

Subtype VWL 85/7.2 AS 230V S3 / VWL 105/7.2 AS 230V S3

Certificate Holder	Vaillant GmbH
Address	Berghauser Str. 40
ZIP	42859
City	Remscheid
Country	DE
Certification Body	DIN CERTCO Gesellschaft für Konformitätsbewertung mbH
Subtype title	VWL 85/7.2 AS 230V S3 / VWL 105/7.2 AS 230V S3
Registration number	011-1W0554
Heat Pump Type	Outdoor Air/Water
Refrigerant	R32
Mass of Refrigerant	1.6 kg
Certification Date	26.09.2022
Testing basis	European KEYMARK Scheme for Heat Pumps Rev. 10 (as of 2022-06)

**Model VWL 85/7.2 AS 230V S3 + VWL 108/7.2 IS**

Model name	VWL 85/7.2 AS 230V S3 + VWL 108/7.2 IS
Application	Heating + DHW + low temp
Units	Indoor, Outdoor
Climate zone (for heating)	Colder, Warmer, Warmer Climate, Colder Climate
Heat Source	Outdoor Air
Reversibility	Yes
Cooling mode application (optional)	+7°C/12°C, +18°C/+23°C
Any additional heat sources	n/a

**General data**

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

**Outdoor Air/Water****EN 16147 | Average Climate**

Declared load profile	L
Efficiency ηDHW	94 %
COP	2.36
Heating up time	00:54 h:min
Standby power input	39.0 W
Reference hot water temperature	51.5 °C
Mixed water at 40°C	236 l

**EN 16147 | Colder Climate**

Declared load profile	L
Efficiency ηDHW	80 %
COP	2.00
Heating up time	00:57 h:min
Standby power input	40.9 W
Reference hot water temperature	51.45 °C
Mixed water at 40°C	235.28 l

**EN 16147 | Warmer Climate**

Declared load profile	L
Efficiency ηDHW	109 %
COP	2.72
Heating up time	00:51 h:min
Standby power input	34.9 W
Reference hot water temperature	51.68 °C
Mixed water at 40°C	236.73 l

**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 14511-2 | Heating**

	Low temperature	Medium temperature
Heat output	7.88 kW	6.71 kW
El input	1.70 kW	2.14 kW
COP	4.65	3.14

**EN 14511-2 | Cooling**

	+7°C/+12°C	+18°C/+23°C
El input	2.27 kW	1.78 kW
Cooling capacity	6.37	7.04
EER	2.81	3.96

**EN 12102-1 | Average Climate**

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	63 dB(A)	63 dB(A)

**EN 14825 | Average Climate**

	Low temperature	Medium temperature
$\eta_s$	175 %	131 %
Prated	7.46 kW	7.68 kW
SCOP	4.46	3.34
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	6.60 kW	6.80 kW
COP Tj = -7°C	2.84	2.16
Cdh Tj = -7 °C	1.00	1.00
Pdh Tj = +2°C	3.89 kW	4.12 kW
COP Tj = +2°C	4.46	3.26
Cdh Tj = +2 °C	1.00	1.00
Pdh Tj = +7°C	4.40 kW	4.31 kW
COP Tj = +7°C	5.72	4.29
Cdh Tj = +7 °C	0.97	0.98
Pdh Tj = 12°C	5.08 kW	5.16 kW
COP Tj = 12°C	7.39	5.81
Cdh Tj = +12 °C	0.97	0.98
Pdh Tj = Tbiv	6.60 kW	6.80 kW
COP Tj = Tbiv	2.84	2.16
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	5.75 kW	6.51 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.45	1.72

Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.00	1.00
WTOL	60 °C	60 °C
Poff	15 W	15 W
PTO	20 W	20 W
PSB	15 W	15 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.71 kW	1.18 kW
Annual energy consumption Qhe	3457 kWh	4755 kWh

**EN 12102-1 | Colder Climate**

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	63 dB(A)	63 dB(A)

**EN 14825 | Colder Climate**

	Low temperature	Medium temperature
ηs	145 %	109 %
Prated	7.74 kW	8.13 kW
SCOP	3.71	2.81
Tbiv	-15 °C	-15 °C
TOL	-20 °C	-15 °C
Pdh Tj = -7°C	4.97 kW	4.50 kW
COP Tj = -7°C	3.05	2.31
Cdh Tj = -7 °C	0.99	1.00
Pdh Tj = +2°C	3.38 kW	3.71 kW
COP Tj = +2°C	4.40	3.65
Cdh Tj = + 2 °C	0.97	0.98
Pdh Tj = +7°C	4.57 kW	4.37 kW
COP Tj = +7°C	6.37	4.73
Cdh Tj = + 7 °C	0.97	0.98
Pdh Tj = 12°C	5.06 kW	5.02 kW
COP Tj = 12°C	7.71	6.07
Cdh Tj = +12 °C	0.97	0.98
Pdh Tj = Tbiv	6.31 kW	6.63 kW
COP Tj = Tbiv	2.50	1.73
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	5.25 kW	6.63 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	1.94	1.73
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.00	1.00
WTOL	60 °C	60 °C
Poff	15 W	15 W
PTO	20 W	20 W

PSB	15 W	15 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	7.74 kW	8.13 kW
Annual energy consumption Qhe	5141 kWh	7129 kWh
Pdh Tj = -15°C (if TOL)	6.31	6.63
COP Tj = -15°C (if TOL)	2.50	1.73
Cdh Tj = -15 °C	1.00	1.00

**EN 12102-1 | Warmer Climate**

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	63 dB(A)	63 dB(A)

**EN 14825 | Warmer Climate**

	Low temperature	Medium temperature
ηs	225 %	156 %
Prated	8.03 kW	7.02 kW
SCOP	5.71	3.96
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	8.03 kW	7.02 kW
COP Tj = +2°C	3.35	2.16
Cdh Tj = +2 °C	1.00	1.00
Pdh Tj = +7°C	5.51 kW	4.73 kW
COP Tj = +7°C	5.21	3.40
Cdh Tj = +7 °C	0.98	0.99
Pdh Tj = 12°C	5.41 kW	5.27 kW
COP Tj = 12°C	7.05	5.22
Cdh Tj = +12 °C	0.97	0.98
Pdh Tj = Tbiv	8.03 kW	7.02 kW
COP Tj = Tbiv	3.35	2.16
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	8.03 kW	7.02 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.35	2.16
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.00	1.00
WTOL	60 °C	60 °C
Poff	15 W	15 W
PTO	20 W	20 W
PSB	15 W	15 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	1878 kWh	2367 kWh
EN 14825   Cooling		
Pdesignc	+7°C/+12°C	+18°C/+23°C
SEER	7.41 kW	7.04 kW
Pdc Tj = 35°C	4.04	6.00
EER Tj = 35°C	7.41 kW	7.04 kW
Cdc Tj = 35 °C	2.54	3.96
Pdc Tj = 30°C	0.994	1.000
EER Tj = 30°C	5.40 kW	5.15 kW
Cdc Tj = 30 °C	3.43	5.24
Pdc Tj = 25°C	0.988	1.000
EER Tj = 25°C	3.45	4.60 kW
Cdc Tj = 25 °C	4.35	6.81
Pdc Tj = 20°C	0.977	0.973
EER Tj = 20°C	4.00 kW	5.00 kW
Cdc Tj = 20 °C	6.05	8.80
Poff	0.972	0.968
PTO	15 W	18 W
PSB	18 W	15 W
PCK	15 W	0 W
Annual energy consumption Qce	0 W	704 kWh
	1100 kWh	

**Model VWL 85/7.2 AS 230V S3 + VWL 108/7.2 IS S5**

Model name	VWL 85/7.2 AS 230V S3 + VWL 108/7.2 IS S5
Application	Heating + DHW + low temp
Units	Indoor, Outdoor
Climate zone (for heating)	Colder, Warmer, Warmer Climate, Colder Climate
Reversibility	Yes
Cooling mode application (optional)	+7°C/12°C, +18°C/+23°C
Any additional heat sources	n/a

