

Subtype Buderus Logatherm WLW-10,12,14 SP AR P3

Certificate Holder	Bosch Thermotechnik GmbH (Buderus)
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Certification Body	DIN CERTCO Gesellschaft für Konformitätsbewertung mbH
Subtype title	Buderus Logatherm WLW-10,12,14 SP AR P3
Registration number	011-1W0540
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-10 SP AR P3 T190

Model name	WLW166i-10 SP AR P3 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	3x400V 50Hz
Off-peak product	No

Outdoor Air/Water

EN 16147 | Average Climate

Declared load profile	XL
Efficiency η_{DHW}	120 %
COP	2.87
Heating up time	01:53 h:min
Standby power input	50 W
Reference hot water temperature	52.7 °C
Mixed water at 40°C	264 l

EN 16147 | Colder Climate

Declared load profile	XL
Efficiency η_{DHW}	104 %
COP	2.5
Heating up time	02:08 h:min
Standby power input	50 W
Reference hot water temperature	51.6 °C
Mixed water at 40°C	260 l

EN 16147 | Warmer Climate

Declared load profile	XL
Efficiency η_{DHW}	138 %
COP	3.33
Heating up time	01:26 h:min
Standby power input	40 W
Reference hot water temperature	50.6 °C
Mixed water at 40°C	255 l

EN 14511-4 | Heating

Shutting off the heat transfer medium flow passed

Complete power supply failure	passed
Defrost test	passed
Starting and operating test	passed

EN 14511-2 | Heating

	Low temperature	Medium temperature
Heat output	9.98 kW	8.88 kW
El input	2.09 kW	2.99 kW
COP	4.77	2.97

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
η_s	183 %	135 %
Prated	10 kW	10 kW
SCOP	4.66	3.45
Tbiv	-9 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	8.84 kW	8.62 kW
COP Tj = -7°C	3.14	2.14
Cdh Tj = -7 °C	0.99	0.99
Pdh Tj = +2°C	5.36 kW	5.61 kW
COP Tj = +2°C	4.68	3.49
Cdh Tj = +2 °C	0.98	0.99
Pdh Tj = +7°C	5.21 kW	4.83 kW
COP Tj = +7°C	5.46	4.22
Cdh Tj = +7 °C	0.98	0.98
Pdh Tj = 12°C	6.20 kW	5.89 kW
COP Tj = 12°C	7.44	5.83
Cdh Tj = +12 °C	0.97	0.98
Pdh Tj = Tbiv	9.03 kW	8.62 kW
COP Tj = Tbiv	2.88	2.13
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	8.76 kW	7.71 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.80	1.86
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.99	0.99
WTOL	60 °C	60 °C
Poff	22 W	22 W
PTO	0 W	0 W
PSB	22 W	22 W

PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.24 kW	2.29 kW
Annual energy consumption Q _{he}	4435 kWh	5985 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
η_s	155 %	126 %
Prated	10 kW	10 kW
SCOP	3.95	3.23
T _{biv}	-15 °C	-13 °C
TOL	-20 °C	-20 °C
P _{dh} T _j = -7 °C	6.11 kW	6.12 kW
COP T _j = -7 °C	3.63	2.9
C _{dh} T _j = -7 °C	0.99	0.99
P _{dh} T _j = +2 °C	4.48 kW	4.23 kW
COP T _j = +2 °C	4.56	3.76
C _{dh} T _j = +2 °C	0.98	0.98
P _{dh} T _j = +7 °C	5.26 kW	5.01 kW
COP T _j = +7 °C	5.43	4.5
C _{dh} T _j = +7 °C	0.98	0.98
P _{dh} T _j = 12 °C	6.14 kW	5.97 kW
COP T _j = 12 °C	7.1	5.86
C _{dh} T _j = +12 °C	0.97	0.98
P _{dh} T _j = T _{biv}	7.7 kW	7.71 kW
COP T _j = T _{biv}	2.67	2.15
P _{dh} T _j = TOL or P _{dh} T _j = T _{designh} if TOL < T _{designh}	6.2 kW	6.91 kW
COP T _j = TOL or COP T _j = T _{designh} if TOL < T _{designh}	2.26	1.99
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}	22 W	22 W
PTO	0 W	0 W
PSB	22 W	22 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	10 kW	10 kW
Annual energy consumption Q _{he}	6248 kWh	7631 kWh

