

Subtype S-Therm Ontario SMH5-40 60

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 SMH5-40 60
Registration number	041-K037-21
Heat Pump Type	Outdoor Air/Water
Refrigerant	R32
Mass of Refrigerant	0.95 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 SMH5-40B*/SMH-40IRBC

Model name	SMH5-40B*/SMH-40IRBC
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}	128 %
COP	3.06
Heating up time	4h33min h:min
Standby power input	48.3 W
Reference hot water temperature	49.0 °C
Mixed water at 40°C	333 l

EN 16147 | Colder Climate

Declared load profile	XL
Efficiency η_{DHW}	90 %
COP	2.16
Heating up time	6:36 h:min
Standby power input	62.8 W
Reference hot water temperature	48.0 °C
Mixed water at 40°C	321 l

EN 16147 | Warmer Climate

Declared load profile	XL
Efficiency η_{DHW}	120 %
COP	3.34
Heating up time	4:9 h:min
Standby power input	30.0 W
Reference hot water temperature	49.0 °C
Mixed water at 40°C	326 l

EN 14511-4 | Heating

Shutting off the heat transfer medium flow	passed
Complete power supply failure	passed

Defrost test	passed	
Starting and operating test	passed	
EN 14511-2 Heating		
	Low temperature	Medium temperature
Heat output	5.00 kW	4.80 kW
El input	0.93 kW	1.48 kW
COP	5.40	3.25
EN 12102-1 Average Climate		
	Low temperature	Medium temperature
Sound power level outdoor	56 dB(A)	58 dB(A)
EN 14825 Average Climate		
	Low temperature	Medium temperature
ηs	192 %	137 %
Prated	5.00 kW	5.00 kW
SCOP	4.88	3.50
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	4.80 kW	4.30 kW
COP Tj = -7°C	3.43	2.47
Cdh Tj = -7 °C	0.990	0.990
Pdh Tj = +2°C	3.10 kW	2.70 kW
COP Tj = +2°C	4.83	3.19
Cdh Tj = +2 °C	0.980	0.980
Pdh Tj = +7°C	1.90 kW	1.70 kW
COP Tj = +7°C	5.95	4.89
Cdh Tj = +7 °C	0.950	0.950
Pdh Tj = 12°C	1.70 kW	1.60 kW
COP Tj = 12°C	8.49	6.61
Cdh Tj = +12 °C	0.940	0.940
Pdh Tj = Tbiv	4.80 kW	4.30 kW
COP Tj = Tbiv	3.43	2.47
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	4.40 kW	3.60 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.46	1.56
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	0.60 kW	1.40 kW
Annual energy consumption Qhe	2306 kWh	2882 kWh

EN 14825 | Colder Climate

	Low temperature	Medium temperature
η_s	168 %	112 %
Prated	5.00 kW	4.00 kW
SCOP	4.28	2.88
Tbiv	-15 °C	-15 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	2.90 kW	2.60 kW
COP Tj = -7°C	3.43	2.05
Cdh Tj = -7 °C	0.990	0.990
Pdh Tj = +2°C	1.80 kW	1.60 kW
COP Tj = +2°C	5.41	3.77
Cdh Tj = +2 °C	0.970	0.970
Pdh Tj = +7°C	1.30 kW	1.30 kW
COP Tj = +7°C	6.24	5.15
Cdh Tj = +7 °C	0.950	0.950
Pdh Tj = 12°C	1.50 kW	1.50 kW
COP Tj = 12°C	8.38	7.21
Cdh Tj = +12 °C	0.950	0.950
Pdh Tj = Tbiv	3.70 kW	3.50 kW
COP Tj = Tbiv	2.85	1.76
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	3.20 kW	2.50 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	1.65	1.20
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	1.50 kW
Annual energy consumption Qhe	2630 kWh	3721 kWh
Pdh Tj = -15°C (if TOL)	3.70	3.50
COP Tj = -15°C (if TOL)	2.85	1.76
Cdh Tj = -15 °C	0.980	0.990

EN 14825 | Warmer Climate

Low temperature	Medium temperature
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η_s	239 %	170 %
Prated	5.00 kW	5.00 kW
SCOP	6.05	4.33
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	5.10 kW	5.20 kW
COP Tj = +2°C	3.85	2.44
Cdh Tj = +2 °C	0.990	0.990
Pdh Tj = +7°C	3.40 kW	3.20 kW
COP Tj = +7°C	5.80	3.67
Cdh Tj = +7 °C	0.980	0.980
Pdh Tj = 12°C	1.50 kW	1.50 kW
COP Tj = 12°C	7.20	5.79
Cdh Tj = +12 °C	0.950	0.950
Pdh Tj = Tbiv	5.10 kW	5.20 kW
COP Tj = Tbiv	3.85	2.44
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	5.10 kW	5.20 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.85	2.44
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.980	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	1124 kWh	1604 kWh