**General data**

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

**Outdoor Air/Water****EN 16147 | Average Climate**

Declared load profile	L
Efficiency ηDHW	94 %
COP	2.36
Heating up time	00:54 h:min
Standby power input	39.0 W
Reference hot water temperature	51.5 °C
Mixed water at 40°C	236 l

**EN 16147 | Colder Climate**

Declared load profile	L
Efficiency ηDHW	80 %
COP	2.00
Heating up time	00:57 h:min
Standby power input	40.9 W
Reference hot water temperature	51.45 °C
Mixed water at 40°C	235.28 l

**EN 16147 | Warmer Climate**

Declared load profile	L
Efficiency ηDHW	109 %
COP	2.72
Heating up time	00:51 h:min
Standby power input	34.9 W
Reference hot water temperature	51.68 °C
Mixed water at 40°C	236.73 l

**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 14511-2 | Heating**

	Low temperature	Medium temperature
Heat output	7.88 kW	6.71 kW
El input	1.70 kW	2.14 kW
COP	4.65	3.14

**EN 14511-2 | Cooling**

	+7°C/+12°C	+18°C/+23°C
El input	2.27 kW	1.78 kW
Cooling capacity	6.37	7.04
EER	2.81	3.96

**EN 12102-1 | Average Climate**

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	63 dB(A)	63 dB(A)

**EN 14825 | Average Climate**

	Low temperature	Medium temperature
$\eta_s$	175 %	131 %
P <sub>rated</sub>	7.46 kW	7.68 kW
SCOP	4.46	3.34
T <sub>biv</sub>	-7 °C	-7 °C
T <sub>OL</sub>	-10 °C	-10 °C
P <sub>dh</sub> T <sub>j</sub> = -7 °C	6.60 kW	6.80 kW
COP T <sub>j</sub> = -7 °C	2.84	2.16
Cd <sub>h</sub> T <sub>j</sub> = -7 °C	1.00	1.00
P <sub>dh</sub> T <sub>j</sub> = +2 °C	3.89 kW	4.12 kW
COP T <sub>j</sub> = +2 °C	4.46	3.26
Cd <sub>h</sub> T <sub>j</sub> = +2 °C	1.00	1.00
P <sub>dh</sub> T <sub>j</sub> = +7 °C	4.40 kW	4.31 kW
COP T <sub>j</sub> = +7 °C	5.72	4.29
Cd <sub>h</sub> T <sub>j</sub> = +7 °C	0.97	0.98
P <sub>dh</sub> T <sub>j</sub> = 12 °C	5.08 kW	5.16 kW
COP T <sub>j</sub> = 12 °C	7.39	5.81
Cd <sub>h</sub> T <sub>j</sub> = +12 °C	0.97	0.98
P <sub>dh</sub> T <sub>j</sub> = T <sub>biv</sub>	6.60 kW	6.80 kW
COP T <sub>j</sub> = T <sub>biv</sub>	2.84	2.16
P <sub>dh</sub> T <sub>j</sub> = T <sub>OL</sub> or P <sub>dh</sub> T <sub>j</sub> = T <sub>designh</sub> if T <sub>OL</sub> < T <sub>designh</sub>	5.75 kW	6.51 kW
COP T <sub>j</sub> = T <sub>OL</sub> or COP T <sub>j</sub> = T <sub>designh</sub> if T <sub>OL</sub> < T <sub>designh</sub>	2.45	1.72

Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.00	1.00
WTOL	60 °C	60 °C
Poff	15 W	15 W
PTO	20 W	20 W
PSB	15 W	15 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.71 kW	1.18 kW
Annual energy consumption Qhe	3457 kWh	4755 kWh

**EN 12102-1 | Colder Climate**

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	63 dB(A)	63 dB(A)

**EN 14825 | Colder Climate**

	Low temperature	Medium temperature
ηs	145 %	109 %
Prated	7.74 kW	8.13 kW
SCOP	3.71	2.81
Tbiv	-15 °C	-15 °C
TOL	-20 °C	-15 °C
Pdh Tj = -7°C	4.97 kW	4.50 kW
COP Tj = -7°C	3.05	2.31
Cdh Tj = -7 °C	0.99	1.00
Pdh Tj = +2°C	3.38 kW	3.71 kW
COP Tj = +2°C	4.40	3.65
Cdh Tj = +2 °C	0.97	0.98
Pdh Tj = +7°C	4.57 kW	4.37 kW
COP Tj = +7°C	6.37	4.73
Cdh Tj = +7 °C	0.97	0.98
Pdh Tj = 12°C	5.06 kW	5.02 kW
COP Tj = 12°C	7.71	6.07
Cdh Tj = +12 °C	0.97	0.98
Pdh Tj = Tbiv	6.31 kW	6.63 kW
COP Tj = Tbiv	2.50	1.73
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	5.25 kW	6.63 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	1.94	1.73
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.00	1.00
WTOL	60 °C	60 °C
Poff	15 W	15 W
PTO	20 W	20 W

PSB	15 W	15 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	7.74 kW	8.13 kW
Annual energy consumption Qhe	5141 kWh	7129 kWh
Pdh Tj = -15°C (if TOL)	6.31	6.63
COP Tj = -15°C (if TOL)	2.50	1.73
Cdh Tj = -15 °C	1.00	1.00

**EN 12102-1 | Warmer Climate**

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	63 dB(A)	63 dB(A)

**EN 14825 | Warmer Climate**

	Low temperature	Medium temperature
ηs	225 %	156 %
Prated	8.03 kW	7.02 kW
SCOP	5.71	3.96
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	8.03 kW	7.02 kW
COP Tj = +2°C	3.35	2.16
Cdh Tj = +2 °C	1.00	1.00
Pdh Tj = +7°C	5.51 kW	4.73 kW
COP Tj = +7°C	5.21	3.40
Cdh Tj = +7 °C	0.98	0.99
Pdh Tj = 12°C	5.41 kW	5.27 kW
COP Tj = 12°C	7.05	5.22
Cdh Tj = +12 °C	0.97	0.98
Pdh Tj = Tbiv	8.03 kW	7.02 kW
COP Tj = Tbiv	3.35	2.16
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	8.03 kW	7.02 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.35	2.16
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.00	1.00
WTOL	60 °C	60 °C
Poff	15 W	15 W
PTO	20 W	20 W
PSB	15 W	15 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	1878 kWh	2367 kWh
EN 14825   Cooling		
Pdesignc	+7°C/+12°C	+18°C/+23°C
SEER	7.41 kW	7.04 kW
Pdc Tj = 35°C	4.04	6.00
EER Tj = 35°C	7.41 kW	7.04 kW
Cdc Tj = 35 °C	2.54	3.96
Pdc Tj = 30°C	0.994	1.000
EER Tj = 30°C	5.40 kW	5.15 kW
Cdc Tj = 30 °C	3.43	5.24
Pdc Tj = 25°C	0.988	1.000
EER Tj = 25°C	3.45	4.60 kW
Cdc Tj = 25 °C	4.35	6.81
Pdc Tj = 20°C	0.977	0.973
EER Tj = 20°C	4.00 kW	5.00 kW
Cdc Tj = 20 °C	6.05	8.80
Poff	0.972	0.968
PTO	15 W	18 W
PSB	18 W	15 W
PCK	15 W	0 W
Annual energy consumption Qce	0 W	704 kWh
	1100 kWh	

**Model VWL 85/7.2 AS 230V S3 + VWL 107/7.2 IS**

Model name	VWL 85/7.2 AS 230V S3 + VWL 107/7.2 IS
Application	Heating (medium temp)
Units	Indoor, Outdoor
Climate zone (for heating)	Colder, Warmer, Warmer Climate, Colder Climate
Reversibility	Yes
Cooling mode application (optional)	+7°C/12°C, +18°C/+23°C
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 14511-2 | Heating**

	Low temperature	Medium temperature
Heat output	7.88 kW	6.71 kW
El input	1.70 kW	2.14 kW
COP	4.65	3.14

**EN 14511-2 | Cooling**

	+7°C/+12°C	+18°C/+23°C
El input	2.27 kW	1.78 kW
Cooling capacity	6.37	7.04
EER	2.81	3.96

