Login

Summary of	Buderus Logatherm WLW-12,14 SP AR	Reg. No.	011-1W0541
Certificate Holder			
Name	Bosch Thermotechnik GmbH (Buderus)		
Address	Sophienstraße 30-32	Zip	35576
City	Wetzlar	Country	Germany
Certification Body	DIN CERTCO Gesellschaft für Konformitätsbewertung mbH		
Subtype title	Buderus Logatherm WLW-12,14 SP AR		
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

Configure model	
Model name	WLW166i-12 SP AR T190
Application	Heating + DHW + low temp
Units	Indoor + Outdoor
Climate Zone	Colder Climate + Warmer Climate
Reversibility	Yes
Cooling mode application (optional)	n/a

General Data	
Power supply	1x230V 50Hz

Heating

EN 14511-2		
	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 14511-4	
Shutting off the heat transfer medium flow	passed
Complete power supply failure	passed
Defrost test	passed
Starting and operating test	passed

Warmer Climate

EN 12102-1

	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

	Low temperature	Medium temperature
η_s	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

Colder Climate

EN 12102-1		
	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

	Low temperature	**Medium temperature**
η_s	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<-20°C)	8.04	6.63
COP Tj = -15°C (if TOL<-20°C)	2.06	1.52
Cdh Tj = -15 °C	0.99	0.99

Average Climate

EN 12102-1		
	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

	Low temperature	**Medium temperature**
η_s	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

Domestic Hot Water (DHW)

Warmer Climate

EN 16147	
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

Colder Climate

EN 16147	
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

Average Climate

EN 16147	
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

Model: WLW166i-12 SP AR E

Configure model	
Model name	WLW166i-12 SP AR E
Application	Heating (medium temp)
Units	Indoor + Outdoor
Climate Zone	Colder Climate + Warmer Climate
Reversibility	Yes
Cooling mode application (optional)	n/a

General Data	
Power supply	1x230V 50Hz

Heating

EN 14511-2		
	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 14511-4	
Shutting off the heat transfer medium flow	passed
Complete power supply failure	passed
Defrost test	passed
Starting and operating test	passed

Warmer Climate

EN 12102-1		
	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		
	Low temperature	**Medium temperature**
η_s	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

Colder Climate

EN 12102-1		
	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

	Low temperature	**Medium temperature**
η_s	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<-20°C)	8.04	6.63
COP Tj = -15°C (if TOL<-20°C)	2.06	1.52
Cdh Tj = -15 °C	0.99	0.99

Average Climate

EN 12102-1		
	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

	Low temperature	**Medium temperature**
η_s	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

Model: WLW166i-12 SP AR B

Configure model	
Model name	WLW166i-12 SP AR B
Application	Heating (medium temp)
Units	Indoor + Outdoor
Climate Zone	Colder Climate + Warmer Climate
Reversibility	Yes
Cooling mode application (optional)	n/a

General Data	
Power supply	1x230V 50Hz

Heating

EN 14511-2		
	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 14511-4	
Shutting off the heat transfer medium flow	passed
Complete power supply failure	passed
Defrost test	passed
Starting and operating test	passed

Warmer Climate

EN 12102-1		
	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		
	Low temperature	**Medium temperature**
η_s	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

Colder Climate

EN 12102-1		
	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

	Low temperature	**Medium temperature**
η_s	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<-20°C)	8.04	6.63
COP Tj = -15°C (if TOL<-20°C)	2.06	1.52
Cdh Tj = -15 °C	0.99	0.99

Average Climate

EN 12102-1		
	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

	Low temperature	**Medium temperature**
η_s	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

Model: WLW166i-14 SP AR T190

Configure model	
Model name	WLW166i-14 SP AR T190
Application	Heating + DHW + low temp
Units	Indoor + Outdoor
Climate Zone	Colder Climate + Warmer Climate
Reversibility	Yes
Cooling mode application (optional)	n/a

General Data	
Power supply	1x230V 50Hz

Heating

EN 14511-2		
	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 14511-4	
Shutting off the heat transfer medium flow	passed
Complete power supply failure	passed
Defrost test	passed
Starting and operating test	passed

Warmer Climate

EN 12102-1

	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

	Low temperature	Medium temperature
η_s	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

Colder Climate

EN 12102-1		
	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

	Low temperature	**Medium temperature**
η_s	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<-20°C)	9.35	6.92
COP Tj = -15°C (if TOL<-20°C)	2.02	1.53
Cdh Tj = -15 °C	0.99	0.99

Average Climate

EN 12102-1		
	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

	Low temperature	**Medium temperature**
η_s	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

Domestic Hot Water (DHW)

Warmer Climate

EN 16147	
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

Colder Climate

EN 16147	
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

Average Climate

EN 16147	
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

Model: WLW166i-14 SP AR E

Configure model	
Model name	WLW166i-14 SP AR E
Application	Heating (medium temp)
Units	Indoor + Outdoor
Climate Zone	Colder Climate + Warmer Climate
Reversibility	Yes
Cooling mode application (optional)	n/a

General Data	
Power supply	1x230V 50Hz

Heating

EN 14511-2		
	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 14511-4	
Shutting off the heat transfer medium flow	passed
Complete power supply failure	passed
Defrost test	passed
Starting and operating test	passed

Warmer Climate

EN 12102-1		
	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		
	Low temperature	**Medium temperature**
η_s	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

Colder Climate

EN 12102-1		
	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

	Low temperature	**Medium temperature**
η_s	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<-20°C)	9.35	6.92
COP Tj = -15°C (if TOL<-20°C)	2.02	1.53
Cdh Tj = -15 °C	0.99	0.99

Average Climate

EN 12102-1		
	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

	Low temperature	**Medium temperature**
η_s	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

Model: WLW166i-14 SP AR B

Configure model	
Model name	WLW166i-14 SP AR B
Application	Heating (medium temp)
Units	Indoor + Outdoor
Climate Zone	Colder Climate + Warmer Climate
Reversibility	Yes
Cooling mode application (optional)	n/a

General Data	
Power supply	1x230V 50Hz

Heating

EN 14511-2		
	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 14511-4	
Shutting off the heat transfer medium flow	passed
Complete power supply failure	passed
Defrost test	passed
Starting and operating test	passed

Warmer Climate

EN 12102-1		
	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		
	Low temperature	**Medium temperature**
η_s	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

Colder Climate

EN 12102-1		
	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

	Low temperature	**Medium temperature**
η_s	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<-20°C)	9.35	6.92
COP Tj = -15°C (if TOL<-20°C)	2.02	1.53
Cdh Tj = -15 °C	0.99	0.99

Average Climate

EN 12102-1		
	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

	Low temperature	**Medium temperature**
η_s	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