Subtype S-Therm Ontario Split 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 Split 160
Registration number	041-K037-28
Heat Pump Type	Outdoor Air/Water
Refrigerant	R32
Mass of Refrigerant	1.84 kg
Certification Date	03.03.2023
Testing basis	Heat Pump Keymark Scheme Rules Rev 11
Testing laboratory	SGS-CSTC Standards Technical Services Co., Ltd. Shunde Branch, CN

Model GSH-160IRB*-3/GSH-160ERB-3	
Model name	GSH-160IRB*-3/GSH-160ERB-3
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	3x400V 50Hz
Off-peak product	n/a

Outdoor Air/Water	
EN 16147 | Average Climate	
Declared load profile	XL
Efficiency ηDHW	108 %
COP	2.58
Heating up time	1:28 h:min
Standby power input	67.1 W
Reference hot water temperature	52 °C
Mixed water at 40°C	336 l
EN 16147 | Colder Climate	
Declared load profile	XL
Efficiency ηDHW	85 %
COP	2.05
Heating up time	1:54 h:min
Standby power input	70 W
Reference hot water temperature	52 °C
Mixed water at 40°C	333 l
EN 16147 | Warmer Climate	
Declared load profile	XL
Efficiency ηDHW	115 %
COP	2.73
Heating up time	1:28 h:min
Standby power input	68.2 W
Reference hot water temperature	52 °C
Mixed water at 40°C	332 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	15.5 kW	16 kW
El input	3.44 kW	5.52 kW
COP	4.51	2.9

EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level indoor	42 dB(A)	42 dB(A)
Sound power level outdoor	64 dB(A)	68 dB(A)

EN 14825 | Average Climate

	Low temperature	Medium temperature
ηs	175 %	131 %
Prated	13 kW	13 kW
SCOP	4.45	3.35
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	11.1 kW	11.6 kW
COP Tj = -7°C	2.68	1.96
Cdh Tj = -7 °C	0.99	1
Pdh Tj = +2°C	6.5 kW	7.3 kW
COP Tj = +2°C	4.35	3.33
Cdh Tj = +2 °C	0.98	0.99
Pdh Tj = +7°C	4.2 kW	4.2 kW
COP Tj = +7°C	6.05	4.48
Cdh Tj = +7 °C	0.96	0.97
Pdh Tj = 12°C	3.3 kW	3.1 kW
COP Tj = 12°C	7.34	5.65
Cdh Tj = +12 °C	0.94	0.95
Pdh Tj = Tbiv	11.1 kW	11.6 kW
COP Tj = Tbiv	2.68	1.96
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	10.7 kW	11 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.61	1.81
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	2.3 kW	2 kW
Annual energy consumption Qhe	6027 kWh	7958 kWh

EN 14825 | Colder Climate

	Low temperature	Medium temperature
ηs	156 %	119 %
Prated	12 kW	13 kW
SCOP	3.98	3.05
Tbiv	-15 °C	-15 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	6.6 kW	8.6 kW
COP Tj = -7°C	3.29	2.63
Cdh Tj = -7 °C	0.99	0.99
Pdh Tj = +2°C	4.5 kW	4.7 kW
COP Tj = +2°C	4.85	3.69
Cdh Tj = +2 °C	0.97	0.98
Pdh Tj = +7°C	2.8 kW	3 kW
COP Tj = +7°C	5.83	4.58
Cdh Tj = +7 °C	0.95	0.96
Pdh Tj = 12°C	3.4 kW	3.2 kW
COP Tj = 12°C	7.17	5.97
Cdh Tj = +12 °C	0.95	0.95
Pdh Tj = Tbiv	10.1 kW	10.5 kW
COP Tj = Tbiv	2.57	1.83
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	7.8 kW	4 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	1.75	1.08
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	4.2 kW	9 kW
Annual energy consumption Qhe	7442 kWh	10476 kWh
Pdh Tj = -15°C (if TOL	10.1	10.5
COP Tj = -15°C (if TOL	2.57	1.83

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
ηs	236 %	171 %
Prated	13 kW	14 kW
SCOP	5.98	4.35
Tbiv	2 °C	2 °C

TOL	2 °C	2 °C
Pdh Tj = +2°C	13 kW	13.7 kW
COP Tj = +2°C	3	2.29
Cdh Tj = +2 °C	0.99	1
Pdh Tj = +7°C	8.1 kW	9.3 kW
COP Tj = +7°C	5.14	3.59
Cdh Tj = +7 °C	0.98	0.99
Pdh Tj = 12°C	3.7 kW	4.2 kW
COP Tj = 12°C	7.84	5.84
Cdh Tj = +12 °C	0.95	0.97
Pdh Tj = Tbiv	13 kW	13.7 kW
COP Tj = Tbiv	3	2.29
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	13 kW	13.7 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3	2.29
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 kW	0 kW
Annual energy consumption Qhe	2903 kWh	4292 kWh

