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Summary of	Vitocal 2xx-G B10	Reg. No.	011-1W0287
Certificate Holder			
Name	Viessmann Wärmepumpen GmbH		
Address	Viessmannstr. 1	Zip	35107
City	Allendorf/Eder	Country	Germany
Certification Body	DIN CERTCO Gesellschaft für Konformitätsbewertung mbH		
Subtype title	Vitocal 2xx-G B10		
Heat Pump Type	Brine/Water		
Refrigerant	R410A		
Mass of Refrigerant	2.4 kg		
Certification Date	11.07.2019		

## Model: VITOCAL 200-G BWC 201.B10

Configure model	
Model name	VITOCAL 200-G BWC 201.B10
Application	Heating (medium temp)
Units	Indoor
Climate Zone	Colder Climate + Warmer Climate
Reversibility	No
Cooling mode application (optional)	n/a

General Data	
Power supply	3x400V 50Hz

### Heating

EN 14511-2		
	Low temperature	Medium temperature
Heat output	10.36 kW	9.42 kW
El input	2.16 kW	3.32 kW
COP	4.81	2.85

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

### Average Climate

This information was generated by the HP KEYMARK database on 18 Mar 2022

### EN 12102-1

	Low temperature	Medium temperature
Sound power level indoor	46 dB(A)	46 dB(A)

### EN 14825

		Low temperature	Medium temperature
P <sub>designh</sub>	11.72 kW		
$\eta_s$	204 %	150 %	
P <sub>rated</sub>	11.72 kW	10.81 kW	
SCOP	5.32	3.97	
T <sub>biv</sub>	-7 °C	-7 °C	
TOL	-10 °C	-10 °C	
P <sub>dh</sub> T <sub>j</sub> = -7°C	10.31 kW	9.51 kW	
COP T <sub>j</sub> = -7°C	4.99	3.23	
C <sub>dh</sub> T <sub>j</sub> = -7 °C	0.99	0.99	
P <sub>dh</sub> T <sub>j</sub> = +2°C	10.40 kW	9.78 kW	
COP T <sub>j</sub> = +2°C	5.33	3.84	
C <sub>dh</sub> T <sub>j</sub> = +2 °C	0.99	0.99	
P <sub>dh</sub> T <sub>j</sub> = +7°C	10.48 kW	9.96 kW	
COP T <sub>j</sub> = +7°C	5.67	4.31	
C <sub>dh</sub> T <sub>j</sub> = +7 °C	0.99	0.99	

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Pdh Tj = 12°C	10.58 kW	10.15 kW
COP Tj = 12°C	6.02	4.83
Cdh Tj = +12 °C	0.99	0.99
Pdh Tj = Tbiv	10.31 kW	9.51 kW
COP Tj = Tbiv	4.99	3.23
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	10.31 kW	9.42 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.96	3.07
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.99	0.99
WTOL	65 °C	65 °C
Poff	0 W	0 W
PTO	0 W	0 W
PSB	12 W	12 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.41 kW	1.39 kW
Backup Heater	0.00 kW	
Annual energy consumption Qhe	4554 kWh	5630 kWh

## Warmer Climate

This information was generated by the HP KEYMARK database on 18 Mar 2022

### EN 12102-1

	Low temperature	Medium temperature
Sound power level indoor	46 dB(A)	46 dB(A)

### EN 14825

	Low temperature	Medium temperature
$\eta_s$	208 %	145 %
Prated	10.27 kW	9.39 kW
SCOP	5.41	3.82
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	10.27 kW	9.39 kW
COP Tj = +2°C	4.95	3.00
Cdh Tj = +2 °C	0.99	0.99
Pdh Tj = +7°C	10.33 kW	9.66 kW
COP Tj = +7°C	5.24	3.50
Cdh Tj = +7 °C	0.99	0.99
Pdh Tj = 12°C	10.46 kW	10.02 kW
COP Tj = 12°C	5.79	4.40
Cdh Tj = +12 °C	0.99	0.99
Pdh Tj = Tbiv	10.27 kW	9.39 kW

