

Subtype S-Therm Ontario SMH5-120 140 160

Certificate Holder	SINCLAIR Global Group s.r.o.
Address	Purkyňova 45
ZIP	61200
City	Brno
Country	CZ
Certification Body	BRE Global Limited
Subtype title	S-Therm Ontario SMH5-120 140 160
Registration number	041-K037-23
Heat Pump Type	Outdoor Air/Water
Refrigerant	R32
Mass of Refrigerant	2.2 kg
Certification Date	03.03.2023
Testing basis	Heat Pump Keymark Scheme Rules Rev 11
Testing laboratory	Bureau Veritas Consumer Products Services (Guangzhou) Co., Ltd, Science City Branch

Model SMH5-120B */SMH-120IRBC2

Model name	SMH5-120B */SMH-120IRBC2
Application	Heating + DHW + low temp
Units	Outdoor
Climate zone (for heating)	Colder, Warmer, Warmer Climate, Colder Climate
Reversibility	Yes
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

General data

Power supply	1x230V 50Hz
Off-peak product	n/a

Outdoor Air/Water**EN 16147 | Average Climate**

Declared load profile	XL
Efficiency η_{DHW}	110 %
COP	2.63
Heating up time	1:38 h:min
Standby power input	60.2 W
Reference hot water temperature	49.0 °C
Mixed water at 40°C	325 l

EN 16147 | Colder Climate

Declared load profile	XL
Efficiency η_{DHW}	87 %
COP	2.08
Heating up time	2:15 h:min
Standby power input	72.9 W
Reference hot water temperature	48.0 °C
Mixed water at 40°C	330 l

EN 16147 | Warmer Climate

Declared load profile	XL
Efficiency η_{DHW}	113 %
COP	2.71
Heating up time	1:40 h:min
Standby power input	57.8 W
Reference hot water temperature	49.0 °C
Mixed water at 40°C	323 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	12.00 kW	12.00 kW
El input	2.43 kW	3.93 kW
COP	4.94	3.05
EN 12102-1 Average Climate		
	Low temperature	Medium temperature
Sound power level outdoor	64 dB(A)	68 dB(A)
EN 14825 Average Climate		
	Low temperature	Medium temperature
ηs	188 %	144 %
Prated	12.00 kW	12.00 kW
SCOP	4.78	3.68
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	10.70 kW	10.40 kW
COP Tj = -7°C	2.98	2.11
Cdh Tj = -7 °C	0.990	0.990
Pdh Tj = +2°C	6.10 kW	6.90 kW
COP Tj = +2°C	4.38	3.81
Cdh Tj = +2 °C	0.980	0.990
Pdh Tj = +7°C	4.10 kW	4.30 kW
COP Tj = +7°C	7.03	4.36
Cdh Tj = +7 °C	0.960	0.970
Pdh Tj = 12°C	3.40 kW	3.00 kW
COP Tj = 12°C	9.49	6.96
Cdh Tj = +12 °C	0.930	0.940
Pdh Tj = Tbiv	10.70 kW	10.40 kW
COP Tj = Tbiv	2.98	2.11
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	10.20 kW	9.80 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.62	1.77
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.990	0.990
WTOL	65 °C	65 °C
Poff	25 W	25 W
PTO	25 W	25 W
PSB	25 W	25 W
PCK	25 W	25 W

Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.80 kW	2.20 kW
Annual energy consumption Qhe	5194 kWh	6606 kWh

