

# Thin Film Solar Cell Market: Global Industry Trends, Share, Size, Growth, Opportunity and Forecast 2023-2028

<https://marketpublishers.com/r/TC4C760D815FEN.html>

Date: October 2023

Pages: 149

Price: US\$ 2,499.00 (Single User License)

ID: TC4C760D815FEN

## Abstracts

### Market Overview:

The global thin film solar cell market size reached US\$ 14.2 Billion in 2022. Looking forward, IMARC Group expects the market to reach US\$ 28.2 Billion by 2028, exhibiting a growth rate (CAGR) of 12.3% during 2023-2028.

A thin film solar cell (TFSC) is a renewable energy device designed to convert light energy into electrical energy. It is produced by depositing one or more thin layers of photovoltaic materials on substrates, such as glass, plastic, and metal. Cadmium telluride (CdTe), amorphous silicon (a-Si), copper indium gallium selenide (CIGS), and gallium arsenide (GaAs) are some commonly used photovoltaic materials in TFSC. It is widely used in electronic powering circuits, home light applications, solar fields, rooftop installations, recreational vehicles, and camping. As compared to conventional photovoltaic cells, TFSC is more lightweight, cost-effective, and provides enhanced flexibility for wide-ranging applications. It also offers larger area modules, shorter energy payback periods, lower material consumption, monolithic integration, and tuneable material properties.

### Thin Film Solar Cell Market Trends:

The increasing adoption of renewable energy sources due to the rising environmental concerns among the masses across the globe is creating a positive outlook for the market. A TFSC is a sustainable, renewable, clean, and reliable energy source that generates power without creating noise pollution or producing toxic and greenhouse gases (GHG). In addition, the rising demand for solar-powered light on road dividers

and streets is acting as another growth-inducing factor. Furthermore, widespread product adoption due to the rising energy consumption, coupled with increasing electricity prices, is providing an impetus to the market growth. Additionally, extensive research and development (R&D) activities in anti-reflective coatings, surface texturing, plasmonic light capture, and optimizing solar cell materials to enhance the efficiency and absorption capabilities of TFSC are providing an impetus to the market growth. Moreover, the integration of nanotechnology that provides an improved optical path for absorption, reduces recombination losses, and offers design flexibility is positively influencing the market growth. Other factors, including increasing initiatives by several governments toward sustainable development, decreasing dependence on fossil fuels, and recent technological advancements to reduce production costs, are anticipated to drive the market growth.

#### Key Market Segmentation:

IMARC Group provides an analysis of the key trends in each sub-segment of the global thin film solar cell market report, along with forecasts at the global, regional and country level from 2023-2028. Our report has categorized the market based on type, installation and end user.

#### Breakup by Type:

Cadmium Telluride

Amorphous Thin-Film Silicon

Copper Indium Gallium Selenide

Microcrystalline Tandem Cells

Thin-Film Polycrystalline Silicon

Others

#### Breakup by Installation:

On-Grid

Off-Grid

## Breakup by End User:

Residential

Commercial

Utility

## Breakup by Region:

North America

United States

Canada

Asia-Pacific

China

Japan

India

South Korea

Australia

Indonesia

Others

Europe

Germany

France

United Kingdom

Italy

Spain

Russia

Others

Latin America

Brazil

Mexico

Others

Middle East and Africa

Competitive Landscape:

The competitive landscape of the industry has also been examined along with the profiles of the key players being Ascent Solar Technologies Inc., First Solar Inc., Flisom, Hanergy Thin Film Power EME B.V., Kaneka Corporation, Miasole (Hanergy Holding Group Ltd.), Oxford Photovoltaics Limited, Trony Solar Holdings Company Limited and Wuxi Suntech Power Co. Ltd.

Key Questions Answered in This Report

1. What was the size of the global thin film solar cell market in 2022?
2. What is the expected growth rate of the global thin film solar cell market during 2023-2028?
3. What are the key factors driving the global thin film solar cell market?
4. What has been the impact of COVID-19 on the global thin film solar cell market?

5. What is the breakup of the global thin film solar cell market based on the type?
6. What is the breakup of the global thin film solar cell market based on the installation?
7. What is the breakup of the global thin film solar cell market based on the end user?
8. What are the key regions in the global thin film solar cell market?
9. Who are the key players/companies in the global thin film solar cell market?

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