

Innovation for a Better Life

# LG SOLAR

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<http://www.lg.com/global/business/solar>

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\* The contents can be changed without notice.

# Technological innovation is paramount for the growth of sustainable renewable energy.

The advancement of solar technology and affordability paired with the positive public view led to an exponential growth for the industry. Since photovoltaic (PV) modules have an average lifespan of 25 years, choosing a robust product from a trusted brand is paramount for all consumers. Through 30 years of diligent solar research and development, LG continuously leads the industry with PV modules that are unparalleled in quality and performance. Additionally, LG's record is complimented by the stability of its veteran brand making LG the reliable partner for everyone.



**Innovation for a Better Life**  
Best Partner for Your Life

# LG SOLAR

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**Why LG Solar?**

- Brand Power
- Leading Technology
- Quality

**LG NeON® Series**

- LG NeON® R / LG NeON® R Black
- LG NeON® 2 / LG NeON® 2 Black
- LG NeON® 2 BiFacial

**LG MonoX® Plus**

- LG MonoX® Plus
- LG MonoX® Plus (For Floating System)

**Reference**

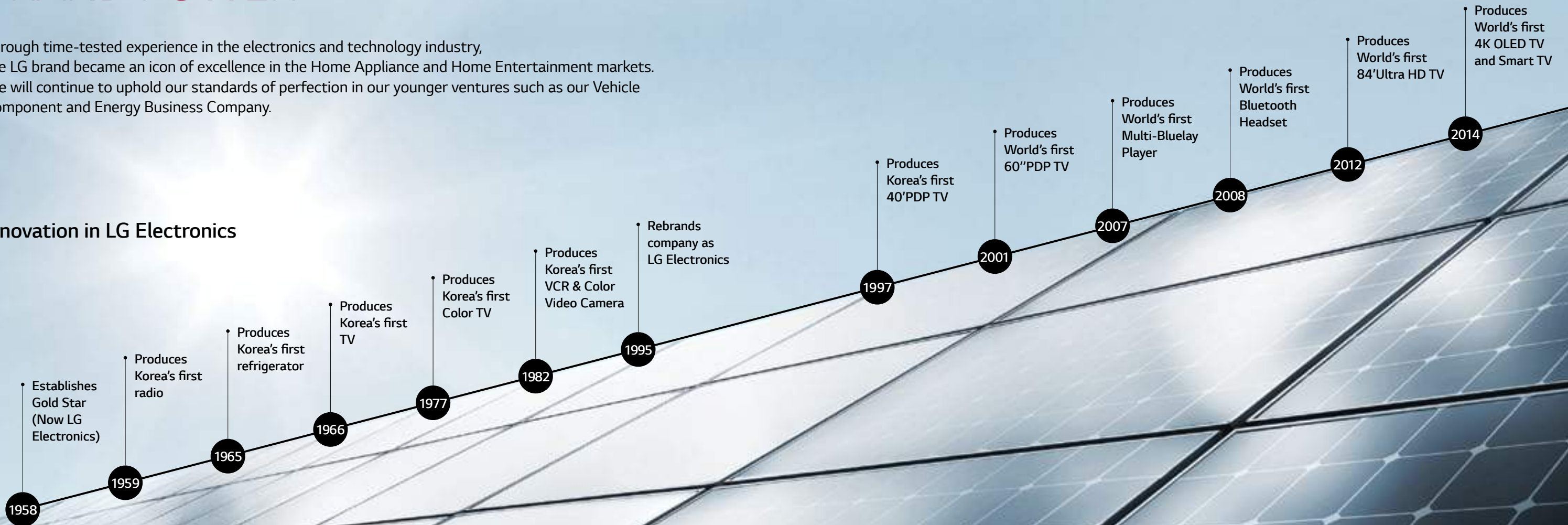
**Contact Us**



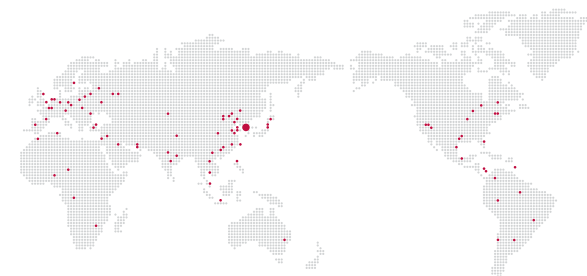
# BRAND POWER

Through time-tested experience in the electronics and technology industry, the LG brand became an icon of excellence in the Home Appliance and Home Entertainment markets. We will continue to uphold our standards of perfection in our younger ventures such as our Vehicle Component and Energy Business Company.

## Innovation in LG Electronics



LG Electronics plays an active role in world markets with its assertive global business policy. As a result, LG Electronics controls 125 local subsidiaries worldwide, with roughly 77,000 executives and employees.



REVENUE	Workforce	World Presence
\$47.92 billion (2016)	77,000	125 Global Operations

\* LGE consolidated basis, Exchange Rate KRW 1,155.47 per USD

## LG Smart Energy Solutions

LG has developed a complete energy management system that integrates solar energy production, storage, and control that can be complimented with LG high efficiency appliances.

### SOLAR

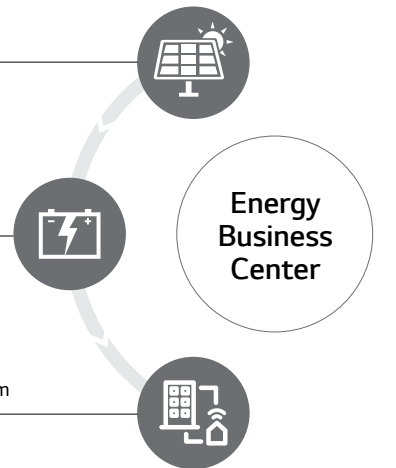
High efficiency module that generates more energy

### ESS Energy Storage System

Stable electricity flow with high system efficiency

### EMS Energy Management System

Ultimate building control and energy management solution

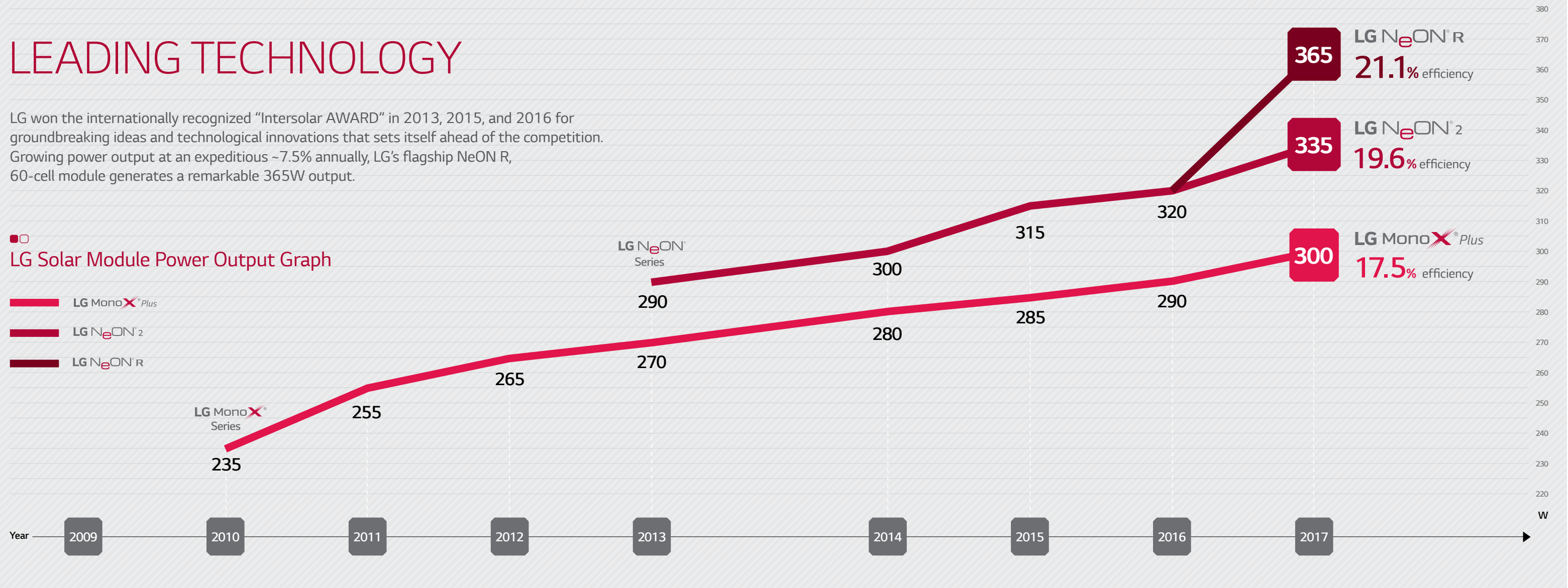


# LEADING TECHNOLOGY

LG won the internationally recognized "Intersolar AWARD" in 2013, 2015, and 2016 for groundbreaking ideas and technological innovations that sets itself ahead of the competition. Growing power output at an expeditious ~7.5% annually, LG's flagship NeON R, 60-cell module generates a remarkable 365W output.

## LG Solar Module Power Output Graph

- LG MonoX<sup>®</sup> Plus
- LG NeON<sup>®</sup> 2
- LG NeON<sup>®</sup> R



## LG Solar Awards & Innovation in Technology

**2013**

**N-type Cell**

N-type cells convert sunlight into energy more efficiently than P-type cells. Additionally, the rear side of the cell also generates energy

**2015**

**Cello Technology**

Cello technology uses 12 wires compared to 4 ribbons allowing for a higher current distribution. Cello's cylindrical wiring scatters the light of various angles more efficiently than conventional flat wiring.

