Technological Innovation – an imperative for sustainable renewable energy.

Solar energy has grown exponentially thanks to rapidly improving technology and growing public interest. Because photovoltaic (PV) modules have an average lifespan of several decades, choosing a well-built product from a trusted brand is crucial. Through 30 years of diligent solar research and development, LG relentlessly leads the industry with PV modules that are unparalleled in quality and performance. LG, as a trusted global brand, is a reliable partner for your business.
Ever since 1958, LG has pioneered innovation and development in electronics and technology. From washing machines and dryers to Smart TVs and mobile phones, the LG brand has become a global icon of excellence. Now LG is bringing the same standards of perfection to energy solutions, vehicle components and other product lines.

LG Electronics is a truly global company with a presence in 118 locations around the world and more than 75,000 employees.

LG Energy Solutions
LG offers solar modules, energy storage systems (ESS), and energy management systems (EMS).

SOLAR
High efficiency module that generates more energy

ESS Energy Storage System
Stable electricity flow with high system efficiency

EMS Energy Management System
Home, building, and factory energy management solutions.
LEADING TECHNOLOGY

LG won the coveted "Intersolar" award in 2013, 2015 and 2016 for ground-breaking technological innovations that pushed the boundaries of the solar industry. Our commitment to innovation continues unabated. Our latest flagship NeON® R module generates a remarkable 370W output.

N-type cells convert sunlight into energy more efficiently than P-type cells. In addition, the back side of the cell also generates electricity.

NeON® 2 BiFacial is capable of generating electricity from both the front and back side of the module, allowing up to 30% more electricity generation than standard modules.

Innovation for a Better Life

LG Solar Awards & Innovation in Technology

- 2013
  - N-type Cell
    - N-type cells convert sunlight into energy more efficiently than P-type cells.
  - Cello Technology™
    - Cello technology™ uses 12 wires, spreading the current more evenly and reducing electrical resistance compared to conventional 4-ribbons.

- 2016
  - Bifacial Module
    - NeON® R BiFacial is capable of generating electricity from both the front and back side of the module, allowing up to 30% more electricity generation than standard modules.

- 2017 / 2018
  - Back Contact Type Module
    - All electrodes are located on the back side, improving sunlight absorption.

- 2015
  - Cello Technology™
    - Cello technology™ uses 12 wires, spreading the current more evenly and reducing electrical resistance compared to conventional 4-ribbons.

- 2014
  - N-type Cell
    - N-type cells convert sunlight into energy more efficiently than P-type cells.

- 2013
  - N-type Cell
    - N-type cells convert sunlight into energy more efficiently than P-type cells.

LG Solar Module Power Output Graph

- 2013
  - LG NeON
  - LG NeON®

- 2014
  - LG NeON
  - LG NeON®

- 2015
  - LG NeON
  - LG NeON®

- 2016
  - LG NeON
  - LG NeON®

- 2017
  - LG NeON
  - LG NeON®

- 2018
  - LG NeON
  - LG NeON®

- 2019
  - LG NeON
  - LG NeON®
QUALITY

A commitment to quality is the very essence of LG’s product philosophy. To this end, we have designed our solar modules to remain robust even in less-than-ideal operating conditions such as high temperatures or low irradiance. With LG panels, customers can be sure to generate more energy for longer.

Operational Excellence & Testing Facilities

LG solar modules are built in a fully automated, state-of-the-art production line to maintain the utmost precision and quality. Furthermore, LG is the first corporation in the world to operate in-house solar testing facilities certified by the four leading inspection and certification authorities.

LG offers industry-leading performance and product warranties, thereby giving customers the peace of mind to make a long term investment in clean, reliable solar energy.

Output Warranty

<table>
<thead>
<tr>
<th>Performance (%)</th>
<th>1 year</th>
<th>5 years</th>
<th>10 years</th>
<th>15 years</th>
<th>20 years</th>
<th>25 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>LG NeON®️️</td>
<td>95.3%</td>
<td>94.9%</td>
<td>90.7%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LG NeON®️️</td>
<td>90.8%</td>
<td>89.6%</td>
<td>88.6%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P-Mono Product (industry average)</td>
<td>95%</td>
<td>94.9%</td>
<td>95.3%</td>
<td>90.7%</td>
<td>89.6%</td>
<td>88.6%</td>
</tr>
</tbody>
</table>

Annual degradation:
- First year: 0.8%
- After 1st year: -0.3% annual degradation

