

solar thermal collector

■ITM

Feature:

◆The pipeline is made of all the red copper and conducted By heat transfer medium liquid. Water can't flow in vacuum Tubes and operated when confined. The manifold uses Aluminum alloy mould material of high strength with Air flow design. It is furnished in good style.

◆Can withstand high pressure when it works.

◆Module design, arbitrary combination, which can meet the demand of large water consumption.



A.1 Efficiency curve with measurement points based on aperture area 1.876 m²

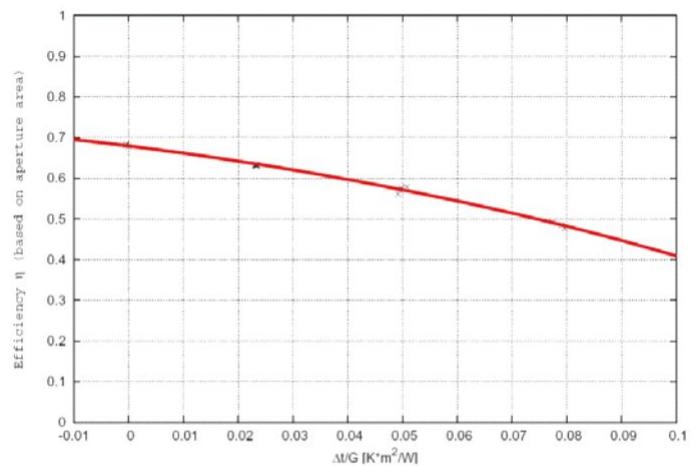
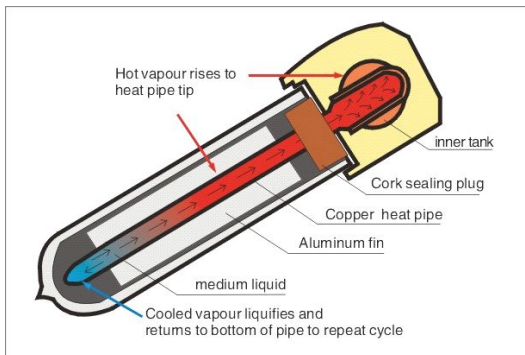
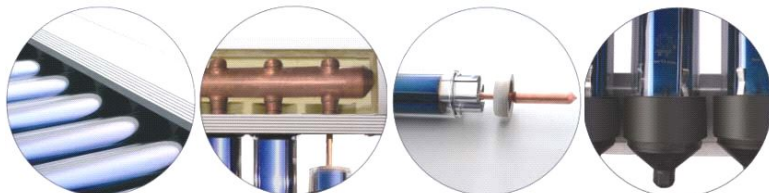


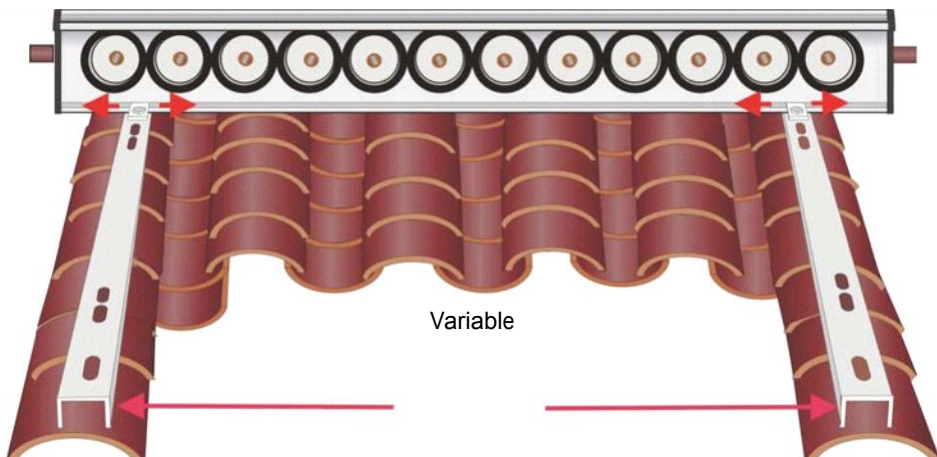
Figure 6: Efficiency curve with measurement points based on aperture area 1.876 m²

Results:

The calculated parameters are based on following areas:
 aperture area of 1.876 m²: absorber area of 1.603 m²:

$$\begin{aligned} \eta_{0a} &= 0.679 & \eta_{0A} &= 0.795 \\ \alpha_{1a} &= 1.696 \text{ W/m}^2\text{K} & \alpha_{1A} &= 1.985 \text{ W/m}^2\text{K} \\ \alpha_{2a} &= 0.0099 \text{ W/m}^2\text{K}^2 & \alpha_{2A} &= 0.0117 \text{ W/m}^2\text{K}^2 \end{aligned}$$





