.02	6.47
C <sub>dh</sub> T <sub>j</sub> = +12 °C	0.966	0.973
P <sub>dh</sub> T <sub>j</sub> = T <sub>biv</sub>	7.13 kW	6.98 kW

This information was generated by the HP KEYMARK database on 5 Jul 2022

COP $T_j = T_{biv}$	3.47	2.70
P <sub>dh</sub> $T_j = TOL$ or P <sub>dh</sub> $T_j = T_{designh}$ if $TOL < T_{designh}$	5.51 kW	4.90 kW
COP $T_j = TOL$ or COP $T_j = T_{designh}$ if $TOL < T_{designh}$	2.22	1.51
C <sub>dh</sub> $T_j = TOL$ or P <sub>dh</sub> $T_j = T_{designh}$ if $TOL < T_{designh}$	0.993	0.995
WTOL	60 °C	60 °C
P <sub>off</sub>	14 W	14 W
PTO	14 W	14 W
PSB	14 W	14 W
PCK	14 W	14 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	11.16 kW	10.93 kW
Backup Heater	4.00 kW	4.00 kW
Annual energy consumption Q <sub>he</sub>	7398 kWh	9226 kWh

## Average Climate

<b>EN 12102-1</b>		
	<b>Low temperature</b>	<b>Medium temperature</b>
Sound power level indoor	15 dB(A)	15 dB(A)
Sound power level outdoor	57 dB(A)	57 dB(A)

<b>EN 14825</b>
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This information was generated by the HP KEYMARK database on 5 Jul 2022

	<b>Low temperature</b>	<b>Medium temperature</b>
P <sub>designh</sub>	8.37 kW	7.62 kW
$\eta_s$	195 %	140 %
P <sub>rated</sub>	8.37 kW	7.62 kW
SCOP	4.95	3.57
T <sub>biv</sub>	-7 °C	-7 °C
TOL	-20 °C	-20 °C
P <sub>dh</sub> T <sub>j</sub> = -7°C	7.40 kW	6.74 kW
COP T <sub>j</sub> = -7°C	3.10	2.29
C <sub>dh</sub> T <sub>j</sub> = -7 °C	0.994	0.995
P <sub>dh</sub> T <sub>j</sub> = +2°C	4.54 kW	4.22 kW
COP T <sub>j</sub> = +2°C	4.80	3.51
C <sub>dh</sub> T <sub>j</sub> = +2 °C	0.986	0.989
P <sub>dh</sub> T <sub>j</sub> = +7°C	2.94 kW	2.74 kW
COP T <sub>j</sub> = +7°C	6.61	4.36
C <sub>dh</sub> T <sub>j</sub> = +7 °C	0.969	0.978
P <sub>dh</sub> T <sub>j</sub> = 12°C	3.16 kW	3.28 kW
COP T <sub>j</sub> = 12°C	8.15	6.50
C <sub>dh</sub> T <sub>j</sub> = +12 °C	0.965	0.973
P <sub>dh</sub> T <sub>j</sub> = T <sub>biv</sub>	7.40 kW	6.74 kW
COP T <sub>j</sub> = T <sub>biv</sub>	3.10	2.29

This information was generated by the HP KEYMARK database on 5 Jul 2022

Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	5.51 kW	4.90 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.22	1.51
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.994	0.995
WTOL	60 °C	60 °C
Poff	14 W	14 W
PTO	14 W	14 W
PSB	14 W	14 W
PCK	14 W	14 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	2.86 kW	2.72 kW
Backup Heater	4.00 kW	4.00 kW
Annual energy consumption Qhe	3490 kWh	4405 kWh

## Model: AEROTOP MONO 08.2 M-RL

Configure model	
Model name	AEROTOP MONO 08.2 M-RL
Application	Heating (medium temp)
Units	Indoor + Outdoor
Climate Zone	Colder Climate + Warmer Climate
Reversibility	Yes
Cooling mode application (optional)	+7°C/12°C

General Data	
Power supply	3x400V 50Hz

### Heating

EN 14511-2		
	Low temperature	Medium temperature
Heat output	8.00 kW	5.80 kW
El input	1.67 kW	1.97 kW
COP	4.80	2.95

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

### Cooling

This information was generated by the HP KEYMARK database on 5 Jul 2022

### EN 14511-2

	+7°C/+12°C	+18°C/+23°C
El input	2.26 kW	1.49 kW
Cooling capacity	7	7.00
EER	3.10	4.70

### EN 14825

This information was generated by the HP KEYMARK database on 5 Jul 2022

	<b>+7°C/+12°C</b>
P <sub>designc</sub>	7 kW
SEER	4.64
P <sub>dc</sub> T <sub>j</sub> = 35°C	7 kW
EER T <sub>j</sub> = 35°C	3.1
P <sub>dc</sub> T <sub>j</sub> = 30°C	5.17 kW
EER T <sub>j</sub> = 30°C	4.13
C <sub>dc</sub> T <sub>j</sub> = 30 °C	0.99
P <sub>dc</sub> T <sub>j</sub> = 25°C	3.32 kW
EER T <sub>j</sub> = 25°C	4.89
C <sub>dc</sub> T <sub>j</sub> = 25 °C	0.98
P <sub>dc</sub> T <sub>j</sub> = 20°C	3.19 kW
EER T <sub>j</sub> = 20°C	6.85
C <sub>dc</sub> T <sub>j</sub> = 20 °C	0.97
P <sub>off</sub>	14 W
PTO	14 W
PSB	14 W
PCK	0 W
Annual energy consumption Q <sub>ce</sub>	1381 kWh

## Warmer Climate

### EN 12102-1

	Low temperature	Medium temperature
Sound power level indoor	15 dB(A)	15 dB(A)
Sound power level outdoor	57 dB(A)	57 dB(A)

