



15 YEARS LONGER THAN INDUSTRY STANDARD OF 10 YEARS

# LG NeON<sup>®</sup>2 BiFacial

## LG405/410/415N2T-L5

Up to 20.0% efficiency and boost power

### Awards Received By LG Solar™



### THE NeON<sup>®</sup> 2 BiFacial - 415W

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 415W 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 415W 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 415W are a similar size to many conventional 360W panels. In internal LG tilt frame performance tests the LG NeON<sup>®</sup>2 BiFacial 415W 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 -0.33%/ year thereafter. This brings an 90.08% warranted output at 25 years, compared to 80.2% for many competing panels.













# LG NeON<sup>®</sup> 2 BiFacial

## 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.

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 many lesser known brand panels selling in Australia, LG solar panels offer a peace of mind solution, as they are backed by an established global brand with a long local support history.

## KEY FEATURES

 <p><b>Proven Field Performance</b></p> <p>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.</p>	 <p><b>Low LID</b></p> <p>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.</p>
 <p><b>Australia Wide Partner Network</b></p> <p>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.</p>	 <p><b>Extensive Testing Programme</b></p> <p>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.</p>
 <p><b>Strict Quality Control Reliable for the Future</b></p> <p>The quality control of LG world-class solar production is monitored and improved using Six Sigma techniques via 500+ monitoring points to effectively maintain and improve our uncompromising quality.</p>	 <p><b>High Wind Load Resistance</b></p> <p>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.</p>
 <p><b>Multi Anti-reflective Coatings Increase Output</b></p> <p>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.</p>	 <p><b>Double-Sided Cell Structure</b></p> <p>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.</p>
 <p><b>Improved High Temperature Performance</b></p> <p>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.</p>	 <p><b>Enhanced Low Light Performance</b></p> <p>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.</p>
 <p><b>"CELLO" Technology Increases Power</b></p> <p>"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.</p>	 <p><b>Automated Production in South Korea</b></p> <p>LG NeON 2 and NeON R 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.</p>

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

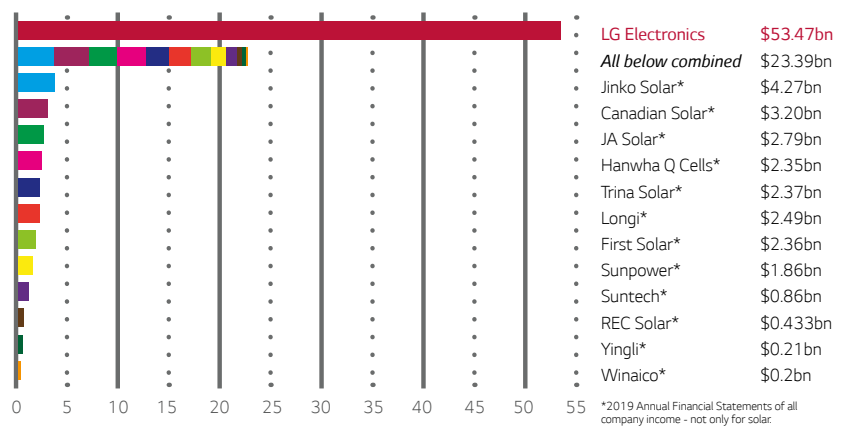
LG NeON<sup>®</sup> 2 BiFacial solar modules now offer even more performance. Featuring a classy new design with a total of 72 cells, it is LG's latest module. LG has extended its product warranty from 10 for many other competitor panels to 25 years and improving its linear performance guarantee to at 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.