Pdh Tj = -15°C (if TOL	7.7	7.39
COP Tj = -15°C (if TOL	2.67	2.07
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
η_s	228 %	170 %
Prated	12 kW	12 kW
SCOP	5.77	4.32
Tbiv	4 °C	4 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	9.6 kW	9.87 kW
COP Tj = +2°C	3.42	2.61
Cdh Tj = +2 °C	0.99	0.99
Pdh Tj = +7°C	7.51 kW	7.68 kW
COP Tj = +7°C	5.37	3.74
Cdh Tj = +7 °C	0.98	0.99
Pdh Tj = 12°C	6.17 kW	5.94 kW
COP Tj = 12°C	7.09	5.48
Cdh Tj = +12 °C	0.97	0.98
Pdh Tj = Tbiv	10.24 kW	10.28 kW
COP Tj = Tbiv	3.78	2.87
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	9.6 kW	9.87 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.42	2.61
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.99	0.99
WTOL	60 °C	60 °C
Poff	22 W	22 W
PTO	0 W	0 W
PSB	22 W	22 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	2.4 kW	2.13 kW
Annual energy consumption Qhe	2778 kWh	3712 kWh

Model WLW166i-10 SP AR P3 E

Model name	WLW166i-10 SP AR P3 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	3x400V 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	9.98 kW	8.88 kW
El input	2.09 kW	2.99 kW
COP	4.77	2.97

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
η_s	183 %	135 %
Prated	10 kW	10 kW
SCOP	4.66	3.45
Tbiv	-9 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	8.84 kW	8.62 kW
COP Tj = -7°C	3.14	2.14
Cdh Tj = -7 °C	0.99	0.99
Pdh Tj = +2°C	5.36 kW	5.61 kW
COP Tj = +2°C	4.68	3.49

Cdh Tj = +2 °C	0.98	0.99
Pdh Tj = +7°C	5.21 kW	4.83 kW
COP Tj = +7°C	5.46	4.22
Cdh Tj = +7 °C	0.98	0.98
Pdh Tj = 12°C	6.20 kW	5.89 kW
COP Tj = 12°C	7.44	5.83
Cdh Tj = +12 °C	0.97	0.98
Pdh Tj = Tbiv	9.03 kW	8.62 kW
COP Tj = Tbiv	2.88	2.13
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	8.76 kW	7.71 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.80	1.86
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.99	0.99
WTOL	60 °C	60 °C
Poff	22 W	22 W
PTO	0 W	0 W
PSB	22 W	22 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.24 kW	2.29 kW
Annual energy consumption Qhe	4435 kWh	5985 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
η_s	155 %	126 %
Prated	10 kW	10 kW
SCOP	3.95	3.23
Tbiv	-15 °C	-13 °C
TOL	-20 °C	-20 °C
Pdh Tj = -7°C	6.11 kW	6.12 kW
COP Tj = -7°C	3.63	2.9
Cdh Tj = -7 °C	0.99	0.99
Pdh Tj = +2°C	4.48 kW	4.23 kW
COP Tj = +2°C	4.56	3.76
Cdh Tj = +2 °C	0.98	0.98
Pdh Tj = +7°C	5.26 kW	5.01 kW
COP Tj = +7°C	5.43	4.5
Cdh Tj = +7 °C	0.98	0.98
Pdh Tj = 12°C	6.14 kW	5.97 kW

COP Tj = 12 °C	7.1	5.86
Cdh Tj = +12 °C	0.97	0.98
Pdh Tj = Tbiv	7.7 kW	7.71 kW
COP Tj = Tbiv	2.67	2.15
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	6.2 kW	6.91 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.26	1.99
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.99	0.99
WTOL	60 °C	60 °C
Poff	22 W	22 W
PTO	0 W	0 W
PSB	22 W	22 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	6248 kWh	7631 kWh
Pdh Tj = -15 °C (if TOL	7.7	7.39
COP Tj = -15 °C (if TOL	2.67	2.07
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
η_s	228 %	170 %
Prated	12 kW	12 kW
SCOP	5.77	4.32
Tbiv	4 °C	4 °C
TOL	2 °C	2 °C
Pdh Tj = +2 °C	9.6 kW	9.87 kW
COP Tj = +2 °C	3.42	2.61
Cdh Tj = +2 °C	0.99	0.99
Pdh Tj = +7 °C	7.51 kW	7.68 kW
COP Tj = +7 °C	5.37	3.74
Cdh Tj = +7 °C	0.98	0.99
Pdh Tj = 12 °C	6.17 kW	5.94 kW
COP Tj = 12 °C	7.09	5.48
Cdh Tj = +12 °C	0.97	0.98
Pdh Tj = Tbiv	10.24 kW	10.28 kW
COP Tj = Tbiv	3.78	2.87

Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	9.6 kW	9.87 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.42	2.61
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.99	0.99
WTOL	60 °C	60 °C
Poff	22 W	22 W
PTO	0 W	0 W
PSB	22 W	22 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	2.4 kW	2.13 kW
Annual energy consumption Qhe	2778 kWh	3712 kWh

Model WLW166i-10 SP AR P3 B

Model name	WLW166i-10 SP AR P3 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	9.98 kW	8.88 kW
El input	2.09 kW	2.99 kW
COP	4.77	2.97

