

## Subtype VWL 75/6 A 230V

Certificate Holder	Vaillant Deutschland GmbH & Co KG
Address	Berghauser Straße 40
ZIP	42859
City	Remscheid
Country	DE
Certification Body	VDE Prüf- und Zertifizierungsinstitut GmbH
Subtype title	VWL 75/6 A 230V
Registration number	40050985
Heat Pump Type	Outdoor Air/Water
Refrigerant	R290
Mass of Refrigerant	0.9 kg
Certification Date	11.11.2022
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 85/6 A 230V S3

Model name	VWL 85/6 A 230V S3
Application	Heating (medium temp)
Units	Outdoor
Climate zone (for heating)	Colder, Warmer, Warmer Climate, Colder Climate
Reversibility	Yes
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

## General data

Power supply	1x230V 50Hz
Off-peak product	n/a

## Outdoor Air/Water

### EN 14511-4 | Heating

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

### EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level outdoor	58 dB(A)	57 dB(A)

### EN 14825 | Average Climate

	Low temperature	Medium temperature
$\eta_s$	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 Tj = -7 °C	0.990	0.990
Pdh Tj = +2°C	3.83 kW	3.49 kW
COP Tj = +2°C	4.73	3.32
Cdh Tj = +2 °C	0.970	0.970
Pdh Tj = +7°C	3.21 kW	3.06 kW
COP Tj = +7°C	6.33	4.67
Cdh Tj = +7 °C	0.950	0.960
Pdh Tj = 12°C	3.72 kW	3.62 kW
COP Tj = 12°C	7.79	6.23
Cdh Tj = +12 °C	0.940	0.950
Pdh Tj = Tbiv	6.38 kW	5.66 kW
COP Tj = Tbiv	2.93	2.17

Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	6.00 kW	5.09 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.66	1.92
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh		
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	1.21 kW	1.30 kW
Annual energy consumption Qhe	3139 kWh	3837 kWh

#### EN 12102-1 | Colder Climate

	Low temperature	Medium temperature
Sound power level outdoor	58 dB(A)	57 dB(A)

#### EN 14825 | Colder Climate

	Low temperature	Medium temperature
$\eta_s$	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 Tj = -7 °C	0.970	0.980
Pdh Tj = +2°C	2.80 kW	2.59 kW
COP Tj = +2°C	5.04	3.70
Cdh Tj = +2 °C	0.950	0.960
Pdh Tj = +7°C	3.25 kW	3.12 kW
COP Tj = +7°C	6.63	5.08
Cdh Tj = +7 °C	0.950	0.960
Pdh Tj = 12°C	3.73 kW	3.67 kW
COP Tj = 12°C	7.71	6.80
Cdh Tj = +12 °C	0.940	0.950
Pdh Tj = Tbiv	4.92 kW	4.56 kW
COP Tj = Tbiv	2.57	1.92
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	3.66 kW	3.29 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.19	1.56
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh		

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	6.03 kW	5.59 kW
Annual energy consumption Q <sub>he</sub>	3665 kWh	4506 kWh
P <sub>dh</sub> T <sub>j</sub> = -15°C (if TOL	4.92	4.56
COP T <sub>j</sub> = -15°C (if TOL	2.57	1.92
C <sub>dh</sub> T <sub>j</sub> = -15 °C	0.980	0.990

#### EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level outdoor	58 dB(A)	57 dB(A)

#### EN 14825 | Warmer Climate

	Low temperature	Medium temperature
η <sub>s</sub>	228 %	162 %
Prated	6.87 kW	7.06 kW
SCOP	5.78	4.13
T <sub>biv</sub>	2 °C	2 °C
TOL	2 °C	2 °C
P <sub>dh</sub> T <sub>j</sub> = +2°C	6.87 kW	7.06 kW
COP T <sub>j</sub> = +2°C	3.18	2.31
C <sub>dh</sub> T <sub>j</sub> = +2 °C	0.99	0.99
P <sub>dh</sub> T <sub>j</sub> = +7°C	4.38 kW	4.71 kW
COP T <sub>j</sub> = +7°C	5.29	3.44
C <sub>dh</sub> T <sub>j</sub> = +7 °C	0.97	0.98
P <sub>dh</sub> T <sub>j</sub> = 12°C	3.68 kW	3.56 kW
COP T <sub>j</sub> = 12°C	7.37	5.62
C <sub>dh</sub> T <sub>j</sub> = +12 °C	0.95	0.96
P <sub>dh</sub> T <sub>j</sub> = T <sub>biv</sub>	6.87 kW	7.06 kW
COP T <sub>j</sub> = T <sub>biv</sub>	3.18	2.31
P <sub>dh</sub> T <sub>j</sub> = TOL or P <sub>dh</sub> T <sub>j</sub> = T <sub>designh</sub> if TOL < T <sub>designh</sub>	6.87 kW	7.06 kW
COP T <sub>j</sub> = TOL or COP T <sub>j</sub> = T <sub>designh</sub> if TOL < T <sub>designh</sub>	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  $Q_{he}$ 

1586 kWh

2284 kWh

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## Model VWL 65/6 A 230V S3

Model name	VWL 65/6 A 230V S3
Application	Heating (medium temp)
Units	Outdoor
Climate zone (for heating)	Colder, Warmer, Warmer Climate, Colder Climate
Reversibility	Yes
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

## General data

Power supply	1x230V 50Hz
Off-peak product	n/a

## Outdoor Air/Water

### EN 14511-4 | Heating

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

### EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level outdoor	50 dB(A)	57 dB(A)

### EN 14825 | Average Climate

	Low temperature	Medium temperature
$\eta_s$	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 Tj = -7 °C	0.990	0.990
Pdh Tj = +2°C	3.67 kW	3.63 kW
COP Tj = +2°C	4.62	3.39
Cdh Tj = +2 °C	0.970	0.970
Pdh Tj = +7°C	3.12 kW	3.01 kW
COP Tj = +7°C	6.36	4.67
Cdh Tj = +7 °C	0.950	0.960
Pdh Tj = 12°C	3.69 kW	3.57 kW
COP Tj = 12°C	7.82	6.19
Cdh Tj = +12 °C	0.940	0.950
Pdh Tj = Tbiv	5.96 kW	5.54 kW
COP Tj = Tbiv	3.01	2.14

Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	5.52 kW	5.05 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.77	1.90
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh		
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	1.21 kW	1.21 kW
Annual energy consumption Qhe	2951 kWh	3731 kWh

#### EN 12102-1 | Colder Climate

	Low temperature	Medium temperature
Sound power level outdoor	50 dB(A)	57 dB(A)

#### EN 14825 | Colder Climate

	Low temperature	Medium temperature
$\eta_s$	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 Tj = -7 °C	0.970	0.980
Pdh Tj = +2°C	2.75 kW	2.58 kW
COP Tj = +2°C	5.17	3.80
Cdh Tj = +2 °C	0.950	0.960
Pdh Tj = +7°C	3.16 kW	3.07 kW
COP Tj = +7°C	6.64	5.07
Cdh Tj = +7 °C	0.940	0.960
Pdh Tj = 12°C	3.69 kW	3.60 kW
COP Tj = 12°C	7.77	6.57
Cdh Tj = +12 °C	0.940	0.950
Pdh Tj = Tbiv	4.87 kW	4.50 kW
COP Tj = Tbiv	2.57	1.91
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	4.10 kW	3.76 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.23	1.58
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh		

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	5.97 kW	5.51 kW
Annual energy consumption Q <sub>he</sub>	3560 kWh	4385 kWh
P <sub>dh</sub> T <sub>j</sub> = -15°C (if TOL		
COP T <sub>j</sub> = -15°C (if TOL		
C <sub>dh</sub> T <sub>j</sub> = -15 °C		

#### EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level outdoor	50 dB(A)	57 dB(A)

#### EN 14825 | Warmer Climate

	Low temperature	Medium temperature
η <sub>s</sub>	229 %	162 %
Prated	5.31 kW	5.98 kW
SCOP	5.81	4.12
T <sub>biv</sub>	2 °C	2 °C
TOL	2 °C	2 °C
P <sub>dh</sub> T <sub>j</sub> = +2°C	5.31 kW	5.98 kW
COP T <sub>j</sub> = +2°C	3.46	2.33
C <sub>dh</sub> T <sub>j</sub> = +2 °C	0.98	0.99
P <sub>dh</sub> T <sub>j</sub> = +7°C	4.12 kW	3.72 kW
COP T <sub>j</sub> = +7°C	5.49	3.50
C <sub>dh</sub> T <sub>j</sub> = +7 °C	0.96	0.97
P <sub>dh</sub> T <sub>j</sub> = 12°C	3.67 kW	3.52 kW
COP T <sub>j</sub> = 12°C	7.40	5.58
C <sub>dh</sub> T <sub>j</sub> = +12 °C	0.95	0.96
P <sub>dh</sub> T <sub>j</sub> = T <sub>biv</sub>	5.31 kW	5.98 kW
COP T <sub>j</sub> = T <sub>biv</sub>	3.46	2.33
P <sub>dh</sub> T <sub>j</sub> = TOL or P <sub>dh</sub> T <sub>j</sub> = T <sub>designh</sub> if TOL < T <sub>designh</sub>	5.31 kW	5.98 kW
COP T <sub>j</sub> = TOL or COP T <sub>j</sub> = T <sub>designh</sub> if TOL < T <sub>designh</sub>	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	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW



Annual energy consumption  $Q_{he}$ 

1222 kWh

1938 kWh

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## Model VWL 75/6 A 230V

Model name	VWL 75/6 A 230V
Application	Heating (medium temp)
Units	Outdoor
Climate zone (for heating)	Colder, Warmer, Warmer Climate, Colder Climate
Reversibility	Yes
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

## General data

Power supply	1x230V 50Hz
Off-peak product	n/a

## Outdoor Air/Water

### EN 14511-4 | Heating

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

### EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level outdoor	53 dB(A)	55 dB(A)

### EN 14825 | Average Climate

	Low temperature	Medium temperature
$\eta_s$	185 %	134 %
Prated	6.60 kW	6.13 kW
SCOP	4.69	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 Tj = -7 °C	0.990	0.990
Pdh Tj = +2°C	3.72 kW	3.46 kW
COP Tj = +2°C	4.68	3.36
Cdh Tj = +2 °C	0.960	0.970
Pdh Tj = +7°C	3.18 kW	3.00 kW
COP Tj = +7°C	6.38	4.60
Cdh Tj = +7 °C	0.950	0.960
Pdh Tj = 12°C	3.74 kW	3.59 kW
COP Tj = 12°C	7.88	6.18
Cdh Tj = +12 °C	0.940	0.950
Pdh Tj = Tbiv	6.27 kW	5.42 kW
COP Tj = Tbiv	2.64	2.13

Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	6.27 kW	4.88 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.64	1.88
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.990	0.990
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	1.25 kW
Annual energy consumption Qhe	2907 kWh	3688 kWh

#### EN 12102-1 | Colder Climate

	Low temperature	Medium temperature
Sound power level outdoor	53 dB(A)	55 dB(A)

#### EN 14825 | Colder Climate

	Low temperature	Medium temperature
ηs	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 Tj = -7 °C	0.970	0.980
Pdh Tj = +2°C	2.73 kW	2.55 kW
COP Tj = +2°C	5.01	3.62
Cdh Tj = +2 °C	0.950	0.960
Pdh Tj = +7°C	3.19 kW	3.08 kW
COP Tj = +7°C	6.82	5.05
Cdh Tj = +7 °C	0.940	0.950
Pdh Tj = 12°C	3.78 kW	3.64 kW
COP Tj = 12°C	8.52	6.54
Cdh Tj = +12 °C	0.940	0.950
Pdh Tj = Tbiv	4.77 kW	4.40 kW
COP Tj = Tbiv	2.60	1.90
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	4.94 kW	4.57 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.08	1.53
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.990	0.990

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	5.85 kW	5.39 kW
Annual energy consumption Q <sub>he</sub>	3546 kWh	4380 kWh
P <sub>dh</sub> T <sub>j</sub> = -15°C (if TOL	4.77	4.40
COP T <sub>j</sub> = -15°C (if TOL	2.60	1.90
C <sub>dh</sub> T <sub>j</sub> = -15 °C	0.980	0.990

#### EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level outdoor	53 dB(A)	55 dB(A)

#### EN 14825 | Warmer Climate

	Low temperature	Medium temperature
η <sub>s</sub>	237 %	163 %
Prated	6.77 kW	6.60 kW
SCOP	5.99	4.14
T <sub>biv</sub>	2 °C	2 °C
TOL	2 °C	2 °C
P <sub>dh</sub> T <sub>j</sub> = +2°C	6.77 kW	6.60 kW
COP T <sub>j</sub> = +2°C	3.23	2.23
C <sub>dh</sub> T <sub>j</sub> = +2 °C	0.99	0.99
P <sub>dh</sub> T <sub>j</sub> = +7°C	4.14 kW	4.52 kW
COP T <sub>j</sub> = +7°C	5.52	3.47
C <sub>dh</sub> T <sub>j</sub> = +7 °C	0.96	0.98
P <sub>dh</sub> T <sub>j</sub> = 12°C	3.75 kW	3.56 kW
COP T <sub>j</sub> = 12°C	7.65	5.68
C <sub>dh</sub> T <sub>j</sub> = +12 °C	0.95	0.96
P <sub>dh</sub> T <sub>j</sub> = T <sub>biv</sub>	6.77 kW	6.60 kW
COP T <sub>j</sub> = T <sub>biv</sub>	3.23	2.23
P <sub>dh</sub> T <sub>j</sub> = TOL or P <sub>dh</sub> T <sub>j</sub> = T <sub>designh</sub> if TOL < T <sub>designh</sub>	6.77 kW	6.60 kW
COP T <sub>j</sub> = TOL or COP T <sub>j</sub> = T <sub>designh</sub> if TOL < T <sub>designh</sub>	3.23	2.23
C <sub>dh</sub> T <sub>j</sub> = TOL or P <sub>dh</sub> T <sub>j</sub> = T <sub>designh</sub> if TOL < T <sub>designh</sub>	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 Q <sub>he</sub>	1510 kWh	2128 kWh

## Model VWL 75/6 A 230V S2

Model name	VWL 75/6 A 230V S2
Application	Heating (medium temp)
Units	Outdoor
Climate zone (for heating)	Colder, Warmer, Warmer Climate, Colder Climate
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

## General data

Power supply	1x230V 50Hz
Off-peak product	n/a

## Outdoor Air/Water

### EN 14511-4 | Heating

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

### EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level outdoor	53 dB(A)	55 dB(A)

### EN 14825 | Average Climate

	Low temperature	Medium temperature
$\eta_s$	183 %	133 %
Prated	6.60 kW	6.13 kW
SCOP	4.69	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 Tj = -7 °C	0.990	0.990
Pdh Tj = +2°C	3.72 kW	3.46 kW
COP Tj = +2°C	4.68	3.36
Cdh Tj = +2 °C	0.960	0.970
Pdh Tj = +7°C	3.18 kW	3.00 kW
COP Tj = +7°C	6.38	4.60
Cdh Tj = +7 °C	0.950	0.960
Pdh Tj = 12°C	3.74 kW	3.59 kW
COP Tj = 12°C	7.88	6.18
Cdh Tj = +12 °C	0.940	0.950
Pdh Tj = Tbiv	6.27 kW	5.42 kW
COP Tj = Tbiv	2.64	2.13

Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	6.27 kW	4.88 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.64	1.88
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.990	0.990
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	1.25 kW
Annual energy consumption Qhe	2937 kWh	3718 kWh

#### EN 12102-1 | Colder Climate

	Low temperature	Medium temperature
Sound power level outdoor	53 dB(A)	55 dB(A)

