Solar Collector Factsheet: SPF-Nr. C690

Model	**Seido 1-16**
Type	Tube collector
Manufacturer	Beijing Sunda Solar Energy Technology
Address	No. 3 Huayuan Road, Haidian District
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	CN Beijing 100083
Telephone	+86 10 62 00 10 33
Fax	+86 10 62 00 10 33
E-Mail	sunda@public3.bta.net.cn
Internet	www.sundasolar.com
Sales area	CH,DE,AT,UN

☑ Performance test EN 12975
☐ Quality test EN 12975

Dimensions

Total length	2.126	m
Total width	1.920	m
Empty weight with glass	102	kg
Liquid content	0.96	l
Aperture area	3.008	m²
Absorber area	2.859	m²
Gross area	4.082	m²

Technical data

Minimum volume flow rate	100	l/h
Recommended volume flow rate	130	l/h
Maximum volume flow rate	300	l/h
Maximum operating pressure	6	bar
Stagnation temperature	--	°C

(Ta = 30°C, G = 1000 W/m²)

Types of mounting

☑ Construction for flat roof
☐ Integration into sloped roof
☑ Construction for sloping roof
☐ Front mounting

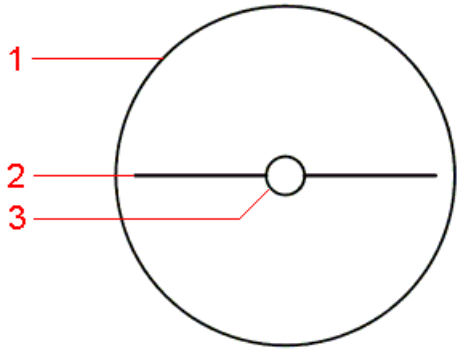
Further data

☐ Variable module size
☑ Glazing replaceable

Hydraulic connections

Copper pipe, nominal diameter 22 mm

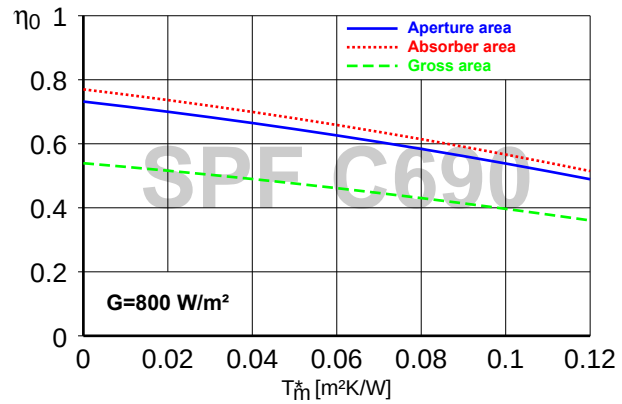
Construction



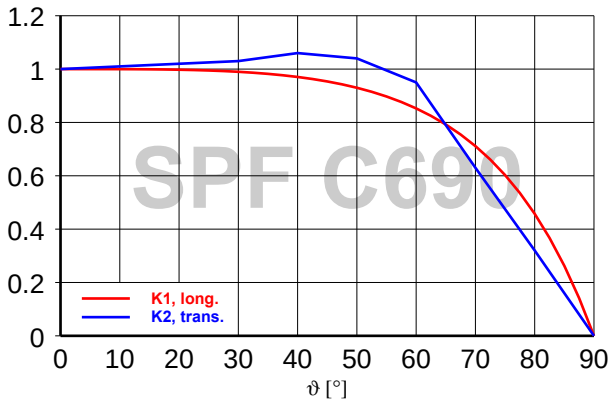
Element list and Nomenclature

1 Glazing
2 Absorber
3 Heat pipe

Efficiency curve



Angle factors (Incident Angle Modifier)



Reference area	Aperture	Absorber	Gross
η_0	0.732	0.770	0.539
a_1 [W/(m²K)]	1.50	1.58	1.11
a_2 [W/(m²K²)]	0.0054	0.0057	0.0040

Test fluid: water-glycol 33.3%, volume current: 200 l/h

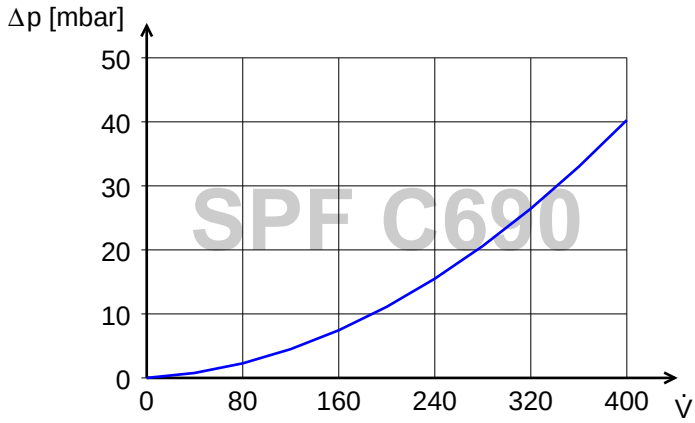
K1, longitudinal (50°)	0.93
K2, transversal (50°)	1.04
(special IAM)	
Heat capacity: C	14.8 kJ/K

System (Climate: central Switzerland, collector orientation: south, cold water 10°C, hot water 50°C)

Short description of the system (simulation with Polysun)	Surface demand**	Solar yield**
Domestic hot water Fss = 60% (*) Tank 450 l, collector inclination 45° Daily energy demand 10 kWh (4-6 persons) Energy demand of the reference system 4'200 kWh/year	4.21 m²	605 kWh/m²
Water pre-heating Fss = 25% (*) 2 tanks 1'500 l + 2'500 l, collector inclination 30° Domestic hot water 10'000 l/day (200 persons) Daily heat losses (circulation & tank) 60 kWh Energy demand of the reference system 191'700 kWh/year	61.7 m²	779 kWh/m²
Space heating Fss = 25% (*) Combined storage 1'200 l, collector inclination 45° Daily energy demand 10 kWh (4-6 persons) Building 200 m², moderately heavy construction, well insulated Heating power demand 5.8 kW (outdoor temperature -8°C) Energy demand space heating 12'140 kWh/year Energy demand of the reference system 16'340 kWh/year	11.3 m²	483 kWh/m²

*) "Fractional solar savings": Proportion of the final energy that, thanks to the solar system, can be saved compared to a reference system.
**) Surface demand and solar yield are given with respect to the aperture area.

Collector pressure drop curve



Pressure drop table

Volume current	Pressure drop
0 l/h	0 mbar
80 l/h	2 mbar
160 l/h	7 mbar
240 l/h	16 mbar
320 l/h	26 mbar
400 l/h	40 mbar

Test fluid: water-glycol 33.3%, 20°C