

# 520 Watt Ultralight PV Module

## 144 Half Cell Monocrystalline PERC Module

DF520J-12x12UW



### Ultralight Technology

Aerospace polymer composite module with back rail weighs just 24.5 pounds—nearly 60% lighter than conventional glass-framed modules.



### Proven Mono PERC Cells

Utilizing trusted Monocrystalline PERC cells, we deliver efficiencies and lifetime performance rivaling other solar modules.



### Pre-integrated Back Rail

Composite back rail enables seamless integration into traditional solar mechanical mounting systems with no module-level grounding required.



### Durability Standards & Certifications

The first glass-free laminated solar panel to pass the same durability tests as conventional glass panels, including IEC 61215:2016, PID, and salt mist level 8 tests. Certified to UL 61730, UL 2703, and CAN/CSA-C22.2 No. 61730.



## PREMIUM PRODUCT WARRANTY

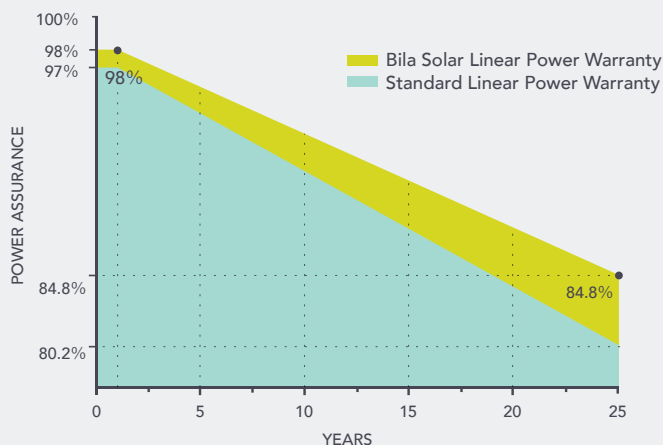
**12 Years**

Product Materials & Workmanship Warranty\*

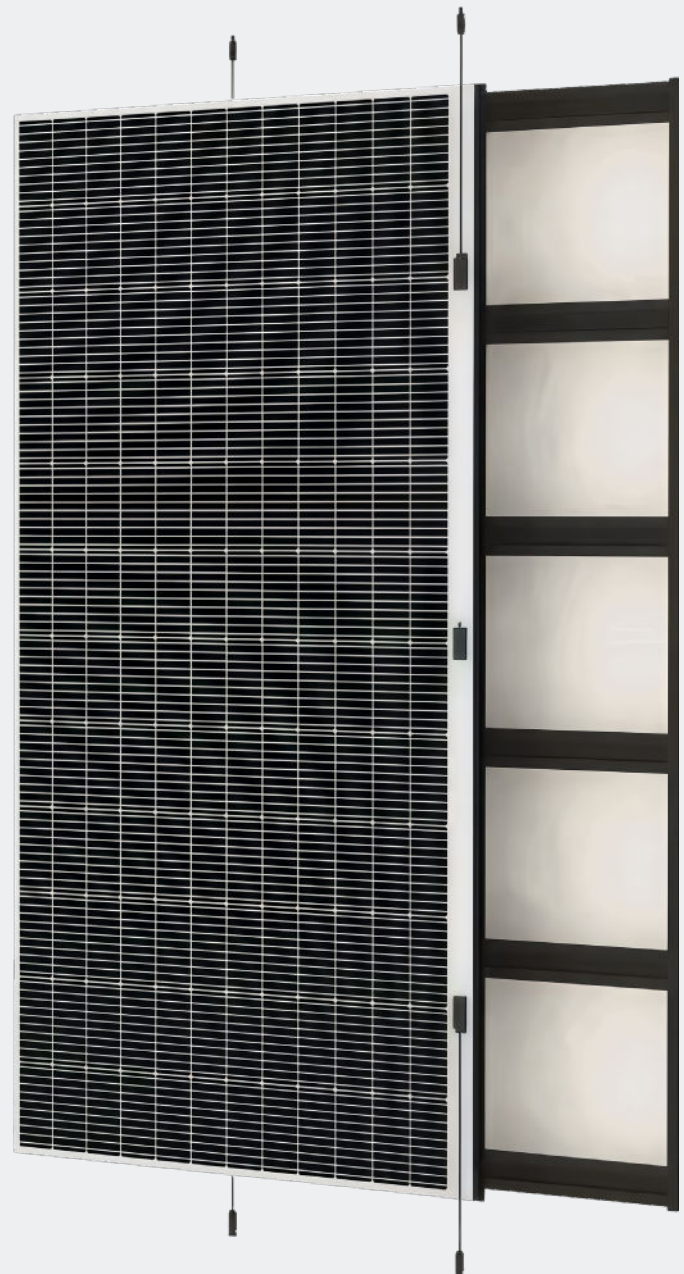
**25 Years**

Linear Power Performance Warranty\*

1st Year degradation <2%, annual degradation <0.45% per year.