**2016 / 2017**

**Bifacial Product**

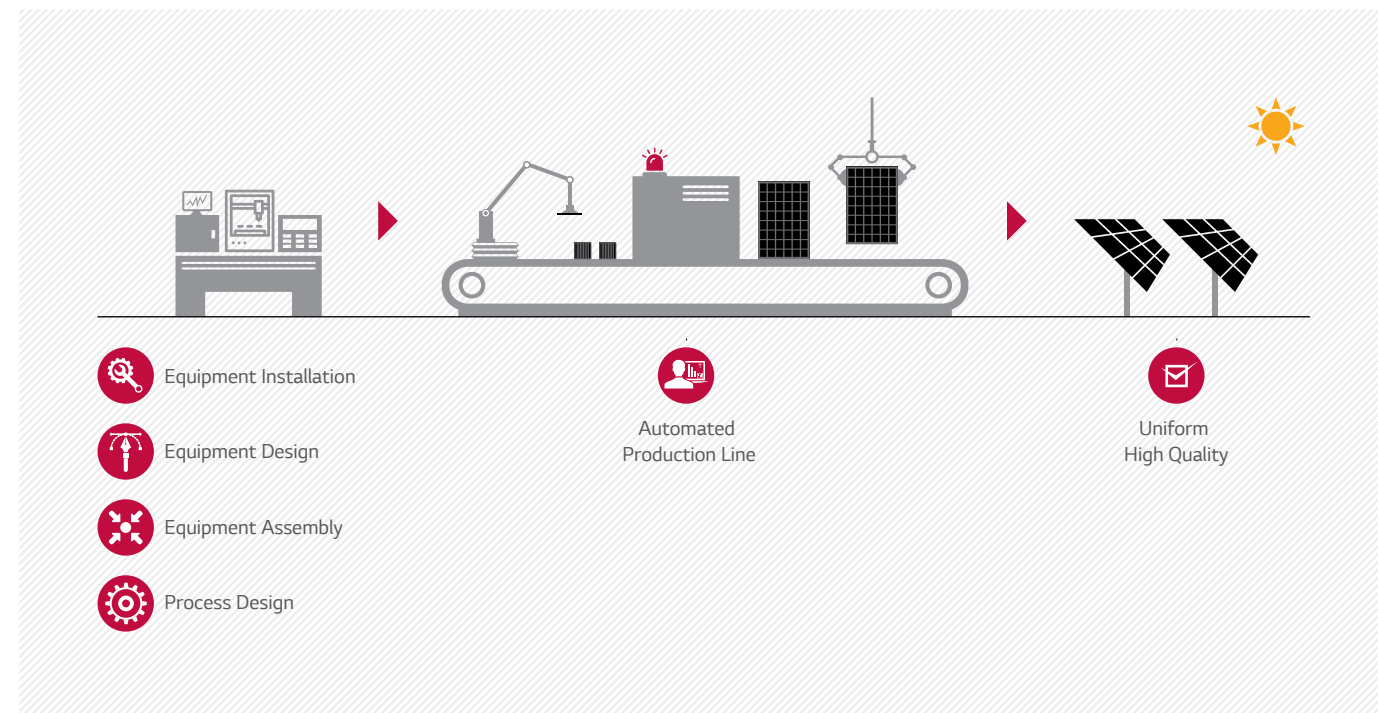
NeON<sup>®</sup> 2 BiFacial is capable of generating energy from the module front and rear sides allowing up to 30% more energy generation than standard PV module.

# QUALITY

LG has always built innovative, high quality products and LG modules uphold the same standards. LG PV modules remain robust and efficient in environments with high temperatures or low irradiance. This combined with a low annual degradation and longer warranty than the market average, warrants LG quality and consumer confidence.

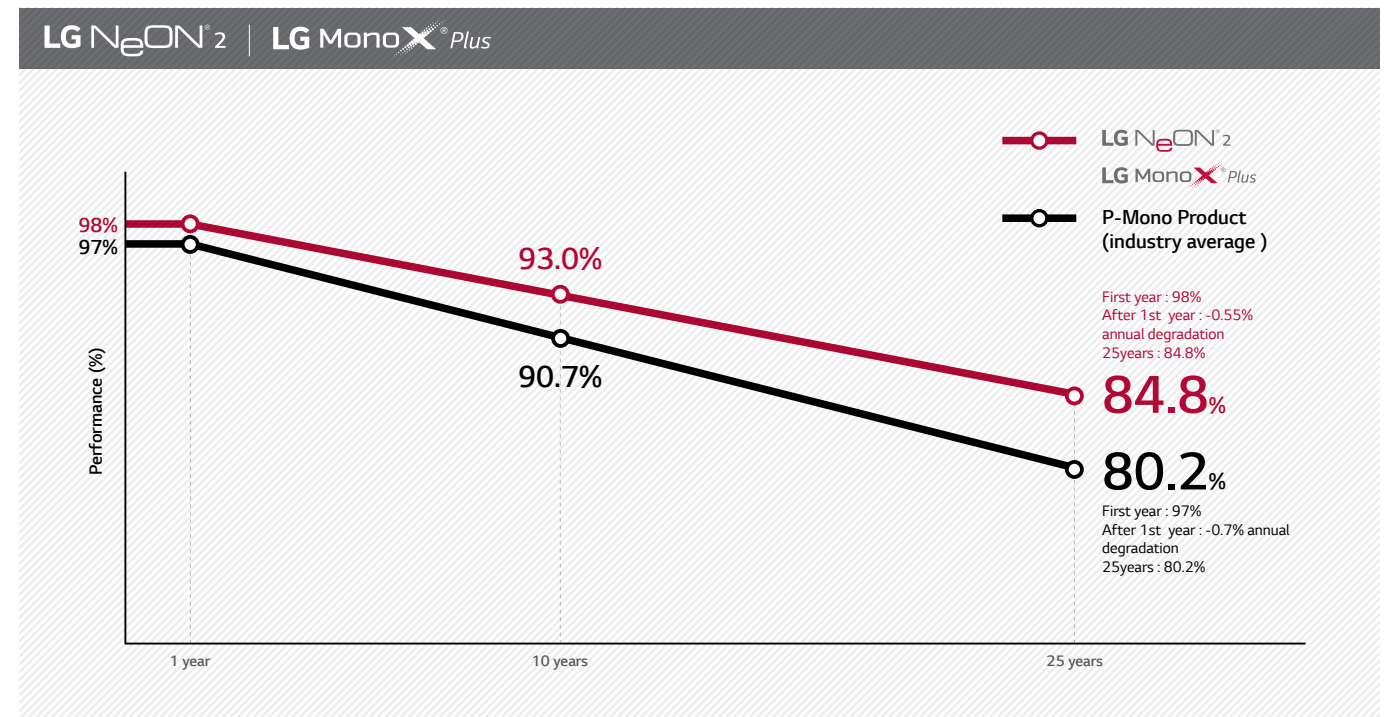
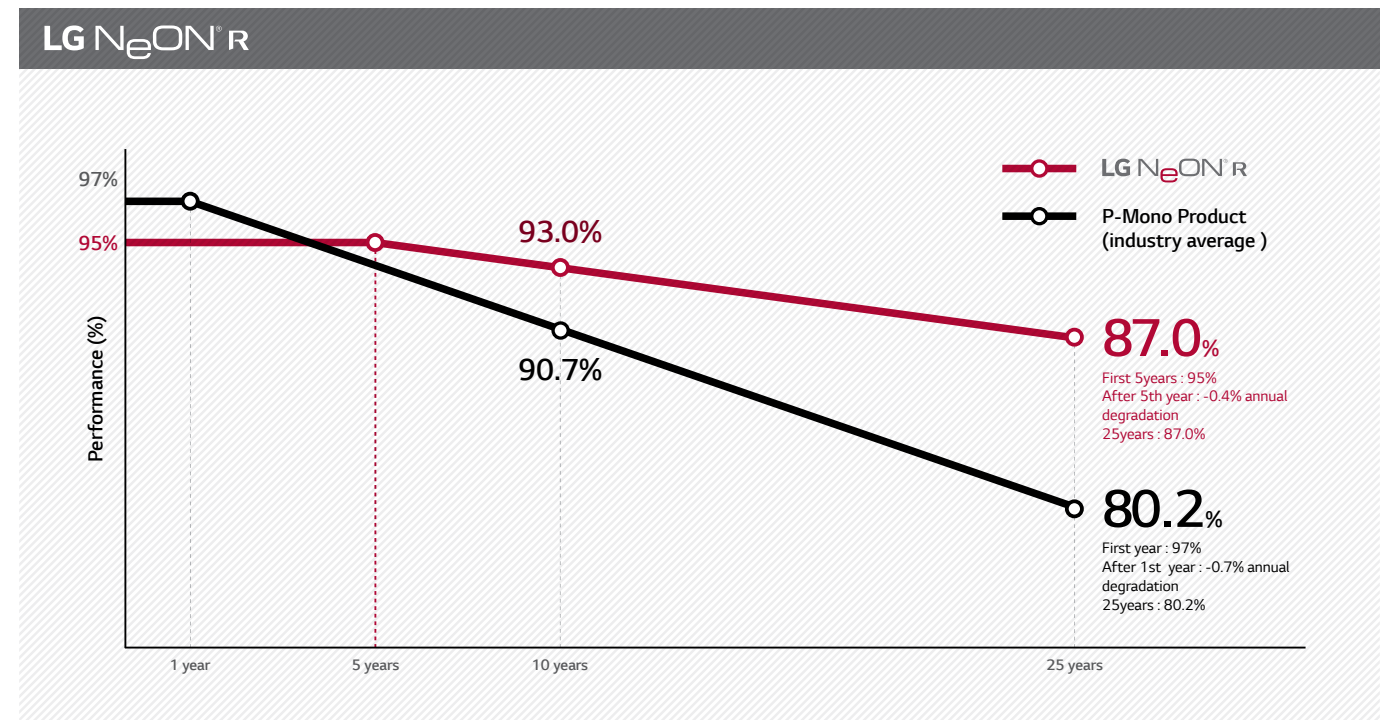
## Operational Excellence & Testing Facilities

LG PV modules are built on an automated production line in order to maintain the utmost precision and quality, And LG is the first corporation in the world to operate in-house solar testing facilities that are certified by the 4 major inspection and certification authorities.



