

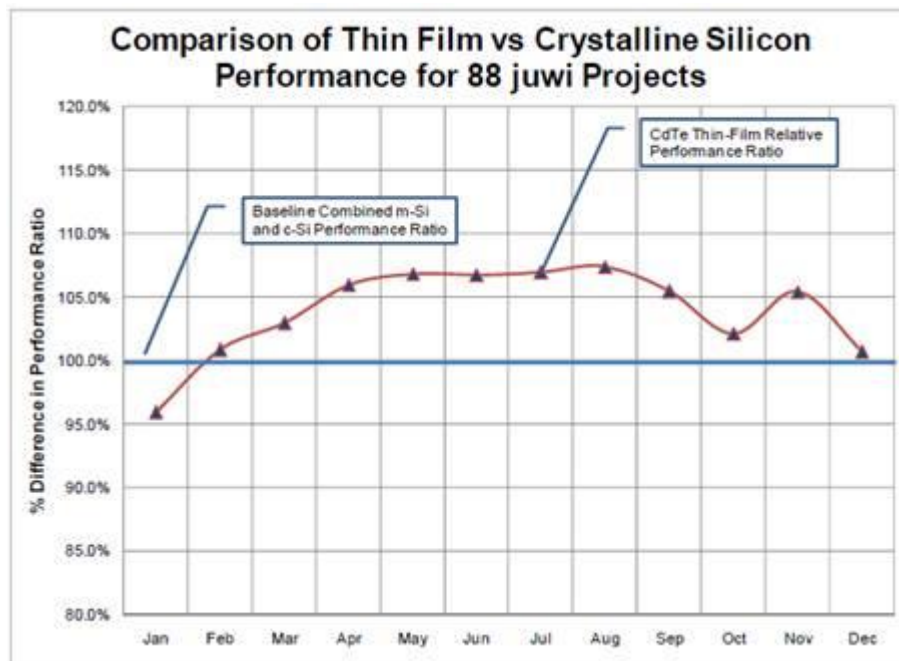
Product Advantages

High Conversion Efficiency

Cadmium Telluride (CdTe) is a compound semiconductor with high absorption coefficient, 100 times higher than silicon. The energy gap width of cadmium telluride makes it the most suitable material for photovoltaic energy conversion, higher than silicon – with only one hundredth of thickness, the cadmium telluride can absorb same amount of light as silicon does. As of today, the world record for cadmium telluride thin film solar cell conversion efficiency is 18.7%. And Sanko Solar CdTe thin film solar modules with dimension of 1200mm*600mm have already reached 12.03% on conversion efficiency, with 79.54W rated output tested and certified by TUV NORD. The S1 and S2 series has already obtained the TUV and CQC certification. The ST series will have the certification shortly.

High Power Output:

With the lower temperature coefficient, the better low-light effect and weak heat spot effect being provide in them, the PV systems which use CdTe modules , are capable of generate more electricity power. This characteristic will lead a huge advantage that will bring in greater benefits for you, especially at the time that subsidies are handed out by the actual power generation, such as today.

