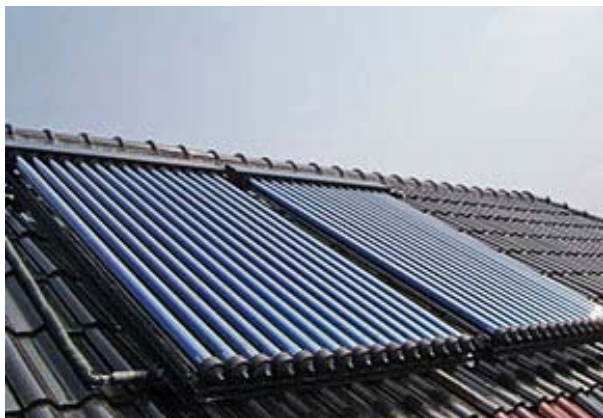


Solar Collector Factsheet

Jinyi JHC-5818-15



Model	JHC-5818-15
Type	Evacuated tube collector
Manufacturer	Jiaying Jinyi Solar Energy Technology Co., Ltd.
Address	Caozhuang Industrial Park CN-314022 Jiaying, Zhejiang Province
Telephone	+86 573 8284 8871
Fax	+86 573 8284 8893
Email	info@jinyi-solar.com
Internet	www.jinyi-solar.com
Test date	09.2009

- Performance test EN12975:2006
- Quality test EN12975:2006



Dimensions

Total length	1.925 m
Total width	1.184 m
Gross area	2.279 m ²
Aperture area	1.408 m ²
Absorber area	1.208 m ²
Weight empty	49 kg

Technical data

Minimum flowrate	120 l/h
Nominal flowrate	160 l/h
Maximum flowrate	500 l/h
Fluid content	0.9 l
Maximum operating pressure	12 bar
Stagnation temperature	221 °C

Types of mounting

- Construction for sloping roof
- Integration into sloping roof
- On flat roof with stand
- Facade

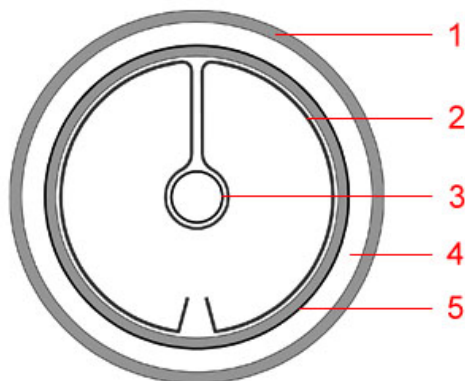
Further information

- Units in different sizes available
- Glazing replaceable

Hydraulic connection

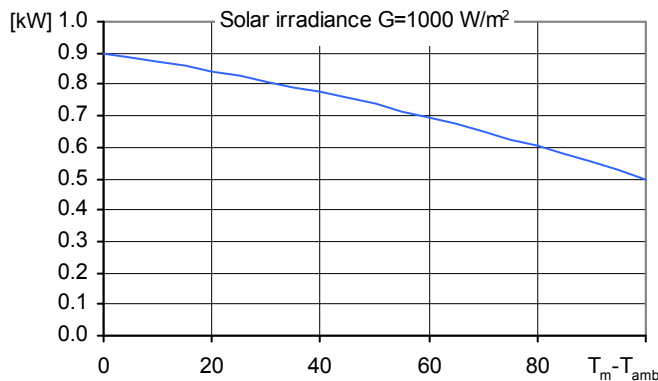
Copper pipe, nominal diameter 1/2"

