

Non-concentrating Solar Collector Market Forecasts to 2032 – Global Analysis By Type (Flat-Plate Collectors, Evacuated Tube Collectors, Thermosyphon Systems, Glazed Collectors and Unglazed Collectors), Absorber Plate, End User and By Geography

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Abstracts

According to Statistics MRC, the Global Non-concentrating Solar Collector Market is accounted for \$3.4 billion in 2025 and is expected to reach \$6.4 billion by 2032 growing at a CAGR of 9.2% during the forecast period. A non-concentrating solar collector is a solar thermal system designed to absorb sunlight without concentrating it on a specific point. These collectors gather both direct and scattered solar radiation across a broad area, making them efficient even in less sunny or overcast weather. Commonly applied in residential water heating and space heating, they function at relatively low temperatures and are known for their affordability, ease of installation, and low upkeep. Popular examples include flat-plate and evacuated tube collectors. Due to their ability to continuously capture solar energy throughout the day, they are widely adopted for both household and commercial purposes.

According to the U.S. Department of Energy, solar energy is projected to contribute around 20% of the nation's electricity by 2030, with non-concentrating technologies playing a pivotal role in this transition.

Market Dynamics:

Driver:

Increasing awareness of energy efficiency

The growing emphasis on reducing carbon emissions is pushing demand for energy-efficient solar technologies. Non-concentrating collectors are increasingly used in residential and commercial heating applications. Public and private incentives for renewable energy adoption are accelerating market penetration. These systems are particularly popular for domestic water heating and space heating in cold climates. The simplicity and cost-effectiveness of non-concentrating technologies make them suitable for mass deployment.

Restraint:

Limited efficiency compared to concentrating systems

Non-concentrating collectors operate at lower temperatures, limiting their effectiveness in industrial applications. Their inability to track the sun reduces energy absorption, especially in high-latitude areas. When compared to concentrating systems, they offer lower energy conversion rates. This restricts their usage to low-temperature thermal applications only. The efficiency gap creates hesitation among commercial users seeking optimal return on investment.

Opportunity:

Integration with smart building technologies

Smart homes and buildings are incorporating solar thermal systems for sustainable energy use. Integration with IoT and automation platforms enhances system performance and monitoring. Data-driven energy optimization allows users to maximize heat output based on usage patterns. Governments are promoting smart energy retrofits, which include solar heating installations. This synergy opens up a new frontier for non-concentrating collector applications in urban infrastructure.

Threat:

Rising competition from PV solar panels

The rapid advancement of photovoltaic (PV) panels has overshadowed solar thermal technologies in some markets. Falling PV prices and their ability to generate electricity, not just heat, give them an edge. Consumers often opt for PV systems with battery

storage for all-in-one energy needs. The versatility and scalability of PV systems are diverting investment away from solar thermal solutions. This growing competition could restrict future demand for flat-plate and evacuated tube collectors.

Covid-19 Impact:

The pandemic temporarily halted construction activities and delayed solar installations. Supply chain interruptions caused project postponements and increased material costs. However, the push for energy independence during lockdowns renewed interest in decentralized energy systems. Governments included renewable energy in economic recovery packages, indirectly benefiting solar collectors. The market showed signs of resilience due to ongoing residential installations and green building trends.

The flat-plate collectors segment is expected to be the largest during the forecast period

The flat-plate collectors segment is expected to account for the largest market share during the due to their cost-effectiveness, ease of installation, and versatility in various solar thermal applications such as water heating and space heating. Flat-plate collectors are widely used in residential and commercial sectors owing to their durable structure and efficient performance under moderate temperature conditions. Their compatibility with building-integrated systems and ability to operate without tracking the sun further enhances their adoption.

