Subtype Buderus Logatherm WLW-12,14 SP AR	
Certificate Holder	Bosch Thermotechnik GmbH (Buderus)
Address	Sophienstraße 30-32
ZIP	35576
City	Wetzlar
Country	DE
Certification Body	DIN CERTCO Gesellschaft für Konformitätsbewertung mbH
Subtype title	Buderus Logatherm WLW-12,14 SP AR
Registration number	011-1W0541
Heat Pump Type	Outdoor Air/Water
Refrigerant	R410A
Mass of Refrigerant	3.2 kg
Certification Date	10.06.2022
Testing basis	European KEYMARK Scheme for Heat Pumps Rev. 9 (as of 2021-03)

Model WLW166i-12 SP AR T190	
Model name	WLW166i-12 SP AR T190
Application	Heating + DHW + low temp
Units	Indoor, Outdoor
Climate zone (for heating)	Warmer Climate, Colder Climate
Heat Source	Outdoor Air
Reversibility	Yes
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

General data	
Power supply	1x230V 50Hz
Off-peak product	No

Outdoor Air/Water	
EN 16147 | Average Climate	
Declared load profile	XL
Efficiency ηDHW	104 %
COP	2.52
Heating up time	01:46 h:min
Standby power input	48.3 W
Reference hot water temperature	52.5 °C
Mixed water at 40°C	265 l
EN 16147 | Colder Climate	
Declared load profile	XL
Efficiency ηDHW	79 %
COP	1.93
Heating up time	02:03 h:min
Standby power input	51.2 W
Reference hot water temperature	52.3 °C
Mixed water at 40°C	266 l
EN 16147 | Warmer Climate	
Declared load profile	XL
Efficiency ηDHW	128 %
COP	3.09
Heating up time	01:33 h:min
Standby power input	41.7 W
Reference hot water temperature	51.9 °C
Mixed water at 40°C	264 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	12.12 kW	9.15 kW
El input	2.98 kW	3.62 kW
COP	4.07	2.53

EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level indoor	45 dB(A)	45 dB(A)
Sound power level outdoor	64 dB(A)	64 dB(A)

EN 14825 | Average Climate

	Low temperature	Medium temperature
ηs	166 %	119 %
Prated	11 kW	10.3 kW
SCOP	4.23	3.06
Tbiv	-8 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	10.10 kW	8.29 kW
COP Tj = -7°C	2.48	1.73
Cdh Tj = -7 °C	1	1
Pdh Tj = +2°C	6.07 kW	6.10 kW
COP Tj = +2°C	4.36	3.15
Cdh Tj = +2 °C	0.99	0.99
Pdh Tj = +7°C	5.25 kW	4.84 kW
COP Tj = +7°C	5.22	3.90
Cdh Tj = +7 °C	0.98	0.98
Pdh Tj = 12°C	6.15 kW	5.89 kW
COP Tj = 12°C	6.59	5.22
Cdh Tj = +12 °C	0.98	0.98
Pdh Tj = Tbiv	9.85 kW	8.29 kW
COP Tj = Tbiv	2.42	1.73
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	9.32 kW	6.25 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.26	1.43
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1	1
WTOL	60 °C	60 °C
Poff	20 W	20 W
PTO	0 W	0 W
PSB	20 W	20 W

PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.68 kW	4.05 kW
Annual energy consumption Qhe	5371 kWh	6961 kWh

EN 12102-1 | Colder Climate		
	Low temperature	Medium temperature
Sound power level indoor	45 dB(A)	45 dB(A)
Sound power level outdoor	64 dB(A)	64 dB(A)

