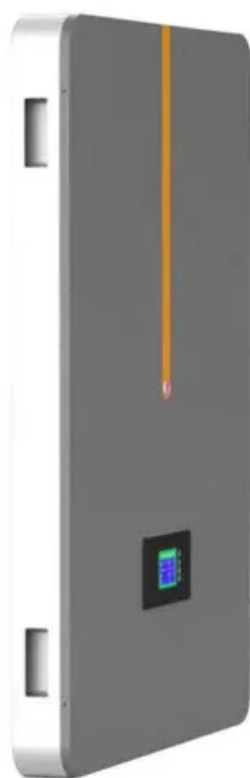


**EQACC SOLAR**

# **Hemispherical solar glass**



## Overview

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Approximately (97 percent) of the water on Earth is salty or polluted, leaving just 3% as freshwater, only about (1%) of which is easily accessible for human use. The world's population is increasingly dependent.

What is a hemispherical solar still?

**Hemispherical solar still** Hemispherical solar still is characterized by the hemispherical-shaped transparent top cover. The main purpose of using a hemispherical-shaped top cover is to enhance the amount of solar energy that can be collected by the solar still.

Can hemispherical solar stills improve thermal performance?

The hemispherical solar still (HSS) is one of the most effective alternatives for meeting the need for freshwater in rural and distant locations. However, there are limits to the performance of hemispherical solar stills, and various researchers have examined the ability to enhance (HSS) thermal performance.

What is a hemispherical solar still made of?

Schematic diagrams for the hemispherical and pyramid solar stills used in this study are shown in Fig. 1; the circular-shaped basin was made of mild steel and painted with black paint in order to enhance absorptivity. While the top hemispherical cover was made from an acrylic sheet with 88% transmittance.

What are the energy efficiencies of hemispherical solar stills?

It was found that the maximum daily energy efficiencies of the single-slope and hemispherical solar stills were 25.81% and 38.61%, respectively. Whereas the maximum daily exergy efficiencies of the single-slope and hemispherical solar stills were 1.8% and 3.1%, respectively.

## Hemispherical solar glass

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### Thermal-exergetic analysis of hemispherical solar still

The daily thermal energy and exergetic performance metrics of the hemispherical-cover solar still have been benchmarked against a conventional solar still configuration, ...

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### Enhancing hemispherical solar still yield via wick ...

The economic feasibility presented that the dual utilization of the wick and the glass cover cooling (THSS-WC) reduced the total cost of distillates produced from hemispherical ...



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### Hemispherical solar still: Recent advances and development

Generally, hemispherical solar still has relatively better thermal performance than other types of solar stills. The maximum solar radiation, daily accumulative yield, thermal ...

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## Solar Glass vs Regular Glass: Key Differences Explained

Solar Glass vs Regular Glass: Key Differences Explained The evolution of renewable energy technology has brought significant advances in materials science, ...

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## Enhanced solar desalination via hemispheric distiller with ...

Therefore, this work introduces a different approach to enhancing the performance of the hemispherical solar distiller (HSD) with a convex base and convex cover. The modified ...

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## Augmenting hemispherical solar still performance: A ...

The modified solar still design incorporates a hemispherical tube, leading to a higher glass temperature (increased by 5.5 °C) due to enhanced evaporation and ...

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## Effect of top cover cooling on the performance of hemispherical solar



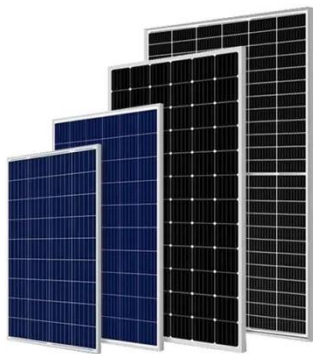
By using the water film over the single glass hemispherical type solar still the performance of hemispherical solar still was studied thoroughly by Hijleh Abu [4] and Hijleh ...

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## Optimizing the performance of hemispheric solar still using ...

Productivity enhancement of hemispherical solar still using Al<sub>2</sub>O<sub>3</sub>-water-based nanofluid and cooling the glass cover (Bellila et al. 2021).

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## Productivity enhancement of hemispherical solar still using Al

The hemispherical distiller characteristics are having a large surface area for receiving and condensing compared to a conventional single-slope distiller. To achieve the ...

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## Experimental study of the performance of hemispherical ...

Glass cover designs including pyramid

[7,8], double glass [9], conical [10], tubular [11-13], spherical [14] and hemispherical [15-18] shapes have also been studied. In order to ...

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## Experimental Studies on the Use of Nanofluid and Glass ...

The impact of using TiO<sub>2</sub> nano-coated basin and glass cover cooling at different concentrations of 0.1, 0.2, and 0.3% on Traditional Hemispherical Solar

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## Experimental Study on Various Solar Still ...

Humankind has depended for ages on underground water reservoirs for its fresh water needs. But these sources do not always ...

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## Performance improvements of hemispherical solar still using ...

Various scientists are looking for effective and easy solutions for the



augmentation of yield from the hemispherical solar still (HSS). In this study, aluminum foil sheet was used to ...

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## Optimizing the performance of hemispheric solar still using ...

Figure 9 a-c shows the hourly variation of accumulated water productivity for various concentrations accompanied by cooling the glass cover of hemispherical solar stills ...



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## Conical solar stills: A review

The hemispherical solar still (depicted in Fig. 1e) features a curved bowl-like shape resembling a hemisphere, while the spherical solar still (Fig. 1f) consists of a spherical glass ...

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## Silver/Glass Mirrors for Solar Thermal Systems

The goal of the Solar Thermal Technology Program is to advance the engineering and scientific understanding



of solar thermal technology and to  
establish the technology base ...

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## **Thermal and economic analysis of hemispherical solar still ...**

In current experimental study  
hemispherical solar still was modified  
with attachments of different fins,  
applied water sprinkling technique and  
its comparison was done without it ...

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