Q CELLS PRODUCT CATALOGUE 2017

Q.POWER-G5 SOLAR MODULE SERIES

Q CELLS
Engineered in **Germany**

HANWHA Q CELLS
GERMAN QUALITY BACKED BY KOREAN FINANCIAL STRENGTH

FOR HANWHA Q CELLS, PHOTOVOLTAIC TECHNOLOGY IS NOT JUST A PRODUCT. IT IS THE KEY TO RELIABLE, POWERFUL, AND SUSTAINABLE ENERGY SUPPLY – TODAY AND FOR FUTURE GENERATIONS.

THINK GLOBAL, ACT LOCAL.

Hanwha Q CELLS offers a wide-ranging product portfolio - from solar modules and cells to complete systems for private, industrial and commercial rooftop installations, and up to turn-key solar power plants. We develop and test our products at our headquarters for technology and innovation in Germany until they are ready for serial production. They are then manufactured at our international production locations and marketed through our international distribution network.

AN ALLIANCE OF TECHNOLOGY AND FINANCE

Since October 2012, Hanwha Q CELLS has been part of the Hanwha Group. Founded in 1952, the Hanwha Group is one of the eighth largest companies in South Korea. The group is comprised of 56 South Korean and 190 international subsidiaries belonging to the three main business areas of Manufacturing and Construction, Finance, Services and Leisure. Through this strong, long-term alliance, we are ideally positioned both financially and technologically for the future.

NO. 1 LARGEST SOLAR CELL MANUFACTURER

Hanwha Q CELLS is the world's largest solar cell manufacturer and one of the largest solar module manufacturers. As of the third quarter 2017, our solar manufacturing capacity will reach 6.8 GW per annum.

GLOBAL R&D NETWORK

Hanwha Q CELLS' dedicated scientists, engineers and technologists in 4 R&D Centers – located in Germany, Korea, Malaysia and China - are continually innovating and developing new technologies. We operate 3 state-of-the-art manufacturing plants in Korea, Malaysia and China.

16+GW TRACK RECORD

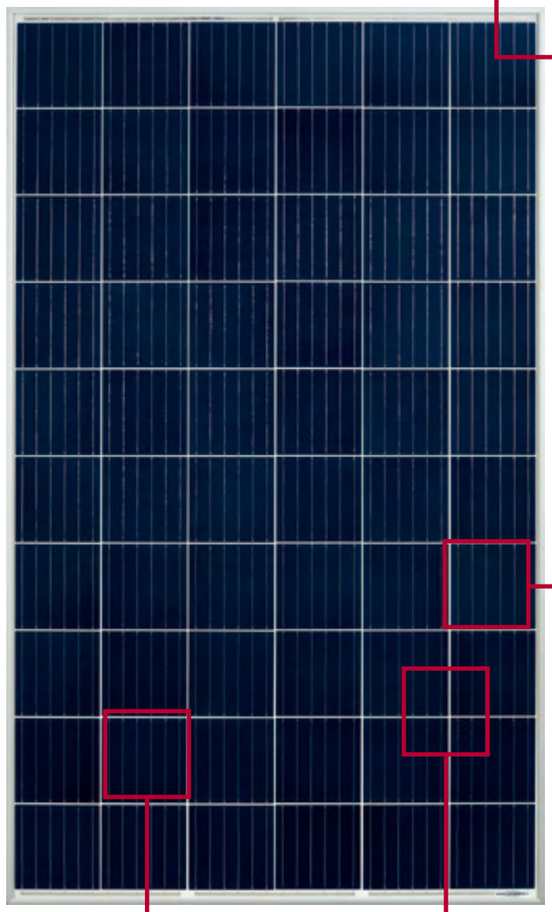
As of the end of 2016, Hanwha Q CELLS and its predecessor companies delivered more than 16 GW of solar cells and modules worldwide.