### EN 14825

	Low temperature	Medium temperature
P <sub>designh</sub>	4.93 kW	4.48 kW
$\eta_s$	242 %	151 %
P <sub>rated</sub>	4.93 kW	4.48 kW
SCOP	6.14	3.84
T <sub>biv</sub>	2 °C	2 °C
TOL	-20 °C	-20 °C
P <sub>dh</sub> T <sub>j</sub> = +2°C	4.93 kW	4.48 kW
COP T <sub>j</sub> = +2°C	4.05	2.53
C <sub>dh</sub> T <sub>j</sub> = +2 °C	0.989	0.992
P <sub>dh</sub> T <sub>j</sub> = +7°C	3.10 kW	2.81 kW
COP T <sub>j</sub> = +7°C	5.70	3.08
C <sub>dh</sub> T <sub>j</sub> = +7 °C	0.975	0.985
P <sub>dh</sub> T <sub>j</sub> = 12°C	3.28 kW	3.16 kW
COP T <sub>j</sub> = 12°C	7.86	5.45



This information was generated by the HP KEYMARK database on 5 Jul 2022

Cdh Tj = +12 °C	0.967	0.977
Pdh Tj = Tbiv	4.93 kW	4.48 kW
COP Tj = Tbiv	4.05	2.53
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	5.51 kW	4.90 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.22	1.51
WTOL	60 °C	60 °C
Poff	14 W	14 W
PTO	14 W	14 W
PSB	14 W	14 W
PCK	14 W	14 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Backup Heater	4.00 kW	4.00 kW
Annual energy consumption Qhe	1073 kWh	1557 kWh

## Colder Climate

<b>EN 12102-1</b>		
	<b>Low temperature</b>	<b>Medium temperature</b>
Sound power level indoor	15 dB(A)	15 dB(A)
Sound power level outdoor	57 dB(A)	57 dB(A)

<b>EN 14825</b>
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This information was generated by the HP KEYMARK database on 5 Jul 2022

	Low temperature	Medium temperature
P <sub>designh</sub>	11.78 kW	11.53 kW
$\eta_s$	154 %	120 %
P <sub>rated</sub>	11.78 kW	11.53 kW
SCOP	3.93	3.08
T <sub>biv</sub>	-7 °C	-7 °C
TOL	-20 °C	-20 °C
P <sub>dh</sub> T <sub>j</sub> = -7°C	7.13 kW	6.98 kW
COP T <sub>j</sub> = -7°C	3.47	2.73
C <sub>dh</sub> T <sub>j</sub> = -7 °C	0.993	0.995
P <sub>dh</sub> T <sub>j</sub> = +2°C	4.51 kW	4.20 kW
COP T <sub>j</sub> = +2°C	5.32	4.07
C <sub>dh</sub> T <sub>j</sub> = +2 °C	0.984	0.987
P <sub>dh</sub> T <sub>j</sub> = +7°C	3.06 kW	2.84 kW
COP T <sub>j</sub> = +7°C	7.24	5.15
C <sub>dh</sub> T <sub>j</sub> = +7 °C	0.968	0.975
P <sub>dh</sub> T <sub>j</sub> = 12°C	3.18 kW	3.24 kW
COP T <sub>j</sub> = 12°C	8.02	6.47
C <sub>dh</sub> T <sub>j</sub> = +12 °C	0.966	0.973
P <sub>dh</sub> T <sub>j</sub> = T <sub>biv</sub>	7.13 kW	6.98 kW

This information was generated by the HP KEYMARK database on 5 Jul 2022

COP $T_j = T_{biv}$	3.47	2.70
$P_{dh} T_j = TOL$ or $P_{dh} T_j = T_{designh}$ if $TOL < T_{designh}$	5.51 kW	4.90 kW
COP $T_j = TOL$ or COP $T_j = T_{designh}$ if $TOL < T_{designh}$	2.22	1.51
$C_{dh} T_j = TOL$ or $P_{dh} T_j = T_{designh}$ if $TOL < T_{designh}$	0.993	0.995
WTOL	60 °C	60 °C
Poff	14 W	14 W
PTO	14 W	14 W
PSB	14 W	14 W
PCK	14 W	14 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	11.16 kW	10.93 kW
Backup Heater	4.00 kW	4.00 kW
Annual energy consumption $Q_{he}$	7398 kWh	9226 kWh

## Average Climate

<b>EN 12102-1</b>		
	<b>Low temperature</b>	<b>Medium temperature</b>
Sound power level indoor	15 dB(A)	15 dB(A)
Sound power level outdoor	57 dB(A)	57 dB(A)

<b>EN 14825</b>
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This information was generated by the HP KEYMARK database on 5 Jul 2022

	<b>Low temperature</b>	<b>Medium temperature</b>
P <sub>designh</sub>	8.37 kW	7.62 kW
$\eta_s$	195 %	140 %
P <sub>rated</sub>	8.37 kW	7.62 kW
SCOP	4.95	3.57
T <sub>biv</sub>	-7 °C	-7 °C
TOL	-20 °C	-20 °C
P <sub>dh</sub> T <sub>j</sub> = -7°C	7.40 kW	6.74 kW
COP T <sub>j</sub> = -7°C	3.10	2.29
C <sub>dh</sub> T <sub>j</sub> = -7 °C	0.994	0.995
P <sub>dh</sub> T <sub>j</sub> = +2°C	4.54 kW	4.22 kW
COP T <sub>j</sub> = +2°C	4.80	3.51
C <sub>dh</sub> T <sub>j</sub> = +2 °C	0.986	0.989
P <sub>dh</sub> T <sub>j</sub> = +7°C	2.94 kW	2.74 kW
COP T <sub>j</sub> = +7°C	6.61	4.36
C <sub>dh</sub> T <sub>j</sub> = +7 °C	0.969	0.978
P <sub>dh</sub> T <sub>j</sub> = 12°C	3.16 kW	3.28 kW
COP T <sub>j</sub> = 12°C	8.15	6.50
C <sub>dh</sub> T <sub>j</sub> = +12 °C	0.965	0.973
P <sub>dh</sub> T <sub>j</sub> = T <sub>biv</sub>	7.40 kW	6.74 kW
COP T <sub>j</sub> = T <sub>biv</sub>	3.10	2.29

