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Summary of	VWL 37/5 230V / VWL 37/5 230V S2 / VWL 39/5 230V / VWL 39/5 230V S2 / VWL 57/5 230V, VWL 57/5 230V S2, VWL 59/5 230V / VWL 59/5 230V S2	Reg. No.	40048836
Certificate H	older		
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 37/5 230V / VWL 37/5 230V S2 / VWL 39/5 230V / VWL 39/5 230V S2 / VWL 57/5 230V, VWL 57/5 230V S2, VWL 59/5 230V / VWL 59/5 230V S2		
Heat Pump Type	Outdoor Air/Water		
Refrigerant	R410A		
Mass of Refrigerant	1.4 kg		
Certification Date	17.09.2018		
Testing basis	DIN EN 14825:2016-10; EN 14825:2016 DIN EN 16147:2017-08; EN 16147:2017+AC:2017 DIN EN 12102:2013-10; EN 12102:2013		



Model: VWL 37/5 230V

Configure model			
Model name	VWL 37/5 230V		
Application	Heating (medium temp)		
Units	Indoor		
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	4.92 kW	4.73 kW	
El input	1.15 kW	1.79 kW	
СОР	4.46	2.69	

Warmer Climate



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

EN 14825		
	Low temperature	Medium temperature
η_{s}	212 %	139 %
Prated	3.90 kW	3.80 kW
SCOP	5.38	3.56
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	3.93 kW	3.83 kW
COP Tj = +2°C	3.68	2.44
Cdh Tj = +2 °C	0.990	0.990
Pdh Tj = +7°C	2.51 kW	2.44 kW
COP Tj = +7°C	5.29	3.31
Cdh Tj = +7 °C	0.980	0.980
Pdh Tj = 12°C	2.70 kW	2.46 kW
COP Tj = 12°C	7.43	5.48
Cdh Tj = +12 °C	0.970	0.980





Pdh Tj = Tbiv	3.93 kW	3.80 kW
COP Tj = Tbiv	3.68	2.46
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	3.93 kW	3.80 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.68	2.46
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.990	0.990
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	969 kWh	1428 kWh

Colder Climate

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



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	Low temperature	Medium temperature
ης	156 %	109 %
Prated	3.85 kW	3.01 kW
SCOP	3.96	2.79
Tbiv	-13 °C	-15 °C
TOL	-20 °C	-15 °C
Pdh Tj = -7° C	2.43 kW	1.89 kW
$COP Tj = -7^{\circ}C$	3.49	2.42
Cdh Tj = -7 °C	0.990	0.990
Pdh Tj = $+2$ °C	1.98 kW	1.75 kW
COP Tj = +2°C	4.79	3.46
Cdh Tj = +2 °C	0.980	0.980
Pdh Tj = $+7^{\circ}$ C	2.31 kW	2.12 kW
$COPTj = +7^{\circ}C$	6.16	4.69
Cdh Tj = $+7$ °C	0.970	0.980
Pdh Tj = 12°C	2.74 kW	2.57 kW
COP Tj = 12°C	7.83	6.54
Cdh Tj = +12 °C	0.970	0.970
Pdh Tj = Tbiv	2.99 kW	2.49 kW
COP Tj = Tbiv	2.77	1.80
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	2.36 kW	2.49 kW

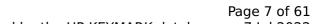




COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.23	1.80
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.990	0.990
WTOL	55 °C	55 °C
Poff	11 W	11 W
РТО	11 W	11 W
PSB	11 W	11 W
PCK	o w	o w
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	3.85 kW	3.01 kW
Annual energy consumption Qhe	2394 kWh	2661 kWh
Pdh Tj = -15°C (if TOL<-20°C)		
COP Tj = -15°C (if TOL $<$ -20°C)		
Cdh Tj = -15 °C		

Average Climate

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





	Low temperature	Medium temperature
η_{s}	183 %	130 %
Prated	4.00 kW	3.60 kW
SCOP	4.64	3.31
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	3.60 kW	3.24 kW
$COP Tj = -7^{\circ}C$	3.15	2.11
Cdh Tj = -7 °C	0.990	0.990
Pdh Tj = $+2$ °C	2.31 kW	2.04 kW
COP Tj = +2°C	4.53	3.21
Cdh Tj = +2 °C	0.980	0.980
Pdh Tj = $+7^{\circ}$ C	2.27 kW	2.06 kW
COP Tj = +7°C	5.84	4.30
Cdh Tj = +7 °C	0.980	0.980
Pdh Tj = 12°C	2.75 kW	2.53 kW
COP Tj = 12°C	7.88	6.18
Cdh Tj = +12 °C	0.970	0.980
Pdh Tj = Tbiv	3.60 kW	3.24 kW
COP Tj = Tbiv	3.15	2.11
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	3.32 kW	2.86 kW



