

# Solar Cooling Unit

## SelfChill Air/Liquid Indoor/Outdoor

322021 • 322110 • 322123 • EN • 04/2024

The SelfChill Air/Liquid cooling units are hermetically sealed cooling devices that work as a vapor-compression heat pump. They are filled with refrigerant and ready to be plugged to a PV system with or without batteries for different cooling applications. The Units consists of the following parts: compressor (SECOP BD35K), condenser, evaporator plate and electronic control unit (SECOP 101N0420).

The indoor versions use an air forced condenser (322021, 322110) while the outdoor version (322123) has a static condenser suitable for exposure to harsh environments where the use of an external fan is not desired. The indoor version is available with two different evaporator plates coating. The article 322021 with anticorrosive white paint for applications in contact with air or solid parts, and the article 322110 with a special rubber coating for applications where liquids are to be cooled down.

#### Advantages:

- Create your own cooling system
- Direct connection to a PV panel with less than 45 V DC Open Circuit Voltage, or 12/24 V DC batteries
- Automatic variable speed control to adapt to different cooling demands
- Low shipping costs due to compact size

Technical Data	322021 /322110	322123
Power Consumption:	45 W (at 2000 1/min) - 75 W (at 3500 1/min )	
Temperature Range:		
Evaporator:	-5°C to 15°	-5°C to 15°
Ambient:	10°C to 45°C	10°C to 45°C
Voltage Range:	10 - 45 VDC	
Refrigerant:	R-600a (Isobutane), 35g	R-600a (Isobutane), 90g
Evaporator plate dimensions (H x W):	515,8 x 502,6 mm	
Suction line between condensing unit and evaporator (diameter/length)	0,8 / 600 mm	0,8 / 1000 mm
Dimensions (packed): (Width, Length, Height)	250 x 600 x 630 mm	710x245x800 mm
Weight (packed):	10 kg	15kg



Article number: 322021

Solar Cooling Unit SelfChill Air Indoor 45/75 A-F



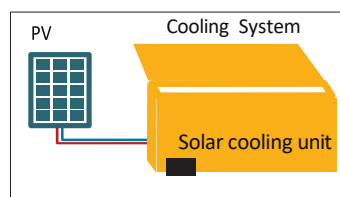
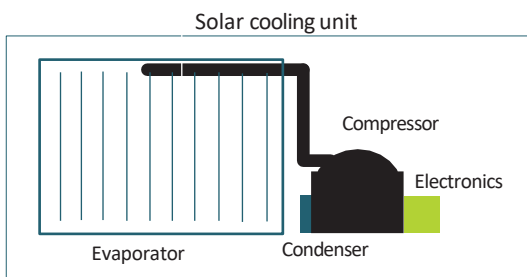
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Solar Cooling Unit SelfChill Liquid Indoor 45/75 A-F



Article number: 322123

Solar Cooling Unit SelfChill Air Outdoor 45/75 A-F



### Cooling Performance Indoor Versions

**322021** Solar Cooling Unit SelfChill Air Indoor 45/75 A-F

**322110** Solar Cooling Unit SelfChill Liquid Indoor 45/75 A-F

COP at n = 3500 1/min		Evaporator temperature (° C)				
		-5	0	5	10	15
Ambient Temperature (°C)	15	1.94	2.38	3.03	4.11	
	25	1.46	1.70	2.02	2.47	3.14
	35	1.17	1.32	1.51	1.76	2.09
	45	0.97	1.08	1.21	1.37	1.57

Cooling Power (W) at 3500 1/min		Evaporator temperature (° C)				
		-5	0	5	10	15
Ambient Temperature (°C)	15	146	178	227	308	
	25	109	127	151	185	235
	35	87	99	113	132	157
	45	73	81	91	103	118

COP at n = 2000 1/min		Evaporator temperature (° C)				
		-5	0	5	10	15
Ambient Temperature (°C)	15	2.25	2.84	3.80	5.63	
	25	1.63	1.93	2.34	2.95	3.94
	35	1.27	1.46	1.69	2.00	2.42
	45	1.05	1.17	1.32	1.51	1.75

Cooling Power (W) at 2000 1/min		Evaporator temperature (° C)				
		-5	0	5	10	15
Ambient Temperature (°C)	15	101	128	171	253	
	25	73	87	105	133	177
	35	57	66	76	90	109
	45	47	53	59	68	79

### Cooling Performance Outdoor Versions

#### 322123 Solar Cooling Unit SelfChill Air Outdoor 45/75 A-F

COP at n = 3500 1/min		Evaporator temperature (° C)				
		-5	0	5	10	15
Ambient Temperature (°C)	15	1.29	1.49	1.75	2.10	
	25	1.05	1.18	1.34	1.55	1.81
	35	0.88	0.98	1.09	1.23	1.39
	45	0.76	0.83	0.92	1.01	1.13

Cooling Power (W) at 35001/min		Evaporator temperature (° C)				
		-5	0	5	10	15
Ambient Temperature (°C)	15	97	112	131	158	
	25	79	89	101	116	136
	35	66	73	82	92	104
	45	57	63	69	76	85

COP at n = 2000 1/min		Evaporator temperature (° C)				
		-5	0	5	10	15
Ambient Temperature (°C)	15	1.65	1.98	2.44	3.14	
	25	1.28	1.47	1.72	2.05	2.53
	35	1.04	1.17	1.32	1.52	1.78
	45	0.88	0.97	1.08	1.21	1.37

Cooling Power (W) at 2000 1/min		Evaporator temperature (° C)				
		-5	0	5	10	15
Ambient Temperature (°C)	15	74	89	110	141	
	25	57	66	77	92	114
	35	47	53	60	69	80
	45	39	44	49	54	62

Electronic unit Code number	Resistor R1	Motor Speed rpm
Secop 101N0420	0	Variable Speed
	173	2000
	450	2500
	865	3000
	1696	3500