Conventional P-type Mono

<table>
<thead>
<tr>
<th>Performance (%)</th>
<th>10 years</th>
<th>15 years</th>
<th>20 years</th>
<th>25 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>LG NeON®️️</td>
<td>98%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
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<td>97%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P-Mono Product (industry average)</td>
<td>97%</td>
<td>94%</td>
<td>90%</td>
<td>89%</td>
</tr>
</tbody>
</table>

Annual degradation:
- First year: 0.7%
- After 1st year: -0.5% annual degradation
LG NeON® R

World’s Highest Power Class

The LG NeON® R features the highest and most efficient energy generation technology that LG has ever produced. A revolutionary new cell structure that moves the electrodes to the back of the panel ensures both higher light absorption and a cleaner design.

Technical Data

<table>
<thead>
<tr>
<th>Product Model</th>
<th>LG NeON® R 60cell</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cell Type</td>
<td>Monocrystalline / N-type</td>
</tr>
<tr>
<td># of Cells</td>
<td>60/6 (6 x 10)</td>
</tr>
<tr>
<td>Maximum Power</td>
<td>370W</td>
</tr>
<tr>
<td>Module Efficiency</td>
<td>21.4%</td>
</tr>
<tr>
<td>Dimensions (L x W x H)</td>
<td>1,700 x 1,016 x 40 mm</td>
</tr>
<tr>
<td>Weight</td>
<td>17.5kg</td>
</tr>
</tbody>
</table>

Output Warranty of Pmax

| First year: 98% | After 1st year: 0.3% annual degradation | 25 years: 90.8% |

Product Warranty 25 years

Features

Technical Features

The LG NeON® R has been designed with sleek appeal at the forefront. The metal electrodes have been re-located to the back side of the panel. The result is a clean, sleek panel that blends in seamlessly on rooftops and can thereby help increase property values.

High efficiency advantage

The high efficiency of the LG NeON® R module allows more energy to be generated from the same number of panels. Alternatively, fewer modules are needed to meet a given energy requirement. This flexibility allows customers the option to expand the system in the future.

Superior temperature coefficient

The NeON® R is less sensitive to temperature variations than conventional p-mono panels. The hotter the weather, the bigger the gap between the NeON® R and conventional p-mono panels.

Delivers premium black frame

Eliminates electrodes on the front of cells

Interconnectors positioned on the cell’s rear side maximize light absorption

Increased amount of interconnectors reduces energy loss
LG NeON®2 60 cell | LG NeON®2 Black 60 cell

LG’s Flagship Module

The LG NeON®2 is LG’s flagship solar module. It received the acclaimed 2015 Intersolar award for featuring LG’s Cello Technology™, which improves performance and makes the LG NeON®2 one of the most powerful and versatile modules on the market.

LG NeON®2 Black

The LG NeON®2 black is built around the black theme. Designed with a sophisticated matte black frame, a black back sheet, and black cells with thin electrodes, this module is perfectly suited to any rooftop.

Technical Data

<table>
<thead>
<tr>
<th>Product Model</th>
<th>LG NeON®2 60cell</th>
<th>LG NeON®2 60cell Black</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cell Type</td>
<td>Monocrystalline / N-type</td>
<td>Monocrystalline / N-type</td>
</tr>
<tr>
<td># of Cells</td>
<td>60 cell (6 x 10)</td>
<td>60 cell (6 x 10)</td>
</tr>
<tr>
<td>Maximum Power</td>
<td>340W</td>
<td>335W</td>
</tr>
<tr>
<td>Power Output</td>
<td>325W</td>
<td>320W</td>
</tr>
<tr>
<td>Module Efficiency</td>
<td>19.8%</td>
<td>19.8%</td>
</tr>
<tr>
<td>Dimensions (L x W x H)</td>
<td>1,686 x 1,016 x 40 mm</td>
<td>1,686 x 1,016 x 40 mm</td>
</tr>
<tr>
<td>Weight</td>
<td>17.1kg</td>
<td>17.1kg</td>
</tr>
<tr>
<td>Output Warranty of Pmax</td>
<td>Linear Warranty</td>
<td>Linear Warranty</td>
</tr>
<tr>
<td></td>
<td>(First year: 98%, After 1st year: 0.35% annual degradation, 25years: 89.6%)</td>
<td></td>
</tr>
</tbody>
</table>

Product Warranty 25years

Features

Increased Light Absorption

LG NeON®2

Reduced Electricity Loss

12 Wires

High Power Module

The LG NeON®2 produces more energy than conventional P-type modules, allowing energy requirements to be met in a smaller footprint.