**EN 12102-1 | Average Climate**

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	63 dB(A)	63 dB(A)

**EN 14825 | Average Climate**

	Low temperature	Medium temperature
$\eta_s$	175 %	131 %
Prated	7.46 kW	7.68 kW
SCOP	4.46	3.34
Tbiv	-7 °C	-7 °C

TOL	-10 °C	-10 °C
Pdh Tj = -7°C	6.60 kW	6.80 kW
COP Tj = -7°C	2.84	2.16
Cdh Tj = -7 °C	1.00	1.00
Pdh Tj = +2°C	3.89 kW	4.12 kW
COP Tj = +2°C	4.46	3.26
Cdh Tj = +2 °C	1.00	1.00
Pdh Tj = +7°C	4.40 kW	4.31 kW
COP Tj = +7°C	5.72	4.29
Cdh Tj = +7 °C	0.97	0.98
Pdh Tj = 12°C	5.08 kW	5.16 kW
COP Tj = 12°C	7.39	5.81
Cdh Tj = +12 °C	0.97	0.98
Pdh Tj = Tbiv	6.60 kW	6.80 kW
COP Tj = Tbiv	2.84	2.16
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	5.75 kW	6.51 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.45	1.72
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.00	1.00
WTOL	60 °C	60 °C
Poff	15 W	15 W
PTO	20 W	20 W
PSB	15 W	15 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.71 kW	1.18 kW
Annual energy consumption Qhe	3457 kWh	4755 kWh

**EN 12102-1 | Colder Climate**

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	63 dB(A)	63 dB(A)

**EN 14825 | Colder Climate**

	Low temperature	Medium temperature
ηs	145 %	109 %
Prated	7.74 kW	8.13 kW
SCOP	3.71	2.81
Tbiv	-15 °C	-15 °C
TOL	-20 °C	-15 °C
Pdh Tj = -7°C	4.97 kW	4.50 kW
COP Tj = -7°C	3.05	2.31
Cdh Tj = -7 °C	0.99	1.00
Pdh Tj = +2°C	3.38 kW	3.71 kW

COP Tj = +2°C	4.40	3.65
Cdh Tj = +2 °C	0.97	0.98
Pdh Tj = +7°C	4.57 kW	4.37 kW
COP Tj = +7°C	6.37	4.73
Cdh Tj = +7 °C	0.97	0.98
Pdh Tj = 12°C	5.06 kW	5.02 kW
COP Tj = 12°C	7.71	6.07
Cdh Tj = +12 °C	0.97	0.98
Pdh Tj = Tbiv	6.31 kW	6.63 kW
COP Tj = Tbiv	2.50	1.73
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	5.25 kW	6.63 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	1.94	1.73
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.00	1.00
WTOL	60 °C	60 °C
Poff	15 W	15 W
PTO	20 W	20 W
PSB	15 W	15 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	7.74 kW	8.13 kW
Annual energy consumption Qhe	5141 kWh	7129 kWh
Pdh Tj = -15°C (if TOL)	6.31	6.63
COP Tj = -15°C (if TOL)	2.50	1.73
Cdh Tj = -15 °C	1.00	1.00

**EN 12102-1 | Warmer Climate**

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	63 dB(A)	63 dB(A)

**EN 14825 | Warmer Climate**

	Low temperature	Medium temperature
ηs	225 %	156 %
Prated	8.03 kW	7.02 kW
SCOP	5.71	3.96
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	8.03 kW	7.02 kW
COP Tj = +2°C	3.35	2.16
Cdh Tj = +2 °C	1.00	1.00
Pdh Tj = +7°C	5.51 kW	4.73 kW
COP Tj = +7°C	5.21	3.40
Cdh Tj = +7 °C	0.98	0.99

Pdh Tj = 12°C	5.41 kW	5.27 kW
COP Tj = 12°C	7.05	5.22
Cdh Tj = +12 °C	0.97	0.98
Pdh Tj = Tbiv	8.03 kW	7.02 kW
COP Tj = Tbiv	3.35	2.16
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	8.03 kW	7.02 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.35	2.16
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.00	1.00
WTOL	60 °C	60 °C
Poff	15 W	15 W
PTO	20 W	20 W
PSB	15 W	15 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	1878 kWh	2367 kWh

**EN 14825 | Cooling**

	+7°C/+12°C	+18°C/+23°C
Pdesignc	7.41 kW	7.04 kW
SEER	4.04	6.00
Pdc Tj = 35°C	7.41 kW	7.04 kW
EER Tj = 35°C	2.54	3.96
Cdc Tj = 35 °C	0.994	1.000
Pdc Tj = 30°C	5.40 kW	5.15 kW
EER Tj = 30°C	3.43	5.24
Cdc Tj = 30 °C	0.988	1.000
Pdc Tj = 25°C	3.45 kW	4.60 kW
EER Tj = 25°C	4.35	6.81
Cdc Tj = 25 °C	0.977	0.973
Pdc Tj = 20°C	4.00 kW	5.00 kW
EER Tj = 20°C	6.05	8.80
Cdc Tj = 20 °C	0.972	0.968
Poff	15 W	15 W
PTO	18 W	18 W
PSB	15 W	15 W
PCK	0 W	0 W
Annual energy consumption Qce	1100 kWh	704 kWh

**Model VWL 85/7.2 AS 230V S3 + VWL 107/7.2 IS S1**

Model name	VWL 85/7.2 AS 230V S3 + VWL 107/7.2 IS S1
Application	Heating (medium temp)
Units	Indoor, Outdoor
Climate zone (for heating)	Warmer, Warmer Climate
Heat Source	Outdoor Air
Reversibility	Yes
Cooling mode application (optional)	+7°C/12°C, +18°C/+23°C
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 14511-2 | Heating**

	Low temperature	Medium temperature
Heat output	7.88 kW	6.71 kW
El input	1.70 kW	2.14 kW
COP	4.65	3.14

**EN 14511-2 | Cooling**

	+7°C/+12°C	+18°C/+23°C
El input	2.27 kW	1.78 kW
Cooling capacity	6.37	7.04
EER	2.81	3.96

**EN 12102-1 | Average Climate**

	Low temperature	Medium temperature
Sound power level indoor	39 dB(A)	39 dB(A)
Sound power level outdoor	63 dB(A)	63 dB(A)

**EN 14825 | Average Climate**

	Low temperature	Medium temperature
ηs	175 %	130 %
Prated	5.75 kW	6.51 kW
SCOP	4.45	3.33

Tbiv	-10 °C	-10 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	6.60 kW	6.80 kW
COP Tj = -7°C	2.84	2.16
Cdh Tj = -7 °C	0.990	0.990
Pdh Tj = +2°C	3.89 kW	4.12 kW
COP Tj = +2°C	4.46	3.26
Cdh Tj = +2 °C	0.980	0.980
Pdh Tj = +7°C	4.40 kW	4.31 kW
COP Tj = +7°C	5.72	4.29
Cdh Tj = +7 °C	0.970	0.980
Pdh Tj = 12°C	5.08 kW	5.16 kW
COP Tj = 12°C	7.39	5.81
Cdh Tj = +12 °C	0.970	0.980
Pdh Tj = Tbiv	5.75 kW	6.51 kW
COP Tj = Tbiv	2.45	1.72
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	5.75 kW	6.51 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.45	1.72
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.000	1.000
WTOL	60 °C	60 °C
Poff	15 W	15 W
PTO	20 W	20 W
PSB	15 W	15 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	n/a	n/a
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	2669 kWh	4032 kWh

**EN 12102-1 | Warmer Climate**

	Low temperature	Medium temperature
Sound power level indoor	39 dB(A)	39 dB(A)
Sound power level outdoor	63 dB(A)	63 dB(A)

**EN 14825 | Warmer Climate**

	Low temperature	Medium temperature
ηs	225 %	156 %
Prated	8.03 kW	7.02 kW
SCOP	5.71	3.96
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	8.03 kW	7.02 kW
COP Tj = +2°C	3.35	2.16
Cdh Tj = +2 °C	1.000	1.000

