



**Q.CELLS**  
YIELD SECURITY

- ✓ ANTI PID TECHNOLOGY (APT)
- ✓ HOT-SPOT PROTECT (HSP)
- ✓ TRACEABLE QUALITY (TRA.Q™)

CLAIMING LEADERSHIP MEANS PROVING IT

# THE SAFE CHOICE FOR SECURE YIELDS

The next generation crystalline solar modules by Q-Cells

NEW TECHNOLOGY –  
FOR EVEN HIGHER  
YIELDS!



**Q.CELLS**

# Q-CELLS QUALITY WITH NO COMPROMISES PAYS OFF FOR YOU TOO!

## MORE COST-EFFECTIVE THANKS TO EXPERIENCE

Q-Cells is the technology leader in the photovoltaics industry. Founded in 1999, Q-Cells had developed into the world's largest solar cell manufacturer in just a few years. With our comprehensive expertise we have been setting standards in the industry regarding power, reliability, aesthetics, and simplicity of installation for 10 years. What's more, we don't only claim leadership, we prove it with hard facts.

## INNOVATION ENSURES QUALITY

As a primary innovation driver in the solar industry, we set the pace for standards in the industry:

- 2004** Introduction of the 6-inch cell standard.
- 2007** Introduction of the 3-busbar layout at cell level.
- 2008** Increase in resilience due to hot-spot free cells thanks to unique hot spot protect (HSP) quality controls.
- 2010** World record efficiencies of thin-film modules and introduction of the first full-square monocrystalline cells.
- 2011** Increase in yield reliability thanks to innovative Anti PID Technology (APT).
- 2011** Enhanced yield security thanks to the unique Traceable Quality (Tra.Q™) laser-marking technology, which guarantees traceability and forgery protection.

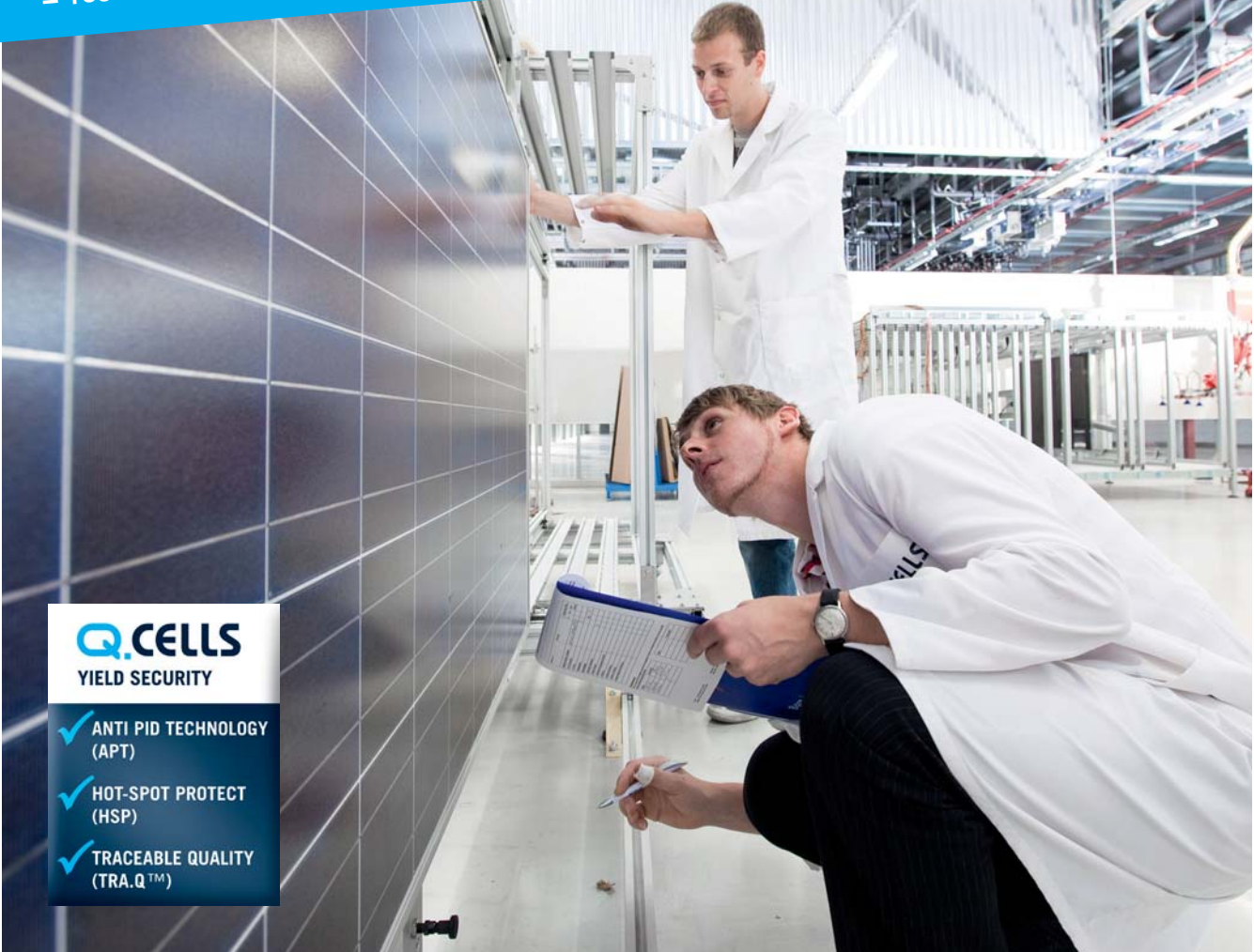
**Our innovations facilitate the decision to choose Q-Cells solar modules as a choice that pays off.**