EN 14825 | Colder Climate		
	Low temperature	Medium temperature
ηs	132 %	102 %
Prated	10 kW	10 kW
SCOP	3.37	2.64
Tbiv	-15 °C	-13 °C
TOL	-15 °C	-15 °C
Pdh Tj = -7°C	6.34 kW	6.3 kW
COP Tj = -7°C	3.25	2.28
Cdh Tj = -7 °C	0.99	0.99
Pdh Tj = +2°C	4.45 kW	4.17 kW
COP Tj = +2°C	4.21	3.36
Cdh Tj = +2 °C	0.98	0.98
Pdh Tj = +7°C	5.22 kW	4.98 kW
COP Tj = +7°C	5.15	4.14
Cdh Tj = +7 °C	0.98	0.98
Pdh Tj = 12°C	6.12 kW	5.95 kW
COP Tj = 12°C	7.02	5.52
Cdh Tj = +12 °C	0.98	0.98
Pdh Tj = Tbiv	8.04 kW	7.21 kW
COP Tj = Tbiv	2.06	1.65
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	8.04 kW	6.63 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.06	1.52
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.99	0.99
WTOL	60 °C	60 °C
Poff	20 W	20 W
PTO	0 W	0 W
PSB	20 W	20 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	10 kW	10 kW
Annual energy consumption Qhe	7311 kWh	9349 kWh

Pdh Tj = -15°C (if TOL	8.04	6.63
COP Tj = -15°C (if TOL	2.06	1.52
Cdh Tj = -15 °C	0.99	0.99

EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level indoor	45 dB(A)	45 dB(A)
Sound power level outdoor	64 dB(A)	64 dB(A)

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
ηs	223 %	149 %
Prated	11 kW	11 kW
SCOP	5.65	3.81
Tbiv	2 °C	3 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	10.8 kW	9.82 kW
COP Tj = +2°C	2.87	2.07
Cdh Tj = +2 °C	0.99	0.99
Pdh Tj = +7°C	7.48 kW	7.12 kW
COP Tj = +7°C	5.09	3.26
Cdh Tj = +7 °C	0.99	0.99
Pdh Tj = 12°C	6.12 kW	5.73 kW
COP Tj = 12°C	7.02	4.91
Cdh Tj = +12 °C	0.98	0.98
Pdh Tj = Tbiv	10.8 kW	10.45 kW
COP Tj = Tbiv	2.87	2.24
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	10.8 kW	9.82 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.87	2.07
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.99	0.99
WTOL	60 °C	60 °C
Poff	20 W	20 W
PTO	0 W	0 W
PSB	20 W	20 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0 kW	1.18 kW
Annual energy consumption Qhe	2599 kWh	3857 kWh

Model WLW166i-12 SP AR E	
Model name	WLW166i-12 SP AR E
Application	Heating (medium temp)
Units	Indoor, Outdoor
Climate zone (for heating)	Warmer Climate, Colder Climate
Heat Source	Outdoor Air
Reversibility	Yes
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

General data	
Power supply	1x230V 50Hz
Off-peak product	No

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	12.12 kW	9.15 kW
El input	2.98 kW	3.62 kW
COP	4.07	2.53

EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level indoor	42 dB(A)	42 dB(A)
Sound power level outdoor	64 dB(A)	64 dB(A)

EN 14825 | Average Climate

	Low temperature	Medium temperature
ηs	166 %	119 %
Prated	11 kW	10.3 kW
SCOP	4.23	3.06
Tbiv	-8 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	10.10 kW	8.29 kW
COP Tj = -7°C	2.48	1.73
Cdh Tj = -7 °C	1	1
Pdh Tj = +2°C	6.07 kW	6.10 kW
COP Tj = +2°C	4.36	3.15

Cdh Tj = +2 °C	0.99	0.99
Pdh Tj = +7°C	5.25 kW	4.84 kW
COP Tj = +7°C	5.22	3.90
Cdh Tj = +7 °C	0.98	0.98
Pdh Tj = 12°C	6.15 kW	5.89 kW
COP Tj = 12°C	6.59	5.22
Cdh Tj = +12 °C	0.98	0.98
Pdh Tj = Tbiv	9.85 kW	8.29 kW
COP Tj = Tbiv	2.42	1.73
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	9.32 kW	6.25 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.26	1.43
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1	1
WTOL	60 °C	60 °C
Poff	20 W	20 W
PTO	0 W	0 W
PSB	20 W	20 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.68 kW	4.05 kW
Annual energy consumption Qhe	5371 kWh	6961 kWh

