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Summary of	VWL 75/5 AS 230V	Reg. No.	40049303
Certificate Holder			
Name	Vaillant Deutschland GmbH & Co KG		
Address	Berghauser Straße 40	Zip	42859
City	Remscheid	Country	Germany
Certification Body	VDE Prüf- und Zertifizierungsinstitut GmbH		
Subtype title	VWL 75/5 AS 230V		
Heat Pump Type	Outdoor Air/Water		
Refrigerant	R410A		
Mass of Refrigerant	2.39 kg		
Certification Date	10.03.2021		
Testing basis	DIN EN 14511-1:2019-07; EN 14511-1:2018; DIN EN 14511-2:2019-07; EN 14511-2:2018; DIN EN 14511-3:2019-07; EN 14511-3:2018; DIN EN 14511-4:2019-07; EN 14511-4:2018; DIN EN 14825:2019-07; EN 14825:2018; DIN EN 12102-1:2018-02; EN 12102-1:2017		

Model: VWL 75/5 AS 230V + VWL 77/5 IS

Configure model	
Model name	VWL 75/5 AS 230V + VWL 77/5 IS
Application	Heating (medium temp)
Units	Indoor + Outdoor
Climate Zone	Colder Climate + Warmer Climate
Reversibility	Yes
Cooling mode application (optional)	n/a

General Data	
Power supply	1x230V 50Hz

Heating

EN 14511-4	
Operating range outdoor exchanger/indoor exchanger lower limit/lower limit	passed
Operating range outdoor exchanger/indoor exchanger upper limit/upper limit	passed
Shutting off the heat transfer medium flow	passed
Complete power supply failure	passed
Defrost test	passed

EN 14511-2		
	Low temperature	Medium temperature
Heat output	5.78 kW	4.95 kW
El input	1.26 kW	1.84 kW
COP	4.58	2.69

Warmer Climate

EN 12102-1		
	Low temperature	Medium temperature
Sound power level indoor	43 dB(A)	43 dB(A)
Sound power level outdoor	54 dB(A)	54 dB(A)

EN 14825		
	Low temperature	Medium temperature
η_s	239 %	159 %
Prated	4.51 kW	3.94 kW
SCOP	6.04	4.05
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	4.51 kW	3.94 kW
COP Tj = +2°C	3.68	2.30
Cdh Tj = +2 °C	0.99	0.99
Pdh Tj = +7°C	2.81 kW	2.45 kW
COP Tj = +7°C	5.55	3.38
Cdh Tj = +7 °C	0.98	0.99
Pdh Tj = 12°C	3.20 kW	3.15 kW
COP Tj = 12°C	7.35	5.43
Cdh Tj = +12 °C	0.98	0.98

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

Pdh Tj = Tbiv	4.51 kW	3.94 kW
COP Tj = Tbiv	3.68	2.30
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	4.51 kW	3.94 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.68	2.30
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.99	0.99
WTOL	55 °C	55 °C
Poff	11 W	11 W
PTO	11 W	11 W
PSB	11 W	11 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	997 kWh	1300 kWh

Colder Climate

EN 12102-1		
	Low temperature	Medium temperature
Sound power level indoor	43 dB(A)	43 dB(A)
Sound power level outdoor	54 dB(A)	54 dB(A)

EN 14825		
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This information was generated by the HP KEYMARK database on 5 Dec 2022

	Low temperature	Medium temperature
η_s	156 %	117 %
Prated	6.60 kW	5.36 kW
SCOP	3.96	3.00
Tbiv	-15 °C	-15 °C
TOL	-20 °C	-15 °C
Pdh Tj = -7°C	3.89 kW	3.55 kW
COP Tj = -7°C	3.51	2.53
Cdh Tj = -7 °C	0.990	0.990
Pdh Tj = +2°C	2.31 kW	2.33 kW
COP Tj = +2°C	4.66	3.78
Cdh Tj = +2 °C	0.980	0.980
Pdh Tj = +7°C	2.77 kW	2.77 kW
COP Tj = +7°C	6.19	6.19
Cdh Tj = +7 °C	0.980	0.980
Pdh Tj = 12°C	3.20 kW	3.25 kW
COP Tj = 12°C	7.55	6.81
Cdh Tj = +12 °C	0.980	0.980
Pdh Tj = Tbiv	5.39 kW	4.37 kW
COP Tj = Tbiv	2.48	1.72
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	3.75 kW	4.37 kW