## Superior Performance Warranty

LG offers industry top-level warranty on output providing customers with peace of mind when generating electricity



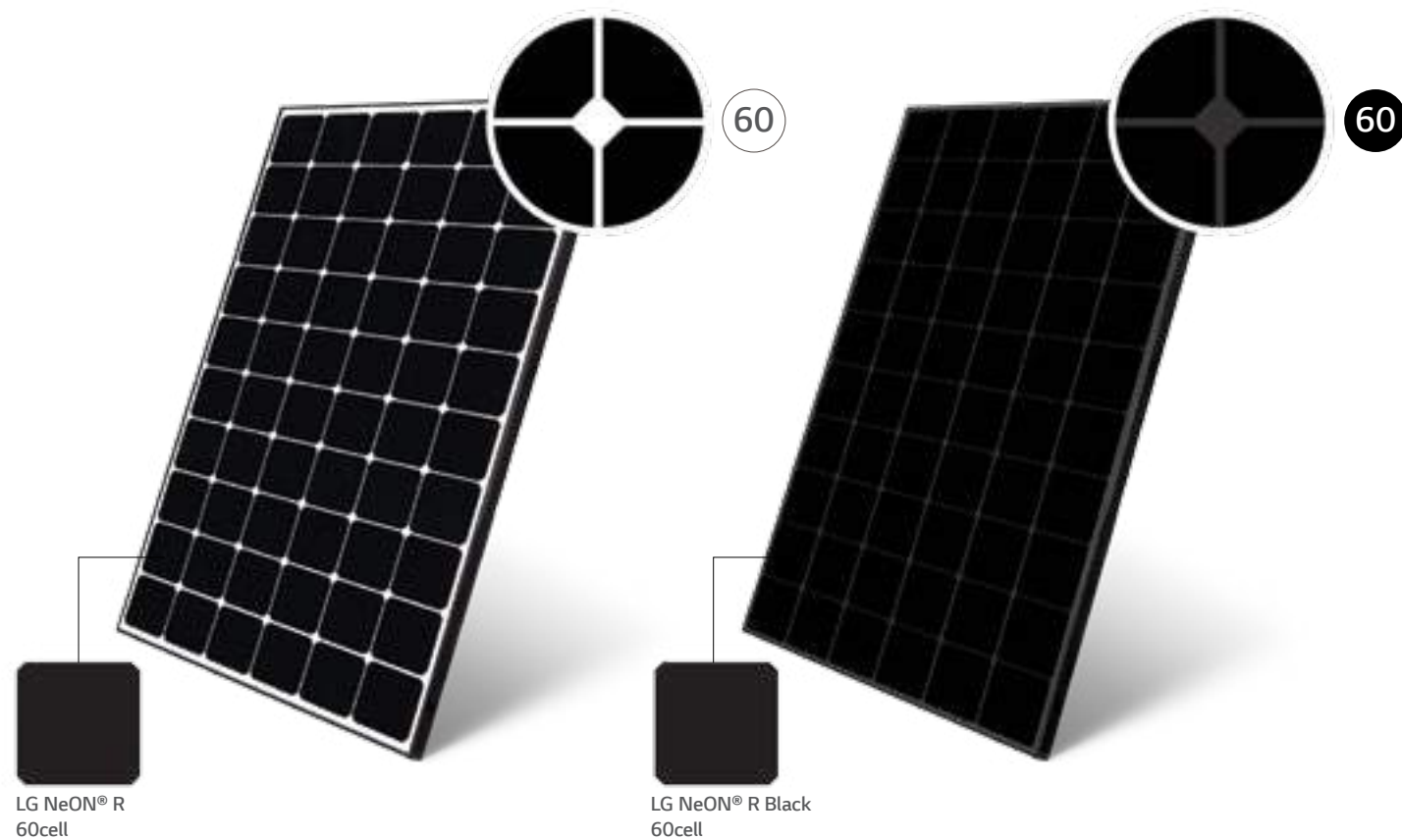


# LG NeON® R | LG NeON® R Black



## The Apex of Solar Generation

The LG NeON® R is LG's premier module armed with the highest and most efficient energy generation technology that LG has ever produced. LG NeON® R not only generates the most energy from LG's lineup but is also the most stable in all environmental conditions. The LG NeON® R Black is the sleek version of the LG NeON® R built to astatically compliment a residential rooftop.



LG NeON® R 60cell

LG NeON® R Black 60cell



## Technical Data

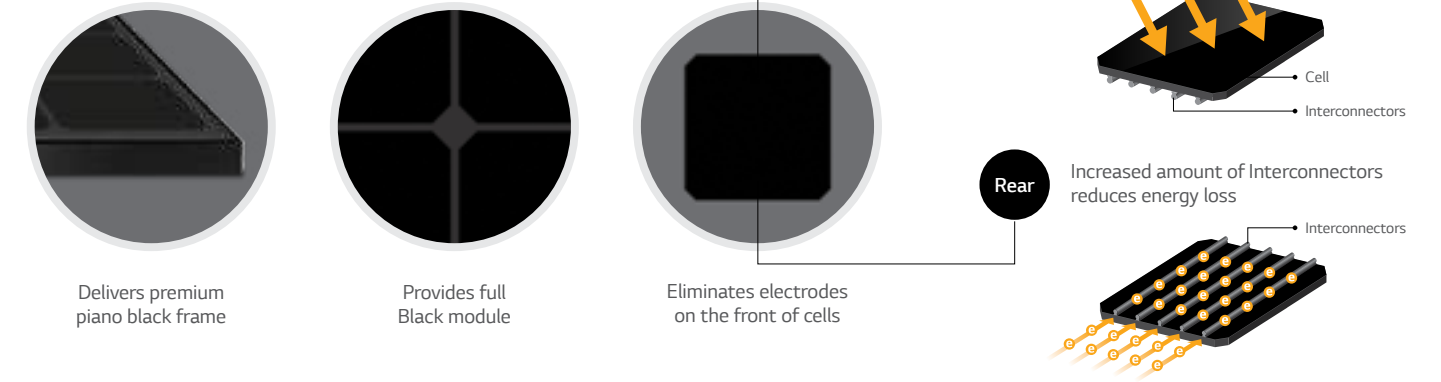
Product Model	LG NeON® R 60cell			LG NeON® R Black 60cell		
Cell Type	Monocrystalline / N-type			Monocrystalline / N-type		
# of Cells	60cell (6 x 10)			60cell (6 x 10)		
Maximum Power	365W	360W	355W	350W	350W	340W
Module Efficiency	21.1%	20.8%	20.6%	20.3%	20.3%	19.7%
Dimensions (L x W x H)	1,700 x 1,016 x 40 mm			1,700 x 1,016 x 40 mm		
Weight	18.5kg			18.5kg		
Output Warranty of Pmax	Linear Warranty (First 5 years : 95%, After 5th year : 0.4% annual degradation, 25years : 87%)					



## Features

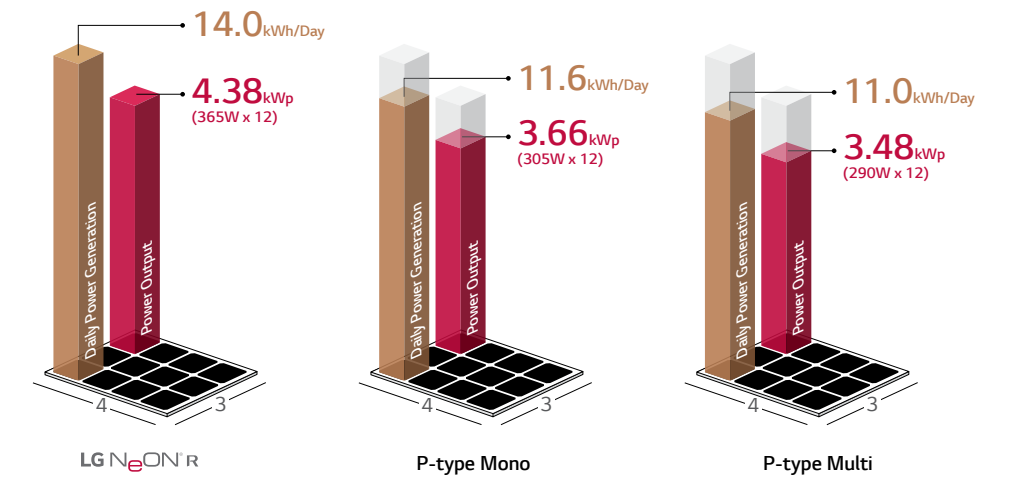
### Technical Feature

The LG NeON® R is a "true black" module that eliminates metal electrodes on the front side. The module's environmental and aesthetic design is ideal for roofs offering a clean, sleek modern exterior and increasing the home's value.