EN 12102-1 | Colder Climate		
	Low temperature	Medium temperature
Sound power level indoor	42 dB(A)	42 dB(A)
Sound power level outdoor	64 dB(A)	64 dB(A)

EN 14825 | Colder Climate		
	Low temperature	Medium temperature
ηs	132 %	102 %
Prated	10 kW	10 kW
SCOP	3.37	2.64
Tbiv	-15 °C	-13 °C
TOL	-15 °C	-15 °C
Pdh Tj = -7°C	6.34 kW	6.3 kW
COP Tj = -7°C	3.25	2.28
Cdh Tj = -7 °C	0.99	0.99
Pdh Tj = +2°C	4.45 kW	4.17 kW
COP Tj = +2°C	4.21	3.36
Cdh Tj = +2 °C	0.98	0.98
Pdh Tj = +7°C	5.22 kW	4.98 kW
COP Tj = +7°C	5.15	4.14
Cdh Tj = +7 °C	0.98	0.98
Pdh Tj = 12°C	6.12 kW	5.95 kW

COP Tj = 12°C	7.02	5.52
Cdh Tj = +12 °C	0.98	0.98
Pdh Tj = Tbiv	8.04 kW	7.21 kW
COP Tj = Tbiv	2.06	1.65
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	8.04 kW	6.63 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.06	1.52
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.99	0.99
WTOL	60 °C	60 °C
Poff	20 W	20 W
PTO	0 W	0 W
PSB	20 W	20 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	10 kW	10 kW
Annual energy consumption Qhe	7311 kWh	9349 kWh
Pdh Tj = -15°C (if TOL	8.04	6.63
COP Tj = -15°C (if TOL	2.06	1.52
Cdh Tj = -15 °C	0.99	0.99

EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level indoor	42 dB(A)	42 dB(A)
Sound power level outdoor	64 dB(A)	64 dB(A)

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
ηs	223 %	149 %
Prated	11 kW	11 kW
SCOP	5.65	3.81
Tbiv	2 °C	3 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	10.8 kW	9.82 kW
COP Tj = +2°C	2.87	2.07
Cdh Tj = +2 °C	0.99	0.99
Pdh Tj = +7°C	7.48 kW	7.12 kW
COP Tj = +7°C	5.09	3.26
Cdh Tj = +7 °C	0.99	0.99
Pdh Tj = 12°C	6.12 kW	5.73 kW
COP Tj = 12°C	7.02	4.91
Cdh Tj = +12 °C	0.98	0.98
Pdh Tj = Tbiv	10.8 kW	10.45 kW
COP Tj = Tbiv	2.87	2.24

Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	10.8 kW	9.82 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.87	2.07
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.99	0.99
WTOL	60 °C	60 °C
Poff	20 W	20 W
PTO	0 W	0 W
PSB	20 W	20 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0 kW	1.18 kW
Annual energy consumption Qhe	2599 kWh	3857 kWh

Model WLW166i-12 SP AR B	
Model name	WLW166i-12 SP AR B
Application	Heating (medium temp)
Units	Indoor, Outdoor
Climate zone (for heating)	Warmer Climate, Colder Climate
Heat Source	Outdoor Air
Reversibility	Yes
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

General data	
Power supply	1x230V 50Hz
Off-peak product	No

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	12.12 kW	9.15 kW
El input	2.98 kW	3.62 kW
COP	4.07	2.53

EN 12102-1 | Average Climate		
	Low temperature	Medium temperature
Sound power level indoor	42 dB(A)	42 dB(A)
Sound power level outdoor	64 dB(A)	64 dB(A)