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
η_s	183 %	135 %
Prated	10 kW	10 kW
SCOP	4.66	3.45
Tbiv	-9 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	8.84 kW	8.62 kW
COP Tj = -7°C	3.14	2.14
Cdh Tj = -7 °C	0.99	0.99
Pdh Tj = +2°C	5.36 kW	5.61 kW
COP Tj = +2°C	4.68	3.49

Cdh Tj = +2 °C	0.98	0.99
Pdh Tj = +7°C	5.21 kW	4.83 kW
COP Tj = +7°C	5.46	4.22
Cdh Tj = +7 °C	0.98	0.98
Pdh Tj = 12°C	6.20 kW	5.89 kW
COP Tj = 12°C	7.44	5.83
Cdh Tj = +12 °C	0.97	0.98
Pdh Tj = Tbiv	9.03 kW	8.62 kW
COP Tj = Tbiv	2.88	2.13
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	8.76 kW	7.71 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.80	1.86
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.99	0.99
WTOL	60 °C	60 °C
Poff	22 W	22 W
PTO	0 W	0 W
PSB	22 W	22 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	n/a	n/a
Supplementary Heater: PSUP	1.24 kW	2.29 kW
Annual energy consumption Qhe	4435 kWh	5985 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
η_s	155 %	126 %
Prated	10 kW	10 kW
SCOP	3.95	3.23
Tbiv	-15 °C	-13 °C
TOL	-20 °C	-20 °C
Pdh Tj = -7°C	6.11 kW	6.12 kW
COP Tj = -7°C	3.63	2.9
Cdh Tj = -7 °C	0.99	0.99
Pdh Tj = +2°C	4.48 kW	4.23 kW
COP Tj = +2°C	4.56	3.76
Cdh Tj = +2 °C	0.98	0.98
Pdh Tj = +7°C	5.26 kW	5.01 kW
COP Tj = +7°C	5.43	4.5
Cdh Tj = +7 °C	0.98	0.98
Pdh Tj = 12°C	6.14 kW	5.97 kW

COP Tj = 12 °C	7.1	5.86
Cdh Tj = +12 °C	0.97	0.98
Pdh Tj = Tbiv	7.7 kW	7.71 kW
COP Tj = Tbiv	2.67	2.15
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	6.2 kW	6.91 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.26	1.99
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.99	0.99
WTOL	60 °C	60 °C
Poff	22 W	22 W
PTO	0 W	0 W
PSB	22 W	22 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	6248 kWh	7631 kWh
Pdh Tj = -15 °C (if TOL	7.7	7.39
COP Tj = -15 °C (if TOL	2.67	2.07
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
η_s	228 %	170 %
Prated	12 kW	12 kW
SCOP	5.77	4.32
Tbiv	4 °C	4 °C
TOL	2 °C	2 °C
Pdh Tj = +2 °C	9.6 kW	9.87 kW
COP Tj = +2 °C	3.42	2.61
Cdh Tj = +2 °C	0.99	0.99
Pdh Tj = +7 °C	7.51 kW	7.68 kW
COP Tj = +7 °C	5.37	3.74
Cdh Tj = +7 °C	0.98	0.99
Pdh Tj = 12 °C	6.17 kW	5.94 kW
COP Tj = 12 °C	7.09	5.48
Cdh Tj = +12 °C	0.97	0.98
Pdh Tj = Tbiv	10.24 kW	10.28 kW
COP Tj = Tbiv	3.78	2.87

Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	9.6 kW	9.87 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.42	2.61
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.99	0.99
WTOL	60 °C	60 °C
Poff	22 W	22 W
PTO	0 W	0 W
PSB	22 W	22 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	n/a	n/a
Supplementary Heater: PSUP	2.4 kW	2.13 kW
Annual energy consumption Qhe	2778 kWh	3712 kWh

Model WLW166i-12 SP AR P3 T190

Model name	WLW166i-12 SP AR P3 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	3x400V 50Hz
Off-peak product	No

Outdoor Air/Water

EN 16147 | Average Climate

Declared load profile	XL
Efficiency η_{DHW}	120 %
COP	2.87
Heating up time	01:53 h:min
Standby power input	50 W
Reference hot water temperature	52.7 °C
Mixed water at 40°C	264 l

EN 16147 | Colder Climate

Declared load profile	XL
Efficiency η_{DHW}	104 %
COP	2.5
Heating up time	02:08 h:min
Standby power input	50 W
Reference hot water temperature	51.6 °C
Mixed water at 40°C	260 l

EN 16147 | Warmer Climate

Declared load profile	XL
Efficiency η_{DHW}	138 %
COP	3.33
Heating up time	01:26 h:min
Standby power input	40 W
Reference hot water temperature	50.6 °C
Mixed water at 40°C	255 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	11.6 kW	10.80 kW
El input	2.58 kW	3.75 kW
COP	4.5	2.88

