

COMPANY BACKGROUND

Q CELLS

Engineered in **Germany**

ABOUT Q CELLS

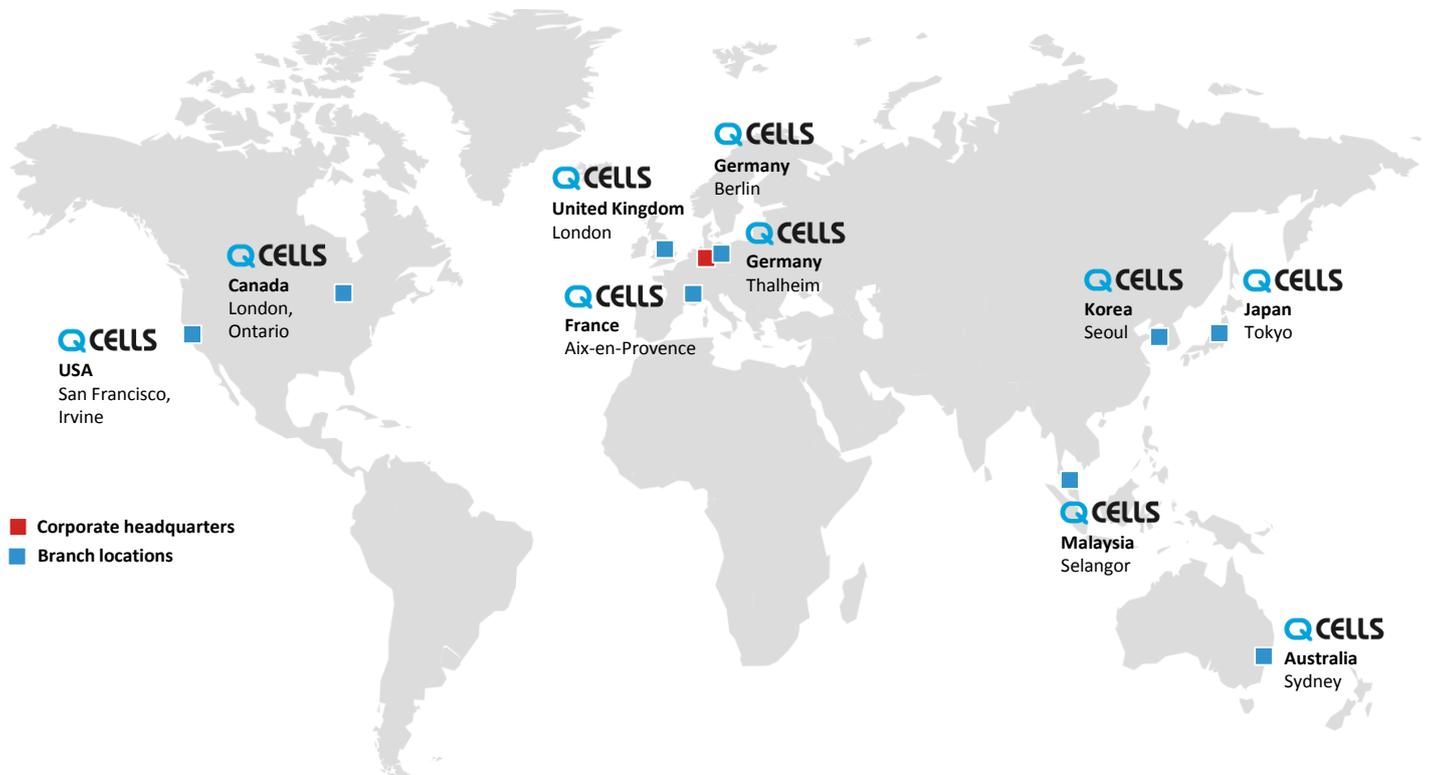
COMPANY PROFILE

Hanwha Q CELLS Australia Pty Ltd. is a wholly owned subsidiary of Hanwha Q CELLS GmbH, which is headquartered in Germany and Europe's largest photovoltaics provider. Q CELLS was established in 1999 as Q-Cells AG as a solar cell manufacturer. Current operations extend from the manufacture of crystalline silicon solar cells and panels, through to the turnkey delivery of complete photovoltaic systems.