40+ COUNTRIES

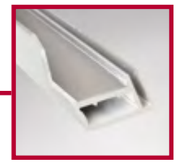
The global footprint of our sales network spans more than 40 countries across Europe, the Americas, Asia-Pacific and Africa.

The state-of-the-art solar energy R&D Center in South Korea

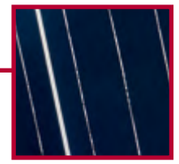
WE PAY ATTENTION TO DETAIL
THE NEW G5 SOLAR MODULE



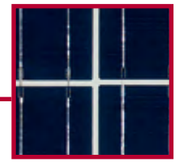
Reduced frame edge avoids moss and dirt build-up



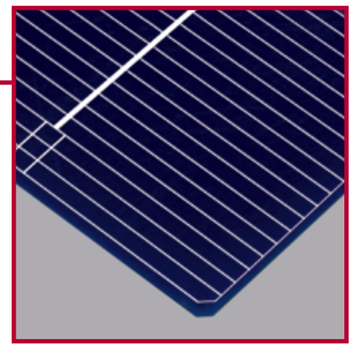
35 mm high-tech frame for wind and snow loads up to 4000/5400 Pa (IEC)



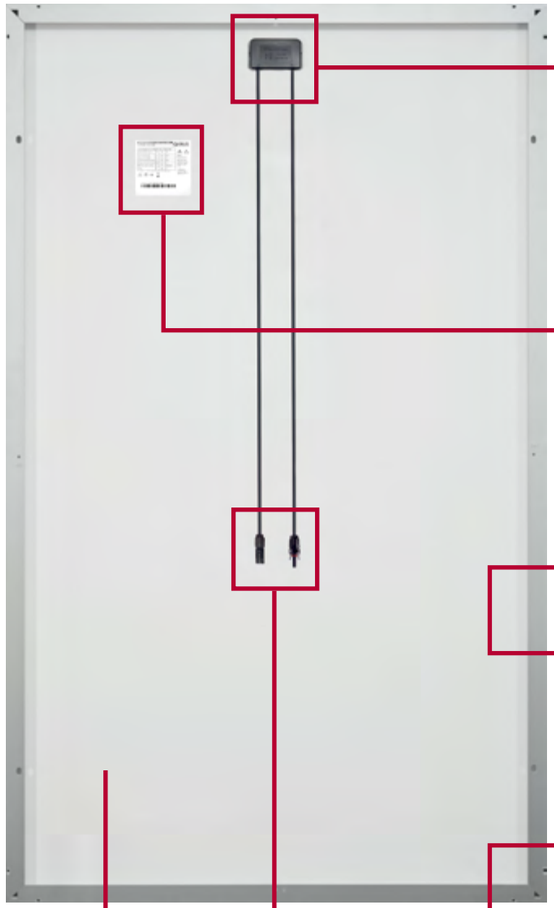
High-quality, anti-reflection technology processed via the sol-gel roller coating method for higher yields, homogeneity and long-time stability



Optimised, even cell spacing improves performance and avoids microfractures



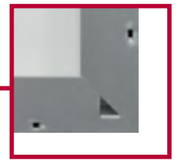
NEW 6 busbar cell design for more power and better reliability. The narrower distance between the busbars allows better flow of electrons and reduces power loss.



Optimised junction box design for increased energy yields and corrosion protection

High power classes with positive sorting for low levelised cost of electricity (LCOE) and high reverse current resistance