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COP $T_j = T_{biv}$	4.95	3.00
$P_{dh} T_j = TOL$ or $P_{dh} T_j = T_{designh}$ if $TOL < T_{designh}$	10.27 kW	9.39 kW
COP $T_j = TOL$ or COP $T_j = T_{designh}$ if $TOL < T_{designh}$	4.95	3.00
$C_{dh} T_j = TOL$ or $P_{dh} T_j = T_{designh}$ if $TOL < T_{designh}$	0.99	0.99
WTOL	65 °C	65 °C
Poff	0 W	0 W
PTO	0 W	0 W
PSB	12 W	12 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption $Q_{he}$	2536 kWh	3281 kWh

## Colder Climate

<b>EN 12102-1</b>		
	<b>Low temperature</b>	<b>Medium temperature</b>
Sound power level indoor	46 dB(A)	46 dB(A)

<b>EN 14825</b>		
	<b>Low temperature</b>	<b>Medium temperature</b>
$\eta_s$	206 %	143 %

This information was generated by the HP KEYMARK database on 18 Mar 2022

Prated	17.18 kW	15.83 kW
SCOP	5.36	3.78
Tbiv	-7 °C	-7 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	10.44 kW	9.78 kW
COP Tj = -7°C	5.76	3.84
Cdh Tj = -7 °C	0.99	0.99
Pdh Tj = +2°C	10.48 kW	9.99 kW
COP Tj = +2°C	6.47	4.37
Cdh Tj = +2 °C	0.99	0.99
Pdh Tj = +7°C	10.55 kW	10.16 kW
COP Tj = +7°C	6.78	4.84
Cdh Tj = +7 °C	0.99	0.99
Pdh Tj = 12°C	10.55 kW	10.26 kW
COP Tj = 12°C	6.85	5.25
Cdh Tj = +12 °C	0.99	0.99
Pdh Tj = Tbiv	10.44 kW	9.78 kW
COP Tj = Tbiv	5.76	3.84
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	10.44 kW	9.47 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	6.12	3.15
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.99	0.99

This information was generated by the HP KEYMARK database on 18 Mar 2022

WTOL	65 °C	65 °C
Poff	0 W	0 W
PTO	0 W	0 W
PSB	12 W	12 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	6.73 kW	6.35 kW
Annual energy consumption Qhe	7907 kWh	10312 kWh
Pdh Tj = -15°C (if TOL<-20°C)	10.47	9.65
COP Tj = -15°C (if TOL<-20°C)	6.39	3.51
Cdh Tj = -15 °C	0.99	0.99



# Model: VITOCAL 200-G BWC 201.B10 SC

## Configure model

Model name	VITOCAL 200-G BWC 201.B10 SC
Application	Heating (medium temp)
Units	Indoor
Climate Zone	Colder Climate + Warmer Climate
Reversibility	No
Cooling mode application (optional)	n/a

## General Data

Power supply	n/a
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## Heating

### EN 14511-2

	Low temperature	Medium temperature
Heat output	10.36 kW	9.42 kW
El input	2.16 kW	3.32 kW
COP	4.81	2.85

### EN 14511-4

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

## Average Climate

### EN 12102-1

	Low temperature	Medium temperature
Sound power level indoor	46 dB(A)	46 dB(A)

### EN 14825

		Low temperature	Medium temperature
P <sub>designh</sub>	11.72 kW		
$\eta_s$	204 %	150 %	
P <sub>rated</sub>	11.72 kW	10.81 kW	
SCOP	5.32	3.97	
T <sub>biv</sub>	-7 °C	-7 °C	
TOL	-10 °C	-10 °C	
P <sub>dh</sub> T <sub>j</sub> = -7°C	10.31 kW	9.51 kW	
COP T <sub>j</sub> = -7°C	4.99	3.23	
C <sub>dh</sub> T <sub>j</sub> = -7 °C	0.99	0.99	
P <sub>dh</sub> T <sub>j</sub> = +2°C	10.40 kW	9.78 kW	
COP T <sub>j</sub> = +2°C	5.33	3.84	
C <sub>dh</sub> T <sub>j</sub> = +2 °C	0.99	0.99	
P <sub>dh</sub> T <sub>j</sub> = +7°C	10.48 kW	9.96 kW	
COP T <sub>j</sub> = +7°C	5.67	4.31	
C <sub>dh</sub> T <sub>j</sub> = +7 °C	0.99	0.99	