EN 14825 | Average Climate		
	Low temperature	Medium temperature
ηs	166 %	119 %
Prated	11 kW	10.3 kW
SCOP	4.23	3.06
Tbiv	-8 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	10.10 kW	8.29 kW
COP Tj = -7°C	2.48	1.73
Cdh Tj = -7 °C	1	1
Pdh Tj = +2°C	6.07 kW	6.10 kW
COP Tj = +2°C	4.36	3.15

Cdh Tj = +2 °C	0.99	0.99
Pdh Tj = +7°C	5.25 kW	4.84 kW
COP Tj = +7°C	5.22	3.90
Cdh Tj = +7 °C	0.98	0.98
Pdh Tj = 12°C	6.15 kW	5.89 kW
COP Tj = 12°C	6.59	5.22
Cdh Tj = +12 °C	0.98	0.98
Pdh Tj = Tbiv	9.85 kW	8.29 kW
COP Tj = Tbiv	2.42	1.73
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	9.32 kW	6.25 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.26	1.43
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1	1
WTOL	60 °C	60 °C
Poff	20 W	20 W
PTO	0 W	0 W
PSB	20 W	20 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	n/a	n/a
Supplementary Heater: PSUP	1.68 kW	4.05 kW
Annual energy consumption Qhe	5371 kWh	6961 kWh

EN 12102-1 | Colder Climate

	Low temperature	Medium temperature
Sound power level indoor	42 dB(A)	42 dB(A)
Sound power level outdoor	64 dB(A)	64 dB(A)

EN 14825 | Colder Climate

	Low temperature	Medium temperature
ηs	132 %	102 %
Prated	10 kW	10 kW
SCOP	3.37	2.64
Tbiv	-15 °C	-13 °C
TOL	-15 °C	-15 °C
Pdh Tj = -7°C	6.34 kW	6.3 kW
COP Tj = -7°C	3.25	2.28
Cdh Tj = -7 °C	0.99	0.99
Pdh Tj = +2°C	4.45 kW	4.17 kW
COP Tj = +2°C	4.21	3.36
Cdh Tj = +2 °C	0.98	0.98
Pdh Tj = +7°C	5.22 kW	4.98 kW
COP Tj = +7°C	5.15	4.14
Cdh Tj = +7 °C	0.98	0.98
Pdh Tj = 12°C	6.12 kW	5.95 kW

COP Tj = 12°C	7.02	5.52
Cdh Tj = +12 °C	0.98	0.98
Pdh Tj = Tbiv	8.04 kW	7.21 kW
COP Tj = Tbiv	2.06	1.65
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	8.04 kW	6.63 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.06	1.52
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.99	0.99
WTOL	60 °C	60 °C
Poff	20 W	20 W
PTO	0 W	0 W
PSB	20 W	20 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	n/a	n/a
Supplementary Heater: PSUP	10 kW	10 kW
Annual energy consumption Qhe	7311 kWh	9349 kWh
Pdh Tj = -15°C (if TOL	8.04	6.63
COP Tj = -15°C (if TOL	2.06	1.52
Cdh Tj = -15 °C	0.99	0.99

EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level indoor	42 dB(A)	42 dB(A)
Sound power level outdoor	64 dB(A)	64 dB(A)

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
ηs	223 %	149 %
Prated	11 kW	11 kW
SCOP	5.65	3.81
Tbiv	2 °C	3 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	10.8 kW	9.82 kW
COP Tj = +2°C	2.87	2.07
Cdh Tj = +2 °C	0.99	0.99
Pdh Tj = +7°C	7.48 kW	7.12 kW
COP Tj = +7°C	5.09	3.26
Cdh Tj = +7 °C	0.99	0.99
Pdh Tj = 12°C	6.12 kW	5.73 kW
COP Tj = 12°C	7.02	4.91
Cdh Tj = +12 °C	0.98	0.98
Pdh Tj = Tbiv	10.8 kW	10.45 kW
COP Tj = Tbiv	2.87	2.24

Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	10.8 kW	9.82 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.87	2.07
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.99	0.99
WTOL	60 °C	60 °C
Poff	20 W	20 W
PTO	0 W	0 W
PSB	20 W	20 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	n/a	n/a
Supplementary Heater: PSUP	0 kW	1.18 kW
Annual energy consumption Qhe	2599 kWh	3857 kWh

Model WLW166i-14 SP AR T190	
Model name	WLW166i-14 SP AR T190
Application	Heating + DHW + low temp
Units	Indoor, Outdoor
Climate zone (for heating)	Warmer Climate, Colder Climate
Heat Source	Outdoor Air
Reversibility	Yes
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

General data	
Power supply	1x230V 50Hz
Off-peak product	No

Outdoor Air/Water	
EN 16147 | Average Climate	
Declared load profile	XL
Efficiency ηDHW	104 %
COP	2.52
Heating up time	01:46 h:min
Standby power input	48.3 W
Reference hot water temperature	52.5 °C
Mixed water at 40°C	265 l
EN 16147 | Colder Climate	
Declared load profile	XL
Efficiency ηDHW	79 %
COP	1.93
Heating up time	02:03 h:min
Standby power input	51.2 W
Reference hot water temperature	52.3 °C
Mixed water at 40°C	266 l
EN 16147 | Warmer Climate	
Declared load profile	XL
Efficiency ηDHW	128 %
COP	3.09
Heating up time	01:33 h:min
Standby power input	41.7 W
Reference hot water temperature	51.9 °C
Mixed water at 40°C	264 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	13.81 kW	9.15 kW
El input	3.68 kW	3.62 kW
COP	3.75	2.53

EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level indoor	45 dB(A)	45 dB(A)
Sound power level outdoor	65 dB(A)	65 dB(A)

EN 14825 | Average Climate

	Low temperature	Medium temperature
ηs	166 %	117 %
Prated	11.6 kW	12 kW
SCOP	4.23	3
Tbiv	-9 °C	-5 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	10.10 kW	8.29 kW
COP Tj = -7°C	2.48	1.73
Cdh Tj = -7 °C	1	1
Pdh Tj = +2°C	6.07 kW	6.40 kW
COP Tj = +2°C	4.36	3.08
Cdh Tj = +2 °C	0.99	0.99
Pdh Tj = +7°C	5.25 kW	4.93 kW
COP Tj = +7°C	5.22	4.03
Cdh Tj = +7 °C	0.98	0.98
Pdh Tj = 12°C	6.15 kW	5.91 kW
COP Tj = 12°C	6.59	5.40
Cdh Tj = +12 °C	0.98	0.98
Pdh Tj = Tbiv	10.51 kW	8.80 kW
COP Tj = Tbiv	2.25	1.93
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	10.24 kW	6.25 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.18	1.43
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1	1
WTOL	60 °C	60 °C
Poff	20 W	20 W
PTO	0 W	0 W
PSB	20 W	20 W

PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.36 kW	5.75 kW
Annual energy consumption Qhe	5667 kWh	8259 kWh

EN 12102-1 | Colder Climate

	Low temperature	Medium temperature
Sound power level indoor	45 dB(A)	45 dB(A)
Sound power level outdoor	65 dB(A)	65 dB(A)

EN 14825 | Colder Climate

	Low temperature	Medium temperature
ηs	131 %	103 %
Prated	11 kW	11 kW
SCOP	3.36	2.64
Tbiv	-15 °C	-12 °C
TOL	-15 °C	-15 °C
Pdh Tj = -7°C	6.25 kW	6.75 kW
COP Tj = -7°C	3.21	2.24
Cdh Tj = -7 °C	0.99	0.99
Pdh Tj = +2°C	4.45 kW	4.22 kW
COP Tj = +2°C	4.26	3.43
Cdh Tj = +2 °C	0.98	0.98
Pdh Tj = +7°C	5.19 kW	4.99 kW
COP Tj = +7°C	4.88	4.17
Cdh Tj = +7 °C	0.98	0.98
Pdh Tj = 12°C	6.12 kW	5.96 kW
COP Tj = 12°C	7.02	5.55
Cdh Tj = +12 °C	0.98	0.98
Pdh Tj = Tbiv	9.35 kW	7.76 kW
COP Tj = Tbiv	2.02	1.7
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	9.35 kW	6.92 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.02	1.53
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.99	0.99
WTOL	60 °C	60 °C
Poff	20 W	20 W
PTO	0 W	0 W
PSB	20 W	20 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	11 kW	11 kW
Annual energy consumption Qhe	8067 kWh	10280 kWh

