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Global N-type 110?m and 130?m Silicon Wafer Supply, Demand and Key Producers, 2026-2032

https://marketpublishers.com/r/GDEA2203F808EN.html
Date: July 2026
Pages: 112
Price: US$ 4,480.00 (Single User License)
ID: GDEA2203F808EN

Abstracts

The global N-type 110?m and 130?m Silicon Wafer market size is expected to reach $ 9196 million by 2032, rising at a market growth of 8.6% CAGR during the forecast period (2026-2032).

N-type 110 ?m and 130 ?m photovoltaic silicon wafers refer to solar cell wafers made from N-type monocrystalline silicon substrates, with thicknesses of approximately 110 micrometers and 130 micrometers, respectively. They are mainly used in the manufacturing of high-efficiency crystalline silicon solar cells such as TOPCon, HJT, and IBC / BC cells.

By reducing wafer thickness, these wafers help lower silicon consumption and non-silicon costs. At the same time, they must maintain sufficient mechanical strength, minority carrier lifetime, low oxygen and carbon content, low breakage rate, and good process compatibility across crystal pulling, wafer slicing, cleaning, texturing, cell processing, and module packaging.

The 110 ?m specification is generally more oriented toward HJT, thin-wafer high-efficiency cells, and low-temperature process routes, while the 130 ?m specification is more commonly used in mainstream N-type cell routes such as TOPCon, where cost, yield, and mass-production stability need to be balanced.

From the perspective of the industry?s fundamental nature, N-type 110 ?m and 130 ?m photovoltaic silicon wafers are key base materials in the transition of high-efficiency crystalline silicon solar cells from P-type to N-type technology and from thicker wafers toward thinner wafers. Their value lies not only in providing the silicon substrate for solar cells, but also in reducing silicon consumption and module manufacturing costs

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through wafer thinning, while supporting further efficiency improvements in high-efficiency cell technologies such as TOPCon, HJT, and IBC / BC. Compared with traditional P-type wafers, N-type wafers offer better minority carrier lifetime and lower potential for light-induced degradation, making them an important foundation for the iteration of high-efficiency cell technologies. The thickness difference between 110 ?m and 130 ?m essentially reflects the industry?s balancing choice between ?further cost reduction? and ?maintaining stable mass-production yield.? From the perspective of demand structure, 130 ?m N-type wafers are currently closer to mainstream mass-production applications, especially for N-type cell routes such as TOPCon that have already achieved large-scale industrialization. While TOPCon manufacturers seek to reduce silicon consumption, they also pay close attention to wafer slicing yield, cell breakage rate, equipment compatibility, and module packaging reliability. Therefore, 130 ?m wafers offer a relatively good balance between cost reduction and manufacturing stability. In contrast, 110 ?m N-type wafers are more oriented toward HJT, thin-wafer high-efficiency cells, and the next stage of cost reduction. Because HJT features a low-temperature process and a symmetrical structure, it is more adaptable to wafer thinning and is therefore more likely to lead mass-production validation of 120 ?m, 110 ?m, or even thinner specifications. Overall, 130 ?m is the current mainstream mass-production balance point, while 110 ?m represents an important direction for wafer-thinning upgrades and future cost optimization. From the perspective of technical challenges, the core challenge of N-type thin wafers is not simply ?cutting thinner,? but maintaining wafer strength, electrical performance, and full-process yield at reduced thicknesses. Lower wafer thickness directly reduces silicon consumption, but it also increases the risks of breakage, microcracks, warpage, handling damage, and module packaging stress. This places higher requirements on crystal pulling quality, diamond wire slicing, cleaning and texturing, cell processing, automated handling, and module packaging. The 110 ?m wafer, in particular, requires higher equipment precision, tighter process windows, better wafer-to-wafer consistency, and more rigorous customer validation in mass production. Whether wafer thinning can continue to advance in the future depends not only on the slicing capability of wafer manufacturers, but also on whether cell and module manufacturers can build a systematic balance among efficiency, yield, reliability, and cost. From the perspective of the competitive landscape, the market for N-type 110 ?m and 130 ?m photovoltaic silicon wafers is mainly driven by leading companies with integrated capabilities in crystal pulling, wafer slicing, cell manufacturing, and module production. Companies such as LONGi Green Energy, TCL Zhonghuan, JinkoSolar, JA Solar, Trina Solar, and Tongwei have strong influence across the N-type wafer, cell, and module value chain. Among them, integrated companies can accelerate the validation and adoption of new thickness specifications through internal cell and module demand. Specialized wafer manufacturers place

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greater emphasis on large-size wafers, wafer thinning, low-damage slicing, and highly consistent supply capability. As N-type cell capacity continues to expand, wafer competition will no longer focus only on size and price, but will further shift toward thickness control, wafer quality stability, breakage rate, customer process compatibility, and supply chain coordination. From the perspective of market outlook, N-type 110 ?m and 130 ?m photovoltaic silicon wafers are still in a rapid growth stage, with long-term trends clearly benefiting from the increasing penetration of N-type cells and the continued cost reduction of the photovoltaic industry. In the short term, 130 ?m will remain the more prudent and easier-to-scale mainstream specification, especially in the TOPCon route; 110 ?m is more likely to be gradually adopted first in HJT, high-efficiency thin-wafer cells, and certain advanced technology routes. In the future, as slicing losses decline, handling equipment is upgraded, low-damage cell processes mature, and module packaging reliability improves, there will still be room for further reductions in wafer thickness. However, the industry also faces risks such as price-cycle volatility, overcapacity, yield pressure, and reliability risks caused by excessive wafer thinning. Overall, N-type 110 ?m and 130 ?m wafers are not a niche material independent of the photovoltaic industry, but a key supporting link in the evolution of high-efficiency photovoltaic cell technologies and the reduction of silicon costs.

