

## Collectors

# SOLAR THERMAL COLLECTORS & DRAINBACK SYSTEM



In the thermal solar energy range State Water Heaters can offer you 2 kinds of installations. Firstly the solar systems that use thermal solar energy combined with an intelligent control system that makes the installation very energy efficient. This kind of installation is controlled by a high efficiency solar gas water heater. The combination of condensing high efficiency with thermal solar energy integrated in one solution minimizes the gas consumption of the installation. State Water Heaters also provides installations for smaller applications in the configuration of indirect solar systems. These solar systems consist of an indirect tank which is connected to an already existing central heating system or boiler. For any system you choose, State Water Heaters can deliver the required parts and several accessories.

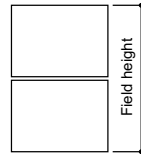
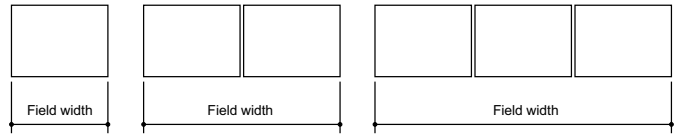
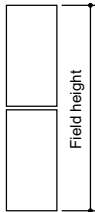
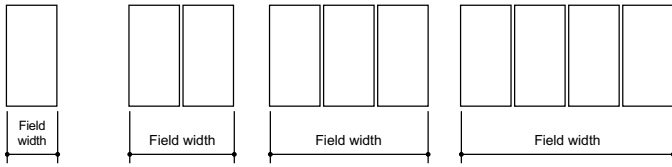
- Approved by EN12975-2-2006 and Solar Keymark certified
- Temperature resistant up to 200°C
- Flat-roof mounting console (SPFR)
- Simple installation system even with multiple collectors
- The system is supplied with all parts needed for complete installation. The entire package is available as a single order number
- Patented drainback system to prevent stagnation temperature is available as an accessory
- Frame construction collectors can be delivered with or without concrete blocks
- All sets can be delivered in horizontal or vertical aligned collectors
- Can be set up with up to 15 collectors



**SPF** Solartechnik  
Prüfung  
Forschung

#### SAMPLE SPECIFICATION

*Solar collectors will have a fully copper collector absorber plate and copper meandering tubes, welded with ultra sound welding process, encased in aluminum weather resistant profile. Rear side will be stucco sheet to prevent corrosion. Insulation will be minimum 60 mm rockwool. The copper solar absorption plate will have a vacuum applied sputtered absorption layer on the absorber for maximum efficiency. Working pressure of the collector will be 6 bar, tested at 10 bar. Collector will be suitable for high temperature glycol solar fluid. Collectors will be equipped with a drain back tank to prevent over heating of solar fluid. Collectors will be complying with EN12975-1:2011-01 and EN12975-2:2006-6 and current CEN-Keymark. Solar glass will be SPF certified.*



Field width						
	Number of collectors					Every extra collector
Vertical collector	1	2	3	4	5	
In cm	116.7	238.7	306.7	482.7	604.7	+122

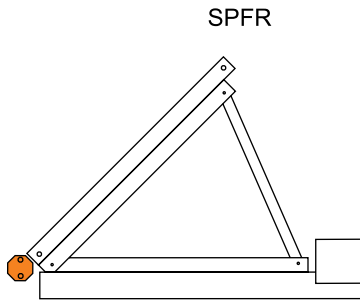
Field width					
	Number of collectors				Every extra collector
Vertical collector	1	2	3	4	
In cm	206.7	418.7	630.7	842.7	+212

Field width		
	Number of collectors	
Vertical collector	1	2
In cm	206.7	418.7

Field width		
	Number of collectors	
Vertical collector	1	2
In cm	116.7	238.7

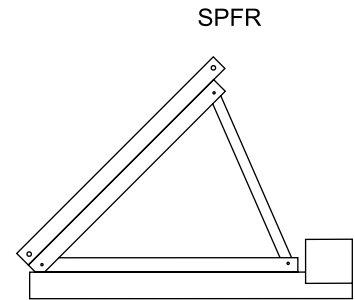
Frame with drainback

SPFR  
Built on **frame**



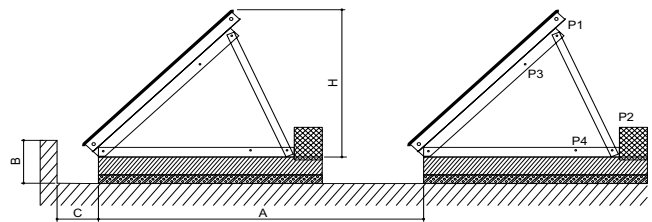
Frame

SPFR  
Built on **frame**



## Technical specifications

Net collector surface	m2	2.20
Total collector surface	m2	2.52
Length collector surface	mm	2100
Width collector surface	mm	1200
Height collector surface	mm	110
Frame material		Aluminium
Glass		ESG Sun Glass
Insulation		60mm Rockwool
Heat absorber		Copper
Maximum working pressure	kPa	600
Capacity unit of solar fluid	l	2.2
Flow of solar fluid	l/m2	15-40
Maximum admissible temperature	°C	208
Collector aperture area	m2	2.24
Zero loss efficiency	%	0.78
First order coefficient	W/(m2K)	3.59
Second order coefficient	W/(m2K2)	0.01
Incident angle modifier		0.93
Length collector	mm	1167
Width collector	mm	2067
Thickness collector	mm	110
Weight	kg	44



## Distance between collectors

Collector type	Distance A			
	20°	30°	45°	60°
Horizontal	270	310	320	330
Vertical	440	515	600	650

## Height assembled collectors

Collector type	Height H			
	20°	30°	45°	60°
Horizontal	53	71	93	110
Vertical	71	104	147	180

## Distance to frame

Height balustrade	Distance C
30	20
40	40
50	70
60	100
70	125
80	150
90	180
100	205
110	20

## Position stand

Angle	Position
<b>SHORT TRAVERSE</b>	
20°	40
30°	70
<b>LONG TRAVERSE</b>	
45°	125
60°	150