Pdh Tj = +7°C	5.51 kW	4.73 kW
COP Tj = +7°C	5.21	3.40
Cdh Tj = +7 °C	0.980	0.990
Pdh Tj = 12°C	5.41 kW	5.27 kW
COP Tj = 12°C	7.05	5.22
Cdh Tj = +12 °C	0.970	0.980
Pdh Tj = Tbiv	8.03 kW	7.02 kW
COP Tj = Tbiv	3.35	2.16
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	8.03 kW	7.02 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.35	2.16
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.000	1.000
WTOL	60 °C	60 °C
Poff	15 W	15 W
PTO	20 W	20 W
PSB	15 W	15 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	n/a	n/a
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	1878 kWh	2367 kWh

**EN 14825 | Cooling**

	+7°C/+12°C	+18°C/+23°C
Pdesignc	7.41 kW	7.04 kW
SEER	4.04	6.00
Pdc Tj = 35°C	7.41 kW	7.04 kW
EER Tj = 35°C	2.54	3.96
Cdc Tj = 35 °C	1.000	1.000
Pdc Tj = 30°C	5.40 kW	5.15 kW
EER Tj = 30°C	3.43	5.24
Cdc Tj = 30 °C	1.000	1.000
Pdc Tj = 25°C	3.45 kW	4.60 kW
EER Tj = 25°C	4.35	6.81
Cdc Tj = 25 °C	1.000	0.973
Pdc Tj = 20°C	4.00 kW	5.00 kW
EER Tj = 20°C	6.05	8.80
Cdc Tj = 20 °C	0.972	0.968
Poff	15 W	15 W
PTO	18 W	18 W
PSB	15 W	15 W
PCK	0 W	0 W
Annual energy consumption Qce	1100 kWh	704 kWh

**Model VWL 85/7.2 AS 230V S3 + VWL 108/7.2 IS C2**

Model name	VWL 85/7.2 AS 230V S3 + VWL 108/7.2 IS C2
Application	Heating + DHW + low temp
Units	Indoor, Outdoor
Climate zone (for heating)	Colder, Warmer, Warmer Climate, Colder Climate
Heat Source	Outdoor Air
Reversibility	Yes
Cooling mode application (optional)	+7°C/12°C, +18°C/+23°C
Any additional heat sources	n/a

**General data**

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

**Outdoor Air/Water****EN 16147 | Average Climate**

Declared load profile	L
Efficiency ηDHW	94 %
COP	2.36
Heating up time	00:54 h:min
Standby power input	39.0 W
Reference hot water temperature	51.5 °C
Mixed water at 40°C	236 l

**EN 16147 | Colder Climate**

Declared load profile	L
Efficiency ηDHW	80 %
COP	2.00
Heating up time	00:57 h:min
Standby power input	40.9 W
Reference hot water temperature	51.45 °C
Mixed water at 40°C	235.28 l

**EN 16147 | Warmer Climate**

Declared load profile	L
Efficiency ηDHW	109 %
COP	2.72
Heating up time	00:51 h:min
Standby power input	34.9 W
Reference hot water temperature	51.68 °C
Mixed water at 40°C	236.73 l

**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 14511-2 | Heating**

	Low temperature	Medium temperature
Heat output	7.88 kW	6.71 kW
El input	1.75 kW	2.19 kW
COP	4.51	3.07

**EN 14511-2 | Cooling**

	+7°C/+12°C	+18°C/+23°C
El input	2.32 kW	1.83 kW
Cooling capacity	6.37	7.04
EER	2.75	3.85

**EN 12102-1 | Average Climate**

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	63 dB(A)	63 dB(A)

**EN 14825 | Average Climate**

	Low temperature	Medium temperature
$\eta_s$	166 %	126 %
Prated	7.46 kW	7.68 kW
SCOP	4.24	3.22
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	6.60 kW	6.80 kW
COP Tj = -7°C	2.78	2.13
Cdh Tj = -7 °C	1.00	1.00
Pdh Tj = +2°C	3.89 kW	4.12 kW
COP Tj = +2°C	4.22	3.13
Cdh Tj = +2 °C	1.00	1.00
Pdh Tj = +7°C	4.40 kW	4.31 kW
COP Tj = +7°C	5.37	4.09
Cdh Tj = +7 °C	0.98	0.98
Pdh Tj = 12°C	5.08 kW	5.16 kW
COP Tj = 12°C	6.89	5.50
Cdh Tj = +12 °C	0.97	0.98
Pdh Tj = Tbiv	6.60 kW	6.80 kW
COP Tj = Tbiv	2.78	2.13
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	5.75 kW	6.51 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.39	1.70

Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.00	1.00
WTOL	60 °C	60 °C
Poff	15 W	15 W
PTO	20 W	20 W
PSB	15 W	15 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.71 kW	1.18 kW
Annual energy consumption Qhe	3636 kWh	4934 kWh

**EN 12102-1 | Colder Climate**

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	63 dB(A)	63 dB(A)

**EN 14825 | Colder Climate**

	Low temperature	Medium temperature
ηs	139 %	106 %
Prated	7.74 kW	8.13 kW
SCOP	3.55	2.72
Tbiv	-15 °C	-15 °C
TOL	-20 °C	-15 °C
Pdh Tj = -7°C	4.97 kW	4.50 kW
COP Tj = -7°C	2.96	2.26
Cdh Tj = -7 °C	0.99	1.00
Pdh Tj = +2°C	3.38 kW	3.71 kW
COP Tj = +2°C	4.13	3.48
Cdh Tj = +2 °C	0.98	0.98
Pdh Tj = +7°C	4.57 kW	4.37 kW
COP Tj = +7°C	5.96	4.49
Cdh Tj = +7 °C	0.97	0.98
Pdh Tj = 12°C	5.06 kW	5.02 kW
COP Tj = 12°C	7.16	5.72
Cdh Tj = +12 °C	0.97	0.98
Pdh Tj = Tbiv	6.31 kW	6.63 kW
COP Tj = Tbiv	2.45	1.70
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	5.25 kW	6.63 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	1.90	1.70
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.00	1.00
WTOL	60 °C	60 °C
Poff	15 W	15 W
PTO	20 W	20 W

PSB	15 W	15 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	7.74 kW	8.13 kW
Annual energy consumption Qhe	5375 kWh	7367 kWh
Pdh Tj = -15°C (if TOL)	6.31	6.63
COP Tj = -15°C (if TOL)	2.45	1.70
Cdh Tj = -15 °C	1.00	1.00

**EN 12102-1 | Warmer Climate**

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	63 dB(A)	63 dB(A)

**EN 14825 | Warmer Climate**

	Low temperature	Medium temperature
ηs	214 %	149 %
Prated	8.03 kW	7.02 kW
SCOP	5.43	3.81
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	8.03 kW	7.02 kW
COP Tj = +2°C	3.28	2.13
Cdh Tj = +2 °C	1.00	1.00
Pdh Tj = +7°C	5.51 kW	4.73 kW
COP Tj = +7°C	4.97	3.28
Cdh Tj = +7 °C	0.98	0.99
Pdh Tj = 12°C	5.41 kW	5.27 kW
COP Tj = 12°C	6.62	4.97
Cdh Tj = +12 °C	0.98	0.98
Pdh Tj = Tbiv	8.03 kW	7.02 kW
COP Tj = Tbiv	3.28	2.13
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	8.03 kW	7.02 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.28	2.13
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.00	1.00
WTOL	60 °C	60 °C
Poff	15 W	15 W
PTO	20 W	20 W
PSB	15 W	15 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	1976 kWh	2460 kWh
EN 14825   Cooling		
Pdesignc	+7°C/+12°C	+18°C/+23°C
SEER	7.41 kW	7.04 kW
Pdc Tj = 35°C	3.85	5.66
EER Tj = 35°C	7.41 kW	7.04 kW
Cdc Tj = 35 °C	2.49	3.85
Pdc Tj = 30°C	0.994	1.000
EER Tj = 30°C	5.40 kW	5.15 kW
Cdc Tj = 30 °C	3.33	4.98
Pdc Tj = 25°C	0.989	1.000
EER Tj = 25°C	3.45 kW	4.60 kW
Cdc Tj = 25 °C	4.09	6.34
Pdc Tj = 20°C	0.978	0.975
EER Tj = 20°C	4.00 kW	5.00 kW
Cdc Tj = 20 °C	5.63	8.09
Poff	0.974	0.970
PTO	15 W	15 W
PSB	18 W	18 W
PCK	15 W	15 W
Annual energy consumption Qce	0 W	0 W
	1155 kWh	747 kWh

