

Solar Collector Factsheet: SPF-Nr. C697



Model	LaZer2
Type	Tube collector
Manufacturer	SolarUK
Address	Crabtree, The Warren -- GB-TN6 1UB East Sussex Crowborough
Telephone	+44 1892 66 73 20
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E-Mail	duncan@solaruk.net
Internet	www.solaruk.net
Sales area	CH,EU

- Performance test EN 12975
- Quality test EN 12975

Dimensions

Total length	1.276 m
Total width	2.110 m
Empty weight with glass	86 kg
Liquid content	4.30 l
Aperture area	1.864 m ²
Absorber area	1.592 m ²
Gross area	2.692 m ²

Technical data

Minimum volume flow rate	45 l/h
Recommended volume flow rate	45 l/h
Maximum volume flow rate	150 l/h
Maximum operating pressure	4 bar
Stagnation temperature	239 °C
(Ta = 30°C, G = 1000 W/m ²)	

Types of mounting

- Construction for flat roof
- Integration into sloped roof
- Construction for sloping roof
- Front mounting

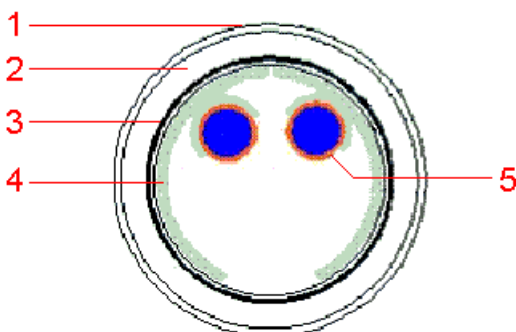
Further data

- Variable module size
- Glazing replaceable

Hydraulic connections

Copper pipe, nominal diameter 15 mm

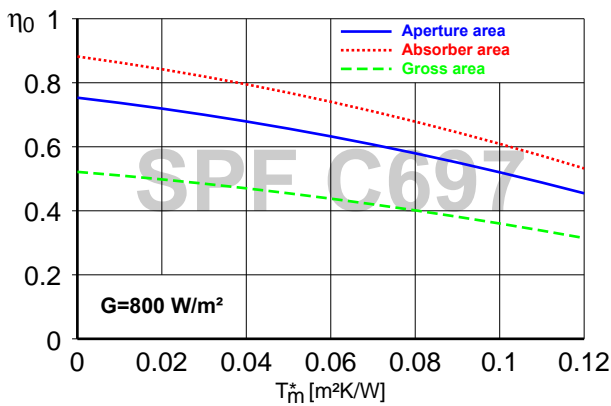
Construction



Element list and Nomenclature

- 1 Glazing
- 2 Vacuum
- 3 Absorber
- 4 Heat conducting profile
- 5 U-tube

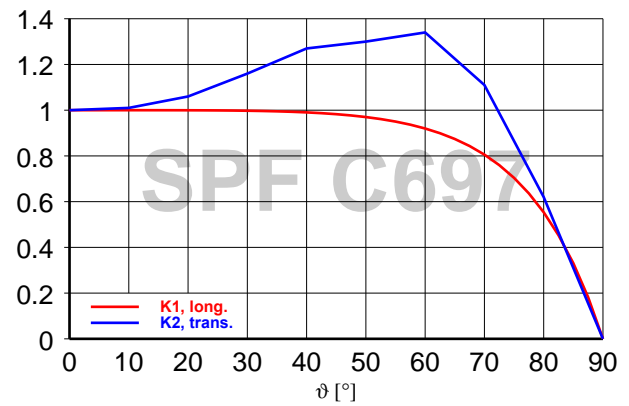
Efficiency curve



Reference area	Aperture	Absorber	Gross
η_0	0.753	0.882	0.522
a_1 [W/(m²K)]	1.54	1.80	1.06
a_2 [W/(m²K²)]	0.0099	0.0116	0.0069
Test fluid: water-glycol 33.3%, volume current: 150 l/h			

Angle factors

(Incident Angle Modifier)



K1, longitudinal (50°)	0.97
K2, transversal (50°)	1.30
(special IAM)	
Heat capacity: C	50.9 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 F_{ss} = 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

3.92 m²

652 kWh/m²

Water pre-heating F_{ss} = 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

53.8 m²

893 kWh/m²

Space heating F_{ss} = 25% (*)

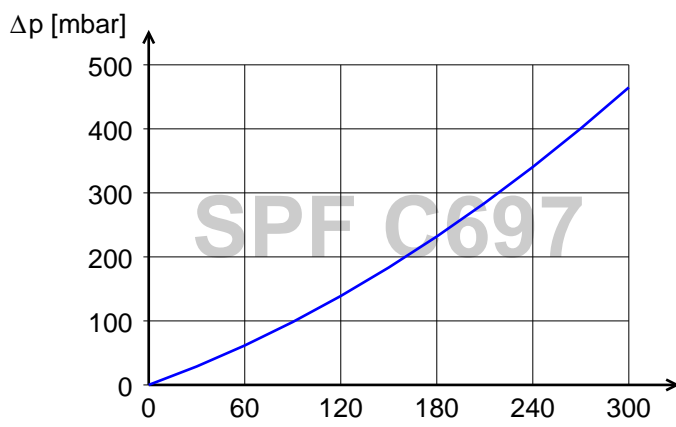
Combined storage 1'200 l, collector inclination 45°
Daily energy demand 10 kWh (4-6 persons)
Building 200 m², moderately heavy construction, well insulated
Heating power demand 5.8 kW (outdoor temperature -8°C)
Energy demand space heating 12'140 kWh/year
Energy demand of the reference system 16'340 kWh/year

11.1 m²

498 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
60 l/h	62 mbar
120 l/h	139 mbar
180 l/h	232 mbar
240 l/h	340 mbar
300 l/h	465 mbar

Test fluid: water-glycol 33.3%, 20°C