

PSV FLAT SOLAR COLLECTORS
FOR VERTICAL ASSEMBLY



Description

giacosun® PSV flat solar collector for vertical assembly is a structure of anodized aluminium sheet, dark brown colour, isolated on the bottom and on the walls with a layer of mineral wool. The highly selective absorbing plate, made of copper, brilliant bronze colour, with TINOX treatment is welded by ultra-sound technique to a series of copper pipes crossed by the thermo-vector fluid; the copper pipe series converges into the inlet and outlet conduits to make the hydraulic connections easier. The collector protection is made with a covering of highly selective toughened glass, having low iron content, highly selective, extractable and interchangeable, keeping the hydraulic connection working. It is fixed into the structure by means of a double EPDM washer, resistant to high temperatures. In order to guarantee a rapid response to temperature variations, the sensor is fixed directly on the absorbing plate in an appropriate housing. The hydraulic connection to adjacent manifolds is made by using couplings having the tail piece directly drawn on the structure that, with the addition of a simple R20SC fitting, makes also the connection of the collector series to the system easier.



NOTE

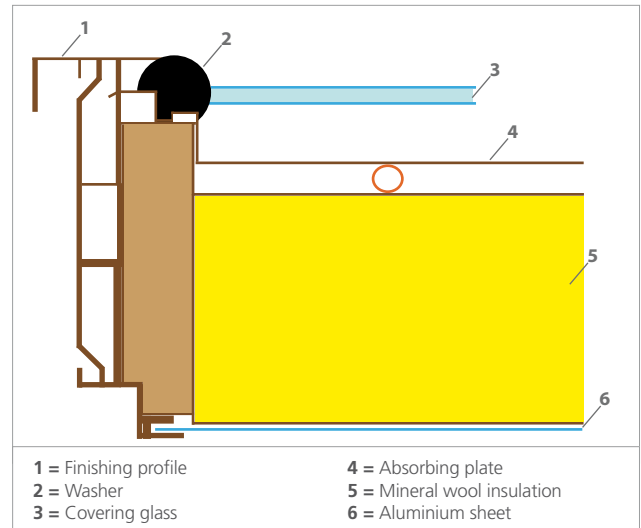
The bracket set for assembly on different coverings, and with various inclination angles has to be ordered separately.



Principal features

	PSV01Y001 (2,5 m ²)	PSV02Y001 (2 m ²)
Structure and profile	Anodized aluminium 5/10	Anodized aluminium 5/10
Ground	Knurled aluminium 5/10	Knurled aluminium 5/10
Covering	4 mm transparent toughened glass	4 mm transparent toughened glass
Insulation (ground/lateral)	50/20 mm mineral wool	50/20 mm mineral wool
Washers	EPDM	EPDM
Weight (empty)	55 kg	48 kg
Fluid content	1,3 l	1,1 l
Dimensions (LxHxP)	1205x2206x100 mm	1040x2206x100 mm
Marking	Solar Keymark	Solar Keymark
Compliance	UNI EN 12975-1-2:2006	UNI EN 12975-1-2:2006
Guarantee	10 years	10 years

Panel section



Technical Data

	PSV01Y001 (2,5 m ²)	PSV02Y001 (2 m ²)
Collector total surface	2,65 m ²	2,30 m ²
Opening total surface	2,35 m ²	1,99 m ²
Absorbing plate - Material - Dimensions (LxH) - Surface	2/10 TINOX copper 1100x2101 mm 2,31 m ²	2/10 TINOX copper 935x2101 mm 1,965 m ²
Plate pipes - horizontal - vertical	2 made of copper 22x1 mm 10 made of copper 8x0,6 mm	2 made of copper 22x1 mm 10 made of copper 8x0,6 mm
Absorption	95%	95 %
Emission	5%	5 %
Peak power	1699 W	1256 W
Instantaneous efficiency	0,772	0,772
Thermal capacity	48,6 kJ/K	27,5 kJ/K
Stagnation temperature	175°C	142°C
m ² recommended capacity	15-40 l/h	15-40 l/h
Max. pressure	10 bar	10 bar

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Hydraulic functioning

The 2,5 m² collector has 2 connections (fig.1). The inlet of the thermovector fluid is from the connection positioned above left. The inlet/outlet conduit is blocked in central position and deviates the fluid in descending direction, supplying in parallel the first series of 5 vertical pipes. The thermovector fluid, reaches and supplies the lower conduit, crosses the second series of 5 vertical pipes in an upward direction, by reaching again the inlet/outlet conduit. The fluid outlet is from the connection positioned above right.