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
η_s	179 %	136 %
Prated	11 kW	11 kW
SCOP	4.56	3.48
Tbiv	-10 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	10.22 kW	9.51 kW
COP Tj = -7°C	3.02	2.10
Cdh Tj = -7 °C	0.99	1
Pdh Tj = +2°C	6.14 kW	6.06 kW
COP Tj = +2°C	4.56	3.52
Cdh Tj = +2 °C	0.98	0.99
Pdh Tj = +7°C	5.22 kW	5.01 kW
COP Tj = +7°C	5.46	4.35
Cdh Tj = +7 °C	0.98	0.98
Pdh Tj = 12°C	6.17 kW	5.97 kW
COP Tj = 12°C	7.21	5.69
Cdh Tj = +12 °C	0.97	0.98
Pdh Tj = Tbiv	10.76 kW	9.51 kW
COP Tj = Tbiv	2.62	2.10
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	10.76 kW	8.89 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.62	1.93
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.99	1
WTOL	60 °C	60 °C
Poff	22 W	22 W
PTO	0 W	0 W
PSB	22 W	22 W

PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	2.11 kW
Annual energy consumption Q _{he}	4983 kWh	6527 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
η_s	156 %	126 %
Prated	11 kW	11 kW
SCOP	3.97	3.23
T _{biv}	-15 °C	-13 °C
TOL	-20 °C	-20 °C
P _{dh} T _j = -7°C	6.96 kW	6.95 kW
COP T _j = -7°C	3.61	2.76
C _{dh} T _j = -7 °C	0.99	0.99
P _{dh} T _j = +2°C	4.5 kW	4.44 kW
COP T _j = +2°C	4.6	4.02
C _{dh} T _j = +2 °C	0.98	0.98
P _{dh} T _j = +7°C	5.28 kW	5.01 kW
COP T _j = +7°C	5.56	4.54
C _{dh} T _j = +7 °C	0.98	0.98
P _{dh} T _j = 12°C	6.15 kW	5.97 kW
COP T _j = 12°C	7.09	5.89
C _{dh} T _j = +12 °C	0.97	0.98
P _{dh} T _j = T _{biv}	9.57 kW	8.16 kW
COP T _j = T _{biv}	2.45	2.05
P _{dh} T _j = TOL or P _{dh} T _j = T _{designh} if TOL < T _{designh}	7.9 kW	7.15 kW
COP T _j = TOL or COP T _j = T _{designh} if TOL < T _{designh}	2.05	1.84
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}	22 W	22 W
PTO	0 W	0 W
PSB	22 W	22 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	11 kW	11 kW
Annual energy consumption Q _{he}	6834 kWh	8388 kWh

Pdh Tj = -15°C (if TOL	9.57	7.78
COP Tj = -15°C (if TOL	2.45	1.96
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
η_s	229 %	168 %
Prated	13 kW	13 kW
SCOP	5.79	4.27
Tbiv	3 °C	3 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	10.9 kW	11.3 kW
COP Tj = +2°C	3.28	2.48
Cdh Tj = +2 °C	0.99	0.99
Pdh Tj = +7°C	8.66 kW	8.67 kW
COP Tj = +7°C	5.22	3.61
Cdh Tj = +7 °C	0.99	0.99
Pdh Tj = 12°C	6.15 kW	5.97 kW
COP Tj = 12°C	7.13	5.51
Cdh Tj = +12 °C	0.97	0.98
Pdh Tj = Tbiv	11.3 kW	11.57 kW
COP Tj = Tbiv	3.46	2.61
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	10.9 kW	11.3 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.28	2.48
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.99	0.99
WTOL	60 °C	60 °C
Poff	22 W	22 W
PTO	0 W	0 W
PSB	22 W	22 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	2.1 kW	1.7 kW
Annual energy consumption Qhe	2999 kWh	4068 kWh

Model WLW166i-12 SP AR P3 E

Model name	WLW166i-12 SP AR P3 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	3x400V 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	11.6 kW	10.80 kW
El input	2.58 kW	3.75 kW
COP	4.5	2.88

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
η_s	179 %	136 %
Prated	11 kW	11 kW
SCOP	4.56	3.48
Tbiv	-10 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	10.22 kW	9.51 kW
COP Tj = -7°C	3.02	2.10
Cdh Tj = -7 °C	0.99	1
Pdh Tj = +2°C	6.14 kW	6.06 kW
COP Tj = +2°C	4.56	3.52

