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.	n/a

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		
Name of testing laboratory	n/a		
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		

Model: VWL 37/5 230V

General Data	
Power supply	1x230V 50Hz

Heating

EN 14511-2		
	Low temperature	**Medium temperature**
Heat output	4.84 kW	4.68 kW
El input	1.06 kW	1.72 kW
COP	4.56	2.72
Indoor water flow rate	0.86 m³/h	0.52 m³/h

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

Average Climate

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

EN 14825		
	Low temperature	**Medium temperature**
η_s	191 %	132 %
Prated	4.84 kW	4.68 kW
SCOP	4.86	3.38
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	3.56 kW	3.21 kW
COP Tj = -7°C	3.20	2.12
Cdh	0.99	0.99
Pdh Tj = +2°C	2.26 kW	2.01 kW
COP Tj = +2°C	4.74	3.27
Cdh	0.98	0.98
Pdh Tj = +7°C	2.23 kW	2.03 kW
COP Tj = +7°C	6.25	4.45
Cdh	0.98	0.98
Pdh Tj = 12°C	2.70 kW	2.50 kW

COP Tj = 12°C	8.55	6.46
Cdh	0.97	0.98
Pdh Tj = Tbiv	3.56 kW	3.21 kW
COP Tj = Tbiv	3.20	2.12
Pdh Tj = TOL	3.28 kW	2.83 kW
COP Tj = TOL	2.90	1.83
Cdh	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	1700 kWh	2199 kWh

Warmer Climate

EN 14825		
	Low temperature	**Medium temperature**
η_s	221 %	141 %
Prated	4.84 kW	4.68 kW

SCOP	5.61	3.61
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	3.89 kW	3.80 kW
COP Tj = +2°C	3.75	2.46
Cdh	0.99	0.99
Pdh Tj = +7°C	2.16 kW	1.85 kW
COP Tj = +7°C	5.61	3.39
Cdh	0.98	0.98
Pdh Tj = 12°C	2.66 kW	2.43 kW
COP Tj = 12°C	8.03	5.70
Cdh	0.97	0.98
Pdh Tj = Tbiv	3.89 kW	3.80 kW
COP Tj = Tbiv	3.75	2.46
Pdh Tj = TOL	3.89 kW	3.80 kW
COP Tj = TOL	3.75	2.46
Cdh	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	929 kWh	1408 kWh

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

Colder Climate

EN 14825		
	Low temperature	**Medium temperature**
η_s	162 %	111 %
Prated	4.84 kW	4.68 kW
SCOP	4.12	2.84
Tbiv	-13 °C	-15 °C
TOL	-20 °C	-15 °C
Pdh Tj = -7°C	2.39 kW	1.85 kW
COP Tj = -7°C	3.58	2.45
Cdh	0.99	0.99
Pdh Tj = +2°C	1.93 kW	1.72 kW

COP Tj = +2°C	5.07	3.56
Cdh	0.98	0.98
Pdh Tj = +7°C	2.26 kW	2.09 kW
COP Tj = +7°C	6.60	4.87
Cdh	0.97	0.98
Pdh Tj = 12°C	2.70 kW	2.54 kW
COP Tj = 12°C	8.48	6.87
Cdh	0.97	0.97
Pdh Tj = Tbiv	2.94 kW	2.46 kW
COP Tj = Tbiv	2.81	1.81
Pdh Tj = TOL	2.31 kW	2.46 kW
COP Tj = TOL	2.26	1.81
Cdh	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	2303 kWh	2609 kWh

Pdh Tj = -15°C (if TOL<-20°C)	0.01	2.46
COP Tj = -15°C (if TOL<-20°C)	0.01	1.81
Cdh	0.01	0.99

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

Model: VWL 39/5 230V

General Data	
Power supply	1x230V 50Hz

Heating

EN 14511-2		
	Low temperature	**Medium temperature**
Heat output	4.68 kW	
El input	1.72 kW	
COP	2.72	
Indoor water flow rate	0.52 m³/h	