The Copper segment is expected to have the highest CAGR during the forecast period

Over the forecast period, the Copper segment is predicted to witness the highest growth rate due to its superior thermal conductivity, durability, and resistance to corrosion, making it ideal for use in solar thermal systems. Its ability to efficiently transfer heat contributes to better collector performance and energy output. The rising adoption of high-performance solar collectors in residential and industrial applications is pushing the demand for copper-based systems. Additionally, advancements in manufacturing technologies and increased focus on energy efficiency are further propelling the segment's growth trajectory across emerging and developed markets.

Region with largest share:

During the forecast period, the Asia Pacific region is expected to hold the largest market share in the non-concentrating solar collector market during the forecast period. Countries such as China, India, and Japan are leading adopters due to their strong

solar energy policies, high solar irradiance, and growing demand for sustainable heating solutions. Rapid urbanization, coupled with the expanding residential and commercial construction sectors, is accelerating the deployment of solar thermal systems. Additionally, government initiatives supporting renewable energy adoption, including subsidies and incentives for solar installations, are fostering market expansion.

Region with highest CAGR:

Over the forecast period, the North America region is anticipated to exhibit the highest CAGR. Growing environmental concerns and rising energy costs are prompting significant investments in renewable energy technologies across the region. The U.S. and Canada are actively promoting solar thermal solutions through tax incentives, grants, and renewable energy mandates. There is an increasing preference for solar heating systems in residential and industrial applications due to their long-term cost savings and sustainability benefits. Furthermore, technological innovations, coupled with heightened consumer awareness and favourable, policy frameworks, are driving the accelerated adoption of non-concentrating solar collectors in North America.

Key players in the market

Some of the key players in Non-concentrating Solar Collector Market include Greenonetec, Soletrol, Prosunpro, Bosch Thermotechnik, Viessmann, Solahart, Vaillant Group, Xne Group, Dimas. Solimpeks. Rheem Manufacturing Company, American Solar Direct, Tata Power Solar, SolarWorld and Ariston Thermo Group.

Key Developments:

In February 2025, Bosch Thermotechnik launched a new series of flat-plate solar collectors designed for residential heating applications, emphasizing improved efficiency and ease of installation.

In January 2025, Viessmann Group announced a strategic partnership with a leading construction firm to integrate its non-concentrating solar collectors into new eco-friendly housing projects across Europe.

In January 2025, Vaillant introduced the auroTHERM VFK 150, a non-concentrating collector optimized for integration with smart home heating systems.

Types Covered:

Flat-Plate Collectors

Evacuated Tube Collectors

Thermosyphon Systems

Glazed Collectors

Unglazed Collectors

Absorber Plates Covered:

Copper

Aluminium

Steel Plates

End Users Covered:

Residential

Commercial

Industrial

Non-Concentrating

Other End Users

Regions Covered:

North America

US

Canada

Mexico

Europe

Germany

UK

Italy

France

Spain

Rest of Europe

Asia Pacific

Japan

China

India

Australia

New Zealand

South Korea

Rest of Asia Pacific

South America

Argentina

Brazil

Chile

Rest of South America

Middle East & Africa

Saudi Arabia

UAE

Qatar

South Africa

Rest of Middle East & Africa

What our report offers:

- Market share assessments for the regional and country-level segments
- Strategic recommendations for the new entrants
- Covers Market data for the years 2024, 2025, 2026, 2028, and 2032
- Market Trends (Drivers, Constraints, Opportunities, Threats, Challenges, Investment Opportunities, and recommendations)
- Strategic recommendations in key business segments based on the market estimations
- Competitive landscaping mapping the key common trends
- Company profiling with detailed strategies, financials, and recent developments
- Supply chain trends mapping the latest technological advancements

Free Customization Offerings:

All the customers of this report will be entitled to receive one of the following free customization options:

Company Profiling

Comprehensive profiling of additional market players (up to 3)

SWOT Analysis of key players (up to 3)

Regional Segmentation

Market estimations, Forecasts and CAGR of any prominent country as per the client's interest (Note: Depends on feasibility check)

Competitive Benchmarking

Benchmarking of key players based on product portfolio, geographical presence, and strategic alliances

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