Cdh Tj = +2 °C	0.98	0.99
Pdh Tj = +7°C	5.22 kW	5.01 kW
COP Tj = +7°C	5.46	4.35
Cdh Tj = +7 °C	0.98	0.98
Pdh Tj = 12°C	6.17 kW	5.97 kW
COP Tj = 12°C	7.21	5.69
Cdh Tj = +12 °C	0.97	0.98
Pdh Tj = Tbiv	10.76 kW	9.51 kW
COP Tj = Tbiv	2.62	2.10
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	10.76 kW	8.89 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.62	1.93
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.99	1
WTOL	60 °C	60 °C
Poff	22 W	22 W
PTO	0 W	0 W
PSB	22 W	22 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	2.11 kW
Annual energy consumption Qhe	4983 kWh	6527 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
η_s	156 %	126 %
Prated	11 kW	11 kW
SCOP	3.97	3.23
Tbiv	-15 °C	-13 °C
TOL	-20 °C	-20 °C
Pdh Tj = -7°C	6.96 kW	6.95 kW
COP Tj = -7°C	3.61	2.76
Cdh Tj = -7 °C	0.99	0.99
Pdh Tj = +2°C	4.5 kW	4.44 kW
COP Tj = +2°C	4.6	4.02
Cdh Tj = +2 °C	0.98	0.98
Pdh Tj = +7°C	5.28 kW	5.01 kW
COP Tj = +7°C	5.56	4.54
Cdh Tj = +7 °C	0.98	0.98
Pdh Tj = 12°C	6.15 kW	5.97 kW

COP Tj = 12°C	7.09	5.89
Cdh Tj = +12 °C	0.97	0.98
Pdh Tj = Tbiv	9.57 kW	8.16 kW
COP Tj = Tbiv	2.45	2.05
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	7.9 kW	7.15 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.05	1.84
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.99	0.99
WTOL	60 °C	60 °C
Poff	22 W	22 W
PTO	0 W	0 W
PSB	22 W	22 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	6834 kWh	8388 kWh
Pdh Tj = -15°C (if TOL	9.57	7.78
COP Tj = -15°C (if TOL	2.45	1.96
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	229 %	168 %
Prated	13 kW	13 kW
SCOP	5.79	4.27
Tbiv	3 °C	3 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	10.9 kW	11.3 kW
COP Tj = +2°C	3.28	2.48
Cdh Tj = +2 °C	0.99	0.99
Pdh Tj = +7°C	8.66 kW	8.67 kW
COP Tj = +7°C	5.22	3.61
Cdh Tj = +7 °C	0.99	0.99
Pdh Tj = 12°C	6.15 kW	5.97 kW
COP Tj = 12°C	7.13	5.51
Cdh Tj = +12 °C	0.97	0.98
Pdh Tj = Tbiv	11.3 kW	11.57 kW
COP Tj = Tbiv	3.46	2.61

Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	10.9 kW	11.3 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.28	2.48
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.99	0.99
WTOL	60 °C	60 °C
Poff	22 W	22 W
PTO	0 W	0 W
PSB	22 W	22 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	2.1 kW	1.7 kW
Annual energy consumption Qhe	2999 kWh	4068 kWh

Model WLW166i-12 SP AR P3 B

Model name	WLW166i-12 SP AR P3 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	11.6 kW	10.80 kW
El input	2.58 kW	3.75 kW
COP	4.5	2.88

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
η_s	179 %	136 %
Prated	11 kW	11 kW
SCOP	4.56	3.48
Tbiv	-10 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	10.22 kW	9.51 kW
COP Tj = -7°C	3.02	2.10
Cdh Tj = -7 °C	0.99	1
Pdh Tj = +2°C	6.14 kW	6.06 kW
COP Tj = +2°C	4.56	3.52

Cdh Tj = +2 °C	0.98	0.99
Pdh Tj = +7°C	5.22 kW	5.01 kW
COP Tj = +7°C	5.46	4.35
Cdh Tj = +7 °C	0.98	0.98
Pdh Tj = 12°C	6.17 kW	5.97 kW
COP Tj = 12°C	7.21	5.69
Cdh Tj = +12 °C	0.97	0.98
Pdh Tj = Tbiv	10.76 kW	9.51 kW
COP Tj = Tbiv	2.62	2.10
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	10.76 kW	8.89 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.62	1.93
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.99	1
WTOL	60 °C	60 °C
Poff	22 W	22 W
PTO	0 W	0 W
PSB	22 W	22 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	n/a	n/a
Supplementary Heater: PSUP	0.00 kW	2.11 kW
Annual energy consumption Qhe	4983 kWh	6527 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	156 %	126 %
Prated	11 kW	11 kW
SCOP	3.97	3.23
Tbiv	-15 °C	-13 °C
TOL	-20 °C	-20 °C
Pdh Tj = -7°C	6.96 kW	6.95 kW
COP Tj = -7°C	3.61	2.76
Cdh Tj = -7 °C	0.99	0.99
Pdh Tj = +2°C	4.5 kW	4.44 kW
COP Tj = +2°C	4.6	4.02
Cdh Tj = +2 °C	0.98	0.98
Pdh Tj = +7°C	5.28 kW	5.01 kW
COP Tj = +7°C	5.56	4.54
Cdh Tj = +7 °C	0.98	0.98
Pdh Tj = 12°C	6.15 kW	5.97 kW