Pdh Tj = -15°C (if TOL	9.35	6.92
COP Tj = -15°C (if TOL	2.02	1.53
Cdh Tj = -15 °C	0.99	0.99

EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level indoor	45 dB(A)	45 dB(A)
Sound power level outdoor	65 dB(A)	65 dB(A)

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
ηs	217 %	147 %
Prated	13 kW	13 kW
SCOP	5.5	3.75
Tbiv	3 °C	4 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	11.38 kW	9.82 kW
COP Tj = +2°C	2.77	2.07
Cdh Tj = +2 °C	0.99	0.99
Pdh Tj = +7°C	8.1 kW	8.48 kW
COP Tj = +7°C	4.9	3.2
Cdh Tj = +7 °C	0.99	0.99
Pdh Tj = 12°C	6.12 kW	5.73 kW
COP Tj = 12°C	7.02	4.91
Cdh Tj = +12 °C	0.98	0.98
Pdh Tj = Tbiv	11.74 kW	10.99 kW
COP Tj = Tbiv	2.93	2.41
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	11.38 kW	9.82 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.77	2.07
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.99	0.99
WTOL	60 °C	60 °C
Poff	20 W	20 W
PTO	0 W	0 W
PSB	20 W	20 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.62 kW	3.18 kW
Annual energy consumption Qhe	3158 kWh	4627 kWh

Model WLW166i-14 SP AR E	
Model name	WLW166i-14 SP AR E
Application	Heating (medium temp)
Units	Indoor, Outdoor
Climate zone (for heating)	Warmer Climate, Colder Climate
Heat Source	Outdoor Air
Reversibility	Yes
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

General data	
Power supply	1x230V 50Hz
Off-peak product	No

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	13.81 kW	9.15 kW
El input	3.68 kW	3.62 kW
COP	3.75	2.53

EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level indoor	42 dB(A)	42 dB(A)
Sound power level outdoor	65 dB(A)	65 dB(A)

EN 14825 | Average Climate

	Low temperature	Medium temperature
ηs	166 %	117 %
Prated	11.6 kW	12 kW
SCOP	4.23	3
Tbiv	-9 °C	-5 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	10.10 kW	8.29 kW
COP Tj = -7°C	2.48	1.73
Cdh Tj = -7 °C	1	1
Pdh Tj = +2°C	6.07 kW	6.40 kW
COP Tj = +2°C	4.36	3.08

Cdh Tj = +2 °C	0.99	0.99
Pdh Tj = +7°C	5.25 kW	4.93 kW
COP Tj = +7°C	5.22	4.03
Cdh Tj = +7 °C	0.98	0.98
Pdh Tj = 12°C	6.15 kW	5.91 kW
COP Tj = 12°C	6.59	5.40
Cdh Tj = +12 °C	0.98	0.98
Pdh Tj = Tbiv	10.51 kW	8.80 kW
COP Tj = Tbiv	2.25	1.93
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	10.24 kW	6.25 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.18	1.43
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1	1
WTOL	60 °C	60 °C
Poff	20 W	20 W
PTO	0 W	0 W
PSB	20 W	20 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.36 kW	5.75 kW
Annual energy consumption Qhe	5667 kWh	8259 kWh

