Summary of	VWL 75/6 A 230V	Reg. No.	40050985
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	VDE Prüf- und Zertifizierungsinstitut GmbH		
Subtype title	VWL 75/6 A 230V		
Heat Pump Type	Outdoor Air/Water		
Refrigerant	R290		
Mass Of Refrigerant	0.9 kg		
Certification Date	12.04.2020		
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 14825:2016-10; EN 14825:2016 DIN EN 12102-1:2018-02; EN 12102-1:2017		

Model: VWL 85/6 A 230V S3

General Data	
Power supply	1x230V 50Hz

Heating

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

EN 14511-2		
	Low temperature	**Medium temperature**
Heat output	7.37 kW	7.58 kW
El input	1.66 kW	2.65 kW
COP	4.42	2.85
Indoor water flow rate	1.28 m³/h	0.83 m³/h

Average Climate

EN 14825		
	Low temperature	**Medium temperature**

η_s	187 %	135 %
Prated	7.21 kW	6.39 kW
SCOP	4.75	3.44
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	6.38 kW	5.66 kW
COP Tj = -7°C	2.93	2.17
Cdh	0.99	0.99
Pdh Tj = +2°C	3.83 kW	3.49 kW
COP Tj = +2°C	4.73	3.32
Cdh	0.97	0.97
Pdh Tj = +7°C	3.21 kW	3.06 kW
COP Tj = +7°C	6.33	4.67
Cdh	0.95	0.96
Pdh Tj = 12°C	3.72 kW	3.62 kW
COP Tj = 12°C	7.79	6.23
Cdh	0.94	0.95
Pdh Tj = Tbiv	6.38 kW	5.66 kW
COP Tj = Tbiv	2.93	2.17
Pdh Tj = TOL	6.00 kW	5.09 kW
COP Tj = TOL	2.66	1.92

WTOL	55 °C	55 °C
Poff	8 W	8 W
PTO	29 W	29 W
PSB	29 W	29 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	3139 kWh	3837 kWh

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level outdoor	58 dB(A)	57 dB(A)

Warmer Climate

EN 14825		
	Low temperature	**Medium temperature**
η_s	228 %	162 %
Prated	6.87 kW	7.06 kW
SCOP	5.78	4.13
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C

Pdh Tj = +2°C	6.87 kW	7.06 kW
COP Tj = +2°C	3.18	2.31
Cdh	0.99	0.99
Pdh Tj = +7°C	4.38 kW	4.71 kW
COP Tj = +7°C	5.29	3.44
Cdh	0.97	0.98
Pdh Tj = 12°C	3.68 kW	3.56 kW
COP Tj = 12°C	7.37	5.62
Cdh	0.95	0.96
Pdh Tj = Tbiv	6.87 kW	7.06 kW
COP Tj = Tbiv	3.18	2.31
Pdh Tj = TOL	6.87 kW	7.06 kW
COP Tj = TOL	3.18	2.31
WTOL	55 °C	55 °C
Poff	8 W	8 W
PTO	29 W	29 W
PSB	29 W	29 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	1586 kWh	2284 kWh

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level outdoor	58 dB(A)	57 dB(A)

Colder Climate

EN 14825		
	Low temperature	**Medium temperature**
η_s	159 %	119 %
Prated	6.03 kW	5.59 kW
SCOP	4.05	3.06
Tbiv	-15 °C	-15 °C
TOL	-20 °C	-20 °C
Pdh Tj = -7°C	3.71 kW	3.77 kW
COP Tj = -7°C	3.42	2.54
Cdh	0.97	0.98
Pdh Tj = +2°C	2.80 kW	2.59 kW
COP Tj = +2°C	5.04	3.70
Cdh	0.95	0.96
Pdh Tj = +7°C	3.25 kW	3.12 kW
COP Tj = +7°C	6.63	5.08
Cdh	0.95	0.96

Pdh Tj = 12°C	3.73 kW	3.67 kW
COP Tj = 12°C	7.71	6.80
Cdh	0.94	0.95
Pdh Tj = Tbiv	4.92 kW	4.56 kW
COP Tj = Tbiv	2.57	1.92
Pdh Tj = TOL	3.66 kW	3.29 kW
COP Tj = TOL	2.19	1.56
WTOL	55 °C	55 °C
Poff	8 W	8 W
PTO	29 W	29 W
PSB	29 W	29 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	3665 kWh	4506 kWh
Pdh Tj = -15°C (if TOL<-20°C)	4.92	4.56
COP Tj = -15°C (if TOL<-20°C)	2.57	1.92
Cdh	0.98	0.99