Since 2012, Q CELLS has been part of the Hanwha Group. Founded in 1952, Hanwha Group is now one of South Korea's 10 largest corporations and a global Fortune 500 Company, with US\$117 billion in assets in 2013. With more than 60 years of industrial leadership and experience, Hanwha's manufacturing and construction businesses encompass a broad range of fields from basic chemicals and advanced materials to property development and total solar energy solutions. The finance network, covering banking, insurance, asset management and securities, is the second largest non-bank finance group in South Korea. The Hanwha Corporation is listed on the Korea Stock Exchange.

Today Hanwha Q CELLS GmbH is Europe's largest manufacturer of solar photovoltaic products. Hanwha Q CELLS operates a local office in North Sydney, offering immediate and quality service from our qualified staff.

GLOBAL NETWORK, GERMAN QUALITY, LOCAL SUPPORT.

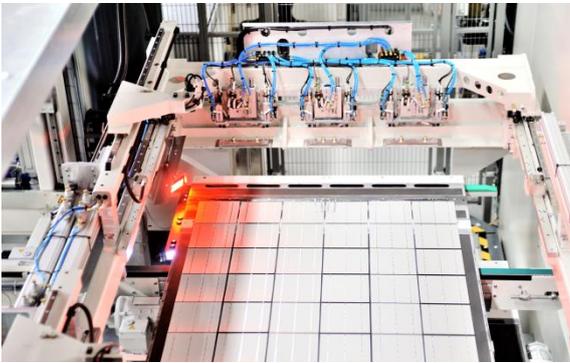


PRODUCTION

HANWHA Q CELLS' PRODUCTION PLANTS for solar cells and modules are at the company sites in Germany (cells & module production) and Malaysia (cell production only), as well as at the company's certified contractors in Europe and Asia.

- **CELL PRODUCTION** is conducted at our state-of-the-art facilities in Thalheim Germany and Cyberjaya Malaysia. These facilities are modern, highly automated sites and are subject to 100% quality testing. Cell production capacity in Malaysia recently reached 1.1GW and the Germany facility is on track to reach 230MW by the end of 2014.
- **MODULE PRODUCTION** is undertaken in Thalheim Germany, and at the company's certified contractors in Poland and Asia. Quality is maintained at these sites through 100% testing.

Q CELLS MODULES FOR THE AUSTRALIAN MARKET ARE SUPPLIED FROM EITHER THE GERMAN OR POLISH SITES.



Q CELLS module production



Q CELLS cell production

WHY CHOOSE Q CELLS?

SUMMARY

INDUSTRY-LEADING PERFORMANCE which results in optimised power generation and great return on investment. Q CELLS panels have better performance in low light (98% efficiency at 200W/m²) so they generate power earlier and later in the day. A superior temperature power coefficient (-0.42%/°C) means great performance in the hot Australian sun. All this leads to superior yields and a solar investment that is paid off sooner. Importantly and uniquely, **our performance claims are proven through independent field tests** such as Photon Labs and Alice Spring Desert Knowledge Centre which show Q CELLS panels are always outperforming other manufacturers' products.

INDUSTRY-LEADING QUALITY which contributes to having 'ultra-reliability' over the product's lifetime. Q CELLS has a proven track record in quality. The intense and frequent testing is undertaken by our German engineers and is backed by Q CELLS' **leading 12-year product warranty and 25-year performance warranty** (at least 83% power output after 25 years). The "VDE Quality Tested" programme offers the most comprehensive **independent** quality testing regime in the solar industry sector. Your customer's solar investment is further protected from performance degradation via our Triple Yield Security - **Anti-PID** and **Hot Spot Protect**, all of which is specifically included in our warranty.

