

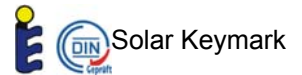
Solar Collector Factsheet

Fakro SKW 114x206



Model	SKW 114x206
Type	Flat plate collector
Manufacturer	Fakro PP Sp. z o.o.
Address	ul. Wegierska 144a
	PL-33-300 Nowy Sacz
Telephone	
Fax	--
Email	--
Internet	www.fakro.com
Test date	08.2009

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



Dimensions

Total length	2.068 m
Total width	1.145 m
Gross area	2.366 m ²
Aperture area	2.073 m ²
Absorber area	2.073 m ²
Weight empty	42 kg

Technical data

Minimum flowrate	60 l/h
Nominal flowrate	120 l/h
Maximum flowrate	180 l/h
Fluid content	1.2 l
Maximum operating pressure	6 bar
Stagnation temperature	200 °C

Types of mounting

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

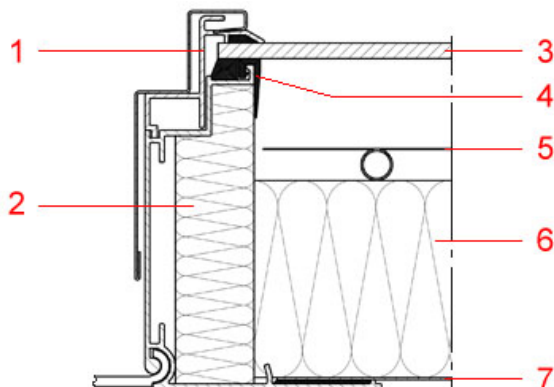
Further information

- Units in different sizes available
- Glazing replaceable

Hydraulic connection

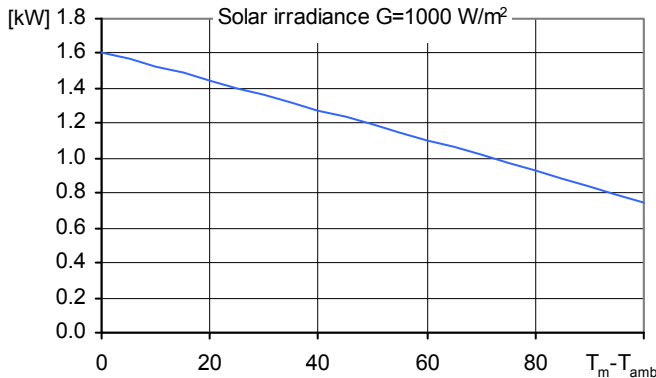
R3/4"

Construction



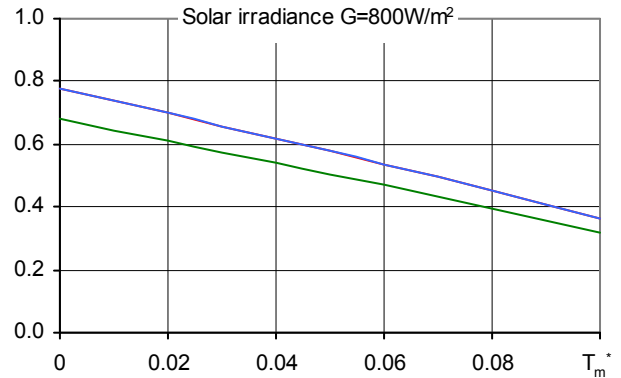
- 1 Frame
- 2 Lateral thermal insulation
- 3 Glazing
- 4 Glass fixing profile
- 5 Absorber
- 6 Thermal insulation
- 7 Rear panel

Peak Power per collector unit W_{peak}



Peak Power W_{peak}	1607 W
Thermal capacity*	5.1 kJ/K
Flowrate during test	150 l/h
Fluid for test	Water-Glycol 33.3%

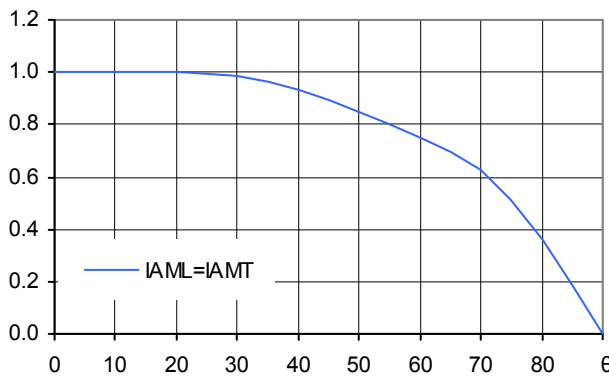
Relative efficiency η



Reference	Gross	Aperture	Absorber
η_0	0.679	0.775	0.775
a_1 [WK ⁻¹ m ⁻²]	3.35	3.82	3.82
a_2 [WK ⁻² m ⁻²]	0.0031	0.0035	0.0035

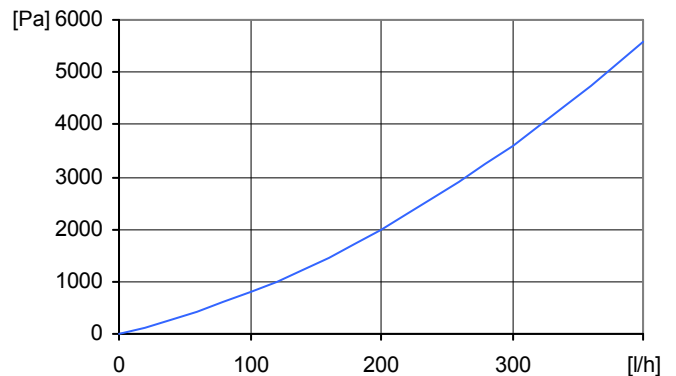
*) Specific thermal capacity C of the collector without fluid, determined according to 6.1.6.2 of EN12975-2:2006

Incident angle modifier IAM



K1, transversal IAM at 50°	0.85
K2, longitudinal IAM at 50°	0.85

Pressure drop Δp



Pressure drop at nominal flowrate
 $\Delta p = 1007 \text{ Pa}$ (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**

5.36 m²
2.6 collectors 474 kWh/m²

70.2 m²
33.9 collectors 685 kWh/m²

16.9 m²
8.2 collectors 320 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.