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level outdoor	58 dB(A)	57 dB(A)

Model: VWL 65/6 A 230V S3

General Data	
Power supply	1x230V 50Hz

Heating

EN 14511-2		
	Low temperature	**Medium temperature**
Heat output	5.12 kW	5.80 kW
El input	1.10 kW	2.00 kW
COP	4.66	2.89
Indoor water flow rate	0.90 m³/h	0.64 m³/h

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 outdoor	50 dB(A)	57 dB(A)

EN 14825		
	Low temperature	**Medium temperature**
η_s	186 %	136 %
Prated	6.73 kW	6.26 kW
SCOP	4.71	3.47
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	5.96 kW	5.54 kW
COP Tj = -7°C	3.01	2.14
Cdh	0.99	0.99
Pdh Tj = +2°C	3.67 kW	3.63 kW
COP Tj = +2°C	4.62	3.39
Cdh	0.97	0.97
Pdh Tj = +7°C	3.12 kW	3.01 kW
COP Tj = +7°C	6.36	4.67
Cdh	0.95	0.96
Pdh Tj = 12°C	3.69 kW	3.57 kW

COP Tj = 12°C	7.82	6.19
Cdh	0.94	0.95
Pdh Tj = Tbiv	5.96 kW	5.54 kW
COP Tj = Tbiv	3.01	2.14
Pdh Tj = TOL	5.52 kW	5.05 kW
COP Tj = TOL	2.77	1.90
WTOL	55 °C	55 °C
Poff	8 W	8 W
PTO	29 W	29 W
PSB	29 W	29 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	2951 kWh	3731 kWh

Warmer Climate

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level outdoor	50 dB(A)	57 dB(A)

EN 14825		
	Low temperature	**Medium temperature**

η_s	229 %	162 %
Prated	5.31 kW	5.98 kW
SCOP	5.81	4.12
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	5.31 kW	5.98 kW
COP Tj = +2°C	3.46	2.33
Cdh	0.98	0.99
Pdh Tj = +7°C	4.12 kW	3.72 kW
COP Tj = +7°C	5.49	3.50
Cdh	0.96	0.97
Pdh Tj = 12°C	3.67 kW	3.52 kW
COP Tj = 12°C	7.40	5.58
Cdh	0.95	0.96
Pdh Tj = Tbiv	5.31 kW	5.98 kW
COP Tj = Tbiv	3.46	2.33
Pdh Tj = TOL	5.31 kW	5.98 kW
COP Tj = TOL	3.46	2.33
WTOL	55 °C	55 °C
Poff	8 W	8 W
PTO	29 W	29 W

PSB	29 W	29 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	electricity	electricty
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	1222 kWh	1938 kWh

Colder Climate

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level outdoor	50 dB(A)	57 dB(A)

EN 14825		
	Low temperature	**Medium temperature**
η_s	162 %	121 %
Prated	5.97 kW	5.51 kW
SCOP	4.13	3.10
Tbiv	-15 °C	-15 °C
TOL	-20 °C	-20 °C
Pdh Tj = -7°C	3.58 kW	3.27 kW
COP Tj = -7°C	3.45	2.55
Cdh	0.97	0.98

Pdh Tj = +2°C	2.75 kW	2.58 kW
COP Tj = +2°C	5.17	3.80
Cdh	0.95	0.96
Pdh Tj = +7°C	3.16 kW	3.07 kW
COP Tj = +7°C	6.64	5.07
Cdh	0.94	0.96
Pdh Tj = 12°C	3.69 kW	3.60 kW
COP Tj = 12°C	7.77	6.57
Cdh	0.94	0.95
Pdh Tj = Tbiv	4.87 kW	4.50 kW
COP Tj = Tbiv	2.57	1.91
Pdh Tj = TOL	4.10 kW	3.76 kW
COP Tj = TOL	2.23	1.58
WTOL	55 °C	55 °C
Poff	8 W	8 W
PTO	29 W	29 W
PSB	29 W	29 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	3560 kWh	4385 kWh