This information was generated by the HP KEYMARK database on 5 Jul 2022

$P_{dh} T_j = TOL$ or $P_{dh} T_j = T_{designh}$ if $TOL < T_{designh}$	5.51 kW	4.90 kW
$COP T_j = TOL$ or $COP T_j = T_{designh}$ if $TOL < T_{designh}$	2.22	1.51
$C_{dh} T_j = TOL$ or $P_{dh} T_j = T_{designh}$ if $TOL < T_{designh}$	0.994	0.995
WTOL	60 °C	60 °C
Poff	14 W	14 W
PTO	14 W	14 W
PSB	14 W	14 W
PCK	14 W	14 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	2.86 kW	2.72 kW
Backup Heater	4.00 kW	4.00 kW
Annual energy consumption $Q_{he}$	3490 kWh	4405 kWh

## Model: ENERGION M PLUS 80

Configure model	
Model name	ENERGION M PLUS 80
Application	Heating (medium temp)
Units	Indoor + Outdoor
Climate Zone	Colder Climate + Warmer Climate
Reversibility	Yes
Cooling mode application (optional)	+7°C/12°C

General Data	
Power supply	1x230V 50Hz

### Heating

EN 14511-2		
	Low temperature	Medium temperature
Heat output	8.00 kW	5.80 kW
El input	1.67 kW	1.97 kW
COP	4.80	2.95

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

### Cooling

This information was generated by the HP KEYMARK database on 5 Jul 2022

### EN 14511-2

	+7°C/+12°C	+18°C/+23°C
El input	2.26 kW	1.49 kW
Cooling capacity	7	7.00
EER	3.10	4.70

### EN 14825

This information was generated by the HP KEYMARK database on 5 Jul 2022

	<b>+7°C/+12°C</b>
P <sub>designc</sub>	7 kW
SEER	4.64
P <sub>dc</sub> T <sub>j</sub> = 35°C	7 kW
EER T <sub>j</sub> = 35°C	3.1
P <sub>dc</sub> T <sub>j</sub> = 30°C	5.17 kW
EER T <sub>j</sub> = 30°C	4.13
C <sub>dc</sub> T <sub>j</sub> = 30 °C	0.99
P <sub>dc</sub> T <sub>j</sub> = 25°C	3.32 kW
EER T <sub>j</sub> = 25°C	4.89
C <sub>dc</sub> T <sub>j</sub> = 25 °C	0.98
P <sub>dc</sub> T <sub>j</sub> = 20°C	3.19 kW
EER T <sub>j</sub> = 20°C	6.85
C <sub>dc</sub> T <sub>j</sub> = 20 °C	0.97
P <sub>off</sub>	14 W
PTO	14 W
PSB	14 W
PCK	0 W
Annual energy consumption Q <sub>ce</sub>	1381 kWh

## Warmer Climate



### EN 12102-1

	Low temperature	Medium temperature
Sound power level indoor	35 dB(A)	35 dB(A)
Sound power level outdoor	57 dB(A)	57 dB(A)

### EN 14825

	Low temperature	Medium temperature
P <sub>designh</sub>	4.93 kW	4.48 kW
$\eta_s$	242 %	151 %
P <sub>rated</sub>	4.93 kW	4.48 kW
SCOP	6.14	3.84
T <sub>biv</sub>	2 °C	2 °C
TOL	-20 °C	-20 °C
P <sub>dh</sub> T <sub>j</sub> = +2°C	4.93 kW	4.48 kW
COP T <sub>j</sub> = +2°C	4.05	2.53
C <sub>dh</sub> T <sub>j</sub> = +2 °C	0.989	0.992
P <sub>dh</sub> T <sub>j</sub> = +7°C	3.10 kW	2.81 kW
COP T <sub>j</sub> = +7°C	5.70	3.08
C <sub>dh</sub> T <sub>j</sub> = +7 °C	0.975	0.985
P <sub>dh</sub> T <sub>j</sub> = 12°C	3.28 kW	3.16 kW
COP T <sub>j</sub> = 12°C	7.86	5.45

This information was generated by the HP KEYMARK database on 5 Jul 2022

Cdh Tj = +12 °C	0.967	0.977
Pdh Tj = Tbiv	4.93 kW	4.48 kW
COP Tj = Tbiv	4.05	2.53
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	5.51 kW	4.90 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.22	1.51
WTOL	60 °C	60 °C
Poff	14 W	14 W
PTO	14 W	14 W
PSB	14 W	14 W
PCK	14 W	14 W
Supplementary Heater: Type of energy input	n/a	n/a
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Backup Heater	4.00 kW	4.00 kW
Annual energy consumption Qhe	1073 kWh	1557 kWh

## Colder Climate

<b>EN 12102-1</b>		
	<b>Low temperature</b>	<b>Medium temperature</b>
Sound power level indoor	35 dB(A)	35 dB(A)
Sound power level outdoor	57 dB(A)	57 dB(A)

<b>EN 14825</b>
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This information was generated by the HP KEYMARK database on 5 Jul 2022

	Low temperature	Medium temperature
P <sub>designh</sub>	11.78 kW	11.53 kW
$\eta_s$	154 %	120 %
P <sub>rated</sub>	11.78 kW	11.53 kW
SCOP	3.93	3.08
T <sub>biv</sub>	-7 °C	-7 °C
TOL	-20 °C	-20 °C
P <sub>dh</sub> T <sub>j</sub> = -7°C	7.13 kW	6.98 kW
COP T <sub>j</sub> = -7°C	3.47	2.73
C <sub>dh</sub> T <sub>j</sub> = -7 °C	0.993	0.995
P <sub>dh</sub> T <sub>j</sub> = +2°C	4.51 kW	4.20 kW
COP T <sub>j</sub> = +2°C	5.32	4.07
C <sub>dh</sub> T <sub>j</sub> = +2 °C	0.984	0.987
P <sub>dh</sub> T <sub>j</sub> = +7°C	3.06 kW	2.84 kW
COP T <sub>j</sub> = +7°C	7.24	5.15
C <sub>dh</sub> T <sub>j</sub> = +7 °C	0.968	0.975
P <sub>dh</sub> T <sub>j</sub> = 12°C	3.18 kW	3.24 kW
COP T <sub>j</sub> = 12°C	8.02	6.47
C <sub>dh</sub> T <sub>j</sub> = +12 °C	0.966	0.973
P <sub>dh</sub> T <sub>j</sub> = T <sub>biv</sub>	7.13 kW	6.98 kW

