CEN heat pump
KEYMARK

Registration number 011-1W0754

Subtype VWL 37/5 230V / VWL 37/5 230V S2 / VWL 39/5 230V / VWL 39/5 230V S2 / VWL 57/5 230V, VWL 57/5 230V S2, VWL 59/5 230V / VWL 59/5 230V S2

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 37/5 230V / VWL 37/5 230V S2 / VWL 39/5 230V / VWL 39/5 230V S2 / VWL 57/5 230V, VWL 57/5 230V S2, VWL 59/5 230V / VWL 59/5 230V S2
Registration number	011-1W0754
Heat Pump Type	Outdoor Air/Water
Refrigerant	R410A
Mass of Refrigerant	1.4 kg
Certification Date	10.08.2022
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 37/5 230V		
Model name	VWL 37/5 230V	
Application	Heating (medium temp)	
Units	Indoor	
Climate zone (for heating)	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 14511-2 | Heating		
	Low temperature	Medium temperature
Heat output	4.92 kW	4.73 kW
El input	1.15 kW	1.79 kW
COP	4.46	2.69
EN 12102-1 | Average Climate		
	Low temperature	Medium temperature
Sound power level indoor	49 dB(A)	49 dB(A)
Sound power level outdoor	- dB(A)	- dB(A)
EN 14825 | Average Climate		
	Low temperature	Medium temperature
ηs	183 %	130 %
Prated	4.00 kW	3.60 kW
SCOP	4.64	3.31
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	3.60 kW	3.24 kW
COP Tj = -7°C	3.15	2.11
Cdh Tj = -7 °C	0.990	0.990
Pdh Tj = +2°C	2.31 kW	2.04 kW
COP Tj = +2°C	4.53	3.21
Cdh Tj = +2 °C	0.980	0.980

Pdh Tj = +7°C	2.27 kW	2.06 kW
COP Tj = +7°C	5.84	4.30
Cdh Tj = +7 °C	0.980	0.980
Pdh Tj = 12°C	2.75 kW	2.53 kW
COP Tj = 12°C	7.88	6.18
Cdh Tj = +12 °C	0.970	0.980
Pdh Tj = Tbiv	3.60 kW	3.24 kW
COP Tj = Tbiv	3.15	2.11
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	3.32 kW	2.86 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.86	1.82
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.990	0.990
WTOL	55 °C	55 °C
Poff	11 W	11 W
PTO	11 W	11 W
PSB	11 W	11 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.68 kW	0.74 kW
Annual energy consumption Qhe	1781 kWh	2246 kWh

EN 12102-1 | Colder Climate

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

EN 14825 | Colder Climate

	Low temperature	Medium temperature
ηs	156 %	109 %
Prated	3.85 kW	3.01 kW
SCOP	3.96	2.79
Tbiv	-13 °C	-15 °C
TOL	-20 °C	-15 °C
Pdh Tj = -7°C	2.43 kW	1.89 kW
COP Tj = -7°C	3.49	2.42
Cdh Tj = -7 °C	0.990	0.990
Pdh Tj = +2°C	1.98 kW	1.75 kW
COP Tj = +2°C	4.79	3.46
Cdh Tj = +2 °C	0.980	0.980
Pdh Tj = +7°C	2.31 kW	2.12 kW
COP Tj = +7°C	6.16	4.69
Cdh Tj = +7 °C	0.970	0.980
Pdh Tj = 12°C	2.74 kW	2.57 kW
COP Tj = 12°C	7.83	6.54

Cdh Tj = +12 °C	0.970	0.970
Pdh Tj = Tbiv	2.99 kW	2.49 kW
COP Tj = Tbiv	2.77	1.80
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	2.36 kW	2.49 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.23	1.80
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.990	0.990
WTOL	55 °C	55 °C
Poff	11 W	11 W
PTO	11 W	11 W
PSB	11 W	11 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	3.85 kW	3.01 kW
Annual energy consumption Qhe	2394 kWh	2661 kWh
Pdh Tj = -15°C (if TOL		
COP Tj = -15°C (if TOL		
Cdh Tj = -15 °C		

EN 12102-1 | Warmer Climate

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

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
ηs	212 %	139 %
Prated	3.90 kW	3.80 kW
SCOP	5.38	3.56
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	3.93 kW	3.83 kW
COP Tj = +2°C	3.68	2.44
Cdh Tj = +2 °C	0.990	0.990
Pdh Tj = +7°C	2.51 kW	2.44 kW
COP Tj = +7°C	5.29	3.31
Cdh Tj = +7 °C	0.980	0.980
Pdh Tj = 12°C	2.70 kW	2.46 kW
COP Tj = 12°C	7.43	5.48
Cdh Tj = +12 °C	0.970	0.980
Pdh Tj = Tbiv	3.93 kW	3.80 kW
COP Tj = Tbiv	3.68	2.46
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	3.93 kW	3.80 kW