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

Model: VWL 75/6 A 230V

General Data	
Power supply	1x230V 50Hz

Heating

EN 14511-2		
	Low temperature	**Medium temperature**
Heat output	4.57 kW	4.95 kW
El input	0.95 kW	1.68 kW
COP	4.79	2.93
Indoor water flow rate	0.79 m³/h	0.54 m³/h

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 outdoor	53 dB(A)	55 dB(A)

EN 14825		
	Low temperature	**Medium temperature**
η_s	184 %	134 %
Prated	6.60 kW	6.13 kW
SCOP	4.68	3.43
Tbiv	-10 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	5.84 kW	5.42 kW
COP Tj = -7°C	2.72	2.13
Cdh	0.99	0.99
Pdh Tj = +2°C	3.72 kW	3.46 kW
COP Tj = +2°C	4.68	3.36
Cdh	0.96	0.97
Pdh Tj = +7°C	3.18 kW	3.00 kW
COP Tj = +7°C	6.38	4.60
Cdh	0.95	0.96
Pdh Tj = 12°C	3.74 kW	3.59 kW

COP Tj = 12°C	7.88	6.18
Cdh	0.94	0.95
Pdh Tj = Tbiv	6.27 kW	5.42 kW
COP Tj = Tbiv	2.64	2.13
Pdh Tj = TOL	6.27 kW	4.88 kW
COP Tj = TOL	2.64	1.88
Cdh	0.99	0.99
WTOL	70 °C	70 °C
Poff	8 W	8 W
PTO	29 W	29 W
PSB	29 W	29 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	2912 kWh	3688 kWh

Warmer Climate

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level outdoor	53 dB(A)	55 dB(A)

EN 14825

	Low temperature	**Medium temperature**
η_s	237 %	163 %
Prated	6.77 kW	6.60 kW
SCOP	5.99	4.14
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	6.77 kW	6.60 kW
COP Tj = +2°C	3.23	2.23
Cdh	0.99	0.99
Pdh Tj = +7°C	4.14 kW	4.52 kW
COP Tj = +7°C	5.52	3.47
Cdh	0.96	0.98
Pdh Tj = 12°C	3.75 kW	3.56 kW
COP Tj = 12°C	7.65	5.68
Cdh	0.95	0.96
Pdh Tj = Tbiv	6.77 kW	6.60 kW
COP Tj = Tbiv	3.23	2.23
Pdh Tj = TOL	6.77 kW	6.60 kW
COP Tj = TOL	3.23	2.23
Cdh	0.99	0.99
WTOL	70 °C	70 °C

Poff	8 W	8 W
PTO	29 W	29 W
PSB	29 W	29 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	1510 kWh	2128 kWh

Colder Climate

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level outdoor	53 dB(A)	55 dB(A)

EN 14825		
	Low temperature	**Medium temperature**
η_s	160 %	118 %
Prated	5.85 kW	5.39 kW
SCOP	4.07	3.03
Tbiv	-15 °C	-15 °C
TOL	-20 °C	-20 °C
Pdh Tj = -7°C	3.51 kW	3.69 kW

COP Tj = -7°C	3.31	2.53
Cdh	0.97	0.98
Pdh Tj = +2°C	2.73 kW	2.55 kW
COP Tj = +2°C	5.01	3.62
Cdh	0.95	0.96
Pdh Tj = +7°C	3.19 kW	3.08 kW
COP Tj = +7°C	6.82	5.05
Cdh	0.94	0.95
Pdh Tj = 12°C	3.78 kW	3.64 kW
COP Tj = 12°C	8.52	6.54
Cdh	0.94	0.95
Pdh Tj = Tbiv	4.77 kW	4.40 kW
COP Tj = Tbiv	2.60	1.90
Pdh Tj = TOL	4.94 kW	4.57 kW
COP Tj = TOL	2.08	1.53
Cdh	0.99	0.99
WTOL	70 °C	70 °C
Poff	8 W	8 W
PTO	29 W	29 W
PSB	29 W	29 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	3546 kWh	4380 kWh
Pdh Tj = -15°C (if TOL<-20°C)	4.77	4.40
COP Tj = -15°C (if TOL<-20°C)	2.60	1.90
Cdh	0.98	0.99