Resistant higher temperature



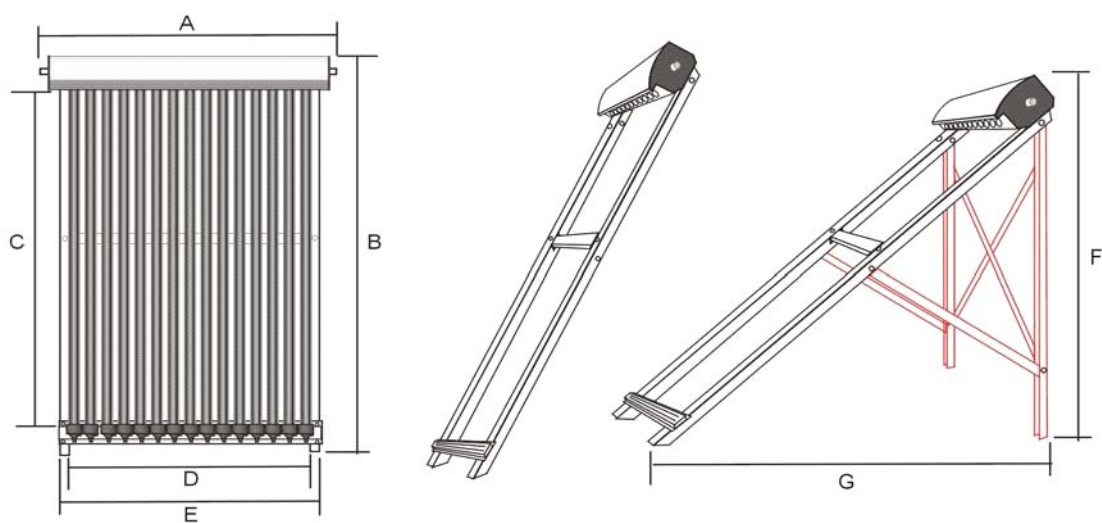
Silicon ring



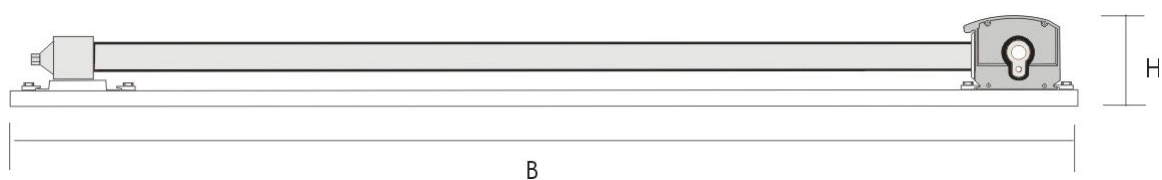
Heat pipe onicity resistant freeze

Other brand heat pipe get weakly resistant freeze

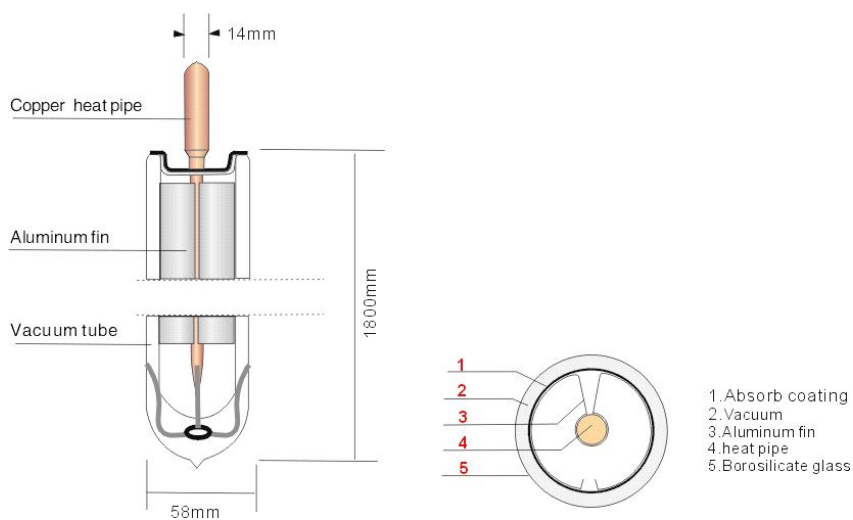
ITM Technical Data (figure size)



Slope roof bracket "red frame" is flat roof bracket



Model	A (mm)	B (mm)	C (mm)	D (mm)	E (mm) Can Adjust	F (mm) Angle	G (mm)	H (mm)
ITM-SC58-1800-12	1070	1990	1740	875	700-1005	1430/45°	1420	13
ITM-SC58-1800-15	1295	1990	1740	1100	900-1230	1430/45°	1420	13
ITM-SC58-1800-20	1670	1990	1740	1475	1300-1605	1430/45°	1420	13



model name	ITM-SC58-1800-12	ITM-SC58-1800-15	ITM-SC58-1800-20
	USD164.00	USD202.50	USD266.00
number of tubes	12	15	20
Gross size(mm)	1010*1980 (W*L)	1235*1980 (W*L)	1610*1980 (W*L)
aperture area M2	1.108	1.397	1.876
Absorber area M2	0.964	1.199	1.603
flat roof installation size	1420*1010*1420mm (l *W*H)	1420*1235*1420mm (l *W*H)	1420*1610*1420mm (l *W*H)
weight empty (KG)	40.7	56	64.4
fluid volume (L)	0.8	1	1.37
Heat transfer medium	pure water/glycol	pure water/glycol	pure water/glycol
working pressure	6	6	6
Max testing pressure	12 bar	12 bar	12 bar
Max working	280℃	280℃	280℃
efficiency n°	0.788	0.79	0.795
inlet/outlet connection	22mm	22mm	22mm
manifold packing mm	1*2000*200*160	1*2000*200*160	1*2000*200*160
tubes packing mm	1*1940*280*270	1*1940*350*270	2*1940*350*180
Material			
Material	high borosilicate glass		
vacuum tube	high borosilicate glass		
size	58*1800mm		
coating	SS-CU-AIN/ALN		
heat pipe material	TU1 copper		
heat pipe length	1700mm		
heat pipe diameter	condenser \varnothing 14mm, body \varnothing 8mm		
manifold header pipe	TP2		
manifold casing	anodized aluminum alloy		
insulation	rock wool with polyurethane foam		
bracket	galvanized steel		
tube holder	UV stabilized nylon		
seals	silicon seal		
contact sheets	aluminum fin		