SPF Solartechnik Prüfung Forschung

C1129

Solar Collector Factsheet
GPO-TEC GPO 2100 ultra

Model	**GPO 2100 ultra**
Type	Flat plate collector
Manufacturer	GPO-TEC Solartechnik GmbH
Address	Am Brücklein 10
	DE-95659 Arzberg
Telephone	+49 (0)92 33 55 48
Fax	+49 (0)92 33 55 39
Email	info@gpo-tec.de
Internet	**www.gpo-tec.de**
Test date	03.2009

☑ Performance test EN12975:2006
☑ Quality test EN12975:2006

Solar Keymark

Dimensions

Total length	2.032 m
Total width	1.030 m
Gross area	2.093 m^2
Aperture area	2.007 m^2
Absorber area	1.998 m^2
Weight empty	35 kg

Technical data

Minimum flowrate	30 l/h
Nominal flowrate	100 l/h
Maximum flowrate	180 l/h
Fluid content	1.5 l
Maximum operating pressure	6 bar
Stagnation temperature	198 °C

Types of mounting

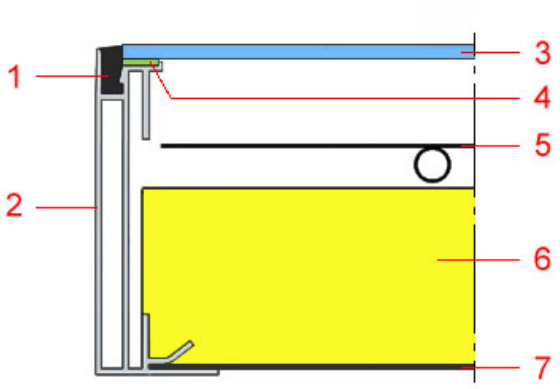
☑ Construction for sloping roof
☑ Integration into sloping roof
☑ On flat roof with stand
☑ Facade

Further information

☐ Units in different sizes available
☐ Glazing replaceable

Hydraulic connection
G3/4"

Construction



1 Sealing
2 Frame
3 Glazing
4 Double-sided adhesive tape
5 Absorber
6 Thermal insulation
7 Rear panel

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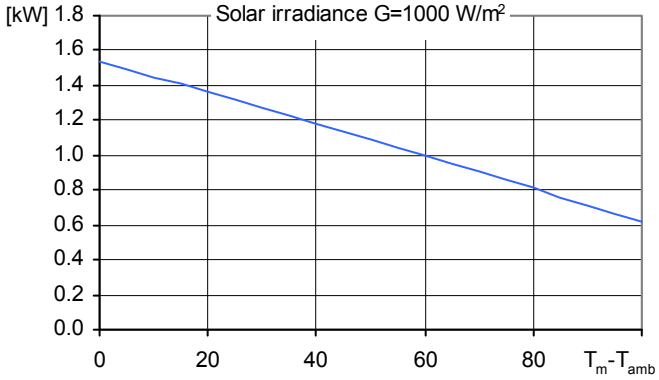
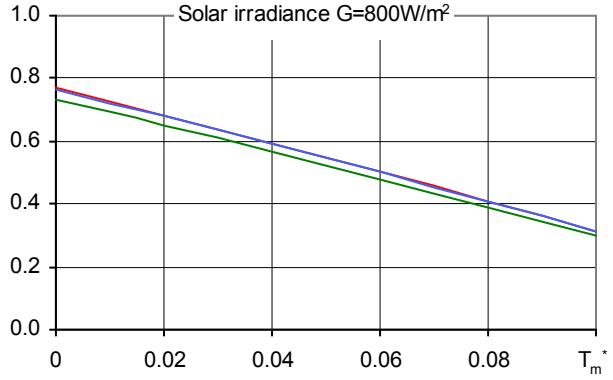
Peak Power per collector unit W_{peak}



Relative efficiency η

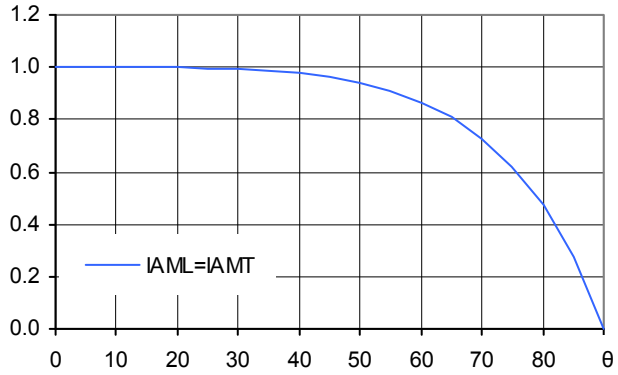


Peak Power W_{peak}	1534 W
Thermal capacity*	4.9 kJ/K
Flowrate during test	150 l/h
Fluid for test	Water-Glycol 33.3%

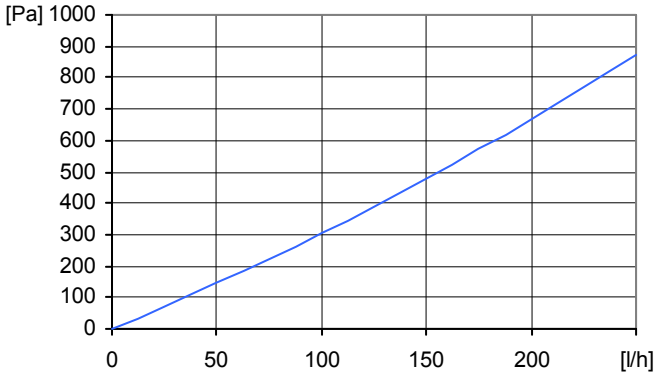
Reference	**Gross**	**Aperture**	**Absorber**
η_0	0.733	0.765	0.768
a_1 [$WK^{-1}m^{-2}$]	4.07	4.24	4.26
a_2 [$WK^{-2}m^{-2}$]	0.0032	0.0034	0.0034

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

Incident angle modifier IAM



Pressure drop Δp



K1, transversal IAM at 50°	0.94
K2, longitudinal IAM at 50°	0.94

Pressure drop at nominal flowrate

Δp = 303 Pa (T=20°C)

SPF Simulation of systems using Polysun

Short description of the system	**Surface demand** Number of collectors**	**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 4200 kWh/year	5.40 m^2 2.7 collectors	471 kWh/m^2
Water pre-heating: Fss* = 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	68.7 m^2 34.2 collectors	700 kWh/m^2
Space heating system: Fss* = 25% Combined storage1200 l, collector inclination 45°, Daily energy demand 10 kWh (4-6 persons), Building 200 m^2, 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	17.5 m^2 8.7 collectors	308 kWh/m^2

*) 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.