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# Pyranometer Market Size and Forecasts (2022 - 2030), Global and Regional Share, Trends, and Growth Opportunity Analysis Report Coverage: By Type (Photovoltaic Pyranometers and Thermopile Pyranometers) and Application (Photovoltaic Systems, Meteorology, and Climate Stations)

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## Abstracts

The pyranometer market size is expected to grow from US$ 97.20 million in 2023 to US$ 183.42 million by 2030; it is estimated to record a CAGR of 8.3% from 2022 to 2030.

A pyranometer measures solar irradiance from a hemispherical field of view incident on a plane surface. The sun is Earth’s foremost source of extra-terrestrial energy, which significantly impacts climate and weather as well as is a major part of energy production (by harvesting solar energy). Solar radiation is one of the prevailing forces behind the Earth’s weather patterns, which makes it a primary factor in climate and weather studies. In such studies, pyranometers are generally used to measure the Global Horizontal Irradiance (GHI) to analyze the irradiance incident on the surface of the Earth.

In the solar energy industry, pyranometer are deployed to analyze the performance of photovoltaic (PV) power plants. The productivity of the PV power plant can be analyzed by comparing the real power output from the PV power plant to the projected output based on a pyranometer reading. Pyranometers can also help in studying the relevance of probable sites for PV power plants. In this case, pyranometers are used to analyze the projected output of a PV installation. Furthermore, a pyranometer deployed in the solar panel plane of the array (POA) delivers important input data for calculating

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performance ratios in photovoltaic energy installations.

Solar energy is the use of sunlight to generate electricity or heat, and pyranometers are used to measure the amount of available solar energy. In photovoltaic systems, pyranometers are used to measure the solar irradiance that hits the solar panels. This calculated value is used to measure the panels' power output and ensure that they are operating at their maximum efficiency. Additionally, the pyranometer used in the solar energy industry monitors the performance of PV power plants. On the basis of a pyranometer reading, the efficiency of the PV power plant can be determined by comparing the actual power output from the PV power plant to the expected output. Several companies such as Apogee Instruments and Soluzione Solare S.r.l offer pyranometers, which are applied in PV systems. In climatology, pyranometers measure the amount of solar radiation that reaches the Earth’s surface. This information is used to study climate change and develop Earth's atmosphere models. Climatology is the study of climate, and pyranometers are used in climatology to measure solar irradiance over long periods. Therefore, the increasing application of pyranometers in photovoltaic systems, climatology, and meteorology is driving the pyranometer market growth.

Impact of COVID-19 Pandemic on Pyranometer Market

The COVID-19 pandemic hampered the pyranometer market growth in 2020. The pandemic caused a slowdown in the global economy, which led to a decrease in investment in solar energy projects. However, the pyranometer market has been recovering with the rebuilding of the global economy.

However, the pyranometer market is considered to be stable as several countries are launching solar power plants.

The demand for solar energy is expected to grow in the coming years as governments and businesses globally seek ways to reduce their reliance on fossil fuels. This is expected to boost the demand for pyranometers, which are used to measure solar irradiance.

The global shift towards renewable energy is another key trend expected to boost the pyranometer market size during the forecast period. Solar energy is considered one of the most popular renewable energy sources, and the demand for pyranometers is expected to grow with the development of more solar energy projects. Several countries are establishing solar plants after the pandemic, which is driving the pyranometer market.

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For instance, in June 2021, Togo, a city in West Africa, launched the largest solar plant in West Africa to expand power access and promote renewable energy in the small coastal country. Pyranometers are used to analyze the performance of photovoltaic (PV) power plants in the solar energy industry.

The pyranometer market is growing and is expected to continue developing in the coming years. The increasing demand for solar and renewable energy drives the growth of the pyranometer market. Additionally, technological advancements such as silicon cell pyranometers with various material varieties and global expansion are expected to boost pyranometer market growth in the coming years.

The Europe pyranometer market is experiencing considerable growth due to the increasing interest of the European Union (EU) in delivering innovative solutions for global health, technology, and climate challenges. In November 2021, the European Council formed a new collaboration between the European Union’s Member States and industries to introduce creative solutions to overcome health, transportation, energy, digital technology, and metrology concerns. Moreover, research and innovations in product development are expected to fuel the pyranometer market growth in the region. Several metrological research and development (R&D) organizations are working on pyranometer product developments to reduce soiling losses in PV systems. For instance, in November 2022, an international research group led by Spain's DLR Institute of Solar Research developed Radguard, a novel system that calculated the soiling losses in PV systems. Radguard used a PV reference cell for ~45?minutes at night or a lamp to illuminate a pyranometer. The lamp is secured from soiling by a 25-cm collimator, as scientists stated its importance in maintaining the device's appropriate functioning and the lamp's fixed position. In Asia Pacific, there is a rapid increase in investments in solar energy and rapid expansion in the solar energy industry. For instance, in May 2023, Metro Pacific Investments funded US$ 427 million in SP New Energy, a solar energy company in the Philippines. These investments are contributing to the increased demand for pyranometers in the pyranometers market.

Governments of Saudi Arabia, the UAE, South Africa, Brazil, Argentina, and many countries in the MEA and SAM are supporting PV installations for renewable energy generation. For instance, in March 2023, Noria Energy, a California-based solar developer, launched a 1.5 MW floating solar power system on the reservoir at Colombia’s Urr? Dam, the largest project of its kind in SAM. Therefore, the demand for

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pyranometers is increasing due to a rise in solar power plant installations, which is fueling the pyranometer market growth in the MEA and SAM.

Hukseflux Thermal Sensors BV, Delta Ohm Srl, Li-Cor Inc, Eppley Laboratory Inc, OTT Hydromet Corp, Lambrecht Meteo Gmbh, Apogee Instruments Inc, Campbell Scientific Inc, Delta-T Devices Ltd, Eko Instruments Co Ltd Co Ltd, and Hoskin Scientific Ltd are among the key pyranometer market players profiled in this pyranometer market study. Several other essential pyranometer market players were analyzed for a holistic view of the pyranometer market and its ecosystem.

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