This information was generated by the HP KEYMARK database on 17 Dec 2020

Summary of	Ecodan Zubadan 10/12-200D AA	Reg. No.	037-0022-20
Certificate Holder			
Name	Mitsubishi Electric Air Conditioning Systems Europe LTD		
Address	Nettlehill Road, Houston Industrial Estate	Zip	EH54 5EQ
City	Livingston	Country	United Kingdom
Certification Body	SZU - Strojirensky zkusebni ustav (Engineering Test Institute, Public Enterprise)		
Name of testing laboratory	Heat Pump Test Center WPZ		
Subtype title	Ecodan Zubadan 10/12-200D AA		
Heat Pump Type	Outdoor Air/Water		
Refrigerant	R32		
Mass Of Refrigerant	1.7 kg		
Certification Date	06.10.2020		
Testing basis	HP Keymark scheme rules rev. no. 6		

Model: PUD-SHWM100VAA(-BS) + E*ST20D-M*D

General Data	
Power supply	1x230V 50Hz

Heating

EN 14511-2		
	Low temperature	**Medium temperature**
Heat output	8.00 kW	8.00 kW
El input	1.60 kW	3.08 kW
COP	5.00	2.60
Indoor water flow rate	1.37 m³/h	0.86 m³/h

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

Average Climate

EN 12102-1

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	59 dB(A)	59 dB(A)

EN 14825

	Low temperature	Medium temperature
η_s	180 %	136 %
Prated	10.00 kW	10.00 kW
SCOP	4.56	3.48
Tbiv	-10 °C	-10 °C
TOL	-28 °C	-28 °C
Pdh Tj = -7°C	8.90 kW	8.90 kW
COP Tj = -7°C	3.16	2.18
Cdh	1.00	1.00
Pdh Tj = +2°C	5.70 kW	5.40 kW
COP Tj = +2°C	4.52	3.29
Cdh	0.99	0.99
Pdh Tj = +7°C	5.40 kW	5.20 kW
COP Tj = +7°C	5.63	4.81
Cdh	0.98	0.99

Pdh Tj = 12°C	4.50 kW	3.60 kW
COP Tj = 12°C	7.89	7.06
Cdh	0.97	0.97
Pdh Tj = Tbiv	10.00 kW	10.00 kW
COP Tj = Tbiv	2.92	1.91
Pdh Tj = TOL	7.70 kW	7.70 kW
COP Tj = TOL	1.57	1.57
WTOL	60 °C	60 °C
Poff	15 W	15 W
PTO	15 W	15 W
PSB	15 W	15 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	electricity	electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	4430 kWh	5836 kWh

Warmer Climate

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	59 dB(A)	59 dB(A)

EN 14825

	Low temperature	Medium temperature
η_s	235 %	136 %
Prated	10.00 kW	10.00 kW
SCOP	5.95	4.14
Tbiv	2 °C	2 °C
TOL	-28 °C	-28 °C
Pdh Tj = +2°C	10.00 kW	10.00 kW
COP Tj = +2°C	3.45	2.05
Cdh	1.00	1.00
Pdh Tj = +7°C	6.40 kW	6.40 kW
COP Tj = +7°C	5.42	3.48
Cdh	0.99	0.99
Pdh Tj = 12°C	4.40 kW	4.20 kW
COP Tj = 12°C	7.46	5.68
Cdh	0.98	0.98
Pdh Tj = Tbiv	10.00 kW	10.00 kW
COP Tj = Tbiv	3.45	2.05
Pdh Tj = TOL	7.70 kW	7.70 kW
COP Tj = TOL	1.57	1.57
WTOL	60 °C	60 °C

Poff	15 W	15 W
PTO	15 W	15 W
PSB	15 W	15 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	electricity	electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	2191 kWh	3169 kWh

Domestic Hot Water (DHW)

Average Climate

EN 16147	
Declared load profile	L
Efficiency ηDHW	148 %
COP	3.49
Heating up time	1:47 h:min
Standby power input	36.0 W
Reference hot water temperature	52.5 °C
Mixed water at 40°C	278 l

Warmer Climate

EN 16147

Declared load profile	L
Efficiency ηDHW	162 %
COP	3.80
Heating up time	1:49 h:min
Standby power input	33.0 W
Reference hot water temperature	52.5 °C
Mixed water at 40°C	278 l

Model: PUD-SHWM100VAA(-BS) + E*ST20D-*M*D

General Data	
Power supply	1x230V 50Hz

Heating

EN 14511-2		
	Low temperature	**Medium temperature**
Heat output	8.00 kW	8.00 kW
El input	1.60 kW	3.08 kW
COP	5.00	2.60
Indoor water flow rate	1.37 m³/h	0.86 m³/h

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

Average Climate

EN 12102-1

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	59 dB(A)	59 dB(A)

EN 14825

	Low temperature	Medium temperature
η_s	180 %	136 %
Prated	10.00 kW	10.00 kW
SCOP	4.56	3.48
Tbiv	-10 °C	-10 °C
TOL	-28 °C	-28 °C
Pdh Tj = -7°C	8.90 kW	8.90 kW
COP Tj = -7°C	3.16	2.18
Cdh	1.00	1.00
Pdh Tj = +2°C	5.70 kW	5.40 kW
COP Tj = +2°C	4.52	3.29
Cdh	0.99	0.99
Pdh Tj = +7°C	5.40 kW	5.20 kW
COP Tj = +7°C	5.63	4.81
Cdh	0.98	0.99

Pdh Tj = 12°C	4.50 kW	3.60 kW
COP Tj = 12°C	7.89	7.06
Cdh	0.97	0.97
Pdh Tj = Tbiv	10.00 kW	10.00 kW
COP Tj = Tbiv	2.92	1.91
Pdh Tj = TOL	7.70 kW	7.70 kW
COP Tj = TOL	1.57	1.57
WTOL	60 °C	60 °C
Poff	15 W	15 W
PTO	15 W	15 W
PSB	15 W	15 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	electricity	electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	4430 kWh	5836 kWh

Warmer Climate

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	59 dB(A)	59 dB(A)