This information was generated by the HP KEYMARK database on 18 Mar 2022

Pdh Tj = 12°C	10.58 kW	10.15 kW
COP Tj = 12°C	6.02	4.83
Cdh Tj = +12 °C	0.99	0.99
Pdh Tj = Tbiv	10.31 kW	9.51 kW
COP Tj = Tbiv	4.99	3.23
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	10.31 kW	9.42 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.96	3.07
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.99	0.99
WTOL	65 °C	65 °C
Poff	0 W	0 W
PTO	0 W	0 W
PSB	12 W	12 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.41 kW	1.39 kW
Backup Heater	0.00 kW	
Annual energy consumption Qhe	4554 kWh	5630 kWh

## Warmer Climate

This information was generated by the HP KEYMARK database on 18 Mar 2022

### EN 12102-1

	Low temperature	Medium temperature
Sound power level indoor	46 dB(A)	46 dB(A)

### EN 14825

	Low temperature	Medium temperature
$\eta_s$	208 %	145 %
Prated	10.27 kW	9.39 kW
SCOP	5.41	3.82
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	10.27 kW	9.39 kW
COP Tj = +2°C	4.95	3.00
Cdh Tj = +2 °C	0.99	0.99
Pdh Tj = +7°C	10.33 kW	9.66 kW
COP Tj = +7°C	5.24	3.50
Cdh Tj = +7 °C	0.99	0.99
Pdh Tj = 12°C	10.46 kW	10.02 kW
COP Tj = 12°C	5.79	4.40
Cdh Tj = +12 °C	0.99	0.99
Pdh Tj = Tbiv	10.27 kW	9.39 kW

This information was generated by the HP KEYMARK database on 18 Mar 2022

COP Tj = Tbiv	4.95	3.00
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	10.27 kW	9.39 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.95	3.00
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.99	0.99
WTOL	65 °C	65 °C
Poff	0 W	0 W
PTO	0 W	0 W
PSB	12 W	12 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	2536 kWh	3281 kWh

## Colder Climate

<b>EN 12102-1</b>		
	<b>Low temperature</b>	<b>Medium temperature</b>
Sound power level indoor	46 dB(A)	46 dB(A)

<b>EN 14825</b>		
	<b>Low temperature</b>	<b>Medium temperature</b>
$\eta_s$	206 %	143 %

This information was generated by the HP KEYMARK database on 18 Mar 2022

Prated	17.18 kW	15.83 kW
SCOP	5.36	3.78
Tbiv	-7 °C	-7 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	10.44 kW	9.78 kW
COP Tj = -7°C	5.76	3.84
Cdh Tj = -7 °C	0.99	0.99
Pdh Tj = +2°C	10.48 kW	9.99 kW
COP Tj = +2°C	6.47	4.37
Cdh Tj = +2 °C	0.99	0.99
Pdh Tj = +7°C	10.55 kW	10.16 kW
COP Tj = +7°C	6.78	4.84
Cdh Tj = +7 °C	0.99	0.99
Pdh Tj = 12°C	10.55 kW	10.26 kW
COP Tj = 12°C	6.85	5.25
Cdh Tj = +12 °C	0.99	0.99
Pdh Tj = Tbiv	10.44 kW	9.78 kW
COP Tj = Tbiv	5.76	3.84
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	10.44 kW	9.47 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	6.12	3.15
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.99	0.99

This information was generated by the HP KEYMARK database on 18 Mar 2022

WTOL	65 °C	65 °C
Poff	0 W	0 W
PTO	0 W	0 W
PSB	12 W	12 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	6.73 kW	6.35 kW
Annual energy consumption Qhe	7907 kWh	10312 kWh
Pdh Tj = -15°C (if TOL<-20°C)	10.47	9.65
COP Tj = -15°C (if TOL<-20°C)	6.39	3.51
Cdh Tj = -15 °C	0.99	0.99

## Model: VITOCAL 222-G BWT 221.B10

Configure model	
Model name	VITOCAL 222-G BWT 221.B10
Application	Heating + DHW + low temp
Units	Indoor
Climate Zone	Colder Climate + Warmer Climate
Reversibility	No
Cooling mode application (optional)	n/a

General Data	
Power supply	3x400V 50Hz
Off-peak product	Yes

### Heating

EN 14511-2		
	Low temperature	Medium temperature
Heat output	10.36 kW	9.42 kW
El input	2.16 kW	3.32 kW
COP	4.81	2.85