EN 14825 | Colder Climate

	Low temperature	Medium temperature
η_s	181 %	129 %
Prated	11.00 kW	12.00 kW
SCOP	4.60	3.30
Tbiv	-15 °C	-15 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	6.90 kW	7.80 kW
COP Tj = -7°C	3.88	2.77
Cdh Tj = -7 °C	0.990	0.990
Pdh Tj = +2°C	4.10 kW	4.40 kW
COP Tj = +2°C	5.71	3.95
Cdh Tj = +2 °C	0.970	0.980
Pdh Tj = +7°C	2.70 kW	2.80 kW
COP Tj = +7°C	7.20	5.55
Cdh Tj = +7 °C	0.930	0.950
Pdh Tj = 12°C	3.20 kW	3.30 kW
COP Tj = 12°C	8.77	7.45
Cdh Tj = +12 °C	0.930	0.940
Pdh Tj = Tbiv	9.20 kW	9.90 kW
COP Tj = Tbiv	2.74	1.96
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	7.90 kW	7.00 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	1.89	1.18
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.990	0.990
WTOL	65 °C	65 °C
Poff	25 W	25 W
PTO	25 W	25 W
PSB	25 W	25 W
PCK	25 W	25 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	3.10 kW	5.00 kW
Annual energy consumption Qhe	6044 kWh	9034 kWh
Pdh Tj = -15°C (if TOL)	9.20	9.90
COP Tj = -15°C (if TOL)	2.74	1.96
Cdh Tj = -15 °C	0.990	0.990

EN 14825 | Warmer Climate

Low temperature	Medium temperature
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ηs	273 %	180 %
Prated	12.00 kW	12.00 kW
SCOP	6.90	4.58
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	11.60 kW	12.20 kW
COP Tj = +2°C	3.65	2.27
Cdh Tj = +2 °C	0.990	1.000
Pdh Tj = +7°C	7.30 kW	8.10 kW
COP Tj = +7°C	5.74	3.74
Cdh Tj = +7 °C	0.980	0.990
Pdh Tj = 12°C	3.30 kW	3.50 kW
COP Tj = 12°C	9.38	6.29
Cdh Tj = +12 °C	0.930	0.950
Pdh Tj = Tbiv	11.60 kW	12.20 kW
COP Tj = Tbiv	3.65	2.27
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	11.60 kW	12.20 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.65	2.27
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.990	1.000
WTOL	65 °C	65 °C
Poff	25 W	25 W
PTO	25 W	25 W
PSB	25 W	25 W
PCK	25 W	25 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	2236 kWh	3558 kWh

Model SMH5-120B*-3/SMH-120IRBC2-3

Model name	SMH5-120B*-3/SMH-120IRBC2-3
Application	Heating + DHW + low temp
Units	Outdoor
Climate zone (for heating)	Colder, Warmer, Warmer Climate, Colder Climate
Reversibility	Yes
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

General data

Power supply	3x400V 50Hz
Off-peak product	n/a

Outdoor Air/Water**EN 16147 | Average Climate**

Declared load profile	XL
Efficiency η_{DHW}	110 %
COP	2.63
Heating up time	1:38 h:min
Standby power input	60.2 W
Reference hot water temperature	49.0 °C
Mixed water at 40°C	325 l

EN 16147 | Colder Climate

Declared load profile	XL
Efficiency η_{DHW}	87 %
COP	2.08
Heating up time	2:15 h:min
Standby power input	72.9 W
Reference hot water temperature	48.0 °C
Mixed water at 40°C	330 l

EN 16147 | Warmer Climate

Declared load profile	XL
Efficiency η_{DHW}	113 %
COP	2.71
Heating up time	1:40 h:min
Standby power input	57.8 W
Reference hot water temperature	49.0 °C
Mixed water at 40°C	323 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	12.00 kW	12.00 kW
El input	2.49 kW	4.12 kW
COP	4.82	2.91
EN 12102-1 Average Climate		
	Low temperature	Medium temperature
Sound power level outdoor	64 dB(A)	68 dB(A)
EN 14825 Average Climate		
	Low temperature	Medium temperature
ηs	180 %	137 %
Prated	12.00 kW	12.00 kW
SCOP	4.58	3.50
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	10.80 kW	10.50 kW
COP Tj = -7°C	3.01	2.02
Cdh Tj = -7 °C	0.990	1.000
Pdh Tj = +2°C	6.70 kW	6.90 kW
COP Tj = +2°C	4.50	3.66
Cdh Tj = +2 °C	0.970	0.990
Pdh Tj = +7°C	4.50 kW	4.40 kW
COP Tj = +7°C	5.82	4.30
Cdh Tj = +7 °C	0.960	0.980
Pdh Tj = 12°C	3.30 kW	3.00 kW
COP Tj = 12°C	7.45	5.12
Cdh Tj = +12 °C	0.940	0.960
Pdh Tj = Tbiv	10.80 kW	10.50 kW
COP Tj = Tbiv	3.01	2.02
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	9.90 kW	11.50 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.51	2.02
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.990	0.990
WTOL	65 °C	65 °C
Poff	25 W	25 W
PTO	25 W	25 W
PSB	25 W	25 W
PCK	25 W	25 W

Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	2.10 kW	0.50 kW
Annual energy consumption Qhe	5517 kWh	6990 kWh

EN 14825 | Colder Climate

	Low temperature	Medium temperature
η_s	159 %	117 %
Prated	11.00 kW	12.00 kW
SCOP	4.05	3.00
Tbiv	-15 °C	-15 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	7.00 kW	7.80 kW
COP Tj = -7°C	3.40	2.55
Cdh Tj = -7 °C	0.990	0.990
Pdh Tj = +2°C	4.20 kW	4.40 kW
COP Tj = +2°C	5.04	3.71
Cdh Tj = +2 °C	0.970	0.980
Pdh Tj = +7°C	3.00 kW	2.90 kW
COP Tj = +7°C	6.04	4.61
Cdh Tj = +7 °C	0.950	0.960
Pdh Tj = 12°C	3.30 kW	3.30 kW
COP Tj = 12°C	7.23	5.24
Cdh Tj = +12 °C	0.950	0.960
Pdh Tj = Tbiv	9.00 kW	9.60 kW
COP Tj = Tbiv	2.42	1.79
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	7.60 kW	6.70 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	1.79	1.06
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.990	0.990
WTOL	65 °C	65 °C
Poff	25 W	25 W
PTO	25 W	25 W
PSB	25 W	25 W
PCK	25 W	25 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	3.40 kW	5.30 kW
Annual energy consumption Qhe	6685 kWh	9548 kWh
Pdh Tj = -15°C (if TOL)	9.00	9.60
COP Tj = -15°C (if TOL)	2.42	1.79
Cdh Tj = -15 °C	0.990	0.990

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
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ηs	244 %	169 %
Prated	12.00 kW	12.00 kW
SCOP	6.18	4.30
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	11.70 kW	12.30 kW
COP Tj = +2°C	3.43	2.51
Cdh Tj = +2 °C	0.990	0.990
Pdh Tj = +7°C	7.50 kW	7.90 kW
COP Tj = +7°C	5.41	3.50
Cdh Tj = +7 °C	0.980	0.990
Pdh Tj = 12°C	3.50 kW	3.60 kW
COP Tj = 12°C	7.85	5.80
Cdh Tj = +12 °C	0.940	0.960
Pdh Tj = Tbiv	11.70 kW	12.30 kW
COP Tj = Tbiv	3.43	2.51
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	11.70 kW	12.30 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.43	2.51
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.990	0.990
WTOL	65 °C	65 °C
Poff	25 W	25 W
PTO	25 W	25 W
PSB	25 W	25 W
PCK	25 W	25 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	2531 kWh	3822 kWh

Model SMH5-140B*/SMH-140IRBC2

Model name	SMH5-140B*/SMH-140IRBC2
Application	Heating + DHW + low temp
Units	Outdoor
Climate zone (for heating)	Colder, Warmer, Warmer Climate, Colder Climate
Reversibility	Yes
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

General data

Power supply	1x230V 50Hz
Off-peak product	n/a

Outdoor Air/Water**EN 16147 | Average Climate**

Declared load profile	XL
Efficiency η_{DHW}	110 %
COP	2.63
Heating up time	1:38 h:min
Standby power input	60.2 W
Reference hot water temperature	49.0 °C
Mixed water at 40°C	325 l

EN 16147 | Colder Climate

Declared load profile	XL
Efficiency η_{DHW}	87 %
COP	2.08
Heating up time	2:15 h:min
Standby power input	72.9 W
Reference hot water temperature	48.0 °C
Mixed water at 40°C	330 l