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COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.86	1.82
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.990	0.990
WTOL	55 °C	55 °C
Poff	11 W	11 W
РТО	11 W	11 W
PSB	11 W	11 W
PCK	o w	o w
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.68 kW	0.74 kW
Annual energy consumption Qhe	1781 kWh	2246 kWh

Model: VWL 39/5 230V

Configure model		
Model name	VWL 39/5 230V	
Application	Heating + DHW + low temp	
Units	Indoor	
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

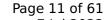
EN 14511-2		
	Low temperature	Medium temperature
Heat output	4.92 kW	4.73 kW
El input	1.15 kW	1.79 kW
СОР	4.46	2.69

Warmer Climate



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

EN 14825		
	Low temperature	Medium temperature
η_{s}	212 %	139 %
Prated	3.90 kW	3.80 kW
SCOP	5.38	3.56
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	3.93 kW	3.83 kW
COP Tj = +2°C	3.68	2.44
Cdh Tj = +2 °C	0.990	0.990
Pdh Tj = +7°C	2.51 kW	2.44 kW
COP Tj = +7°C	5.29	3.31
Cdh Tj = +7 °C	0.980	0.980
Pdh Tj = 12°C	2.70 kW	2.46 kW
COP Tj = 12°C	7.43	5.48
Cdh Tj = +12 °C	0.970	0.980

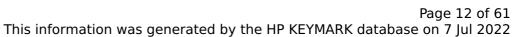




Pdh Tj = Tbiv	3.93 kW	3.80 kW
COP Tj = Tbiv	3.68	2.46
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	3.93 kW	3.80 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.68	2.46
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.990	0.990
WTOL	55 °C	55 °C
Poff	11 W	11 W
РТО	11 W	11 W
PSB	11 W	11 W
PCK	o w	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	969 kWh	1428 kWh

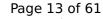
Colder Climate

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





	Low temperature	Medium temperature
ης	156 %	109 %
Prated	3.85 kW	3.01 kW
SCOP	3.96	2.79
Tbiv	-13 °C	-15 °C
TOL	-20 °C	-15 °C
Pdh Tj = -7° C	2.43 kW	1.89 kW
$COP Tj = -7^{\circ}C$	3.49	2.42
Cdh Tj = -7 °C	0.990	0.990
Pdh Tj = $+2$ °C	1.98 kW	1.75 kW
COP Tj = +2°C	4.79	3.46
Cdh Tj = +2 °C	0.980	0.980
Pdh Tj = $+7^{\circ}$ C	2.31 kW	2.12 kW
$COP Tj = +7^{\circ}C$	6.16	4.69
Cdh Tj = $+7$ °C	0.970	0.980
Pdh Tj = 12°C	2.74 kW	2.57 kW
COP Tj = 12°C	7.83	6.54
Cdh Tj = +12 °C	0.970	0.970
Pdh Tj = Tbiv	2.99 kW	2.49 kW
COP Tj = Tbiv	2.77	1.80
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	2.36 kW	2.49 kW

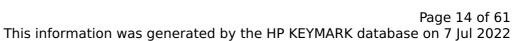




2.23	1.80
0.990	0.990
55 °C	55 °C
11 W	11 W
11 W	11 W
11 W	11 W
0 W	o w
Electricity	Electricity
3.85 kW	3.01 kW
2394 kWh	2661 kWh
	0.990 55 °C 11 W 11 W 11 W 0 W Electricity 3.85 kW

Average Climate

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





	Low temperature	Medium temperature
η_{s}	183 %	130 %
Prated	4.00 kW	3.60 kW
SCOP	4.64	3.31
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	3.60 kW	3.24 kW
COP Tj = -7°C	3.15	2.11
Cdh Tj = -7 °C	0.990	0.990
Pdh Tj = +2°C	2.31 kW	2.04 kW
COP Tj = +2°C	4.53	3.21
Cdh Tj = +2 °C	0.980	0.980
Pdh Tj = +7°C	2.27 kW	2.06 kW
$COP Tj = +7^{\circ}C$	5.84	4.30
Cdh Tj = +7 °C	0.980	0.980
Pdh Tj = 12°C	2.75 kW	2.53 kW
COP Tj = 12°C	7.88	6.18
Cdh Tj = +12 °C	0.970	0.980
Pdh Tj = Tbiv	3.60 kW	3.24 kW
COP Tj = Tbiv	3.15	2.11
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	3.32 kW	2.86 kW





COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.86	1.82
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.990	0.990
WTOL	55 °C	55 °C
Poff	11 W	11 W
PTO	11 W	11 W
PSB	11 W	11 W
PCK	o w	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.68 kW	0.74 kW
Annual energy consumption Qhe	1781 kWh	2246 kWh

Domestic Hot Water (DHW)

Warmer Climate

EN 16147		
Declared load profile	XL	
Efficiency ηDHW	125 %	
СОР	3.06	
Heating up time	02:42 h:min	
Standby power input	19.0 W	
Reference hot water temperature	55.0 °C	
Mixed water at 40°C	275 I	