## YOUR SUCCESS IS OUR BENCHMARK

That's why Q-Cells offers comprehensive service including yield simulation and monitoring, technical training sessions, and professional support provided by our engineers on site. This allows you to transform our competence into your success.



**CERTIFIED QUALITY MANAGEMENT ACCORDING TO ISO 9001  
+ TESTING METHODOLOGY WITHOUT COMPROMISES  
= 100 % QUALITY WITH COMPREHENSIVE PERFORMANCE WARRANTIES!**



**Q.CELLS**  
YIELD SECURITY

- ✓ ANTI PID TECHNOLOGY (APT)
- ✓ HOT-SPOT PROTECT (HSP)
- ✓ TRACEABLE QUALITY (TRA.Q™)

**QUALITY PRODUCTS  
+ COMPREHENSIVE ON-SITE SERVICE  
= PROFITABLE SOLUTIONS FOR ALL!**



# CHOOSE THE MOST RELIABLE AND SAFEST CRYSTALLINE SOLAR MODULES!

## INCREASED EFFICIENCY, INCREASED POWER, INCREASED YIELD

Only the best for your customers – Q-Cells crystalline solar modules:

- **NEW!** As first company in the industry we exclusively use PID-resistant<sup>1</sup> solar cells and therefore prevent power losses caused by potential-induced degradation: **Maximum yield security.**
- **NEW!** The new forgery-proof Traceable Quality (Tra.Q™) technology allows us to guarantee the exclusive use of genuine and traceable Q-Cells solar cells: **Definite high performance solar cells.**
- Comprehensive tests of every individual module with electroluminescence inspection: **Minimization of power losses.**

## GENERATE LONG-TERM PROFITS DEPENDABLY

A smiling customer is a loyal customer:

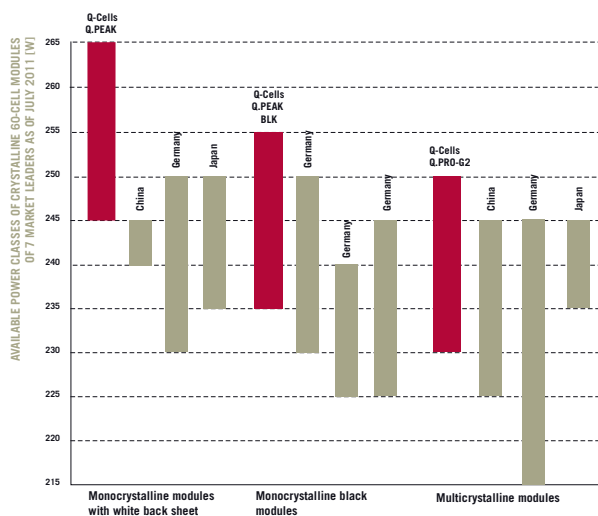
- **NEW!** 25-year linear performance warranty and 10-year extended product warranty<sup>2</sup>: **Secure investment.**
- Considerably higher resilience and lower risk of fire thanks to use of Q-Cells manufactured Hot-Spot free cells: **For highest reliability.**
- Q-Cells modules offer the highest permissible reverse current: **For more flexible installation and increased resilience.**
- Tested for wind/snow loads up to 5,400 Pa: **Strong in every weather condition.**
- In our TDAP-certified module test center we perform our measurements in accordance with the strictest VDE directives: **You can put your trust in our performance data.**
- VDE Quality Tested and extended IEC stress tests: **Secure long-term quality and or fewer claims.**