EN 14825

	Low temperature	Medium temperature
η_s	235 %	136 %
Prated	10.00 kW	10.00 kW
SCOP	5.95	4.14
Tbiv	2 °C	2 °C
TOL	-28 °C	-28 °C
Pdh Tj = +2°C	10.00 kW	10.00 kW
COP Tj = +2°C	3.45	2.05
Cdh	1.00	1.00
Pdh Tj = +7°C	6.40 kW	6.40 kW
COP Tj = +7°C	5.42	3.48
Cdh	0.99	0.99
Pdh Tj = 12°C	4.40 kW	4.20 kW
COP Tj = 12°C	7.46	5.68
Cdh	0.98	0.98
Pdh Tj = Tbiv	10.00 kW	10.00 kW
COP Tj = Tbiv	3.45	2.05
Pdh Tj = TOL	7.70 kW	7.70 kW
COP Tj = TOL	1.57	1.57
WTOL	60 °C	60 °C

Poff	15 W	15 W
PTO	15 W	15 W
PSB	15 W	15 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	electricity	electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	2191 kWh	3169 kWh

Domestic Hot Water (DHW)

Average Climate

EN 16147	
Declared load profile	L
Efficiency ηDHW	148 %
COP	3.49
Heating up time	1:47 h:min
Standby power input	36.0 W
Reference hot water temperature	52.5 °C
Mixed water at 40°C	278 l

Warmer Climate

EN 16147	
Declared load profile	L
Efficiency ηDHW	162 %
COP	3.80
Heating up time	1:49 h:min
Standby power input	33.0 W
Reference hot water temperature	52.5 °C
Mixed water at 40°C	278 l

Model: PUD-SHWM100VAA(-BS) + E*SD-M*D

General Data	
Power supply	1x230V 50Hz

Heating

EN 14511-2		
	Low temperature	**Medium temperature**
Heat output	8.00 kW	8.00 kW
El input	1.60 kW	3.08 kW
COP	5.00	2.60
Indoor water flow rate	1.37 m³/h	0.86 m³/h

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

Average Climate

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	59 dB(A)	59 dB(A)

EN 14825		
	Low temperature	**Medium temperature**
η_s	180 %	136 %
Prated	10.00 kW	10.00 kW
SCOP	4.56	3.48
Tbiv	-10 °C	-10 °C
TOL	-28 °C	-28 °C
Pdh Tj = -7°C	8.90 kW	8.90 kW
COP Tj = -7°C	3.16	2.18
Cdh	1.00	1.00
Pdh Tj = +2°C	5.70 kW	5.40 kW
COP Tj = +2°C	4.52	3.29
Cdh	0.99	0.99
Pdh Tj = +7°C	5.40 kW	5.20 kW
COP Tj = +7°C	5.63	4.81
Cdh	0.98	0.99

Pdh Tj = 12°C	4.50 kW	3.60 kW
COP Tj = 12°C	7.89	7.06
Cdh	0.97	0.97
Pdh Tj = Tbiv	10.00 kW	10.00 kW
COP Tj = Tbiv	2.92	1.91
Pdh Tj = TOL	7.70 kW	7.70 kW
COP Tj = TOL	1.57	1.57
WTOL	60 °C	60 °C
Poff	15 W	15 W
PTO	15 W	15 W
PSB	15 W	15 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	electricity	electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	4430 kWh	5836 kWh

Warmer Climate

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	59 dB(A)	59 dB(A)

EN 14825

	Low temperature	Medium temperature
η_s	235 %	136 %
Prated	10.00 kW	10.00 kW
SCOP	5.95	4.14
Tbiv	2 °C	2 °C
TOL	-28 °C	-28 °C
Pdh Tj = +2°C	10.00 kW	10.00 kW
COP Tj = +2°C	3.45	2.05
Cdh	1.00	1.00
Pdh Tj = +7°C	6.40 kW	6.40 kW
COP Tj = +7°C	5.42	3.48
Cdh	0.99	0.99
Pdh Tj = 12°C	4.40 kW	4.20 kW
COP Tj = 12°C	7.46	5.68
Cdh	0.98	0.98
Pdh Tj = Tbiv	10.00 kW	10.00 kW
COP Tj = Tbiv	3.45	2.05
Pdh Tj = TOL	7.70 kW	7.70 kW
COP Tj = TOL	1.57	1.57
WTOL	60 °C	60 °C

Poff	15 W	15 W
PTO	15 W	15 W
PSB	15 W	15 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	electricity	electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	2191 kWh	3169 kWh

Model: PUD-SHWM100VAA(-BS) + E*SD-*M*D

General Data	
Power supply	1x230V 50Hz

Heating

EN 14511-2		
	Low temperature	**Medium temperature**
Heat output	8.00 kW	8.00 kW
El input	1.60 kW	3.08 kW
COP	5.00	2.60
Indoor water flow rate	1.37 m³/h	0.86 m³/h

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

Average Climate

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	59 dB(A)	59 dB(A)

EN 14825		
	Low temperature	**Medium temperature**
η_s	180 %	136 %
Prated	10.00 kW	10.00 kW
SCOP	4.56	3.48
Tbiv	-10 °C	-10 °C
TOL	-28 °C	-28 °C
Pdh Tj = -7°C	8.90 kW	8.90 kW
COP Tj = -7°C	3.16	2.18
Cdh	1.00	1.00
Pdh Tj = +2°C	5.70 kW	5.40 kW
COP Tj = +2°C	4.52	3.29
Cdh	0.99	0.99
Pdh Tj = +7°C	5.40 kW	5.20 kW
COP Tj = +7°C	5.63	4.81
Cdh	0.98	0.99

Pdh Tj = 12°C	4.50 kW	3.60 kW
COP Tj = 12°C	7.89	7.06
Cdh	0.97	0.97
Pdh Tj = Tbiv	10.00 kW	10.00 kW
COP Tj = Tbiv	2.92	1.91
Pdh Tj = TOL	7.70 kW	7.70 kW
COP Tj = TOL	1.57	1.57
WTOL	60 °C	60 °C
Poff	15 W	15 W
PTO	15 W	15 W
PSB	15 W	15 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	electricity	electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	4430 kWh	5836 kWh