Colder Climate

EN 16147		
Declared load profile	XL	
Efficiency ηDHW	90 %	
СОР	2.22	
Heating up time	04:39 h:min	
Standby power input	21.0 W	
Reference hot water temperature	55.0 °C	
Mixed water at 40°C	265 I	

Average Climate

EN 16147		
Declared load profile	XL	
Efficiency ηDHW	102 %	
COP	2.51	
Heating up time	03:49 h:min	
Standby power input	20.0 W	
Reference hot water temperature	55.0 °C	
Mixed water at 40°C	276	

Model: VWL 37/5 230V S2

Configure model		
Model name VWL 37/5 230V S2		
Application	Heating (medium temp)	
Units	Indoor	
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	

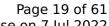
EN 14511-2		
	Low temperature	Medium temperature
Heat output	4.92 kW	4.73 kW
El input	1.15 kW	1.79 kW
СОР	4.46	2.69

Warmer Climate



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

EN 14825			
	Low temperature	Medium temperature	
η_{s}	202 %	135 %	
Prated	3.90 kW	3.80 kW	
SCOP	5.13	3.44	
Tbiv	2 °C	2 °C	
TOL	2 °C	2 °C	
Pdh Tj = +2°C	3.93 kW	3.83 kW	
COP Tj = +2°C	3.68	2.44	
Cdh Tj = +2 °C	0.990	0.990	
Pdh Tj = +7°C	2.51 kW	2.44 kW	
COP Tj = +7°C	5.29	3.31	
Cdh Tj = +7 °C	0.980	0.980	
Pdh Tj = 12°C	2.70 kW	2.46 kW	
COP Tj = 12°C	7.43	5.48	
Cdh Tj = +12 °C	0.970	0.980	





This information was generated by the HP KEYMARK database on 7 Jul 20		
Pdh Tj = Tbiv	3.93 kW	3.80 kW
COP Tj = Tbiv	3.68	2.46
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	3.93 kW	3.80 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.68	2.46
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.990	0.990
WTOL	55 °C	55 °C
Poff	11 W	11 W
РТО	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

Colder Climate

Annual energy consumption Qhe

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

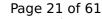
1015 kWh

1477 kWh





	Low temperature	Medium temperature
η_{s}	154 %	108 %
Prated	3.85 kW	3.01 kW
SCOP	3.92	2.76
Tbiv	-13 °C	-15 °C
TOL	-20 °C	-15 °C
Pdh Tj = -7°C	2.43 kW	1.89 kW
$COP Tj = -7^{\circ}C$	3.49	2.42
Cdh Tj = -7 °C	0.990	0.990
Pdh Tj = +2°C	1.98 kW	1.75 kW
COP Tj = +2°C	4.79	3.46
Cdh Tj = +2 °C	0.980	0.980
Pdh Tj = +7°C	2.31 kW	2.12 kW
$COP Tj = +7^{\circ}C$	6.16	4.69
Cdh Tj = +7 °C	0.970	0.980
Pdh Tj = 12°C	2.74 kW	2.57 kW
COP Tj = 12°C	7.83	6.54
Cdh Tj = +12 °C	0.970	0.970
Pdh Tj = Tbiv	2.99 kW	2.49 kW
COP Tj = Tbiv	2.77	1.80
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	2.36 kW	2.49 kW

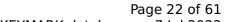




COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.23	1.80
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.990	0.990
WTOL	55 °C	55 °C
Poff	11 W	11 W
РТО	11 W	11 W
PSB	11 W	11 W
PCK	o w	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	3.85 kW	3.01 kW
Annual energy consumption Qhe	2419 kWh	2686 kWh
Pdh Tj = -15°C (if TOL<-20°C)		
COP Tj = -15°C (if TOL $<$ -20°C)		
Cdh Tj = -15 °C		

Average Climate

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





	Low temperature	Medium temperature
η_{s}	179 %	127 %
Prated	4.00 kW	3.60 kW
SCOP	4.54	3.25
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7° C	3.60 kW	3.24 kW
$COP Tj = -7^{\circ}C$	3.15	2.11
Cdh Tj = -7 °C	0.990	0.990
Pdh Tj = $+2$ °C	2.31 kW	2.04 kW
COP Tj = +2°C	4.53	3.21
Cdh Tj = $+2$ °C	0.980	0.980
Pdh Tj = $+7^{\circ}$ C	2.27 kW	2.06 kW
$COP Tj = +7^{\circ}C$	5.84	4.30
Cdh Tj = $+7$ °C	0.980	0.980
Pdh Tj = 12°C	2.75 kW	2.53 kW
COP Tj = 12°C	7.88	6.18
Cdh Tj = +12 °C	0.970	0.980
Pdh Tj = Tbiv	3.60 kW	3.24 kW
COP Tj = Tbiv	3.15	2.11
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL $<$ Tdesignh	3.32 kW	2.86 kW



COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.86	1.82
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.990	0.990
WTOL	55 °C	55 °C
Poff	11 W	11 W
РТО	11 W	11 W
PSB	11 W	11 W
PCK	o w	o w
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.68 kW	0.74 kW
Annual energy consumption Qhe	1821 kWh	2286 kWh



Model: VWL 39/5 230V S2

Configure model		
Model name VWL 39/5 230V S2		
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 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	4.92 kW	4.73 kW
El input	1.15 kW	1.79 kW
СОР	4.46	2.69

Warmer Climate



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

EN 14825		
	Low temperature	Medium temperature
η_{s}	202 %	135 %
Prated	3.90 kW	3.80 kW
SCOP	5.13	3.44
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	3.93 kW	3.83 kW
COP Tj = +2°C	3.68	2.44
Cdh Tj = +2 °C	0.990	0.990
Pdh Tj = +7°C	2.51 kW	2.44 kW
COP Tj = +7°C	5.29	3.31
Cdh Tj = +7 °C	0.980	0.980
Pdh Tj = 12°C	2.70 kW	2.46 kW
COP Tj = 12°C	7.43	5.48
Cdh Tj = +12 °C	0.970	0.980

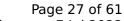




Pdh Tj = Tbiv	3.93 kW	3.80 kW
COP Tj = Tbiv	3.68	2.46
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	3.93 kW	3.80 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.68	2.46
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.990	0.990
WTOL	55 °C	55 °C
Poff	11 W	11 W
PTO	11 W	11 W
PSB	11 W	11 W
PCK	o w	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	1015 kWh	1477 kWh

Colder Climate

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





	Low temperature	Medium temperature
η_{s}	154 %	108 %
Prated	3.85 kW	3.01 kW
SCOP	3.92	2.76
Tbiv	-13 °C	-15 °C
TOL	-20 °C	-15 °C
Pdh Tj = -7°C	2.43 kW	1.89 kW
$COP Tj = -7^{\circ}C$	3.49	2.42
Cdh Tj = -7 °C	0.990	0.990
Pdh Tj = $+2^{\circ}$ C	1.98 kW	1.75 kW
COPTj = +2°C	4.79	3.46
Cdh Tj = +2 °C	0.980	0.980
Pdh Tj = +7°C	2.31 kW	2.12 kW
COP Tj = +7°C	6.16	4.69
Cdh Tj = +7 °C	0.970	0.980
Pdh Tj = 12°C	2.74 kW	2.57 kW
COP Tj = 12°C	7.83	6.54
Cdh Tj = +12 °C	0.970	0.970
Pdh Tj = Tbiv	2.99 kW	2.49 kW
COP Tj = Tbiv	2.77	1.80
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	2.36 kW	2.49 kW





COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.23	1.80
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.990	0.990
WTOL	55 °C	55 °C
Poff	11 W	11 W
РТО	11 W	11 W
PSB	11 W	11 W
PCK	o w	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	3.85 kW	3.01 kW
Annual energy consumption Qhe	2419 kWh	2686 kWh
Pdh Tj = -15°C (if TOL<-20°C)		
COP Tj = -15°C (if TOL $<$ -20°C)		
Cdh Tj = -15 °C		

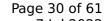
Average Climate

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





	Low temperature	Medium temperature
η_{S}	179 %	127 %
Prated	4.00 kW	3.60 kW
SCOP	4.54	3.25
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	3.60 kW	3.24 kW
COP Tj = -7°C	3.15	2.11
Cdh Tj = -7 °C	0.990	0.990
Pdh Tj = $+2$ °C	2.31 kW	2.04 kW
COP Tj = +2°C	4.53	3.21
Cdh Tj = +2 °C	0.980	0.980
Pdh Tj = +7°C	2.27 kW	2.06 kW
$COPTj = +7^{\circ}C$	5.84	4.30
Cdh Tj = +7 °C	0.980	0.980
Pdh Tj = 12°C	2.75 kW	2.53 kW
COP Tj = 12°C	7.88	6.18
Cdh Tj = +12 °C	0.970	0.980
Pdh Tj = Tbiv	3.60 kW	3.24 kW
COP Tj = Tbiv	3.15	2.11
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL $<$ Tdesignh	3.32 kW	2.86 kW





COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.86	1.82
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.990	0.990
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	0.68 kW	0.74 kW
Annual energy consumption Qhe	1821 kWh	2286 kWh

Domestic Hot Water (DHW)

Warmer Climate

EN 16147	
Declared load profile	XL
Efficiency ηDHW	125 %
СОР	3.06
Heating up time	02:42 h:min
Standby power input	19.0 W
Reference hot water temperature	55.0 °C
Mixed water at 40°C	275 I



Colder Climate

EN 16147	
Declared load profile	XL
Efficiency ηDHW	90 %
СОР	2.22
Heating up time	04:39 h:min
Standby power input	21.0 W
Reference hot water temperature	55.0 °C
Mixed water at 40°C	265 I