This report studies the global N-type 110?m and 130?m Silicon Wafer production, demand, key manufacturers, and key regions.

This report is a detailed and comprehensive analysis of the world market for N-type 110?m and 130?m Silicon Wafer and provides market size (US$ million) and Year-over-Year (YoY) Growth, considering 2025 as the base year. This report explores demand trends and competition, as well as details the characteristics of N-type 110?m and 130?m Silicon Wafer that contribute to its increasing demand across many markets.

Highlights and key features of the study

Global N-type 110?m and 130?m Silicon Wafer total production and demand, 2021-2032, (K Units)
Global N-type 110?m and 130?m Silicon Wafer total production value, 2021-2032, (USD Million)
Global N-type 110?m and 130?m Silicon Wafer production by region & country, production, value, CAGR, 2021-2032, (USD Million) & (K Units), (based on production site)
Global N-type 110?m and 130?m Silicon Wafer consumption by region & country, CAGR, 2021-2032 & (K Units)

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U.S. VS China: N-type 110?m and 130?m Silicon Wafer domestic production, consumption, key domestic manufacturers and share
Global N-type 110?m and 130?m Silicon Wafer production by manufacturer, production, price, value and market share 2021-2026, (USD Million) & (K Units)
Global N-type 110?m and 130?m Silicon Wafer production by Wafer Thickness, production, value, CAGR, 2021-2032, (USD Million) & (K Units)
Global N-type 110?m and 130?m Silicon Wafer production by Application, production, value, CAGR, 2021-2032, (USD Million) & (K Units)

This report profiles key players in the global N-type 110?m and 130?m Silicon Wafer market based on the following parameters - company overview, production, value, price, gross margin, product portfolio, geographical presence, and key developments. Key companies covered as a part of this study include LONGi Green Energy Technology Co., Ltd., TCL Zhonghuan Renewable Energy Technology Co., Ltd., JinkoSolar Holding Co., Ltd. / Jinko Solar Co., Ltd., JA Solar Technology Co., Ltd., Trina Solar Co., Ltd., Tongwei Co., Ltd., Canadian Solar Inc. / CSI Solar, etc.

This report also provides key insights about market drivers, restraints, opportunities, new product launches or approvals.

Stakeholders would have ease in decision-making through various strategy matrices used in analyzing the World N-type 110?m and 130?m Silicon Wafer market

Detailed Segmentation:

Each section contains quantitative market data including market by value (US$ Millions), volume (production, consumption) & (K Units) and average price (US$/Unit) by manufacturer, by Wafer Thickness, and by Application. Data is given for the years 2021-2032 by year with 2025 as the base year, 2026 as the estimate year, and 2027-2032 as the forecast year.

Global N-type 110?m and 130?m Silicon Wafer Market, By Region:

United States

China

Europe

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Japan

South Korea

ASEAN

India

Rest of World

Global N-type 110?m and 130?m Silicon Wafer Market, Segmentation by Wafer Thickness:

110 ?m N-type Wafers

130 ?m N-type Wafers

Other Thin N-type Wafers

Standard / Thicker N-type Wafers

Global N-type 110?m and 130?m Silicon Wafer Market, Segmentation by Cell Technology Route:

TOPCon Wafers

HJT Wafers

IBC / BC Wafers

Tandem / Perovskite-Silicon Wafers

Other High-efficiency N-type Wafers

Global N-type 110?m and 130?m Silicon Wafer Market, Segmentation by Crystal Growth:

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N-type Monocrystalline CZ Wafers

N-type Low-oxygen Wafers

N-type High-lifetime Wafers

N-type Doped Wafers

Other Specialty N-type Wafers

Global N-type 110?m and 130?m Silicon Wafer Market, Segmentation by Application:

Cell Manufacturing

Module Manufacturing

Pilot Line

Companies Profiled:

LONGi Green Energy Technology Co., Ltd.

TCL Zhonghuan Renewable Energy Technology Co., Ltd.

JinkoSolar Holding Co., Ltd. / Jinko Solar Co., Ltd.

JA Solar Technology Co., Ltd.

Trina Solar Co., Ltd.

Tongwei Co., Ltd.

Canadian Solar Inc. / CSI Solar

Key Questions Answered:

1. How big is the global N-type 110?m and 130?m Silicon Wafer market?

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2. What is the demand of the global N-type 110?m and 130?m Silicon Wafer market?
3. What is the year over year growth of the global N-type 110?m and 130?m Silicon Wafer market?
4. What is the production and production value of the global N-type 110?m and 130?m Silicon Wafer market?
5. Who are the key producers in the global N-type 110?m and 130?m Silicon Wafer market?
6. What are the growth factors driving the market demand?

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