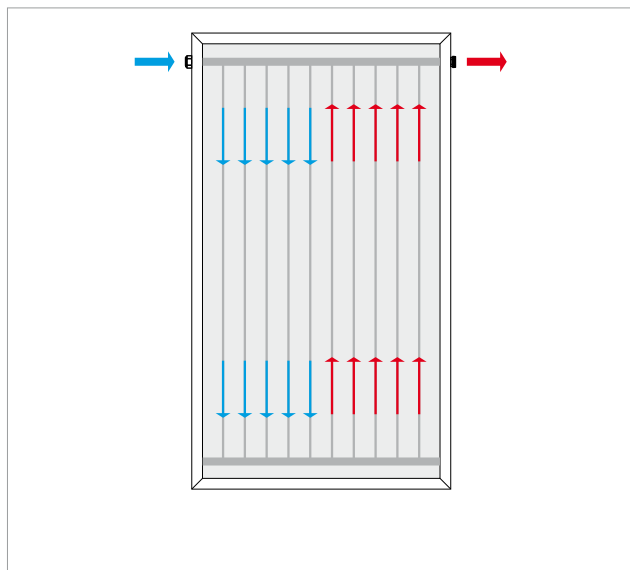


fig.1 2,5 m² collector
Use no. 1 R20SCY004 size 3/4" fitting, for the connection to the system

The 2 m² collector has 4 connections (fig.2). The inlet of the thermovector fluid is from the connection positioned down left. The inlet supplies in parallel the first series of 8 vertical pipes, by means of which the fluid reaches the outlet conduit. The 2 not used connections shall be protected through appropriate screw plugs. The collector has anti-condensate holes passing through frame and insulation closed by means of press plugs in EPDM rubber with reaction hole. Each hydraulic structure of the collector is tested at 15 bar pressure.

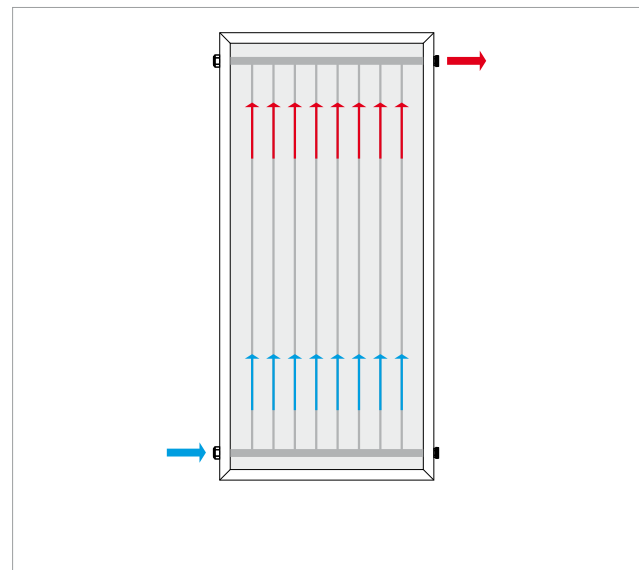
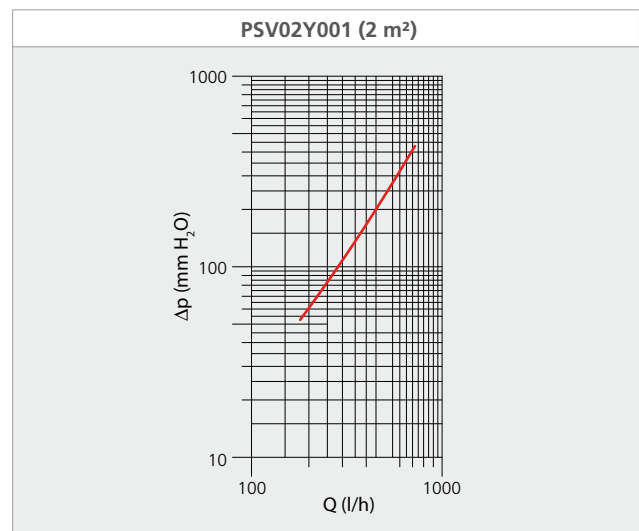
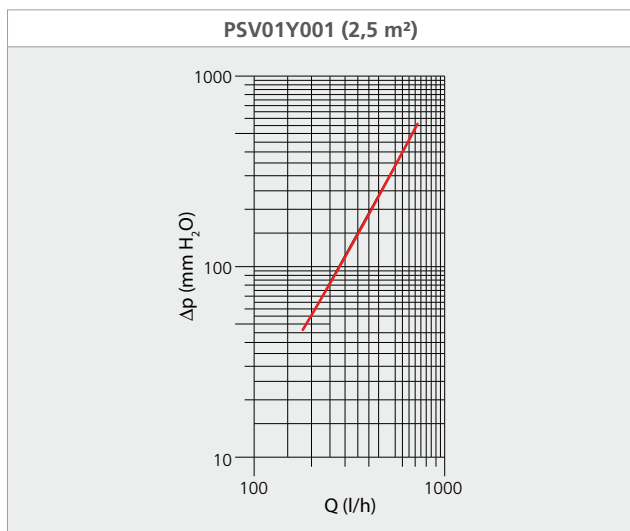


