Huasun Heterojunction

Full-scenario Solution

02 Commercial & Industrial Color-coated Steel Sheet Roofs

Photovoltaic (PV) power generation has rapidly grown in the commercial and industrial (C&I) sector in China, with new installed capacity reaching 37.03 GW in the first half of 2024 — a 90.47% increase year-over-year.

By integrating PV systems into corporate energy consumption, businesses can lower electricity costs and reduce carbon emissions. Heterojunction (HJT) solar technology, recognized for its high efficiency and stability, presents an optimal solution for distributed energy in C&I applications.

*The following data is sourced from PVsyst simulations of HJT modules, juxtaposed against simulations for PERC and TOPCon

modules of equivalent size.



Shenzhen · Guangdong Province · China

२२ Global Horizontal Irradiance: 1469.8 kWh/㎡ *

***Data sourced from Solargis**

Solution in C&I Roofs Scenario

Module Power: 620 W Module Dimension: 2382×1134 Array: 2P, Vertical AC System Capacity: 4.8 MVA DC System Capacity: 5.9892 MWp Pnom Ratio: 1.25

Installation: Flat Mount



Huasun Everest 210R-132 HJT Module

Advantages of HJT Solution

01 Higher Efficiency, Larger Capacity













Greater Power Output

And Higher Total Energy Generation

+0.3948 MWp DC system capacity vs. PERC 555 W modules; +0.1932 MWp DC system capacity vs. TOPCon 600 W modules.



Optimized Overall System Capacity

+0.08 of Pnom ratio vs. PERC 555 W modules;

+0.04 of Pnom ratio vs. TOPCon 600 W modules.

*Compared with 620 W HJT modules.

02 Lower Degradation, Enhanced Reliability

	PERC 555 W	TOPCon 600 W	HJT 620 W
First-year Degradation	2%	1%	1 %
Linear Degradation	0.45%	0.4%	0.3%



1% lower first-year degradation



0.15% lower annual linear degradation vs. 555 W PERC modules;



HJT modules, characterized by their unique structure and low-temperature fabrication process, exhibit minimal light-induced degradation (LID) and superior anti-UV capabilities.

As a result, they demonstrate lower degradation rates and reliable power generation performance. This stability ensures consistent power output throughout the project's lifecycle, effectively reducing maintenance and replacement costs.

03 Increased Power Generation

Year	HJT 620 W	PERC 550 W	Additional Generation Hours	TOPCon 600 W	Additional Generation Hours
Year 1	1,276	1,214	62	1,252	24
Year 2	1,259.41	1,184.26	75.15	1,234.47	24.94
Year 3	1,255.58	1,178.79	76.79	1,229.46	26.12

Year 4	1,251.76	1,173.33	78.43	1,224.46	27.3
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25-year Lifecycle	30,445.36	28,128.38	2,316.98	29,497.12	948.24

In the solution for a color-coated steel sheet roof project, the first-year generation period of using Huasun HJT 620 W modules is:

+ 24 hours vs. 600 W TOPCon modules,

totaling 948.24 additional hours over 25 years.

+ 62 hours vs. 555 W PERC modules, totaling 2316.98 additional hours over 25 years.

Significant Power Generation Gain

PERC 555 W TOPCon 600 W **HJT Baseline**

Installed Capacity +3.33%+7.06%

First-year +5.11% +1.92% **Generation Hours**

Total Power Generation +15.88%

+6.66%

25-year Lifecycle 24,981.94 kWh 11,738.04 kWh

Over a 25-year lifecycle, the project with HJT 620 W modules can generate

+ 24,981.94 kWh vs. PERC 555 W modules;

+ 11,738.04 kWh vs. TOPCon 600 W modules.



04 Lower LCOE, Higher ROI



In the solution for a color-coated steel sheet roof project, the BOS cost of using Huasun HJT 620 W modules is:





1. Exceptional efficiency

2. Low degradation rates

3. Reliable power output

4. Enhanced energy generation

5. Reduced operational expenses