This information was generated by the HP KEYMARK database on 5 Jul 2022

COP $T_j = T_{biv}$	3.47	2.70
$P_{dh} T_j = TOL$ or $P_{dh} T_j = T_{designh}$ if $TOL < T_{designh}$	5.51 kW	4.90 kW
COP $T_j = TOL$ or COP $T_j = T_{designh}$ if $TOL < T_{designh}$	2.22	1.51
$C_{dh} T_j = TOL$ or $P_{dh} T_j = T_{designh}$ if $TOL < T_{designh}$	0.993	0.995
WTOL	60 °C	60 °C
Poff	14 W	14 W
PTO	14 W	14 W
PSB	14 W	14 W
PCK	14 W	14 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	11.16 kW	10.93 kW
Backup Heater	4.00 kW	4.00 kW
Annual energy consumption $Q_{he}$	7398 kWh	9226 kWh

## Average Climate

<b>EN 12102-1</b>		
	<b>Low temperature</b>	<b>Medium temperature</b>
Sound power level indoor	35 dB(A)	35 dB(A)
Sound power level outdoor	57 dB(A)	57 dB(A)

<b>EN 14825</b>
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This information was generated by the HP KEYMARK database on 5 Jul 2022

	<b>Low temperature</b>	<b>Medium temperature</b>
P <sub>designh</sub>	8.37 kW	7.62 kW
$\eta_s$	195 %	140 %
P <sub>rated</sub>	8.37 kW	7.62 kW
SCOP	4.95	3.57
T <sub>biv</sub>	-7 °C	-7 °C
TOL	-20 °C	-20 °C
P <sub>dh</sub> T <sub>j</sub> = -7°C	7.40 kW	6.74 kW
COP T <sub>j</sub> = -7°C	3.10	2.29
C <sub>dh</sub> T <sub>j</sub> = -7 °C	0.994	0.995
P <sub>dh</sub> T <sub>j</sub> = +2°C	4.54 kW	4.22 kW
COP T <sub>j</sub> = +2°C	4.80	3.51
C <sub>dh</sub> T <sub>j</sub> = +2 °C	0.986	0.989
P <sub>dh</sub> T <sub>j</sub> = +7°C	2.94 kW	2.74 kW
COP T <sub>j</sub> = +7°C	6.61	4.36
C <sub>dh</sub> T <sub>j</sub> = +7 °C	0.969	0.978
P <sub>dh</sub> T <sub>j</sub> = 12°C	3.16 kW	3.28 kW
COP T <sub>j</sub> = 12°C	8.15	6.50
C <sub>dh</sub> T <sub>j</sub> = +12 °C	0.965	0.973
P <sub>dh</sub> T <sub>j</sub> = T <sub>biv</sub>	7.40 kW	6.74 kW
COP T <sub>j</sub> = T <sub>biv</sub>	3.10	2.29

This information was generated by the HP KEYMARK database on 5 Jul 2022

$P_{dh} T_j = TOL$ or $P_{dh} T_j = T_{designh}$ if $TOL < T_{designh}$	5.51 kW	4.90 kW
$COP T_j = TOL$ or $COP T_j = T_{designh}$ if $TOL < T_{designh}$	2.22	1.51
$C_{dh} T_j = TOL$ or $P_{dh} T_j = T_{designh}$ if $TOL < T_{designh}$	0.994	0.995
WTOL	60 °C	60 °C
Poff	14 W	14 W
PTO	14 W	14 W
PSB	14 W	14 W
PCK	14 W	14 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	2.86 kW	2.72 kW
Backup Heater	4.00 kW	4.00 kW
Annual energy consumption $Q_{he}$	3490 kWh	4405 kWh

## Model: ENERGION M PLUS 80T

Configure model	
Model name	ENERGION M PLUS 80T
Application	Heating (medium temp)
Units	Indoor + Outdoor
Climate Zone	Colder Climate + Warmer Climate
Reversibility	Yes
Cooling mode application (optional)	+7°C/12°C

General Data	
Power supply	3x400V 50Hz

### Heating

EN 14511-2		
	Low temperature	Medium temperature
Heat output	8.00 kW	5.80 kW
El input	1.67 kW	1.97 kW
COP	4.80	2.95

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

### Cooling

### EN 14511-2

	+7°C/+12°C	+18°C/+23°C
El input	2.26 kW	1.49 kW
Cooling capacity	7	7.00
EER	3.10	4.70

### EN 14825



This information was generated by the HP KEYMARK database on 5 Jul 2022

	<b>+7°C/+12°C</b>
P <sub>designc</sub>	7 kW
SEER	4.64
P <sub>dc</sub> T <sub>j</sub> = 35°C	7 kW
EER T <sub>j</sub> = 35°C	3.1
P <sub>dc</sub> T <sub>j</sub> = 30°C	5.17 kW
EER T <sub>j</sub> = 30°C	4.13
C <sub>dc</sub> T <sub>j</sub> = 30 °C	0.99
P <sub>dc</sub> T <sub>j</sub> = 25°C	3.32 kW
EER T <sub>j</sub> = 25°C	4.89
C <sub>dc</sub> T <sub>j</sub> = 25 °C	0.98
P <sub>dc</sub> T <sub>j</sub> = 20°C	3.19 kW
EER T <sub>j</sub> = 20°C	6.85
C <sub>dc</sub> T <sub>j</sub> = 20 °C	0.97
P <sub>off</sub>	14 W
PTO	14 W
PSB	14 W
PCK	0 W
Annual energy consumption Q <sub>ce</sub>	1381 kWh