Warmer Climate

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	59 dB(A)	59 dB(A)

EN 14825

	Low temperature	Medium temperature
η_s	235 %	136 %
Prated	10.00 kW	10.00 kW
SCOP	5.95	4.14
Tbiv	2 °C	2 °C
TOL	-28 °C	-28 °C
Pdh Tj = +2°C	10.00 kW	10.00 kW
COP Tj = +2°C	3.45	2.05
Cdh	1.00	1.00
Pdh Tj = +7°C	6.40 kW	6.40 kW
COP Tj = +7°C	5.42	3.48
Cdh	0.99	0.99
Pdh Tj = 12°C	4.40 kW	4.20 kW
COP Tj = 12°C	7.46	5.68
Cdh	0.98	0.98
Pdh Tj = Tbiv	10.00 kW	10.00 kW
COP Tj = Tbiv	3.45	2.05
Pdh Tj = TOL	7.70 kW	7.70 kW
COP Tj = TOL	1.57	1.57
WTOL	60 °C	60 °C

Poff	15 W	15 W
PTO	15 W	15 W
PSB	15 W	15 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	electricity	electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	2191 kWh	3169 kWh

Model: PUD-SHWM100YAA(-BS) + E*ST20D-M*D

General Data	
Power supply	3x400V 50Hz

Heating

EN 14511-2		
	Low temperature	**Medium temperature**
Heat output	8.00 kW	8.00 kW
El input	1.60 kW	3.08 kW
COP	5.00	2.60
Indoor water flow rate	1.37 m³/h	0.86 m³/h

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

Average Climate

EN 12102-1

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	59 dB(A)	59 dB(A)

EN 14825

	Low temperature	Medium temperature
η_s	178 %	135 %
Prated	10.00 kW	10.00 kW
SCOP	4.52	3.46
Tbiv	-10 °C	-10 °C
TOL	-28 °C	-28 °C
Pdh Tj = -7°C	8.90 kW	8.90 kW
COP Tj = -7°C	3.16	2.18
Cdh	0.99	1.00
Pdh Tj = +2°C	5.70 kW	5.40 kW
COP Tj = +2°C	4.52	3.29
Cdh	0.98	0.99
Pdh Tj = +7°C	5.40 kW	5.20 kW
COP Tj = +7°C	5.63	4.81
Cdh	0.98	0.98

Pdh Tj = 12°C	4.50 kW	3.60 kW
COP Tj = 12°C	7.89	7.06
Cdh	0.96	0.96
Pdh Tj = Tbiv	10.00 kW	10.00 kW
COP Tj = Tbiv	2.92	1.91
Pdh Tj = TOL	7.70 kW	7.70 kW
COP Tj = TOL	1.57	1.57
WTOL	60 °C	60 °C
Poff	22 W	22 W
PTO	22 W	22 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	0.00 kW
Annual energy consumption Qhe	4430 kWh	5836 kWh

Warmer Climate

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	59 dB(A)	59 dB(A)

EN 14825

	Low temperature	Medium temperature
η_s	232 %	135 %
Prated	10.00 kW	10.00 kW
SCOP	5.88	4.11
Tbiv	2 °C	2 °C
TOL	-28 °C	-28 °C
Pdh Tj = +2°C	10.00 kW	10.00 kW
COP Tj = +2°C	3.45	2.05
Cdh	0.99	1.00
Pdh Tj = +7°C	6.40 kW	6.40 kW
COP Tj = +7°C	5.42	3.48
Cdh	0.98	0.99
Pdh Tj = 12°C	4.40 kW	4.20 kW
COP Tj = 12°C	7.46	5.68
Cdh	0.96	0.97
Pdh Tj = Tbiv	10.00 kW	10.00 kW
COP Tj = Tbiv	3.45	2.05
Pdh Tj = TOL	7.70 kW	7.70 kW
COP Tj = TOL	1.57	1.57
WTOL	60 °C	60 °C

Poff	22 W	22 W
PTO	22 W	22 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	0.00 kW
Annual energy consumption Qhe	2191 kWh	3169 kWh

Domestic Hot Water (DHW)

Average Climate

EN 16147	
Declared load profile	L
Efficiency ηDHW	148 %
COP	3.49
Heating up time	1:47 h:min
Standby power input	36.0 W
Reference hot water temperature	52.5 °C
Mixed water at 40°C	278 l

Warmer Climate

EN 16147	
Declared load profile	L
Efficiency ηDHW	162 %
COP	3.80
Heating up time	1:49 h:min
Standby power input	33.0 W
Reference hot water temperature	52.5 °C
Mixed water at 40°C	278 l

Model: PUD-SHWM100YAA(-BS) + E*ST20D-*M*D

General Data	
Power supply	3x400V 50Hz

Heating

EN 14511-2		
	Low temperature	**Medium temperature**
Heat output	8.00 kW	8.00 kW
El input	1.60 kW	3.08 kW
COP	5.00	2.60
Indoor water flow rate	1.37 m³/h	0.86 m³/h

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

Average Climate

EN 12102-1

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	59 dB(A)	59 dB(A)

EN 14825

	Low temperature	Medium temperature
η_s	178 %	135 %
Prated	10.00 kW	10.00 kW
SCOP	4.52	3.46
Tbiv	-10 °C	-10 °C
TOL	-28 °C	-28 °C
Pdh Tj = -7°C	8.90 kW	8.90 kW
COP Tj = -7°C	3.16	2.18
Cdh	0.99	1.00
Pdh Tj = +2°C	5.70 kW	5.40 kW
COP Tj = +2°C	4.52	3.29
Cdh	0.98	0.99
Pdh Tj = +7°C	5.40 kW	5.20 kW
COP Tj = +7°C	5.63	4.81
Cdh	0.98	0.98