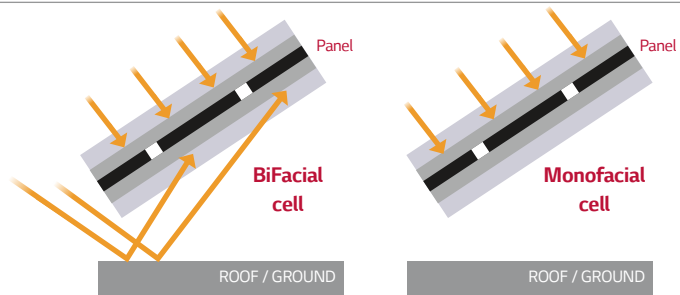
Good to know: LG Electronics Australia Pty Ltd is the warrantor in Australia and NZ for your solar modules. So LG support, via offices in every Australian mainland state and NZ and through our 70 strong Australia wide dealer network, is only a phone call away.

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



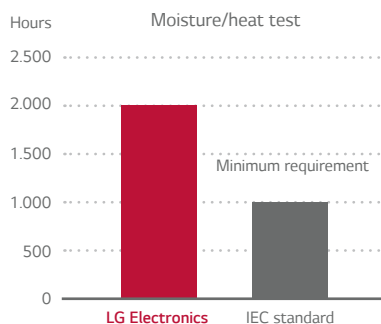
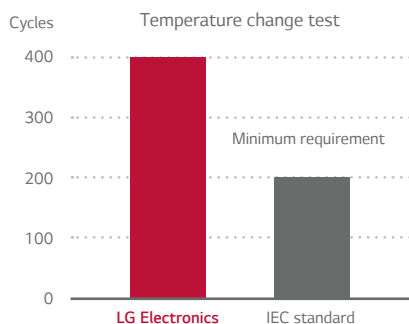
### HIGHER OUTPUT, HIGHER YIELD

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**



# LG NeON<sup>®</sup>2 BiFacial

## 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	21.5 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

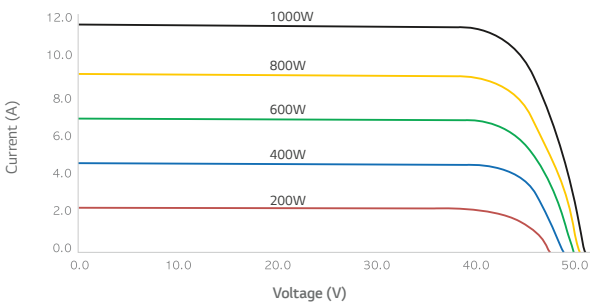
Certifications	IEC 61215-1/-1-1/2:2016, IEC 61730-1/-2:2016, UL1703 ISO 9001, ISO 14001, ISO 50001 OHSAS 18001
Module Fire Rating	Class C (UL790)
Product Warranty	25 Years
Output Warranty of Pmax (Measurement Tolerance ± 3%)	Linear Warranty <sup>1</sup>

<sup>1</sup> 1) 1st year 98%, 2) After 1st year: 0.33% annual degradation, 3) 90.08% at 25 years.