Aesthetic All-Black Module

The LG NeON®2 black is built around the black theme. Designed with a sophisticated matte black frame, a black back sheet, and black cells with thin electrodes, this module is perfectly suited to any rooftop.
**LG NeON² 72 cell**

LG’s Best-selling Module

The LG NeON² is LG’s best-selling solar module. It received the acclaimed 2015 Intersolar AWARD for featuring LG’s Cello Technology™ which increases its power output and reliability making it one of the most powerful and versatile modules on the market.

**Features**

Enhanced Long-term Reliability

When micro-cracks or finger electrode erosion occurs due to external factors, the layout of wires helps mitigate the performance loss caused by blocked electrical pathways.

High Power Module

The LG NeON² produces more electricity than conventional P-type modules, allowing you to make more energy in less space.

Strong Performance Throughout the Day

N type based technology has a better temperature coefficient and generates a much higher yield than nameplate and/or P type based technology.

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**Technical Data**

<table>
<thead>
<tr>
<th>Product Model</th>
<th>LG NeON² 72Cell</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cell Type</td>
<td>Monocrystalline / N-type</td>
</tr>
<tr>
<td># of Cells</td>
<td>72-cell (6 x 12)</td>
</tr>
<tr>
<td>Maximum Power</td>
<td>400W / 395W</td>
</tr>
<tr>
<td>Module Efficiency</td>
<td>19.3% / 19.1%</td>
</tr>
<tr>
<td>Dimensions (L x W x H)</td>
<td>2,024 x 1,024 x 40 mm</td>
</tr>
<tr>
<td>Weight</td>
<td>20.3kg</td>
</tr>
</tbody>
</table>

**Output Warranty of Pmax**

Linear Warranty

(First year: 98%, After 1st year: 0.35% annual degradation, 25 years: 89.6%)

**Product Warranty**

25 years
LG NeON®² BiFacial

Double-sided Generation At Its Best

The LG NeON®² BiFacial is designed with a transparent back sheet to absorb sunlight from both the front and the back of the cell. This increases the amount of sunlight that is collected, improving energy generation.

Technical Data

<table>
<thead>
<tr>
<th>Product Model</th>
<th>LG NeON®² BiFacial</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cell Type</td>
<td>Monocrystalline / N-type</td>
</tr>
<tr>
<td># of Cells</td>
<td>72-cell (6 x 12)</td>
</tr>
<tr>
<td>Maximum Power</td>
<td>395W</td>
</tr>
<tr>
<td>Module Efficiency</td>
<td>18.7%</td>
</tr>
<tr>
<td>Dimensions (L x W x H)</td>
<td>2,064 x 1,024 x 40 mm</td>
</tr>
<tr>
<td>Weight</td>
<td>22.1kg</td>
</tr>
</tbody>
</table>

Output Warranty of Pmax

Linear Warranty

(First year: 98%, After 1st year: 0.5% annual degradation, 25-years: 86%)

Product Warranty

25-years

Features

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

Using a NeON® cell which can generate energy on both sides, LG developed a module optimized for bifacial generation.

Additional Energy Yield

The amount of additional energy the LG NeON®² BiFacial can produce depends on the reflectiveness of the surface. The higher reflectiveness, the higher the additional energy yield. In ideal conditions, the LG NeON®² BiFacial can yield a power boost of up to almost 30%.

Conventional Monofacial Product

Albedo (%)  

| Soil, Meadows | 5.5% |
| Dirt, Gravel, Concrete | 10.2% |
| Sand | 16.5% |
| Snow | 23.3% |
| White Membrane | 26.9% |

* Base on LG internal European Program Landscape, 1x1, height 0.5m, pitch: 6.7, tilt angle 30°
* Region: Bayern München, Germany
* Albedo: Reflecting light energy of a surface. It changes according to aging, weather, measurement of surface
REFERENCE

Thailand_Bangkok

USA_Easton

Australia_Sydney

Korea_Sejong

Japan_Hokkaido

Japan_Aomori
LG Solar, Your Trustworthy Energy Partner

LG Electronics has been actively involved in solar energy research for over 30 years. We also bring more than 50 years’ experience in the electronics industry to the table. By synergizing the know-how we have gained from these endeavors, we have developed a complete line-up of premium solar modules offering enhanced energy output and long-term quality assurance. But we don’t rest on our laurels. We continue to invest relentlessly to develop the next generation of solar technology, ensuring a brighter, cleaner future for our children.