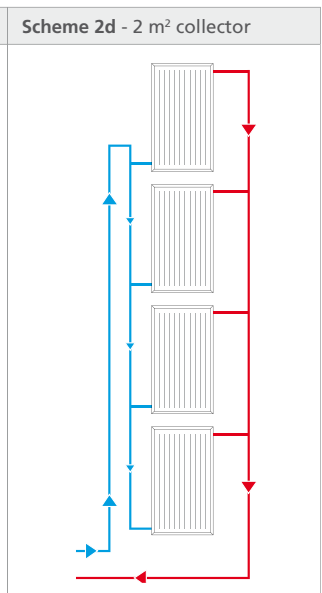
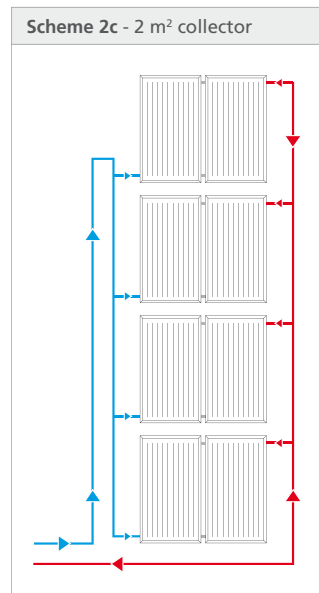
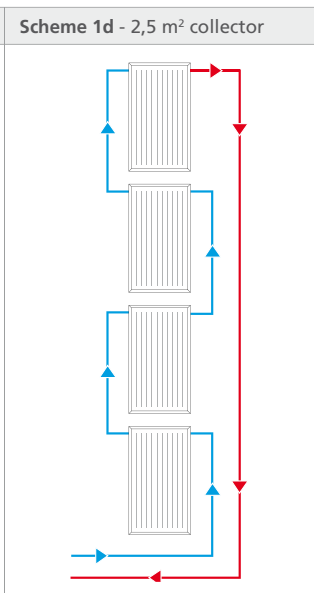
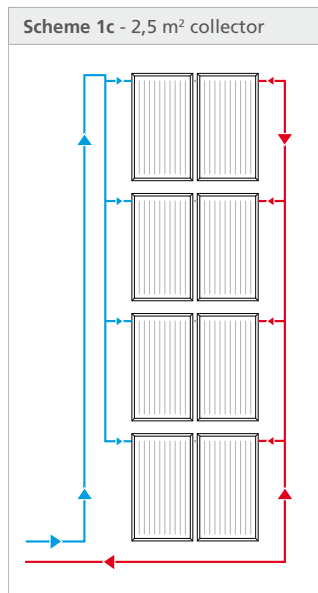
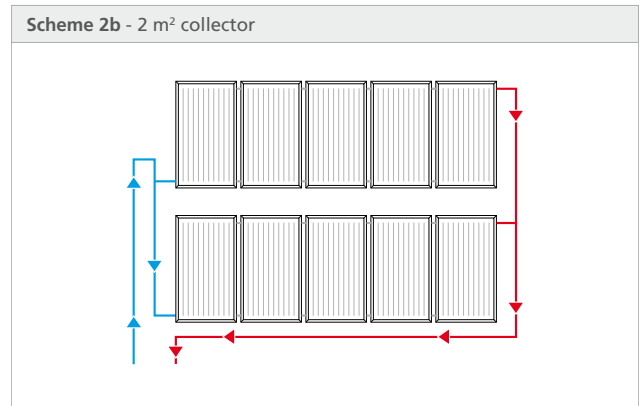
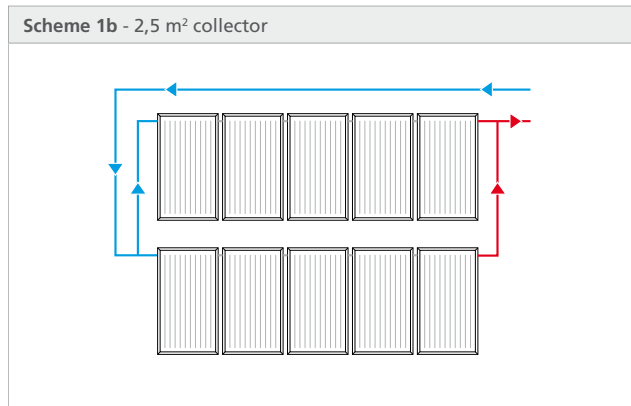
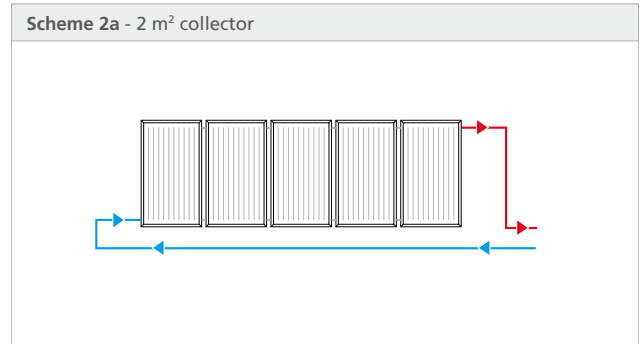
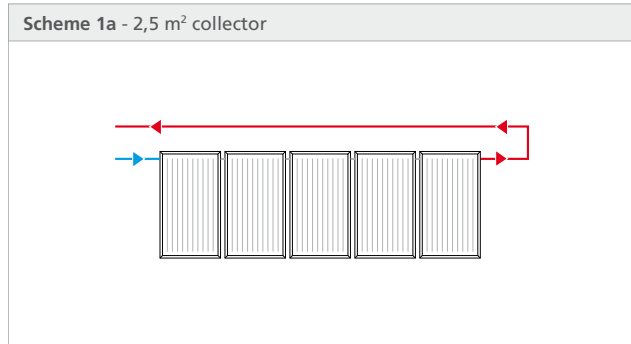
fig.2 2 m² collector
Use no. 2 R20SCY004 size 3/4" fitting, and no. 2R594Y005 size 3/4" plugs, for the connection to the system and for closing of the not used connections.