EN 16147 | Warmer Climate

Declared load profile	XL
Efficiency η_{DHW}	113 %
COP	2.71
Heating up time	1:40 h:min
Standby power input	57.8 W
Reference hot water temperature	49.0 °C
Mixed water at 40°C	323 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	14.20 kW	13.80 kW
El input	2.99 kW	4.67 kW
COP	4.75	2.95
EN 12102-1 Average Climate		
	Low temperature	Medium temperature
Sound power level outdoor	64 dB(A)	68 dB(A)
EN 14825 Average Climate		
	Low temperature	Medium temperature
ηs	185 %	145 %
Prated	13.00 kW	13.00 kW
SCOP	4.70	3.70
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	11.50 kW	11.80 kW
COP Tj = -7°C	2.71	2.10
Cdh Tj = -7 °C	0.990	1.000
Pdh Tj = +2°C	7.10 kW	6.90 kW
COP Tj = +2°C	4.39	3.81
Cdh Tj = +2 °C	0.980	0.990
Pdh Tj = +7°C	4.40 kW	4.50 kW
COP Tj = +7°C	6.89	4.52
Cdh Tj = +7 °C	0.960	0.980
Pdh Tj = 12°C	3.50 kW	3.00 kW
COP Tj = 12°C	10.30	7.05
Cdh Tj = +12 °C	0.930	0.940
Pdh Tj = Tbiv	11.50 kW	11.80 kW
COP Tj = Tbiv	2.71	2.10
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	11.50 kW	9.60 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.38	1.75
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.990	0.990
WTOL	65 °C	65 °C
Poff	25 W	25 W
PTO	25 W	25 W
PSB	25 W	25 W
PCK	25 W	25 W

Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.50 kW	3.40 kW
Annual energy consumption Qhe	5682 kWh	7456 kWh

EN 14825 | Colder Climate

	Low temperature	Medium temperature
η_s	184 %	132 %
Prated	12.00 kW	13.00 kW
SCOP	4.68	3.38
Tbiv	-15 °C	-15 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	6.90 kW	7.80 kW
COP Tj = -7°C	3.88	2.77
Cdh Tj = -7 °C	0.990	0.990
Pdh Tj = +2°C	4.50 kW	5.20 kW
COP Tj = +2°C	5.93	4.23
Cdh Tj = +2 °C	0.970	0.980
Pdh Tj = +7°C	2.70 kW	2.90 kW
COP Tj = +7°C	7.20	5.24
Cdh Tj = +7 °C	0.930	0.950
Pdh Tj = 12°C	3.20 kW	3.30 kW
COP Tj = 12°C	8.98	7.55
Cdh Tj = +12 °C	0.930	0.940
Pdh Tj = Tbiv	9.70 kW	10.70 kW
COP Tj = Tbiv	2.72	1.99
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	7.90 kW	7.00 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	1.89	1.18
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.990	0.990
WTOL	65 °C	65 °C
Poff	25 W	25 W
PTO	25 W	25 W
PSB	25 W	25 W
PCK	25 W	25 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	4.10 kW	6.00 kW
Annual energy consumption Qhe	6257 kWh	9572 kWh
Pdh Tj = -15°C (if TOL)	9.70	10.70
COP Tj = -15°C (if TOL)	2.72	1.99
Cdh Tj = -15 °C	0.990	0.990

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
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ηs	268 %	186 %
Prated	14.00 kW	14.00 kW
SCOP	6.78	4.73
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	14.00 kW	14.20 kW
COP Tj = +2°C	3.38	2.30
Cdh Tj = +2 °C	0.990	1.000
Pdh Tj = +7°C	8.40 kW	8.40 kW
COP Tj = +7°C	5.57	3.73
Cdh Tj = +7 °C	0.980	0.990
Pdh Tj = 12°C	3.80 kW	4.20 kW
COP Tj = 12°C	9.32	6.75
Cdh Tj = +12 °C	0.940	0.960
Pdh Tj = Tbiv	14.00 kW	14.20 kW
COP Tj = Tbiv	3.38	2.30
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	14.00 kW	14.20 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.38	2.30
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.990	1.000
WTOL	65 °C	65 °C
Poff	25 W	25 W
PTO	25 W	25 W
PSB	25 W	25 W
PCK	25 W	25 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	2755 kWh	4008 kWh

