A close run between eight modules

JAM54D40-460/LB delivers 16,913 kWh over 30 years at 0.41 c/kWh, which makes its energy 55% cheaper per kilowatt-hour than the dearest module in this report. It is not the cheapest sticker price in the set - €69.17 is - and it still wins.

BEST LONG-TERM CHOICE

JA SOLAR JAM54D40-460/LB 460 Wp

- **Cheapest energy in the set.** 0.41 c/kWh, 55% below the dearest module in the set.
- **Best composite in the set.** It scores highest across lifetime energy, cost per kWh and warranty length taken together.

67 OF 100

COST PER KWH
0.41 c/kWh

RANKING LEADER	HIGHEST 30-YEAR YIELD	LOWEST COST PER KWH	MODULES COMPARED
JAM54D40-460/LB Score 67 of 100	18,156 kWh 2,059 kWh above the lowest module	0.41 c/kWh 55% cheaper than the dearest	8 Prices entered by the requester

ASSUMPTIONS Cell temperature 58 °C · Installation Pitched, equator · Baseline yield 1,450 kWh/kWp · Horizon 30 years · Currency EUR

01 · SIDE BY SIDE

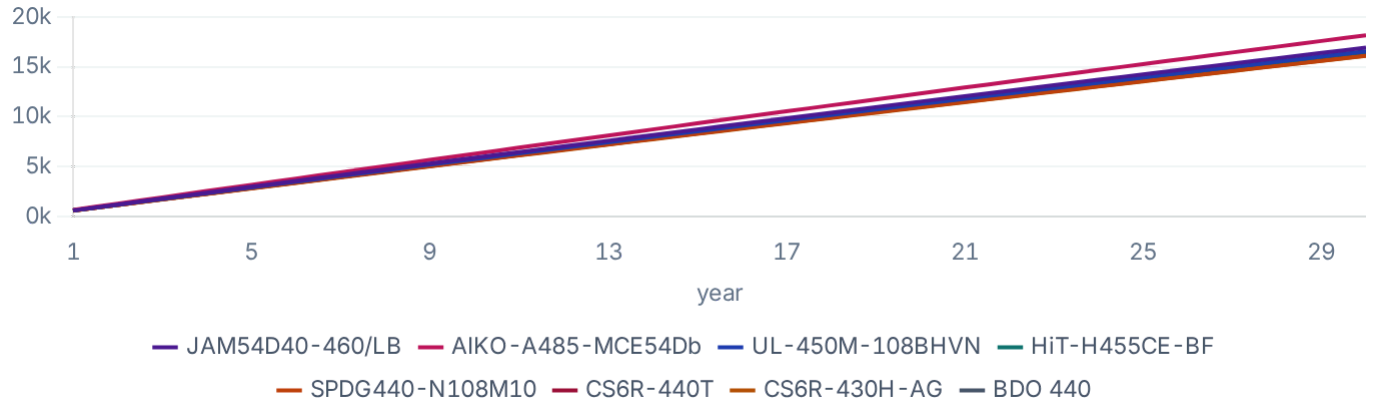
#	MANUFACTURER / MODEL	POWER	PRICE	YEAR 1	30-YEAR	PER KWH (C)	SCORE
1	JA SOLAR JAM54D40-460/LB	460 Wp	€69.65	597	16,913	0.41	67
2	AIKO AIKO-A485-MCE54Db	485 Wp	€112.30	636	18,156	0.62	66
3	UL-450M-108BHVN	450 Wp	€69.17	584	16,545	0.42	62
4	HYUNDAI ENERGY SOLUTIONS HiT-H455CE-BF	455 Wp	€76.70	595	16,507	0.46	58
5	SUNPRO SPDG440-N108M10	440 Wp	€69.86	569	16,118	0.43	56
6	CanadianSolar CS6R-440T	440 Wp	€78	571	16,177	0.48	53
7	CanadianSolar CS6R-430H-AG	430 Wp	€110.69	564	16,097	0.69	35
8	Bisol BDO 440	440 Wp	€149.77	571	16,387	0.91	25

better worse — Colours and scores are relative to the 8 modules in this report only.