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

Average Climate

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

EN 14825	
	Medium temperature
η_s	132 %
Prated	4.68 kW
SCOP	3.38
Tbiv	-7 °C
TOL	-10 °C
Pdh Tj = -7°C	3.21 kW
COP Tj = -7°C	2.12
Cdh	0.99
Pdh Tj = +2°C	2.01 kW
COP Tj = +2°C	3.27
Cdh	0.98
Pdh Tj = +7°C	2.03 kW
COP Tj = +7°C	4.45
Cdh	0.98
Pdh Tj = 12°C	2.50 kW

COP Tj = 12°C	6.46
Cdh	0.98
Pdh Tj = Tbiv	3.21 kW
COP Tj = Tbiv	2.12
Pdh Tj = TOL	2.83 kW
COP Tj = TOL	1.83
Cdh	0.99
WTOL	55 °C
Poff	11 W
PTO	11 W
PSB	11 W
PCK	0 W
Supplementary Heater: Type of energy input	electricity
Supplementary Heater: PSUP	0.00 kW
Annual energy consumption Qhe	2199 kWh

Warmer Climate

EN 14825	
	Medium temperature
η_s	141 %
Prated	4.68 kW

SCOP	3.61
Tbiv	2 °C
TOL	2 °C
Pdh Tj = +2°C	3.80 kW
COP Tj = +2°C	2.46
Cdh	0.99
Pdh Tj = +7°C	1.85 kW
COP Tj = +7°C	3.39
Cdh	0.98
Pdh Tj = 12°C	2.43 kW
COP Tj = 12°C	5.70
Cdh	0.98
Pdh Tj = Tbiv	3.80 kW
COP Tj = Tbiv	2.46
Pdh Tj = TOL	3.80 kW
COP Tj = TOL	2.46
Cdh	0.99
WTOL	55 °C
Poff	11 W
PTO	11 W
PSB	11 W

PCK	0 W
Supplementary Heater: Type of energy input	electricity
Supplementary Heater: PSUP	0.00 kW
Annual energy consumption Qhe	1408 kWh

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

Colder Climate

EN 14825	
	Medium temperature
η_s	111 %
Prated	4.68 kW
SCOP	2.84
Tbiv	-15 °C
TOL	-15 °C
Pdh Tj = -7°C	1.85 kW
COP Tj = -7°C	2.45
Cdh	0.99
Pdh Tj = +2°C	1.72 kW

COP Tj = +2°C	3.56
Cdh	0.98
Pdh Tj = +7°C	2.09 kW
COP Tj = +7°C	4.87
Cdh	0.98
Pdh Tj = 12°C	2.54 kW
COP Tj = 12°C	6.87
Cdh	0.97
Pdh Tj = Tbiv	2.46 kW
COP Tj = Tbiv	1.81
Pdh Tj = TOL	2.46 kW
COP Tj = TOL	1.81
Cdh	0.99
WTOL	55 °C
Poff	11 W
PTO	11 W
PSB	11 W
PCK	0 W
Supplementary Heater: Type of energy input	electricity
Supplementary Heater: PSUP	0.00 kW
Annual energy consumption Qhe	2609 kWh

Pdh Tj = -15°C (if TOL<-20°C)	2.46
COP Tj = -15°C (if TOL<-20°C)	1.81
Cdh	0.99

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

Domestic Hot Water (DHW)

Average Climate

EN 16147	
Declared load profile	XL
Efficiency ηDHW	102 %
COP	2.51
Heating up time	3:49 h:min
Standby power input	20.0 W
Reference hot water temperature	55.0 °C
Mixed water at 40°C	276 l

Warmer Climate

EN 16147	
Declared load profile	XL
Efficiency ηDHW	125 %
COP	3.06
Heating up time	2:42 h:min
Standby power input	19.0 W
Reference hot water temperature	55.0 °C
Mixed water at 40°C	275 l

Colder Climate

EN 16147	
Declared load profile	XL
Efficiency ηDHW	90 %
COP	2.22
Heating up time	4:39 h:min
Standby power input	21.0 W
Reference hot water temperature	55.0 °C
Mixed water at 40°C	265 l