Reliable silicone connection for excellent stability and durability

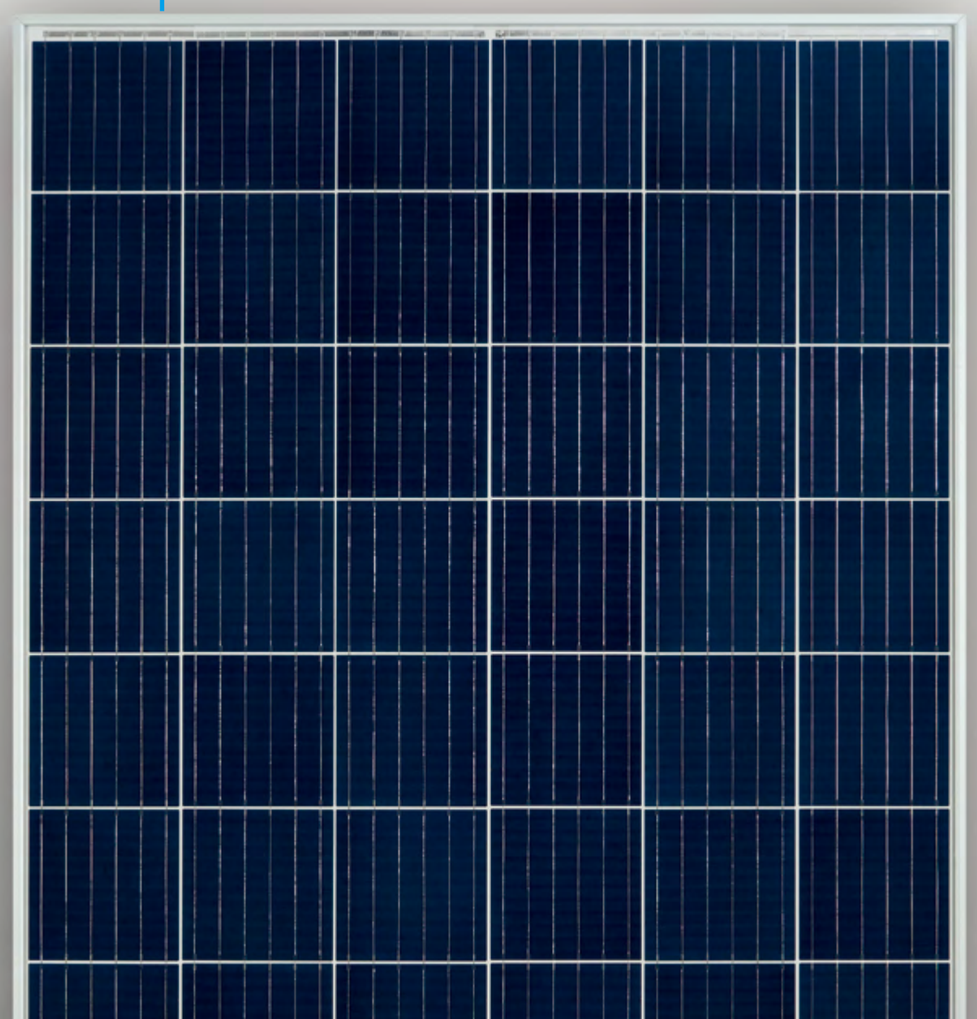


Optimally positioned, large drainage holes and asymetric frame design protect against frost damage

High-quality backside for permanent sealing

Robust connecting plug

EXCELLENT RELIABILITY AND OPERATIONAL SAFETY



Q.POWER-G5

The new Q.POWER-G5 is our latest model in a series of excellent and reliable polycrystalline Q CELLS solar modules. Like the name suggests, this 60-cell module is available in power classes of up to 280 Wp and comes with superior reliability and high level operational safety. The improved 6 busbar cell design leads to optimum earnings and low LCOE combined with its hard wearing junction box and connectors as well as its optimised frame makes the new Q.POWER-G5 an all-rounder that is suitable for any application ranging from residential and C+I projects to ground mounted solar power plants.

