

Subtype S-Therm Ontario Split 40 60 2

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 Split 40 60 2
Registration number	041-K037-24
Heat Pump Type	Outdoor Air/Water
Refrigerant	R32
Mass of Refrigerant	1.1 kg
Certification Date	03.03.2023
Testing basis	Heat Pump Keymark Scheme Rules Rev 11

Model GSH-40IRBC/GSH-40ERB2

Model name	GSH-40IRBC/GSH-40ERB2
Application	Heating + DHW + low temp
Units	Indoor, 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}	107 %
COP	2.53
Heating up time	2:52 h:min
Standby power input	78.6 W
Reference hot water temperature	51.0 °C
Mixed water at 40°C	374 l

EN 16147 | Colder Climate

Declared load profile	XL
Efficiency η_{DHW}	79 %
COP	1.90
Heating up time	2:55 h:min
Standby power input	81.6 W
Reference hot water temperature	51.0 °C
Mixed water at 40°C	371 l

EN 16147 | Warmer Climate

Declared load profile	XL
Efficiency η_{DHW}	111 %
COP	2.62
Heating up time	1:40 h:min
Standby power input	74.8 W
Reference hot water temperature	51.0 °C
Mixed water at 40°C	375 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	4.00 kW	3.60 kW
El input	0.77 kW	1.40 kW
COP	5.20	2.57

EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level indoor	42 dB(A)	42 dB(A)
Sound power level outdoor	60 dB(A)	62 dB(A)

EN 14825 | Average Climate

	Low temperature	Medium temperature
η_s	183 %	128 %
Prated	5.00 kW	5.00 kW
SCOP	4.65	3.28
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	4.60 kW	4.00 kW
COP Tj = -7°C	3.23	2.03
Cdh Tj = -7 °C	0.980	0.990
Pdh Tj = +2°C	2.90 kW	2.60 kW
COP Tj = +2°C	4.59	3.27
Cdh Tj = +2 °C	0.960	0.970
Pdh Tj = +7°C	2.60 kW	2.30 kW
COP Tj = +7°C	6.39	4.30
Cdh Tj = +7 °C	0.940	0.950
Pdh Tj = 12°C	2.80 kW	2.80 kW
COP Tj = 12°C	6.37	6.00
Cdh Tj = +12 °C	0.940	0.950
Pdh Tj = Tbiv	4.60 kW	4.00 kW
COP Tj = Tbiv	3.23	2.03
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	4.20 kW	3.80 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.56	1.38
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh		
WTOL	60 °C	60 °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	0.80 kW	1.20 kW
Annual energy consumption Q _{he}	2216 kWh	3152 kWh

EN 14825 | Colder Climate

	Low temperature	Medium temperature
η_s	145 %	95 %
Prated	4.00 kW	3.00 kW
SCOP	3.70	2.45
T _{biv}	-15 °C	-15 °C
TOL	-22 °C	-22 °C
P _{dh} T _j = -7°C	2.40 kW	1.90 kW
COP T _j = -7°C	2.68	1.72
C _{dh} T _j = -7 °C	0.970	0.980
P _{dh} T _j = +2°C	2.30 kW	1.90 kW
COP T _j = +2°C	5.34	3.41
C _{dh} T _j = +2 °C	0.940	0.960
P _{dh} T _j = +7°C	2.70 kW	2.60 kW
COP T _j = +7°C	7.04	5.29
C _{dh} T _j = +7 °C	0.940	0.950
P _{dh} T _j = 12°C	2.60 kW	2.90 kW
COP T _j = 12°C	6.90	6.71
C _{dh} T _j = +12 °C	0.930	0.940
P _{dh} T _j = T _{biv}	3.10 kW	2.70 kW
COP T _j = T _{biv}	2.06	1.35
P _{dh} T _j = TOL or P _{dh} T _j = T _{designh} if TOL < T _{designh}	2.70 kW	2.30 kW
COP T _j = TOL or COP T _j = T _{designh} if TOL < T _{designh}	1.58	1.10
C _{dh} T _j = TOL or P _{dh} T _j = T _{designh} if TOL < T _{designh}		
WTOL	60 °C	60 °C
P _{off}	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	1.20 kW	0.70 kW
Annual energy consumption Q _{he}	2662 kWh	3015 kWh
P _{dh} T _j = -15°C (if TOL	3.10	2.70
COP T _j = -15°C (if TOL	2.06	1.35
C _{dh} T _j = -15 °C		

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
--	-----------------	--------------------

η_s	232 %	153 %
Prated	5.00 kW	4.00 kW
SCOP	5.88	3.90
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	4.80 kW	4.20 kW
COP Tj = +2°C	3.46	2.10
Cdh Tj = +2 °C	0.980	0.990
Pdh Tj = +7°C	3.30 kW	2.60 kW
COP Tj = +7°C	5.57	3.40
Cdh Tj = +7 °C	0.960	0.970
Pdh Tj = 12°C	2.90 kW	2.70 kW
COP Tj = 12°C	7.60	5.55
Cdh Tj = +12 °C	0.930	0.950
Pdh Tj = Tbiv	4.80 kW	4.20 kW
COP Tj = Tbiv	3.46	2.10
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	4.80 kW	4.20 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.46	2.10
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh		
WTOL	60 °C	60 °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	1137 kWh	1365 kWh