Model: VWL 37/5 230V S2

General Data	
Power supply	1x230V 50Hz

Heating

EN 14511-2		
	Low temperature	**Medium temperature**
Heat output	4.84 kW	4.68 kW
El input	1.06 kW	1.72 kW
COP	4.56	2.72
Indoor water flow rate	0.86 m³/h	0.52 m³/h

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

Average Climate

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

EN 14825		
	Low temperature	**Medium temperature**
η_s	187 %	130 %
Prated	4.84 kW	4.68 kW
SCOP	4.75	3.32
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	3.56 kW	3.21 kW
COP Tj = -7°C	3.20	2.12
Cdh	0.99	0.99
Pdh Tj = +2°C	2.26 kW	2.01 kW
COP Tj = +2°C	4.74	3.27
Cdh	0.98	0.98
Pdh Tj = +7°C	2.23 kW	2.03 kW
COP Tj = +7°C	6.25	4.45
Cdh	0.98	0.98
Pdh Tj = 12°C	2.70 kW	2.50 kW

COP Tj = 12°C	8.55	6.46
Cdh	0.97	0.98
Pdh Tj = Tbiv	3.56 kW	3.21 kW
COP Tj = Tbiv	3.20	2.12
Pdh Tj = TOL	3.28 kW	2.83 kW
COP Tj = TOL	2.90	1.83
Cdh	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	1741 kWh	2240 kWh

Warmer Climate

EN 14825		
	Low temperature	**Medium temperature**
η_s	210 %	136 %
Prated	4.84 kW	4.68 kW

SCOP	5.33	3.49
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	3.89 kW	3.80 kW
COP Tj = +2°C	3.75	2.46
Cdh	0.99	0.99
Pdh Tj = +7°C	2.16 kW	1.85 kW
COP Tj = +7°C	5.61	3.39
Cdh	0.98	0.98
Pdh Tj = 12°C	2.66 kW	2.43 kW
COP Tj = 12°C	8.03	5.70
Cdh	0.97	0.98
Pdh Tj = Tbiv	3.89 kW	3.80 kW
COP Tj = Tbiv	3.75	2.46
Pdh Tj = TOL	3.89 kW	3.80 kW
COP Tj = TOL	3.75	2.46
Cdh	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	976 kWh	1456 kWh

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

Colder Climate

EN 14825		
	Low temperature	**Medium temperature**
η_s	160 %	110 %
Prated	4.84 kW	4.68 kW
SCOP	4.08	2.82
Tbiv	-13 °C	-15 °C
TOL	-20 °C	-15 °C
Pdh Tj = -7°C	2.39 kW	1.85 kW
COP Tj = -7°C	3.58	2.45
Cdh	0.99	0.99
Pdh Tj = +2°C	1.93 kW	1.72 kW

COP Tj = +2°C	5.07	3.56
Cdh	0.98	0.98
Pdh Tj = +7°C	2.26 kW	2.09 kW
COP Tj = +7°C	6.60	4.87
Cdh	0.97	0.98
Pdh Tj = 12°C	2.70 kW	2.54 kW
COP Tj = 12°C	8.48	6.87
Cdh	0.97	0.97
Pdh Tj = Tbiv	2.94 kW	2.46 kW
COP Tj = Tbiv	2.81	1.81
Pdh Tj = TOL	2.31 kW	2.46 kW
COP Tj = TOL	2.26	1.81
Cdh	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	2327 kWh	2634 kWh

Pdh Tj = -15°C (if TOL<-20°C)	0.01	2.46
COP Tj = -15°C (if TOL<-20°C)	0.01	1.81
Cdh	0.01	0.99

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

Model: VWL 39/5 230V S2

General Data	
Power supply	1x230V 50Hz

Heating

EN 14511-2		
	Low temperature	**Medium temperature**
Heat output	4.68 kW	
El input	1.72 kW	
COP	2.72	
Indoor water flow rate	0.52 m³/h	

