

# DNA™ 144 Bifacial

Solar for Innovators

Residential | Commercial | Utility

## Designed & Engineered in Silicon Valley

450W | 445W | 440W

Our DNA Split-cell Series impressively combines advanced technologies to maximize performance. Produce up to 30% more energy with the bi-facial rear side generation. Our patented DNA, Dual Nano Absorber, technology allows for panel to harvest energy from all directions and operate exceptionally in high heat temperatures.



Produce up to 30% more energy with rear-side generation



Advanced split cell technology with 9 ultra-thin busbars allows for less resistance and more photon capture



Ideal solution for applications affected by shading



All-black design for pristine aesthetics  
No excessive silver bussing or ribbons



Robust product design is resilient in extreme weather. Up to 5400 Pa snow load and 6200 Pa windload



30 Year  
Warranty

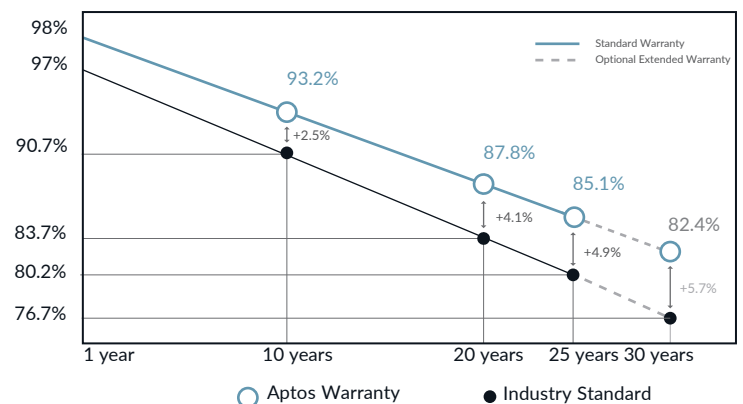
3X IEC  
Standards

RETC Top  
Performer



3140 De La Cruz Blvd., Ste  
200 Santa Clara, CA 95054  
[www.aptosolar.com](http://www.aptosolar.com)  
[info@aptosolar.com](mailto:info@aptosolar.com)

## Linear Performance Warranty





## Electrical Specifications

	DNA-144-BF26-440W	DNA-144-BF26-445W	DNA-144-BF26-450W
STCrated Output $P_{mpp}$ (W)	440W	445W	450W
Module Efficiency	20.21%	20.42%	20.65%
Open Circuit Voltage $V_{oc}$ (V)	49.9	50.1	50.3
Short Circuit Current $I_{sc}$ (A)	11.33	11.40	11.47
Rated Voltage $V_{mmp}$ (V)	41.0	41.2	41.4
Rated Current $I_{mmp}$ (A)	10.74	10.83	10.90

Standard Test Conditions for front-face of panel: 1000 W/m<sup>2</sup>, 25°C, measurement uncertainty <3%

## Temperature Coefficients

Temperature Coefficients $P_{mmp}$	-0.36%
Temperature Coefficients $I_{sc}$	+0.05%/°C
Temperature Coefficients $V_{oc}$	-0.29%/°C
Normal Operating Cell Temperature (NOCT)	44°C

## Test Operating Conditions

Maximum Series Fuse	20A
Maximum System Voltage	1,000 VDC (UL&IEC)
Maximum Load Capacity (Tested to UL 1703)	5400 Pa Snow Load/ 6200 Pa Wind Load
Fire Performance Class	Class C/Type 1

## Packaging Configuration

Number of Modules per Pallet	30
Number of Pallets per 40ft. Container	22
Pallet Dimensions	2110 X 1120 X 2365
Pallet Weight (kg)	749
Container Weight (kg)	16478

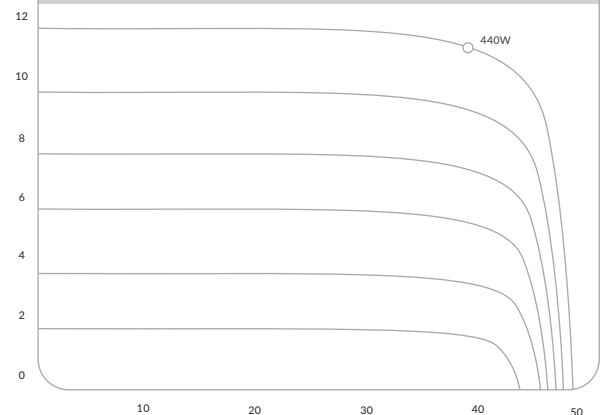
## Certifications



## Mechanical Properties

Cell Type	Monocrystalline
Glass	3.2mm, anti-reflection coating, high transmission, low iron, tempered glass
Frame	Anodized Aluminum Alloy
Junction Box	IP68
Dimensions	2095 X 1039 X 35mm
Output Cable	4mm <sup>2</sup> (EU)12AWG,39.37in.(1200mm)
Weight	53.13lbs.(24.1kg)
Cable Length	1200mm
Encapsulant	POE

## I-V Curve



## Bifacial Output

$P_{mmp}$ (W) at STC	440	435	430
Bi-facial Boost 5%	462	456	451
Bi-facial Boost 10%	484	478	473
Bi-facial Boost 15%	505	500	495