02 · WHERE THE DIFFERENCE COMES FROM

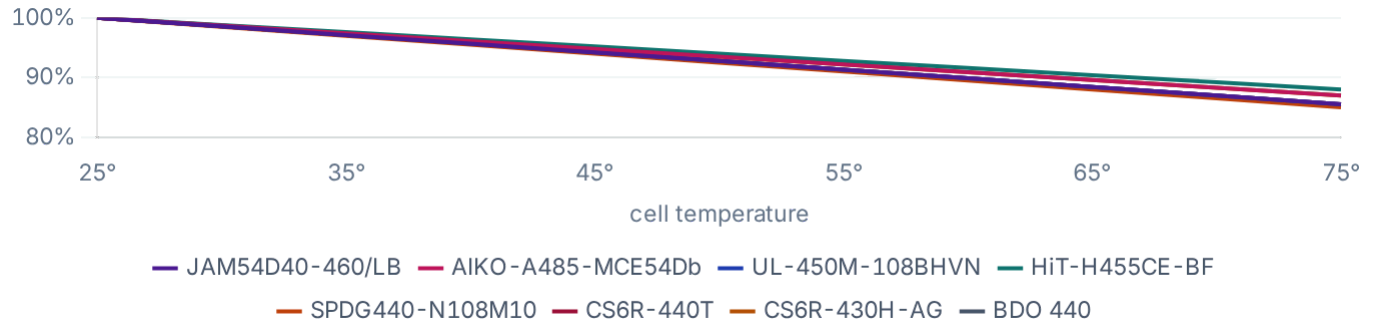
Cumulative energy over 30 years

Kilowatt-hours added up year by year. The gap widens with every year - by year 30 it is 2,059 kWh between the highest and lowest module.



Output retained as the cell heats up

A module is rated at 25 °C; a working roof sits well above it. At 58 °C the -0.24 %/°C module still delivers 92.1% of nameplate, the -0.30 %/°C module 90.1%.



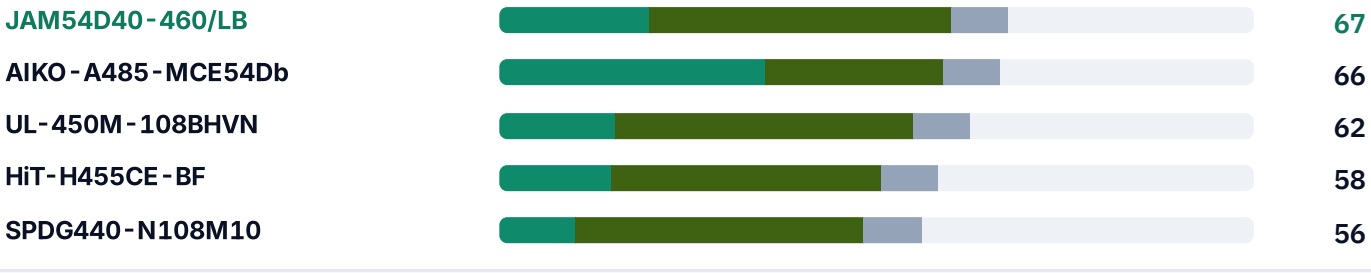
03 · MILESTONES

Cumulative kWh per module

MODULE	Y5	Y10	Y15	Y20	Y25	Y30
JAM54D40-460/LB	2,962	5,865	8,711	11,500	14,233	16,913
AIKO-A485-MCE54Db	3,160	6,266	9,317	12,315	15,261	18,156
UL-450M-108BHVN	2,898	5,738	8,521	11,250	13,924	16,545
HiT-H455CE-BF	2,944	5,808	8,594	11,305	13,942	16,507
SPDG440-N108M10	2,823	5,590	8,301	10,959	13,565	16,118
Difference, best to worst	+358	+711	+1,057	+1,397	+1,731	+2,059

Ranks 1 to 5 shown. The remaining 3 module(s) are in the table on page 1.

04 · WHAT DRIVES EACH SCORE



Ranks 1 to 5 shown. The remaining 3 module(s) are scored in the table above.

30-year yield · 45% Cost per kWh · 40% Warranty · 15%

05 · HOW EACH FIGURE IS BUILT

1 Annual yield
Panel watts times the installation baseline of 1,450 kWh/kWp, times a temperature factor from the module's own coefficient at 58 °C, times whatever degradation has left that year.

2 Degradation
Each module ages at its own datasheet rate - JAM54D40-460/LB loses 1% in year one, then 0.4% a year. Where a manufacturer publishes no curve, the 2% / 0.55% convention is used.

3 Cost per kWh
Offer price divided by the thirty annual yields added together. The only figure that lets a dearer module win, and often it does.

4 Score
A 0-100 composite: lifetime energy 45%, cost per kWh 40%, warranty 15%, each normalised across this report's modules. A dimension they all tie on splits evenly.

⚠ What this report does not model

Energy price inflation, inverter and installation cost, local irradiance, weather, shading, or a degradation curve worse than the datasheet promises. Prices were entered by whoever requested this report, not quoted or verified by ComparePV. This compares modules against each other, not a full system business case.

06 · TERMS USED IN THIS REPORT

Cost per kWh (LCOE)
Offer price divided by lifetime yield. What one kilowatt-hour from this module actually costs. Lower is better.

Tc Pmax
Temperature coefficient of maximum power, %/°C. How much output drops per degree above 25 °C. Smaller is better in heat.

Baseline yield
Energy one kWp produces per year. Set by installation type: ground mount around 1,100, pitched equator-facing 1,050, east-west 950.

Score
Relative ranking of this offer within this set only. The same module at the same price scores differently against different competition.

The live version stays online

Change the temperature, the installation type or the prices and the comparison recomputes. Anonymous and shareable.

comparepv.com/panel-report/62b47647-161a-4509-a5f5-32b776fb5f67