### High Power Generation

The LG NeON® R is a high efficiency module that generates more energy than a conventional module. Less modules are needed to achieve energy requirements allowing consumers flexibility in system design.



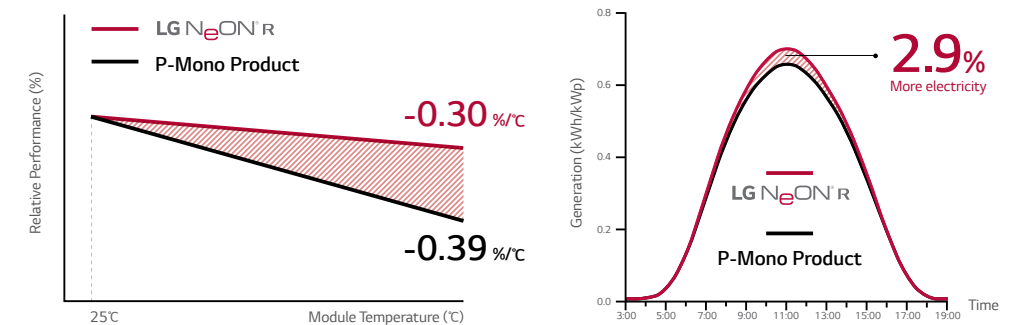
\* PV Syst simulation result  
\* Region : Bayern München, Germany  
\* Data source : Pan file, Datasheet

Power Output Comparison of 12-module arrays

### High Temperature Stability

The LG NeON® R generates 2.9% more energy than conventional P-type mono modules in high temperature conditions.

\* PV Syst simulation result  
\* Region : Bayern München, Germany  
\* One day in July (Highest temperature in a day : 32°C)  
\* Data source : Pan file, Datasheet

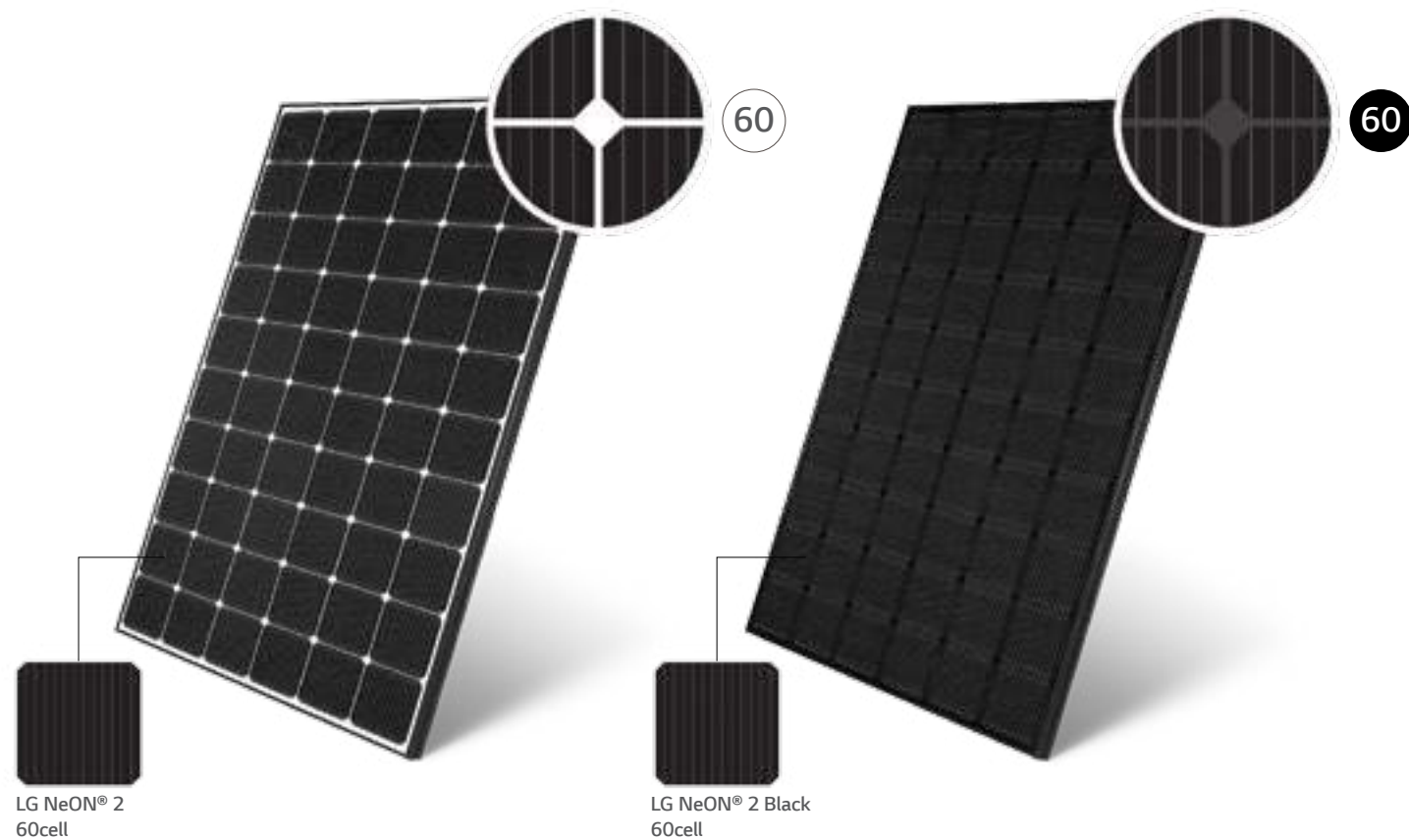


# LG NeON<sup>®</sup> 2 | LG NeON<sup>®</sup> 2 Black



## LG's Best Selling Module

The LG NeON<sup>®</sup> 2 is LG's best selling solar module. It received the acclaimed 2015 Intersolar AWARD for featuring LG's Cello Technology that increases its power output and reliability making it one of the most powerful and versatile modules on the market.



LG NeON<sup>®</sup> 2  
60cell

LG NeON<sup>®</sup> 2 Black  
60cell



## Technical Data

Product Model	LG NeON <sup>®</sup> 2 60cell			LG NeON <sup>®</sup> 2 Black 60cell	
Cell Type	Monocrystalline / N-type			Monocrystalline / N-type	
# of Cells	60cell (6 x 10)			60cell (6 x 10)	
Maximum Power	335W	330W	325W	320W	315W
Module Efficiency	19.6%	19.3%	19.0%	18.7%	18.4%
Dimensions (L x W x H)	1,686 x 1,016 x 40 mm			1,686 x 1,016 x 40 mm	
Weight	18kg			18kg	
Output Warranty of Pmax	Linear Warranty (First year : 98%, After 1st year : 0.55% annual degradation, 25years : 84.8%)				

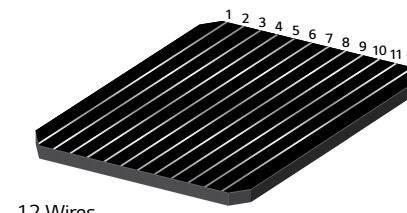


## Features

### Technical Feature

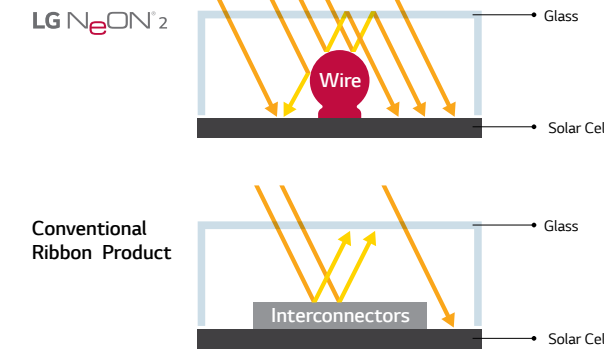


Cello Technology™

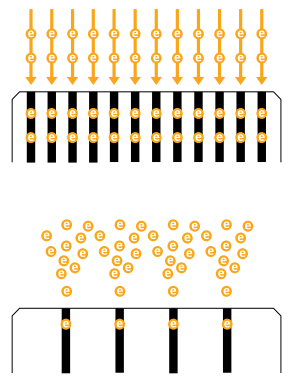


12 Wires

### Increased Light Absorption

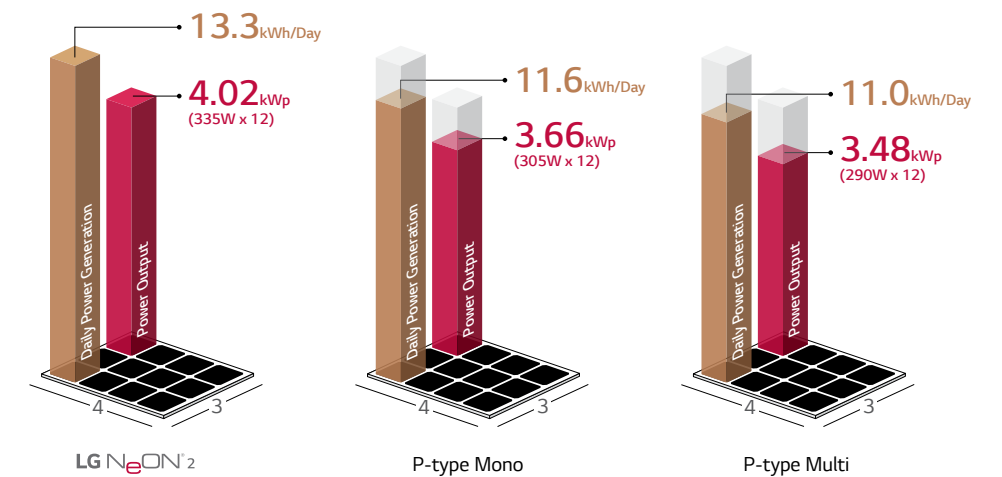


### Reduced Electricity Loss



### High Power Module

The LG NeON<sup>®</sup> 2 produces more energy than conventional modules allowing energy requirements to be met using less space.