Average Climate

EN 16147	
Declared load profile	XL
Efficiency ηDHW	102 %
СОР	2.51
Heating up time	03:49 h:min
Standby power input	20.0 W
Reference hot water temperature	55.0 °C
Mixed water at 40°C	276 l

Model: VWL 57/5 230V

Configure model	
Model name	VWL 57/5 230V
Application	Heating (medium temp)
Units	Indoor
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		

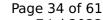
EN 14511-2			
	Low temperature	Medium temperature	
Heat output	4.92 kW	4.73 kW	
El input	1.15 kW	1.79 kW	
СОР	4.46	2.69	

Warmer Climate



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

EN 14825		
	Low temperature	Medium temperature
η_{s}	235 %	161 %
Prated	3.90 kW	3.90 kW
SCOP	5.94	4.09
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	3.97 kW	3.83 kW
COP Tj = +2°C	3.68	2.44
Cdh Tj = +2 °C	0.99	0.99
Pdh Tj = +7°C	2.48 kW	2.33 kW
COP Tj = +7°C	5.32	3.38
Cdh Tj = +7 °C	0.98	0.99
Pdh Tj = 12°C	2.70 kW	2.46 kW
COP Tj = 12°C	7.43	5.48
Cdh Tj = +12 °C	0.97	0.98





	1
3.97 kW	3.83 kW
3.68	2.44
3.97 kW	3.83 kW
3.68	2.44
0.99	0.99
55 °C	55 °C
11 W	11 W
11 W	11 W
11 W	11 W
o w	0 W
Electricity	Electricity
0.00 kW	0.00 kW
877 kWh	1274 kWh
	3.68 3.97 kW 3.68 0.99 55 °C 11 W 11 W 11 W 0 W Electricity 0.00 kW

Colder Climate

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





	Low temperature	Medium temperature
η_{S}	149 %	113 %
Prated	5.56 kW	4.69 kW
SCOP	3.79	2.90
Tbiv	-15 °C	-15 °C
TOL	-15 °C	-15 °C
Pdh Tj = -7° C	3.25 kW	2.73 kW
COP Tj = -7° C	3.51	2.55
Cdh Tj = -7 °C	0.990	0.990
Pdh Tj = $+2$ °C	2.00 kW	1.77 kW
COP Tj = +2°C	4.93	3.57
Cdh Tj = +2 °C	0.980	0.980
Pdh Tj = $+7^{\circ}$ C	2.35 kW	2.13 kW
$COP Tj = +7^{\circ}C$	6.34	4.76
Cdh Tj = $+7$ °C	0.970	0.980
Pdh Tj = 12°C	2.75 kW	2.57 kW
COP Tj = 12°C	7.88	6.54
Cdh Tj = +12 °C	0.970	0.970
Pdh Tj = Tbiv	4.58 kW	3.85 kW
COP Tj = Tbiv	2.56	1.84
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	4.58 kW	3.85 kW

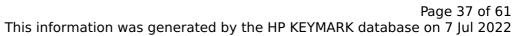




COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.56	1.84
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.990	0.990
WTOL	55 °C	55 °C
Poff	11 W	11 W
РТО	11 W	11 W
PSB	11 W	11 W
PCK	0 W	o w
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	5.60 kW	4.69 kW
Annual energy consumption Qhe	3612 kWh	3989 kWh
Pdh Tj = -15°C (if TOL<-20°C)		
COP Tj = -15°C (if TOL $<$ -20°C)		
Cdh Tj = -15 °C		

Average Climate

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





	Low temperature	Medium temperature
η_{s}	185 %	135 %
Prated	6.40 kW	4.90 kW
SCOP	4.71	3.44
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7° C	5.73 kW	4.38 kW
COP Tj = -7° C	2.93	2.12
Cdh Tj = -7 °C	0.990	0.990
Pdh Tj = $+2$ °C	3.55 kW	2.74 kW
$COP Tj = +2^{\circ}C$	4.64	3.39
Cdh Tj = +2 °C	0.990	0.990
Pdh Tj = $+7^{\circ}$ C	2.32 kW	2.08 kW
$COP Tj = +7^{\circ}C$	6.10	4.40
Cdh Tj = +7 °C	0.970	0.980
Pdh Tj = 12°C	2.77 kW	2.54 kW
COP Tj = 12°C	8.17	6.23
Cdh Tj = +12 °C	0.970	0.980
Pdh Tj = Tbiv	5.73 kW	4.38 kW
COP Tj = Tbiv	2.93	2.12
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	4.99 kW	3.91 kW



COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.62	1.85
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.990	1.000
WTOL	55 °C	55 °C
Poff	11 W	11 W
РТО	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	1.40 kW	0.99 kW
Annual energy consumption Qhe	2807 kWh	2941 kWh

Model: VWL 59/5 230V

Configure model		
Model name	VWL 59/5 230V	
Application	Heating + DHW + low temp	
Units	Indoor	
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	