Model SMH5-140B*-3/SMH-140IRBC2-3

Model name	SMH5-140B*-3/SMH-140IRBC2-3
Application	Heating + DHW + low temp
Units	Outdoor
Climate zone (for heating)	Colder, Warmer, Warmer Climate, Colder Climate
Reversibility	Yes
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

General data

Power supply	3x400V 50Hz
Off-peak product	n/a

Outdoor Air/Water**EN 16147 | Average Climate**

Declared load profile	XL
Efficiency η_{DHW}	110 %
COP	2.63
Heating up time	1:38 h:min
Standby power input	60.2 W
Reference hot water temperature	49.0 °C
Mixed water at 40°C	325 l

EN 16147 | Colder Climate

Declared load profile	XL
Efficiency η_{DHW}	87 %
COP	2.08
Heating up time	2:15 h:min
Standby power input	72.9 W
Reference hot water temperature	48.0 °C
Mixed water at 40°C	330 l

EN 16147 | Warmer Climate

Declared load profile	XL
Efficiency η_{DHW}	113 %
COP	2.71
Heating up time	1:40 h:min
Standby power input	57.8 W
Reference hot water temperature	49.0 °C
Mixed water at 40°C	323 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	14.20 kW	13.80 kW
El input	3.09 kW	4.84 kW
COP	4.60	2.85
EN 12102-1 Average Climate		
	Low temperature	Medium temperature
Sound power level outdoor	64 dB(A)	68 dB(A)
EN 14825 Average Climate		
	Low temperature	Medium temperature
η_s	179 %	138 %
Prated	13.00 kW	13.00 kW
SCOP	4.55	3.53
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	11.60 kW	11.80 kW
COP Tj = -7°C	2.89	2.21
Cdh Tj = -7 °C	0.990	1.000
Pdh Tj = +2°C	6.70 kW	6.90 kW
COP Tj = +2°C	4.50	3.66
Cdh Tj = +2 °C	0.980	0.990
Pdh Tj = +7°C	4.50 kW	4.40 kW
COP Tj = +7°C	5.82	4.30
Cdh Tj = +7 °C	0.970	0.980
Pdh Tj = 12°C	3.40 kW	3.00 kW
COP Tj = 12°C	7.53	4.93
Cdh Tj = +12 °C	0.950	0.960
Pdh Tj = Tbiv	11.60 kW	11.80 kW
COP Tj = Tbiv	2.89	2.21
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	11.10 kW	11.60 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.28	2.02
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.990	0.990
WTOL	65 °C	65 °C
Poff	25 W	25 W
PTO	25 W	25 W
PSB	25 W	25 W
PCK	25 W	25 W

Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.90 kW	1.40 kW
Annual energy consumption Qhe	5927 kWh	7769 kWh

EN 14825 | Colder Climate

	Low temperature	Medium temperature
η_s	158 %	118 %
Prated	12.00 kW	13.00 kW
SCOP	4.03	3.03
Tbiv	-15 °C	-15 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	7.00 kW	7.80 kW
COP Tj = -7°C	3.40	2.55
Cdh Tj = -7 °C	0.990	0.990
Pdh Tj = +2°C	4.20 kW	4.40 kW
COP Tj = +2°C	5.04	3.71
Cdh Tj = +2 °C	0.970	0.980
Pdh Tj = +7°C	3.00 kW	2.90 kW
COP Tj = +7°C	6.06	4.61
Cdh Tj = +7 °C	0.950	0.960
Pdh Tj = 12°C	3.20 kW	3.30 kW
COP Tj = 12°C	6.17	5.03
Cdh Tj = +12 °C	0.950	0.960
Pdh Tj = Tbiv	9.70 kW	10.40 kW
COP Tj = Tbiv	2.38	1.82
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	7.60 kW	6.70 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	1.79	1.06
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.990	0.990
WTOL	65 °C	65 °C
Poff	25 W	25 W
PTO	25 W	25 W
PSB	25 W	25 W
PCK	25 W	25 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	4.40 kW	6.30 kW
Annual energy consumption Qhe	7293 kWh	10373 kWh
Pdh Tj = -15°C (if TOL)	9.70	10.40
COP Tj = -15°C (if TOL)	2.38	1.82
Cdh Tj = -15 °C	0.990	0.990