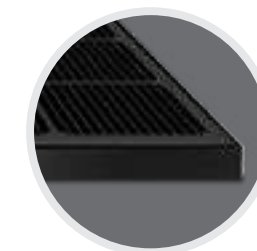


\* PV Syst simulation result  
\* Region : Bayern München, Germany  
\* Data source : Pan file, Datasheet

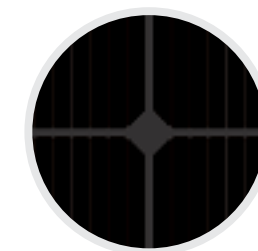
Power Output Comparison of 12-module arrays

### Aesthetic Black module

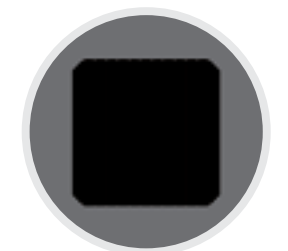
The LG NeON<sup>®</sup> 2 is equipped with a sophisticated glossy piano black frame and a complimentary black back sheet, and black cells with thin electrodes. This module is perfectly-suited to any rooftop.



Glossy Piano  
Black Frame



Black Back sheet



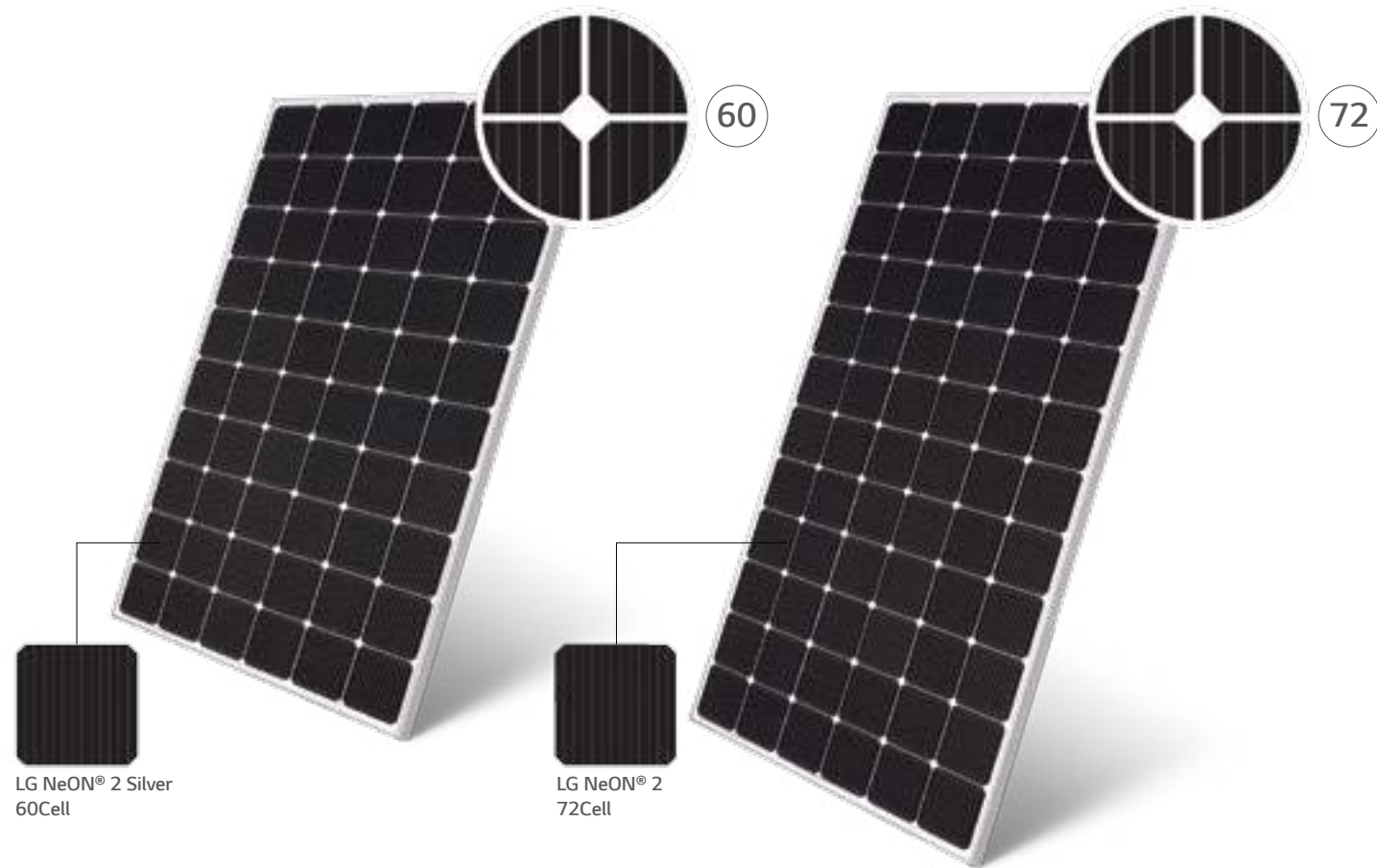
Black Cell with  
Cello Technology

# LG NeON<sup>®</sup> 2



## LG's Best Selling Module

The LG NeON<sup>®</sup> 2 is LG's best selling solar module. It received the acclaimed 2015 Intersolar AWARD for featuring LG's Cello Technology that increases its power output and reliability making it one of the most powerful and versatile modules on the market.



## Technical Data

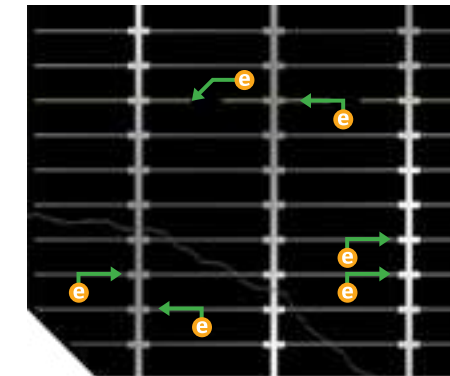
Product Model	LG NeON <sup>®</sup> 2 Silver 60Cell			LG NeON <sup>®</sup> 2 72Cell		
Cell Type	Monocrystalline / N-type					
# of Cells	60cell (6 x 10)			72cell (6 x 12)		
Maximum Power	335W	330W	325W	400W	395W	390W
Module Efficiency	19.6%	19.3%	19.0%	19.3%	19.1%	18.8%
Dimensions (L x W x H)	1,686 x 1,016 x 40 mm			2,024 x 1,024 x 40 mm		
Weight	18kg			21.7kg		
Output Warranty of Pmax	Linear Warranty (First year : 98%, After 1st year : 0.55% annual degradation, 25years : 84.8%)					



## Features

### Enhanced Long-term Reliability

When micro crack or finger electrode erosion happens by natural degradation of mechanisms in the outskirts of the solar cell, LG NeON<sup>®</sup> 2 reduces down performance by blocking the electrical path due to the tight layout of wires



Multiple electrical path maintained by wires



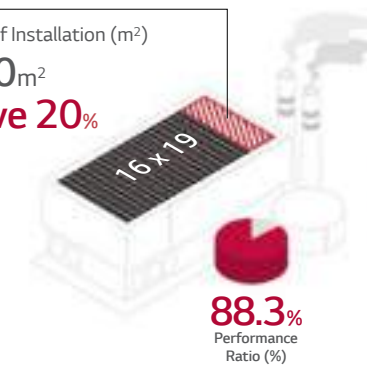
Conventional Ribbon Product

### High Power Module

The LG NeON<sup>®</sup> 2 produces more energy than Conventional P-type Multi modules allowing energy requirements to be met using less space.