TECHNICAL DATA

Type	60-cell module
Capacity	Up to 280 Wp
Efficiency	Up to 17.4 %
Sorting	+5/-0 W

HOW YOU BENEFIT

- Innovative 6 busbar cell design for more power and better reliability
- High safety due to ammonia-resistant junction box and robust connectors
- Extreme weather rating: tested for wind loads up to 4,000 Pa and snow loads up to 5,400 Pa
- Optimised design with 35 mm frame height
- Easy to install, weights just 18 kg ± 5 %

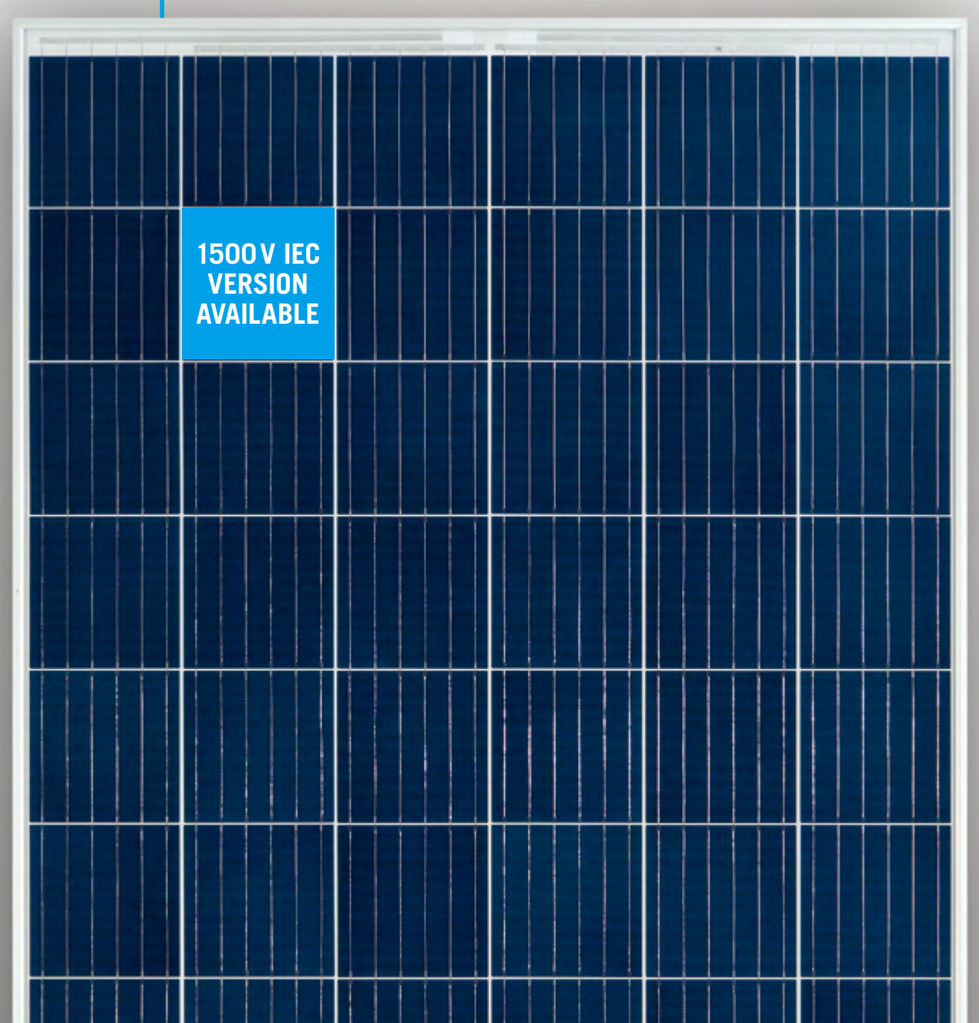
THE IDEAL SOLUTION FOR:

Private rooftop installations

Commercial and industrial rooftop installations

Ground-mounted solar power plants

EXCELLENT RELIABILITY AND OPERATIONAL SAFETY



Q.POWER L-G5

Q.POWER L-G5 is our latest 72-cell polycrystalline solar module and surprises with power ratings of up to 335 Wp. Its sophisticated technology makes it an extremely reliable product with high operational safety. It also comes with our new 6 busbar cell design which makes the key difference in terms of energy yield and lowest LCOE. With the new, reduced height, frame design Q.POWER L-G5 benefits from lower logistic costs than comparable 72-cell modules, whilst maintaining an outstanding weather rating being certified for wind loads of up to 2400 Pa and snow loads of up to 5400 Pa. Thanks to its extremely high power rating Q.POWER L-G5 is especially suitable for ground mounted solar power plants. Q.POWER L-G5 is also available as a 1500 V IEC version.