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

Model VWL 39/5 230V	
Model name	VWL 39/5 230V
Application	Heating + DHW + low temp
Units	Indoor
Climate zone (for heating)	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 16147 | Average Climate	
Declared load profile	XL
Efficiency ηDHW	102 %
COP	2.51
Heating up time	03:49 h:min
Standby power input	20.0 W
Reference hot water temperature	55.0 °C
Mixed water at 40°C	276 l

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

EN 16147 | Warmer Climate	
Declared load profile	XL
Efficiency ηDHW	125 %
COP	3.06
Heating up time	02:42 h:min
Standby power input	19.0 W
Reference hot water temperature	55.0 °C
Mixed water at 40°C	275 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	4.92 kW	4.73 kW
El input	1.15 kW	1.79 kW
COP	4.46	2.69

EN 12102-1 | Average Climate

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

EN 14825 | Average Climate

	Low temperature	Medium temperature
ηs	183 %	130 %
Prated	4.00 kW	3.60 kW
SCOP	4.64	3.31
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	3.60 kW	3.24 kW
COP Tj = -7°C	3.15	2.11
Cdh Tj = -7 °C	0.990	0.990
Pdh Tj = +2°C	2.31 kW	2.04 kW
COP Tj = +2°C	4.53	3.21
Cdh Tj = +2 °C	0.980	0.980
Pdh Tj = +7°C	2.27 kW	2.06 kW
COP Tj = +7°C	5.84	4.30
Cdh Tj = +7 °C	0.980	0.980
Pdh Tj = 12°C	2.75 kW	2.53 kW
COP Tj = 12°C	7.88	6.18
Cdh Tj = +12 °C	0.970	0.980
Pdh Tj = Tbiv	3.60 kW	3.24 kW
COP Tj = Tbiv	3.15	2.11
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	3.32 kW	2.86 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.86	1.82
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.990	0.990
WTOL	55 °C	55 °C
Poff	11 W	11 W
PTO	11 W	11 W
PSB	11 W	11 W
PCK	0 W	0 W

Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.68 kW	0.74 kW
Annual energy consumption Qhe	1781 kWh	2246 kWh

EN 12102-1 | Colder Climate

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

EN 14825 | Colder Climate

	Low temperature	Medium temperature
ηs	156 %	109 %
Prated	3.85 kW	3.01 kW
SCOP	3.96	2.79
Tbiv	-13 °C	-15 °C
TOL	-20 °C	-15 °C
Pdh Tj = -7°C	2.43 kW	1.89 kW
COP Tj = -7°C	3.49	2.42
Cdh Tj = -7 °C	0.990	0.990
Pdh Tj = +2°C	1.98 kW	1.75 kW
COP Tj = +2°C	4.79	3.46
Cdh Tj = +2 °C	0.980	0.980
Pdh Tj = +7°C	2.31 kW	2.12 kW
COP Tj = +7°C	6.16	4.69
Cdh Tj = +7 °C	0.970	0.980
Pdh Tj = 12°C	2.74 kW	2.57 kW
COP Tj = 12°C	7.83	6.54
Cdh Tj = +12 °C	0.970	0.970
Pdh Tj = Tbiv	2.99 kW	2.49 kW
COP Tj = Tbiv	2.77	1.80
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	2.36 kW	2.49 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.23	1.80
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.990	0.990
WTOL	55 °C	55 °C
Poff	11 W	11 W
PTO	11 W	11 W
PSB	11 W	11 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	3.85 kW	3.01 kW
Annual energy consumption Qhe	2394 kWh	2661 kWh
Pdh Tj = -15°C (if TOL		