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

### Average Climate



### EN 12102-1

	Low temperature	Medium temperature
Sound power level indoor	46 dB(A)	46 dB(A)

### EN 14825

		Low temperature	Medium temperature
P <sub>designh</sub>	11.72 kW		
$\eta_s$	204 %	150 %	
P <sub>rated</sub>	11.72 kW	10.81 kW	
SCOP	5.32	3.97	
T <sub>biv</sub>	-7 °C	-7 °C	
TOL	-10 °C	-10 °C	
P <sub>dh</sub> T <sub>j</sub> = -7°C	10.31 kW	9.51 kW	
COP T <sub>j</sub> = -7°C	4.99	3.23	
C <sub>dh</sub> T <sub>j</sub> = -7 °C	0.99	0.99	
P <sub>dh</sub> T <sub>j</sub> = +2°C	10.40 kW	9.78 kW	
COP T <sub>j</sub> = +2°C	5.33	3.84	
C <sub>dh</sub> T <sub>j</sub> = +2 °C	0.99	0.99	
P <sub>dh</sub> T <sub>j</sub> = +7°C	10.48 kW	9.96 kW	
COP T <sub>j</sub> = +7°C	5.67	4.31	
C <sub>dh</sub> T <sub>j</sub> = +7 °C	0.99	0.99	

This information was generated by the HP KEYMARK database on 18 Mar 2022

Pdh Tj = 12°C	10.58 kW	10.15 kW
COP Tj = 12°C	6.02	4.83
Cdh Tj = +12 °C	0.99	0.99
Pdh Tj = Tbiv	10.31 kW	9.51 kW
COP Tj = Tbiv	4.99	3.23
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	10.31 kW	9.42 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.96	3.07
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.99	0.99
WTOL	65 °C	65 °C
Poff	0 W	0 W
PTO	0 W	0 W
PSB	12 W	12 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.41 kW	1.39 kW
Backup Heater	0.00 kW	
Annual energy consumption Qhe	4554 kWh	5630 kWh

## Warmer Climate

This information was generated by the HP KEYMARK database on 18 Mar 2022

### EN 12102-1

	Low temperature	Medium temperature
Sound power level indoor	46 dB(A)	46 dB(A)

### EN 14825

	Low temperature	Medium temperature
$\eta_s$	208 %	145 %
Prated	10.27 kW	9.39 kW
SCOP	5.41	3.82
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	10.27 kW	9.39 kW
COP Tj = +2°C	4.95	3.00
Cdh Tj = +2 °C	0.99	0.99
Pdh Tj = +7°C	10.33 kW	9.66 kW
COP Tj = +7°C	5.24	3.50
Cdh Tj = +7 °C	0.99	0.99
Pdh Tj = 12°C	10.46 kW	10.02 kW
COP Tj = 12°C	5.79	4.40
Cdh Tj = +12 °C	0.99	0.99
Pdh Tj = Tbiv	10.27 kW	9.39 kW

This information was generated by the HP KEYMARK database on 18 Mar 2022

COP Tj = Tbiv	4.95	3.00
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	10.27 kW	9.39 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.95	3.00
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.99	0.99
WTOL	65 °C	65 °C
Poff	0 W	0 W
PTO	0 W	0 W
PSB	12 W	12 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	2536 kWh	3281 kWh

## Colder Climate

<b>EN 12102-1</b>		
	<b>Low temperature</b>	<b>Medium temperature</b>
Sound power level indoor	46 dB(A)	46 dB(A)

<b>EN 14825</b>		
	<b>Low temperature</b>	<b>Medium temperature</b>
$\eta_s$	206 %	143 %

This information was generated by the HP KEYMARK database on 18 Mar 2022

Prated	17.18 kW	15.83 kW
SCOP	5.36	3.78
Tbiv	-7 °C	-7 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	10.44 kW	9.78 kW
COP Tj = -7°C	5.76	3.84
Cdh Tj = -7 °C	0.99	0.99
Pdh Tj = +2°C	10.48 kW	9.99 kW
COP Tj = +2°C	6.47	4.37
Cdh Tj = +2 °C	0.99	0.99
Pdh Tj = +7°C	10.55 kW	10.16 kW
COP Tj = +7°C	6.78	4.84
Cdh Tj = +7 °C	0.99	0.99
Pdh Tj = 12°C	10.55 kW	10.26 kW
COP Tj = 12°C	6.85	5.25
Cdh Tj = +12 °C	0.99	0.99
Pdh Tj = Tbiv	10.44 kW	9.78 kW
COP Tj = Tbiv	5.76	3.84
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	10.44 kW	9.47 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	6.12	3.15
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.99	0.99