**Model VWL 105/7.2 AS 230V S3 + VWL 108/7.2 IS**

Model name	VWL 105/7.2 AS 230V S3 + VWL 108/7.2 IS
Application	Heating + DHW + low temp
Units	Indoor, Outdoor
Climate zone (for heating)	Colder, Warmer, Warmer Climate, Colder Climate
Heat Source	Outdoor Air
Reversibility	Yes
Cooling mode application (optional)	+7°C/12°C, +18°C/+23°C
Any additional heat sources	n/a

**General data**

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

**Outdoor Air/Water****EN 16147 | Average Climate**

Declared load profile	L
Efficiency ηDHW	94 %
COP	2.36
Heating up time	00:54 h:min
Standby power input	39.0 W
Reference hot water temperature	51.5 °C
Mixed water at 40°C	236 l

**EN 16147 | Colder Climate**

Declared load profile	L
Efficiency ηDHW	80 %
COP	2.00
Heating up time	00:57 h:min
Standby power input	40.9 W
Reference hot water temperature	51.45 °C
Mixed water at 40°C	235.28 l

**EN 16147 | Warmer Climate**

Declared load profile	L
Efficiency ηDHW	109 %
COP	2.72
Heating up time	00:51 h:min
Standby power input	34.9 W
Reference hot water temperature	51.68 °C
Mixed water at 40°C	236.73 l

**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 14511-2 | Heating**

	Low temperature	Medium temperature
Heat output	9.85 kW	7.40 kW
El input	2.11 kW	2.32 kW
COP	4.68	3.19

**EN 14511-2 | Cooling**

	+7°C/+12°C	+18°C/+23°C
El input	3.00 kW	1.90 kW
Cooling capacity	7.32	7.16
EER	2.44	3.76

**EN 12102-1 | Average Climate**

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	63 dB(A)	63 dB(A)

**EN 14825 | Average Climate**

	Low temperature	Medium temperature
$\eta_s$	178 %	130 %
Prated	7.75 kW	8.35 kW
SCOP	4.51	3.34
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	6.86 kW	7.38 kW
COP Tj = -7°C	2.80	2.24
Cdh Tj = -7 °C	1.00	1.00
Pdh Tj = +2°C	4.10 kW	4.39 kW
COP Tj = +2°C	4.43	3.10
Cdh Tj = +2 °C	1.00	1.00
Pdh Tj = +7°C	4.47 kW	4.45 kW
COP Tj = +7°C	6.09	4.51
Cdh Tj = +7 °C	0.97	0.98
Pdh Tj = 12°C	5.12 kW	5.34 kW
COP Tj = 12°C	7.95	6.07
Cdh Tj = +12 °C	0.97	0.98
Pdh Tj = Tbiv	6.86 kW	7.38 kW
COP Tj = Tbiv	2.80	2.24
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	6.08 kW	7.07 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.40	1.98

Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.00	1.00
WTOL	60 °C	60 °C
Poff	15 W	15 W
PTO	20 W	20 W
PSB	15 W	15 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.67 kW	1.28 kW
Annual energy consumption Qhe	3548 kWh	5170 kWh

**EN 12102-1 | Colder Climate**

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	63 dB(A)	63 dB(A)

**EN 14825 | Colder Climate**

	Low temperature	Medium temperature
ηs	144 %	106 %
Prated	6.86 kW	8.14 kW
SCOP	3.69	2.72
Tbiv	-15 °C	-15 °C
TOL	-20 °C	-15 °C
Pdh Tj = -7°C	4.31 kW	4.73 kW
COP Tj = -7°C	3.00	2.20
Cdh Tj = -7 °C	0.99	1.00
Pdh Tj = +2°C	3.62 kW	3.34 kW
COP Tj = +2°C	4.54	3.48
Cdh Tj = +2 °C	0.97	0.98
Pdh Tj = +7°C	4.44 kW	4.42 kW
COP Tj = +7°C	6.02	5.02
Cdh Tj = +7 °C	0.97	0.98
Pdh Tj = 12°C	5.08 kW	5.18 kW
COP Tj = 12°C	7.37	5.62
Cdh Tj = +12 °C	0.97	0.98
Pdh Tj = Tbiv	5.60 kW	6.64 kW
COP Tj = Tbiv	2.20	1.72
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	5.80 kW	6.64 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.09	1.72
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.00	1.00
WTOL	60 °C	60 °C
Poff	15 W	15 W
PTO	20 W	20 W

PSB	15 W	15 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	6.86 kW	8.14 kW
Annual energy consumption Qhe	4587 kWh	7362 kWh
Pdh Tj = -15°C (if TOL)	5.60	6.64
COP Tj = -15°C (if TOL)	2.20	1.72
Cdh Tj = -15 °C	1.00	1.00

**EN 12102-1 | Warmer Climate**

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	63 dB(A)	63 dB(A)

**EN 14825 | Warmer Climate**

	Low temperature	Medium temperature
$\eta_s$	225 %	162 %
Prated	8.03 kW	7.39 kW
SCOP	5.71	4.12
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	8.03 kW	7.39 kW
COP Tj = +2°C	3.35	2.08
Cdh Tj = +2 °C	1.00	1.00
Pdh Tj = +7°C	5.51 kW	5.16 kW
COP Tj = +7°C	5.21	3.50
Cdh Tj = +7 °C	0.98	0.99
Pdh Tj = 12°C	5.41 kW	5.40 kW
COP Tj = 12°C	7.05	5.55
Cdh Tj = +12 °C	0.97	0.98
Pdh Tj = Tbiv	8.03 kW	7.39 kW
COP Tj = Tbiv	3.35	2.08
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	8.03 kW	7.39 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.35	2.08
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.00	1.00
WTOL	60 °C	60 °C
Poff	15 W	15 W
PTO	20 W	20 W
PSB	15 W	15 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	1878 kWh	2396 kWh
<b>EN 14825   Cooling</b>		
Pdesignc	+7°C/+12°C	+18°C/+23°C
SEER	7.69 kW	8.44 kW
Pdc Tj = 35°C	3.97	5.94
EER Tj = 35°C	7.69 kW	8.44 kW
Cdc Tj = 35 °C	2.39	3.61
Pdc Tj = 30°C	1.000	1.000
EER Tj = 30°C	5.34 kW	5.98 kW
Cdc Tj = 30 °C	3.43	5.01
Pdc Tj = 25°C	1.000	1.000
EER Tj = 25°C	3.32 kW	4.48 kW
Cdc Tj = 25 °C	4.44	6.84
Pdc Tj = 20°C	0.975	0.972
EER Tj = 20°C	3.65 kW	4.82 kW
Cdc Tj = 20 °C	5.50	8.57
Poff	0.972	0.967
PTO	15 W	15 W
PSB	20 W	20 W
PCK	15 W	15 W
Annual energy consumption Qce	0 W	0 W
	1161 kWh	853 kWh

**Model VWL 105/7.2 AS 230V S3 + VWL 108/7.2 IS S5**

Model name	VWL 105/7.2 AS 230V S3 + VWL 108/7.2 IS S5
Application	Heating + DHW + low temp
Units	Indoor, Outdoor
Climate zone (for heating)	Colder, Warmer, Warmer Climate, Colder Climate
Reversibility	Yes
Cooling mode application (optional)	+7°C/12°C, +18°C/+23°C
Any additional heat sources	n/a

**General data**

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

**Outdoor Air/Water****EN 16147 | Average Climate**

Declared load profile	L
Efficiency ηDHW	94 %
COP	2.36
Heating up time	00:54 h:min
Standby power input	39.0 W
Reference hot water temperature	51.5 °C
Mixed water at 40°C	236 l