EN 12102-1 | Colder Climate

	Low temperature	Medium temperature
Sound power level indoor	42 dB(A)	42 dB(A)
Sound power level outdoor	65 dB(A)	65 dB(A)

EN 14825 | Colder Climate

	Low temperature	Medium temperature
ηs	131 %	103 %
Prated	11 kW	11 kW
SCOP	3.36	2.64
Tbiv	-15 °C	-12 °C
TOL	-15 °C	-15 °C
Pdh Tj = -7°C	6.25 kW	6.75 kW
COP Tj = -7°C	3.21	2.24
Cdh Tj = -7 °C	0.99	0.99
Pdh Tj = +2°C	4.45 kW	4.22 kW
COP Tj = +2°C	4.26	3.43
Cdh Tj = +2 °C	0.98	0.98
Pdh Tj = +7°C	5.19 kW	4.99 kW
COP Tj = +7°C	4.88	4.17
Cdh Tj = +7 °C	0.98	0.98
Pdh Tj = 12°C	6.12 kW	5.96 kW

COP Tj = 12°C	7.02	5.55
Cdh Tj = +12 °C	0.98	0.98
Pdh Tj = Tbiv	9.35 kW	7.76 kW
COP Tj = Tbiv	2.02	1.7
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	9.35 kW	6.92 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.02	1.53
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.99	0.99
WTOL	60 °C	60 °C
Poff	20 W	20 W
PTO	0 W	0 W
PSB	20 W	20 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	11 kW	11 kW
Annual energy consumption Qhe	8067 kWh	10280 kWh
Pdh Tj = -15°C (if TOL	9.35	6.92
COP Tj = -15°C (if TOL	2.02	1.53
Cdh Tj = -15 °C	0.99	0.99

EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level indoor	42 dB(A)	42 dB(A)
Sound power level outdoor	65 dB(A)	65 dB(A)

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
ηs	217 %	147 %
Prated	13 kW	13 kW
SCOP	5.5	3.75
Tbiv	3 °C	4 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	11.38 kW	9.82 kW
COP Tj = +2°C	2.77	2.07
Cdh Tj = +2 °C	0.99	0.99
Pdh Tj = +7°C	8.1 kW	8.48 kW
COP Tj = +7°C	4.9	3.2
Cdh Tj = +7 °C	0.99	0.99
Pdh Tj = 12°C	6.12 kW	5.73 kW
COP Tj = 12°C	7.02	4.91
Cdh Tj = +12 °C	0.98	0.98
Pdh Tj = Tbiv	11.74 kW	10.99 kW
COP Tj = Tbiv	2.93	2.41

Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	11.38 kW	9.82 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.77	2.07
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.99	0.99
WTOL	60 °C	60 °C
Poff	20 W	20 W
PTO	0 W	0 W
PSB	20 W	20 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.62 kW	3.18 kW
Annual energy consumption Qhe	3158 kWh	4627 kWh

Model WLW166i-14 SP AR B	
Model name	WLW166i-14 SP AR B
Application	Heating (medium temp)
Units	Indoor, Outdoor
Climate zone (for heating)	Warmer Climate, Colder Climate
Heat Source	Outdoor Air
Reversibility	Yes
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

General data	
Power supply	1x230V 50Hz
Off-peak product	No

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	13.81 kW	9.15 kW
El input	3.68 kW	3.62 kW
COP	3.75	2.53

EN 12102-1 | Average Climate		
	Low temperature	Medium temperature
Sound power level indoor	42 dB(A)	42 dB(A)
Sound power level outdoor	65 dB(A)	65 dB(A)

EN 14825 | Average Climate		
	Low temperature	Medium temperature
ηs	166 %	117 %
Prated	11.6 kW	12 kW
SCOP	4.23	3
Tbiv	-9 °C	-5 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	10.10 kW	8.29 kW
COP Tj = -7°C	2.48	1.73
Cdh Tj = -7 °C	1	1
Pdh Tj = +2°C	6.07 kW	6.40 kW
COP Tj = +2°C	4.36	3.08