## Q-CELLS CRYSTALLINE MODULES: THE HEIGHT OF MODULE EFFICIENCY

Q.PEAK offers mono yield protection. The standard, light-induced initial degradation of mono-cells is already taken into account at 2.5% in the performance data. Q-Cells is the only cell producer providing this mono yield protection.

Q.PRO-G2 multicrystalline 60-cell modules achieve a nominal efficiency of up to 15.0%, though their actual efficiency can be up to 15.3% taking the +5/-0 Wp positive sorting into account. In actuality, this is proven by high performance yield data.



REGION (ANNUAL INSOLATION)	ANNUAL YIELD <sup>2</sup>
	[kWh/kWp]
North Germany (Hamburg) (947 kWh/m <sup>2</sup> ) <sup>1</sup>	855
Central Germany (Berlin) (1,009 kWh/m <sup>2</sup> ) <sup>1</sup>	920
South Germany (Munich) (1,149 kWh/m <sup>2</sup> ) <sup>1</sup>	1,060

<sup>1</sup> Horizontal irradiation for 30° roof pitch

<sup>2</sup> PV Sol simulation with Q.PRO-G2 240, SMA inverter, southern roof orientation

<sup>1</sup> Leakage currents from the PV module can cause significant yield losses in a phenomenon known as potential-induced degradation (PID) and arise within the first months of operation. Q-Cells prevents any risk of PID right on cell level. APT test conditions: -600 V, wet module surface, 25 °C, 300 h

<sup>2</sup> Performance warranty: min. 97% of nominal power in year 1; max. 0.6% degradation per year from year 2; min. 83% of nominal power after 25 years. Full product and performance warranties are subject to registration, and apply in accordance with the valid regional warranty terms.



**NEW MODULE!**  
AVAILABLE NOW

## Q.PEAK 245-265 HIGHEST POWER AND RELIABILITY

**TYPE** Monocrystalline 60-cell module.

**POWER** With up to 265 Wp and 15.9 % efficiency, highest performing module of its kind on the market.

- Use of full-square mono cells: 3 % higher yield compared with standard modules with pseudo-square mono cells.
- Positive sorting +5/-0 Wp: Extra yield.
- Junction box with IP67 protection rating: Temporarily waterproof up to 1 m water depth.
- The energy pack: Ideal for high performance on private rooftop installations.



**NEW MODULE!**  
AVAILABLE FROM SEP 2011

## Q.PEAK BLK 235-255 AESTHETICS COMBINED WITH TOP PERFORMANCE

**TYPE** Monocrystalline 60-cell module.

**POWER** With up to 255 Wp and 15.3 % efficiency, market leader among uniform, black, monocrystalline modules.

- Use of full-square mono cells combines highest yields with aesthetic design for demanding architectural applications.
- Positive sorting +5/-0 Wp: Extra yield.
- Junction box with IP67 protection rating: Temporarily waterproof up to 1 m water depth.
- The beau: Ideal for private rooftop and facade installations.



**NEW MODULE GENERATION!**  
AVAILABLE NOW

## Q.PRO - G2 230-250 HIGHEST RELIABILITY AND SAFETY

**TYPE** Multicrystalline 60-cell module.

**POWER** With up to 250 Wp and 15.0 % efficiency, highest performing module of its kind on the market.

- Positive sorting +5/-0 Wp: Extra yield.
- Junction box with IP67 protection rating: Temporarily waterproof up to 1 m water depth.
- The classic: Ideal for private rooftop installations.

# RELIABLE YIELDS WITH HIGH EFFICIENCY!

## MORE FOR YOUR INVESTMENT THANKS TO Q-CELLS YIELD SECURITY

The degradation of crystalline modules isn't only a question of aging. Q-Cells has identified three main factors and has ensured that they don't affect our modules.