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

Average Climate

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

EN 14825	
	Medium temperature
η_s	130 %
Prated	4.68 kW
SCOP	3.32
Tbiv	-7 °C
TOL	-10 °C
Pdh Tj = -7°C	3.21 kW
COP Tj = -7°C	2.12
Cdh	0.99
Pdh Tj = +2°C	2.01 kW
COP Tj = +2°C	3.27
Cdh	0.98
Pdh Tj = +7°C	2.03 kW
COP Tj = +7°C	4.45
Cdh	0.98
Pdh Tj = 12°C	2.50 kW

COP Tj = 12°C	6.46
Cdh	0.98
Pdh Tj = Tbiv	3.21 kW
COP Tj = Tbiv	2.12
Pdh Tj = TOL	2.83 kW
COP Tj = TOL	1.83
Cdh	0.99
WTOL	55 °C
Poff	11 W
PTO	11 W
PSB	11 W
PCK	0 W
Supplementary Heater: Type of energy input	electricity
Supplementary Heater: PSUP	0.00 kW
Annual energy consumption Qhe	2240 kWh

Warmer Climate

EN 14825	
	Medium temperature
η_s	136 %
Prated	4.68 kW

SCOP	3.49
Tbiv	2 °C
TOL	2 °C
Pdh Tj = +2°C	3.80 kW
COP Tj = +2°C	2.46
Cdh	0.99
Pdh Tj = +7°C	1.85 kW
COP Tj = +7°C	3.39
Cdh	0.98
Pdh Tj = 12°C	2.43 kW
COP Tj = 12°C	5.70
Cdh	0.98
Pdh Tj = Tbiv	3.80 kW
COP Tj = Tbiv	2.46
Pdh Tj = TOL	3.80 kW
COP Tj = TOL	2.46
Cdh	0.99
WTOL	55 °C
Poff	11 W
PTO	11 W
PSB	11 W

PCK	0 W
Supplementary Heater: Type of energy input	electricity
Supplementary Heater: PSUP	0.00 kW
Annual energy consumption Qhe	1456 kWh

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

Colder Climate

EN 14825	
	Medium temperature
η_s	110 %
Prated	4.68 kW
SCOP	2.82
Tbiv	-15 °C
TOL	-15 °C
Pdh Tj = -7°C	1.85 kW
COP Tj = -7°C	2.45
Cdh	0.99
Pdh Tj = +2°C	1.72 kW

COP Tj = +2°C	3.56
Cdh	0.98
Pdh Tj = +7°C	2.09 kW
COP Tj = +7°C	4.87
Cdh	0.98
Pdh Tj = 12°C	2.54 kW
COP Tj = 12°C	6.87
Cdh	0.97
Pdh Tj = Tbiv	2.46 kW
COP Tj = Tbiv	1.81
Pdh Tj = TOL	2.46 kW
COP Tj = TOL	1.81
Cdh	0.99
WTOL	55 °C
Poff	11 W
PTO	11 W
PSB	11 W
PCK	0 W
Supplementary Heater: Type of energy input	electricity
Supplementary Heater: PSUP	0.00 kW
Annual energy consumption Qhe	2634 kWh

Pdh Tj = -15°C (if TOL<-20°C)	2.46
COP Tj = -15°C (if TOL<-20°C)	1.81
Cdh	0.99

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

Domestic Hot Water (DHW)

Average Climate

EN 16147	
Declared load profile	XL
Efficiency ηDHW	102 %
COP	2.51
Heating up time	3:49 h:min
Standby power input	20.0 W
Reference hot water temperature	55.0 °C
Mixed water at 40°C	276 l

Warmer Climate

EN 16147	
Declared load profile	XL
Efficiency ηDHW	125 %
COP	3.06
Heating up time	2:42 h:min
Standby power input	19.0 W
Reference hot water temperature	55.0 °C
Mixed water at 40°C	275 l

Colder Climate

EN 16147	
Declared load profile	XL
Efficiency ηDHW	90 %
COP	2.22
Heating up time	4:39 h:min
Standby power input	21.0 W
Reference hot water temperature	55.0 °C
Mixed water at 40°C	265 l

