



15 YEARS  
LONGER THAN  
INDUSTRY  
STANDARD OF  
10 YEARS

# LG NeON<sup>®</sup> 2 BiFacial

## LG400/405N2T-J5

19.3%/19.5% efficiency and boost power up to 30% in optimal install conditions

### Awards Received By LG Solar<sup>™</sup>



### THE NeON<sup>®</sup> 2 BiFacial - 405W

The new LG NeON<sup>®</sup> 2 BiFacial has seen many improvements to earlier LG panels, from longer warranties, higher efficiency and lower degradation.

The LG NeON<sup>®</sup> 2 BiFacial module combines the NeON<sup>®</sup> 2 double sided CELLO cell with a clear backsheet. This enables the panel to generate power from both the front and rear of the module. Additional power is generated from the light that is reflected off the roof or ground surface underneath being absorbed by the rear side of the cells of the module. The NeON<sup>®</sup> 2 BiFacial 405W also adopts LG's unique CELLO technology with 12 multi wire busbars to reduce current resistance, enhancing power output and panel reliability.

#### Higher output via tilt frames



In optimised tilt frame installations the 405W BiFacial panel can achieve close to 30% more output from light absorption via the rear of the double sided cell. Higher reflective backgrounds and raised installation environments combined will increase the output far beyond that expected from a conventional monofacial panel.

#### More Power per Square Metre



LG NeON<sup>®</sup> 2 BiFacial 405W are a similar size to many conventional 360W panels. In internal LG tilt frame performance tests the LG NeON<sup>®</sup> 2 BiFacial 405W panel can produce more than the name plate in optimised installation conditions. This means you can get more power per square meter from the NeON<sup>®</sup> 2 BiFacial than many panels on the Australian and NZ markets.

#### 25 Years Product Warranty (Parts & Labour)



The LG product warranty is 15 years longer than the industry standard 10 years and covers 25 years. The Warranty is held by LG Electronics Australia and New Zealand. The warranty includes replacement labour and transport.

#### Improved 25 Year Performance Warranty



The initial degradation of the module has been improved from -3% to -2%, in the 1st year and the annual rate of degradation has fallen from -0.7%/year to -0.35%/ year thereafter. This brings an 89.6% warranted output after 25 years, compared to 80.2% for many competing panels.

## ABOUT LG ELECTRONICS

LG Electronics embarked on a solar energy research programme in 1985, using our vast experience in semi-conductors, chemistry and electronics. In 2013, 2015 and 2016 the LG NeON<sup>®</sup> range won the acclaimed Intersolar Award in Germany. LG Solar has also been voted WINNER Trusted Brands 2020 - SOLAR PANELS by Reader's Digest from over 3,000 Australian consumers surveyed. The NeON 2 BiFacial represents a new development of the LG NeON<sup>®</sup> range and this particular model won the 2016 Intersolar Award in Germany, which demonstrates LG Solar's lead in innovation and commitment to the renewable energy industry. With over 200 lesser known brand panels selling in Australia, LG solar panels offer a peace of mind solution, as they are backed by a very large, diversified company with over 100 subsidiaries.

## KEY FEATURES



### Proven Field Performance

LG has been involved in a number of comparison tests of the LG panels against many other brand panels. LG NeON<sup>®</sup> 2 BiFacial models are consistently among the best performing in these tests.



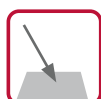
### Australia Wide Partner Network

LG Solar has an Australia wide partner network which will support and maintain your system in years to come. Help and advice is only one phone call away.



### Strict Quality Control Reliable for the Future

The quality control of LG world-class solar production is monitored and improved to Six Sigma quality control standards, which includes 500+ monitoring points to effectively maintain and improve our uncompromising quality.



### Multi Anti-reflective Coatings Increase Output

LG Solar™ is using an anti-reflective coating on the panels glass as well as on the cell surface to ensure more light is absorbed in the panel and not reflected. More absorbed light means more electricity generation.



