

Comparison of SunMaxx Heat Pipe Vs U-Pipe Evacuated Tube Solar Collectors:

Test Models: SunMaxx-30 and SunMaxx-30U
 Testing Report: Solar Keymark Certification Testing

Model	SunMaxx-30U			SunMaxx-30		
Aperture Area	2.67 m ² (28.74 ft ²)			2.79 m ² (30.03 ft ²)		
Conversion Factor (efficiency (η _o))	0.650			0.734		
Heat Transfer Coefficient (a ₁)	1.585 W/(m ² K)			1.529 W/(m ² K)		
Temperature Dependent Heat Transfer Coefficient (a ₂)	0.002 W/(m ² K)			0.012 W/(m ² K)		
Typical Power Output/Collector						
T _m – T _a (K)	@ 400 W/m ²	@ 700 W/m ²	@ 1000 W/m ²	@ 400 W/m ²	@ 700 W/m ²	@ 1000 W/m ²
10	649	1172	1693	772	1387	2001
30	562	1083	1510	650	1264	1879
50	469	990	1510	490	1105	1719
Power Output (W/m² – Aperture Area) based on 1000W/m² Irradiance						
	634 W/m ² of Aperture Area			717 W/m ² of Aperture Area		
Power Output (BTU/h/m² – Aperture Area) based on 1000W/m² Irradiance						
	2163 BTU/h/m ² of Aperture Area 201 BTU/h/ft ² of Aperture Area			2446 BTU/h/m ² of Aperture Area 227 BTU/h/ft ² of Aperture Area		
Total BTU/h	5923 BTU/h			6824 BTU/h		
MSRP (collector)	\$ 995.00			\$ 1399.00		
BTU/h/\$ Invested (Value of Collector)	5.95 BTU/h/\$			4.9 BTU/h/\$		

It is clear from the results that the conversion efficiency of SunMaxx Heat Pipe Evacuated Tube Solar Collectors is superior to that of SunMaxx U-Pipe Evacuated Tube Solar Collectors. Despite this, U-Pipe Solar Collectors provide an extremely low-cost alternative to U-Pipe Solar Collectors, and their unique ability to be installed at 0 and 90 degree angles (flat or vertical) make them a superb choice for commercial installations where space is often limited shading caused by multiple rows of solar collectors can be a problem for engineering and system design.

However, in pure dollar value – BTU/h/\$ invested – SunMaxx U-Pipe Solar Evacuated Tube Solar Collectors deliver a higher energy value because of their extremely low price and high performance ratings. If you are looking for the most value for your money, and the lowest possible initial investment, SunMaxx U-Pipe Evacuated Tube Solar Collectors are clearly the most viable choice.

In particular, U-Pipe Solar Collectors are the perfect for installations where the Solar Collectors will be mounted flush (flat) on a zero-pitch (flat) roof, or in a vertical orientation on the side wall of a building.