## Warmer Climate

### EN 12102-1

	Low temperature	Medium temperature
Sound power level indoor	35 dB(A)	35 dB(A)
Sound power level outdoor	57 dB(A)	57 dB(A)

### EN 14825

	Low temperature	Medium temperature
P <sub>designh</sub>	4.93 kW	4.48 kW
$\eta_s$	242 %	151 %
P <sub>rated</sub>	4.93 kW	4.48 kW
SCOP	6.14	3.84
T <sub>biv</sub>	2 °C	2 °C
TOL	-20 °C	-20 °C
P <sub>dh</sub> T <sub>j</sub> = +2°C	4.93 kW	4.48 kW
COP T <sub>j</sub> = +2°C	4.05	2.53
C <sub>dh</sub> T <sub>j</sub> = +2 °C	0.989	0.992
P <sub>dh</sub> T <sub>j</sub> = +7°C	3.10 kW	2.81 kW
COP T <sub>j</sub> = +7°C	5.70	3.08
C <sub>dh</sub> T <sub>j</sub> = +7 °C	0.975	0.985
P <sub>dh</sub> T <sub>j</sub> = 12°C	3.28 kW	3.16 kW
COP T <sub>j</sub> = 12°C	7.86	5.45

This information was generated by the HP KEYMARK database on 5 Jul 2022

Cdh Tj = +12 °C	0.967	0.977
Pdh Tj = Tbiv	4.93 kW	4.48 kW
COP Tj = Tbiv	4.05	2.53
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	5.51 kW	4.90 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.22	1.51
WTOL	60 °C	60 °C
Poff	14 W	14 W
PTO	14 W	14 W
PSB	14 W	14 W
PCK	14 W	14 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Backup Heater	4.00 kW	4.00 kW
Annual energy consumption Qhe	1073 kWh	1557 kWh

## Colder Climate

<b>EN 12102-1</b>		
	<b>Low temperature</b>	<b>Medium temperature</b>
Sound power level indoor	35 dB(A)	35 dB(A)
Sound power level outdoor	57 dB(A)	57 dB(A)

<b>EN 14825</b>
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This information was generated by the HP KEYMARK database on 5 Jul 2022

	Low temperature	Medium temperature
P <sub>designh</sub>	11.78 kW	11.53 kW
$\eta_s$	154 %	120 %
P <sub>rated</sub>	11.78 kW	11.53 kW
SCOP	3.93	3.08
T <sub>biv</sub>	-7 °C	-7 °C
TOL	-20 °C	-20 °C
P <sub>dh</sub> T <sub>j</sub> = -7°C	7.13 kW	6.98 kW
COP T <sub>j</sub> = -7°C	3.47	2.73
C <sub>dh</sub> T <sub>j</sub> = -7 °C	0.993	0.995
P <sub>dh</sub> T <sub>j</sub> = +2°C	4.51 kW	4.20 kW
COP T <sub>j</sub> = +2°C	5.32	4.07
C <sub>dh</sub> T <sub>j</sub> = +2 °C	0.984	0.987
P <sub>dh</sub> T <sub>j</sub> = +7°C	3.06 kW	2.84 kW
COP T <sub>j</sub> = +7°C	7.24	5.15
C <sub>dh</sub> T <sub>j</sub> = +7 °C	0.968	0.975
P <sub>dh</sub> T <sub>j</sub> = 12°C	3.18 kW	3.24 kW
COP T <sub>j</sub> = 12°C	8.02	6.47
C <sub>dh</sub> T <sub>j</sub> = +12 °C	0.966	0.973
P <sub>dh</sub> T <sub>j</sub> = T <sub>biv</sub>	7.13 kW	6.98 kW

This information was generated by the HP KEYMARK database on 5 Jul 2022

COP Tj = Tbiv	3.47	2.70
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	5.51 kW	4.90 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.22	1.51
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.993	0.995
WTOL	60 °C	60 °C
Poff	14 W	14 W
PTO	14 W	14 W
PSB	14 W	14 W
PCK	14 W	14 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	11.16 kW	10.93 kW
Backup Heater	4.00 kW	4.00 kW
Annual energy consumption Qhe	7398 kWh	9226 kWh

## Average Climate

<b>EN 12102-1</b>		
	<b>Low temperature</b>	<b>Medium temperature</b>
Sound power level indoor	35 dB(A)	35 dB(A)
Sound power level outdoor	57 dB(A)	57 dB(A)

<b>EN 14825</b>
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This information was generated by the HP KEYMARK database on 5 Jul 2022

	<b>Low temperature</b>	<b>Medium temperature</b>
P <sub>designh</sub>	8.37 kW	7.62 kW
$\eta_s$	195 %	140 %
P <sub>rated</sub>	8.37 kW	7.62 kW
SCOP	4.95	3.57
T <sub>biv</sub>	-7 °C	-7 °C
TOL	-20 °C	-20 °C
P <sub>dh</sub> T <sub>j</sub> = -7°C	7.40 kW	6.74 kW
COP T <sub>j</sub> = -7°C	3.10	2.29
C <sub>dh</sub> T <sub>j</sub> = -7 °C	0.994	0.995
P <sub>dh</sub> T <sub>j</sub> = +2°C	4.54 kW	4.22 kW
COP T <sub>j</sub> = +2°C	4.80	3.51
C <sub>dh</sub> T <sub>j</sub> = +2 °C	0.986	0.989
P <sub>dh</sub> T <sub>j</sub> = +7°C	2.94 kW	2.74 kW
COP T <sub>j</sub> = +7°C	6.61	4.36
C <sub>dh</sub> T <sub>j</sub> = +7 °C	0.969	0.978
P <sub>dh</sub> T <sub>j</sub> = 12°C	3.16 kW	3.28 kW
COP T <sub>j</sub> = 12°C	8.15	6.50
C <sub>dh</sub> T <sub>j</sub> = +12 °C	0.965	0.973
P <sub>dh</sub> T <sub>j</sub> = T <sub>biv</sub>	7.40 kW	6.74 kW
COP T <sub>j</sub> = T <sub>biv</sub>	3.10	2.29