Model: VWL 57/5 230V

General Data	
Power supply	1x230V 50Hz

Heating

EN 14511-2		
	Low temperature	**Medium temperature**
Heat output	4.84 kW	4.68 kW
El input	1.06 kW	1.72 kW
COP	4.56	2.72
Indoor water flow rate	0.86 m³/h	0.52 m³/h

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

Average Climate

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

EN 14825		
	Low temperature	**Medium temperature**
η_s	193 %	138 %
Prated	4.84 kW	4.68 kW
SCOP	4.90	3.52
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	5.69 kW	4.36 kW
COP Tj = -7°C	2.96	2.13
Cdh	0.99	0.99
Pdh Tj = +2°C	3.51 kW	2.71 kW
COP Tj = +2°C	4.79	3.46
Cdh	0.99	0.99
Pdh Tj = +7°C	2.27 kW	2.05 kW
COP Tj = +7°C	6.53	4.56
Cdh	0.97	0.98
Pdh Tj = 12°C	2.73 kW	2.51 kW

COP Tj = 12°C	8.87	6.53
Cdh	0.97	0.98
Pdh Tj = Tbiv	5.69 kW	4.36 kW
COP Tj = Tbiv	2.96	2.13
Pdh Tj = TOL	4.95 kW	3.89 kW
COP Tj = TOL	2.64	1.86
Cdh	0.99	1.00
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	2701 kWh	2876 kWh

Warmer Climate

EN 14825		
	Low temperature	**Medium temperature**
η_s	250 %	166 %
Prated	4.84 kW	4.68 kW

SCOP	6.32	4.21
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	3.89 kW	3.80 kW
COP Tj = +2°C	3.76	2.47
Cdh	0.99	0.99
Pdh Tj = +7°C	2.44 kW	2.30 kW
COP Tj = +7°C	5.61	3.45
Cdh	0.98	0.99
Pdh Tj = 12°C	2.66 kW	2.43 kW
COP Tj = 12°C	8.03	5.70
Cdh	0.97	0.98
Pdh Tj = Tbiv	3.89 kW	3.80 kW
COP Tj = Tbiv	3.76	2.47
Pdh Tj = TOL	3.89 kW	3.80 kW
COP Tj = TOL	3.76	2.47
Cdh	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	824 kWh	1237 kWh

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

Colder Climate

EN 14825		
	Low temperature	**Medium temperature**
η_s	148 %	115 %
Prated	4.68 kW	4.68 kW
SCOP	3.76	2.84
Tbiv	-15 °C	-15 °C
TOL	-15 °C	-15 °C
Pdh Tj = -7°C	3.21 kW	2.70 kW
COP Tj = -7°C	3.58	2.58
Cdh	0.99	0.99
Pdh Tj = +2°C	1.96 kW	1.74 kW

COP Tj = +2°C	5.23	3.68
Cdh	0.98	0.98
Pdh Tj = +7°C	2.30 kW	2.10 kW
COP Tj = +7°C	6.81	4.94
Cdh	0.97	0.98
Pdh Tj = 12°C	2.70 kW	2.54 kW
COP Tj = 12°C	8.55	6.87
Cdh	0.97	0.97
Pdh Tj = Tbiv	3.52 kW	3.83 kW
COP Tj = Tbiv	2.28	1.85
Pdh Tj = TOL	3.52 kW	3.83 kW
COP Tj = TOL	2.28	1.85
Cdh	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	3642 kWh	3911 kWh

Pdh Tj = -15°C (if TOL<-20°C)	3.52	3.83
COP Tj = -15°C (if TOL<-20°C)	2.28	1.85
Cdh	0.99	0.99

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

Model: VWL 59/5 230V

General Data	
Power supply	1x230V 50Hz

Heating

EN 14511-2		
	Low temperature	**Medium temperature**
Heat output	4.68 kW	
El input	1.72 kW	
COP	2.72	
Indoor water flow rate	0.52 m³/h	