Model GSH-160IRB*/GSH-160ERB	
Model name	GSH-160IRB*/GSH-160ERB
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 ηDHW	105 %
COP	2.52
Heating up time	1:28 h:min
Standby power input	67.1 W
Reference hot water temperature	52 °C
Mixed water at 40°C	336 l
EN 16147 | Colder Climate	
Declared load profile	XL
Efficiency ηDHW	84 %
COP	2.04
Heating up time	1:54 h:min
Standby power input	70 W
Reference hot water temperature	52 °C
Mixed water at 40°C	333 l
EN 16147 | Warmer Climate	
Declared load profile	XL
Efficiency ηDHW	108 %
COP	2.59
Heating up time	1:28 h:min
Standby power input	68.2 W
Reference hot water temperature	52 °C
Mixed water at 40°C	332 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	15.5 kW	16 kW
El input	3.44 kW	5.42 kW
COP	4.51	2.95

EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level indoor	42 dB(A)	42 dB(A)
Sound power level outdoor	64 dB(A)	68 dB(A)

EN 14825 | Average Climate

	Low temperature	Medium temperature
ηs	181 %	137 %
Prated	13 kW	13 kW
SCOP	4.6	3.5
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	11.6 kW	12 kW
COP Tj = -7°C	2.76	2.23
Cdh Tj = -7 °C	0.99	1
Pdh Tj = +2°C	6.5 kW	7.2 kW
COP Tj = +2°C	4.4	3.33
Cdh Tj = +2 °C	0.98	0.99
Pdh Tj = +7°C	4.5 kW	4.5 kW
COP Tj = +7°C	6.63	4.72
Cdh Tj = +7 °C	0.96	0.97
Pdh Tj = 12°C	3.3 kW	3.1 kW
COP Tj = 12°C	7.34	5.65
Cdh Tj = +12 °C	0.94	0.95
Pdh Tj = Tbiv	11.6 kW	12 kW
COP Tj = Tbiv	2.76	2.23
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	10.7 kW	11.8 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.74	2
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	2.3 kW	1.2 kW
Annual energy consumption Qhe	5886 kWh	8045 kWh

EN 14825 | Colder Climate

	Low temperature	Medium temperature
ηs	165 %	122 %
Prated	12 kW	13 kW
SCOP	4.2	3.13
Tbiv	-15 °C	-15 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	6.6 kW	8.3 kW
COP Tj = -7°C	3.33	2.62
Cdh Tj = -7 °C	0.99	0.99
Pdh Tj = +2°C	4.7 kW	5.1 kW
COP Tj = +2°C	5.49	3.84
Cdh Tj = +2 °C	0.97	0.98
Pdh Tj = +7°C	2.8 kW	3 kW
COP Tj = +7°C	5.83	4.58
Cdh Tj = +7 °C	0.95	0.96
Pdh Tj = 12°C	3.2 kW	3.2 kW
COP Tj = 12°C	7.02	5.97
Cdh Tj = +12 °C	0.95	0.95
Pdh Tj = Tbiv	9.5 kW	11 kW
COP Tj = Tbiv	2.64	2.05
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	7.8 kW	4 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	1.83	1.08
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	4.2 kW	9 kW
Annual energy consumption Qhe	6908 kWh	10672 kWh
Pdh Tj = -15°C (if TOL	9.5	11
COP Tj = -15°C (if TOL	2.64	2.05

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
ηs	266 %	178 %
Prated	13 kW	14 kW
SCOP	6.73	4.53
Tbiv	2 °C	2 °C

TOL	2 °C	2 °C
Pdh Tj = +2°C	13.1 kW	13.7 kW
COP Tj = +2°C	3.19	2.32
Cdh Tj = +2 °C	0.99	1
Pdh Tj = +7°C	8.4 kW	8.9 kW
COP Tj = +7°C	5.6	3.65
Cdh Tj = +7 °C	0.98	0.99
Pdh Tj = 12°C	3.7 kW	4 kW
COP Tj = 12°C	9.24	6.3
Cdh Tj = +12 °C	0.94	0.96
Pdh Tj = Tbiv	13.1 kW	13.7 kW
COP Tj = Tbiv	3.19	2.32
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	13.1 kW	13.7 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.19	2.32
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 kW	0 kW
Annual energy consumption Qhe	2610 kWh	4055 kWh