Model: VWL 75/6 A 230V S2

General Data	
Power supply	1x230V 50Hz

Heating

EN 14511-2		
	Low temperature	**Medium temperature**
Heat output	4.57 kW	4.95 kW
El input	0.95 kW	1.68 kW
COP	4.79	2.93
Indoor water flow rate	0.79 m³/h	0.54 m³/h

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 outdoor	53 dB(A)	55 dB(A)

EN 14825		
	Low temperature	**Medium temperature**
η_s	183 %	133 %
Prated	6.60 kW	6.13 kW
SCOP	4.64	3.41
Tbiv	-10 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	5.84 kW	5.42 kW
COP Tj = -7°C	2.72	2.13
Cdh	0.99	0.99
Pdh Tj = +2°C	3.72 kW	3.46 kW
COP Tj = +2°C	4.68	3.36
Cdh	0.96	0.97
Pdh Tj = +7°C	3.18 kW	3.00 kW
COP Tj = +7°C	6.38	4.60
Cdh	0.95	0.96
Pdh Tj = 12°C	3.74 kW	3.59 kW

COP Tj = 12°C	7.88	6.18
Cdh	0.94	0.95
Pdh Tj = Tbiv	6.27 kW	5.42 kW
COP Tj = Tbiv	2.64	2.13
Pdh Tj = TOL	6.27 kW	4.88 kW
COP Tj = TOL	2.64	1.88
Cdh	0.99	0.99
WTOL	70 °C	70 °C
Poff	8 W	8 W
PTO	29 W	29 W
PSB	29 W	29 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	2937 kWh	3718 kWh

Warmer Climate

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level outdoor	53 dB(A)	55 dB(A)

EN 14825

	Low temperature	**Medium temperature**
η_s	231 %	160 %
Prated	6.77 kW	6.60 kW
SCOP	5.85	4.07
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	6.77 kW	6.60 kW
COP Tj = +2°C	3.23	2.23
Cdh	0.99	0.99
Pdh Tj = +7°C	4.14 kW	4.52 kW
COP Tj = +7°C	5.52	3.47
Cdh	0.96	0.98
Pdh Tj = 12°C	3.75 kW	3.56 kW
COP Tj = 12°C	7.65	5.68
Cdh	0.95	0.96
Pdh Tj = Tbiv	6.77 kW	6.60 kW
COP Tj = Tbiv	3.23	2.23
Pdh Tj = TOL	6.77 kW	6.60 kW
COP Tj = TOL	3.23	2.23
Cdh	0.99	0.99
WTOL	70 °C	70 °C

Poff	8 W	8 W
PTO	29 W	29 W
PSB	29 W	29 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	1546 kWh	2164 kWh

Colder Climate

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level outdoor	53 dB(A)	55 dB(A)

EN 14825		
	Low temperature	**Medium temperature**
η_s	159 %	118 %
Prated	5.85 kW	5.39 kW
SCOP	4.05	3.02
Tbiv	-15 °C	-15 °C
TOL	-20 °C	-20 °C
Pdh Tj = -7°C	3.51 kW	3.69 kW

COP Tj = -7°C	3.31	2.53
Cdh	0.97	0.98
Pdh Tj = +2°C	2.73 kW	2.55 kW
COP Tj = +2°C	5.01	3.62
Cdh	0.95	0.96
Pdh Tj = +7°C	3.19 kW	3.08 kW
COP Tj = +7°C	6.82	5.05
Cdh	0.94	0.95
Pdh Tj = 12°C	3.78 kW	3.64 kW
COP Tj = 12°C	8.52	6.54
Cdh	0.94	0.95
Pdh Tj = Tbiv	4.77 kW	4.40 kW
COP Tj = Tbiv	2.60	1.90
Pdh Tj = TOL	4.94 kW	4.57 kW
COP Tj = TOL	2.08	1.53
Cdh	0.99	0.99
WTOL	70 °C	70 °C
Poff	8 W	8 W
PTO	29 W	29 W
PSB	29 W	29 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	3565 kWh	4398 kWh
Pdh Tj = -15°C (if TOL<-20°C)	4.77	4.40
COP Tj = -15°C (if TOL<-20°C)	2.60	1.90
Cdh	0.98	0.99