### Improved High Temperature Performance

Solar panels slowly lose ability to generate power as they get hotter. LG NeON<sup>®</sup> 2 BiFacial, has an improved temperature co-efficient to standard modules, which means in hot weather LG NeON<sup>®</sup> 2 panels will deliver higher output.



### "CELLO" Technology Increases Power

"CELLO" Multi wire busbar cell technology lowers electrical resistance and increases panel efficiency, giving more power per panel and provides a more uniform look to the panel.



### Low LID

The N-type doping of the NeON<sup>®</sup> cells results in extremely low Light Induced Degradation (LID) when compared with the standard P-type cells. This means more electricity generation over the life of the panel, as the panel degrades less.



### Extensive Testing Programme

LG solar panels are tested up to 2 times the International Standards at our in-house testing laboratories, ensuring a very robust and longer lasting solar module.



### High Wind Load Resistance

LG panels have a strong double walled frame. When it comes to wind forces (rear load) our panel under test withstood a wind load of 3000Pa.



### Double-Sided Cell Structure

In conventional panels the cells produce energy from the front only. The NeON<sup>®</sup> 2 Cell produces energy from both the front as well as the back of the cell. This innovative technology allows the absorption of light from behind the panel which raises the panel's electricity output.



### Enhanced Low Light Performance

LG NeON<sup>®</sup> 2 panels will give better performance under low light, such as early morning or late afternoon compared to many competing panels.



### Automated Production in South Korea

All LG solar panels are manufactured in a custom designed and fully automated production line by LG in Gumi, South Korea ensuring extremely low tolerances. This means great quality and build consistency between panels.

## LG NeON<sup>®</sup> 2 *BiFacial* – INNOVATIVE, CLEVER, EFFICIENT.

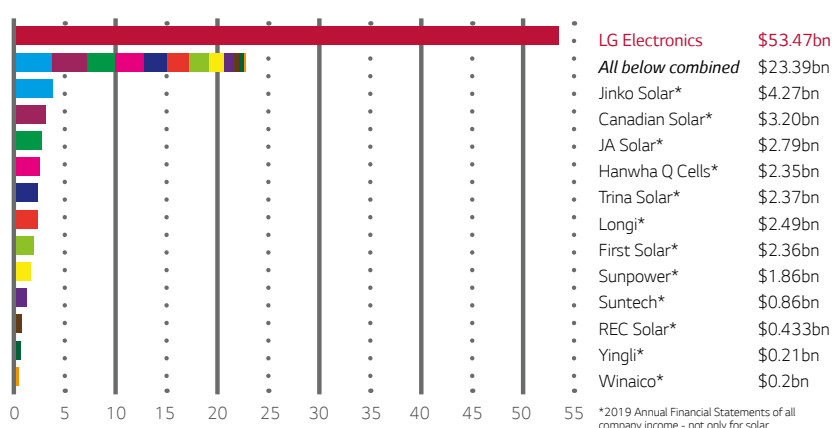
LG NeON<sup>®</sup> 2 *BiFacial* solar modules now offer even more performance. Featuring a classy new design with a total of 72 cells, it is LG's latest module. LG has extended its product warranty from 10 for many other competitor panels to 25 years and improving its linear performance guarantee to at least 89.6% of nominal output at 25 years. The LG NeON<sup>®</sup> 2 *BiFacial* is an excellent choice for high performing long lasting solar systems.

### LOCAL WARRANTY, GLOBAL STRENGTH

LG Solar™ is part of LG Electronics Inc., a global and financially strong company, with over 50 years of experience in technology.