COP Tj = -15°C (if TOL	
Cdh Tj = -15 °C	

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

EN 14825 | Warmer Climate		
	Low temperature	Medium temperature
ηs	212 %	139 %
Prated	3.90 kW	3.80 kW
SCOP	5.38	3.56
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	3.93 kW	3.83 kW
COP Tj = +2°C	3.68	2.44
Cdh Tj = +2 °C	0.990	0.990
Pdh Tj = +7°C	2.51 kW	2.44 kW
COP Tj = +7°C	5.29	3.31
Cdh Tj = +7 °C	0.980	0.980
Pdh Tj = 12°C	2.70 kW	2.46 kW
COP Tj = 12°C	7.43	5.48
Cdh Tj = +12 °C	0.970	0.980
Pdh Tj = Tbiv	3.93 kW	3.80 kW
COP Tj = Tbiv	3.68	2.46
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	3.93 kW	3.80 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.68	2.46
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.990	0.990
WTOL	55 °C	55 °C
Poff	11 W	11 W
PTO	11 W	11 W
PSB	11 W	11 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	969 kWh	1428 kWh

Model VWL 37/5 230V S2	
Model name	VWL 37/5 230V S2
Application	Heating (medium temp)
Units	Indoor
Climate zone (for heating)	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 14511-2 | Heating	Low temperature	Medium temperature
Heat output	4.92 kW	4.73 kW
El input	1.15 kW	1.79 kW
COP	4.46	2.69

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

EN 14825 | Average Climate	Low temperature	Medium temperature
ηs	179 %	127 %
Prated	4.00 kW	3.60 kW
SCOP	4.54	3.25
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	3.60 kW	3.24 kW
COP Tj = -7°C	3.15	2.11
Cdh Tj = -7 °C	0.990	0.990
Pdh Tj = +2°C	2.31 kW	2.04 kW
COP Tj = +2°C	4.53	3.21
Cdh Tj = +2 °C	0.980	0.980
Pdh Tj = +7°C	2.27 kW	2.06 kW

COP Tj = +7°C	5.84	4.30
Cdh Tj = +7 °C	0.980	0.980
Pdh Tj = 12°C	2.75 kW	2.53 kW
COP Tj = 12°C	7.88	6.18
Cdh Tj = +12 °C	0.970	0.980
Pdh Tj = Tbiv	3.60 kW	3.24 kW
COP Tj = Tbiv	3.15	2.11
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	3.32 kW	2.86 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.86	1.82
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.990	0.990
WTOL	55 °C	55 °C
Poff	11 W	11 W
PTO	11 W	11 W
PSB	11 W	11 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.68 kW	0.74 kW
Annual energy consumption Qhe	1821 kWh	2286 kWh

EN 12102-1 | Colder Climate

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

EN 14825 | Colder Climate

	Low temperature	Medium temperature
ηs	154 %	108 %
Prated	3.85 kW	3.01 kW
SCOP	3.92	2.76
Tbiv	-13 °C	-15 °C
TOL	-20 °C	-15 °C
Pdh Tj = -7°C	2.43 kW	1.89 kW
COP Tj = -7°C	3.49	2.42
Cdh Tj = -7 °C	0.990	0.990
Pdh Tj = +2°C	1.98 kW	1.75 kW
COP Tj = +2°C	4.79	3.46
Cdh Tj = +2 °C	0.980	0.980
Pdh Tj = +7°C	2.31 kW	2.12 kW
COP Tj = +7°C	6.16	4.69
Cdh Tj = +7 °C	0.970	0.980
Pdh Tj = 12°C	2.74 kW	2.57 kW
COP Tj = 12°C	7.83	6.54
Cdh Tj = +12 °C	0.970	0.970

Pdh Tj = Tbiv	2.99 kW	2.49 kW
COP Tj = Tbiv	2.77	1.80
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	2.36 kW	2.49 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.23	1.80
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.990	0.990
WTOL	55 °C	55 °C
Poff	11 W	11 W
PTO	11 W	11 W
PSB	11 W	11 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	3.85 kW	3.01 kW
Annual energy consumption Qhe	2419 kWh	2686 kWh
Pdh Tj = -15°C (if TOL		
COP Tj = -15°C (if TOL		
Cdh Tj = -15 °C		

EN 12102-1 | Warmer Climate

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

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
ηs	202 %	135 %
Prated	3.90 kW	3.80 kW
SCOP	5.13	3.44
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	3.93 kW	3.83 kW
COP Tj = +2°C	3.68	2.44
Cdh Tj = +2 °C	0.990	0.990
Pdh Tj = +7°C	2.51 kW	2.44 kW
COP Tj = +7°C	5.29	3.31
Cdh Tj = +7 °C	0.980	0.980
Pdh Tj = 12°C	2.70 kW	2.46 kW
COP Tj = 12°C	7.43	5.48
Cdh Tj = +12 °C	0.970	0.980
Pdh Tj = Tbiv	3.93 kW	3.80 kW
COP Tj = Tbiv	3.68	2.46
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	3.93 kW	3.80 kW

COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.68	2.46
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.990	0.990
WTOL	55 °C	55 °C
Poff	11 W	11 W
PTO	11 W	11 W
PSB	11 W	11 W
PCK	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	1015 kWh	1477 kWh

Model VWL 39/5 230V S2	
Model name	VWL 39/5 230V S2
Application	Heating + DHW + low temp
Units	Indoor
Climate zone (for heating)	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 16147 | Average Climate	
Declared load profile	XL
Efficiency ηDHW	102 %
COP	2.51
Heating up time	03:49 h:min
Standby power input	20.0 W
Reference hot water temperature	55.0 °C
Mixed water at 40°C	276 l

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

EN 16147 | Warmer Climate	
Declared load profile	XL
Efficiency ηDHW	125 %
COP	3.06
Heating up time	02:42 h:min
Standby power input	19.0 W
Reference hot water temperature	55.0 °C
Mixed water at 40°C	275 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	4.92 kW	4.73 kW
El input	1.15 kW	1.79 kW
COP	4.46	2.69

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

EN 14825 | Average Climate		
	Low temperature	Medium temperature
ηs	179 %	127 %
Prated	4.00 kW	3.60 kW
SCOP	4.54	3.25
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	3.60 kW	3.24 kW
COP Tj = -7°C	3.15	2.11
Cdh Tj = -7 °C	0.990	0.990
Pdh Tj = +2°C	2.31 kW	2.04 kW
COP Tj = +2°C	4.53	3.21
Cdh Tj = +2 °C	0.980	0.980
Pdh Tj = +7°C	2.27 kW	2.06 kW
COP Tj = +7°C	5.84	4.30
Cdh Tj = +7 °C	0.980	0.980
Pdh Tj = 12°C	2.75 kW	2.53 kW
COP Tj = 12°C	7.88	6.18
Cdh Tj = +12 °C	0.970	0.980
Pdh Tj = Tbiv	3.60 kW	3.24 kW
COP Tj = Tbiv	3.15	2.11
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	3.32 kW	2.86 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.86	1.82
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.990	0.990
WTOL	55 °C	55 °C
Poff	11 W	11 W
PTO	11 W	11 W
PSB	11 W	11 W
PCK	0 W	0 W

Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.68 kW	0.74 kW
Annual energy consumption Qhe	1821 kWh	2286 kWh

EN 12102-1 | Colder Climate

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

EN 14825 | Colder Climate

	Low temperature	Medium temperature
ηs	154 %	108 %
Prated	3.85 kW	3.01 kW
SCOP	3.92	2.76
Tbiv	-13 °C	-15 °C
TOL	-20 °C	-15 °C
Pdh Tj = -7°C	2.43 kW	1.89 kW
COP Tj = -7°C	3.49	2.42
Cdh Tj = -7 °C	0.990	0.990
Pdh Tj = +2°C	1.98 kW	1.75 kW
COP Tj = +2°C	4.79	3.46
Cdh Tj = +2 °C	0.980	0.980
Pdh Tj = +7°C	2.31 kW	2.12 kW
COP Tj = +7°C	6.16	4.69
Cdh Tj = +7 °C	0.970	0.980
Pdh Tj = 12°C	2.74 kW	2.57 kW
COP Tj = 12°C	7.83	6.54
Cdh Tj = +12 °C	0.970	0.970
Pdh Tj = Tbiv	2.99 kW	2.49 kW
COP Tj = Tbiv	2.77	1.80
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	2.36 kW	2.49 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.23	1.80
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.990	0.990
WTOL	55 °C	55 °C
Poff	11 W	11 W
PTO	11 W	11 W
PSB	11 W	11 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	3.85 kW	3.01 kW
Annual energy consumption Qhe	2419 kWh	2686 kWh
Pdh Tj = -15°C (if TOL		

COP Tj = -15°C (if TOL	
Cdh Tj = -15 °C	

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

EN 14825 | Warmer Climate		
	Low temperature	Medium temperature
ηs	202 %	135 %
Prated	3.90 kW	3.80 kW
SCOP	5.13	3.44
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	3.93 kW	3.83 kW
COP Tj = +2°C	3.68	2.44
Cdh Tj = +2 °C	0.990	0.990
Pdh Tj = +7°C	2.51 kW	2.44 kW
COP Tj = +7°C	5.29	3.31
Cdh Tj = +7 °C	0.980	0.980
Pdh Tj = 12°C	2.70 kW	2.46 kW
COP Tj = 12°C	7.43	5.48
Cdh Tj = +12 °C	0.970	0.980
Pdh Tj = Tbiv	3.93 kW	3.80 kW
COP Tj = Tbiv	3.68	2.46
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	3.93 kW	3.80 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.68	2.46
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.990	0.990
WTOL	55 °C	55 °C
Poff	11 W	11 W
PTO	11 W	11 W
PSB	11 W	11 W
PCK	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	1015 kWh	1477 kWh