TECHNICAL DATA

Type	72-cell module
Capacity	Up to 335 Wp
Efficiency	Up to 17.5 %
Sorting	+5/-0 W

HOW YOU BENEFIT

- Innovative 6 busbar cell design for more power and better reliability
- High safety due to ammonia-resistant junction box and robust connectors
- Extreme weather rating: tested for wind loads up to 2,400 Pa and snow loads up to 5,400 Pa
- Lower logistics costs due to higher module capacity per box
- Optimised design with 35 mm frame height
- Easy to install, weights just 22.5 kg ± 5 %

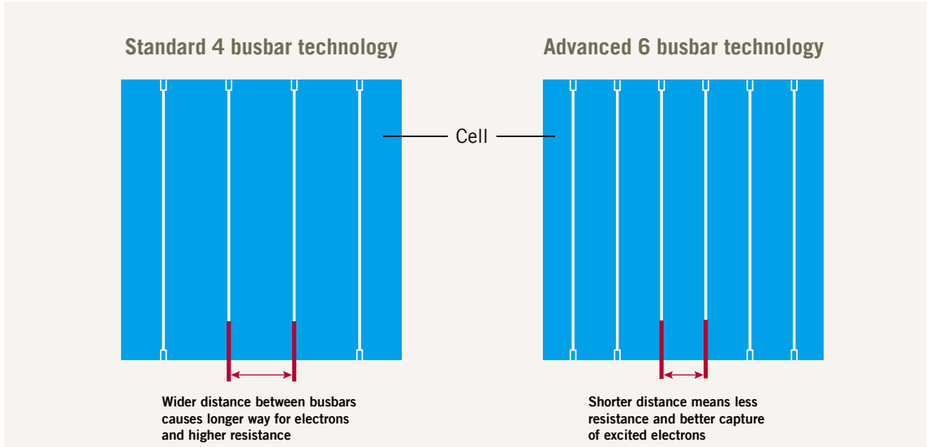
THE IDEAL SOLUTION FOR:

Ground-mounted solar power plants

THE 6 BUSBAR SOLUTION
A UNIQUE Q CELLS CELL DESIGN CONCEPT

THE Q.POWER-G5 AND Q.PRIME-G5 SOLAR MODULE LINEUP BENEFITS FROM THE NEW 6 BUSBAR CELL CONCEPT FOR MORE PERFORMANCE AND RELIABILITY

6BB TECHNOLOGY PROVIDES BETTER EFFICIENCY BY RESISTANCE REDUCTION



BIG DISTANCE BETWEEN BUSBARS
LOWER POWER, LESS RELIABILITY

NARROWER DISTANCE BETWEEN BUSBARS
HIGHER POWER, BETTER RELIABILITY

HIGHER PERFORMANCE CLASSES
Thanks to 6 busbar technology, Q CELLS solar modules offer more power per surface, resulting in higher yields at lower BOS costs.

TEMPERATURE COEFFICIENT
Even on hot days, Q CELLS solar modules produce reliable yields and lose less efficiency than standard solar modules.

LOW-LIGHT BEHAVIOUR
High yields with low radiation intensity, for example, during sunrise and sunset and on cloudy days, but also in autumn and winter when the sun is flat over the horizon.