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

COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.09	1.72
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.990	1.000
WTOL	55 °C	55 °C
Poff	11 W	11 W
PTO	11 W	11 W
PSB	11 W	11 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	6.60 kW	5.36 kW
Annual energy consumption Qhe	4106 kWh	4401 kWh
Pdh Tj = -15°C (if TOL<-20°C)	3.36	4.37
COP Tj = -15°C (if TOL<-20°C)	1.94	1.72
Cdh Tj = -15 °C	0.990	1.000

Average Climate

EN 12102-1		
	Low temperature	Medium temperature
Sound power level indoor	43 dB(A)	43 dB(A)
Sound power level outdoor	54 dB(A)	54 dB(A)

EN 14825

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

	Low temperature	Medium temperature
η_s	173 %	133 %
Prated	7.08 kW	6.36 kW
SCOP	4.40	3.39
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	6.30 kW	5.62 kW
COP Tj = -7°C	2.58	2.00
Cdh Tj = -7 °C	1.000	1.000
Pdh Tj = +2°C	3.90 kW	3.31 kW
COP Tj = +2°C	4.37	3.29
Cdh Tj = +2 °C	0.990	0.990
Pdh Tj = +7°C	2.72 kW	2.69 kW
COP Tj = +7°C	5.86	4.62
Cdh Tj = +7 °C	0.980	0.980
Pdh Tj = 12°C	3.28 kW	3.21 kW
COP Tj = 12°C	7.54	6.27
Cdh Tj = +12 °C	0.980	0.980
Pdh Tj = Tbiv	6.26 kW	5.62 kW
COP Tj = Tbiv	2.57	2.00
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	5.66 kW	4.92 kW

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

COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.38	1.84
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.000	1.000
WTOL	55 °C	55 °C
Poff	11 W	11 W
PTO	11 W	11 W
PSB	11 W	11 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.42 kW	1.44 kW
Annual energy consumption Qhe	3324 kWh	3869 kWh

Model: VWL 75/5 AS 230V + VWL 78/5 IS

Configure model	
Model name	VWL 75/5 AS 230V + VWL 78/5 IS
Application	Heating + DHW + low temp
Units	Indoor + Outdoor
Climate Zone	Colder Climate + Warmer Climate
Reversibility	Yes
Cooling mode application (optional)	n/a

General Data	
Power supply	1x230V 50Hz

Heating

EN 14511-4	
Operating range outdoor exchanger/indoor exchanger lower limit/lower limit	passed
Operating range outdoor exchanger/indoor exchanger upper limit/upper limit	passed
Shutting off the heat transfer medium flow	passed
Complete power supply failure	passed
Defrost test	passed

EN 14511-2		
	Low temperature	Medium temperature
Heat output	5.78 kW	4.95 kW
El input	1.26 kW	1.84 kW
COP	4.58	2.69

Warmer Climate

EN 12102-1		
	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	44 dB(A)
Sound power level outdoor	54 dB(A)	54 dB(A)

EN 14825		
	Low temperature	Medium temperature
η_s	239 %	159 %
Prated	4.51 kW	3.94 kW
SCOP	6.04	4.05
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	4.51 kW	3.94 kW
COP Tj = +2°C	3.68	2.30
Cdh Tj = +2 °C	0.99	0.99
Pdh Tj = +7°C	2.81 kW	2.45 kW
COP Tj = +7°C	5.55	3.38
Cdh Tj = +7 °C	0.98	0.99
Pdh Tj = 12°C	3.20 kW	3.15 kW
COP Tj = 12°C	7.35	5.43
Cdh Tj = +12 °C	0.98	0.98