Model: VWL 65/6 A 230V

General Data	
Power supply	1x230V 50Hz

Heating

EN 14511-2		
	Low temperature	**Medium temperature**
Heat output	4.48 kW	4.94 kW
El input	0.94 kW	1.69 kW
COP	4.78	2.93
Indoor water flow rate	0.78 m³/h	0.54 m³/h

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 outdoor	53 dB(A)	55 dB(A)

EN 14825		
	Low temperature	**Medium temperature**
η_s	188 %	131 %
Prated	5.87 kW	4.40 kW
SCOP	4.77	3.36
Tbiv	-10 °C	-10 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	5.19 kW	3.89 kW
COP Tj = -7°C	3.10	2.19
Cdh	0.98	0.98
Pdh Tj = +2°C	3.01 kW	2.57 kW
COP Tj = +2°C	4.73	3.25
Cdh	0.96	0.96
Pdh Tj = +7°C	3.09 kW	2.95 kW
COP Tj = +7°C	6.17	4.48
Cdh	0.95	0.96
Pdh Tj = 12°C	3.66 kW	3.56 kW

COP Tj = 12°C	7.60	6.06
Cdh	0.94	0.95
Pdh Tj = Tbiv	5.37 kW	4.84 kW
COP Tj = Tbiv	2.78	1.89
Pdh Tj = TOL	5.37 kW	4.84 kW
COP Tj = TOL	2.78	1.89
Cdh	0.99	0.99
WTOL	55 °C	55 °C
Poff	8 W	8 W
PTO	29 W	29 W
PSB	29 W	29 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	2544 kWh	2831 kWh

Warmer Climate

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level outdoor	53 dB(A)	55 dB(A)

EN 14825

	Low temperature	**Medium temperature**
η_s	206 %	164 %
Prated	6.73 kW	6.10 kW
SCOP	5.22	4.16
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	5.71 kW	6.10 kW
COP Tj = +2°C	3.29	2.29
Cdh	0.98	0.99
Pdh Tj = +7°C	3.73 kW	4.28 kW
COP Tj = +7°C	5.59	3.58
Cdh	0.96	0.98
Pdh Tj = 12°C	3.64 kW	3.51 kW
COP Tj = 12°C	7.36	5.59
Cdh	0.95	0.96
Pdh Tj = Tbiv	6.73 kW	6.10 kW
COP Tj = Tbiv	3.23	2.29
Pdh Tj = TOL	6.73 kW	6.10 kW
COP Tj = TOL	3.23	2.29
Cdh	0.99	0.99
WTOL	55 °C	55 °C

Poff	8 W	8 W
PTO	29 W	29 W
PSB	29 W	29 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	electricity	electricity
Supplementary Heater: PSUP	0.60 kW	0.00 kW
Annual energy consumption Qhe	1724 kWh	1956 kWh

Colder Climate

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level outdoor	53 dB(A)	55 dB(A)

EN 14825		
	Low temperature	**Medium temperature**
η_s	162 %	117 %
Prated	4.25 kW	3.92 kW
SCOP	4.11	3.00
Tbiv	-20 °C	-20 °C
TOL	-20 °C	-20 °C
Pdh Tj = -7°C	2.81 kW	2.28 kW

COP Tj = -7°C	3.51	2.43
Cdh	0.97	0.97
Pdh Tj = +2°C	2.71 kW	2.53 kW
COP Tj = +2°C	5.06	3.72
Cdh	0.95	0.96
Pdh Tj = +7°C	3.10 kW	3.01 kW
COP Tj = +7°C	6.39	4.89
Cdh	0.95	0.96
Pdh Tj = 12°C	3.69 kW	3.58 kW
COP Tj = 12°C	7.84	6.44
Cdh	0.94	0.95
Pdh Tj = Tbiv	4.03 kW	3.71 kW
COP Tj = Tbiv	2.20	1.59
Pdh Tj = TOL	4.03 kW	3.71 kW
COP Tj = TOL	2.20	1.59
Cdh	0.98	0.99
WTOL	55 °C	55 °C
Poff	8 W	8 W
PTO	29 W	29 W
PSB	29 W	29 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	2549 kWh	3219 kWh