Pdh Tj = 12°C	4.50 kW	3.60 kW
COP Tj = 12°C	7.89	7.06
Cdh	0.96	0.96
Pdh Tj = Tbiv	10.00 kW	10.00 kW
COP Tj = Tbiv	2.92	1.91
Pdh Tj = TOL	7.70 kW	7.70 kW
COP Tj = TOL	1.57	1.57
WTOL	60 °C	60 °C
Poff	22 W	22 W
PTO	22 W	22 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	0.00 kW
Annual energy consumption Qhe	4430 kWh	5836 kWh

Warmer Climate

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	59 dB(A)	59 dB(A)

EN 14825

	Low temperature	Medium temperature
η_s	232 %	135 %
Prated	10.00 kW	10.00 kW
SCOP	5.88	4.11
Tbiv	2 °C	2 °C
TOL	-28 °C	-28 °C
Pdh Tj = +2°C	10.00 kW	10.00 kW
COP Tj = +2°C	3.45	2.05
Cdh	0.99	1.00
Pdh Tj = +7°C	6.40 kW	6.40 kW
COP Tj = +7°C	5.42	3.48
Cdh	0.98	0.99
Pdh Tj = 12°C	4.40 kW	4.20 kW
COP Tj = 12°C	7.46	5.68
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COP Tj = Tbiv	3.45	2.05
Pdh Tj = TOL	7.70 kW	7.70 kW
COP Tj = TOL	1.57	1.57
WTOL	60 °C	60 °C

Poff	22 W	22 W
PTO	22 W	22 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	0.00 kW
Annual energy consumption Qhe	2191 kWh	3169 kWh

Domestic Hot Water (DHW)

Average Climate

EN 16147	
Declared load profile	L
Efficiency ηDHW	148 %
COP	3.49
Heating up time	1:47 h:min
Standby power input	36.0 W
Reference hot water temperature	52.5 °C
Mixed water at 40°C	278 l

Warmer Climate

EN 16147

Declared load profile	L
Efficiency ηDHW	162 %
COP	3.80
Heating up time	1:49 h:min
Standby power input	33.0 W
Reference hot water temperature	52.5 °C
Mixed water at 40°C	278 l

Model: PUD-SHWM100YAA(-BS) + E*SD-M*D

General Data	
Power supply	3x400V 50Hz

Heating

EN 14511-2		
	Low temperature	**Medium temperature**
Heat output	8.00 kW	8.00 kW
El input	1.60 kW	3.08 kW
COP	5.00	2.60
Indoor water flow rate	1.37 m³/h	0.86 m³/h

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

Average Climate

EN 12102-1

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	59 dB(A)	59 dB(A)

EN 14825

	Low temperature	Medium temperature
η_s	178 %	135 %
Prated	10.00 kW	10.00 kW
SCOP	4.52	3.46
Tbiv	-10 °C	-10 °C
TOL	-28 °C	-28 °C
Pdh Tj = -7°C	8.90 kW	8.90 kW
COP Tj = -7°C	3.16	2.18
Cdh	0.99	1.00
Pdh Tj = +2°C	5.70 kW	5.40 kW
COP Tj = +2°C	4.52	3.29
Cdh	0.98	0.99
Pdh Tj = +7°C	5.40 kW	5.20 kW
COP Tj = +7°C	5.63	4.81
Cdh	0.98	0.98

Pdh Tj = 12°C	4.50 kW	3.60 kW
COP Tj = 12°C	7.89	7.06
Cdh	0.96	0.96
Pdh Tj = Tbiv	10.00 kW	10.00 kW
COP Tj = Tbiv	2.92	1.91
Pdh Tj = TOL	7.70 kW	7.70 kW
COP Tj = TOL	1.57	1.57
WTOL	60 °C	60 °C
Poff	22 W	22 W
PTO	22 W	22 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	0.00 kW
Annual energy consumption Qhe	4430 kWh	5836 kWh

Warmer Climate

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	59 dB(A)	59 dB(A)

EN 14825

	Low temperature	Medium temperature
η_s	232 %	135 %
Prated	10.00 kW	10.00 kW
SCOP	5.88	4.11
Tbiv	2 °C	2 °C
TOL	-28 °C	-28 °C
Pdh Tj = +2°C	10.00 kW	10.00 kW
COP Tj = +2°C	3.45	2.05
Cdh	0.99	1.00
Pdh Tj = +7°C	6.40 kW	6.40 kW
COP Tj = +7°C	5.42	3.48
Cdh	0.98	0.99
Pdh Tj = 12°C	4.40 kW	4.20 kW
COP Tj = 12°C	7.46	5.68
Cdh	0.96	0.97
Pdh Tj = Tbiv	10.00 kW	10.00 kW
COP Tj = Tbiv	3.45	2.05
Pdh Tj = TOL	7.70 kW	7.70 kW
COP Tj = TOL	1.57	1.57
WTOL	60 °C	60 °C

Poff	22 W	22 W
PTO	22 W	22 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	0.00 kW
Annual energy consumption Qhe	2191 kWh	3169 kWh

Model: PUD-SHWM100YAA(-BS) + E*SD-*M*D

General Data	
Power supply	3x400V 50Hz

Heating

EN 14511-2		
	Low temperature	**Medium temperature**
Heat output	8.00 kW	8.00 kW
El input	1.60 kW	3.08 kW
COP	5.00	2.60
Indoor water flow rate	1.37 m³/h	0.86 m³/h

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

Average Climate

EN 12102-1

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	59 dB(A)	59 dB(A)

EN 14825

	Low temperature	Medium temperature
η_s	178 %	135 %
Prated	10.00 kW	10.00 kW
SCOP	4.52	3.46
Tbiv	-10 °C	-10 °C
TOL	-28 °C	-28 °C
Pdh Tj = -7°C	8.90 kW	8.90 kW
COP Tj = -7°C	3.16	2.18
Cdh	0.99	1.00
Pdh Tj = +2°C	5.70 kW	5.40 kW
COP Tj = +2°C	4.52	3.29
Cdh	0.98	0.99
Pdh Tj = +7°C	5.40 kW	5.20 kW
COP Tj = +7°C	5.63	4.81
Cdh	0.98	0.98