**EN 16147 | Colder Climate**

Declared load profile	L
Efficiency ηDHW	80 %
COP	2.00
Heating up time	00:57 h:min
Standby power input	40.9 W
Reference hot water temperature	51.45 °C
Mixed water at 40°C	235.28 l

**EN 16147 | Warmer Climate**

Declared load profile	L
Efficiency ηDHW	109 %
COP	2.72
Heating up time	00:51 h:min
Standby power input	34.9 W
Reference hot water temperature	51.68 °C
Mixed water at 40°C	236.73 l

**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 14511-2 | Heating

	Low temperature	Medium temperature
Heat output	9.85 kW	7.40 kW
El input	2.11 kW	2.32 kW
COP	4.68	3.19

### EN 14511-2 | Cooling

	+7°C/+12°C	+18°C/+23°C
El input	3.00 kW	1.90 kW
Cooling capacity	7.32	7.16
EER	2.44	3.76

### EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	63 dB(A)	63 dB(A)

### EN 14825 | Average Climate

	Low temperature	Medium temperature
$\eta_s$	178 %	130 %
P <sub>rated</sub>	7.75 kW	8.35 kW
SCOP	4.51	3.34
T <sub>biv</sub>	-7 °C	-7 °C
T <sub>OL</sub>	-10 °C	-10 °C
P <sub>dh</sub> T <sub>j</sub> = -7 °C	6.86 kW	7.38 kW
COP T <sub>j</sub> = -7 °C	2.80	2.24
Cd <sub>h</sub> T <sub>j</sub> = -7 °C	1.00	1.00
P <sub>dh</sub> T <sub>j</sub> = +2 °C	4.10 kW	4.39 kW
COP T <sub>j</sub> = +2 °C	4.43	3.10
Cd <sub>h</sub> T <sub>j</sub> = +2 °C	1.00	1.00
P <sub>dh</sub> T <sub>j</sub> = +7 °C	4.47 kW	4.45 kW
COP T <sub>j</sub> = +7 °C	6.09	4.51
Cd <sub>h</sub> T <sub>j</sub> = +7 °C	0.97	0.98
P <sub>dh</sub> T <sub>j</sub> = 12 °C	5.12 kW	5.34 kW
COP T <sub>j</sub> = 12 °C	7.95	6.07
Cd <sub>h</sub> T <sub>j</sub> = +12 °C	0.97	0.98
P <sub>dh</sub> T <sub>j</sub> = T <sub>biv</sub>	6.86 kW	7.38 kW
COP T <sub>j</sub> = T <sub>biv</sub>	2.80	2.24
P <sub>dh</sub> T <sub>j</sub> = T <sub>OL</sub> or P <sub>dh</sub> T <sub>j</sub> = T <sub>designh</sub> if T <sub>OL</sub> < T <sub>designh</sub>	6.08 kW	7.07 kW
COP T <sub>j</sub> = T <sub>OL</sub> or COP T <sub>j</sub> = T <sub>designh</sub> if T <sub>OL</sub> < T <sub>designh</sub>	2.40	1.98

Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.00	1.00
WTOL	60 °C	60 °C
Poff	15 W	15 W
PTO	20 W	20 W
PSB	15 W	15 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.67 kW	1.28 kW
Annual energy consumption Qhe	3548 kWh	5170 kWh

**EN 12102-1 | Colder Climate**

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	63 dB(A)	63 dB(A)

**EN 14825 | Colder Climate**

	Low temperature	Medium temperature
ηs	144 %	106 %
Prated	6.86 kW	8.14 kW
SCOP	3.69	2.72
Tbiv	-15 °C	-15 °C
TOL	-20 °C	-15 °C
Pdh Tj = -7°C	4.31 kW	4.73 kW
COP Tj = -7°C	3.00	2.20
Cdh Tj = -7 °C	0.99	1.00
Pdh Tj = +2°C	3.62 kW	3.34 kW
COP Tj = +2°C	4.54	3.48
Cdh Tj = + 2 °C	0.97	0.98
Pdh Tj = +7°C	4.44 kW	4.42 kW
COP Tj = +7°C	6.02	5.02
Cdh Tj = + 7 °C	0.97	0.98
Pdh Tj = 12°C	5.08 kW	5.18 kW
COP Tj = 12°C	7.37	5.62
Cdh Tj = +12 °C	0.97	0.98
Pdh Tj = Tbiv	5.60 kW	6.64 kW
COP Tj = Tbiv	2.20	1.72
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	5.80 kW	6.64 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.09	1.72
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.00	1.00
WTOL	60 °C	60 °C
Poff	15 W	15 W
PTO	20 W	20 W

PSB	15 W	15 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	6.86 kW	8.14 kW
Annual energy consumption Qhe	4587 kWh	7362 kWh
Pdh Tj = -15°C (if TOL)	5.60	6.64
COP Tj = -15°C (if TOL)	2.20	1.72
Cdh Tj = -15 °C	1.00	1.00

**EN 12102-1 | Warmer Climate**

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	63 dB(A)	63 dB(A)

**EN 14825 | Warmer Climate**

	Low temperature	Medium temperature
ηs	225 %	162 %
Prated	8.03 kW	7.39 kW
SCOP	5.71	4.12
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	8.03 kW	7.39 kW
COP Tj = +2°C	3.35	2.08
Cdh Tj = +2 °C	1.00	1.00
Pdh Tj = +7°C	5.51 kW	5.16 kW
COP Tj = +7°C	5.21	3.50
Cdh Tj = +7 °C	0.98	0.99
Pdh Tj = 12°C	5.41 kW	5.40 kW
COP Tj = 12°C	7.05	5.55
Cdh Tj = +12 °C	0.97	0.98
Pdh Tj = Tbiv	8.03 kW	7.39 kW
COP Tj = Tbiv	3.35	2.08
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	8.03 kW	7.39 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.35	2.08
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.00	1.00
WTOL	60 °C	60 °C
Poff	15 W	15 W
PTO	20 W	20 W
PSB	15 W	15 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	1878 kWh	2396 kWh
EN 14825   Cooling		
Pdesignc	+7°C/+12°C	+18°C/+23°C
SEER	7.69 kW	8.44 kW
Pdc Tj = 35°C	3.97	5.94
EER Tj = 35°C	7.69 kW	8.44 kW
Cdc Tj = 35 °C	2.39	3.61
Pdc Tj = 30°C	1.000	1.000
EER Tj = 30°C	5.34 kW	5.98 kW
Cdc Tj = 30 °C	3.43	5.01
Pdc Tj = 25°C	1.000	1.000
EER Tj = 25°C	3.32 kW	4.48 kW
Cdc Tj = 25 °C	4.44	6.84
Pdc Tj = 20°C	0.975	0.972
EER Tj = 20°C	3.65 kW	4.82 kW
Cdc Tj = 20 °C	5.50	8.57
Poff	0.972	0.967
PTO	15 W	15 W
PSB	20 W	20 W
PCK	15 W	15 W
Annual energy consumption Qce	0 W	0 W
	1161 kWh	853 kWh

**Model VWL 105/7.2 AS 230V S3 + VWL 107/7.2 IS**

Model name	VWL 105/7.2 AS 230V S3 + VWL 107/7.2 IS
Application	Heating (medium temp)
Units	Indoor, Outdoor
Climate zone (for heating)	Colder, Warmer, Warmer Climate, Colder Climate
Reversibility	Yes
Cooling mode application (optional)	+7°C/12°C, +18°C/+23°C
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 14511-2 | Heating**

	Low temperature	Medium temperature
Heat output	9.85 kW	7.40 kW
El input	2.11 kW	2.32 kW
COP	4.68	3.19

**EN 14511-2 | Cooling**

	+7°C/+12°C	+18°C/+23°C
El input	3.00 kW	1.90 kW
Cooling capacity	7.32	7.16
EER	2.44	3.76

**EN 12102-1 | Average Climate**

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	63 dB(A)	63 dB(A)

**EN 14825 | Average Climate**

	Low temperature	Medium temperature
$\eta_s$	178 %	130 %
Prated	7.75 kW	8.35 kW
SCOP	4.51	3.34
Tbiv	-7 °C	-7 °C