#### EN 14825 | Colder Climate

	Low temperature	Medium temperature
$\eta_s$	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 Tj = -7 °C	0.970	0.980
Pdh Tj = +2°C	2.73 kW	2.55 kW
COP Tj = +2°C	5.01	3.62
Cdh Tj = +2 °C	0.950	0.960
Pdh Tj = +7°C	3.19 kW	3.08 kW
COP Tj = +7°C	6.82	5.05
Cdh Tj = +7 °C	0.940	0.950
Pdh Tj = 12°C	3.78 kW	3.64 kW
COP Tj = 12°C	8.52	6.54
Cdh Tj = +12 °C	0.940	0.950
Pdh Tj = Tbiv	4.77 kW	4.40 kW
COP Tj = Tbiv	2.60	1.90
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	4.94 kW	4.57 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.08	1.53
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.990	0.990

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	5.85 kW	5.39 kW
Annual energy consumption Q <sub>he</sub>	3565 kWh	4398 kWh
P <sub>dh</sub> T <sub>j</sub> = -15°C (if TOL	4.77	4.40
COP T <sub>j</sub> = -15°C (if TOL	2.60	1.90
C <sub>dh</sub> T <sub>j</sub> = -15 °C	0.980	0.990

#### EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level outdoor	53 dB(A)	55 dB(A)

#### EN 14825 | Warmer Climate

	Low temperature	Medium temperature
η <sub>s</sub>	231 %	160 %
Prated	6.77 kW	6.60 kW
SCOP	5.85	4.07
T <sub>biv</sub>	2 °C	2 °C
TOL	2 °C	2 °C
P <sub>dh</sub> T <sub>j</sub> = +2°C	6.77 kW	6.60 kW
COP T <sub>j</sub> = +2°C	3.23	2.23
C <sub>dh</sub> T <sub>j</sub> = +2 °C	0.99	0.99
P <sub>dh</sub> T <sub>j</sub> = +7°C	4.14 kW	4.52 kW
COP T <sub>j</sub> = +7°C	5.52	3.47
C <sub>dh</sub> T <sub>j</sub> = +7 °C	0.96	0.98
P <sub>dh</sub> T <sub>j</sub> = 12°C	3.75 kW	3.56 kW
COP T <sub>j</sub> = 12°C	7.65	5.68
C <sub>dh</sub> T <sub>j</sub> = +12 °C	0.95	0.96
P <sub>dh</sub> T <sub>j</sub> = T <sub>biv</sub>	6.77 kW	6.60 kW
COP T <sub>j</sub> = T <sub>biv</sub>	3.23	2.23
P <sub>dh</sub> T <sub>j</sub> = TOL or P <sub>dh</sub> T <sub>j</sub> = T <sub>designh</sub> if TOL < T <sub>designh</sub>	6.77 kW	6.60 kW
COP T <sub>j</sub> = TOL or COP T <sub>j</sub> = T <sub>designh</sub> if TOL < T <sub>designh</sub>	3.23	2.23
C <sub>dh</sub> T <sub>j</sub> = TOL or P <sub>dh</sub> T <sub>j</sub> = T <sub>designh</sub> if TOL < T <sub>designh</sub>	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 Q <sub>he</sub>	1546 kWh	2164 kWh

## Model VWL 65/6 A 230V

Model name	VWL 65/6 A 230V
Application	Heating (medium temp)
Units	Outdoor
Climate zone (for heating)	Colder, Warmer, Warmer Climate, Colder Climate
Reversibility	Yes
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

## General data

Power supply	1x230V 50Hz
Off-peak product	n/a

## Outdoor Air/Water

### EN 14511-4 | Heating

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

### EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level outdoor	53 dB(A)	55 dB(A)

### EN 14825 | Average Climate

	Low temperature	Medium temperature
$\eta_s$	188 %	131 %
Prated	5.75 kW	4.49 kW
SCOP	4.76	3.35
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 Tj = -7 °C	0.980	0.980
Pdh Tj = +2°C	3.01 kW	2.57 kW
COP Tj = +2°C	4.73	3.25
Cdh Tj = +2 °C	0.960	0.960
Pdh Tj = +7°C	3.09 kW	2.95 kW
COP Tj = +7°C	6.17	4.48
Cdh Tj = +7 °C	0.950	0.960
Pdh Tj = 12°C	3.66 kW	3.56 kW
COP Tj = 12°C	7.60	6.06
Cdh Tj = +12 °C	0.940	0.950
Pdh Tj = Tbiv	5.37 kW	4.84 kW
COP Tj = Tbiv	2.78	1.89

Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	5.37 kW	4.84 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.78	1.89
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.990	0.990
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	2494 kWh	2766 kWh

#### EN 12102-1 | Colder Climate

	Low temperature	Medium temperature
Sound power level outdoor	53 dB(A)	55 dB(A)

#### EN 14825 | Colder Climate

	Low temperature	Medium temperature
$\eta_s$	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 Tj = -7 °C	0.970	0.970
Pdh Tj = +2°C	2.71 kW	2.53 kW
COP Tj = +2°C	5.06	3.72
Cdh Tj = +2 °C	0.950	0.960
Pdh Tj = +7°C	3.10 kW	3.01 kW
COP Tj = +7°C	6.39	4.89
Cdh Tj = +7 °C	0.950	0.960
Pdh Tj = 12°C	3.69 kW	3.58 kW
COP Tj = 12°C	7.84	6.44
Cdh Tj = +12 °C	0.940	0.950
Pdh Tj = Tbiv	4.03 kW	3.71 kW
COP Tj = Tbiv	2.20	1.59
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	4.03 kW	3.71 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.20	1.59
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.980	0.990

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	4.25 kW	3.92 kW
Annual energy consumption Q <sub>he</sub>	2549 kWh	3219 kWh
P <sub>dh</sub> T <sub>j</sub> = -15°C (if TOL		
COP T <sub>j</sub> = -15°C (if TOL		
C <sub>dh</sub> T <sub>j</sub> = -15 °C		

#### EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level outdoor	53 dB(A)	55 dB(A)

#### EN 14825 | Warmer Climate

	Low temperature	Medium temperature
η <sub>s</sub>	232 %	164 %
Prated	5.71 kW	6.10 kW
SCOP	5.87	4.16
T <sub>biv</sub>	2 °C	2 °C
TOL	2 °C	2 °C
P <sub>dh</sub> T <sub>j</sub> = +2°C	5.71 kW	6.10 kW
COP T <sub>j</sub> = +2°C	3.29	2.29
C <sub>dh</sub> T <sub>j</sub> = +2 °C	0.980	0.990
P <sub>dh</sub> T <sub>j</sub> = +7°C	3.73 kW	4.28 kW
COP T <sub>j</sub> = +7°C	5.59	3.58
C <sub>dh</sub> T <sub>j</sub> = +7 °C	0.960	0.980
P <sub>dh</sub> T <sub>j</sub> = 12°C	3.64 kW	3.51 kW
COP T <sub>j</sub> = 12°C	7.36	5.59
C <sub>dh</sub> T <sub>j</sub> = +12 °C	0.950	0.960
P <sub>dh</sub> T <sub>j</sub> = T <sub>biv</sub>	5.71 kW	6.10 kW
COP T <sub>j</sub> = T <sub>biv</sub>	3.29	2.29
P <sub>dh</sub> T <sub>j</sub> = TOL or P <sub>dh</sub> T <sub>j</sub> = T <sub>designh</sub> if TOL < T <sub>designh</sub>	5.71 kW	6.10 kW
COP T <sub>j</sub> = TOL or COP T <sub>j</sub> = T <sub>designh</sub> if TOL < T <sub>designh</sub>	3.29	2.29
C <sub>dh</sub> T <sub>j</sub> = TOL or P <sub>dh</sub> T <sub>j</sub> = T <sub>designh</sub> if TOL < T <sub>designh</sub>	0.990	0.990
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 Q <sub>he</sub>	1299 kWh	1956 kWh

## Model VWL 65/6 A 230V S2

Model name	VWL 65/6 A 230V S2
Application	Heating (medium temp)
Units	Outdoor
Climate zone (for heating)	Colder, Warmer, Warmer Climate, Colder Climate
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