Pdh Tj = 12°C	4.50 kW	3.60 kW
COP Tj = 12°C	7.89	7.06
Cdh	0.96	0.96
Pdh Tj = Tbiv	10.00 kW	10.00 kW
COP Tj = Tbiv	2.92	1.91
Pdh Tj = TOL	7.70 kW	7.70 kW
COP Tj = TOL	1.57	1.57
WTOL	60 °C	60 °C
Poff	22 W	22 W
PTO	22 W	22 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	0.00 kW
Annual energy consumption Qhe	4430 kWh	5836 kWh

Warmer Climate

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	59 dB(A)	59 dB(A)

EN 14825

	Low temperature	Medium temperature
η_s	232 %	135 %
Prated	10.00 kW	10.00 kW
SCOP	5.88	4.11
Tbiv	2 °C	2 °C
TOL	-28 °C	-28 °C
Pdh Tj = +2°C	10.00 kW	10.00 kW
COP Tj = +2°C	3.45	2.05
Cdh	0.99	1.00
Pdh Tj = +7°C	6.40 kW	6.40 kW
COP Tj = +7°C	5.42	3.48
Cdh	0.98	0.99
Pdh Tj = 12°C	4.40 kW	4.20 kW
COP Tj = 12°C	7.46	5.68
Cdh	0.96	0.97
Pdh Tj = Tbiv	10.00 kW	10.00 kW
COP Tj = Tbiv	3.45	2.05
Pdh Tj = TOL	7.70 kW	7.70 kW
COP Tj = TOL	1.57	1.57
WTOL	60 °C	60 °C

Poff	22 W	22 W
PTO	22 W	22 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	0.00 kW
Annual energy consumption Qhe	2191 kWh	3169 kWh

Model: PUD-SHWM120VAA(-BS) + E*ST20D-M*D

General Data	
Power supply	1x230V 50Hz

Heating

EN 14511-2		
	Low temperature	**Medium temperature**
Heat output	10.00 kW	10.00 kW
El input	2.08 kW	3.77 kW
COP	4.80	2.65
Indoor water flow rate	1.72 m³/h	1.07 m³/h

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

Average Climate

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	60 dB(A)	60 dB(A)

EN 14825		
	Low temperature	**Medium temperature**
η_s	179 %	135 %
Prated	12.00 kW	12.00 kW
SCOP	4.55	3.46
Tbiv	-10 °C	-10 °C
TOL	-28 °C	-28 °C
Pdh Tj = -7°C	10.60 kW	10.60 kW
COP Tj = -7°C	2.85	2.14
Cdh	1.00	1.00
Pdh Tj = +2°C	6.50 kW	6.50 kW
COP Tj = +2°C	4.51	3.25
Cdh	0.99	0.99
Pdh Tj = +7°C	5.60 kW	5.30 kW
COP Tj = +7°C	5.89	4.82
Cdh	0.98	0.99

Pdh Tj = 12°C	4.40 kW	4.30 kW
COP Tj = 12°C	8.00	6.94
Cdh	0.97	0.98
Pdh Tj = Tbiv	12.00 kW	12.00 kW
COP Tj = Tbiv	2.77	1.87
Pdh Tj = TOL	9.20 kW	9.20 kW
COP Tj = TOL	1.56	1.56
WTOL	60 °C	60 °C
Poff	15 W	15 W
PTO	15 W	15 W
PSB	15 W	15 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	electricity	electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	5354 kWh	7068 kWh

Warmer Climate

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	60 dB(A)	60 dB(A)

EN 14825

	Low temperature	Medium temperature
η_s	231 %	135 %
Prated	12.00 kW	12.00 kW
SCOP	5.84	4.05
Tbiv	2 °C	2 °C
TOL	-28 °C	-28 °C
Pdh Tj = +2°C	12.00 kW	12.00 kW
COP Tj = +2°C	3.30	2.03
Cdh	1.00	1.00
Pdh Tj = +7°C	7.70 kW	7.70 kW
COP Tj = +7°C	5.17	3.35
Cdh	0.99	0.99
Pdh Tj = 12°C	4.40 kW	5.20 kW
COP Tj = 12°C	7.46	5.59
Cdh	0.98	0.98
Pdh Tj = Tbiv	12.00 kW	12.00 kW
COP Tj = Tbiv	3.30	2.03
Pdh Tj = TOL	9.20 kW	9.20 kW
COP Tj = TOL	1.56	1.56
WTOL	60 °C	60 °C

Poff	15 W	15 W
PTO	15 W	15 W
PSB	15 W	15 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	electricity	electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	2688 kWh	3901 kWh

Domestic Hot Water (DHW)

Average Climate

EN 16147	
Declared load profile	L
Efficiency ηDHW	148 %
COP	3.49
Heating up time	1:47 h:min
Standby power input	36.0 W
Reference hot water temperature	52.5 °C
Mixed water at 40°C	278 l

Warmer Climate

EN 16147

Declared load profile	L
Efficiency ηDHW	162 %
COP	3.80
Heating up time	1:49 h:min
Standby power input	33.0 W
Reference hot water temperature	52.5 °C
Mixed water at 40°C	278 l

Model: PUD-SHWM120VAA(-BS) + E*ST20D-*M*D

General Data	
Power supply	1x230V 50Hz

Heating

EN 14511-2		
	Low temperature	**Medium temperature**
Heat output	10.00 kW	10.00 kW
El input	2.08 kW	3.77 kW
COP	4.80	2.65
Indoor water flow rate	1.72 m³/h	1.07 m³/h

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

Average Climate

EN 12102-1

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	60 dB(A)	60 dB(A)

EN 14825

	Low temperature	Medium temperature
η_s	179 %	135 %
Prated	12.00 kW	12.00 kW
SCOP	4.55	3.46
Tbiv	-10 °C	-10 °C
TOL	-28 °C	-28 °C
Pdh Tj = -7°C	10.60 kW	10.60 kW
COP Tj = -7°C	2.85	2.14
Cdh	1.00	1.00
Pdh Tj = +2°C	6.50 kW	6.50 kW
COP Tj = +2°C	4.51	3.25
Cdh	0.99	0.99
Pdh Tj = +7°C	5.60 kW	5.30 kW
COP Tj = +7°C	5.89	4.82
Cdh	0.98	0.99

