

# *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**



**Global Horizontal Irradiance: 1469.8 kWh/m<sup>2</sup> \***



**\*Data sourced from Solargis**

# Solution in C&I Roofs Scenario

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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

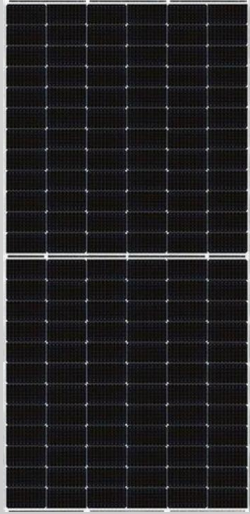
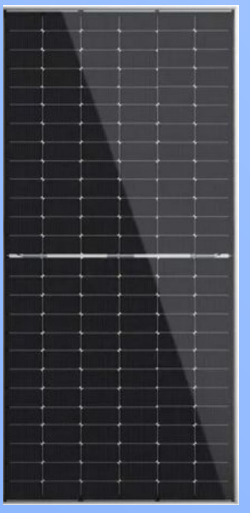
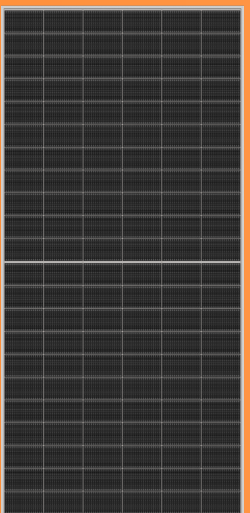
Installation: Flat Mount



Huason Everest 210R-132 HJT Module

# Advantages of HJT Solution

## 01 Higher Efficiency, Larger Capacity

		DC System Capacity (MWp)	Pnom Ratio
	<b>PERC</b> 555 W	5.5944	1.17
	<b>TOPCon</b> 600 W	5.796	1.21
	<b>HJT</b> 620 W	5.9892	1.25



### 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**  
vs. 555 W PERC modules;
- ✓ **0.15% lower annual linear degradation**  
vs. 555 W PERC modules;
- ✓ **0.1% lower annual linear degradation**  
vs. 600 W TOPCon 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

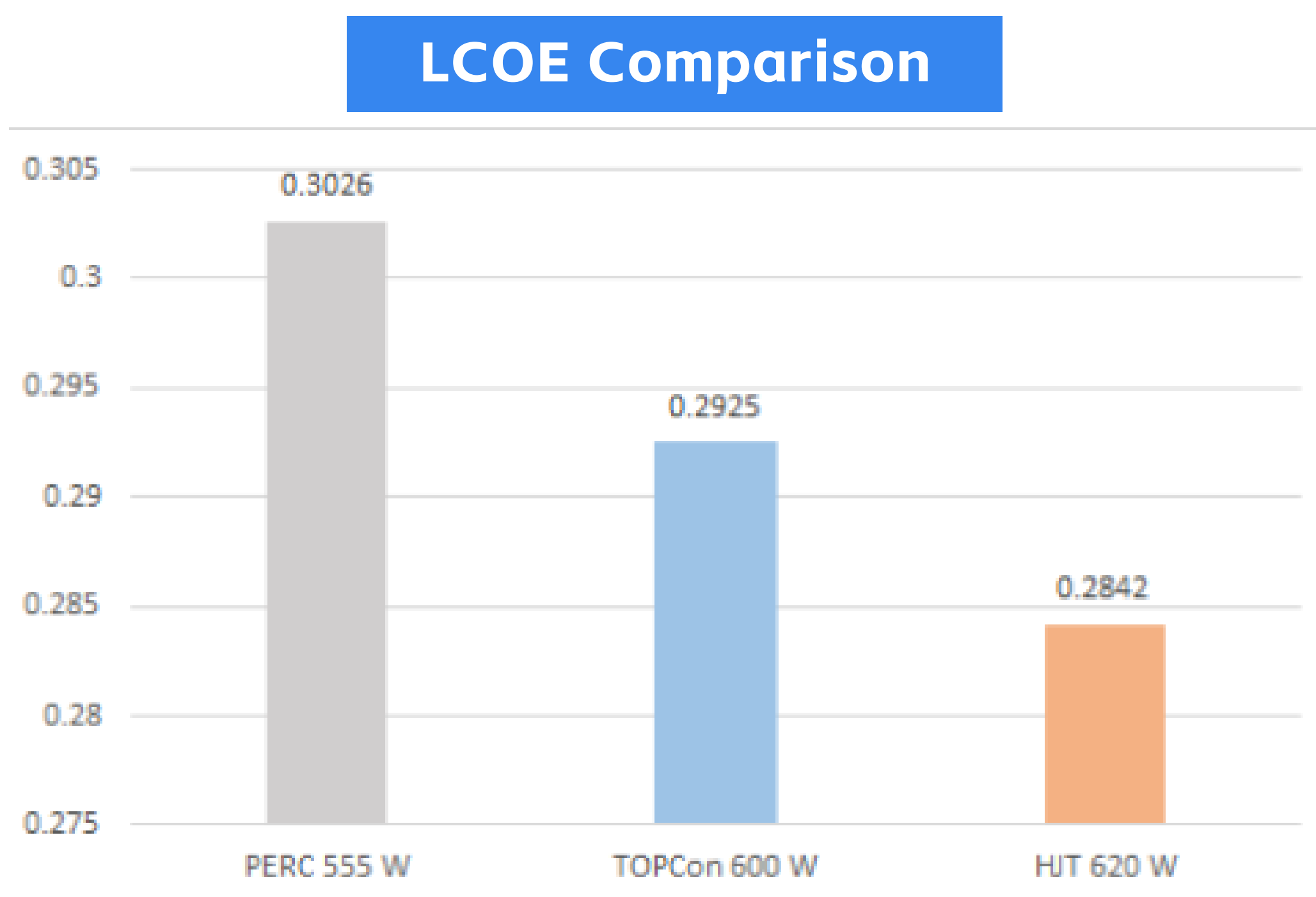
HJT Baseline	PERC 555 W	TOPCon 600 W
Installed Capacity	+7.06%	+3.33%
First-year Generation Hours	+5.11%	+1.92%
Total Power Generation	+15.88%	+6.66%

**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:

- ✓ **0.27 USD cents/W lower** vs. TOPCon 600 W modules;
- ✓ **0.74 USD cents/W lower** vs. PERC 555 W modules.

***1. Exceptional efficiency***

***2. Low degradation rates***

***3. Reliable power output***

***4. Enhanced energy generation***

***5. Reduced operational expenses***