## General data

Power supply	1x230V 50Hz
Off-peak product	n/a

## Outdoor Air/Water

### EN 14511-4 | Heating

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

### EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level outdoor	53 dB(A)	55 dB(A)

### EN 14825 | Average Climate

	Low temperature	Medium temperature
$\eta_s$	185 %	130 %
Prated	5.75 kW	4.49 kW
SCOP	4.71	3.32
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 Tj = -7 °C	0.980	0.980
Pdh Tj = +2°C	3.01 kW	2.57 kW
COP Tj = +2°C	4.73	3.25
Cdh Tj = +2 °C	0.960	0.960
Pdh Tj = +7°C	3.09 kW	2.95 kW
COP Tj = +7°C	6.17	4.48
Cdh Tj = +7 °C	0.950	0.960
Pdh Tj = 12°C	3.66 kW	3.56 kW
COP Tj = 12°C	7.60	6.06
Cdh Tj = +12 °C	0.940	0.950
Pdh Tj = Tbiv	5.37 kW	4.84 kW
COP Tj = Tbiv	2.78	1.89

Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	5.37 kW	4.84 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.78	1.89
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.990	0.990
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	2524 kWh	2796 kWh

#### EN 12102-1 | Colder Climate

	Low temperature	Medium temperature
Sound power level outdoor	53 dB(A)	55 dB(A)

#### EN 14825 | Colder Climate

	Low temperature	Medium temperature
$\eta_s$	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 Tj = -7 °C	0.970	0.970
Pdh Tj = +2°C	2.71 kW	2.53 kW
COP Tj = +2°C	5.06	3.72
Cdh Tj = +2 °C	0.950	0.960
Pdh Tj = +7°C	3.10 kW	3.01 kW
COP Tj = +7°C	6.39	4.89
Cdh Tj = +7 °C	0.950	0.960
Pdh Tj = 12°C	3.69 kW	3.58 kW
COP Tj = 12°C	7.84	6.44
Cdh Tj = +12 °C	0.940	0.950
Pdh Tj = Tbiv	4.03 kW	3.71 kW
COP Tj = Tbiv	2.20	1.59
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	4.03 kW	3.71 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.20	1.59
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.980	0.990

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	4.25 kW	3.92 kW
Annual energy consumption Q <sub>he</sub>	2567 kWh	3237 kWh
P <sub>dh</sub> T <sub>j</sub> = -15°C (if TOL		
COP T <sub>j</sub> = -15°C (if TOL		
C <sub>dh</sub> T <sub>j</sub> = -15 °C		

#### EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level outdoor	53 dB(A)	55 dB(A)

#### EN 14825 | Warmer Climate

	Low temperature	Medium temperature
η <sub>s</sub>	226 %	161 %
Prated	5.71 kW	6.10 kW
SCOP	5.71	4.09
T <sub>biv</sub>	2 °C	2 °C
TOL	2 °C	2 °C
P <sub>dh</sub> T <sub>j</sub> = +2°C	5.71 kW	6.10 kW
COP T <sub>j</sub> = +2°C	3.29	2.29
C <sub>dh</sub> T <sub>j</sub> = +2 °C	0.980	0.990
P <sub>dh</sub> T <sub>j</sub> = +7°C	3.73 kW	4.28 kW
COP T <sub>j</sub> = +7°C	5.59	3.58
C <sub>dh</sub> T <sub>j</sub> = +7 °C	0.960	0.980
P <sub>dh</sub> T <sub>j</sub> = 12°C	3.64 kW	3.51 kW
COP T <sub>j</sub> = 12°C	7.36	5.59
C <sub>dh</sub> T <sub>j</sub> = +12 °C	0.950	0.960
P <sub>dh</sub> T <sub>j</sub> = T <sub>biv</sub>	5.71 kW	6.10 kW
COP T <sub>j</sub> = T <sub>biv</sub>	3.29	2.29
P <sub>dh</sub> T <sub>j</sub> = TOL or P <sub>dh</sub> T <sub>j</sub> = T <sub>designh</sub> if TOL < T <sub>designh</sub>	5.71 kW	6.10 kW
COP T <sub>j</sub> = TOL or COP T <sub>j</sub> = T <sub>designh</sub> if TOL < T <sub>designh</sub>	3.29	2.29
C <sub>dh</sub> T <sub>j</sub> = TOL or P <sub>dh</sub> T <sub>j</sub> = T <sub>designh</sub> if TOL < T <sub>designh</sub>	0.990	0.990
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 Q <sub>he</sub>	1335 kWh	1993 kWh