Model VWL 57/5 230V		
Model name	VWL 57/5 230V	
Application	Heating (medium temp)	
Units	Indoor	
Climate zone (for heating)	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 14511-2 | Heating		
	Low temperature	Medium temperature
Heat output	4.92 kW	4.73 kW
El input	1.15 kW	1.79 kW
COP	4.46	2.69
EN 12102-1 | Average Climate		
	Low temperature	Medium temperature
Sound power level indoor	49 dB(A)	49 dB(A)
Sound power level outdoor	- dB(A)	- dB(A)
EN 14825 | Average Climate		
	Low temperature	Medium temperature
ηs	185 %	135 %
Prated	6.40 kW	4.90 kW
SCOP	4.71	3.44
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	5.73 kW	4.38 kW
COP Tj = -7°C	2.93	2.12
Cdh Tj = -7 °C	0.990	0.990
Pdh Tj = +2°C	3.55 kW	2.74 kW
COP Tj = +2°C	4.64	3.39
Cdh Tj = +2 °C	0.990	0.990

Pdh Tj = +7°C	2.32 kW	2.08 kW
COP Tj = +7°C	6.10	4.40
Cdh Tj = +7 °C	0.970	0.980
Pdh Tj = 12°C	2.77 kW	2.54 kW
COP Tj = 12°C	8.17	6.23
Cdh Tj = +12 °C	0.970	0.980
Pdh Tj = Tbiv	5.73 kW	4.38 kW
COP Tj = Tbiv	2.93	2.12
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	4.99 kW	3.91 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.62	1.85
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.990	1.000
WTOL	55 °C	55 °C
Poff	11 W	11 W
PTO	11 W	11 W
PSB	11 W	11 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.40 kW	0.99 kW
Annual energy consumption Qhe	2807 kWh	2941 kWh

EN 12102-1 | Colder Climate

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

EN 14825 | Colder Climate

	Low temperature	Medium temperature
ηs	149 %	113 %
Prated	5.56 kW	4.69 kW
SCOP	3.79	2.90
Tbiv	-15 °C	-15 °C
TOL	-15 °C	-15 °C
Pdh Tj = -7°C	3.25 kW	2.73 kW
COP Tj = -7°C	3.51	2.55
Cdh Tj = -7 °C	0.990	0.990
Pdh Tj = +2°C	2.00 kW	1.77 kW
COP Tj = +2°C	4.93	3.57
Cdh Tj = +2 °C	0.980	0.980
Pdh Tj = +7°C	2.35 kW	2.13 kW
COP Tj = +7°C	6.34	4.76
Cdh Tj = +7 °C	0.970	0.980
Pdh Tj = 12°C	2.75 kW	2.57 kW
COP Tj = 12°C	7.88	6.54

Cdh Tj = +12 °C	0.970	0.970
Pdh Tj = Tbiv	4.58 kW	3.85 kW
COP Tj = Tbiv	2.56	1.84
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	4.58 kW	3.85 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.56	1.84
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.990	0.990
WTOL	55 °C	55 °C
Poff	11 W	11 W
PTO	11 W	11 W
PSB	11 W	11 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	5.56 kW	4.69 kW
Annual energy consumption Qhe	3612 kWh	3989 kWh
Pdh Tj = -15°C (if TOL		
COP Tj = -15°C (if TOL		
Cdh Tj = -15 °C		

EN 12102-1 | Warmer Climate

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

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
ηs	235 %	161 %
Prated	3.90 kW	3.90 kW
SCOP	5.94	4.09
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	3.97 kW	3.83 kW
COP Tj = +2°C	3.68	2.44
Cdh Tj = +2 °C	0.99	0.99
Pdh Tj = +7°C	2.48 kW	2.33 kW
COP Tj = +7°C	5.32	3.38
Cdh Tj = +7 °C	0.98	0.99
Pdh Tj = 12°C	2.70 kW	2.46 kW
COP Tj = 12°C	7.43	5.48
Cdh Tj = +12 °C	0.97	0.98
Pdh Tj = Tbiv	3.97 kW	3.83 kW
COP Tj = Tbiv	3.68	2.44
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	3.97 kW	3.83 kW

COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.68	2.44
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.99	0.99
WTOL	55 °C	55 °C
Poff	11 W	11 W
PTO	11 W	11 W
PSB	11 W	11 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	877 kWh	1274 kWh

Model VWL 59/5 230V	
Model name	VWL 59/5 230V
Application	Heating + DHW + low temp
Units	Indoor
Climate zone (for heating)	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 16147 | Average Climate	
Declared load profile	XL
Efficiency ηDHW	102 %
COP	2.51
Heating up time	03:49 h:min
Standby power input	20.0 W
Reference hot water temperature	55.0 °C
Mixed water at 40°C	276 l

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

EN 16147 | Warmer Climate	
Declared load profile	XL
Efficiency ηDHW	125 %
COP	3.06
Heating up time	02:42 h:min
Standby power input	19.0 W
Reference hot water temperature	55.0 °C
Mixed water at 40°C	275 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	4.92 kW	4.73 kW
El input	1.15 kW	1.79 kW
COP	4.46	2.69

EN 12102-1 | Average Climate

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

EN 14825 | Average Climate

	Low temperature	Medium temperature
ηs	185 %	135 %
Prated	6.40 kW	4.90 kW
SCOP	4.71	3.44
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	5.73 kW	4.38 kW
COP Tj = -7°C	2.93	2.12
Cdh Tj = -7 °C	0.990	0.990
Pdh Tj = +2°C	3.55 kW	2.74 kW
COP Tj = +2°C	4.64	3.39
Cdh Tj = +2 °C	0.990	0.990
Pdh Tj = +7°C	2.32 kW	2.08 kW
COP Tj = +7°C	6.10	4.40
Cdh Tj = +7 °C	0.970	0.980
Pdh Tj = 12°C	2.77 kW	2.54 kW
COP Tj = 12°C	8.17	6.23
Cdh Tj = +12 °C	0.970	0.980
Pdh Tj = Tbiv	5.73 kW	4.38 kW
COP Tj = Tbiv	2.93	2.12
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	4.99 kW	3.91 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.62	1.85
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.990	1.000
WTOL	55 °C	55 °C
Poff	11 W	11 W
PTO	11 W	11 W
PSB	11 W	11 W
PCK	0 W	0 W

Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.40 kW	0.99 kW
Annual energy consumption Qhe	2807 kWh	2941 kWh

EN 12102-1 | Colder Climate

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

EN 14825 | Colder Climate

	Low temperature	Medium temperature
ηs	149 %	113 %
Prated	5.56 kW	4.69 kW
SCOP	3.79	2.90
Tbiv	-15 °C	-15 °C
TOL	-15 °C	-15 °C
Pdh Tj = -7°C	3.25 kW	2.73 kW
COP Tj = -7°C	3.51	2.55
Cdh Tj = -7 °C	0.990	0.990
Pdh Tj = +2°C	2.00 kW	1.77 kW
COP Tj = +2°C	4.93	3.57
Cdh Tj = +2 °C	0.980	0.980
Pdh Tj = +7°C	2.35 kW	2.13 kW
COP Tj = +7°C	6.34	4.76
Cdh Tj = +7 °C	0.970	0.980
Pdh Tj = 12°C	2.75 kW	2.57 kW
COP Tj = 12°C	7.88	6.54
Cdh Tj = +12 °C	0.970	0.970
Pdh Tj = Tbiv	4.58 kW	3.85 kW
COP Tj = Tbiv	2.56	1.84
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	4.58 kW	3.85 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.56	1.84
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.990	0.990
WTOL	55 °C	55 °C
Poff	11 W	11 W
PTO	11 W	11 W
PSB	11 W	11 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	5.56 kW	4.69 kW
Annual energy consumption Qhe	3612 kWh	3989 kWh
Pdh Tj = -15°C (if TOL		

COP Tj = -15°C (if TOL	
Cdh Tj = -15 °C	

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

EN 14825 | Warmer Climate		
	Low temperature	Medium temperature
ηs	235 %	161 %
Prated	3.90 kW	3.90 kW
SCOP	5.94	4.09
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	3.97 kW	3.83 kW
COP Tj = +2°C	3.68	2.44
Cdh Tj = +2 °C	0.99	0.99
Pdh Tj = +7°C	2.48 kW	2.33 kW
COP Tj = +7°C	5.32	3.38
Cdh Tj = +7 °C	0.98	0.99
Pdh Tj = 12°C	2.70 kW	2.46 kW
COP Tj = 12°C	7.43	5.48
Cdh Tj = +12 °C	0.97	0.98
Pdh Tj = Tbiv	3.97 kW	3.83 kW
COP Tj = Tbiv	3.68	2.44
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	3.97 kW	3.83 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.68	2.44
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.99	0.99
WTOL	55 °C	55 °C
Poff	11 W	11 W
PTO	11 W	11 W
PSB	11 W	11 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	877 kWh	1274 kWh