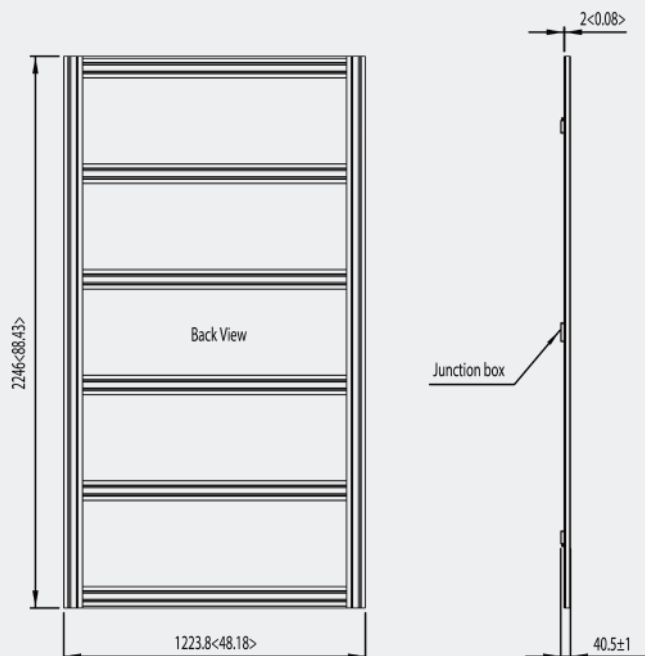
\*According to the applicable Bila Solar, Inc. Limited Product Warranty.



### Power Characteristics

Power Output Range	520 W
Power Tolerance	0/+5 W

Caution: Read installation manual before using the product. Specifications included in this datasheet are subject to change without notice. © 2025 Bila Solar, Inc. All rights reserved.



## Mechanical Characteristics

Solar Cell	Monocrystalline silicon, 182 mm half cell
Number of Cells	144 (12×12)
Module Dimensions	2246×1223.8×25 mm (88.4×48.2×.98 inches)
Weight	11.1 kg (24.5 lbs)
Maximum Load Rating	2400Pa (+/-) or 50 lb/ft <sup>2</sup>
Backsheet	White
Frame	Frameless with back rail
J-Box	IP 68 Rated
Output Cables	Photovoltaic cable 4.0 mm <sup>2</sup> , (+)450/(-)450 mm (17.7 in)
Connector	Stäubli EVO-2A

## Electrical Characteristics

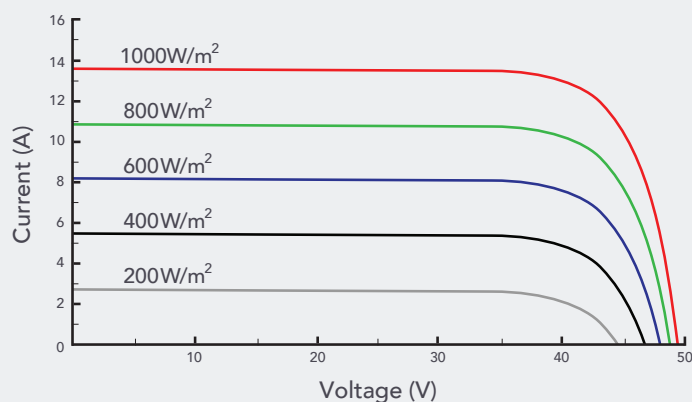
**STC:** Irradiance 1000W/m<sup>2</sup>, Cell Temperature 25°C, AM=1.5. Tolerances of P<sub>max</sub>, V<sub>oc</sub> and I<sub>sc</sub> are within ±5%

Maximum Power (P <sub>max</sub> )	520 W	515 W	510 W	505 W
Maximum Power Voltage (V <sub>mp</sub> )	42.26 V	42.06 V	41.81 V	41.58 V
Maximum Power Current (I <sub>mp</sub> )	12.31 A	12.26 A	12.21 A	12.16 A
Open-Circuit Voltage (V <sub>oc</sub> )	49.54 V	49.34 V	49.14 V	48.94 V
Short-Circuit Current (I <sub>sc</sub> )	13.56 A	13.51 A	13.46 A	13.41 A
Module Efficiency (%)	19.3	19.2	19.0	18.8
Operating Temperature	-40° to 85°C			
Maximum System Voltage	1500 V DC			
Maximum Series Fuse Rating	25 A			
Application Class	Class A			
Power Tolerance	0/+5 W			

## DF Back Rail (profile)



## I-V Curve (520 W)



## Temperature Characteristics

Nominal Module Operating Temperature (NMOT)	41±2°C
Temperature Coefficient of P <sub>max</sub>	-0.34%/°C
Temperature Coefficient of V <sub>oc</sub>	-0.26%/°C
Temperature Coefficient of I <sub>sc</sub>	0.033%/°C

## Packaging Configuration

	20' GP	40' HC
Modules Per Pallet	34	34
Pieces Per Container	136	272

DF520J-12x12UW\_v2.3 (April 2025)