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Summary of	Buderus Logatherm WLW-10,12,14 SP AR P3	Reg. No.	011-1W0540
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-10,12,14 SP AR P3		
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

Configure model	
Model name	WLW166i-10 SP AR P3 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	3x400V 50Hz

Heating

EN 14511-2		
	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 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	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

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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

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

This information was generated by the HP KEYMARK database on 23 Jun 2022

	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

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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<-20°C)	7.7	7.39
COP Tj = -15°C (if TOL<-20°C)	2.67	2.07
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

This information was generated by the HP KEYMARK database on 23 Jun 2022

	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

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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

Domestic Hot Water (DHW)

Warmer Climate

EN 16147	
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

Colder Climate

EN 16147	
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

Average Climate

EN 16147	
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

Model: WLW166i-10 SP AR P3 E

Configure model

Model name	WLW166i-10 SP AR P3 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	3x400V 50Hz
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Heating

EN 14511-2

	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 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	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

This information was generated by the HP KEYMARK database on 23 Jun 2022

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

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

This information was generated by the HP KEYMARK database on 23 Jun 2022

	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

This information was generated by the HP KEYMARK database on 23 Jun 2022

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<-20°C)	7.7	7.39
COP Tj = -15°C (if TOL<-20°C)	2.67	2.07
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

This information was generated by the HP KEYMARK database on 23 Jun 2022

	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

This information was generated by the HP KEYMARK database on 23 Jun 2022

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

Model: WLW166i-10 SP AR P3 B

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

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	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

This information was generated by the HP KEYMARK database on 23 Jun 2022

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

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

This information was generated by the HP KEYMARK database on 23 Jun 2022

	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

This information was generated by the HP KEYMARK database on 23 Jun 2022

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<-20°C)	7.7	7.39
COP Tj = -15°C (if TOL<-20°C)	2.67	2.07
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

This information was generated by the HP KEYMARK database on 23 Jun 2022

	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

This information was generated by the HP KEYMARK database on 23 Jun 2022

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

Model: WLW166i-12 SP AR P3 T190

Configure model	
Model name	WLW166i-12 SP AR P3 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	3x400V 50Hz

Heating

EN 14511-2		
	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 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	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

This information was generated by the HP KEYMARK database on 23 Jun 2022

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

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

This information was generated by the HP KEYMARK database on 23 Jun 2022

	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

This information was generated by the HP KEYMARK database on 23 Jun 2022

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<-20°C)	9.57	7.78
COP Tj = -15°C (if TOL<-20°C)	2.45	1.96
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

This information was generated by the HP KEYMARK database on 23 Jun 2022

	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

This information was generated by the HP KEYMARK database on 23 Jun 2022

COP $T_j = TOL$ or COP $T_j = T_{designh}$ if $TOL < T_{designh}$	2.62	1.93
Cdh $T_j = TOL$ or Pdh $T_j = T_{designh}$ if $TOL < T_{designh}$	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

Domestic Hot Water (DHW)

Warmer Climate

EN 16147	
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

Colder Climate

EN 16147	
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

Average Climate

EN 16147	
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

Model: WLW166i-12 SP AR P3 E

Configure model	
Model name	WLW166i-12 SP AR P3 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	3x400V 50Hz

Heating

EN 14511-2		
	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 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	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

This information was generated by the HP KEYMARK database on 23 Jun 2022

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

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

This information was generated by the HP KEYMARK database on 23 Jun 2022

	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

This information was generated by the HP KEYMARK database on 23 Jun 2022

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<-20°C)	9.57	7.78
COP Tj = -15°C (if TOL<-20°C)	2.45	1.96
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

This information was generated by the HP KEYMARK database on 23 Jun 2022

	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

This information was generated by the HP KEYMARK database on 23 Jun 2022

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

Model: WLW166i-12 SP AR P3 B

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

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	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

This information was generated by the HP KEYMARK database on 23 Jun 2022

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

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

This information was generated by the HP KEYMARK database on 23 Jun 2022

	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

This information was generated by the HP KEYMARK database on 23 Jun 2022

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<-20°C)	9.57	7.78
COP Tj = -15°C (if TOL<-20°C)	2.45	1.96
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

This information was generated by the HP KEYMARK database on 23 Jun 2022

	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

This information was generated by the HP KEYMARK database on 23 Jun 2022

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

Model: WLW166i-14 SP AR P3 T190

Configure model	
Model name	WLW166i-14 SP AR P3 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	3x400V 50Hz

Heating

EN 14511-2		
	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 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	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

This information was generated by the HP KEYMARK database on 23 Jun 2022

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

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

This information was generated by the HP KEYMARK database on 23 Jun 2022

	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

This information was generated by the HP KEYMARK database on 23 Jun 2022

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<-20°C)	10.18	8.31
COP Tj = -15°C (if TOL<-20°C)	2.42	1.88
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

This information was generated by the HP KEYMARK database on 23 Jun 2022

	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

This information was generated by the HP KEYMARK database on 23 Jun 2022

COP $T_j = TOL$ or COP $T_j = T_{designh}$ if $TOL < T_{designh}$	2.54	1.84
Cdh $T_j = TOL$ or Pdh $T_j = T_{designh}$ if $TOL < T_{designh}$	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

Domestic Hot Water (DHW)

Warmer Climate

EN 16147	
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

Colder Climate

EN 16147	
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

Average Climate

EN 16147	
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

Model: WLW166i-14 SP AR P3 E

Configure model	
Model name	WLW166i-14 SP AR P3 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	3x400V 50Hz

Heating

EN 14511-2		
	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 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	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

This information was generated by the HP KEYMARK database on 23 Jun 2022

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

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

This information was generated by the HP KEYMARK database on 23 Jun 2022

	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

This information was generated by the HP KEYMARK database on 23 Jun 2022

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<-20°C)	10.18	8.31
COP Tj = -15°C (if TOL<-20°C)	2.42	1.88
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

This information was generated by the HP KEYMARK database on 23 Jun 2022

	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

This information was generated by the HP KEYMARK database on 23 Jun 2022

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

Model: WLW166i-14 SP AR P3 B

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

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

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WTOL	60 °C	60 °C
Poff	22 W	22 W
PTO	0 W	0 W
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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

Colder Climate

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Pdh Tj = Tbiv	10.18 kW	8.85 kW
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WTOL	60 °C	60 °C
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Supplementary Heater: Type of energy input	n/a	n/a
Supplementary Heater: PSUP	12 kW	12 kW
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Average Climate

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Pdh Tj = 12°C	6.11 kW	6.06 kW
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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
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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