COP Tj = 12°C	7.09	5.89
Cdh Tj = +12 °C	0.97	0.98
Pdh Tj = Tbiv	9.57 kW	8.16 kW
COP Tj = Tbiv	2.45	2.05
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	7.9 kW	7.15 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.05	1.84
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.99	0.99
WTOL	60 °C	60 °C
Poff	22 W	22 W
PTO	0 W	0 W
PSB	22 W	22 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	6834 kWh	8388 kWh
Pdh Tj = -15°C (if TOL	9.57	7.78
COP Tj = -15°C (if TOL	2.45	1.96
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	229 %	168 %
Prated	13 kW	13 kW
SCOP	5.79	4.27
Tbiv	3 °C	3 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	10.9 kW	11.3 kW
COP Tj = +2°C	3.28	2.48
Cdh Tj = +2 °C	0.99	0.99
Pdh Tj = +7°C	8.66 kW	8.67 kW
COP Tj = +7°C	5.22	3.61
Cdh Tj = +7 °C	0.99	0.99
Pdh Tj = 12°C	6.15 kW	5.97 kW
COP Tj = 12°C	7.13	5.51
Cdh Tj = +12 °C	0.97	0.98
Pdh Tj = Tbiv	11.3 kW	11.57 kW
COP Tj = Tbiv	3.46	2.61

Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	10.9 kW	11.3 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.28	2.48
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.99	0.99
WTOL	60 °C	60 °C
Poff	22 W	22 W
PTO	0 W	0 W
PSB	22 W	22 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	n/a	n/a
Supplementary Heater: PSUP	2.1 kW	1.7 kW
Annual energy consumption Qhe	2999 kWh	4068 kWh

Model WLW166i-14 SP AR P3 T190

Model name	WLW166i-14 SP AR P3 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	3x400V 50Hz
Off-peak product	No

Outdoor Air/Water

EN 16147 | Average Climate

Declared load profile	XL
Efficiency η_{DHW}	120 %
COP	2.87
Heating up time	01:53 h:min
Standby power input	50 W
Reference hot water temperature	52.7 °C
Mixed water at 40°C	264 l

EN 16147 | Colder Climate

Declared load profile	XL
Efficiency η_{DHW}	104 %
COP	2.5
Heating up time	02:08 h:min
Standby power input	50 W
Reference hot water temperature	51.6 °C
Mixed water at 40°C	260 l

EN 16147 | Warmer Climate

Declared load profile	XL
Efficiency η_{DHW}	138 %
COP	3.33
Heating up time	01:26 h:min
Standby power input	40 W
Reference hot water temperature	50.6 °C
Mixed water at 40°C	255 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	14.58 kW	12.70 kW
El input	3.41 kW	4.54 kW
COP	4.28	2.80

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
η_s	178 %	138 %
Prated	12 kW	12 kW
SCOP	4.53	3.53
Tbiv	-10 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	10.98 kW	10.26 kW
COP Tj = -7°C	2.73	2.10
Cdh Tj = -7 °C	0.99	1
Pdh Tj = +2°C	6.71 kW	6.60 kW
COP Tj = +2°C	4.71	3.59
Cdh Tj = +2 °C	0.98	0.99
Pdh Tj = +7°C	5.26 kW	5.09 kW
COP Tj = +7°C	5.40	4.48
Cdh Tj = +7 °C	0.98	0.98
Pdh Tj = 12°C	6.11 kW	6.06 kW
COP Tj = 12°C	6.75	5.60
Cdh Tj = +12 °C	0.98	0.98
Pdh Tj = Tbiv	11.49 kW	10.26 kW
COP Tj = Tbiv	2.56	2.10
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	11.49 kW	9.04 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.54	1.84
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1	1
WTOL	60 °C	60 °C
Poff	22 W	22 W
PTO	0 W	0 W
PSB	22 W	22 W

PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	2.96 kW
Annual energy consumption Q _{he}	5475 kWh	7031 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
η_s	155 %	122 %
Prated	12 kW	12 kW
SCOP	3.96	3.12
T _{biv}	-15 °C	-12 °C
TOL	-20 °C	-20 °C
P _{dh} T _j = -7°C	7.62 kW	7.48 kW
COP T _j = -7°C	3.56	2.68
C _{dh} T _j = -7 °C	0.99	0.99
P _{dh} T _j = +2°C	4.53 kW	4.64 kW
COP T _j = +2°C	4.64	3.86
C _{dh} T _j = +2 °C	0.98	0.98
P _{dh} T _j = +7°C	5.26 kW	5.01 kW
COP T _j = +7°C	5.43	4.57
C _{dh} T _j = +7 °C	0.98	0.98
P _{dh} T _j = 12°C	6.15 kW	5.98 kW
COP T _j = 12°C	7.13	5.91
C _{dh} T _j = +12 °C	0.97	0.98
P _{dh} T _j = T _{biv}	10.18 kW	8.85 kW
COP T _j = T _{biv}	2.42	2.03
P _{dh} T _j = TOL or P _{dh} T _j = T _{designh} if TOL < T _{designh}	8.69 kW	7.37 kW
COP T _j = TOL or COP T _j = T _{designh} if TOL < T _{designh}	2.06	1.7
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}	22 W	22 W
PTO	0 W	0 W
PSB	22 W	22 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	12 kW	12 kW
Annual energy consumption Q _{he}	7474 kWh	9483 kWh