This information was generated by the HP KEYMARK database on 5 Jul 2022

Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	5.51 kW	4.90 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.22	1.51
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.994	0.995
WTOL	60 °C	60 °C
Poff	14 W	14 W
PTO	14 W	14 W
PSB	14 W	14 W
PCK	14 W	14 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	2.86 kW	2.72 kW
Backup Heater	4.00 kW	4.00 kW
Annual energy consumption Qhe	3490 kWh	4405 kWh

## Model: ENERGION M LIGHT 80

Configure model	
Model name	ENERGION M LIGHT 80
Application	Heating (medium temp)
Units	Indoor + Outdoor
Climate Zone	Colder Climate + Warmer Climate
Reversibility	Yes
Cooling mode application (optional)	+7°C/12°C

General Data	
Power supply	1x230V 50Hz

### Heating

EN 14511-2		
	Low temperature	Medium temperature
Heat output	8.00 kW	5.80 kW
El input	1.67 kW	1.97 kW
COP	4.80	2.95

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

### Cooling



### EN 14511-2

	+7°C/+12°C	+18°C/+23°C
El input	2.26 kW	1.49 kW
Cooling capacity	7	7.00
EER	3.10	4.70

### EN 14825

This information was generated by the HP KEYMARK database on 5 Jul 2022

	<b>+7°C/+12°C</b>
P <sub>designc</sub>	7 kW
SEER	4.64
P <sub>dc</sub> T <sub>j</sub> = 35°C	7 kW
EER T <sub>j</sub> = 35°C	3.1
P <sub>dc</sub> T <sub>j</sub> = 30°C	5.17 kW
EER T <sub>j</sub> = 30°C	4.13
C <sub>dc</sub> T <sub>j</sub> = 30 °C	0.99
P <sub>dc</sub> T <sub>j</sub> = 25°C	3.32 kW
EER T <sub>j</sub> = 25°C	4.89
C <sub>dc</sub> T <sub>j</sub> = 25 °C	0.98
P <sub>dc</sub> T <sub>j</sub> = 20°C	3.19 kW
EER T <sub>j</sub> = 20°C	6.85
C <sub>dc</sub> T <sub>j</sub> = 20 °C	0.97
P <sub>off</sub>	14 W
PTO	14 W
PSB	14 W
PCK	0 W
Annual energy consumption Q <sub>ce</sub>	1381 kWh

## Warmer Climate

### EN 12102-1

	Low temperature	Medium temperature
Sound power level indoor	15 dB(A)	15 dB(A)
Sound power level outdoor	57 dB(A)	57 dB(A)

### EN 14825

	Low temperature	Medium temperature
P <sub>designh</sub>	4.93 kW	4.48 kW
$\eta_s$	242 %	151 %
P <sub>rated</sub>	4.93 kW	4.48 kW
SCOP	6.14	3.84
T <sub>biv</sub>	2 °C	2 °C
TOL	-20 °C	-20 °C
P <sub>dh</sub> T <sub>j</sub> = +2°C	4.93 kW	4.48 kW
COP T <sub>j</sub> = +2°C	4.05	2.53
C <sub>dh</sub> T <sub>j</sub> = +2 °C	0.989	0.992
P <sub>dh</sub> T <sub>j</sub> = +7°C	3.10 kW	2.81 kW
COP T <sub>j</sub> = +7°C	5.70	3.08
C <sub>dh</sub> T <sub>j</sub> = +7 °C	0.975	0.985
P <sub>dh</sub> T <sub>j</sub> = 12°C	3.28 kW	3.16 kW
COP T <sub>j</sub> = 12°C	7.86	5.45

This information was generated by the HP KEYMARK database on 5 Jul 2022

Cdh Tj = +12 °C	0.967	0.977
Pdh Tj = Tbiv	4.93 kW	4.48 kW
COP Tj = Tbiv	4.05	2.53
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	5.51 kW	4.90 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.22	1.51
WTOL	60 °C	60 °C
Poff	14 W	14 W
PTO	14 W	14 W
PSB	14 W	14 W
PCK	14 W	14 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Backup Heater	4.00 kW	4.00 kW
Annual energy consumption Qhe	1073 kWh	1557 kWh

## Colder Climate

<b>EN 12102-1</b>		
	<b>Low temperature</b>	<b>Medium temperature</b>
Sound power level indoor	15 dB(A)	15 dB(A)
Sound power level outdoor	57 dB(A)	57 dB(A)

<b>EN 14825</b>
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This information was generated by the HP KEYMARK database on 5 Jul 2022

	Low temperature	Medium temperature
P <sub>designh</sub>	11.78 kW	11.53 kW
$\eta_s$	154 %	120 %
P <sub>rated</sub>	11.78 kW	11.53 kW
SCOP	3.93	3.08
T <sub>biv</sub>	-7 °C	-7 °C
TOL	-20 °C	-20 °C
P <sub>dh</sub> T <sub>j</sub> = -7°C	7.13 kW	6.98 kW
COP T <sub>j</sub> = -7°C	3.47	2.73
C <sub>dh</sub> T <sub>j</sub> = -7 °C	0.993	0.995
P <sub>dh</sub> T <sub>j</sub> = +2°C	4.51 kW	4.20 kW
COP T <sub>j</sub> = +2°C	5.32	4.07
C <sub>dh</sub> T <sub>j</sub> = +2 °C	0.984	0.987
P <sub>dh</sub> T <sub>j</sub> = +7°C	3.06 kW	2.84 kW
COP T <sub>j</sub> = +7°C	7.24	5.15
C <sub>dh</sub> T <sub>j</sub> = +7 °C	0.968	0.975
P <sub>dh</sub> T <sub>j</sub> = 12°C	3.18 kW	3.24 kW
COP T <sub>j</sub> = 12°C	8.02	6.47
C <sub>dh</sub> T <sub>j</sub> = +12 °C	0.966	0.973
P <sub>dh</sub> T <sub>j</sub> = T <sub>biv</sub>	7.13 kW	6.98 kW