This information was generated by the HP KEYMARK database on 18 Mar 2022

WTOL	65 °C	65 °C
Poff	0 W	0 W
PTO	0 W	0 W
PSB	12 W	12 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	6.73 kW	6.35 kW
Annual energy consumption Qhe	7907 kWh	10312 kWh
Pdh Tj = -15°C (if TOL<-20°C)	10.47	9.65
COP Tj = -15°C (if TOL<-20°C)	6.39	3.51
Cdh Tj = -15 °C	0.99	0.99

## Domestic Hot Water (DHW)

### Average Climate

This information was generated by the HP KEYMARK database on 18 Mar 2022

<b>EN 16147</b>	
Declared load profile	XL
Efficiency $\eta_{DHW}$	130 %
COP	3.11
Heating up time	1:14 h:min
Standby power input	63.0 W
Reference hot water temperature	54.2 °C
Mixed water at 40°C	302 l

## Warmer Climate

<b>EN 16147</b>	
Declared load profile	XL
Efficiency $\eta_{DHW}$	130 %
COP	3.11
Heating up time	1:14 h:min
Standby power input	63.0 W
Reference hot water temperature	54.2 °C
Mixed water at 40°C	302 l

## Colder Climate

<b>EN 16147</b>	
Declared load profile	XL
Efficiency $\eta_{DHW}$	130 %
COP	3.11
Heating up time	1:14 h:min
Standby power input	63.0 W
Reference hot water temperature	54.2 °C
Mixed water at 40°C	302 l



# Model: VITOCAL 222-G BWT 221.B10 SC

## Configure model

Model name	VITOCAL 222-G BWT 221.B10 SC
Application	Heating + DHW + low temp
Units	Indoor
Climate Zone	Colder Climate + Warmer Climate
Reversibility	No
Cooling mode application (optional)	n/a

## General Data

Power supply	3x400V 50Hz
Off-peak product	Yes

## Heating

### EN 14511-2

	Low temperature	Medium temperature
Heat output	10.36 kW	9.42 kW
El input	2.16 kW	3.32 kW
COP	4.81	2.85

### EN 14511-4

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

## Average Climate

This information was generated by the HP KEYMARK database on 18 Mar 2022

### EN 12102-1

	Low temperature	Medium temperature
Sound power level indoor	46 dB(A)	46 dB(A)

### EN 14825

		Low temperature	Medium temperature
P <sub>designh</sub>	11.72 kW		
$\eta_s$	204 %	150 %	
P <sub>rated</sub>	11.72 kW	10.81 kW	
SCOP	5.32	3.97	
T <sub>biv</sub>	-7 °C	-7 °C	
TOL	-10 °C	-10 °C	
P <sub>dh</sub> T <sub>j</sub> = -7°C	10.31 kW	9.51 kW	
COP T <sub>j</sub> = -7°C	4.99	3.23	
C <sub>dh</sub> T <sub>j</sub> = -7 °C	0.99	0.99	
P <sub>dh</sub> T <sub>j</sub> = +2°C	10.40 kW	9.78 kW	
COP T <sub>j</sub> = +2°C	5.33	3.84	
C <sub>dh</sub> T <sub>j</sub> = +2 °C	0.99	0.99	
P <sub>dh</sub> T <sub>j</sub> = +7°C	10.48 kW	9.96 kW	
COP T <sub>j</sub> = +7°C	5.67	4.31	
C <sub>dh</sub> T <sub>j</sub> = +7 °C	0.99	0.99	

This information was generated by the HP KEYMARK database on 18 Mar 2022

Pdh Tj = 12°C	10.58 kW	10.15 kW
COP Tj = 12°C	6.02	4.83
Cdh Tj = +12 °C	0.99	0.99
Pdh Tj = Tbiv	10.31 kW	9.51 kW
COP Tj = Tbiv	4.99	3.23
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	10.31 kW	9.42 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.96	3.07
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.99	0.99
WTOL	65 °C	65 °C
Poff	0 W	0 W
PTO	0 W	0 W
PSB	12 W	12 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.41 kW	1.39 kW
Backup Heater	0.00 kW	
Annual energy consumption Qhe	4554 kWh	5630 kWh