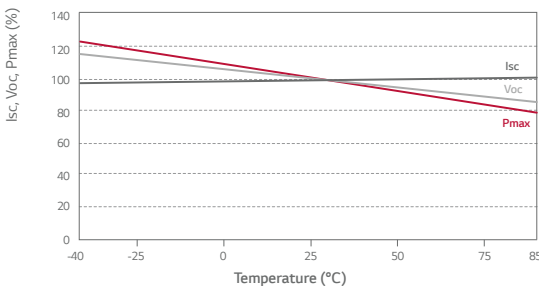
## Temperature Characteristics

NMOT	42 ± 3 °C
Pmax	-0.35 %/°C
Voc	-0.26 %/°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	LG405N2T-L5			LG410N2T-L5			LG415N2T-L5		
	STC*	BiFi100**	BiFi200**	STC*	BiFi100**	BiFi200**	STC*	BiFi100**	BiFi200**
Maximum Power Pmax (W)	405	430	460	410	435	465	415	440	470
MPP Voltage Vmpp (V)	41.5	41.5	41.5	41.9	41.9	41.9	42.3	42.3	42.3
MPP Current Impp (A)	9.76	10.36	11.08	9.79	10.38	11.10	9.82	10.40	11.11
Open Circuit Voltage Voc (V) (Voc, ±5%)	49.3	49.3	49.3	49.4	49.4	49.4	49.5	49.5	49.5
Short Circuit Current Isc (A) (Vsc, ±5%)	10.42	11.06	11.83	10.46	11.10	11.86	10.50	11.12	11.88
Module Efficiency (%)	19.5	20.7	22.2	19.8	21.0	22.4	20.0	21.2	22.7
Operating Temperature (°C)***	-40 ~ +85								
Maximum System Voltage (V)	1000								
Maximum Series Fuse Rating (A)	20								
Pmax Bifaciality Coefficient (%)	75 ± 5								
Power Tolerance (%)	0 ~ +3								

\* STC (Standard Test Condition): Irradiance 1000 W/m<sup>2</sup>, Cell Temperature 25 °C, AM 1.5.

\*\* 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.

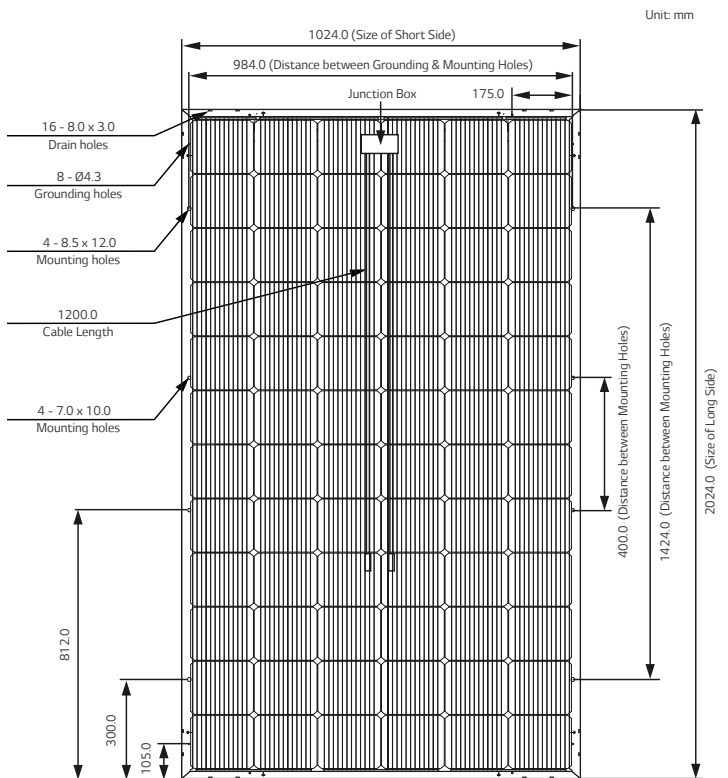
\*\*\* The operating ambient temperature of these devices may exceed 40 °C at full load for all wire sizes if is determined suitable in the field use application.

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

Module Type	LG405N2T-L5			LG410N2T-L5			LG415N2T-L5		
	STC	BiFi100	BiFi200	STC	BiFi100	BiFi200	STC	BiFi100	BiFi200
Maximum Power Pmax (W)	303	322	345	307	326	348	311	330	352
MPP Voltage Vmpp (V)	39.0	39.0	39.0	39.4	39.4	39.4	39.8	39.8	39.8
MPP Current Impp (A)	7.78	8.26	8.84	7.80	8.28	8.85	7.83	8.29	8.86
Open Circuit Voltage Voc (V)	46.5	46.5	46.5	46.6	46.6	46.6	46.7	46.7	46.7
Short Circuit Current Isc (A)	8.38	8.89	9.52	8.41	8.92	9.54	8.44	8.94	9.55

<sup>3</sup> 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)



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Product specifications are subject to change without prior notice.  
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