Pdh Tj = 12°C	4.40 kW	4.30 kW
COP Tj = 12°C	8.00	6.94
Cdh	0.97	0.98
Pdh Tj = Tbiv	12.00 kW	12.00 kW
COP Tj = Tbiv	2.77	1.87
Pdh Tj = TOL	9.20 kW	9.20 kW
COP Tj = TOL	1.56	1.56
WTOL	60 °C	60 °C
Poff	15 W	15 W
PTO	15 W	15 W
PSB	15 W	15 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	electricity	electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	5354 kWh	7068 kWh

Warmer Climate

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	60 dB(A)	60 dB(A)

EN 14825

	Low temperature	Medium temperature
η_s	231 %	135 %
Prated	12.00 kW	12.00 kW
SCOP	5.84	4.05
Tbiv	2 °C	2 °C
TOL	-28 °C	-28 °C
Pdh Tj = +2°C	12.00 kW	12.00 kW
COP Tj = +2°C	3.30	2.03
Cdh	1.00	1.00
Pdh Tj = +7°C	7.70 kW	7.70 kW
COP Tj = +7°C	5.17	3.35
Cdh	0.99	0.99
Pdh Tj = 12°C	4.40 kW	5.20 kW
COP Tj = 12°C	7.46	5.59
Cdh	0.98	0.98
Pdh Tj = Tbiv	12.00 kW	12.00 kW
COP Tj = Tbiv	3.30	2.03
Pdh Tj = TOL	9.20 kW	9.20 kW
COP Tj = TOL	1.56	1.56
WTOL	60 °C	60 °C

Poff	15 W	15 W
PTO	15 W	15 W
PSB	15 W	15 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	electricity	electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	2688 kWh	3901 kWh

Domestic Hot Water (DHW)

Average Climate

EN 16147	
Declared load profile	L
Efficiency ηDHW	148 %
COP	3.49
Heating up time	1:47 h:min
Standby power input	36.0 W
Reference hot water temperature	52.5 °C
Mixed water at 40°C	278 l

Warmer Climate

EN 16147

Declared load profile	L
Efficiency ηDHW	162 %
COP	3.80
Heating up time	1:49 h:min
Standby power input	33.0 W
Reference hot water temperature	52.5 °C
Mixed water at 40°C	278 l

Model: PUD-SHWM120VAA(-BS) + E*SD-M*D

General Data	
Power supply	1x230V 50Hz

Heating

EN 14511-2		
	Low temperature	**Medium temperature**
Heat output	10.00 kW	10.00 kW
El input	2.08 kW	3.77 kW
COP	4.80	2.65
Indoor water flow rate	1.72 m³/h	1.07 m³/h

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

Average Climate

EN 12102-1

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	60 dB(A)	60 dB(A)

EN 14825

	Low temperature	Medium temperature
η_s	179 %	135 %
Prated	12.00 kW	12.00 kW
SCOP	4.55	3.46
Tbiv	-10 °C	-10 °C
TOL	-28 °C	-28 °C
Pdh Tj = -7°C	10.60 kW	10.60 kW
COP Tj = -7°C	2.85	2.14
Cdh	1.00	1.00
Pdh Tj = +2°C	6.50 kW	6.50 kW
COP Tj = +2°C	4.51	3.25
Cdh	0.99	0.99
Pdh Tj = +7°C	5.60 kW	5.30 kW
COP Tj = +7°C	5.89	4.82
Cdh	0.98	0.99

Pdh Tj = 12°C	4.40 kW	4.30 kW
COP Tj = 12°C	8.00	6.94
Cdh	0.97	0.98
Pdh Tj = Tbiv	12.00 kW	12.00 kW
COP Tj = Tbiv	2.77	1.87
Pdh Tj = TOL	9.20 kW	9.20 kW
COP Tj = TOL	1.56	1.56
WTOL	60 °C	60 °C
Poff	15 W	15 W
PTO	15 W	15 W
PSB	15 W	15 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	electricity	electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	5354 kWh	7068 kWh

Warmer Climate

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	60 dB(A)	60 dB(A)

EN 14825

	Low temperature	Medium temperature
η_s	231 %	135 %
Prated	12.00 kW	12.00 kW
SCOP	5.84	4.05
Tbiv	2 °C	2 °C
TOL	-28 °C	-28 °C
Pdh Tj = +2°C	12.00 kW	12.00 kW
COP Tj = +2°C	3.30	2.03
Cdh	1.00	1.00
Pdh Tj = +7°C	7.70 kW	7.70 kW
COP Tj = +7°C	5.17	3.35
Cdh	0.99	0.99
Pdh Tj = 12°C	4.40 kW	5.20 kW
COP Tj = 12°C	7.46	5.59
Cdh	0.98	0.98
Pdh Tj = Tbiv	12.00 kW	12.00 kW
COP Tj = Tbiv	3.30	2.03
Pdh Tj = TOL	9.20 kW	9.20 kW
COP Tj = TOL	1.56	1.56
WTOL	60 °C	60 °C

Poff	15 W	15 W
PTO	15 W	15 W
PSB	15 W	15 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	electricity	electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	2688 kWh	3901 kWh

Model: PUD-SHWM120VAA(-BS) + E*SD-*M*D

General Data	
Power supply	1x230V 50Hz

Heating

EN 14511-2		
	Low temperature	**Medium temperature**
Heat output	10.00 kW	10.00 kW
El input	2.08 kW	3.77 kW
COP	4.80	2.65
Indoor water flow rate	1.72 m³/h	1.07 m³/h

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

Average Climate

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	60 dB(A)	60 dB(A)

EN 14825		
	Low temperature	**Medium temperature**
η_s	179 %	135 %
Prated	12.00 kW	12.00 kW
SCOP	4.55	3.46
Tbiv	-10 °C	-10 °C
TOL	-28 °C	-28 °C
Pdh Tj = -7°C	10.60 kW	10.60 kW
COP Tj = -7°C	2.85	2.14
Cdh	1.00	1.00
Pdh Tj = +2°C	6.50 kW	6.50 kW
COP Tj = +2°C	4.51	3.25
Cdh	0.99	0.99
Pdh Tj = +7°C	5.60 kW	5.30 kW
COP Tj = +7°C	5.89	4.82
Cdh	0.98	0.99

