

## Flat Plate Solar collector

### Detailed Product Description

Flat-plate collectors are the most common solar collectors for use in solar water-heating systems in homes and in solar space heating. A flat-plate collector consists basically of an insulated metal box with a glass or plastic cover (the glazing) and a dark-colored absorber plate. Solar radiation is absorbed by the absorber plate and transferred to a fluid that circulates through the collector in tubes. In an air-based collector the circulating fluid is air, whereas in a liquid-based collector it is usually water.

Flat-plate collectors heat the circulating fluid to a temperature considerably less than that of the boiling point of water and are best suited to applications where the demand temperature is 30-70°C (86-158°F) and/or for applications that require heat during the winter months.

Flat collectors can be mounted in a variety of ways, depending on the type of building, application, and size of collector. Options include mounting on a roof, in the roof itself, or free-standing.

| Dimensions(W×L×H)                                   | 2000*1060*80mm   | 2000*1060*80mm     | 2000*1060*80mm               |
|---|--|--------------------|------------------------------|
| Absorber area m <sup>2</sup>                        | 2  | 2                  | 2                            |
| Absorber area m <sup>2</sup>                        | 1.8  | 1.8                | 1.8                          |
| Conversion factor η %                               | 77.3   | 79.8               | 72.8                         |
| Loss coefficient a1 w/m <sup>2</sup> K              | 3.9  | 3.65               | 4.33                         |
| Loss coefficient a2 w/m <sup>2</sup> k <sup>2</sup> | 0.0052   | 0.0065             | 0.021                        |
| Fluid content L                                     | 2.22   | 2.22               | 3                            |
| Maximum operating pressure Mpa                      | 1  | 1                  | 0.3                          |
| Temperature of operation °C                         | (-)35 ~ 150  | (-)35 ~ 150        | (-)35 ~ 150                  |
| Net Weight KG                                       | 33   | 33                 | 32                           |
| Core  | All copper,ultrasonic welding,Copper and aluminum composite technology                                   |                    |                              |
| Coating   | black chrome   | selective titanium | Positive electrode oxidation |
| Absorptance   | ≥95%±2%  |                    |                              |
| Emittance   | ≤10%±2%  | ≤4%±2%             | ≤20%±2%                      |
| Absorber  | copper T2, δ=0.15mm,aluminum, δ=0.15mm   |                    |                              |
| Header pipe   | copper T2, Φ22*0.7*1060mm, 2pcs  |                    |                              |
| Riser pipe  | Copper T2, Φ10*0.5mm, 8pcs,Copper and aluminum, Φ14*0.45mm, 7pcs   |                    |                              |
| Glass cover   | normal glass:4mm/tempered glass:4mm,rhombic tempered glass:4mm/<br>low iron rhombic tempered glass:3.2mm |                    |                              |
| Dimension of glass sheet                            | 1988×988mm   |                    |                              |
| Transmittance of glass                              | 87% ~ 91%  |                    |                              |



|                        |  |
|------------------------|--|
| Frame                  | aluminum, $\delta=0.9\text{mm}$                              |
| Color of the frame     | champagne,bronze-coloured,white                              |
| Insulation material    | glass wool, PE Foam/glass wool, high dense polyurethane foam |
| Insulation thickness   | 40mm   |
| Back sheet             | galvanized plate:0.3mm/embossed aluminum:0.3mm               |
| Cover sealing material | metal/EPDM+metal   |
| Packing                | carton   |
| Packing dimension      | 2020*1100*80   |

|   | Name  | Model    | Lighting(m <sup>2</sup> ) | FOB \$ Shanghai |
|---|---|----------|---------------------------|-----------------|
| 1 | Copper Aluminum Solar collector ( Magnetron Sputtering Blue Coating ) | SGCA-2.0 | 2.0m <sup>2</sup>         | \$80 /piece     |
| 2 | Red Copper solar collector (Black Chrome )                            | SGBC-2.0 | 2.0m <sup>2</sup>         | \$85 /piece     |
| 3 | Red Copper Solar Collector ( Germany Blue Titanium )                  | SGBT-2.0 | 2.0m <sup>2</sup>         | \$95 /piece     |