Pdh Tj = Tbiv	4.51 kW	3.94 kW
COP Tj = Tbiv	3.68	2.30
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	4.51 kW	3.94 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.68	2.30
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.99	0.99
WTOL	55 °C	55 °C
Poff	11 W	11 W
PTO	11 W	11 W
PSB	11 W	11 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	997 kWh	1300 kWh

Colder Climate

EN 12102-1		
	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	44 dB(A)
Sound power level outdoor	54 dB(A)	54 dB(A)

EN 14825		
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This information was generated by the HP KEYMARK database on 5 Dec 2022

	Low temperature	Medium temperature
η_s	156 %	117 %
Prated	6.60 kW	5.36 kW
SCOP	3.96	3.00
Tbiv	-15 °C	-15 °C
TOL	-20 °C	-15 °C
Pdh Tj = -7°C	3.89 kW	3.55 kW
COP Tj = -7°C	3.51	2.53
Cdh Tj = -7 °C	0.990	0.990
Pdh Tj = +2°C	2.31 kW	2.33 kW
COP Tj = +2°C	4.66	3.78
Cdh Tj = +2 °C	0.980	0.980
Pdh Tj = +7°C	2.77 kW	2.77 kW
COP Tj = +7°C	6.19	6.19
Cdh Tj = +7 °C	0.980	0.980
Pdh Tj = 12°C	3.20 kW	3.25 kW
COP Tj = 12°C	7.55	6.81
Cdh Tj = +12 °C	0.980	0.980
Pdh Tj = Tbiv	5.39 kW	4.37 kW
COP Tj = Tbiv	2.48	1.72
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	3.75 kW	4.37 kW

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

COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.09	1.72
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.990	1.000
WTOL	55 °C	55 °C
Poff	11 W	11 W
PTO	11 W	11 W
PSB	11 W	11 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	6.60 kW	5.36 kW
Annual energy consumption Qhe	4106 kWh	4401 kWh
Pdh Tj = -15°C (if TOL<-20°C)	3.36	4.37
COP Tj = -15°C (if TOL<-20°C)	1.94	1.72
Cdh Tj = -15 °C	0.990	1.000

Average Climate

EN 12102-1		
	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	44 dB(A)
Sound power level outdoor	54 dB(A)	54 dB(A)

EN 14825		
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This information was generated by the HP KEYMARK database on 5 Dec 2022

	Low temperature	Medium temperature
η_s	173 %	133 %
Prated	7.08 kW	6.36 kW
SCOP	4.40	3.39
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	6.30 kW	5.62 kW
COP Tj = -7°C	2.58	2.00
Cdh Tj = -7 °C	1.000	1.000
Pdh Tj = +2°C	3.90 kW	3.31 kW
COP Tj = +2°C	4.37	3.29
Cdh Tj = +2 °C	0.990	0.990
Pdh Tj = +7°C	2.72 kW	2.69 kW
COP Tj = +7°C	5.86	4.62
Cdh Tj = +7 °C	0.980	0.980
Pdh Tj = 12°C	3.28 kW	3.21 kW
COP Tj = 12°C	7.54	6.27
Cdh Tj = +12 °C	0.980	0.980
Pdh Tj = Tbiv	6.26 kW	5.62 kW
COP Tj = Tbiv	2.57	2.00
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	5.66 kW	4.92 kW

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

COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.38	1.84
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.000	1.000
WTOL	55 °C	55 °C
Poff	11 W	11 W
PTO	11 W	11 W
PSB	11 W	11 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.42 kW	1.44 kW
Annual energy consumption Qhe	3324 kWh	3869 kWh

Domestic Hot Water (DHW)

Warmer Climate

EN 16147	
Declared load profile	XL
Efficiency η_{DHW}	134 %
COP	3.26
Heating up time	01:28 h:min
Standby power input	70.0 W
Reference hot water temperature	51.2 °C
Mixed water at 40°C	242 l

Colder Climate

EN 16147	
Declared load profile	XL
Efficiency η_{DHW}	102 %
COP	2.48
Heating up time	02:03 h:min
Standby power input	90.0 W
Reference hot water temperature	46.9 °C
Mixed water at 40°C	246 l