Pdh Tj = 12°C	4.40 kW	4.30 kW
COP Tj = 12°C	8.00	6.94
Cdh	0.97	0.98
Pdh Tj = Tbiv	12.00 kW	12.00 kW
COP Tj = Tbiv	2.77	1.87
Pdh Tj = TOL	9.20 kW	9.20 kW
COP Tj = TOL	1.56	1.56
WTOL	60 °C	60 °C
Poff	15 W	15 W
PTO	15 W	15 W
PSB	15 W	15 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	electricity	electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	5354 kWh	7068 kWh

Warmer Climate

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	60 dB(A)	60 dB(A)

EN 14825

	Low temperature	Medium temperature
η_s	231 %	135 %
Prated	12.00 kW	12.00 kW
SCOP	5.84	4.05
Tbiv	2 °C	2 °C
TOL	-28 °C	-28 °C
Pdh Tj = +2°C	12.00 kW	12.00 kW
COP Tj = +2°C	3.30	2.03
Cdh	1.00	1.00
Pdh Tj = +7°C	7.70 kW	7.70 kW
COP Tj = +7°C	5.17	3.35
Cdh	0.99	0.99
Pdh Tj = 12°C	4.40 kW	5.20 kW
COP Tj = 12°C	7.46	5.59
Cdh	0.98	0.98
Pdh Tj = Tbiv	12.00 kW	12.00 kW
COP Tj = Tbiv	3.30	2.03
Pdh Tj = TOL	9.20 kW	9.20 kW
COP Tj = TOL	1.56	1.56
WTOL	60 °C	60 °C

Poff	15 W	15 W
PTO	15 W	15 W
PSB	15 W	15 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	electricity	electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	2688 kWh	3901 kWh

Model: PUD-SHWM120YAA(-BS) + E*ST20D-M*D

General Data	
Power supply	3x400V 50Hz

Heating

EN 14511-2		
	Low temperature	**Medium temperature**
Heat output	10.00 kW	10.00 kW
El input	2.08 kW	3.77 kW
COP	4.80	2.65
Indoor water flow rate	1.72 m³/h	1.07 m³/h

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

Average Climate

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	60 dB(A)	60 dB(A)

EN 14825		
	Low temperature	**Medium temperature**
η_s	177 %	134 %
Prated	12.00 kW	12.00 kW
SCOP	4.51	3.44
Tbiv	-10 °C	-10 °C
TOL	-28 °C	-28 °C
Pdh Tj = -7°C	10.60 kW	10.60 kW
COP Tj = -7°C	2.85	2.14
Cdh	0.99	1.00
Pdh Tj = +2°C	6.50 kW	6.50 kW
COP Tj = +2°C	4.51	3.25
Cdh	0.98	0.99
Pdh Tj = +7°C	5.60 kW	5.30 kW
COP Tj = +7°C	5.89	4.82
Cdh	0.98	0.98

Pdh Tj = 12°C	4.40 kW	4.30 kW
COP Tj = 12°C	8.00	6.94
Cdh	0.96	0.96
Pdh Tj = Tbiv	12.00 kW	12.00 kW
COP Tj = Tbiv	2.77	1.87
Pdh Tj = TOL	9.20 kW	9.20 kW
COP Tj = TOL	1.56	1.56
WTOL	60 °C	60 °C
Poff	22 W	22 W
PTO	22 W	22 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	0.00 kW
Annual energy consumption Qhe	5354 kWh	7068 kWh

Warmer Climate

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	60 dB(A)	60 dB(A)

EN 14825

	Low temperature	Medium temperature
η_s	229 %	134 %
Prated	12.00 kW	12.00 kW
SCOP	5.79	4.03
Tbiv	2 °C	2 °C
TOL	-28 °C	-28 °C
Pdh Tj = +2°C	12.00 kW	12.00 kW
COP Tj = +2°C	3.30	2.03
Cdh	0.99	1.00
Pdh Tj = +7°C	7.70 kW	7.70 kW
COP Tj = +7°C	5.17	3.35
Cdh	0.98	0.99
Pdh Tj = 12°C	4.40 kW	5.20 kW
COP Tj = 12°C	7.46	5.59
Cdh	0.96	0.98
Pdh Tj = Tbiv	12.00 kW	12.00 kW
COP Tj = Tbiv	3.30	2.03
Pdh Tj = TOL	9.20 kW	9.20 kW
COP Tj = TOL	1.56	1.56
WTOL	60 °C	60 °C

Poff	22 W	22 W
PTO	22 W	22 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	0.00 kW
Annual energy consumption Qhe	2688 kWh	3901 kWh

Domestic Hot Water (DHW)

Average Climate

EN 16147	
Declared load profile	L
Efficiency ηDHW	148 %
COP	3.49
Heating up time	1:47 h:min
Standby power input	36.0 W
Reference hot water temperature	52.5 °C
Mixed water at 40°C	278 l

Warmer Climate

EN 16147	
Declared load profile	L
Efficiency ηDHW	162 %
COP	3.80
Heating up time	1:49 h:min
Standby power input	33.0 W
Reference hot water temperature	52.5 °C
Mixed water at 40°C	278 l

Model: PUD-SHWM120YAA(-BS) + E*ST20D-*M*D

General Data	
Power supply	3x400V 50Hz

Heating

EN 14511-2		
	Low temperature	**Medium temperature**
Heat output	10.00 kW	10.00 kW
El input	2.08 kW	3.77 kW
COP	4.80	2.65
Indoor water flow rate	1.72 m³/h	1.07 m³/h

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

Average Climate

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	60 dB(A)	60 dB(A)