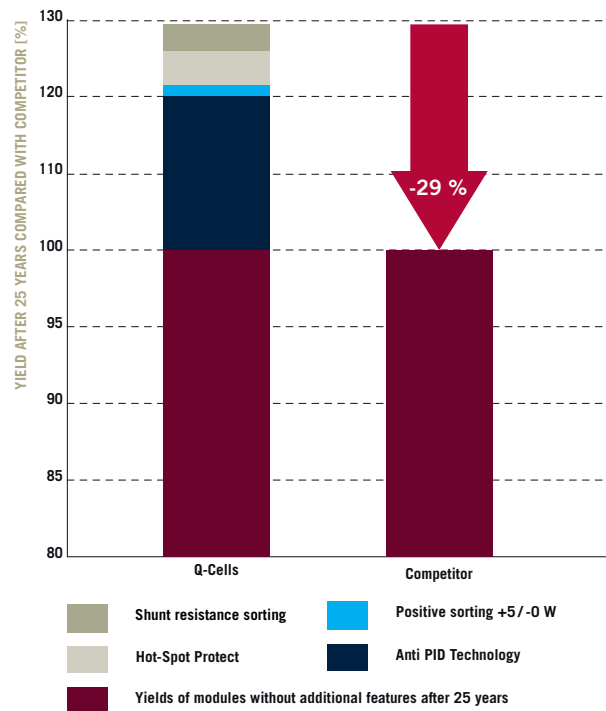
**Shunt resistance:** Sample measurements in Leipzig, Germany, have shown 3% greater yield of modules with shunt-free solar cells compared to modules with shunt-affected cells. At Q-Cells, shunt-affected cells are sorted out at an early stage.

**Hot-Spots:** Hot-Spots are small defects on the cells, which can cause overheating (>200 °C). This can lead to yield loss up to 5% and - in worst case - module fire. Due to our Hot-Spot Protect (HSP) quality control method, which is unique in the PV industry, we sort out Hot-Spot cells before they get into the module.

**Potential-induced Degradation (PID):** PID can cause yield losses of more than 20% (Source: Photon, 12-2010). We optimized our cell production processes to prevent PID directly the on cell level.

But that's not all: Due to the positive sorting of our modules, we offer added power for no extra money.

**With Q-Cells you get the most reliable and safest solar modules ensuring high yields.**

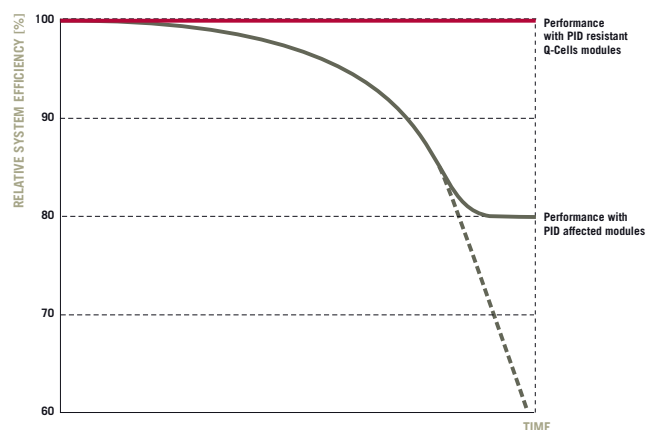


## RELIABLE YIELDS THANKS TO Q-CELLS PREVENTION OF POTENTIAL-INDUCED DEGRADATION (PID)

Leakage currents from the PV module can cause significant yield losses via a phenomenon known as potential-induced degradation (PID) and may arise within the first months of operation. PID is a progressive phenomenon, and losses can greatly exceed 20% if left undetected.

**There's no need to worry about PID with Q-Cells. With our Anti PID Technology (APT), the risk of PID is prevented right on the cell level. We secure highly reliable yields.**

MODEL CALCULATION FOR CRYSTALLINE MODULES



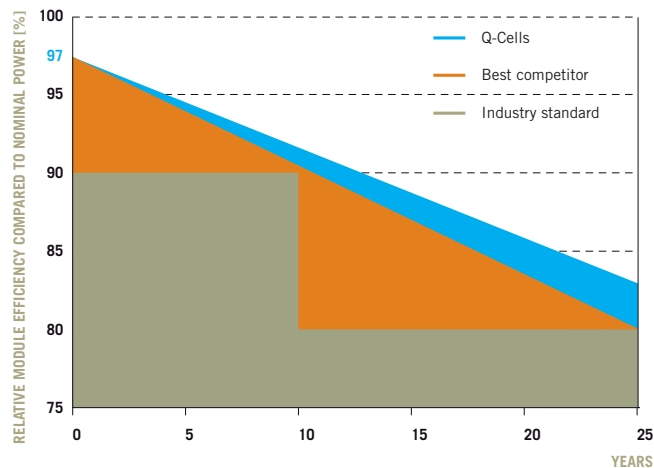
## BEST WARRANTIES ON THE PV MARKET THANKS TO Q-CELLS

Don't accept the standard. Q-Cells offers a linear performance warranty for 25 years of maximum yields as well as an extended 10-year product warranty.