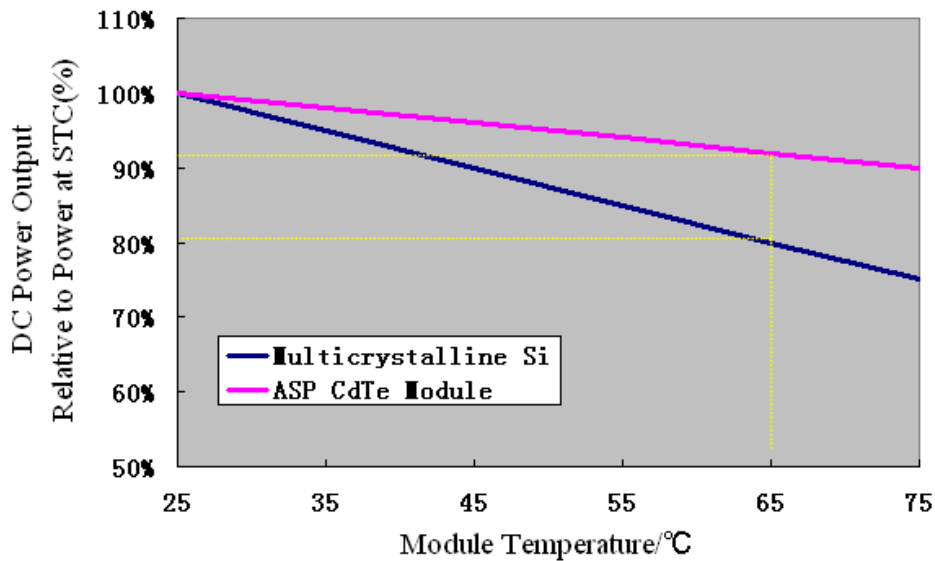


From PHOTON's 2nd Thin Film Conference

Low Temperature Coefficient

The temperature coefficient of Sanko Solar CdTe thin film solar module is only about -0.25%/K, as the traditional crystalline silicon solar module temperature coefficient reaches to -0.48%/K. In most high solar irradiance regions on the planet of Earth, the working temperature of solar modules used in PV systems can reach to 60°C or above. It is scientifically proven that such high temperature can greatly impair the photoelectric conversion efficiency of crystalline silicon solar products.

DC Power Output at Different Temperature



Excellent low-light effect

Cadmium telluride is a direct band gap material with high absorption for the full spectrum. Under lower-light condition, such as dawn, with dusk and diffuse light, the power generation capability of CdTe thin film solar module has been proven to be better than the crystalline silicon solar module which was made of indirect band gap material.

Weak hot spot effect:

The structural features of CdTe thin film modules, help to avoid the hot spot effect on products. Thus, the safety, longevity, performance of the products have also greatly improved.

Good stability

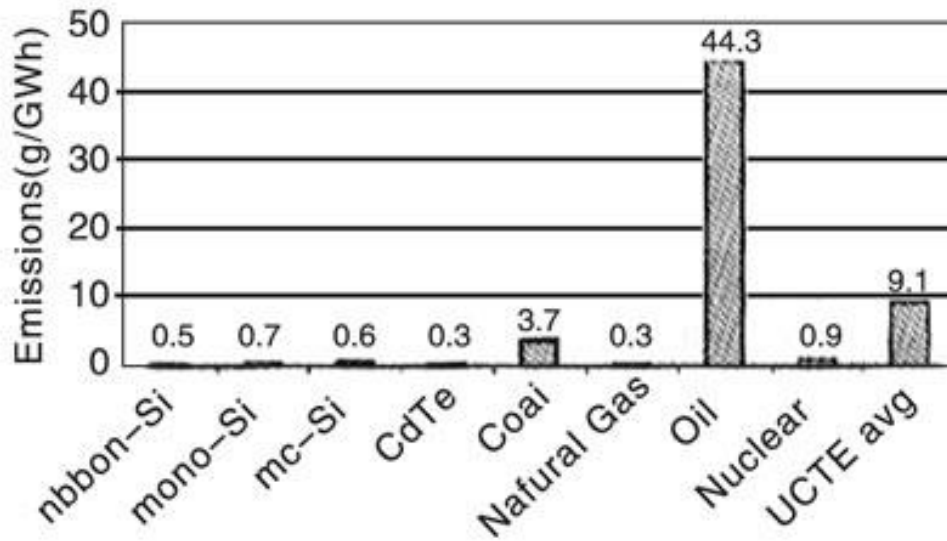
No intrinsic light-induced attenuation effects.

Short energy payback period

The energy payback period of Sanko Solar CdTe thin film solar module is only about 10 months. However, it would be 2 years for crystalline silicon solar modules, in general.

Environmental protection

Scientists from Brookhaven national laboratory US had systematically studied the heavy metal emissions of unit generating capacity from renewable energy, like crystalline silicon solar cell, CdTe thin film solar cell, traditional energy, like coal, oil, natural gas and nuclear energy. In the analysis of solar cell, the full life-cycle process was considered including the original processing of ores required for the solar cell materials, the production and use of solar cells, etc.. The study results showed that the highest cadmium emission is oil which achieves 44.3g/GWh, second highest is coal about 3.7g/GWh. The cadmium emission of solar cells is lower than 1g/GWh, and the CdTe thin film solar cell even only 0.3g/GWh as same as natural gas. It is based on extensive experimental data proving that the CdTe solar product is environment-friendly, so the EU had exempt the RoHs requirements for it. Through developed re-use technology of waste and used CdTe modules to re-use the main material, recycling of waste and used modules achieves the development mode of circular economy.



Cd Emission comparing
 (V.M.Fthenakis et al. 2006EMRS,Nice, France)

In the summary, the lowest cost in power generation characteristic provided by the CdTe thin film solar module can certainly help the world to build a cleaner and better environment for now and for future.