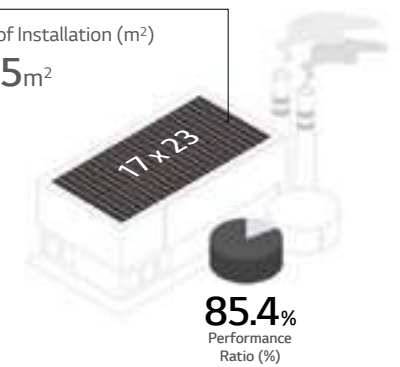
#### LG NeON<sup>®</sup> 2 (335W)

Area of Installation (m<sup>2</sup>)  
**780m<sup>2</sup>**  
**Save 20%**



#### P-type Multi (260W)

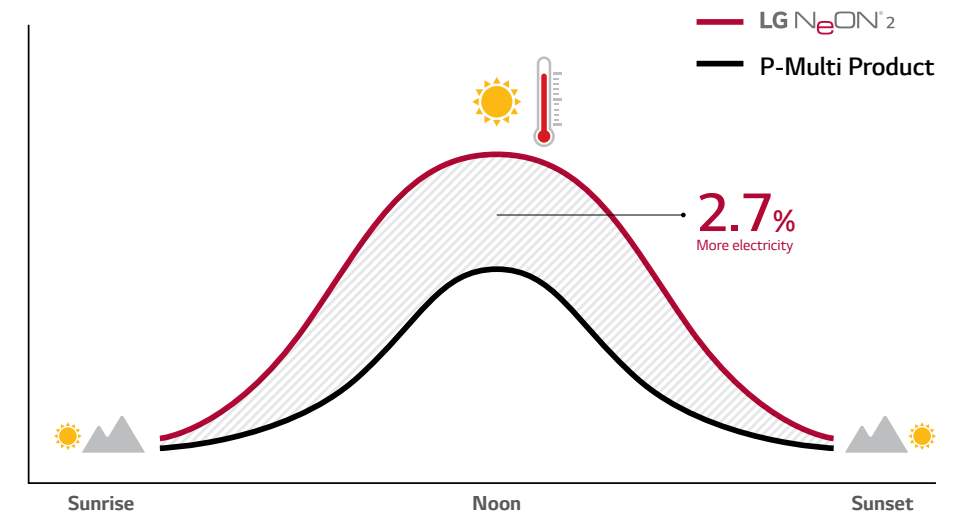
Area of Installation (m<sup>2</sup>)  
**975m<sup>2</sup>**



\* PV Syst simulation result  
\* Region : Bayern München, Germany  
\* Data source : Pan file, Datasheet  
\* Pitch : 5.5m  
\* The distance between modules in an array : 20mm

### Strong Performance in Diverse Environments

The LG NeON<sup>®</sup> 2 generates 2.7% more energy than P-type Multi modules in high temperature conditions as well as at low irradiation conditions.



\* PV Syst simulation result  
\* Region : Bayern München, Germany  
\* One day in July( Highest temperature in a day : 32°C)  
\* Data source : Pan file, Datasheet

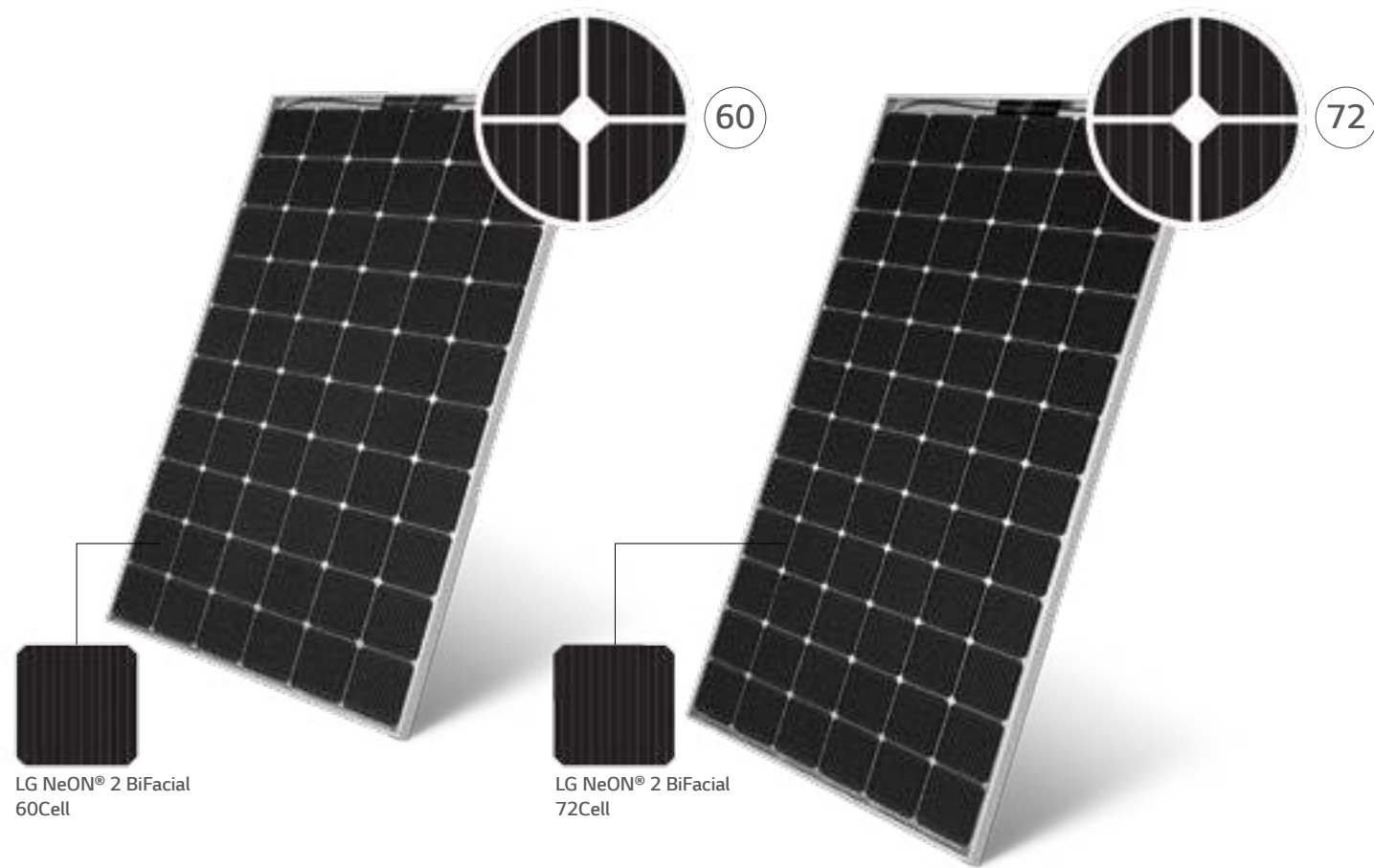


# LG NeON<sup>®</sup> 2 BiFacial



## Double-sided Generation at its best

The LG NeON<sup>®</sup> 2 BiFacial is designed to absorb irradiance not only from the front but also the rear of its NeON<sup>®</sup> cell by using a transparent back sheet. The dual faces of the cell allows for higher energy generation.



## Technical Data

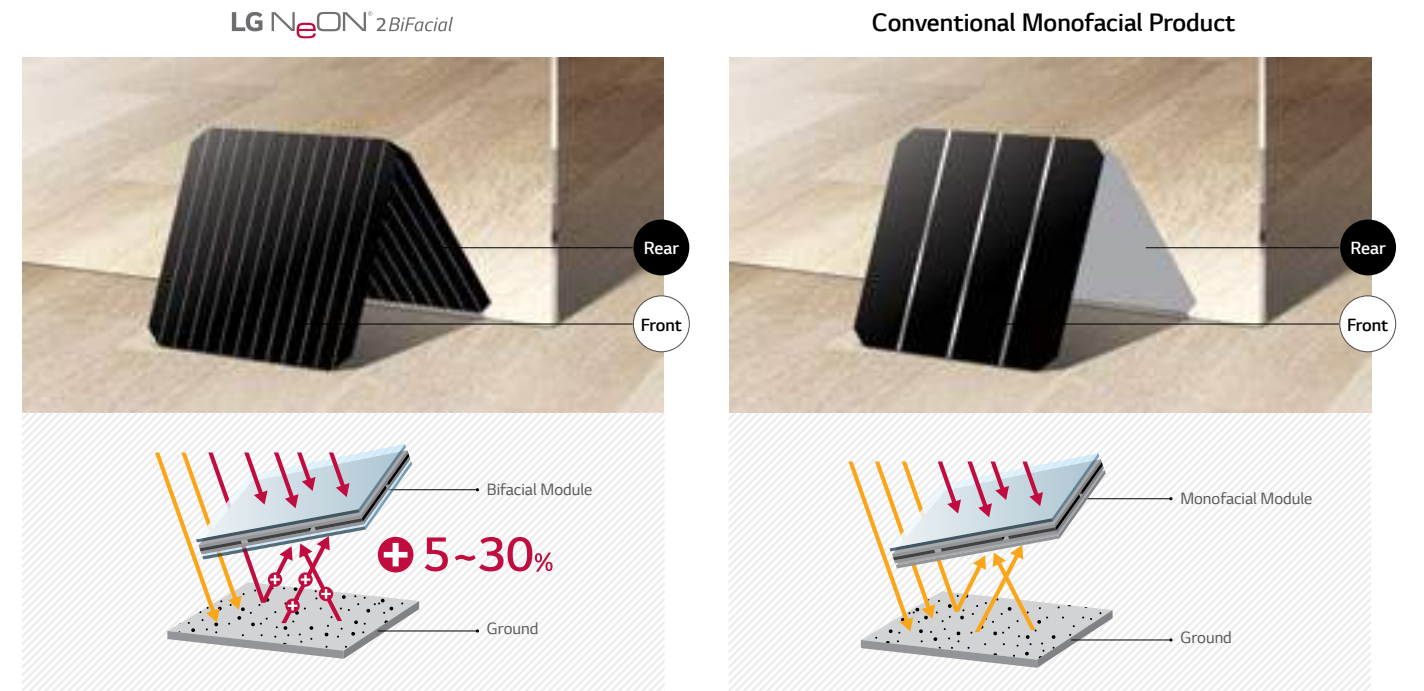
Product Model	LG NeON <sup>®</sup> 2 BiFacial 60Cell		LG NeON <sup>®</sup> 2 BiFacial 72Cell		
Cell Type	Monocrystalline / N-type		Monocrystalline / N-type		
# of Cells	60cell (6 x 10)		72cell (6 x 12)		
Maximum Power	315W	310W	385W	380W	375W
Module Efficiency	17.8%	17.5%	18.3%	18.0%	17.7%
Dimensions (L x W x H)	1,730 x 1,024 x 40 mm		2,064 x 1,024 x 40 mm		
Weight	19.6kg		22.1kg		
Output Warranty of Pmax	Linear Warranty (First year : 98%, After 1st year : 0.55% annual degradation, 25years : 84.8%)				