Average Climate

EN 16147	
Declared load profile	XL
Efficiency η_{DHW}	112 %
COP	2.73
Heating up time	01:45 h:min
Standby power input	80.0 W
Reference hot water temperature	50.7 °C
Mixed water at 40°C	246 l

Model: VWL 75/5 AS 230V S2 + VWL 77/5 IS

Configure model	
Model name	VWL 75/5 AS 230V S2 + VWL 77/5 IS
Application	Heating (medium temp)
Units	Indoor + Outdoor
Climate Zone	Colder Climate + Warmer Climate
Reversibility	No
Cooling mode application (optional)	n/a

General Data	
Power supply	1x230V 50Hz

Heating

EN 14511-4	
Operating range outdoor exchanger/indoor exchanger lower limit/lower limit	passed
Operating range outdoor exchanger/indoor exchanger upper limit/upper limit	passed
Shutting off the heat transfer medium flow	passed
Complete power supply failure	passed
Defrost test	passed

EN 14511-2		
	Low temperature	Medium temperature
Heat output	5.78 kW	4.95 kW
El input	1.26 kW	1.84 kW
COP	4.58	2.69

Warmer Climate

EN 12102-1		
	Low temperature	Medium temperature
Sound power level indoor	43 dB(A)	43 dB(A)
Sound power level outdoor	54 dB(A)	54 dB(A)

EN 14825		
	Low temperature	Medium temperature
η_s	228 %	153 %
Prated	4.51 kW	3.94 kW
SCOP	5.76	3.90
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	4.51 kW	3.94 kW
COP Tj = +2°C	3.68	2.30
Cdh Tj = +2 °C	0.99	0.99
Pdh Tj = +7°C	2.81 kW	2.45 kW
COP Tj = +7°C	5.55	3.38
Cdh Tj = +7 °C	0.98	0.99
Pdh Tj = 12°C	3.20 kW	3.15 kW
COP Tj = 12°C	7.35	5.43
Cdh Tj = +12 °C	0.98	0.98

Pdh Tj = Tbiv	4.51 kW	3.94 kW
COP Tj = Tbiv	3.68	2.30
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	4.51 kW	3.94 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.68	2.30
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.99	0.99
WTOL	55 °C	55 °C
Poff	11 W	11 W
PTO	11 W	11 W
PSB	11 W	11 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	1045 kWh	1349 kWh

Colder Climate

EN 12102-1		
	Low temperature	Medium temperature
Sound power level indoor	43 dB(A)	43 dB(A)
Sound power level outdoor	54 dB(A)	54 dB(A)

EN 14825

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

	Low temperature	Medium temperature
η_s	155 %	116 %
Prated	6.60 kW	5.36 kW
SCOP	3.94	2.98
Tbiv	-15 °C	-15 °C
TOL	-20 °C	-15 °C
Pdh Tj = -7°C	3.89 kW	3.55 kW
COP Tj = -7°C	3.51	2.53
Cdh Tj = -7 °C	0.990	0.990
Pdh Tj = +2°C	2.31 kW	2.33 kW
COP Tj = +2°C	4.66	3.78
Cdh Tj = +2 °C	0.980	0.980
Pdh Tj = +7°C	2.77 kW	2.77 kW
COP Tj = +7°C	6.19	6.19
Cdh Tj = +7 °C	0.980	0.980
Pdh Tj = 12°C	3.20 kW	3.25 kW
COP Tj = 12°C	7.55	6.81
Cdh Tj = +12 °C	0.980	0.980
Pdh Tj = Tbiv	5.39 kW	4.37 kW
COP Tj = Tbiv	2.48	1.72
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	3.75 kW	4.37 kW

