

BRAZED PLATE SOLAR HEAT EXCHANGER

Technical datasheet Nr 11

The brazed plate heat exchanger are designed to transfer the heat energy from the solar circuit to the domestic hot water secondary circuit. Heat transfer is carried out by a counter-current circulation of primary and secondary fluids on each side of the heat exchanger. This counter-current circulation maximizes the energy transfer and homogenizes the temperatures.

• TECHNICAL SPECIFICATIONS:

Dimensioning assumptions for solar heat exchangers are the following:

- Exchanger power based on 650 W/m²
- Head loss max 20 kPa (2mWC)
- Minimum 10% margin over-power
- Flat-plate collector: Primary = MPG (Profile 60/36°C) / Secondary Clear Water (Profile 27/55°C)
- Vacuum tube collector: Primary = MPG (Profile 60/44.5°C) / Secondary Clear Water (Profile 39/55°C)

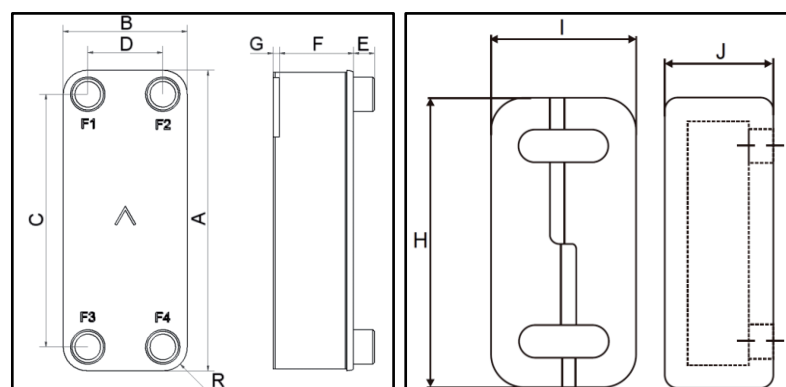


Reference	Flowrate l/(h.m ² _{abs})	Max. collector area (m ² _{abs})	Thermal power (kW)	Model of plates	Number of plates	Primary solar circuit			Secondary domestic water circuit		
						Flowrate (m ³ /h)	Pressure drop (kPa)	Capacity (L)	Flowrate (m ³ /h)	Pressure drop (kPa)	Capacity (L)
50070103001		20	13		20	0.50	3.1	1.00	0.40	1.3	1.11
50070103002	25	40	26		40	1.00	3.0	2.11	0.81	1.4	2.22
50070103003	(flat-plate collector)	80	52	P	70	2.00	4.1	3.77	1.61	2.2	3.88
50070103004		120	78		100	3.00	5.3	5.44	2.42	2.9	5.55
50070103005		160	104		130	4.00	6.8	7.10	3.23	3.9	7.22
50070103015	40 (vacuum tube collector)	21	13.7	P	20	0.84	7.6	1.00	0.75	4.3	1.11
50070103016		51	33.2		40	2.04	10.3	2.11	1.81	6.7	2.22
50070103017		96	62.4		70	3.84	13.2	3.77	3.40	9.1	3.88
50070103018		141	91.7		100	5.64	16.9	5.44	4.99	12.0	5.55
50070103019		177	115.1	130	7.07	19.7	7.10	6.26	14.3	7.22	
50070103020		246	159.9	100	9.83	10.1	11.80	8.70	6.3	12.10	
50070103021		300	195.0	G	120	11.98	11.6	14.20	10.61	7.4	14.50
50070103022	354	230.1		140	14.14	13.3	16.60	12.52	8.7	16.90	

NP = Plates Number

Size	Dimensions (mm)	
	Model P	Model G
A	526	525
B	119	243
C	479	456
D	72	174
E	20.1	27.2
F	4+2.24xNP	10+2.29xNP
G	6	4
H	594	627
I	182	330
J	84.3+2.4xNP	105.1+2.4xNP
R	1"	2"
Insulation thickness	30	40

Technical specifications	
Max. working pressure at 225°C	27 bar
Test pressure	50 bar
Min. temperature	-196 °C
Max. temperature	225 °C
Weight	Model P: 2.148+NPx0.177 kg Model G: 10.27+NPx0.404 kg
Plate material	Parts in contact with fluid: AISI 316 Parts not in contact with fluid: AISI 304
Brazing material	Copper
Standard connection material	AISI 316
Insulation box material	Rigid expanded polyurethane with thermoformed plastic cover
Max. insulation temperature	130 °C



Connection	Type of fluid
F1	Inlet solar fluid (hot)
F3	Outlet solar fluid (cold)
F2	Outlet Domestic Hot Water
F4	Inlet Domestic Cold Water