Model VWL 57/5 230V S2	
Model name	VWL 57/5 230V S2
Application	Heating (medium temp)
Units	Indoor
Climate zone (for heating)	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 14511-2 | Heating	Low temperature	Medium temperature
Heat output	4.92 kW	4.73 kW
El input	1.15 kW	1.79 kW
COP	4.46	2.69

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

EN 14825 | Average Climate	Low temperature	Medium temperature
ηs	183 %	133 %
Prated	6.40 kW	4.90 kW
SCOP	4.64	3.40
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	5.73 kW	4.38 kW
COP Tj = -7°C	2.93	2.12
Cdh Tj = -7 °C	0.990	0.990
Pdh Tj = +2°C	3.55 kW	2.74 kW
COP Tj = +2°C	4.64	3.39
Cdh Tj = +2 °C	0.990	0.990
Pdh Tj = +7°C	2.32 kW	2.08 kW

COP Tj = +7°C	6.10	4.40
Cdh Tj = +7 °C	0.970	0.980
Pdh Tj = 12°C	2.77 kW	2.54 kW
COP Tj = 12°C	8.17	6.23
Cdh Tj = +12 °C	0.970	0.980
Pdh Tj = Tbiv	5.73 kW	4.38 kW
COP Tj = Tbiv	2.93	2.12
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	4.99 kW	3.91 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.62	1.85
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.990	1.000
WTOL	55 °C	55 °C
Poff	11 W	11 W
PTO	11 W	11 W
PSB	11 W	11 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.40 kW	0.99 kW
Annual energy consumption Qhe	2847 kWh	2982 kWh

EN 12102-1 | Colder Climate

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

EN 14825 | Colder Climate

	Low temperature	Medium temperature
ηs	148 %	112 %
Prated	5.56 kW	4.69 kW
SCOP	3.77	2.88
Tbiv	-15 °C	-15 °C
TOL	-15 °C	-15 °C
Pdh Tj = -7°C	3.25 kW	2.73 kW
COP Tj = -7°C	3.51	2.55
Cdh Tj = -7 °C	0.990	0.990
Pdh Tj = +2°C	2.00 kW	1.77 kW
COP Tj = +2°C	4.93	3.57
Cdh Tj = +2 °C	0.980	0.980
Pdh Tj = +7°C	2.35 kW	2.13 kW
COP Tj = +7°C	6.34	4.76
Cdh Tj = +7 °C	0.970	0.980
Pdh Tj = 12°C	2.75 kW	2.57 kW
COP Tj = 12°C	7.88	6.54
Cdh Tj = +12 °C	0.970	0.970

Pdh Tj = Tbiv	4.58 kW	3.85 kW
COP Tj = Tbiv	2.56	1.84
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	4.58 kW	3.85 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.56	1.84
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.990	0.990
WTOL	55 °C	55 °C
Poff	11 W	11 W
PTO	11 W	11 W
PSB	11 W	11 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	5.56 kW	4.69 kW
Annual energy consumption Qhe	3636 kWh	4013 kWh
Pdh Tj = -15°C (if TOL		
COP Tj = -15°C (if TOL		
Cdh Tj = -15 °C		

EN 12102-1 | Warmer Climate

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

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
ηs	222 %	155 %
Prated	3.90 kW	3.90 kW
SCOP	5.63	3.96
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	3.97 kW	3.83 kW
COP Tj = +2°C	3.68	2.44
Cdh Tj = +2 °C	0.99	0.99
Pdh Tj = +7°C	2.48 kW	2.33 kW
COP Tj = +7°C	5.32	3.38
Cdh Tj = +7 °C	0.98	0.99
Pdh Tj = 12°C	2.70 kW	2.46 kW
COP Tj = 12°C	7.43	5.48
Cdh Tj = +12 °C	0.97	0.98
Pdh Tj = Tbiv	3.97 kW	3.83 kW
COP Tj = Tbiv	3.68	2.44
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	3.97 kW	3.83 kW