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Connection examples

It is recommended not to connect more than 5 PSV solar collectors in series. With systems having higher dimensions, we advise to install several collector series connected in parallel.



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Solar Keymark

Solar Keymark represents the quality mark in Europe for products destined for solar thermal systems. Choosing Solar Keymark products means automatically satisfying the European standards, guaranteeing high quality and reliable information about the obtainable performance.

In Europe Solar Keymark is the reference for National and Regional Bodies, to grant contributions and fiscal benefits for public and private projects.



Product specifications

2,5 m² PSV flat solar collector

2,5 m² PSV flat solar collector, vertical assembly, structure in 5/10 anodized aluminium sheet. Collector total surface 2,65 m², opening 2,35 m². 1100x2101 mm (LxH) absorbing plate, 2,31 m² surface, highly selective 2/10 TINOX copper, brilliant bronze colour, ultrasound welding to copper pipes. 2 horizontal pipes 22x1 mm, 10 vertical pipes 8x0,6mm. 4 mm transparent toughened glass covering, extractable and interchangeable, fixed by means of EPDM double washer, resistant to high temperatures. Housing for fixing of the temperature sensor on absorbing plate. 2 brass hydraulic connections with tail piece, 3/4", conical. Mineral wool insulation on ground (50 mm) and walls (20 mm). 95% absorption, 5% emission. Fluid content: 1,3 l. Recommended capacity 15-40 l/h for m². Max pressure 10 bar. Stagnation temperature 174,2°C. Dimensions (LxHxP): 1205x2206x100 mm. Weight 55 kg (empty). Compliance with UNI EN 12975-1-2:2006 standard. Marking: Solar Keymark. Guarantee 10 years. Part number PSV01Y001.

2 m² PSV flat solar collector

2 m² PSV flat solar collector, vertical assembly, structure in 5/10 anodized aluminium sheet. Collector total surface 2,30 m², opening 1,99 m². 935x2101 mm (LxH) absorbing plate, 1,965 m² surface, highly selective 2/10 TINOX copper, brilliant bronze colour, ultrasound welding to copper pipes. 2 horizontal pipes 22x1 mm, 8 vertical pipes 8x0,6mm. 4 mm transparent toughened glass covering, extractable and interchangeable, fixed by means of EPDM double washer, resistant to high temperatures. Housing for fixing of the temperature sensor on absorbing plate. 4 brass hydraulic connections with tail piece, 3/4", conical. Mineral wool insulation on ground (50 mm) and walls (20 mm). 95% absorption, 5% emission. Fluid content: 1,1 l. Recommended capacity 15-40 l/h for m². Max pressure 10 bar. Stagnation temperature 142°C. Dimensions (LxHxP): 1040x2206x100 mm. Weight 48 kg (empty). Compliance with UNI EN 12975-1-2:2006 standard. Marking: Solar Keymark. Guarantee 10 years. Part number PSV02Y001

Additional information

For additional information please check the Giacomini website at the following address: www.giacomini.com

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