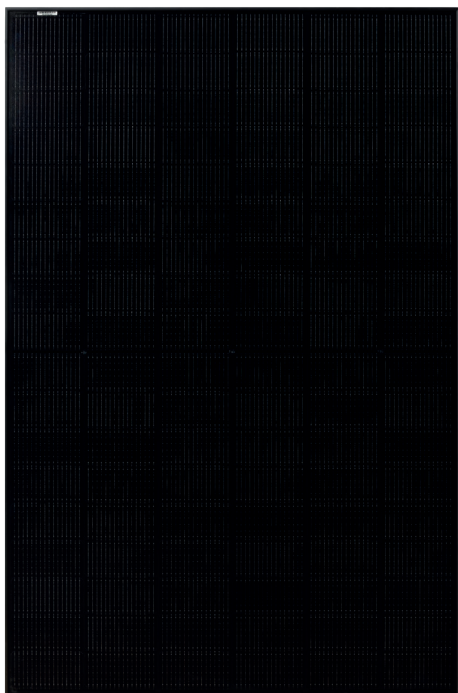


JLSDG96RGxxxW
440 - 460

FullBlack - Bifacial

0~+3W Positive power tolerance | **23,02%** Maximum efficiency


EFFICIENCY, DURABILITY, AND DESIGN COMBINED IN A HIGH-PERFORMANCE MODULE.

The PromaX 460Wc FullBlack module from JNL Solar combines advanced N-TOPCon technology with a sleek design to deliver optimal performance and seamless integration. With an energy efficiency of 23.02%, it ensures maximum output, even under low-light conditions.

Its elegant and discreet FullBlack design, paired with a robust double-glass structure, makes it an ideal solution for residential and commercial rooftops. Built to withstand extreme loads (5400 Pa snow, 2400 Pa wind), it is designed for long-term durability.



A sleek, elegant design that blends in perfectly with the roof - an all-black photovoltaic module from cell to frame.



Efficient & Low-Maintenance: Our JNL module boosts energy with over 80% bifaciality and self-cleaning glass



Guaranteed Performance: Our modules maintain up to 89.4% energy output for 25 years and 87.4% for 30 years.



High Reliability and Efficiency: N-type components with reduced LID/LETID attenuation, 23.02% efficiency, and improved low-light performance.



High conversion efficiency thanks to high-quality modules and advanced cell technology.



Enhanced PID Resistance and Protection: Our rigorous production process minimizes PID risk and protects against hotspots, with a power tolerance of 0 to +3%.



Ideal for private or commercial installations. High power output reduces installation costs.



High reliability thanks to rigorous quality control. More than 30 in-house tests (UV, HF, and many others). Our tests go beyond certification requirements.



Our panels are tested and certified to withstand extreme environmental conditions: wind loads (2400 Pa) and snow loads (5400 Pa).



MECHANICAL DATA

Dimensions	1762×1134×30mm (with frame)
Weight	23.8kg
Cells	N type Mono-Crystalline , 105x182,2mm
Glass	(F) 2.0mm ultra clear embossed double layer colorless glass (B) 2.0mm black mesh semi-tempered glasst
Junction box	IP68
Cable	4mm², symmetrical lengths 1100mm
Connector	MC4 Compatible IP68
Number of cells	96cells (Half-Cell)

ELECTRICAL DATA (parameters at standard test conditions)

TYPICAL TYPE		440W	445W	450W	455W	460W
Max Power	P_{max}	440	445	450	455	460
Max Power Voltage	V_{mp}	29,46	29,69	29,93	30,16	30,39
Max Power Current	I_{mp}	14,94	14,99	15,04	15,09	15,14
Open Circuit Voltage	V_{oc}	35,28	35,54	35,08	36,06	36,3
Short Circuit Current	I_{sc}	15,82	15,86	15,9	15,94	15,99
Module Efficiency	%	22,02%	22,27%	22,52%	22,77%	23,02%
Power Tolerance		0~+5W				
Max System Voltage		DC 1500V (TUV) / 1500V (UL)				
Maximum Series Fuse Rating		30A				

(STC:AM=1.5, 1000W/m², Cells Temperature 25°C)

ELECTRICAL CHARACTERISTICS with 15% Rear Side Power Gain

TYPICAL TYPE		440W	445W	450W	455W	460W
Max Power	P_{max}	506,00	511,75	517,50	523,25	529,00
Max Power Voltage	V_{mp}	29,46	29,69	29,93	30,16	30,39
Max Power Current	I_{mp}	17,18	17,24	17,29	17,35	17,41
Open Circuit Voltage	V_{oc}	35,28	35,54	35,80	36,06	36,30
Short Circuit Current	I_{sc}	18,19	18,24	18,29	18,33	18,39