Hence, we guarantee that the power of a new module:

- does not vary more than 3% from the nominal power in the first year,
- decreases by a maximum of 0.6% per year from year 2,
- still achieves 83% of the nominal power after 25 years.

**With Q-Cells, you get the best warranty on the PV market, thus the highest safety for your investment.**



**YOU ARE ALWAYS GUARANTEED RELIABLE YIELDS  
WITH Q-CELLS CRYSTALLINE SOLAR MODULES!**



# WE PUT OUR PERFORMANCE PROMISE TO THE TEST ON A DAILY BASIS!



## ALICE SPRINGS, AUSTRALIA

### APPLICATION

Independent test facility

### INSTALLED CAPACITY

5.64 kWp

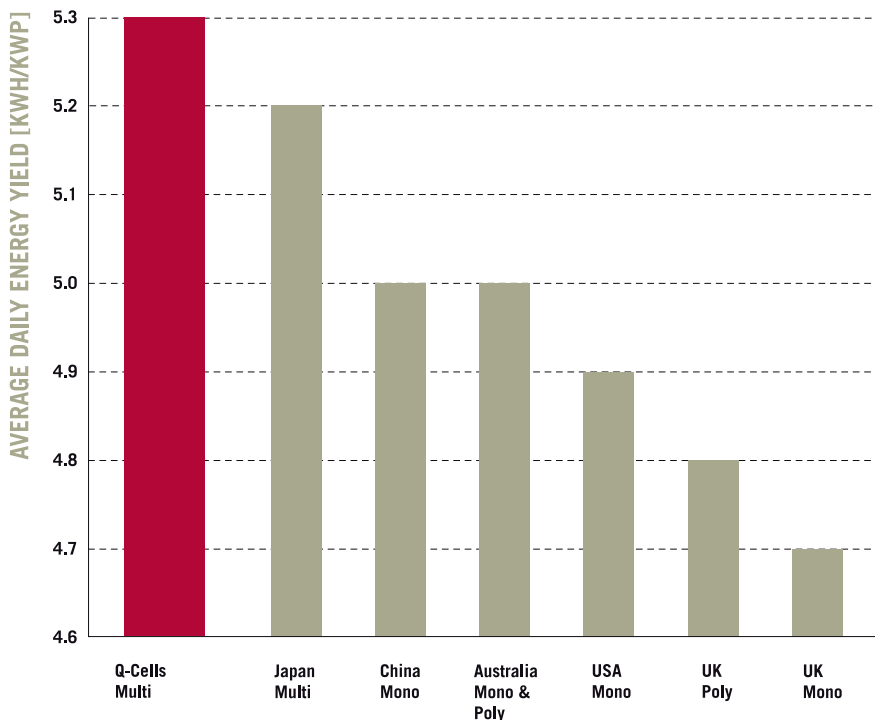
### COMPLETION

March 2010

### MODULES

QC-C05 235 W (Q.PRO predecessor)

Alice Springs, Australia, March 2010 - February 2011



We test our modules to the extreme in the Desert Knowledge Australia Solar Center (DKASC) benchmark comparison. Together with around 20 competitors, solar modules have been monitored in desert conditions in the heart of Australia's outback. Q-Cells solar modules are one of the top performers in this side-by-side comparison\*.

\* Desert Knowledge Australia, the Australian Government, the Government of the Northern Territory, and the project manager of CAT Projects accept no legal responsibility for results and conclusions arising in connection with the data of the DKASC.



## MT. ISA, AUSTRALIA

Q.PRO modules are ideal for small rooftop installations. This solar system supplies the Parkside apartments in Mount Isa, Australia, with clean energy every day. The complete installation stretches over 8 roofs.