## Warmer Climate

This information was generated by the HP KEYMARK database on 18 Mar 2022

### EN 12102-1

	Low temperature	Medium temperature
Sound power level indoor	46 dB(A)	46 dB(A)

### EN 14825

	Low temperature	Medium temperature
$\eta_s$	208 %	145 %
Prated	10.27 kW	9.39 kW
SCOP	5.41	3.82
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	10.27 kW	9.39 kW
COP Tj = +2°C	4.95	3.00
Cdh Tj = +2 °C	0.99	0.99
Pdh Tj = +7°C	10.33 kW	9.66 kW
COP Tj = +7°C	5.24	3.50
Cdh Tj = +7 °C	0.99	0.99
Pdh Tj = 12°C	10.46 kW	10.02 kW
COP Tj = 12°C	5.79	4.40
Cdh Tj = +12 °C	0.99	0.99
Pdh Tj = Tbiv	10.27 kW	9.39 kW

This information was generated by the HP KEYMARK database on 18 Mar 2022

COP Tj = Tbiv	4.95	3.00
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	10.27 kW	9.39 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.95	3.00
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.99	0.99
WTOL	65 °C	65 °C
Poff	0 W	0 W
PTO	0 W	0 W
PSB	12 W	12 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	2536 kWh	3281 kWh

## Colder Climate

<b>EN 12102-1</b>		
	<b>Low temperature</b>	<b>Medium temperature</b>
Sound power level indoor	46 dB(A)	46 dB(A)

<b>EN 14825</b>		
	<b>Low temperature</b>	<b>Medium temperature</b>
$\eta_s$	206 %	143 %

This information was generated by the HP KEYMARK database on 18 Mar 2022

Prated	17.18 kW	15.83 kW
SCOP	5.36	3.78
Tbiv	-7 °C	-7 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	10.44 kW	9.78 kW
COP Tj = -7°C	5.76	3.84
Cdh Tj = -7 °C	0.99	0.99
Pdh Tj = +2°C	10.48 kW	9.99 kW
COP Tj = +2°C	6.47	4.37
Cdh Tj = +2 °C	0.99	0.99
Pdh Tj = +7°C	10.55 kW	10.16 kW
COP Tj = +7°C	6.78	4.84
Cdh Tj = +7 °C	0.99	0.99
Pdh Tj = 12°C	10.55 kW	10.26 kW
COP Tj = 12°C	6.85	5.25
Cdh Tj = +12 °C	0.99	0.99
Pdh Tj = Tbiv	10.44 kW	9.78 kW
COP Tj = Tbiv	5.76	3.84
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	10.44 kW	9.47 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	6.12	3.15
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.99	0.99

This information was generated by the HP KEYMARK database on 18 Mar 2022

WTOL	65 °C	65 °C
Poff	0 W	0 W
PTO	0 W	0 W
PSB	12 W	12 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	6.73 kW	6.35 kW
Annual energy consumption Qhe	7907 kWh	10312 kWh
Pdh Tj = -15°C (if TOL<-20°C)	10.47	9.65
COP Tj = -15°C (if TOL<-20°C)	6.39	3.51
Cdh Tj = -15 °C	0.99	0.99

## Domestic Hot Water (DHW)

### Average Climate

<b>EN 16147</b>	
Declared load profile	XL
Efficiency $\eta_{DHW}$	130 %
COP	3.11
Heating up time	1:14 h:min
Standby power input	63.0 W
Reference hot water temperature	54.2 °C
Mixed water at 40°C	302 l

## Warmer Climate

<b>EN 16147</b>	
Declared load profile	XL
Efficiency $\eta_{DHW}$	130 %
COP	3.11
Heating up time	1:14 h:min
Standby power input	63.0 W
Reference hot water temperature	54.2 °C
Mixed water at 40°C	302 l

## Colder Climate



<b>EN 16147</b>	
Declared load profile	XL
Efficiency $\eta_{DHW}$	130 %
COP	3.11
Heating up time	1:14 h:min
Standby power input	63.0 W
Reference hot water temperature	54.2 °C
Mixed water at 40°C	302 l