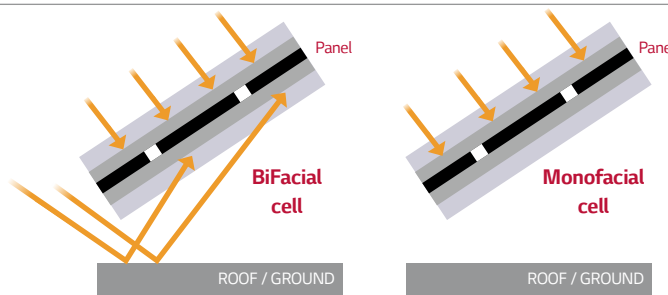
Good to know: LG Electronics Australia Pty Ltd is the warrantor in Australia and NZ for your solar modules. So LG support, via offices in every Australian mainland state and NZ and through our 70 strong Australia wide dealer network, is only a phone call away.

The Warrantor's 2019 Sales in Billions of US Dollars\*



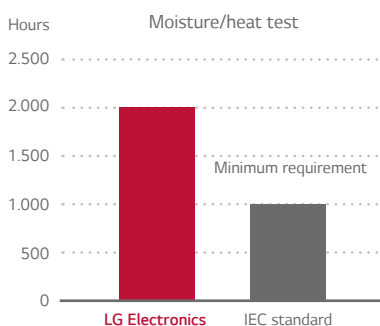
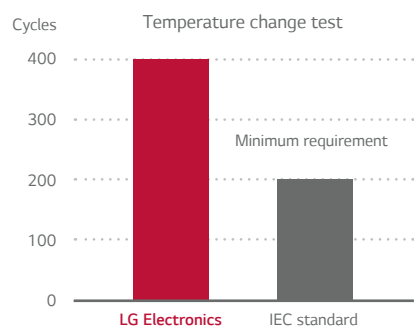
### HIGHER OUTPUT, HIGHER YIELD

In the case of the NeON<sup>®</sup> 2 *BiFacial* the transparent back sheet allows reflected light to reach the rear of the cell increasing electricity production by up to 30% over conventional single sided cell panels.



### EXCELLENT QUALITY, THOROUGHLY TESTED

You can rely on LG. We test our products with at least double the intensity specified in the IEC standard. (International Quality Solar Standard).



### Awards Received By LG Solar™



Our panel range have won a string of Local and International Awards.

### POWERFUL DESIGN, GUARANTEED ROBUST

With reinforced frame design, the LG NeON<sup>®</sup> 2 can under test withstand a front load of 5400 Pa which is the equivalent of 943 kg over the size of the panel. The rear load/wind load of the panel under test is 3000 Pa.



LG offers a 15 year longer product warranty for parts and labour than many competitors 10 years to an impressive 25 years.

**10yrs + 15yrs**



## Mechanical Properties

Cells	6 x 12
Cell Vendor	LG
Cell Type	Monocrystalline / N-type
# of Busbar	12 (Multi Wire Busbar)
Dimensions (L x W x H)	2024 x 1024 x 40 mm
Front Load (test)	5400 Pa
Rear Load (test)	3000 Pa
Weight	20.3 kg
Connector Type	Genuine MC4, IP68 (Male: PV-KST4) (Female: PV-KBT4)
Junction Box	IP68 with 3 bypass diodes
Length of Cables	2 x 1200 mm
Front cover	High transmission tempered glass
Frame	Anodised aluminum

## Certifications and Warranty

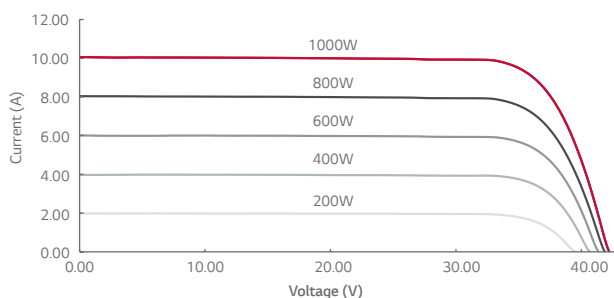
Certifications	IEC 61215-1/-1-1/2:2016, IEC 61730-1/-2:2016, UL1703 ISO 9001, ISO 14001, ISO 50001 OHSAS 18001 IEC 61701:2012 Severity 6 (Salt Mist Corrosion Test) IEC 62716:2013 (Ammonia Test)
Module Fire Rating	Type 1 (UL 1703), Class C (ULC/ORD C1703, IEC 61730)
Product Warranty	25 Years
Output Warranty of Pmax (Measurement Tolerance $\pm 3\%$ )	Linear Warranty <sup>1</sup>

<sup>1</sup> 1) 1st year: 98%, 2) After 1st year: 0.35% annual degradation, 3) 90.08% for 25 years.