## Features

### N-type Cell (double-sided generation cell structure)

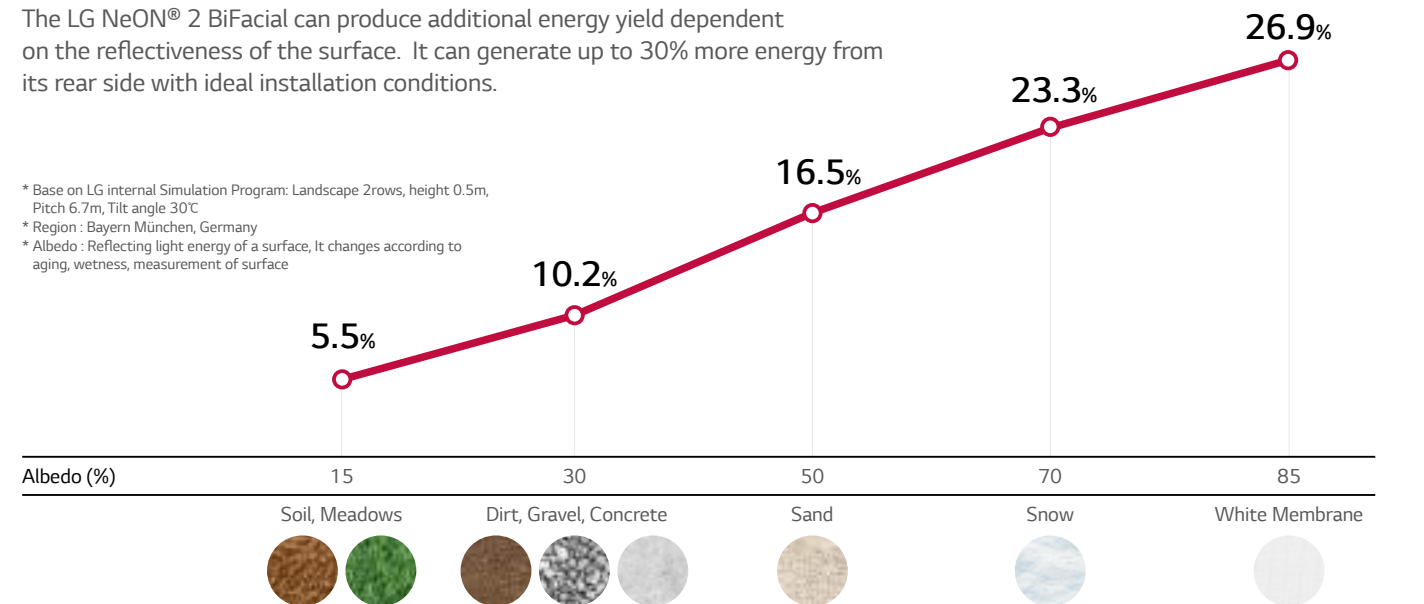
Using NeON<sup>®</sup> cell which can generate energy on both sides, LG developed the optimized module for bifacial generation.



### Additional Energy Yield Based on Ground Type

The LG NeON<sup>®</sup> 2 BiFacial can produce additional energy yield dependent on the reflectiveness of the surface. It can generate up to 30% more energy from its rear side with ideal installation conditions.

\* Base on LG internal Simulation Program: Landscape 2rows, height 0.5m, Pitch 6.7m, Tilt angle 30°  
\* Region : Bayern München, Germany  
\* Albedo : Reflecting light energy of a surface. It changes according to aging, wetness, measurement of surface

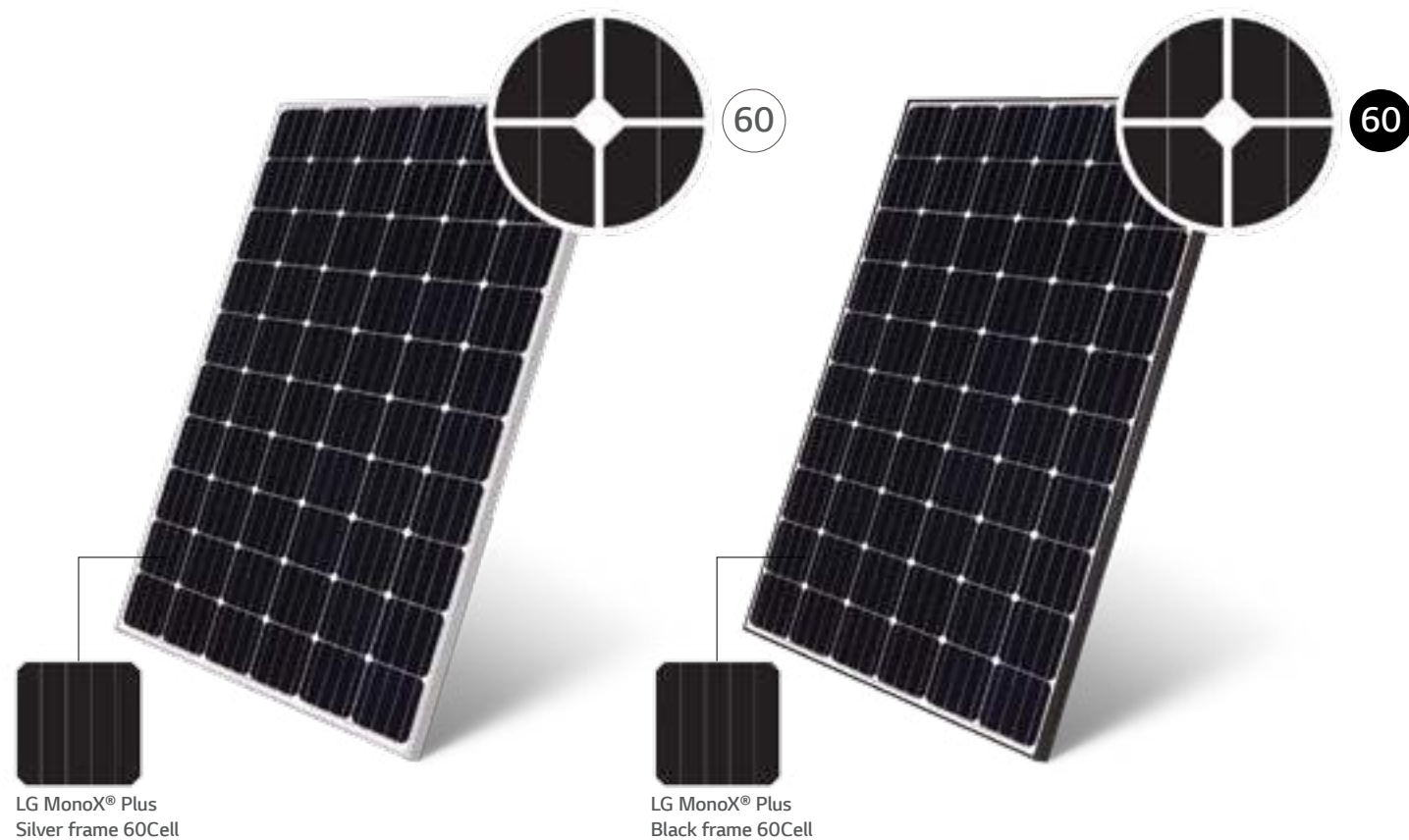


# LG MonoX<sup>®</sup> Plus

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## Built Tough

The LG MonoX<sup>®</sup> Plus is an extremely robust P-type module that maintains high performance by using LG's LiLY Technology. LG also provides an enhanced warranty to for LiLY Technology modules.