Pdh Tj = -15°C (if TOL	10.18	8.31
COP Tj = -15°C (if TOL	2.42	1.88
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
η_s	229 %	168 %
Prated	14 kW	14 kW
SCOP	5.79	4.27
Tbiv	3 °C	3 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	12.2 kW	11.85 kW
COP Tj = +2°C	3.16	2.38
Cdh Tj = +2 °C	0.99	0.99
Pdh Tj = +7°C	8.88 kW	9.05 kW
COP Tj = +7°C	5.21	3.58
Cdh Tj = +7 °C	0.99	0.99
Pdh Tj = 12°C	6.16 kW	5.97 kW
COP Tj = 12°C	7.19	5.56
Cdh Tj = +12 °C	0.97	0.98
Pdh Tj = Tbiv	12.6 kW	12.3 kW
COP Tj = Tbiv	3.33	2.56
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	12.2 kW	11.85 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.16	2.38
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.99	0.99
WTOL	60 °C	60 °C
Poff	22 W	22 W
PTO	0 W	0 W
PSB	22 W	22 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.8 kW	2.15 kW
Annual energy consumption Qhe	3228 kWh	4384 kWh

Model WLW166i-14 SP AR P3 E

Model name	WLW166i-14 SP AR P3 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	3x400V 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	14.58 kW	12.70 kW
El input	3.41 kW	4.54 kW
COP	4.28	2.80

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
η_s	178 %	138 %
Prated	12 kW	12 kW
SCOP	4.53	3.53
Tbiv	-10 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	10.98 kW	10.26 kW
COP Tj = -7°C	2.73	2.10
Cdh Tj = -7 °C	0.99	1
Pdh Tj = +2°C	6.71 kW	6.60 kW
COP Tj = +2°C	4.71	3.59

Cdh Tj = +2 °C	0.98	0.99
Pdh Tj = +7°C	5.26 kW	5.09 kW
COP Tj = +7°C	5.40	4.48
Cdh Tj = +7 °C	0.98	0.98
Pdh Tj = 12°C	6.11 kW	6.06 kW
COP Tj = 12°C	6.75	5.60
Cdh Tj = +12 °C	0.98	0.98
Pdh Tj = Tbiv	11.49 kW	10.26 kW
COP Tj = Tbiv	2.56	2.10
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	11.49 kW	9.04 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.54	1.84
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1	1
WTOL	60 °C	60 °C
Poff	22 W	22 W
PTO	0 W	0 W
PSB	22 W	22 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	2.96 kW
Annual energy consumption Qhe	5475 kWh	7031 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
η_s	155 %	122 %
Prated	12 kW	12 kW
SCOP	3.96	3.12
Tbiv	-15 °C	-12 °C
TOL	-20 °C	-20 °C
Pdh Tj = -7°C	7.62 kW	7.48 kW
COP Tj = -7°C	3.56	2.68
Cdh Tj = -7 °C	0.99	0.99
Pdh Tj = +2°C	4.53 kW	4.64 kW
COP Tj = +2°C	4.64	3.86
Cdh Tj = +2 °C	0.98	0.98
Pdh Tj = +7°C	5.26 kW	5.01 kW
COP Tj = +7°C	5.43	4.57
Cdh Tj = +7 °C	0.98	0.98
Pdh Tj = 12°C	6.15 kW	5.98 kW

COP Tj = 12°C	7.13	5.91
Cdh Tj = +12 °C	0.97	0.98
Pdh Tj = Tbiv	10.18 kW	8.85 kW
COP Tj = Tbiv	2.42	2.03
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	8.69 kW	7.37 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.06	1.7
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.99	0.99
WTOL	60 °C	60 °C
Poff	22 W	22 W
PTO	0 W	0 W
PSB	22 W	22 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	12 kW	12 kW
Annual energy consumption Qhe	7474 kWh	9483 kWh
Pdh Tj = -15°C (if TOL	10.18	8.31
COP Tj = -15°C (if TOL	2.42	1.88
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
η_s	229 %	168 %
Prated	14 kW	14 kW
SCOP	5.79	4.27
Tbiv	3 °C	3 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	12.2 kW	11.85 kW
COP Tj = +2°C	3.16	2.38
Cdh Tj = +2 °C	0.99	0.99
Pdh Tj = +7°C	8.88 kW	9.05 kW
COP Tj = +7°C	5.21	3.58
Cdh Tj = +7 °C	0.99	0.99
Pdh Tj = 12°C	6.16 kW	5.97 kW
COP Tj = 12°C	7.19	5.56
Cdh Tj = +12 °C	0.97	0.98
Pdh Tj = Tbiv	12.6 kW	12.3 kW
COP Tj = Tbiv	3.33	2.56

Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	12.2 kW	11.85 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.16	2.38
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.99	0.99
WTOL	60 °C	60 °C
Poff	22 W	22 W
PTO	0 W	0 W
PSB	22 W	22 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.8 kW	2.15 kW
Annual energy consumption Qhe	3228 kWh	4384 kWh

Model WLW166i-14 SP AR P3 B

Model name	WLW166i-14 SP AR P3 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	14.58 kW	12.70 kW
El input	3.41 kW	4.54 kW
COP	4.28	2.80

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
η_s	178 %	138 %
Prated	12 kW	12 kW
SCOP	4.53	3.53
Tbiv	-10 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	10.98 kW	10.26 kW
COP Tj = -7°C	2.73	2.10
Cdh Tj = -7 °C	0.99	1
Pdh Tj = +2°C	6.71 kW	6.60 kW
COP Tj = +2°C	4.71	3.59

Cdh Tj = +2 °C	0.98	0.99
Pdh Tj = +7°C	5.26 kW	5.09 kW
COP Tj = +7°C	5.40	4.48
Cdh Tj = +7 °C	0.98	0.98
Pdh Tj = 12°C	6.11 kW	6.06 kW
COP Tj = 12°C	6.75	5.60
Cdh Tj = +12 °C	0.98	0.98
Pdh Tj = Tbiv	11.49 kW	10.26 kW
COP Tj = Tbiv	2.56	2.10
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	11.49 kW	9.04 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.54	1.84
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1	1
WTOL	60 °C	60 °C
Poff	22 W	22 W
PTO	0 W	0 W
PSB	22 W	22 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	n/a	n/a
Supplementary Heater: PSUP	0.00 kW	2.96 kW
Annual energy consumption Qhe	5475 kWh	7031 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	155 %	122 %
Prated	12 kW	12 kW
SCOP	3.96	3.12
Tbiv	-15 °C	-12 °C
TOL	-20 °C	-20 °C
Pdh Tj = -7°C	7.62 kW	7.48 kW
COP Tj = -7°C	3.56	2.68
Cdh Tj = -7 °C	0.99	0.99
Pdh Tj = +2°C	4.53 kW	4.64 kW
COP Tj = +2°C	4.64	3.86
Cdh Tj = +2 °C	0.98	0.98
Pdh Tj = +7°C	5.26 kW	5.01 kW
COP Tj = +7°C	5.43	4.57
Cdh Tj = +7 °C	0.98	0.98
Pdh Tj = 12°C	6.15 kW	5.98 kW

COP Tj = 12°C	7.13	5.91
Cdh Tj = +12 °C	0.97	0.98
Pdh Tj = Tbiv	10.18 kW	8.85 kW
COP Tj = Tbiv	2.42	2.03
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	8.69 kW	7.37 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.06	1.7
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.99	0.99
WTOL	60 °C	60 °C
Poff	22 W	22 W
PTO	0 W	0 W
PSB	22 W	22 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	n/a	n/a
Supplementary Heater: PSUP	12 kW	12 kW
Annual energy consumption Qhe	7474 kWh	9483 kWh
Pdh Tj = -15°C (if TOL	10.18	8.31
COP Tj = -15°C (if TOL	2.42	1.88
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	229 %	168 %
Prated	14 kW	14 kW
SCOP	5.79	4.27
Tbiv	3 °C	3 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	12.2 kW	11.85 kW
COP Tj = +2°C	3.16	2.38
Cdh Tj = +2 °C	0.99	0.99
Pdh Tj = +7°C	8.88 kW	9.05 kW
COP Tj = +7°C	5.21	3.58
Cdh Tj = +7 °C	0.99	0.99
Pdh Tj = 12°C	6.16 kW	5.97 kW
COP Tj = 12°C	7.19	5.56
Cdh Tj = +12 °C	0.97	0.98
Pdh Tj = Tbiv	12.6 kW	12.3 kW
COP Tj = Tbiv	3.33	2.56

Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	12.2 kW	11.85 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.16	2.38
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.99	0.99
WTOL	60 °C	60 °C
Poff	22 W	22 W
PTO	0 W	0 W
PSB	22 W	22 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	n/a	n/a
Supplementary Heater: PSUP	1.8 kW	2.15 kW
Annual energy consumption Qhe	3228 kWh	4384 kWh