Model: VWL 65/6 A 230V S2

General Data	
Power supply	1x230V 50Hz

Heating

EN 14511-2		
	Low temperature	**Medium temperature**
Heat output	4.48 kW	4.94 kW
El input	0.94 kW	1.69 kW
COP	4.78	2.93
Indoor water flow rate	0.78 m³/h	0.54 m³/h

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 outdoor	53 dB(A)	55 dB(A)

EN 14825		
	Low temperature	**Medium temperature**
η_s	185 %	130 %
Prated	5.87 kW	4.40 kW
SCOP	4.71	3.31
Tbiv	-10 °C	-10 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	5.19 kW	3.89 kW
COP Tj = -7°C	3.10	2.19
Cdh	0.98	0.98
Pdh Tj = +2°C	3.01 kW	2.57 kW
COP Tj = +2°C	4.73	3.25
Cdh	0.96	0.96
Pdh Tj = +7°C	3.09 kW	2.95 kW
COP Tj = +7°C	6.17	4.48
Cdh	0.95	0.96
Pdh Tj = 12°C	3.66 kW	3.56 kW

COP Tj = 12°C	7.60	6.06
Cdh	0.94	0.95
Pdh Tj = Tbiv	5.37 kW	4.84 kW
COP Tj = Tbiv	2.78	1.89
Pdh Tj = TOL	5.37 kW	4.84 kW
COP Tj = TOL	2.78	1.89
Cdh	0.99	0.99
WTOL	55 °C	55 °C
Poff	8 W	8 W
PTO	29 W	29 W
PSB	29 W	29 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	2574 kWh	2742 kWh

Warmer Climate

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level outdoor	53 dB(A)	55 dB(A)

EN 14825

	Low temperature	**Medium temperature**
η_s	201 %	161 %
Prated	6.73 kW	6.10 kW
SCOP	5.11	4.09
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	5.71 kW	6.10 kW
COP Tj = +2°C	3.29	2.29
Cdh	0.98	0.99
Pdh Tj = +7°C	3.73 kW	4.28 kW
COP Tj = +7°C	5.59	3.58
Cdh	0.96	0.98
Pdh Tj = 12°C	3.64 kW	3.51 kW
COP Tj = 12°C	7.36	5.59
Cdh	0.95	0.96
Pdh Tj = Tbiv	6.73 kW	6.10 kW
COP Tj = Tbiv	3.23	2.29
Pdh Tj = TOL	6.73 kW	6.10 kW
COP Tj = TOL	3.23	2.29
Cdh	0.99	0.99
WTOL	55 °C	55 °C

Poff	8 W	8 W
PTO	29 W	29 W
PSB	29 W	29 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	electricity	electricity
Supplementary Heater: PSUP	0.60 kW	0.00 kW
Annual energy consumption Qhe	1760 kWh	1993 kWh

Colder Climate

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level outdoor	53 dB(A)	55 dB(A)

EN 14825		
	Low temperature	**Medium temperature**
η_s	160 %	116 %
Prated	4.25 kW	3.92 kW
SCOP	4.08	2.98
Tbiv	-20 °C	-20 °C
TOL	-20 °C	-20 °C
Pdh Tj = -7°C	2.81 kW	2.28 kW

COP Tj = -7°C	3.51	2.43
Cdh	0.97	0.97
Pdh Tj = +2°C	2.71 kW	2.53 kW
COP Tj = +2°C	5.06	3.72
Cdh	0.95	0.96
Pdh Tj = +7°C	3.10 kW	3.01 kW
COP Tj = +7°C	6.39	4.89
Cdh	0.95	0.96
Pdh Tj = 12°C	3.69 kW	3.58 kW
COP Tj = 12°C	7.84	6.44
Cdh	0.94	0.95
Pdh Tj = Tbiv	4.03 kW	3.71 kW
COP Tj = Tbiv	2.20	1.59
Pdh Tj = TOL	4.03 kW	3.71 kW
COP Tj = TOL	2.20	1.59
Cdh	0.98	0.99
WTOL	55 °C	55 °C
Poff	8 W	8 W
PTO	29 W	29 W
PSB	29 W	29 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	2567 kWh	3237 kWh