FINANCIALLY STABLE INTERNATIONAL COMPANY

which means we will be around to support you. The investment is backed by the Hanwha Group, a 60 year-old Fortune 500 business with assets >\$100b US – so you can have confidence that we'll be around to honour our warranties in 25 years.

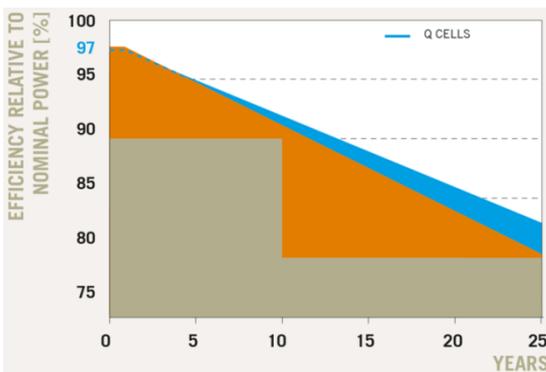
LOCAL SUPPORT from the Q CELLS team at North Sydney which offers technical design, power yield calculations, warranty support, marketing and media services and logistical control.

INDUSTRY RECOGNITION



Our performance and reliability claims are backed up by multiple industry awards and third party performance verification programs. Specifically, Q CELLS was confirmed to have the highest performing polycrystalline panel in the 2013 Photon Yield Measurement Awards. We also consistently perform ahead of our competitors at the Desert Knowledge Solar Centre in Alice Springs – our Q PRO-G3 module is currently outperforming modules such as Trina, Winaico, Sunpower, Kyocera and REC.

GREAT WARRANTY



Our extensive testing regime allows us to confidently pass on the benefits to our customers by increasing coverage provided by our panel warranties.

Q CELLS panels are provided with a **12-year manufacturer's warranty**. This warranty is two years greater than standard industry warranties, and provides greater coverage than most.

Our linear performance warranty is a top performer in the industry. With a maximum 3% degradation in the first year and 0.6% per year thereafter, our performance warranty guarantees at least **92% output after 10 years and 83% output after 25 years**.

And, with the security of a \$117bn corporation that has operated since 1952, you can rest assured that we will be here in 25 years to honour our warranty commitments.

VALUE BUILT INTO EVERY MODULE



TRIPLE YIELD SECURITY

- **ANTI PID TECHNOLOGY** prevents potential-induced degradation at cell level for secure yields without performance losses.
- **HOT-SPOT PROTECT** increases safety and ensures reliable and maximum performance.
- **TRACEABLE QUALITY** (Tra.Q™ labelling technology) provides 100 % complete traceability and forgery protection. No other manufacturer has such strong quality-tracking measures.



INDEPENDENT QUALITY TESTING

- **VDE Quality Tested** means: testing hard; testing continuously; and testing independently.
- The programme raises the bar considerably when compared to standard module tests. It not only tests modules harder than the minimum required standards, it also tests production processes and is a continuous testing schedule (not one-off).
- Q CELLS is the first and only solar module manufacturer to continually and successfully participate in the **VDE Quality Tested** programme.



INDEPENDENT FIELD TESTING

- **Photon Laboratory Yield Measurement** – Q CELLS was number one performer of all poly modules in the 2013 global energy yield test.
- 151 modules were tested in a field in the temperate European climate.
- **Desert Knowledge Centre Alice Springs** – Q CELLS is consistently the top performer in its class at this independent test centre.
- 30+ arrays are tested at this site in the Australian desert.

