

Solar Collector Factsheet: SPF-Nr. C757



Model	vacuTube HP 65/30
Type	Tube collector
Manufacturer	Gasokol GmbH
Address	Markt 53 -- A-4371 Dimbach
Telephone	+43 (07260) 7475-0
Fax	+43 (07260) 7475-4
E-Mail	office@gasokol.at
Internet	www.gasokol.at
Sales area	EU

- Performance test EN 12975
- Quality test EN 12975

Dimensions

Total length	1.992 m
Total width	2.153 m
Empty weight with glass	87 kg
Liquid content	1.32 l
Aperture area	3.207 m ²
Absorber area	2.973 m ²
Gross area	4.289 m ²

Technical data

Minimum volume flow rate	120 l/h
Recommended volume flow rate	240 l/h
Maximum volume flow rate	300 l/h
Maximum operating pressure	6 bar
Stagnation temperature	-- °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

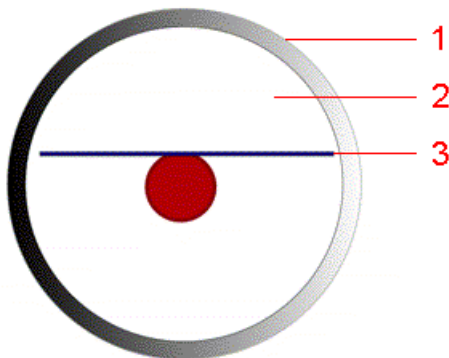
Further data

- Variable module size
- Glazing replaceable

Hydraulic connections

Copper pipe, nominal diameter 22 mm

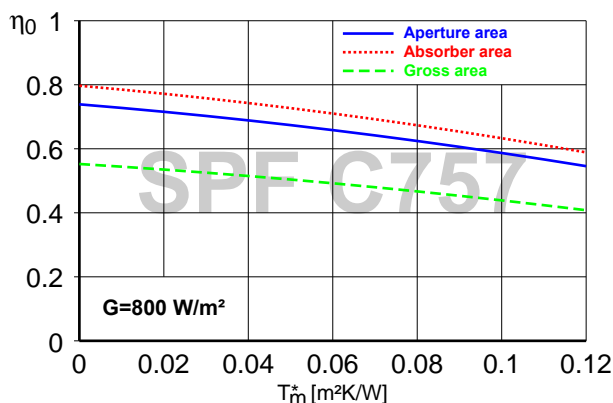
Construction



Element list and Nomenclature

- 1 Glazing
- 2 Vacuum
- 3 Absorber

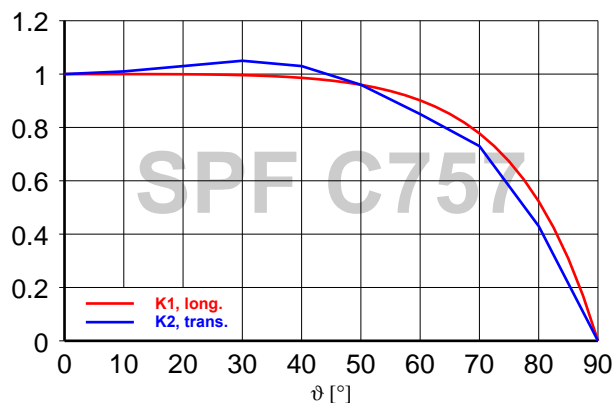
Efficiency curve



Reference area	Aperture	Absorber	Gross
η_0	0.739	0.797	0.552
a_1 [W/(m ² K)]	1.08	1.16	0.80
a_2 [W/(m ² K ²)]	0.0056	0.0060	0.0042
Test fluid: water-glycol 33.3%, volume current: 240 l/h			

Angle factors

(Incident Angle Modifier)



K1, longitudinal (50°)	0.96
K2, transversal (50°)	0.96
(special IAM)	

Heat capacity: C 12.8 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 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

3.96 m²

644 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

59.4 m²

809 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

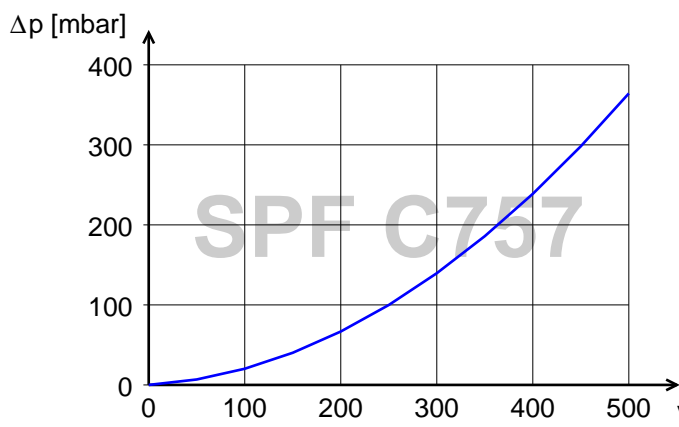
10.4 m²

529 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
100 l/h	20 mbar
200 l/h	67 mbar
300 l/h	140 mbar
400 l/h	239 mbar
500 l/h	364 mbar

Test fluid: water-glycol 33.3%, 20°C