Q CELLS
CERTIFIED QUALITY

BEFORE A PRODUCT IS WORTHY OF THE NAME “Q CELLS”, IT HAS TO UNDERGO AND PASS INDEPENDENT QUALITY PROGRAMS:

LEVEL 1 – YIELD SECURITY
Since 2011, we guarantee for the PID resistance (Potential-Induced Degradation) of our products and their reliability.

LEVEL 2 – ONE-TIME CERTIFICATION TESTS
The second level is comprised of international initial certification tests, for example, in accordance with IEC, CSA/UL, MCS, JET and KS. These guarantee that the electrical safety of the modules and the safety of its construction comply with international standards.

LEVEL 3 – Q CELLS QUALITY PROGRAM
Q CELLS internal quality program ensures that all products meet our company‘s high standards on a daily basis.

EUPD RESEARCH TOP BRAND PV MODULES AUSTRALIA 2016
EUPD RESEARCH TOP BRAND PV MODULES AUSTRALIA 2017

TÜV SÜD · VDE · CE

GLOBAL NETWORK, GERMAN QUALITY
As the World‘s largest manufacturer of solar cells, Hanwha Q CELLS boasts leading technology, financial stability, and a global network – for safe energy provision and a clean future.

Hanwha Q CELLS:
- is German Engineering from Bitterfeld-Wolfen, Germany.
- is Guaranteed quality with an outstandingly low rate of module degradation through a 12-year product warranty and a 25-year linear performance warranty.
- operates the largest technology and module test centre in the industry, as well as its own VDE-certified testing laboratory.
- tests its products under extreme climate conditions, such as tropical humidity, desert heat, and arctic cold.

REQUIRED TESTS	IEC CERTIFICATION	Q CELLS INTERNAL TEST
Test frequency	once, only for initial certification	continuous sampling and monitoring
Thermal Cycling Test (TC)	200 cycles	400 cycles
Damp-Heat Test (DH)	1000 h	2000 h
Humidity-freeze Test (HF)	10 cycles	20 cycles
UV Exposure	60 °C, 15 kWh/m²	60 °C, 30 kWh/m²
Wind Load/Snow Load	2400/2400	4000/5400
EL Test	only certification module	100 % high-resolution, EL inspection
PID Test	–	Monthly monitoring
Anti-salt Test	(5 % 2 h spray + 166 h humidity storage) x 4 cycles	(10 % 2 h spray + 166 h humidity storage) x 8 cycles

Q CELLS REFERENCES

MUGGA LANE SOLAR FARM, AUSTRALIA
15.2 MWp, 2016

This project was a recipient of the Australian Capital Territory (ACT) Government's first solar auction. Over 48,000 HSL modules were installed for the project.

YALUMBA WINERY, AUSTRALIA
1.4 MWp, 2016

Yalumba Winery project is the largest solar photovoltaic (PV) system installed at an Australian winery, producing around 2,000 megawatt hours of electricity per year.

BAROSSA VALLEY SA, AUSTRALIA
90 kWp, 2015

For Barossa Vintners the sun is not used only to ripen grapes for their popular wines. It also powers a 90 kWp solar system with Q CELLS modules, reducing CO_2 emissions for the vineyard by 22% and, not least of all, saving it some 19,000€ in electricity and maintenance costs per year.

ROTTERDAM, THE NETHERLANDS
822 kWp, 2016

The largest solar park in Rotterdam has been constructed on top of the freezer warehouse of FrigoCare in the Waalhaven. The roof has a surface area of 7,500 square metres, the size of a football field. 3,100 Q.PRO BFR-G4.1 solar panels have been installed, which allow the generation of 750,000 kWh of electricity annually.

YOUR NOTES

CONTACT

HANWHA Q CELLS AUSTRALIA PYT LTD
Level 14, 20 Berry Street
North Sydney, NSW 2060
Australia

TEL (LOC) 1 800 Q CELLS
TEL (INT) +61 (0) 2 9016 3033
FAX +61 (0) 2 9016 3032

EMAIL q-cells-Australia@q-cells.com
WEB www.q-cells.com/au