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

Model VWL 59/5 230V S2	
Model name	VWL 59/5 230V S2
Application	Heating + DHW + low temp
Units	Indoor
Climate zone (for heating)	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 16147 | Average Climate	
Declared load profile	XL
Efficiency ηDHW	102 %
COP	2.51
Heating up time	03:49 h:min
Standby power input	20.0 W
Reference hot water temperature	55.0 °C
Mixed water at 40°C	276 l

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

EN 16147 | Warmer Climate	
Declared load profile	XL
Efficiency ηDHW	125 %
COP	3.06
Heating up time	02:42 h:min
Standby power input	19.0 W
Reference hot water temperature	55.0 °C
Mixed water at 40°C	275 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	4.92 kW	4.73 kW
El input	1.15 kW	1.79 kW
COP	4.46	2.69

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

EN 14825 | Average Climate		
	Low temperature	Medium temperature
ηs	183 %	133 %
Prated	6.40 kW	4.90 kW
SCOP	4.64	3.40
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	5.73 kW	4.38 kW
COP Tj = -7°C	2.93	2.12
Cdh Tj = -7 °C	0.990	0.990
Pdh Tj = +2°C	3.55 kW	2.74 kW
COP Tj = +2°C	4.64	3.39
Cdh Tj = +2 °C	0.990	0.990
Pdh Tj = +7°C	2.32 kW	2.08 kW
COP Tj = +7°C	6.10	4.40
Cdh Tj = +7 °C	0.970	0.980
Pdh Tj = 12°C	2.77 kW	2.54 kW
COP Tj = 12°C	8.17	6.23
Cdh Tj = +12 °C	0.970	0.980
Pdh Tj = Tbiv	5.73 kW	4.38 kW
COP Tj = Tbiv	2.93	2.12
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	4.99 kW	3.91 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.62	1.85
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.990	1.000
WTOL	55 °C	55 °C
Poff	11 W	11 W
PTO	11 W	11 W
PSB	11 W	11 W
PCK	0 W	0 W

Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.40 kW	0.99 kW
Annual energy consumption Qhe	2847 kWh	2982 kWh

EN 12102-1 | Colder Climate

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

EN 14825 | Colder Climate

	Low temperature	Medium temperature
ηs	148 %	112 %
Prated	5.56 kW	4.69 kW
SCOP	3.77	2.88
Tbiv	-15 °C	-15 °C
TOL	-15 °C	-15 °C
Pdh Tj = -7°C	3.25 kW	2.73 kW
COP Tj = -7°C	3.51	2.55
Cdh Tj = -7 °C	0.990	0.990
Pdh Tj = +2°C	2.00 kW	1.77 kW
COP Tj = +2°C	4.93	3.57
Cdh Tj = +2 °C	0.980	0.980
Pdh Tj = +7°C	2.35 kW	2.13 kW
COP Tj = +7°C	6.34	4.76
Cdh Tj = +7 °C	0.970	0.980
Pdh Tj = 12°C	2.75 kW	2.57 kW
COP Tj = 12°C	7.88	6.54
Cdh Tj = +12 °C	0.970	0.970
Pdh Tj = Tbiv	4.58 kW	3.85 kW
COP Tj = Tbiv	2.56	1.84
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	4.58 kW	3.85 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.56	1.84
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.990	0.990
WTOL	55 °C	55 °C
Poff	11 W	11 W
PTO	11 W	11 W
PSB	11 W	11 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	5.56 kW	4.69 kW
Annual energy consumption Qhe	3636 kWh	4013 kWh
Pdh Tj = -15°C (if TOL		

COP Tj = -15°C (if TOL	
Cdh Tj = -15 °C	

EN 12102-1 | Warmer Climate

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

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
ηs	222 %	155 %
Prated	3.90 kW	3.90 kW
SCOP	5.63	3.96
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	3.97 kW	3.83 kW
COP Tj = +2°C	3.68	2.44
Cdh Tj = +2 °C	0.99	0.99
Pdh Tj = +7°C	2.48 kW	2.33 kW
COP Tj = +7°C	5.32	3.38
Cdh Tj = +7 °C	0.98	0.99
Pdh Tj = 12°C	2.70 kW	2.46 kW
COP Tj = 12°C	7.43	5.48
Cdh Tj = +12 °C	0.97	0.98
Pdh Tj = Tbiv	3.97 kW	3.83 kW
COP Tj = Tbiv	3.68	2.44
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	3.97 kW	3.83 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.68	2.44
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.99	0.99
WTOL	55 °C	55 °C
Poff	11 W	11 W
PTO	11 W	11 W
PSB	11 W	11 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	925 kWh	1317 kWh