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
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ηs	240 %	159 %
Prated	14.00 kW	15.00 kW
SCOP	6.08	4.05
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	13.70 kW	14.60 kW
COP Tj = +2°C	2.90	2.31
Cdh Tj = +2 °C	0.990	1.000
Pdh Tj = +7°C	8.50 kW	8.80 kW
COP Tj = +7°C	5.36	3.29
Cdh Tj = +7 °C	0.980	0.990
Pdh Tj = 12°C	3.70 kW	3.90 kW
COP Tj = 12°C	7.86	5.47
Cdh Tj = +12 °C	0.940	0.970
Pdh Tj = Tbiv	13.70 kW	14.60 kW
COP Tj = Tbiv	2.90	2.31
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	13.70 kW	14.60 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.90	2.31
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.990	1.000
WTOL	65 °C	65 °C
Poff	25 W	25 W
PTO	25 W	25 W
PSB	25 W	25 W
PCK	25 W	25 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	2995 kWh	4801 kWh

Model SMH5-160B*/SMH-160IRBC2

Model name	SMH5-160B*/SMH-160IRBC2
Application	Heating + DHW + low temp
Units	Outdoor
Climate zone (for heating)	Colder, Warmer, Warmer Climate, Colder Climate
Reversibility	Yes
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

General data

Power supply	1x230V 50Hz
Off-peak product	n/a

Outdoor Air/Water**EN 16147 | Average Climate**

Declared load profile	XL
Efficiency η_{DHW}	110 %
COP	2.63
Heating up time	1:38 h:min
Standby power input	60.2 W
Reference hot water temperature	49.0 °C
Mixed water at 40°C	325 l

EN 16147 | Colder Climate

Declared load profile	XL
Efficiency η_{DHW}	87 %
COP	2.08
Heating up time	2:15 h:min
Standby power input	72.9 W
Reference hot water temperature	48.0 °C
Mixed water at 40°C	330 l

EN 16147 | Warmer Climate

Declared load profile	XL
Efficiency η_{DHW}	113 %
COP	2.71
Heating up time	1:40 h:min
Standby power input	57.8 W
Reference hot water temperature	49.0 °C
Mixed water at 40°C	323 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	15.70 kW	15.40 kW
El input	3.45 kW	5.31 kW
COP	4.55	2.90
EN 12102-1 Average Climate		
	Low temperature	Medium temperature
Sound power level outdoor	64 dB(A)	68 dB(A)
EN 14825 Average Climate		
	Low temperature	Medium temperature
η_s	184 %	145 %
Prated	14.00 kW	14.00 kW
SCOP	4.68	3.70
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	12.20 kW	12.30 kW
COP Tj = -7°C	2.68	2.18
Cdh Tj = -7 °C	0.990	1.000
Pdh Tj = +2°C	7.10 kW	6.90 kW
COP Tj = +2°C	4.39	3.81
Cdh Tj = +2 °C	0.980	0.990
Pdh Tj = +7°C	4.70 kW	4.50 kW
COP Tj = +7°C	6.86	4.56
Cdh Tj = +7 °C	0.960	0.970
Pdh Tj = 12°C	3.50 kW	3.00 kW
COP Tj = 12°C	10.30	7.07
Cdh Tj = +12 °C	0.930	0.940
Pdh Tj = Tbiv	12.20 kW	12.30 kW
COP Tj = Tbiv	2.68	2.18
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	11.20 kW	8.50 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.38	1.41
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.990	0.990
WTOL	65 °C	65 °C
Poff	25 W	25 W
PTO	25 W	25 W
PSB	25 W	25 W
PCK	25 W	25 W

Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	2.80 kW	5.50 kW
Annual energy consumption Qhe	6072 kWh	7768 kWh

EN 14825 | Colder Climate

	Low temperature	Medium temperature
η_s	184 %	132 %
Prated	12.00 kW	13.00 kW
SCOP	4.68	3.38
Tbiv	-15 °C	-15 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	6.90 kW	7.80 kW
COP Tj = -7°C	3.88	2.77
Cdh Tj = -7 °C	0.990	0.990
Pdh Tj = +2°C	4.50 kW	5.20 kW
COP Tj = +2°C	5.93	4.23
Cdh Tj = +2 °C	0.970	0.980
Pdh Tj = +7°C	2.70 kW	2.90 kW
COP Tj = +7°C	7.20	5.24
Cdh Tj = +7 °C	0.930	0.950
Pdh Tj = 12°C	3.20 kW	3.30 kW
COP Tj = 12°C	8.98	7.55
Cdh Tj = +12 °C	0.930	0.940
Pdh Tj = Tbiv	9.70 kW	10.70 kW
COP Tj = Tbiv	2.71	1.99
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	7.90 kW	7.00 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	1.89	1.18
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.990	0.990
WTOL	65 °C	65 °C
Poff	25 W	25 W
PTO	25 W	25 W
PSB	25 W	25 W
PCK	25 W	25 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	4.10 kW	6.00 kW
Annual energy consumption Qhe	6257 kWh	9572 kWh
Pdh Tj = -15°C (if TOL)	9.70	10.70
COP Tj = -15°C (if TOL)	2.71	1.99
Cdh Tj = -15 °C	0.990	0.990

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
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ηs	267 %	186 %
Prated	14.00 kW	14.00 kW
SCOP	6.75	4.73
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	14.20 kW	14.20 kW
COP Tj = +2°C	3.35	2.30
Cdh Tj = +2 °C	0.990	1.000
Pdh Tj = +7°C	8.40 kW	8.40 kW
COP Tj = +7°C	5.57	3.73
Cdh Tj = +7 °C	0.980	0.990
Pdh Tj = 12°C	3.80 kW	4.20 kW
COP Tj = 12°C	9.32	6.75
Cdh Tj = +12 °C	0.940	0.960
Pdh Tj = Tbiv	14.20 kW	14.20 kW
COP Tj = Tbiv	3.35	2.30
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	14.20 kW	14.20 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.35	2.30
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.990	1.000
WTOL	65 °C	65 °C
Poff	25 W	25 W
PTO	25 W	25 W
PSB	25 W	25 W
PCK	25 W	25 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	2800 kWh	4008 kWh

Model SMH5-160B*-3/SMH-160IRBC2-3

Model name	SMH5-160B*-3/SMH-160IRBC2-3
Application	Heating + DHW + low temp
Units	Outdoor
Climate zone (for heating)	Colder, Warmer, Warmer Climate, Colder Climate
Reversibility	Yes
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

General data

Power supply	3x400V 50Hz
Off-peak product	n/a

Outdoor Air/Water**EN 16147 | Average Climate**

Declared load profile	XL
Efficiency η_{DHW}	110 %
COP	2.63
Heating up time	1:38 h:min
Standby power input	60.2 W
Reference hot water temperature	49.0 °C
Mixed water at 40°C	325 l

EN 16147 | Colder Climate

Declared load profile	XL
Efficiency η_{DHW}	87 %
COP	2.08
Heating up time	2:15 h:min
Standby power input	72.9 W
Reference hot water temperature	48.0 °C
Mixed water at 40°C	330 l

