

Subtype Buderus Logatherm WLW-4 SP AR

Certificate Holder	Bosch Thermotechnik GmbH (Buderus)
Address	Sophienstraße 30-32
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Country	DE
Certification Body	DIN CERTCO Gesellschaft für Konformitätsbewertung mbH
Subtype title	Buderus Logatherm WLW-4 SP AR
Registration number	011-1W0538
Heat Pump Type	Outdoor Air/Water
Refrigerant	R32
Mass of Refrigerant	1.1 kg
Certification Date	10.06.2022
Testing basis	European KEYMARK Scheme for Heat Pumps Version 12 (2023-03)

Model WLW166i-4 SP AR T190

Model name	WLW166i-4 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 η_{DHW}	125 %
COP	3.02
Heating up time	02:34 h:min
Standby power input	38 W
Reference hot water temperature	53.7 °C
Mixed water at 40°C	279 l

EN 16147 | Colder Climate

Declared load profile	XL
Efficiency η_{DHW}	100 %
COP	2.42
Heating up time	02:44 h:min
Standby power input	41 W
Reference hot water temperature	53.5 °C
Mixed water at 40°C	270 l

EN 16147 | Warmer Climate

Declared load profile	XL
Efficiency η_{DHW}	152 %
COP	3.68
Heating up time	02:30 h:min
Standby power input	33 W
Reference hot water temperature	53.6 °C
Mixed water at 40°C	277 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	5.21 kW	3.9 kW
El input	1.12 kW	1.44 kW
COP	4.67	2.7

EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level indoor	40 dB(A)	40 dB(A)
Sound power level outdoor	60 dB(A)	60 dB(A)

EN 14825 | Average Climate

	Low temperature	Medium temperature
η_s	186 %	125 %
Prated	5 kW	5.6 kW
SCOP	4.72	3.20
Tbiv	-7 °C	-5 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	4.36 kW	3.80 kW
COP Tj = -7°C	2.96	1.92
Cdh Tj = -7 °C	0.99	0.99
Pdh Tj = +2°C	2.73 kW	3.30 kW
COP Tj = +2°C	4.68	3.27
Cdh Tj = +2 °C	0.98	0.99
Pdh Tj = +7°C	2.34 kW	2.01 kW
COP Tj = +7°C	6.07	4.24
Cdh Tj = +7 °C	0.97	0.98
Pdh Tj = 12°C	2.77 kW	2.51 kW
COP Tj = 12°C	8.02	5.80
Cdh Tj = +12 °C	0.97	0.97
Pdh Tj = Tbiv	4.36 kW	4.15 kW
COP Tj = Tbiv	2.96	2.14
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	3.93 kW	2.58 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.68	1.48
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.99	0.99
WTOL	60 °C	60 °C
Poff	11 W	11 W
PTO	0 W	0 W
PSB	11 W	11 W

PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.07 kW	3.00 kW
Annual energy consumption Q _{he}	2186 kWh	3613 kWh

EN 12102-1 | Colder Climate

	Low temperature	Medium temperature
Sound power level indoor	40 dB(A)	40 dB(A)
Sound power level outdoor	60 dB(A)	60 dB(A)

EN 14825 | Colder Climate

	Low temperature	Medium temperature
η_s	148 %	108 %
Prated	5 kW	5 kW
SCOP	3.77	2.76
T _{biv}	-12 °C	-11 °C
TOL	-20 °C	-17 °C
P _{dh} T _j = -7°C	3.15 kW	3.18 kW
COP T _j = -7°C	3.4	2.44
C _{dh} T _j = -7 °C	0.99	0.99
P _{dh} T _j = +2°C	1.9 kW	1.89 kW
COP T _j = +2°C	4.61	3.55
C _{dh} T _j = +2 °C	0.97	0.98
P _{dh} T _j = +7°C	2.27 kW	1.62 kW
COP T _j = +7°C	6.12	4.27
C _{dh} T _j = +7 °C	0.97	0.97
P _{dh} T _j = 12°C	2.09 kW	1.79 kW
COP T _j = 12°C	5.97	5.18
C _{dh} T _j = +12 °C	0.97	0.97
P _{dh} T _j = T _{biv}	3.69 kW	3.39 kW
COP T _j = T _{biv}	3	1.86
P _{dh} T _j = TOL or P _{dh} T _j = T _{designh} if TOL < T _{designh}	2.24 kW	2.45 kW
COP T _j = TOL or COP T _j = T _{designh} if TOL < T _{designh}	1.59	1.4
C _{dh} T _j = TOL or P _{dh} T _j = T _{designh} if TOL < T _{designh}	0.99	0.99
WTOL	60 °C	60 °C
P _{off}	11 W	11 W
PTO	0 W	0 W
PSB	11 W	11 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	5 kW	5 kW
Annual energy consumption Q _{he}	3267 kWh	4461 kWh

Pdh Tj = -15°C (if TOL	3.26	2.77
COP Tj = -15°C (if TOL	2.43	1.59
Cdh Tj = -15 °C	0.99	0.99

EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level indoor	40 dB(A)	40 dB(A)
Sound power level outdoor	60 dB(A)	60 dB(A)

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
η_s	240 %	150 %
Prated	5 kW	5 kW
SCOP	6.07	3.84
Tbiv	4 °C	4 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	3.94 kW	3.71 kW
COP Tj = +2°C	3.55	2.12
Cdh Tj = +2 °C	0.99	0.99
Pdh Tj = +7°C	3.3 kW	3.28 kW
COP Tj = +7°C	5.52	3.39
Cdh Tj = +7 °C	0.98	0.99
Pdh Tj = 12°C	2.76 kW	2.32 kW
COP Tj = 12°C	7.7	5.03
Cdh Tj = +12 °C	0.97	0.98
Pdh Tj = Tbiv	4.23 kW	4.02 kW
COP Tj = Tbiv	3.96	2.28
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	3.94 kW	3.71 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.55	2.12
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.99	0.99
WTOL	60 °C	60 °C
Poff	11 W	11 W
PTO	0 W	0 W
PSB	11 W	11 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.06 kW	1.29 kW
Annual energy consumption Qhe	1101 kWh	1741 kWh

Model WLW166i-4 SP AR E

Model name	WLW166i-4 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	5.21 kW	3.9 kW
El input	1.12 kW	1.44 kW
COP	4.67	2.7

EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level indoor	45 dB(A)	45 dB(A)
Sound power level outdoor	60 dB(A)	60 dB(A)

EN 14825 | Average Climate

	Low temperature	Medium temperature
η_s	186 %	125 %
Prated	5 kW	5.6 kW
SCOP	4.72	3.20
Tbiv	-7 °C	-5 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	4.36 kW	3.80 kW
COP Tj = -7°C	2.96	1.92
Cdh Tj = -7 °C	0.99	0.99
Pdh Tj = +2°C	2.73 kW	3.30 kW
COP Tj = +2°C	4.68	3.27

Cdh Tj = +2 °C	0.98	0.99
Pdh Tj = +7°C	2.34 kW	2.01 kW
COP Tj = +7°C	6.07	4.24
Cdh Tj = +7 °C	0.97	0.98
Pdh Tj = 12°C	2.77 kW	2.51 kW
COP Tj = 12°C	8.02	5.80
Cdh Tj = +12 °C	0.97	0.97
Pdh Tj = Tbiv	4.36 kW	4.15 kW
COP Tj = Tbiv	2.96	2.14
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	3.93 kW	2.58 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.68	1.48
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.99	0.99
WTOL	60 °C	60 °C
Poff	11 W	11 W
PTO	0 W	0 W
PSB	11 W	11 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.07 kW	3.00 kW
Annual energy consumption Qhe	2186 kWh	3613 kWh

EN 12102-1 | Colder Climate

	Low temperature	Medium temperature
Sound power level indoor	45 dB(A)	45 dB(A)
Sound power level outdoor	60 dB(A)	60 dB(A)

EN 14825 | Colder Climate

	Low temperature	Medium temperature
ηs	148 %	108 %
Prated	5 kW	5 kW
SCOP	3.77	2.76
Tbiv	-12 °C	-11 °C
TOL	-20 °C	-17 °C
Pdh Tj = -7°C	3.15 kW	3.18 kW
COP Tj = -7°C	3.4	2.44
Cdh Tj = -7 °C	0.99	0.99
Pdh Tj = +2°C	1.9 kW	1.89 kW
COP Tj = +2°C	4.61	3.55
Cdh Tj = +2 °C	0.97	0.98
Pdh Tj = +7°C	2.27 kW	1.62 kW
COP Tj = +7°C	6.12	4.27
Cdh Tj = +7 °C	0.97	0.97
Pdh Tj = 12°C	2.09 kW	1.79 kW

COP Tj = 12°C	5.97	5.18
Cdh Tj = +12 °C	0.97	0.97
Pdh Tj = Tbiv	3.69 kW	3.39 kW
COP Tj = Tbiv	3	1.86
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	2.24 kW	2.45 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	1.59	1.4
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.99	0.99
WTOL	60 °C	60 °C
Poff	11 W	11 W
PTO	0 W	0 W
PSB	11 W	11 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	5 kW	5 kW
Annual energy consumption Qhe	3267 kWh	4461 kWh
Pdh Tj = -15°C (if TOL	3.26	2.77
COP Tj = -15°C (if TOL	2.43	1.59
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	60 dB(A)	60 dB(A)

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
η_s	240 %	150 %
Prated	5 kW	5 kW
SCOP	6.07	3.84
Tbiv	4 °C	4 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	3.94 kW	3.71 kW
COP Tj = +2°C	3.55	2.12
Cdh Tj = +2 °C	0.99	0.99
Pdh Tj = +7°C	3.3 kW	3.28 kW
COP Tj = +7°C	5.52	3.39
Cdh Tj = +7 °C	0.98	0.99
Pdh Tj = 12°C	2.76 kW	2.32 kW
COP Tj = 12°C	7.7	5.03
Cdh Tj = +12 °C	0.97	0.98
Pdh Tj = Tbiv	4.23 kW	4.02 kW
COP Tj = Tbiv	3.96	2.28

Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	3.94 kW	3.71 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.55	2.12
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.99	0.99
WTOL	60 °C	60 °C
Poff	11 W	11 W
PTO	0 W	0 W
PSB	11 W	11 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.06 kW	1.29 kW
Annual energy consumption Qhe	1101 kWh	1741 kWh

Model WLW166i-4 SP AR B

Model name	WLW166i-4 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	5.21 kW	3.9 kW
El input	1.12 kW	1.44 kW
COP	4.67	2.7

EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level indoor	45 dB(A)	45 dB(A)
Sound power level outdoor	60 dB(A)	60 dB(A)

EN 14825 | Average Climate

	Low temperature	Medium temperature
η_s	186 %	125 %
Prated	5 kW	5.6 kW
SCOP	4.72	3.20
Tbiv	-7 °C	-5 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	4.36 kW	3.80 kW
COP Tj = -7°C	2.96	1.92
Cdh Tj = -7 °C	0.99	0.99
Pdh Tj = +2°C	2.73 kW	3.30 kW
COP Tj = +2°C	4.68	3.27

Cdh Tj = +2 °C	0.98	0.99
Pdh Tj = +7°C	2.34 kW	2.01 kW
COP Tj = +7°C	6.07	4.24
Cdh Tj = +7 °C	0.97	0.98
Pdh Tj = 12°C	2.77 kW	2.51 kW
COP Tj = 12°C	8.02	5.80
Cdh Tj = +12 °C	0.97	0.97
Pdh Tj = Tbiv	4.36 kW	4.15 kW
COP Tj = Tbiv	2.96	2.14
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	3.93 kW	2.58 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.68	1.48
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.99	0.99
WTOL	60 °C	60 °C
Poff	11 W	11 W
PTO	0 W	0 W
PSB	11 W	11 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	n/a	n/a
Supplementary Heater: PSUP	1.07 kW	3.00 kW
Annual energy consumption Qhe	2186 kWh	3613 kWh

EN 12102-1 | Colder Climate

	Low temperature	Medium temperature
Sound power level indoor	45 dB(A)	45 dB(A)
Sound power level outdoor	60 dB(A)	60 dB(A)

EN 14825 | Colder Climate

	Low temperature	Medium temperature
ηs	148 %	108 %
Prated	5 kW	5 kW
SCOP	3.77	2.76
Tbiv	-12 °C	-11 °C
TOL	-20 °C	-17 °C
Pdh Tj = -7°C	3.15 kW	3.18 kW
COP Tj = -7°C	3.4	2.44
Cdh Tj = -7 °C	0.99	0.99
Pdh Tj = +2°C	1.9 kW	1.89 kW
COP Tj = +2°C	4.61	3.55
Cdh Tj = +2 °C	0.97	0.98
Pdh Tj = +7°C	2.27 kW	1.62 kW
COP Tj = +7°C	6.12	4.27
Cdh Tj = +7 °C	0.97	0.97
Pdh Tj = 12°C	2.09 kW	1.79 kW

COP Tj = 12°C	5.97	5.18
Cdh Tj = +12 °C	0.97	0.97
Pdh Tj = Tbiv	3.69 kW	3.39 kW
COP Tj = Tbiv	3	1.86
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	2.24 kW	2.45 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	1.59	1.4
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.99	0.99
WTOL	60 °C	60 °C
Poff	11 W	11 W
PTO	0 W	0 W
PSB	11 W	11 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	n/a	n/a
Supplementary Heater: PSUP	5 kW	5 kW
Annual energy consumption Qhe	3267 kWh	4461 kWh
Pdh Tj = -15°C (if TOL	3.26	2.77
COP Tj = -15°C (if TOL	2.43	1.59
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	60 dB(A)	60 dB(A)

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
ηs	240 %	150 %
Prated	5 kW	5 kW
SCOP	6.07	3.84
Tbiv	4 °C	4 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	3.94 kW	3.71 kW
COP Tj = +2°C	3.55	2.12
Cdh Tj = +2 °C	0.99	0.99
Pdh Tj = +7°C	3.3 kW	3.28 kW
COP Tj = +7°C	5.52	3.39
Cdh Tj = +7 °C	0.98	0.99
Pdh Tj = 12°C	2.76 kW	2.32 kW
COP Tj = 12°C	7.7	5.03
Cdh Tj = +12 °C	0.97	0.98
Pdh Tj = Tbiv	4.23 kW	4.02 kW
COP Tj = Tbiv	3.96	2.28

Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	3.94 kW	3.71 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.55	2.12
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.99	0.99
WTOL	60 °C	60 °C
Poff	11 W	11 W
PTO	0 W	0 W
PSB	11 W	11 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	n/a	n/a
Supplementary Heater: PSUP	1.06 kW	1.29 kW
Annual energy consumption Qhe	1101 kWh	1741 kWh