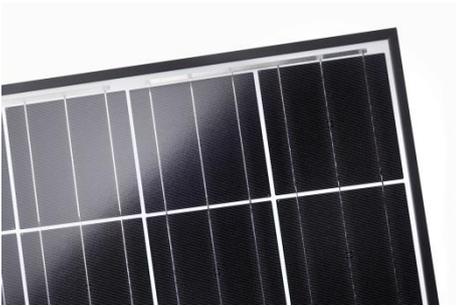


PRODUCTS



Q.PRO-G3 POLYCRYSTALLINE MODULE, 255W_p

- 60-cell poly module.
- Top performer at Alice Springs Desert Knowledge independent test centre.
- Slim, lightweight 35mm frame.
- Industry-leading warranty: 12 year product; and 25-year linear performance (83% at 25 years).
- **Item: Q.PRO-G3 255W_p** polycrystalline module



Q.PEAK-G3 MONOCRYSTALLINE MODULE, 280W_p

- 60-cell high-power mono module in the same size format as the Q.PRO.
- Full square mono cells and black frame for improved aesthetics.
- Slim, lightweight 35mm frame.
- Industry-leading warranty: 12 year product; and 25-year linear performance (83% at 25 years).
- **Item: Q.PEAK G3 280W_p** monocrystalline module



NOT ALL SOLAR PANELS ARE CREATED EQUAL

Hanwha Q CELLS set the global standard in terms of innovation, research and development, superior technology and quality testing, which all comes down to superior performance to withstand the test of time. Q CELLS panels are independently tested in the field alongside of our competitors and consistently come out in front. You can install Q CELLS with confidence, knowing they will continue to work efficiently for decades.

And, as Hanwha Q CELLS is a solid, financially stable global company, we'll be here to honour our 12 year panel warranty and 25 year performance warranty, which will give your clients complete peace of mind.

GUARANTEED TO STAND THE TEST OF TIME

Q CELLS maximise return on investment by providing highly stable power production for decades. They come with a 12 year panel warranty, which is two years more than the industry standard and one of the best 25 year linear performance guarantees on the market. Solar panels do lose a percentage of their performance over time; however, Q CELLS are guaranteed to produce at least 83% of nominal power after 25 years.

Significantly, Hanwha Q CELLS is an established global brand that will be around to honour its warranties in the future.

A TECHNOLOGY LEADER IN THE SOLAR INDUSTRY SECTOR

Hanwha Q CELLS operates the solar industry's largest Research and Development centre and one of the biggest module testing facilities in the world. The company has a strong history of innovation and R&D, with over 200 scientists and engineers employed to research and develop premium panels. To exclude any imperfections due to human error and ensure 100% quality control, the production of Q CELLS panels is fully automated and our manufacturing plants have quality inspection procedures that set the global standard.

THE SECURITY OF AN ESTABLISHED GLOBAL BRAND

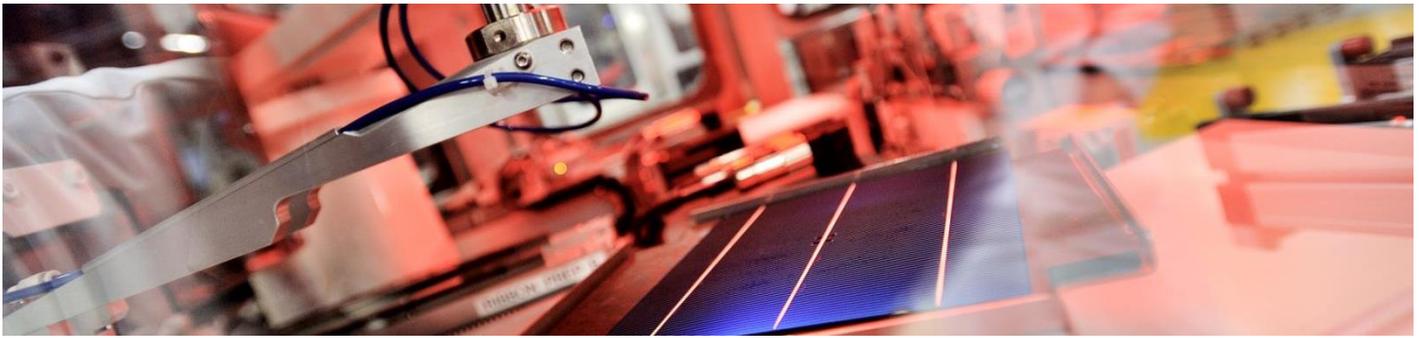
As warranties will only be honoured for as long as the company operates, it's important to choose a financially stable manufacturer with a solid reputation and proven track record.