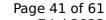
EN 14511-2		
	Low temperature	Medium temperature
Heat output	4.92 kW	4.73 kW
El input	1.15 kW	1.79 kW
СОР	4.46	2.69

Warmer Climate



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

EN 14825		
	Low temperature	Medium temperature
η_{s}	235 %	161 %
Prated	3.90 kW	3.90 kW
SCOP	5.94	4.09
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	3.97 kW	3.83 kW
COP Tj = +2°C	3.68	2.44
Cdh Tj = +2 °C	0.99	0.99
Pdh Tj = +7°C	2.48 kW	2.33 kW
COP Tj = +7°C	5.32	3.38
Cdh Tj = +7 °C	0.98	0.99
Pdh Tj = 12°C	2.70 kW	2.46 kW
COP Tj = 12°C	7.43	5.48
Cdh Tj = +12 °C	0.97	0.98

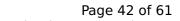




3.97 kW	3.83 kW
3.68	2.44
3.97 kW	3.83 kW
3.68	2.44
0.99	0.99
55 °C	55 °C
11 W	11 W
11 W	11 W
11 W	11 W
0 W	0 W
Electricity	Electricity
0.00 kW	0.00 kW
877 kWh	1274 kWh
	3.68 3.97 kW 3.68 0.99 55 °C 11 W 11 W 11 W 0 W Electricity 0.00 kW

Colder Climate

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





	Low temperature	Medium temperature
η_{s}	149 %	113 %
Prated	5.56 kW	4.69 kW
SCOP	3.79	2.90
Tbiv	-15 °C	-15 °C
TOL	-15 °C	-15 °C
Pdh Tj = -7° C	3.25 kW	2.73 kW
COP Tj = -7° C	3.51	2.55
Cdh Tj = -7 °C	0.990	0.990
Pdh Tj = $+2$ °C	2.00 kW	1.77 kW
$COP Tj = +2^{\circ}C$	4.93	3.57
Cdh Tj = +2 °C	0.980	0.980
Pdh Tj = $+7^{\circ}$ C	2.35 kW	2.13 kW
$COP Tj = +7^{\circ}C$	6.34	4.76
Cdh Tj = +7 °C	0.970	0.980
Pdh Tj = 12°C	2.75 kW	2.57 kW
COP Tj = 12°C	7.88	6.54
Cdh Tj = +12 °C	0.970	0.970
Pdh Tj = Tbiv	4.58 kW	3.85 kW
COP Tj = Tbiv	2.56	1.84
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	4.58 kW	3.85 kW

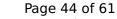




COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.56	1.84
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.990	0.990
WTOL	55 °C	55 °C
Poff	11 W	11 W
РТО	11 W	11 W
PSB	11 W	11 W
PCK	o w	o w
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	5.60 kW	4.69 kW
Annual energy consumption Qhe	3612 kWh	3989 kWh
Pdh Tj = -15°C (if TOL<-20°C)		
COP Tj = -15°C (if TOL<-20°C)		
Cdh Tj = -15 °C		

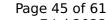
Average Climate

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





	Low temperature	Medium temperature
η_{s}	185 %	135 %
Prated	6.40 kW	4.90 kW
SCOP	4.71	3.44
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	5.73 kW	4.38 kW
$COP Tj = -7^{\circ}C$	2.93	2.12
Cdh Tj = -7 °C	0.990	0.990
Pdh Tj = $+2^{\circ}$ C	3.55 kW	2.74 kW
COPTj = +2°C	4.64	3.39
Cdh Tj = +2 °C	0.990	0.990
Pdh Tj = +7°C	2.32 kW	2.08 kW
COP Tj = +7°C	6.10	4.40
Cdh Tj = +7 °C	0.970	0.980
Pdh Tj = 12°C	2.77 kW	2.54 kW
COP Tj = 12°C	8.17	6.23
Cdh Tj = +12 °C	0.970	0.980
Pdh Tj = Tbiv	5.73 kW	4.38 kW
COP Tj = Tbiv	2.93	2.12
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	4.99 kW	3.91 kW





COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.62	1.85
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	o w	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.40 kW	0.99 kW
Annual energy consumption Qhe	2807 kWh	2941 kWh

Domestic Hot Water (DHW)

Warmer Climate

EN 16147		
Declared load profile	XL	
Efficiency ηDHW	125 %	
СОР	3.06	
Heating up time	02:42 h:min	
Standby power input	19.0 W	
Reference hot water temperature	55.0 °C	
Mixed water at 40°C	275 I	



Colder Climate

EN 16147		
Declared load profile	XL	
Efficiency ηDHW	90 %	
СОР	2.22	
Heating up time	04:39 h:min	
Standby power input	21.0 W	
Reference hot water temperature	55.0 °C	
Mixed water at 40°C	265 I	
Mixed water at 40 C	2031	