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

COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.09	1.72
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.990	1.000
WTOL	55 °C	55 °C
Poff	11 W	11 W
PTO	11 W	11 W
PSB	11 W	11 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	6.60 kW	5.36 kW
Annual energy consumption Qhe	4130 kWh	4425 kWh
Pdh Tj = -15°C (if TOL<-20°C)	5.39	4.37
COP Tj = -15°C (if TOL<-20°C)	2.48	1.72
Cdh Tj = -15 °C	1.000	1.000

Average Climate

EN 12102-1		
	Low temperature	Medium temperature
Sound power level indoor	43 dB(A)	43 dB(A)
Sound power level outdoor	54 dB(A)	54 dB(A)

EN 14825

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

	Low temperature	Medium temperature
η_s	171 %	131 %
Prated	7.08 kW	6.36 kW
SCOP	4.35	3.36
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	6.30 kW	5.62 kW
COP Tj = -7°C	2.58	2.00
Cdh Tj = -7 °C	1.000	1.000
Pdh Tj = +2°C	3.90 kW	3.31 kW
COP Tj = +2°C	4.37	3.29
Cdh Tj = +2 °C	0.990	0.990
Pdh Tj = +7°C	2.72 kW	2.69 kW
COP Tj = +7°C	5.86	4.62
Cdh Tj = +7 °C	0.980	0.980
Pdh Tj = 12°C	3.28 kW	3.21 kW
COP Tj = 12°C	7.54	6.27
Cdh Tj = +12 °C	0.980	0.980
Pdh Tj = Tbiv	6.26 kW	5.62 kW
COP Tj = Tbiv	2.57	2.00
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	5.66 kW	4.92 kW

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

COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.38	1.84
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.000	1.000
WTOL	55 °C	55 °C
Poff	11 W	11 W
PTO	11 W	11 W
PSB	11 W	11 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.42 kW	1.44 kW
Annual energy consumption Qhe	3364 kWh	3909 kWh

Model: VWL 75/5 AS 230V S2 + VWL 78/5 IS

Configure model	
Model name	VWL 75/5 AS 230V S2 + VWL 78/5 IS
Application	Heating + DHW + low temp
Units	Indoor + Outdoor
Climate Zone	Colder Climate + Warmer Climate
Reversibility	No
Cooling mode application (optional)	n/a

General Data	
Power supply	1x230V 50Hz

Heating

EN 14511-4	
Operating range outdoor exchanger/indoor exchanger lower limit/lower limit	passed
Operating range outdoor exchanger/indoor exchanger upper limit/upper limit	passed
Shutting off the heat transfer medium flow	passed
Complete power supply failure	passed
Defrost test	passed

EN 14511-2		
	Low temperature	Medium temperature
Heat output	5.78 kW	4.95 kW
El input	1.26 kW	1.84 kW
COP	4.58	2.69

Warmer Climate

EN 12102-1		
	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	44 dB(A)
Sound power level outdoor	54 dB(A)	54 dB(A)

EN 14825		
	Low temperature	Medium temperature
η_s	228 %	153 %
Prated	4.51 kW	3.94 kW
SCOP	5.76	3.90
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	4.51 kW	3.94 kW
COP Tj = +2°C	3.68	2.30
Cdh Tj = +2 °C	0.99	0.99
Pdh Tj = +7°C	2.81 kW	2.45 kW
COP Tj = +7°C	5.55	3.38
Cdh Tj = +7 °C	0.98	0.99
Pdh Tj = 12°C	3.20 kW	3.15 kW
COP Tj = 12°C	7.35	5.43
Cdh Tj = +12 °C	0.98	0.98

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

Pdh Tj = Tbiv	4.51 kW	3.94 kW
COP Tj = Tbiv	3.68	2.30
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	4.51 kW	3.94 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.68	2.30
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.99	0.99
WTOL	55 °C	55 °C
Poff	11 W	11 W
PTO	11 W	11 W
PSB	11 W	11 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	1045 kWh	1349 kWh

Colder Climate

EN 12102-1		
	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	44 dB(A)
Sound power level outdoor	54 dB(A)	54 dB(A)