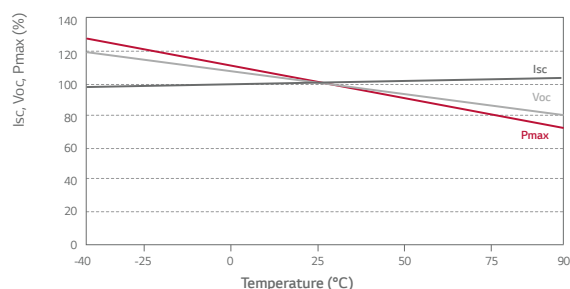
## Temperature Characteristics

NMOT	42 $\pm$ 3 °C
Pmax	-0.36 %/°C
Voc	-0.27 %/°C
Isc	0.03 %/°C

## Current – Voltage characteristics at various irradiance levels



## Current – Voltage characteristics at various cell temperatures



## Electrical Properties (STC<sup>2</sup>)

Module Type	LG400N2T-J5			LG405N2T-J5		
	STC *	BiFi100 **	BiFi200 **	STC *	BiFi100 **	BiFi200 **
Maximum Power Pmax (W)	400	425	450	405	430	455
MPP Voltage Vmpp (V)	41.5	41.5	41.5	41.9	41.9	41.9
MPP Current Impp (A)	9.65	10.24	10.84	9.68	10.26	10.86
Open Circuit Voltage Voc (V)	49.7	49.7	49.7	49.8	49.8	49.8
Short Circuit Current Isc (A)	10.22	10.85	11.48	10.26	10.88	11.51
Module Efficiency (%)	19.3	20.5	21.7	19.5	20.7	22.0
Operating Temperature (°C)	-40 ~ +90					
Maximum System Voltage (V)	1000					
Maximum Series Fuse Rating (A)	20					
Pmax Bifaciality Coefficient (%)	70 $\pm$ 5					
Power Tolerance (%)	0 ~ +3					

\* STC (Standard Test Condition): Irradiance 1000 W/m<sup>2</sup>, Cell Temperature 25 °C, AM 1.5, Measure Tolerance:  $\pm 3\%$

\*\* The electrical properties of BiFi100 and BiFi200 measure under the front side irradiance 1000W/m<sup>2</sup> + (100W/m<sup>2</sup> or 200W/m<sup>2</sup>) \* BiFi Use 100W/m<sup>2</sup> for BiFi100 and 200W/m<sup>2</sup> for BiFi200.

## Electrical Properties (NMOT<sup>3</sup>)

Module Type	LG400N2T-J5			LG405N2T-J5		
	STC	BiFi100	BiFi200	STC	BiFi100	BiFi200
Maximum Power Pmax (W)	300	318	337	304	322	341
MPP Voltage Vmpp (V)	39.0	39.0	39.0	39.4	39.4	39.4
MPP Current Impp (A)	7.69	8.16	8.65	7.72	8.18	8.66
Open Circuit Voltage Voc (V)	46.9	46.9	46.9	47.0	47.0	47.0
Short Circuit Current Isc (A)	8.22	8.72	9.23	8.25	8.75	9.25

\* NMOT (Nominal Module Operating Temperature): Irradiance 800 W/m<sup>2</sup>, ambient temperature 20 °C, wind speed 1 m/s, Spectrum AM 1.5

## Dimensions (mm)