Cdh Tj = +2 °C	0.99	0.99
Pdh Tj = +7°C	5.25 kW	4.93 kW
COP Tj = +7°C	5.22	4.03
Cdh Tj = +7 °C	0.98	0.98
Pdh Tj = 12°C	6.15 kW	5.91 kW
COP Tj = 12°C	6.59	5.40
Cdh Tj = +12 °C	0.98	0.98
Pdh Tj = Tbiv	10.51 kW	8.80 kW
COP Tj = Tbiv	2.25	1.93
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	10.24 kW	6.25 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.18	1.43
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1	1
WTOL	60 °C	60 °C
Poff	20 W	20 W
PTO	0 W	0 W
PSB	20 W	20 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	n/a	n/a
Supplementary Heater: PSUP	1.36 kW	5.75 kW
Annual energy consumption Qhe	5667 kWh	8259 kWh

EN 12102-1 | Colder Climate		
	Low temperature	Medium temperature
Sound power level indoor	42 dB(A)	42 dB(A)
Sound power level outdoor	65 dB(A)	65 dB(A)

EN 14825 | Colder Climate		
	Low temperature	Medium temperature
ηs	131 %	103 %
Prated	11 kW	11 kW
SCOP	3.36	2.64
Tbiv	-15 °C	-12 °C
TOL	-15 °C	-15 °C
Pdh Tj = -7°C	6.25 kW	6.75 kW
COP Tj = -7°C	3.21	2.24
Cdh Tj = -7 °C	0.99	0.99
Pdh Tj = +2°C	4.45 kW	4.22 kW
COP Tj = +2°C	4.26	3.43
Cdh Tj = +2 °C	0.98	0.98
Pdh Tj = +7°C	5.19 kW	4.99 kW
COP Tj = +7°C	4.88	4.17
Cdh Tj = +7 °C	0.98	0.98
Pdh Tj = 12°C	6.12 kW	5.96 kW

COP Tj = 12°C	7.02	5.55
Cdh Tj = +12 °C	0.98	0.98
Pdh Tj = Tbiv	9.35 kW	7.76 kW
COP Tj = Tbiv	2.02	1.7
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	9.35 kW	6.92 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.02	1.53
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.99	0.99
WTOL	60 °C	60 °C
Poff	20 W	20 W
PTO	0 W	0 W
PSB	20 W	20 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	n/a	n/a
Supplementary Heater: PSUP	11 kW	11 kW
Annual energy consumption Qhe	8067 kWh	10280 kWh
Pdh Tj = -15°C (if TOL	9.35	6.92
COP Tj = -15°C (if TOL	2.02	1.53
Cdh Tj = -15 °C	0.99	0.99

EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level indoor	42 dB(A)	42 dB(A)
Sound power level outdoor	65 dB(A)	65 dB(A)

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
ηs	217 %	147 %
Prated	13 kW	13 kW
SCOP	5.5	3.75
Tbiv	3 °C	4 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	11.38 kW	9.82 kW
COP Tj = +2°C	2.77	2.07
Cdh Tj = +2 °C	0.99	0.99
Pdh Tj = +7°C	8.1 kW	8.48 kW
COP Tj = +7°C	4.9	3.2
Cdh Tj = +7 °C	0.99	0.99
Pdh Tj = 12°C	6.12 kW	5.73 kW
COP Tj = 12°C	7.02	4.91
Cdh Tj = +12 °C	0.98	0.98
Pdh Tj = Tbiv	11.74 kW	10.99 kW
COP Tj = Tbiv	2.93	2.41

Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	11.38 kW	9.82 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.77	2.07
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.99	0.99
WTOL	60 °C	60 °C
Poff	20 W	20 W
PTO	0 W	0 W
PSB	20 W	20 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	n/a	n/a
Supplementary Heater: PSUP	1.62 kW	3.18 kW
Annual energy consumption Qhe	3158 kWh	4627 kWh