EN 14825

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

	Low temperature	Medium temperature
η_s	155 %	116 %
Prated	6.60 kW	5.36 kW
SCOP	3.94	2.98
Tbiv	-15 °C	-15 °C
TOL	-20 °C	-15 °C
Pdh Tj = -7°C	3.89 kW	3.55 kW
COP Tj = -7°C	3.51	2.53
Cdh Tj = -7 °C	0.990	0.990
Pdh Tj = +2°C	2.31 kW	2.33 kW
COP Tj = +2°C	4.66	3.78
Cdh Tj = +2 °C	0.980	0.980
Pdh Tj = +7°C	2.77 kW	2.77 kW
COP Tj = +7°C	6.19	6.19
Cdh Tj = +7 °C	0.980	0.980
Pdh Tj = 12°C	3.20 kW	3.25 kW
COP Tj = 12°C	7.55	6.81
Cdh Tj = +12 °C	0.980	0.980
Pdh Tj = Tbiv	5.39 kW	4.37 kW
COP Tj = Tbiv	2.48	1.72
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	3.75 kW	4.37 kW

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

$COP_{Tj} = TOL$ or $COP_{Tj} = T_{designh}$ if $TOL < T_{designh}$	2.09	1.72
$Cdh_{Tj} = TOL$ or $Pdh_{Tj} = T_{designh}$ if $TOL < T_{designh}$	0.990	1.000
WTOL	55 °C	55 °C
Poff	11 W	11 W
PTO	11 W	11 W
PSB	11 W	11 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	6.60 kW	5.36 kW
Annual energy consumption Q_{he}	4130 kWh	4425 kWh
$Pdh_{Tj} = -15^{\circ}C$ (if $TOL < -20^{\circ}C$)	5.39	4.37
$COP_{Tj} = -15^{\circ}C$ (if $TOL < -20^{\circ}C$)	2.48	1.72
$Cdh_{Tj} = -15^{\circ}C$	1.000	1.000

Average Climate

EN 12102-1		
	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	44 dB(A)
Sound power level outdoor	54 dB(A)	54 dB(A)

EN 14825

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

	Low temperature	Medium temperature
η_s	171 %	131 %
Prated	7.08 kW	6.36 kW
SCOP	4.35	3.36
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	6.30 kW	5.62 kW
COP Tj = -7°C	2.58	2.00
Cdh Tj = -7 °C	1.000	1.000
Pdh Tj = +2°C	3.90 kW	3.31 kW
COP Tj = +2°C	4.37	3.29
Cdh Tj = +2 °C	0.990	0.990
Pdh Tj = +7°C	2.72 kW	2.69 kW
COP Tj = +7°C	5.86	4.62
Cdh Tj = +7 °C	0.980	0.980
Pdh Tj = 12°C	3.28 kW	3.21 kW
COP Tj = 12°C	7.54	6.27
Cdh Tj = +12 °C	0.980	0.980
Pdh Tj = Tbiv	6.26 kW	5.62 kW
COP Tj = Tbiv	2.57	2.00
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	5.66 kW	4.92 kW

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

COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.38	1.84
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.000	1.000
WTOL	55 °C	55 °C
Poff	11 W	11 W
PTO	11 W	11 W
PSB	11 W	11 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.42 kW	1.44 kW
Annual energy consumption Qhe	3364 kWh	3909 kWh

Domestic Hot Water (DHW)

Warmer Climate

EN 16147	
Declared load profile	XL
Efficiency η_{DHW}	134 %
COP	3.26
Heating up time	01:28 h:min
Standby power input	70.0 W
Reference hot water temperature	51.2 °C
Mixed water at 40°C	242 l

Colder Climate

EN 16147	
Declared load profile	XL
Efficiency η_{DHW}	102 %
COP	2.48
Heating up time	02:03 h:min
Standby power input	90.0 W
Reference hot water temperature	46.9 °C
Mixed water at 40°C	246 l

Average Climate

EN 16147	
Declared load profile	XL
Efficiency η_{DHW}	112 %
COP	2.73
Heating up time	01:45 h:min
Standby power input	80.0 W
Reference hot water temperature	50.7 °C
Mixed water at 40°C	246 l