Average Climate

EN 16147		
Declared load profile	XL	
Efficiency ηDHW	102 %	
COP	2.51	
Heating up time	03:49 h:min	
Standby power input	20.0 W	
Reference hot water temperature	55.0 °C	
Mixed water at 40°C	276	

Model: VWL 57/5 230V S2

Configure model		
Model name	VWL 57/5 230V S2	
Application	Heating (medium temp)	
Units	Indoor	
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	

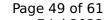
EN 14511-2			
Low temperature Medium temperature			
Heat output	4.92 kW	4.73 kW	
El input	1.15 kW	1.79 kW	
СОР	4.46	2.69	

Warmer Climate



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

EN 14825		
	Low temperature	Medium temperature
η_{s}	222 %	155 %
Prated	3.90 kW	3.90 kW
SCOP	5.63	3.96
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	3.97 kW	3.83 kW
COP Tj = +2°C	3.68	2.44
Cdh Tj = +2 °C	0.99	0.99
Pdh Tj = +7°C	2.48 kW	2.33 kW
COP Tj = +7°C	5.32	3.38
Cdh Tj = +7 °C	0.98	0.99
Pdh Tj = 12°C	2.70 kW	2.46 kW
COP Tj = 12°C	7.43	5.48
Cdh Tj = +12 °C	0.97	0.98





Pdh Tj = Tbiv	3.97 kW	3.83 kW
COP Tj = Tbiv	3.68	2.44
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	3.97 kW	3.83 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.68	2.44
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.99	0.99
WTOL	55 °C	55 °C
Poff	11 W	11 W
РТО	11 W	11 W
PSB	11 W	11 W
PCK	o w	o w
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	925 kWh	1317 kWh

Colder Climate

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





	Low temperature	Medium temperature
η_{s}	148 %	112 %
Prated	5.56 kW	4.69 kW
SCOP	3.77	2.88
Tbiv	-15 °C	-15 °C
TOL	-15 °C	-15 °C
Pdh Tj = -7°C	3.25 kW	2.73 kW
$COP Tj = -7^{\circ}C$	3.51	2.55
Cdh Tj = -7 °C	0.990	0.990
Pdh Tj = +2°C	2.00 kW	1.77 kW
COP Tj = +2°C	4.93	3.57
Cdh Tj = +2 °C	0.980	0.980
Pdh Tj = +7°C	2.35 kW	2.13 kW
$COP Tj = +7^{\circ}C$	6.34	4.76
Cdh Tj = +7 °C	0.970	0.980
Pdh Tj = 12°C	2.75 kW	2.57 kW
COP Tj = 12°C	7.88	6.54
Cdh Tj = +12 °C	0.970	0.970
Pdh Tj = Tbiv	4.58 kW	3.85 kW
COP Tj = Tbiv	2.56	1.84
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	4.58 kW	3.85 kW

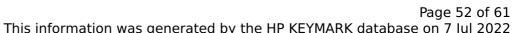




COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.56	1.84
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.990	0.990
WTOL	55 °C	55 °C
Poff	11 W	11 W
РТО	11 W	11 W
PSB	11 W	11 W
PCK	o w	o w
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	5.60 kW	4.69 kW
Annual energy consumption Qhe	3636 kWh	4013 kWh
Pdh Tj = -15°C (if TOL<-20°C)		
COP Tj = -15°C (if TOL $<$ -20°C)		
Cdh Tj = -15 °C		

Average Climate

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





	Low temperature	Medium temperature
η_{s}	183 %	133 %
Prated	6.40 kW	4.90 kW
SCOP	4.64	3.40
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	5.73 kW	4.38 kW
$COP Tj = -7^{\circ}C$	2.93	2.12
Cdh Tj = -7 °C	0.990	0.990
Pdh Tj = +2°C	3.55 kW	2.74 kW
COP Tj = +2°C	4.64	3.39
Cdh Tj = +2 °C	0.990	0.990
Pdh Tj = +7°C	2.32 kW	2.08 kW
$COP Tj = +7^{\circ}C$	6.10	4.40
Cdh Tj = +7 °C	0.970	0.980
Pdh Tj = 12°C	2.77 kW	2.54 kW
COP Tj = 12°C	8.17	6.23
Cdh Tj = +12 °C	0.970	0.980
Pdh Tj = Tbiv	5.73 kW	4.38 kW
COP Tj = Tbiv	2.93	2.12
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	4.99 kW	3.91 kW



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This information was generated by the HP KEYMARK database on 7 Jul 2022

COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.62	1.85
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	o w	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.40 kW	0.99 kW
Annual energy consumption Qhe	2847 kWh	2982 kWh



Model: VWL 59/5 230V S2

Configure model		
Model name	VWL 59/5 230V S2	
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 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	

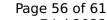
EN 14511-2		
	Low temperature	Medium temperature
Heat output	4.92 kW	4.73 kW
El input	1.15 kW	1.79 kW
СОР	4.46	2.69