EN 16147 | Warmer Climate

Declared load profile	XL
Efficiency η_{DHW}	113 %
COP	2.71
Heating up time	1:40 h:min
Standby power input	57.8 W
Reference hot water temperature	49.0 °C
Mixed water at 40°C	323 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	15.70 kW	15.40 kW
El input	3.57 kW	5.60 kW
COP	4.40	2.75
EN 12102-1 Average Climate		
	Low temperature	Medium temperature
Sound power level outdoor	64 dB(A)	68 dB(A)
EN 14825 Average Climate		
	Low temperature	Medium temperature
ηs	179 %	138 %
Prated	13.00 kW	14.00 kW
SCOP	4.55	3.53
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	11.60 kW	12.10 kW
COP Tj = -7°C	2.89	2.17
Cdh Tj = -7 °C	0.990	1.000
Pdh Tj = +2°C	6.70 kW	6.90 kW
COP Tj = +2°C	4.50	3.66
Cdh Tj = +2 °C	0.980	0.990
Pdh Tj = +7°C	4.50 kW	4.40 kW
COP Tj = +7°C	5.82	4.30
Cdh Tj = +7 °C	0.970	0.980
Pdh Tj = 12°C	3.40 kW	3.00 kW
COP Tj = 12°C	7.53	4.93
Cdh Tj = +12 °C	0.950	0.960
Pdh Tj = Tbiv	11.60 kW	12.10 kW
COP Tj = Tbiv	2.89	2.17
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	11.10 kW	11.50 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.29	2.02
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.990	0.990
WTOL	65 °C	65 °C
Poff	25 W	25 W
PTO	25 W	25 W
PSB	25 W	25 W
PCK	25 W	25 W

Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.90 kW	2.50 kW
Annual energy consumption Qhe	5927 kWh	8014 kWh

EN 14825 | Colder Climate

	Low temperature	Medium temperature
η_s	158 %	118 %
Prated	12.00 kW	13.00 kW
SCOP	4.03	3.03
Tbiv	-15 °C	-15 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	7.00 kW	7.80 kW
COP Tj = -7°C	3.40	2.55
Cdh Tj = -7 °C	0.990	0.990
Pdh Tj = +2°C	4.20 kW	4.40 kW
COP Tj = +2°C	5.04	3.71
Cdh Tj = +2 °C	0.970	0.980
Pdh Tj = +7°C	3.00 kW	2.90 kW
COP Tj = +7°C	6.06	4.61
Cdh Tj = +7 °C	0.950	0.960
Pdh Tj = 12°C	3.20 kW	3.30 kW
COP Tj = 12°C	6.17	5.02
Cdh Tj = +12 °C	0.950	0.960
Pdh Tj = Tbiv	9.70 kW	10.40 kW
COP Tj = Tbiv	2.38	1.82
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	7.60 kW	6.70 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	1.79	1.06
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.990	0.990
WTOL	65 °C	65 °C
Poff	25 W	25 W
PTO	25 W	25 W
PSB	25 W	25 W
PCK	25 W	25 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	4.40 kW	6.30 kW
Annual energy consumption Qhe	7293 kWh	10373 kWh
Pdh Tj = -15°C (if TOL)	9.70	10.40
COP Tj = -15°C (if TOL)	2.38	1.82
Cdh Tj = -15 °C	0.990	0.990

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
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ηs	241 %	159 %
Prated	14.00 kW	15.00 kW
SCOP	6.10	4.05
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	13.70 kW	14.60 kW
COP Tj = +2°C	2.90	2.31
Cdh Tj = +2 °C	0.990	1.000
Pdh Tj = +7°C	8.50 kW	8.80 kW
COP Tj = +7°C	5.36	3.29
Cdh Tj = +7 °C	0.980	0.990
Pdh Tj = 12°C	3.70 kW	3.90 kW
COP Tj = 12°C	7.86	5.47
Cdh Tj = +12 °C	0.950	0.970
Pdh Tj = Tbiv	13.70 kW	14.60 kW
COP Tj = Tbiv	2.90	2.31
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	13.70 kW	14.60 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.90	2.31
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.990	1.000
WTOL	65 °C	65 °C
Poff	25 W	25 W
PTO	25 W	25 W
PSB	25 W	25 W
PCK	25 W	25 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	2995 kWh	4801 kWh