Model SMH5-60B*/SMH-60IRBC

Model name	SMH5-60B*/SMH-60IRBC
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}	128 %
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Heating up time	4h33min h:min
Standby power input	48.3 W
Reference hot water temperature	49.0 °C
Mixed water at 40°C	333 l

EN 16147 | Colder Climate

Declared load profile	XL
Efficiency η_{DHW}	90 %
COP	2.16
Heating up time	6:36 h:min
Standby power input	62.8 W
Reference hot water temperature	48.0 °C
Mixed water at 40°C	321 l

EN 16147 | Warmer Climate

Declared load profile	XL
Efficiency η_{DHW}	120 %
COP	3.34
Heating up time	4:9 h:min
Standby power input	30.0 W
Reference hot water temperature	49.0 °C
Mixed water at 40°C	326 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	6.00 kW	5.80 kW
El input	1.11 kW	1.84 kW
COP	5.41	3.15
EN 12102-1 Average Climate		
	Low temperature	Medium temperature
Sound power level outdoor	56 dB(A)	58 dB(A)
EN 14825 Average Climate		
	Low temperature	Medium temperature
ηs	199 %	137 %
Prated	6.00 kW	5.00 kW
SCOP	5.05	3.50
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	5.10 kW	4.30 kW
COP Tj = -7°C	3.22	2.47
Cdh Tj = -7 °C	0.990	0.990
Pdh Tj = +2°C	3.40 kW	2.70 kW
COP Tj = +2°C	4.86	3.19
Cdh Tj = +2 °C	0.980	0.980
Pdh Tj = +7°C	2.00 kW	1.70 kW
COP Tj = +7°C	7.09	4.89
Cdh Tj = +7 °C	0.950	0.950
Pdh Tj = 12°C	1.70 kW	1.60 kW
COP Tj = 12°C	8.49	6.61
Cdh Tj = +12 °C	0.940	0.940
Pdh Tj = Tbiv	5.10 kW	4.30 kW
COP Tj = Tbiv	3.22	2.47
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	4.40 kW	3.60 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.46	1.56
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	1.60 kW	1.40 kW
Annual energy consumption Qhe	2386 kWh	2882 kWh

EN 14825 | Colder Climate

	Low temperature	Medium temperature
η_s	164 %	120 %
Prated	5.00 kW	5.00 kW
SCOP	4.18	3.08
Tbiv	-15 °C	-15 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	3.20 kW	3.30 kW
COP Tj = -7°C	3.47	2.55
Cdh Tj = -7 °C	0.990	0.990
Pdh Tj = +2°C	1.90 kW	1.80 kW
COP Tj = +2°C	5.18	3.67
Cdh Tj = +2 °C	0.970	0.970
Pdh Tj = +7°C	1.30 kW	1.30 kW
COP Tj = +7°C	6.24	5.15
Cdh Tj = +7 °C	0.950	0.950
Pdh Tj = 12°C	1.50 kW	1.50 kW
COP Tj = 12°C	8.38	7.21
Cdh Tj = +12 °C	0.950	0.950
Pdh Tj = Tbiv	3.90 kW	4.00 kW
COP Tj = Tbiv	2.77	1.91
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	3.20 kW	2.50 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	1.65	1.20
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	2.50 kW
Annual energy consumption Qhe	2825 kWh	3976 kWh
Pdh Tj = -15°C (if TOL)	3.90	4.00
COP Tj = -15°C (if TOL)	2.77	1.91
Cdh Tj = -15 °C	0.980	0.990

EN 14825 | Warmer Climate

Low temperature	Medium temperature
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ηs	239 %	183 %
Prated	5.00 kW	6.00 kW
SCOP	6.05	4.65
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	5.10 kW	6.00 kW
COP Tj = +2°C	3.85	2.50
Cdh Tj = +2 °C	0.990	0.990
Pdh Tj = +7°C	3.40 kW	3.90 kW
COP Tj = +7°C	5.80	4.00
Cdh Tj = +7 °C	0.980	0.980
Pdh Tj = 12°C	1.50 kW	1.70 kW
COP Tj = 12°C	7.20	6.13
Cdh Tj = +12 °C	0.950	0.950
Pdh Tj = Tbiv	5.10 kW	6.00 kW
COP Tj = Tbiv	3.85	2.50
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	5.10 kW	6.00 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.85	2.50
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.980	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	1124 kWh	1722 kWh