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

Average Climate

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

EN 14825	
	Medium temperature
η_s	138 %
Prated	4.68 kW
SCOP	3.52
Tbiv	-7 °C
TOL	-10 °C
Pdh Tj = -7°C	4.36 kW
COP Tj = -7°C	2.13
Cdh	0.99
Pdh Tj = +2°C	2.71 kW
COP Tj = +2°C	3.46
Cdh	0.99
Pdh Tj = +7°C	2.05 kW
COP Tj = +7°C	4.56
Cdh	0.98
Pdh Tj = 12°C	2.51 kW

COP Tj = 12°C	6.53
Cdh	0.98
Pdh Tj = Tbiv	4.36 kW
COP Tj = Tbiv	2.13
Pdh Tj = TOL	3.89 kW
COP Tj = TOL	1.86
Cdh	1.00
WTOL	55 °C
Poff	11 W
PTO	11 W
PSB	11 W
PCK	0 W
Supplementary Heater: Type of energy input	electricity
Supplementary Heater: PSUP	0.00 kW
Annual energy consumption Qhe	2876 kWh

Warmer Climate

EN 14825	
	Medium temperature
η_s	166 %
Prated	4.68 kW

SCOP	4.21
Tbiv	2 °C
TOL	2 °C
Pdh Tj = +2°C	3.80 kW
COP Tj = +2°C	2.47
Cdh	0.99
Pdh Tj = +7°C	2.30 kW
COP Tj = +7°C	3.45
Cdh	0.99
Pdh Tj = 12°C	2.43 kW
COP Tj = 12°C	5.70
Cdh	0.98
Pdh Tj = Tbiv	3.80 kW
COP Tj = Tbiv	2.47
Pdh Tj = TOL	3.80 kW
COP Tj = TOL	2.47
Cdh	0.99
WTOL	55 °C
Poff	11 W
PTO	11 W
PSB	11 W

PCK	0 W
Supplementary Heater: Type of energy input	electricity
Supplementary Heater: PSUP	0.00 kW
Annual energy consumption Qhe	1237 kWh

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

Colder Climate

EN 14825	
	Medium temperature
η_s	115 %
Prated	4.68 kW
SCOP	2.84
Tbiv	-15 °C
TOL	-15 °C
Pdh Tj = -7°C	2.70 kW
COP Tj = -7°C	2.58
Cdh	0.99
Pdh Tj = +2°C	1.74 kW

COP Tj = +2°C	3.68
Cdh	0.98
Pdh Tj = +7°C	2.10 kW
COP Tj = +7°C	4.94
Cdh	0.98
Pdh Tj = 12°C	2.54 kW
COP Tj = 12°C	6.87
Cdh	0.97
Pdh Tj = Tbiv	3.83 kW
COP Tj = Tbiv	1.85
Pdh Tj = TOL	3.83 kW
COP Tj = TOL	1.85
Cdh	0.99
WTOL	55 °C
Poff	11 W
PTO	11 W
PSB	11 W
PCK	0 W
Supplementary Heater: Type of energy input	electricity
Supplementary Heater: PSUP	0.00 kW
Annual energy consumption Qhe	3911 kWh

Pdh Tj = -15°C (if TOL<-20°C)	3.83
COP Tj = -15°C (if TOL<-20°C)	1.85
Cdh	0.99

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

Domestic Hot Water (DHW)

Average Climate

EN 16147	
Declared load profile	XL
Efficiency ηDHW	102 %
COP	2.51
Heating up time	3:49 h:min
Standby power input	20.0 W
Reference hot water temperature	55.0 °C
Mixed water at 40°C	276 l

Warmer Climate

EN 16147	
Declared load profile	XL
Efficiency ηDHW	125 %
COP	3.06
Heating up time	2:42 h:min
Standby power input	19.0 W
Reference hot water temperature	55.0 °C
Mixed water at 40°C	275 l

Colder Climate

EN 16147	
Declared load profile	XL
Efficiency ηDHW	90 %
COP	2.22
Heating up time	4:39 h:min
Standby power input	21.0 W
Reference hot water temperature	55.0 °C
Mixed water at 40°C	265 l