Founded in Thalheim, Germany, Q CELLS has been at the forefront of solar technology for decades. We are owned and backed by the Hanwha Group, a Fortune 500 company, with solar power being the key pillar of its investment strategy. We are also the world's largest premium solar company with offices all around the globe, including an Australian base in Sydney and a national network of industry partners to offer service and support.

TESTED IN THE TOUGHEST AUSTRALIAN CONDITIONS

Q CELLS panels are consistently put under pressure in the most punishing climatic conditions around the world, including Alice Springs' Desert Knowledge Centre (with live public monitoring available at www.dkasolarcentre.com.au) and James Cook University's Cyclone Testing Station in Queensland.

Q CELLS are salt-proof, sun-proof and cyclone-proof and are designed to produce maximum power in the toughest Australian conditions.



SUPERIOR QUALITY – SETTING A PREMIUM PANEL APART

Together with Germany's VDE institute (the internationally renowned independent German certification authority), Q CELLS implemented the most comprehensive quality testing program in the solar industry sector.

Every module is subject to the most comprehensive quality inspection procedures with Q CELLS standards set above and beyond the minimum industry standards that solar panels are required to meet for sale.

The majority of panels on the market today only conform to required minimum standards and many manufacturers claim 'quality' but this is not supported by independent industry testing.

MAXIMISING POWER PRODUCTION

Thanks to the busbar layout and full-square design, Q CELLS are able to maximise the amount of available area for solar generation. They are also designed to minimise reflection, which further minimises energy loss.

Q CELLS Anti-Reflection layer creates a one-piece corrosion resistant panel with 50% less reflection.

Q.ANTUM technology is built into our cells and is designed to capture more of the sun's rays that would otherwise pass through and be lost. Q.ANTUM technology supercharges the performance of our panels.

HIGH EFFICIENCIES IN LOW LIGHT

Q CELLS still have the power to work efficiently in low light. Even in light levels equivalent to a dull day, Q CELLS will still achieve 98% of their rated efficiency. Furthermore, for irradiation levels between 400W/m² and 900W/m² Q CELLS panels exceed 100% of the rated efficiency. That means they're working for your clients, earlier in the morning, later in the afternoon and even when the weather isn't!

RECORD BREAKING PERFORMANCE

Q CELLS technology enabled us to produce the solar panel with record-holding performance. The Q.PRO-G2 235 was awarded Best Polycrystalline Solar Module 2013 by the Photon Laboratory – a field endurance test that included 151 Photovoltaic models from 119 manufacturers.

ADVANCED TECHNOLOGY THAT PUTS SAFETY FIRST

Over the years, Q CELLS have established product standards that set benchmarks for the industry to follow. They were the first company to develop solutions for common panel problems such as Hot Spots, which can cause module fire and Potential Induced Degradation (PID) technology, which cause power loss.

Q CELLS **Hot Spot Protect** (HSP) increases safety and reliability and all modules are guaranteed to be Hot Spot free.

Q CELLS **Anti PID Technology** (APT) prevents Potential Induced Degradation at cell level for secure yields without performance losses and all modules are also guaranteed to be PID free. Our claim is confirmed by the 2012 independent and random tests conducted by the world renowned Fraunhofer Centre for Silicon Photovoltaics. Of the thirteen manufacturers' panels claiming to be "PID Free", nine did not live up to their claims. Q CELLS passed this intense testing, a testament to our technological developments in this area, meaning your customers don't need to worry about performance losses due to PID.

PREMIUM PANEL PROTECTION

Q CELLS panels are protected by a high-tech 35mm aluminium alloy frame, which allows for lower weight, more flexibility and increased loads. Due to a special thermal treatment, frames are particularly tension resistant and, in combination with high quality silicon bonding of the laminates, Q CELLS will resist the fiercest stresses and strains.