ELECTRICAL PARAMETERS AT NMOT TEST CONDITIONS

TYPICAL TYPE		440W	445W	450W	455W	460W
Max Power	P_{max}	332,50	336,50	340,70	344,90	348,00
Max Power Voltage	V_{mp}	27,60	27,90	28,10	28,40	28,60
Max Power Current	I_{mp}	12,03	12,06	12,11	12,14	12,15
Open Circuit Voltage	V_{oc}	33,40	33,70	33,90	32,20	34,40
Short Circuit Current	I_{sc}	12,74	12,77	12,80	12,84	12,88

(Irradiance 800W/m², Ambient Temperature 20, AM 1.5, Wind Speed 1m/s)

TEMPERATURE RATINGS

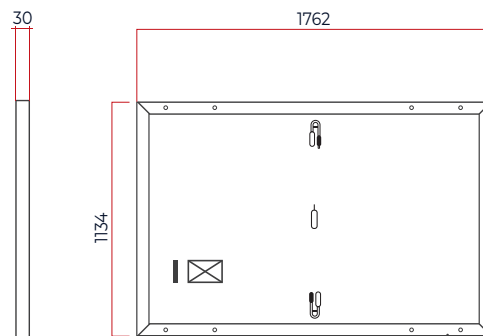
Temperature Coefficient of Isc	0.045%/°C
Temperature Coefficient of Voc	-0.25%/°C
Temperature Coefficient of Pmax	-0.30%/°C
Operational Temperature	-40±85°C
NOCT (Nominal Operating Cell Temperature)	45±2°C

CERTIFICATIONS

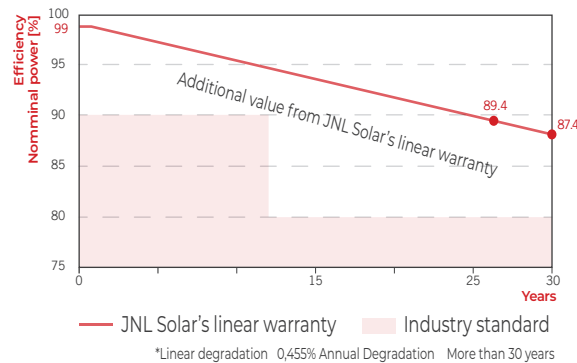
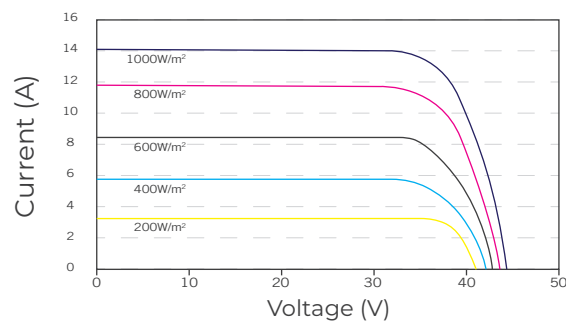
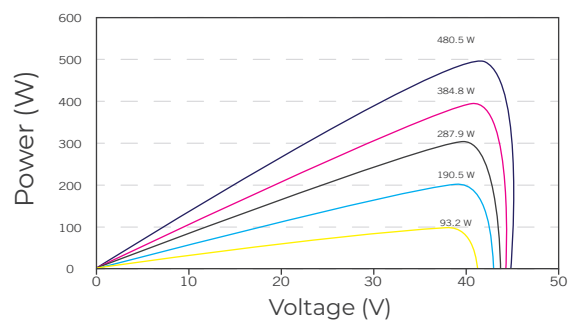


IEC 61215, IEC 61730, IEC 61701, IEC 62716, PPP 58042

DIMENSIONS AND STRUCTURE



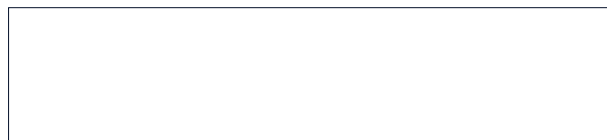
CHARACTERISTICS AT DIFFERENT IRRADIATION



PACKAGING CONFIGURATION

Container	40 HQ
Quantity / pallet	37 pieces
Pallets / container	26 pieces
Quantity / container	962 pieces

AUTHORIZED DEALER



CAUTION: Read the instructions for safety installations before using the product JNLSolar (All rights reserved) © 2024. Specifications included in this data sheet are subject to change without notice