Warmer Climate



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

EN 14825		
	Low temperature	Medium temperature
η_{s}	222 %	155 %
Prated	3.90 kW	3.90 kW
SCOP	5.63	3.96
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	3.97 kW	3.83 kW
COP Tj = +2°C	3.68	2.44
Cdh Tj = +2 °C	0.99	0.99
Pdh Tj = +7°C	2.48 kW	2.33 kW
COP Tj = +7°C	5.32	3.38
Cdh Tj = +7 °C	0.98	0.99
Pdh Tj = 12°C	2.70 kW	2.46 kW
COP Tj = 12°C	7.43	5.48
Cdh Tj = +12 °C	0.97	0.98





Pdh Tj = Tbiv	3.97 kW	3.83 kW
COP Tj = Tbiv	3.68	2.44
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	3.97 kW	3.83 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.68	2.44
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.99	0.99
WTOL	55 °C	55 °C
Poff	11 W	11 W
РТО	11 W	11 W
PSB	11 W	11 W
PCK	o w	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	925 kWh	1317 kWh

Colder Climate

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





	Low temperature	Medium temperature
η_{s}	148 %	112 %
Prated	5.56 kW	4.69 kW
SCOP	3.77	2.88
Гbіv	-15 °C	-15 °C
ΓOL	-15 °C	-15 °C
Pdh Tj = -7°C	3.25 kW	2.73 kW
COP Tj = -7°C	3.51	2.55
Cdh Tj = -7 °C	0.990	0.990
$Pdh Tj = +2^{\circ}C$	2.00 kW	1.77 kW
COP Tj = +2°C	4.93	3.57
Cdh Tj = +2 °C	0.980	0.980
Pdh Tj = +7°C	2.35 kW	2.13 kW
$COP Tj = +7^{\circ}C$	6.34	4.76
Cdh Tj = +7 °C	0.970	0.980
Pdh Tj = 12°C	2.75 kW	2.57 kW
COP Tj = 12°C	7.88	6.54
Cdh Tj = +12 °C	0.970	0.970
Pdh Tj = Tbiv	4.58 kW	3.85 kW
COP Tj = Tbiv	2.56	1.84
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	4.58 kW	3.85 kW

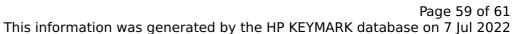




COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.56	1.84
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.990	0.990
WTOL	55 °C	55 °C
Poff	11 W	11 W
РТО	11 W	11 W
PSB	11 W	11 W
PCK	o w	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	5.60 kW	4.69 kW
Annual energy consumption Qhe	3636 kWh	4013 kWh
Pdh Tj = -15°C (if TOL<-20°C)		
COP Tj = -15°C (if TOL $<$ -20°C)		
Cdh Tj = -15 °C		

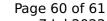
Average Climate

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





	Low temperature	Medium temperature
η_{s}	183 %	133 %
Prated	6.40 kW	4.90 kW
SCOP	4.64	3.40
ГЬіν	-7 °C	-7 °C
гоц	-10 °C	-10 °C
Pdh Tj = -7°C	5.73 kW	4.38 kW
COP Tj = -7°C	2.93	2.12
Cdh Tj = -7 °C	0.990	0.990
Pdh Tj = +2°C	3.55 kW	2.74 kW
COP Tj = +2°C	4.64	3.39
Cdh Tj = +2 °C	0.990	0.990
Pdh Tj = +7°C	2.32 kW	2.08 kW
$COP Tj = +7^{\circ}C$	6.10	4.40
Cdh Tj = +7 °C	0.970	0.980
Pdh Tj = 12°C	2.77 kW	2.54 kW
COP Tj = 12°C	8.17	6.23
Cdh Tj = +12 °C	0.970	0.980
Pdh Tj = Tbiv	5.73 kW	4.38 kW
COP Tj = Tbiv	2.93	2.12
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	4.99 kW	3.91 kW





COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.62	1.85
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	o w	o w
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.40 kW	0.99 kW
Annual energy consumption Qhe	2847 kWh	2982 kWh

Domestic Hot Water (DHW)

Warmer Climate

EN 16147		
Declared load profile	XL	
Efficiency ηDHW	125 %	
СОР	3.06	
Heating up time	02:42 h:min	
Standby power input	19.0 W	
Reference hot water temperature	55.0 °C	
Mixed water at 40°C	275	



Colder Climate

EN 16147		
Declared load profile	XL	
Efficiency ηDHW	90 %	
СОР	2.22	
Heating up time	04:39 h:min	
Standby power input	21.0 W	
Reference hot water temperature	55.0 °C	
Mixed water at 40°C	265 I	

Average Climate

EN 16147		
Declared load profile	XL	
Efficiency ηDHW	102 %	
COP	2.51	
Heating up time	03:49 h:min	
Standby power input	20.0 W	
Reference hot water temperature	55.0 °C	
Mixed water at 40°C	276	