Construction



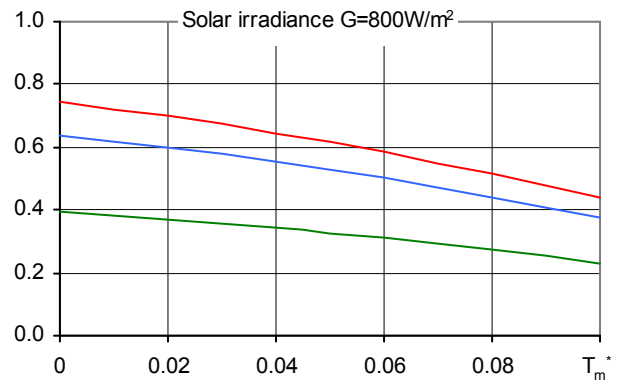
- 1 Glazing
- 2 Heat-conducting metal sheet
- 3 Heat pipe
- 4 Vacuum
- 5 Absorber

Peak Power per collector unit W_{peak}



Peak Power W_{peak}	899 W
Thermal capacity*	16.8 kJ/K
Flowrate during test	100 l/h
Fluid for test	Water-Glycol 33.3%

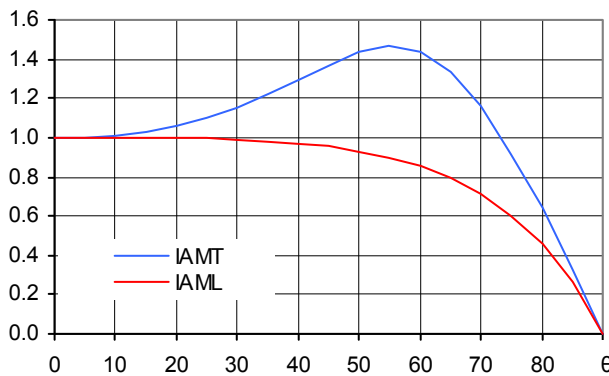
Relative efficiency η



Reference	Gross	Aperture	Absorber
η_0	0.394	0.638	0.744
a_1 [$WK^{-1}m^{-2}$]	1.11	1.79	2.09
a_2 [$WK^{-2}m^{-2}$]	0.0065	0.0105	0.0122

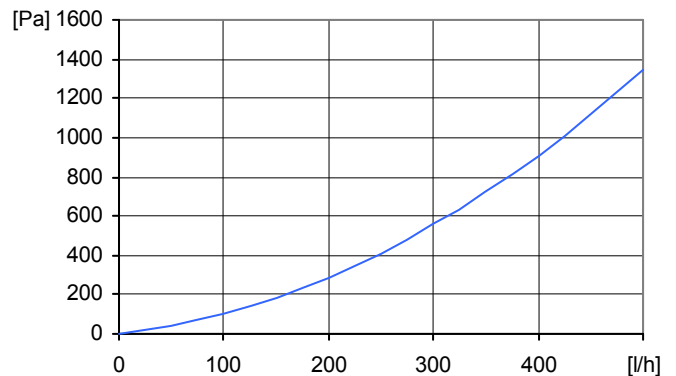
*) Specific thermal capacity C of the collector without fluid, determined according to 6.1.6.2 of EN12975-2:2006

Incident angle modifier IAM



K1, transversal IAM at 50°	1.43
K2, longitudinal IAM at 50°	0.93

Pressure drop Δp



Pressure drop at nominal flowrate
$\Delta p = 202 \text{ Pa}$ (T=20°C)

SPF Simulation of systems using Polysun

Short description of the system

Climate: Central Switzerland, orientation of the collectors: South,
Cold water 10°C, Hot water 50°

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 4200 kWh/year

Water pre-heating: $F_{ss}^* = 25\%$

2 Tanks: 1500 l & 2500 l, collector inclination 30°,
Domestic hot water consumption 10'000 l/day (200 persons)
Daily heat losses (circulation and tanks) 60 kWh,
Energy demand of the reference system 191'700 kWh/year

Space heating system: $F_{ss}^* = 25\%$

Combined storage 1200 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 (ambient
temperature -8°C), Energy demand space heating 12140 kWh/year,
Energy demand of the reference system 16340 kWh/year

Surface demand**
Number of collectors

Solar yield**

4.71 m²
3.3 collectors

542 kWh/m²

64.0 m²
45.5 collectors

751 kWh/m²

13.4 m²
9.5 collectors

405 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.