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## Technical Data

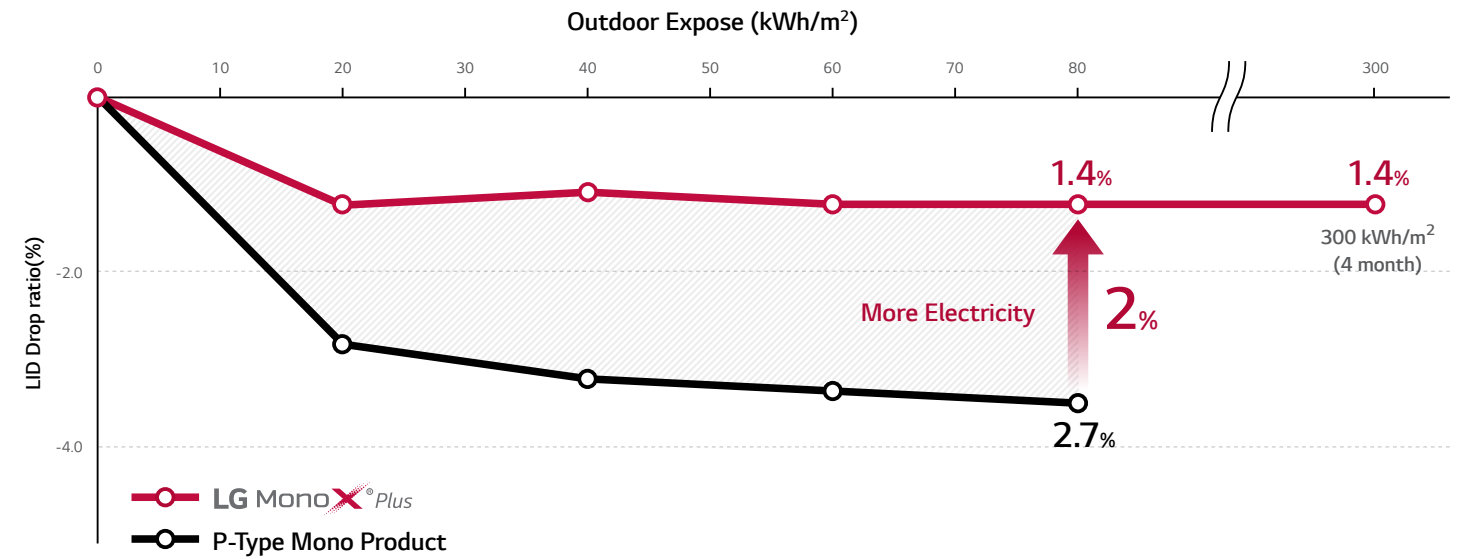
Product Model	LG MonoX <sup>®</sup> Plus 60Cell		
Cell Type	Monocrystalline / P-type		
# of Cells	60cell (6 x 10)		
Maximum Power	300W	295W	290W
Module Efficiency	17.5%	17.2%	16.9%
Dimensions (L x W x H)	1,686 x 1,016 x 40 mm		
Weight	18kg		
Output Warranty of Pmax	Linear Warranty (First year : 98%, After 1st year : 0.55% annual degradation, 25years : 84.8%)		

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## Features

### LiLY Technology

The LG MonoX<sup>®</sup> Plus remains resilient against light induced degradation through the use of LG's LiLY Technology.



### Extreme Physical Durability

The LG MonoX<sup>®</sup> Plus's stress endurance is rated to handle up to 6000 Pa on the front side and up to 5400 Pa on the rear side.



# LG MonoX<sup>®</sup> Plus (For Floating System)



## Built to work over water

The MonoX<sup>®</sup> Plus is reinforced as water floating product, optimized for lake and reservoir applications. It can provide a long-term and stable power generation with its enhanced high moisture resistance. Moreover, using PB free ribbons, MonoX<sup>®</sup> Plus can prevent water pollution.



## Technical Data

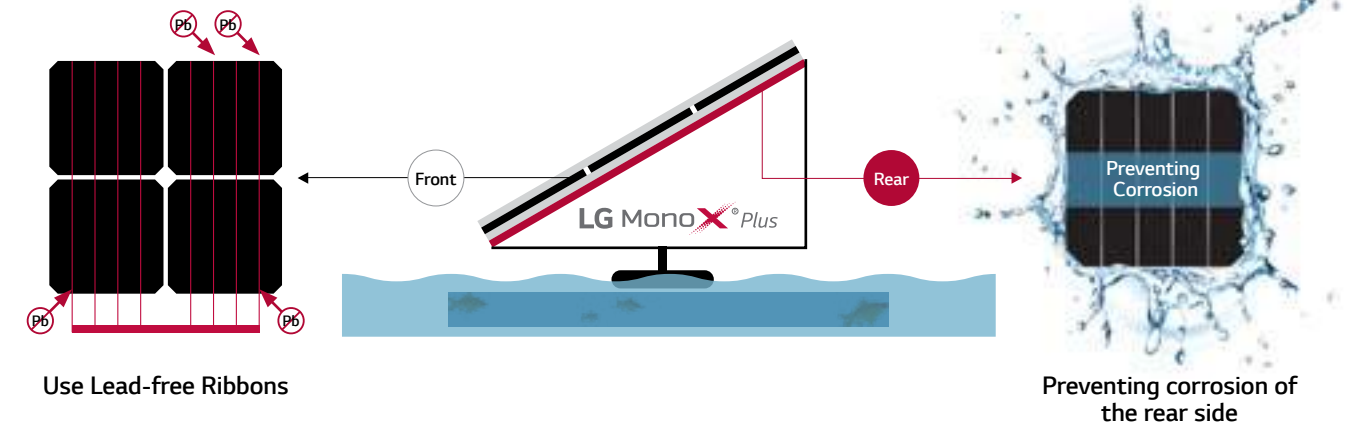
Product Model	LG MonoX <sup>®</sup> Plus 72Cell	
Cell Type	Monocrystalline / P-type	
# of Cells	72cell (6 x 12)	
Maximum Power	360W	355W
Module Efficiency	17.4%	17.1%
Dimensions (L x W x H)	2,024 x 1,024 x 40 mm	
Weight	21.7kg	
Output Warranty of Pmax	Linear Warranty (First year : 98%, After 1st year : 0.55% annual degradation, 25years : 84.8%)	



## Features

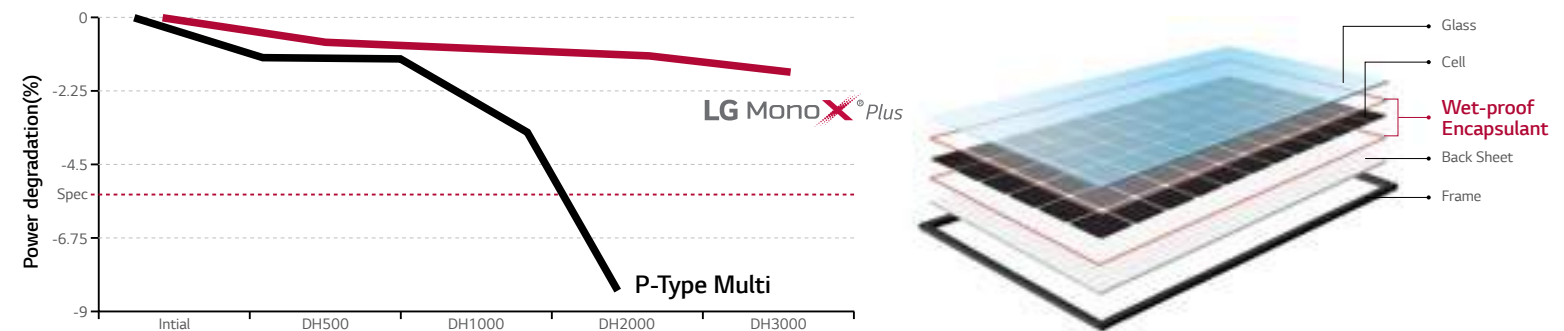
### Environmentally-friendly Module

It is a product designed to minimize the corrosion of module when generating over water for a long time, and it uses lead-free ribbon to prevent water pollution



### Enhanced Power Reliability

It has a higher credibility than that of solar cells when using over water, as it is applied with the components with a stronger wet-proof property



### Balance of System(BOS) Saving

It is a high-performance model that may reduce the cost for system.





# REFERENCE

Residential



Thailand\_Bangkok



Netherland\_Venlo



Thailand\_Bangkok



Germany\_Leipzig



Germany\_Grasberg



Switzerland\_Kolliken



# REFERENCE

Commercial

Utility



Thailand\_Bangkok



USA\_Easton



Australia\_Sydney



Korea\_Sejong



Japan\_Hokkaido



Japan\_Aomori



# PRODUCT LINE-UP

## LG NeON<sup>®</sup>R



365W  
360W  
355W  
350W

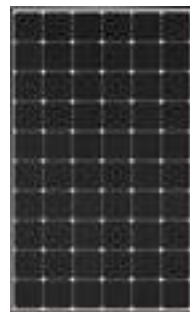
LG NeON<sup>®</sup>R  
60Cell



350W  
345W  
340W

LG NeON<sup>®</sup>R Black  
60Cell

## LG NeON<sup>®</sup>2



335W  
330W  
325W

LG NeON<sup>®</sup>2  
60Cell



320W  
315W

LG NeON<sup>®</sup>2 Black  
60Cell



400W  
395W  
390W

LG NeON<sup>®</sup>2 72Cell

## LG NeON<sup>®</sup>2 BiFacial



315W  
310W

LG NeON<sup>®</sup>2 BiFacial  
60Cell



385W  
380W  
375W

LG NeON<sup>®</sup>2 BiFacial  
72Cell

## LG MonoX<sup>®</sup> Plus



300W  
295W  
290W

LG MonoX<sup>®</sup> plus  
60Cell



360W  
355W

LG MonoX<sup>®</sup> Plus  
(For Floating System)

## BEST PARTNER, LG SOLAR

LG Solar has conducted continued solar energy research for the last 30 years, and by synergizing this research with more than 50 years of experience and knowhow in the electronics industry, has developed a premium solar module product line that offers longterm quality assurance and high energy output capacity.

LG Solar continues to seek new challenges even today. Rather than settling for its successes up to this point, LG Solar will continue its genuine and relentless pursuit of value to satisfy its customers.

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