Model: VWL 57/5 230V S2

General Data	
Power supply	1x230V 50Hz

Heating

EN 14511-2		
	Low temperature	**Medium temperature**
Heat output	4.84 kW	4.68 kW
El input	1.06 kW	1.72 kW
COP	4.56	2.72
Indoor water flow rate	0.86 m³/h	0.52 m³/h

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

Average Climate

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

EN 14825		
	Low temperature	**Medium temperature**
η_s	190 %	136 %
Prated	4.84 kW	4.68 kW
SCOP	4.84	3.47
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	5.69 kW	4.36 kW
COP Tj = -7°C	2.96	2.13
Cdh	0.99	0.99
Pdh Tj = +2°C	3.51 kW	2.71 kW
COP Tj = +2°C	4.79	3.46
Cdh	0.99	0.99
Pdh Tj = +7°C	2.27 kW	2.05 kW
COP Tj = +7°C	6.53	4.56
Cdh	0.97	0.98
Pdh Tj = 12°C	2.73 kW	2.51 kW

COP Tj = 12°C	8.87	6.53
Cdh	0.97	0.98
Pdh Tj = Tbiv	5.69 kW	4.36 kW
COP Tj = Tbiv	2.96	2.13
Pdh Tj = TOL	4.95 kW	3.89 kW
COP Tj = TOL	2.64	1.86
Cdh	0.99	1.00
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	2741 kWh	2916 kWh

Warmer Climate

EN 14825		
	Low temperature	**Medium temperature**
η_s	236 %	159 %
Prated	4.84 kW	4.68 kW

SCOP	5.97	4.05
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	3.89 kW	3.80 kW
COP Tj = +2°C	3.76	2.47
Cdh	0.99	0.99
Pdh Tj = +7°C	2.44 kW	2.30 kW
COP Tj = +7°C	5.61	3.45
Cdh	0.98	0.99
Pdh Tj = 12°C	2.66 kW	2.43 kW
COP Tj = 12°C	8.03	5.70
Cdh	0.97	0.98
Pdh Tj = Tbiv	3.89 kW	3.80 kW
COP Tj = Tbiv	3.76	2.47
Pdh Tj = TOL	3.89 kW	3.80 kW
COP Tj = TOL	3.76	2.47
Cdh	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	873 kWh	1286 kWh

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

Colder Climate

EN 14825		
	Low temperature	**Medium temperature**
η_s	147 %	115 %
Prated	4.68 kW	4.68 kW
SCOP	3.74	2.94
Tbiv	-15 °C	-15 °C
TOL	-15 °C	-15 °C
Pdh Tj = -7°C	3.21 kW	2.70 kW
COP Tj = -7°C	3.58	2.58
Cdh	0.99	0.99
Pdh Tj = +2°C	1.96 kW	1.74 kW

COP Tj = +2°C	5.23	3.68
Cdh	0.98	0.98
Pdh Tj = +7°C	2.30 kW	2.10 kW
COP Tj = +7°C	6.81	4.94
Cdh	0.97	0.98
Pdh Tj = 12°C	2.70 kW	2.54 kW
COP Tj = 12°C	8.55	6.87
Cdh	0.97	0.97
Pdh Tj = Tbiv	3.52 kW	3.83 kW
COP Tj = Tbiv	2.28	1.85
Pdh Tj = TOL	3.52 kW	3.83 kW
COP Tj = TOL	2.28	1.85
Cdh	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	3666 kWh	3935 kWh

Pdh Tj = -15°C (if TOL<-20°C)	3.52	3.83
COP Tj = -15°C (if TOL<-20°C)	2.28	1.85
Cdh	0.99	0.99

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

Model: VWL 59/5 230V S2

General Data	
Power supply	1x230V 50Hz

Heating

EN 14511-2		
	Low temperature	**Medium temperature**
Heat output	4.68 kW	
El input	1.72 kW	
COP	2.72	
Indoor water flow rate	0.52 m³/h	