TOL	-10 °C	-10 °C
Pdh Tj = -7°C	6.86 kW	7.38 kW
COP Tj = -7°C	2.80	2.24
Cdh Tj = -7 °C	1.00	1.00
Pdh Tj = +2°C	4.10 kW	4.39 kW
COP Tj = +2°C	4.43	3.10
Cdh Tj = +2 °C	1.00	1.00
Pdh Tj = +7°C	4.47 kW	4.45 kW
COP Tj = +7°C	6.09	4.51
Cdh Tj = +7 °C	0.97	0.98
Pdh Tj = 12°C	5.12 kW	5.34 kW
COP Tj = 12°C	7.95	6.07
Cdh Tj = +12 °C	0.97	0.98
Pdh Tj = Tbiv	6.86 kW	7.38 kW
COP Tj = Tbiv	2.80	2.24
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	6.08 kW	7.07 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.40	1.98
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.00	1.00
WTOL	60 °C	60 °C
Poff	15 W	15 W
PTO	20 W	20 W
PSB	15 W	15 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.67 kW	1.28 kW
Annual energy consumption Qhe	3548 kWh	5170 kWh

**EN 12102-1 | Colder Climate**

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	63 dB(A)	63 dB(A)

**EN 14825 | Colder Climate**

	Low temperature	Medium temperature
ηs	144 %	106 %
Prated	6.86 kW	8.14 kW
SCOP	3.69	2.72
Tbiv	-15 °C	-15 °C
TOL	-20 °C	-15 °C
Pdh Tj = -7°C	4.31 kW	4.73 kW
COP Tj = -7°C	3.00	2.20
Cdh Tj = -7 °C	0.99	1.00
Pdh Tj = +2°C	3.62 kW	3.34 kW

COP Tj = +2°C	4.54	3.48
Cdh Tj = +2 °C	0.97	0.98
Pdh Tj = +7°C	4.44 kW	4.42 kW
COP Tj = +7°C	6.02	5.02
Cdh Tj = +7 °C	0.97	0.98
Pdh Tj = 12°C	5.08 kW	5.18 kW
COP Tj = 12°C	7.37	5.62
Cdh Tj = +12 °C	0.97	0.98
Pdh Tj = Tbiv	5.60 kW	6.64 kW
COP Tj = Tbiv	2.20	1.72
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	5.80 kW	6.64 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.09	1.72
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.00	1.00
WTOL	60 °C	60 °C
Poff	15 W	15 W
PTO	20 W	20 W
PSB	15 W	15 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	6.86 kW	8.14 kW
Annual energy consumption Qhe	4587 kWh	7362 kWh
Pdh Tj = -15°C (if TOL)	5.60	6.64
COP Tj = -15°C (if TOL)	2.20	1.72
Cdh Tj = -15 °C	1.00	1.00

**EN 12102-1 | Warmer Climate**

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	63 dB(A)	63 dB(A)

**EN 14825 | Warmer Climate**

	Low temperature	Medium temperature
ηs	225 %	162 %
Prated	8.03 kW	7.39 kW
SCOP	5.71	4.12
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	8.03 kW	7.39 kW
COP Tj = +2°C	3.35	2.08
Cdh Tj = +2 °C	1.00	1.00
Pdh Tj = +7°C	5.51 kW	5.16 kW
COP Tj = +7°C	5.21	3.50
Cdh Tj = +7 °C	0.98	0.99

Pdh Tj = 12°C	5.41 kW	5.40 kW
COP Tj = 12°C	7.05	5.55
Cdh Tj = +12 °C	0.97	0.98
Pdh Tj = Tbiv	8.03 kW	7.39 kW
COP Tj = Tbiv	3.35	2.08
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	8.03 kW	7.39 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.35	2.08
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.00	1.00
WTOL	60 °C	60 °C
Poff	15 W	15 W
PTO	20 W	20 W
PSB	15 W	15 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	1878 kWh	2396 kWh

**EN 14825 | Cooling**

	+7°C/+12°C	+18°C/+23°C
Pdesignc	7.69 kW	8.44 kW
SEER	3.97	5.94
Pdc Tj = 35°C	7.69 kW	8.44 kW
EER Tj = 35°C	2.39	3.61
Cdc Tj = 35 °C	1.000	1.000
Pdc Tj = 30°C	5.34 kW	5.98 kW
EER Tj = 30°C	3.43	5.01
Cdc Tj = 30 °C	1.000	1.000
Pdc Tj = 25°C	3.32 kW	4.48 kW
EER Tj = 25°C	4.44	6.84
Cdc Tj = 25 °C	0.975	0.972
Pdc Tj = 20°C	3.65 kW	4.82 kW
EER Tj = 20°C	5.50	8.57
Cdc Tj = 20 °C	0.972	0.967
Poff	15 W	15 W
PTO	20 W	20 W
PSB	15 W	15 W
PCK	0 W	0 W
Annual energy consumption Qce	1161 kWh	853 kWh

**Model VWL 105/7.2 AS 230V S3 + VWL 108/7.2 IS C2**

Model name	VWL 105/7.2 AS 230V S3 + VWL 108/7.2 IS C2
Application	Heating + DHW + low temp
Units	Indoor, Outdoor
Climate zone (for heating)	Colder, Warmer, Warmer Climate, Colder Climate
Heat Source	Outdoor Air
Reversibility	Yes
Cooling mode application (optional)	+7°C/12°C, +18°C/+23°C
Any additional heat sources	n/a

**General data**

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

**Outdoor Air/Water****EN 16147 | Average Climate**

Declared load profile	L
Efficiency $\eta_{DHW}$	94 %
COP	2.36
Heating up time	00:54 h:min
Standby power input	39.0 W
Reference hot water temperature	51.5 °C
Mixed water at 40°C	236 l

**EN 16147 | Colder Climate**

Declared load profile	L
Efficiency $\eta_{DHW}$	80 %
COP	2.00
Heating up time	00:57 h:min
Standby power input	40.9 W
Reference hot water temperature	51.45 °C
Mixed water at 40°C	235.28 l

**EN 16147 | Warmer Climate**

Declared load profile	L
Efficiency $\eta_{DHW}$	109 %
COP	2.72
Heating up time	00:51 h:min
Standby power input	34.9 W
Reference hot water temperature	51.68 °C
Mixed water at 40°C	236.73 l

**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 14511-2 | Heating**

	Low temperature	Medium temperature
Heat output	9.85 kW	7.40 kW
El input	2.16 kW	2.37 kW
COP	4.57	3.12

**EN 14511-2 | Cooling**

	+7°C/+12°C	+18°C/+23°C
El input	3.05 kW	1.95 kW
Cooling capacity	7.32	7.16
EER	2.40	3.67

**EN 12102-1 | Average Climate**

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	63 dB(A)	63 dB(A)

**EN 14825 | Average Climate**

	Low temperature	Medium temperature
$\eta_s$	169 %	126 %
Prated	7.75 kW	8.35 kW
SCOP	4.30	3.22
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	6.86 kW	7.38 kW
COP Tj = -7°C	2.74	2.21
Cdh Tj = -7 °C	1.00	1.00
Pdh Tj = +2°C	4.10 kW	4.39 kW
COP Tj = +2°C	4.20	3.00
Cdh Tj = +2 °C	1.00	1.00
Pdh Tj = +7°C	4.47 kW	4.45 kW
COP Tj = +7°C	5.70	4.29
Cdh Tj = +7 °C	0.97	0.98
Pdh Tj = 12°C	5.12 kW	5.34 kW
COP Tj = 12°C	7.37	5.74
Cdh Tj = +12 °C	0.97	0.98
Pdh Tj = Tbiv	6.86 kW	7.38 kW
COP Tj = Tbiv	2.74	2.21
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	6.08 kW	7.07 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.35	1.96

Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.00	1.00
WTOL	60 °C	60 °C
Poff	15 W	15 W
PTO	20 W	20 W
PSB	15 W	15 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.67 kW	1.28 kW
Annual energy consumption Qhe	3729 kWh	5354 kWh

**EN 12102-1 | Colder Climate**

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	63 dB(A)	63 dB(A)

