

## EQACC SOLAR

# Trough type solar air conditioner



## Overview

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Which trough collector is best for Solar System?

Parabolic trough collector is the most suitable for various applications in solar system. The novelty of this research that mainly focuses on higher thermal efficiency can be obtained by using vacuumed receiver tube, whereas for enhancing the rate of heat transfer a porous trapezoidal fin can be used.

What is a parabolic trough collector?

This shows main difference in previous and current studies in PTC in various solar applications. Parabolic trough collector is a device which is useful for solar energy to thermal energy. It mainly consists of reflector, metal sheet curved parabola, and a receiver tube. Figure 2 mainly shows that cross-sectional view of parabolic trough collector.

What is a parabolic trough?

The collector (also called a reflector) or a parabolic trough has a parabola shape. The parabolic trough has a focal line. The collector's material should have high reflectivity, so that it can reflect the maximum amount of direct solar radiation.

What is the thermal efficiency of a parabolic trough collector?

They obtained 63% optical efficiency and thermal efficiency of 40% at 650 °C inlet temperature. The parabolic trough collector uses water and synthetic oil as working fluids. Heat transfer fluid plays a significant role in enhancing the performance of a PTC system through its better heat transfer properties.

## Trough type solar air conditioner

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### **Design and Thermo-Economic Comparisons ...**

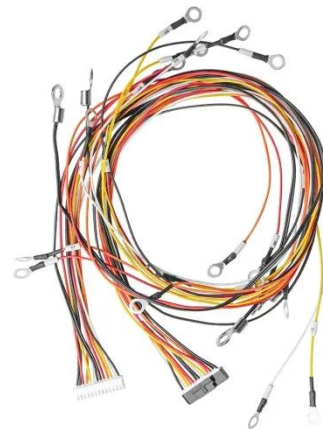
Design and Thermo-Economic Comparisons of an Absorption Air Conditioning System Based on Parabolic Trough and Evacuated Tube ...

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### **Design and Thermo-Economic Comparisons of an Absorption Air ...**

Solar absorption cycles for air conditioning systems have recently attracted much attention. They have some important advantages that aid in reducing greenhouse gas ...



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### **Design and Thermo-Economic Comparisons of an Absorption Air**

Design and Thermo-Economic Comparisons of an Absorption Air Conditioning System Based on Parabolic Trough and Evacuated Tube Solar Collectors

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## PERFORMANCE ANALYSIS OF A SOLAR ...

The proposed system combines a solar field, flashing tank and absorption chiller: two types of absorption cycle H<sub>2</sub>O-LiBr and NH<sub>3</sub>-H<sub>2</sub>O ...

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## A critical review on solar applications of parabolic trough ...

Worldwide, various countries, including India, have a vast potential for solar energy throughout their seasonal duration and are working toward harnessing the maximum amount ...

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## Comprehensive experimental study using a parabolic trough solar air

The main objective of this work is to investigate the performance characteristics of two types of thermal receivers used in parabolic solar air heater (PSAH). Solar air heater ...

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## Use of parabolic trough solar collectors for building air conditioning



The aim of this study is the evaluation of the economic and technical viability for the installation of a solar air conditioning system based on parabolic solar concentrators and ...

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## Design and thermo-economic comparisons of large scale solar ...

The aim of this work is to optimize and design H<sub>2</sub>O-LiBr absorption air conditioning systems that are operated by two different types of solar collectors (ETC and ...



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## Design and Thermo-Economic Comparisons of an ...

Solar absorption cycles for air conditioning systems have recently attracted much attention. They have some important advantages that aid in reducing greenhouse gas ...

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## Design and Thermo-Economic Comparisons of an ...

Abstract:Solar absorption cycles for air

conditioning systems have recently attracted much attention. They have some important advantages that aid in reducing ...

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## Development and thermodynamic analysis of a novel parabolic trough

In the context of valuing solar thermal energy and reducing electricity consumption linked to thermal comfort in buildings, a solar air conditioning system has been studied for ...

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## PERFORMANCE ANALYSIS OF A SOLAR-THERMAL AIR CONDITIONING ...

The proposed system combines a solar field, flashing tank and absorption chiller: two types of absorption cycle H<sub>2</sub>O-LiBr and NH<sub>3</sub>-H<sub>2</sub>O have been compared to each other by ...

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## Performance analysis of solar air conditioning system based ...



The accuracy of the new model was proved to be higher, with which Shirazi A et al. [6] compared three types of solar air conditioning systems (vacuum tube collector + single ...

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