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

Average Climate

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

EN 14825	
	Medium temperature
η_s	136 %
Prated	4.68 kW
SCOP	3.47
Tbiv	-7 °C
TOL	-10 °C
Pdh Tj = -7°C	4.36 kW
COP Tj = -7°C	2.13
Cdh	0.99
Pdh Tj = +2°C	2.71 kW
COP Tj = +2°C	3.46
Cdh	0.99
Pdh Tj = +7°C	2.05 kW
COP Tj = +7°C	4.56
Cdh	0.98
Pdh Tj = 12°C	2.51 kW

COP Tj = 12°C	6.53
Cdh	0.98
Pdh Tj = Tbiv	4.36 kW
COP Tj = Tbiv	2.13
Pdh Tj = TOL	3.89 kW
COP Tj = TOL	1.86
Cdh	1.00
WTOL	55 °C
Poff	11 W
PTO	11 W
PSB	11 W
PCK	0 W
Supplementary Heater: Type of energy input	electricity
Supplementary Heater: PSUP	0.00 kW
Annual energy consumption Qhe	2916 kWh

Warmer Climate

EN 14825	
	Medium temperature
η_s	159 %
Prated	4.68 kW

SCOP	4.05
Tbiv	2 °C
TOL	2 °C
Pdh Tj = +2°C	3.80 kW
COP Tj = +2°C	2.47
Cdh	0.99
Pdh Tj = +7°C	2.30 kW
COP Tj = +7°C	3.45
Cdh	0.99
Pdh Tj = 12°C	2.43 kW
COP Tj = 12°C	5.70
Cdh	0.98
Pdh Tj = Tbiv	3.80 kW
COP Tj = Tbiv	2.47
Pdh Tj = TOL	3.80 kW
COP Tj = TOL	2.47
Cdh	0.99
WTOL	55 °C
Poff	11 W
PTO	11 W
PSB	11 W

PCK	0 W
Supplementary Heater: Type of energy input	electricity
Supplementary Heater: PSUP	0.00 kW
Annual energy consumption Qhe	1286 kWh

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

Colder Climate

EN 14825	
	Medium temperature
η_s	115 %
Prated	4.68 kW
SCOP	2.94
Tbiv	-15 °C
TOL	-15 °C
Pdh Tj = -7°C	2.70 kW
COP Tj = -7°C	2.58
Cdh	0.99
Pdh Tj = +2°C	1.74 kW

COP Tj = +2°C	3.68
Cdh	0.98
Pdh Tj = +7°C	2.10 kW
COP Tj = +7°C	4.94
Cdh	0.98
Pdh Tj = 12°C	2.54 kW
COP Tj = 12°C	6.87
Cdh	0.97
Pdh Tj = Tbiv	3.83 kW
COP Tj = Tbiv	1.85
Pdh Tj = TOL	3.83 kW
COP Tj = TOL	1.85
Cdh	0.99
WTOL	55 °C
Poff	11 W
PTO	11 W
PSB	11 W
PCK	0 W
Supplementary Heater: Type of energy input	electricity
Supplementary Heater: PSUP	0.00 kW
Annual energy consumption Qhe	3935 kWh

Pdh Tj = -15°C (if TOL<-20°C)	3.83
COP Tj = -15°C (if TOL<-20°C)	1.85
Cdh	0.99

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

Domestic Hot Water (DHW)

Average Climate

EN 16147	
Declared load profile	XL
Efficiency ηDHW	102 %
COP	2.51
Heating up time	3:49 h:min
Standby power input	20.0 W
Reference hot water temperature	55.0 °C
Mixed water at 40°C	276 l

Warmer Climate

EN 16147	
Declared load profile	XL
Efficiency ηDHW	125 %
COP	3.06
Heating up time	2:42 h:min
Standby power input	19.0 W
Reference hot water temperature	55.0 °C
Mixed water at 40°C	275 l

Colder Climate

EN 16147	
Declared load profile	XL
Efficiency ηDHW	90 %
COP	2.22
Heating up time	4:39 h:min
Standby power input	21.0 W
Reference hot water temperature	55.0 °C
Mixed water at 40°C	265 l