EN 14825		
	Low temperature	**Medium temperature**
η_s	177 %	134 %
Prated	12.00 kW	12.00 kW
SCOP	4.51	3.44
Tbiv	-10 °C	-10 °C
TOL	-28 °C	-28 °C
Pdh Tj = -7°C	10.60 kW	10.60 kW
COP Tj = -7°C	2.85	2.14
Cdh	0.99	1.00
Pdh Tj = +2°C	6.50 kW	6.50 kW
COP Tj = +2°C	4.51	3.25
Cdh	0.98	0.99
Pdh Tj = +7°C	5.60 kW	5.30 kW
COP Tj = +7°C	5.89	4.82
Cdh	0.98	0.98

Pdh Tj = 12°C	4.40 kW	4.30 kW
COP Tj = 12°C	8.00	6.94
Cdh	0.96	0.96
Pdh Tj = Tbiv	12.00 kW	12.00 kW
COP Tj = Tbiv	2.77	1.87
Pdh Tj = TOL	9.20 kW	9.20 kW
COP Tj = TOL	1.56	1.56
WTOL	60 °C	60 °C
Poff	22 W	22 W
PTO	22 W	22 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	0.00 kW
Annual energy consumption Qhe	5354 kWh	7068 kWh

Warmer Climate

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	60 dB(A)	60 dB(A)

EN 14825

	Low temperature	Medium temperature
η_s	229 %	134 %
Prated	12.00 kW	12.00 kW
SCOP	5.79	4.03
Tbiv	2 °C	2 °C
TOL	-28 °C	-28 °C
Pdh Tj = +2°C	12.00 kW	12.00 kW
COP Tj = +2°C	3.30	2.03
Cdh	0.99	1.00
Pdh Tj = +7°C	7.70 kW	7.70 kW
COP Tj = +7°C	5.17	3.35
Cdh	0.98	0.99
Pdh Tj = 12°C	4.40 kW	5.20 kW
COP Tj = 12°C	7.46	5.59
Cdh	0.96	0.98
Pdh Tj = Tbiv	12.00 kW	12.00 kW
COP Tj = Tbiv	3.30	2.03
Pdh Tj = TOL	9.20 kW	9.20 kW
COP Tj = TOL	1.56	1.56
WTOL	60 °C	60 °C

Poff	22 W	22 W
PTO	22 W	22 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	0.00 kW
Annual energy consumption Qhe	2688 kWh	3901 kWh

Domestic Hot Water (DHW)

Average Climate

EN 16147	
Declared load profile	L
Efficiency ηDHW	148 %
COP	3.49
Heating up time	1:47 h:min
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Reference hot water temperature	52.5 °C
Mixed water at 40°C	278 l

Warmer Climate

EN 16147	
Declared load profile	L
Efficiency ηDHW	162 %
COP	3.80
Heating up time	1:49 h:min
Standby power input	33.0 W
Reference hot water temperature	52.5 °C
Mixed water at 40°C	278 l

Model: PUD-SHWM120YAA(-BS) + E*SD-M*D

General Data	
Power supply	3x400V 50Hz

Heating

EN 14511-2		
	Low temperature	**Medium temperature**
Heat output	10.00 kW	10.00 kW
El input	2.08 kW	3.77 kW
COP	4.80	2.65
Indoor water flow rate	1.72 m³/h	1.07 m³/h

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

Average Climate

EN 12102-1

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	60 dB(A)	60 dB(A)

EN 14825

	Low temperature	Medium temperature
η_s	177 %	134 %
Prated	12.00 kW	12.00 kW
SCOP	4.51	3.44
Tbiv	-10 °C	-10 °C
TOL	-28 °C	-28 °C
Pdh Tj = -7°C	10.60 kW	10.60 kW
COP Tj = -7°C	2.85	2.14
Cdh	0.99	1.00
Pdh Tj = +2°C	6.50 kW	6.50 kW
COP Tj = +2°C	4.51	3.25
Cdh	0.98	0.99
Pdh Tj = +7°C	5.60 kW	5.30 kW
COP Tj = +7°C	5.89	4.82
Cdh	0.98	0.98

Pdh Tj = 12°C	4.40 kW	4.30 kW
COP Tj = 12°C	8.00	6.94
Cdh	0.96	0.96
Pdh Tj = Tbiv	12.00 kW	12.00 kW
COP Tj = Tbiv	2.77	1.87
Pdh Tj = TOL	9.20 kW	9.20 kW
COP Tj = TOL	1.56	1.56
WTOL	60 °C	60 °C
Poff	22 W	22 W
PTO	22 W	22 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	0.00 kW
Annual energy consumption Qhe	5354 kWh	7068 kWh

Warmer Climate

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	60 dB(A)	60 dB(A)

EN 14825

	Low temperature	Medium temperature
η_s	229 %	134 %
Prated	12.00 kW	12.00 kW
SCOP	5.79	4.03
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Cdh	0.98	0.99
Pdh Tj = 12°C	4.40 kW	5.20 kW
COP Tj = 12°C	7.46	5.59
Cdh	0.96	0.98
Pdh Tj = Tbiv	12.00 kW	12.00 kW
COP Tj = Tbiv	3.30	2.03
Pdh Tj = TOL	9.20 kW	9.20 kW
COP Tj = TOL	1.56	1.56
WTOL	60 °C	60 °C

Poff	22 W	22 W
PTO	22 W	22 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	0.00 kW
Annual energy consumption Qhe	2688 kWh	3901 kWh

Model: PUD-SHWM120YAA(-BS) + E*SD-*M*D

General Data	
Power supply	3x400V 50Hz

Heating

EN 14511-2		
	Low temperature	**Medium temperature**
Heat output	10.00 kW	10.00 kW
El input	2.08 kW	3.77 kW
COP	4.80	2.65
Indoor water flow rate	1.72 m³/h	1.07 m³/h

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

Average Climate

EN 12102-1

	Low temperature	Medium temperature
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EN 14825

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COP Tj = 12°C	8.00	6.94
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Pdh Tj = Tbiv	12.00 kW	12.00 kW
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PCK	0 W	0 W
Supplementary Heater: Type of energy input	electricity	electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	5354 kWh	7068 kWh

Warmer Climate

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PCK	0 W	0 W
Supplementary Heater: Type of energy input	electricity	electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
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