**EN 14825 | Colder Climate**

	Low temperature	Medium temperature
ηs	138 %	102 %
Prated	6.86 kW	8.14 kW
SCOP	3.52	2.64
Tbiv	-15 °C	-15 °C
TOL	-20 °C	-15 °C
Pdh Tj = -7°C	4.31 kW	4.73 kW
COP Tj = -7°C	2.90	2.15
Cdh Tj = -7 °C	0.99	1.00
Pdh Tj = +2°C	3.62 kW	3.34 kW
COP Tj = +2°C	4.27	3.31
Cdh Tj = + 2 °C	0.98	0.98
Pdh Tj = +7°C	4.44 kW	4.42 kW
COP Tj = +7°C	5.64	4.75
Cdh Tj = + 7 °C	0.97	0.98
Pdh Tj = 12°C	5.08 kW	5.18 kW
COP Tj = 12°C	6.87	5.33
Cdh Tj = +12 °C	0.97	0.98
Pdh Tj = Tbiv	5.60 kW	6.64 kW
COP Tj = Tbiv	2.16	1.70
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	5.80 kW	6.64 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.05	1.70
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.00	1.00
WTOL	60 °C	60 °C
Poff	15 W	15 W
PTO	20 W	20 W

PSB	15 W	15 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	6.86 kW	8.14 kW
Annual energy consumption Qhe	4798 kWh	7612 kWh
Pdh Tj = -15°C (if TOL)	5.60	6.64
COP Tj = -15°C (if TOL)	2.16	1.70
Cdh Tj = -15 °C	1.00	1.00

**EN 12102-1 | Warmer Climate**

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	63 dB(A)	63 dB(A)

**EN 14825 | Warmer Climate**

	Low temperature	Medium temperature
ηs	214 %	156 %
Prated	8.03 kW	7.39 kW
SCOP	5.43	3.97
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	8.03 kW	7.39 kW
COP Tj = +2°C	3.28	2.05
Cdh Tj = +2 °C	1.00	1.00
Pdh Tj = +7°C	5.51 kW	5.16 kW
COP Tj = +7°C	4.97	3.39
Cdh Tj = +7 °C	0.98	0.99
Pdh Tj = 12°C	5.41 kW	5.40 kW
COP Tj = 12°C	6.62	5.28
Cdh Tj = +12 °C	0.98	0.98
Pdh Tj = Tbiv	8.03 kW	7.39 kW
COP Tj = Tbiv	3.28	2.05
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	8.03 kW	7.39 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.28	2.05
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.00	1.00
WTOL	60 °C	60 °C
Poff	15 W	15 W
PTO	20 W	20 W
PSB	15 W	15 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	1976 kWh	2490 kWh
EN 14825   Cooling		
Pdesignc	+7°C/+12°C	+18°C/+23°C
SEER	7.69 kW	8.44 kW
Pdc Tj = 35°C	3.78	5.60
EER Tj = 35°C	7.69 kW	8.44 kW
Cdc Tj = 35 °C	2.35	3.54
Pdc Tj = 30°C	1.000	1.000
EER Tj = 30°C	5.34 kW	5.98 kW
Cdc Tj = 30 °C	3.33	4.81
Pdc Tj = 25°C	1.000	1.000
EER Tj = 25°C	3.32 kW	4.48 kW
Cdc Tj = 25 °C	4.16	6.35
Pdc Tj = 20°C	1.000	0.974
EER Tj = 20°C	3.65 kW	4.82 kW
Cdc Tj = 20 °C	5.11	7.87
Poff	0.974	0.970
PTO	0 W	0 W
PSB	15 W	15 W
PCK	20 W	0 W
Annual energy consumption Qce	1220 kWh	904 kWh

**Model VWL 105/7.2 AS 230V S3 + VWL 107/7.2 IS S1**

Model name	VWL 105/7.2 AS 230V S3 + VWL 107/7.2 IS S1
Application	Heating (medium temp)
Units	Indoor, Outdoor
Climate zone (for heating)	Warmer, Warmer Climate
Heat Source	Outdoor Air
Reversibility	Yes
Cooling mode application (optional)	+7°C/12°C, +18°C/+23°C
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 14511-2 | Heating**

	Low temperature	Medium temperature
Heat output	9.85 kW	7.40 kW
El input	2.11 kW	2.32 kW
COP	4.68	3.19

**EN 14511-2 | Cooling**

	+7°C/+12°C	+18°C/+23°C
El input	3.00 kW	1.90 kW
Cooling capacity	7.32	7.16
EER	2.44	3.76

**EN 12102-1 | Average Climate**

	Low temperature	Medium temperature
Sound power level indoor	39 dB(A)	39 dB(A)
Sound power level outdoor	63 dB(A)	63 dB(A)

**EN 14825 | Average Climate**

	Low temperature	Medium temperature
ηs	177 %	130 %
Prated	6.08 kW	7.07 kW
SCOP	4.51	3.33

Tbiv	-10 °C	-10 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	6.86 kW	7.38 kW
COP Tj = -7°C	2.80	2.24
Cdh Tj = -7 °C	0.990	0.990
Pdh Tj = +2°C	4.10 kW	4.39 kW
COP Tj = +2°C	4.43	3.10
Cdh Tj = +2 °C	0.980	0.990
Pdh Tj = +7°C	4.47 kW	4.45 kW
COP Tj = +7°C	6.09	4.51
Cdh Tj = +7 °C	0.970	0.980
Pdh Tj = 12°C	5.12 kW	5.34 kW
COP Tj = 12°C	7.95	6.07
Cdh Tj = +12 °C	0.970	0.980
Pdh Tj = Tbiv	6.08 kW	7.07 kW
COP Tj = Tbiv	2.40	1.98
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	6.08 kW	7.07 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.40	1.98
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.000	1.000
WTOL	60 °C	60 °C
Poff	15 W	15 W
PTO	20 W	20 W
PSB	15 W	15 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	n/a	n/a
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	2787 kWh	4379 kWh

**EN 12102-1 | Warmer Climate**

	Low temperature	Medium temperature
Sound power level indoor	39 dB(A)	39 dB(A)
Sound power level outdoor	63 dB(A)	63 dB(A)

**EN 14825 | Warmer Climate**

	Low temperature	Medium temperature
ηs	225 %	162 %
Prated	8.03 kW	7.39 kW
SCOP	5.71	4.12
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	8.03 kW	7.39 kW
COP Tj = +2°C	3.35	2.08
Cdh Tj = +2 °C	1.000	1.000

Pdh Tj = +7°C	5.51 kW	5.16 kW
COP Tj = +7°C	5.21	3.50
Cdh Tj = +7 °C	0.980	0.990
Pdh Tj = 12°C	5.41 kW	5.40 kW
COP Tj = 12°C	7.05	5.55
Cdh Tj = +12 °C	0.970	0.980
Pdh Tj = Tbiv	8.03 kW	7.39 kW
COP Tj = Tbiv	3.35	2.08
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	8.03 kW	7.39 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.35	2.08
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.000	1.000
WTOL	60 °C	60 °C
Poff	15 W	15 W
PTO	20 W	20 W
PSB	15 W	15 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	n/a	n/a
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	1878 kWh	2396 kWh

**EN 14825 | Cooling**

	+7°C/+12°C	+18°C/+23°C
Pdesignc	7.69 kW	8.44 kW
SEER	3.97	5.94
Pdc Tj = 35°C	7.69 kW	8.44 kW
EER Tj = 35°C	2.39	3.61
Cdc Tj = 35 °C	1.000	1.000
Pdc Tj = 30°C	5.34 kW	5.98 kW
EER Tj = 30°C	3.43	5.01
Cdc Tj = 30 °C	1.000	1.000
Pdc Tj = 25°C	3.32 kW	4.48 kW
EER Tj = 25°C	4.44	6.84
Cdc Tj = 25 °C	1.000	0.972
Pdc Tj = 20°C	3.65 kW	4.82 kW
EER Tj = 20°C	5.50	8.57
Cdc Tj = 20 °C	0.972	0.967
Poff	15 W	15 W
PTO	20 W	20 W
PSB	15 W	15 W
PCK	0 W	0 W
Annual energy consumption Qce	1161 kWh	853 kWh