This information was generated by the HP KEYMARK database on 5 Jul 2022

COP $T_j = T_{biv}$	3.47	2.70
$P_{dh} T_j = TOL$ or $P_{dh} T_j = T_{designh}$ if $TOL < T_{designh}$	5.51 kW	4.90 kW
COP $T_j = TOL$ or COP $T_j = T_{designh}$ if $TOL < T_{designh}$	2.22	1.51
$C_{dh} T_j = TOL$ or $P_{dh} T_j = T_{designh}$ if $TOL < T_{designh}$	0.993	0.995
WTOL	60 °C	60 °C
Poff	14 W	14 W
PTO	14 W	14 W
PSB	14 W	14 W
PCK	14 W	14 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	11.16 kW	10.93 kW
Backup Heater	4.00 kW	4.00 kW
Annual energy consumption $Q_{he}$	7398 kWh	9226 kWh

## Average Climate

<b>EN 12102-1</b>		
	<b>Low temperature</b>	<b>Medium temperature</b>
Sound power level indoor	15 dB(A)	15 dB(A)
Sound power level outdoor	57 dB(A)	57 dB(A)

<b>EN 14825</b>
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This information was generated by the HP KEYMARK database on 5 Jul 2022

	<b>Low temperature</b>	<b>Medium temperature</b>
P <sub>designh</sub>	8.37 kW	7.62 kW
$\eta_s$	195 %	140 %
P <sub>rated</sub>	8.37 kW	7.62 kW
SCOP	4.95	3.57
T <sub>biv</sub>	-7 °C	-7 °C
TOL	-20 °C	-20 °C
P <sub>dh</sub> T <sub>j</sub> = -7°C	7.40 kW	6.74 kW
COP T <sub>j</sub> = -7°C	3.10	2.29
C <sub>dh</sub> T <sub>j</sub> = -7 °C	0.994	0.995
P <sub>dh</sub> T <sub>j</sub> = +2°C	4.54 kW	4.22 kW
COP T <sub>j</sub> = +2°C	4.80	3.51
C <sub>dh</sub> T <sub>j</sub> = +2 °C	0.986	0.989
P <sub>dh</sub> T <sub>j</sub> = +7°C	2.94 kW	2.74 kW
COP T <sub>j</sub> = +7°C	6.61	4.36
C <sub>dh</sub> T <sub>j</sub> = +7 °C	0.969	0.978
P <sub>dh</sub> T <sub>j</sub> = 12°C	3.16 kW	3.28 kW
COP T <sub>j</sub> = 12°C	8.15	6.50
C <sub>dh</sub> T <sub>j</sub> = +12 °C	0.965	0.973
P <sub>dh</sub> T <sub>j</sub> = T <sub>biv</sub>	7.40 kW	6.74 kW
COP T <sub>j</sub> = T <sub>biv</sub>	3.10	2.29

This information was generated by the HP KEYMARK database on 5 Jul 2022

Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	5.51 kW	4.90 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.22	1.51
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.994	0.995
WTOL	60 °C	60 °C
Poff	14 W	14 W
PTO	14 W	14 W
PSB	14 W	14 W
PCK	14 W	14 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	2.86 kW	2.72 kW
Backup Heater	4.00 kW	4.00 kW
Annual energy consumption Qhe	3490 kWh	4405 kWh



## Model: ENERGION M LIGHT 80T

Configure model	
Model name	ENERGION M LIGHT 80T
Application	Heating (medium temp)
Units	Indoor + Outdoor
Climate Zone	Colder Climate + Warmer Climate
Reversibility	Yes
Cooling mode application (optional)	+7°C/12°C

General Data	
Power supply	3x400V 50Hz

### Heating

EN 14511-2		
	Low temperature	Medium temperature
Heat output	8.00 kW	5.80 kW
El input	1.67 kW	1.97 kW
COP	4.80	2.95

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

### Cooling

### EN 14511-2

	+7°C/+12°C	+18°C/+23°C
El input	2.26 kW	1.49 kW
Cooling capacity	7	7.00
EER	3.10	4.70

### EN 14825

This information was generated by the HP KEYMARK database on 5 Jul 2022

	<b>+7°C/+12°C</b>
P <sub>designc</sub>	7 kW
SEER	4.64
P <sub>dc</sub> T <sub>j</sub> = 35°C	7 kW
EER T <sub>j</sub> = 35°C	3.1
P <sub>dc</sub> T <sub>j</sub> = 30°C	5.17 kW
EER T <sub>j</sub> = 30°C	4.13
C <sub>dc</sub> T <sub>j</sub> = 30 °C	0.99
P <sub>dc</sub> T <sub>j</sub> = 25°C	3.32 kW
EER T <sub>j</sub> = 25°C	4.89
C <sub>dc</sub> T <sub>j</sub> = 25 °C	0.98
P <sub>dc</sub> T <sub>j</sub> = 20°C	3.19 kW
EER T <sub>j</sub> = 20°C	6.85
C <sub>dc</sub> T <sub>j</sub> = 20 °C	0.97
P <sub>off</sub>	14 W
PTO	14 W
PSB	14 W
PCK	0 W
Annual energy consumption Q <sub>ce</sub>	1381 kWh

## Warmer Climate

### EN 12102-1

	Low temperature	Medium temperature
Sound power level indoor	15 dB(A)	15 dB(A)
Sound power level outdoor	57 dB(A)	57 dB(A)

### EN 14825

	Low temperature	Medium temperature
P <sub>designh</sub>	4.93 kW	4.48 kW
$\eta_s$	242 %	151 %
P <sub>rated</sub>	4.93 kW	4.48 kW
SCOP	6.14	3.84
T <sub>biv</sub>	2 °C	2 °C
TOL	-20 °C	-20 °C
P <sub>dh</sub> T <sub>j</sub> = +2°C	4.93 kW	4.48 kW
COP T <sub>j</sub> = +2°C	4.05	2.53
C <sub>dh</sub> T <sub>j</sub> = +2 °C	0.989	0.992
P <sub>dh</sub> T <sub>j</sub> = +7°C	3.10 kW	2.81 kW
COP T <sub>j</sub> = +7°C	5.70	3.08
C <sub>dh</sub> T <sub>j</sub> = +7 °C	0.975	0.985
P <sub>dh</sub> T <sub>j</sub> = 12°C	3.28 kW	3.16 kW
COP T <sub>j</sub> = 12°C	7.86	5.45