Model GSH-60IRBC/GSH-60ERB2

Model name	GSH-60IRBC/GSH-60ERB2
Application	Heating + DHW + low temp
Units	Indoor, 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}	107 %
COP	2.53
Heating up time	2:52 h:min
Standby power input	78.6 W
Reference hot water temperature	51.0 °C
Mixed water at 40°C	374 l

EN 16147 | Colder Climate

Declared load profile	XL
Efficiency η_{DHW}	79 %
COP	1.90
Heating up time	2:55 h:min
Standby power input	81.6 W
Reference hot water temperature	51.0 °C
Mixed water at 40°C	371 l

EN 16147 | Warmer Climate

Declared load profile	XL
Efficiency η_{DHW}	111 %
COP	2.62
Heating up time	1:40 h:min
Standby power input	74.8 W
Reference hot water temperature	51.0 °C
Mixed water at 40°C	375 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	5.40 kW
El input	1.20 kW	2.16 kW
COP	5.00	2.50

EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level indoor	42 dB(A)	42 dB(A)
Sound power level outdoor	60 dB(A)	62 dB(A)

EN 14825 | Average Climate

	Low temperature	Medium temperature
η_s	181 %	128 %
Prated	6.00 kW	5.00 kW
SCOP	4.60	3.28
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	5.30 kW	4.00 kW
COP Tj = -7°C	2.81	2.03
Cdh Tj = -7 °C	0.990	0.990
Pdh Tj = +2°C	3.30 kW	2.60 kW
COP Tj = +2°C	4.68	3.27
Cdh Tj = +2 °C	0.960	0.970
Pdh Tj = +7°C	2.60 kW	2.30 kW
COP Tj = +7°C	6.47	4.30
Cdh Tj = +7 °C	0.940	0.950
Pdh Tj = 12°C	2.60 kW	2.80 kW
COP Tj = 12°C	5.72	6.00
Cdh Tj = +12 °C	0.940	0.950
Pdh Tj = Tbiv	5.30 kW	4.00 kW
COP Tj = Tbiv	2.81	2.03
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	4.20 kW	3.80 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.56	1.38
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh		
WTOL	60 °C	60 °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	1.20 kW
Annual energy consumption Q _{he}	2685 kWh	3152 kWh

EN 14825 | Colder Climate

	Low temperature	Medium temperature
η_s	144 %	103 %
Prated	4.00 kW	4.00 kW
SCOP	3.68	2.65
T _{biv}	-15 °C	-15 °C
TOL	-22 °C	-22 °C
P _{dh} T _j = -7°C	2.60 kW	2.40 kW
COP T _j = -7°C	2.69	1.83
C _{dh} T _j = -7 °C	0.970	0.980
P _{dh} T _j = +2°C	2.30 kW	2.10 kW
COP T _j = +2°C	5.34	3.87
C _{dh} T _j = +2 °C	0.940	0.950
P _{dh} T _j = +7°C	2.70 kW	2.50 kW
COP T _j = +7°C	7.04	5.31
C _{dh} T _j = +7 °C	0.940	0.950
P _{dh} T _j = 12°C	2.60 kW	2.90 kW
COP T _j = 12°C	6.90	6.73
C _{dh} T _j = +12 °C	0.930	0.940
P _{dh} T _j = T _{biv}	3.40 kW	3.10 kW
COP T _j = T _{biv}	1.98	1.38
P _{dh} T _j = TOL or P _{dh} T _j = T _{designh} if TOL < T _{designh}	2.70 kW	2.30 kW
COP T _j = TOL or COP T _j = T _{designh} if TOL < T _{designh}	1.58	1.10
C _{dh} T _j = TOL or P _{dh} T _j = T _{designh} if TOL < T _{designh}		
WTOL	60 °C	60 °C
P _{off}	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	1.30 kW	1.70 kW
Annual energy consumption Q _{he}	2674 kWh	3701 kWh
P _{dh} T _j = -15°C (if TOL	3.40	3.10
COP T _j = -15°C (if TOL	1.98	1.38
C _{dh} T _j = -15 °C		

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
--	-----------------	--------------------

η_s	232 %	159 %
Prated	5.00 kW	5.00 kW
SCOP	5.88	4.05
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	5.20 kW	5.10 kW
COP Tj = +2°C	3.53	2.14
Cdh Tj = +2 °C	0.980	0.990
Pdh Tj = +7°C	3.30 kW	3.30 kW
COP Tj = +7°C	5.57	3.49
Cdh Tj = +7 °C	0.960	0.970
Pdh Tj = 12°C	2.90 kW	2.70 kW
COP Tj = 12°C	7.60	5.67
Cdh Tj = +12 °C	0.930	0.950
Pdh Tj = Tbiv	5.20 kW	5.10 kW
COP Tj = Tbiv	3.53	2.14
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	5.20 kW	5.10 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.53	2.14
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh		
WTOL	60 °C	60 °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	1136 kWh	1643 kWh