This information was generated by the HP KEYMARK database on 5 Jul 2022

Cdh Tj = +12 °C	0.967	0.977
Pdh Tj = Tbiv	4.93 kW	4.48 kW
COP Tj = Tbiv	4.05	2.53
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	5.51 kW	4.90 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.22	1.51
WTOL	60 °C	60 °C
Poff	14 W	14 W
PTO	14 W	14 W
PSB	14 W	14 W
PCK	14 W	14 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Backup Heater	4.00 kW	4.00 kW
Annual energy consumption Qhe	1073 kWh	1557 kWh

## Colder Climate

<b>EN 12102-1</b>		
	<b>Low temperature</b>	<b>Medium temperature</b>
Sound power level indoor	15 dB(A)	15 dB(A)
Sound power level outdoor	57 dB(A)	57 dB(A)

<b>EN 14825</b>
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This information was generated by the HP KEYMARK database on 5 Jul 2022

	Low temperature	Medium temperature
P <sub>designh</sub>	11.78 kW	11.53 kW
$\eta_s$	154 %	120 %
P <sub>rated</sub>	11.78 kW	11.53 kW
SCOP	3.93	3.08
T <sub>biv</sub>	-7 °C	-7 °C
TOL	-20 °C	-20 °C
P <sub>dh</sub> T <sub>j</sub> = -7°C	7.13 kW	6.98 kW
COP T <sub>j</sub> = -7°C	3.47	2.73
C <sub>dh</sub> T <sub>j</sub> = -7 °C	0.993	0.995
P <sub>dh</sub> T <sub>j</sub> = +2°C	4.51 kW	4.20 kW
COP T <sub>j</sub> = +2°C	5.32	4.07
C <sub>dh</sub> T <sub>j</sub> = +2 °C	0.984	0.987
P <sub>dh</sub> T <sub>j</sub> = +7°C	3.06 kW	2.84 kW
COP T <sub>j</sub> = +7°C	7.24	5.15
C <sub>dh</sub> T <sub>j</sub> = +7 °C	0.968	0.975
P <sub>dh</sub> T <sub>j</sub> = 12°C	3.18 kW	3.24 kW
COP T <sub>j</sub> = 12°C	8.02	6.47
C <sub>dh</sub> T <sub>j</sub> = +12 °C	0.966	0.973
P <sub>dh</sub> T <sub>j</sub> = T <sub>biv</sub>	7.13 kW	6.98 kW

This information was generated by the HP KEYMARK database on 5 Jul 2022

COP Tj = Tbiv	3.47	2.70
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	5.51 kW	4.90 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.22	1.51
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.993	0.995
WTOL	60 °C	60 °C
Poff	14 W	14 W
PTO	14 W	14 W
PSB	14 W	14 W
PCK	14 W	14 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	11.16 kW	10.93 kW
Backup Heater	4.00 kW	4.00 kW
Annual energy consumption Qhe	7398 kWh	9226 kWh

## Average Climate

<b>EN 12102-1</b>		
	<b>Low temperature</b>	<b>Medium temperature</b>
Sound power level indoor	15 dB(A)	15 dB(A)
Sound power level outdoor	57 dB(A)	57 dB(A)

<b>EN 14825</b>
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This information was generated by the HP KEYMARK database on 5 Jul 2022

	<b>Low temperature</b>	<b>Medium temperature</b>
P <sub>designh</sub>	8.37 kW	7.62 kW
$\eta_s$	195 %	140 %
P <sub>rated</sub>	8.37 kW	7.62 kW
SCOP	4.95	3.57
T <sub>biv</sub>	-7 °C	-7 °C
TOL	-20 °C	-20 °C
P <sub>dh</sub> T <sub>j</sub> = -7°C	7.40 kW	6.74 kW
COP T <sub>j</sub> = -7°C	3.10	2.29
C <sub>dh</sub> T <sub>j</sub> = -7 °C	0.994	0.995
P <sub>dh</sub> T <sub>j</sub> = +2°C	4.54 kW	4.22 kW
COP T <sub>j</sub> = +2°C	4.80	3.51
C <sub>dh</sub> T <sub>j</sub> = +2 °C	0.986	0.989
P <sub>dh</sub> T <sub>j</sub> = +7°C	2.94 kW	2.74 kW
COP T <sub>j</sub> = +7°C	6.61	4.36
C <sub>dh</sub> T <sub>j</sub> = +7 °C	0.969	0.978
P <sub>dh</sub> T <sub>j</sub> = 12°C	3.16 kW	3.28 kW
COP T <sub>j</sub> = 12°C	8.15	6.50
C <sub>dh</sub> T <sub>j</sub> = +12 °C	0.965	0.973
P <sub>dh</sub> T <sub>j</sub> = T <sub>biv</sub>	7.40 kW	6.74 kW
COP T <sub>j</sub> = T <sub>biv</sub>	3.10	2.29



This information was generated by the HP KEYMARK database on 5 Jul 2022

$P_{dh} T_j = TOL$ or $P_{dh} T_j = T_{designh}$ if $TOL < T_{designh}$	5.51 kW	4.90 kW
$COP T_j = TOL$ or $COP T_j = T_{designh}$ if $TOL < T_{designh}$	2.22	1.51
$C_{dh} T_j = TOL$ or $P_{dh} T_j = T_{designh}$ if $TOL < T_{designh}$	0.994	0.995
WTOL	60 °C	60 °C
Poff	14 W	14 W
PTO	14 W	14 W
PSB	14 W	14 W
PCK	14 W	14 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	2.86 kW	2.72 kW
Backup Heater	4.00 kW	4.00 kW
Annual energy consumption $Q_{he}$	3490 kWh	4405 kWh