<b>APPLICATION</b>	Private rooftop installation
<b>INSTALLED CAPACITY</b>	155 kWp
<b>COMMISSION DATE</b>	November 2010
<b>MODULES</b>	Q.PRO 230 W
<b>SPECIFIC YIELDS</b>	
	December 2010 - June 2011: 822.92 kWh/kWp
	☉ Performance ratio: 80.48%
	(Source: Q-Cells monitoring)



## CASTEL GOFFREDO, ITALY

This solar system with Q.PRO modules in Castel Goffredo, Italy, has been supplying a home with solar energy since 2010. Despite the lower installation angle of 17%, the system achieves excellent yields.

<b>APPLICATION</b>	Private rooftop installation
<b>INSTALLED CAPACITY</b>	4.5 kWp
<b>COMMISSION DATE</b>	October 2010
<b>MODULES</b>	Q.PRO 225 W
<b>SPECIFIC YIELDS</b>	
	November 2010–June 2011: 708.52 kWh/kWp
	(Source: <a href="http://www.sonnenertrag.eu">www.sonnenertrag.eu</a> )



## CAPPELN, GERMANY

Since June 2010, this small commercial installation in Lower Saxony, Germany, achieved appr. 5 % more yield than all photo-voltaic installations in average in Lower Saxony.

<b>APPLICATION</b>	Commercial rooftop installation
<b>INSTALLED CAPACITY</b>	64.8 kWp
<b>COMPLETION</b>	May 2010
<b>MODULES</b>	QC-C04 (Q.PRO predecessor)
<b>SPECIFIC YIELDS</b>	
	Juli 2010 – June 2011: 970.61 kWh/kWp
	(Average Lower Saxony 934.93 kWh/kWp)
	(Source: <a href="http://www.sonnenertrag.eu">www.sonnenertrag.eu</a> )

# SOMETHING YOU CAN RELY ON: Q-CELLS SERVICE!

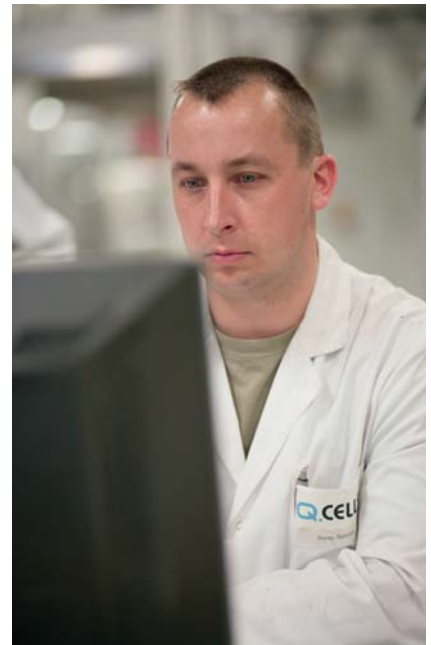
## WE ARE TENACIOUS WHEN IT COMES TO A SUCCESSFUL PARTNERSHIP

If you want to stay in business tomorrow, you have to do one thing above all today: listen. We listen carefully to the requirements of our customers. This allows us to advise and support you right from the word go: from initial planning through to recycling your system at the end of its service life.

## LONG-TERM GUARANTEES INSTEAD OF EMPTY PROMISES

Certified quality management and automated production processes with ongoing checks are our guarantee for highest quality. And it clearly pays off for you – thanks to high-quality modules with long-term stability and top yields.





## PRACTICAL ASSISTANCE, NOT MERE LIP SERVICE

We are there for you if you have any questions or problems. Our highly-competent, telephone support staff is available to assist you in a flash – we don't put you through to a call center, but to experienced technicians, who can even help you on site if necessary.

### **We are tackling problems today so they don't affect you tomorrow:**

- As a member of PV Cycle, we ensure that your end-of-life modules can be returned free-of-charge.
- Together with the German Fire Department, Q-Cells published the first firefighting directives for module fires in 2010.

## WE ARE WITH YOU EVERY STEP OF THE WAY

As a Q-Cells quality partner you don't just benefit from high quality products. We also provide you with support in the marketing of the Q-Cells modules.

## WARRANTY\*

- 10-year product warranty
- 25-year linear performance warranty

\* Performance warranty: min. 97% of nominal power in year 1; max. 0.6% degradation per year from year 2; min. 83% of nominal power after 25 years.  
Full product and performance warranties in accordance with the valid regional warranty terms.

## COOPERATIVE MARKETING BRINGS MORE SUCCESS

- Professional training: Training program for your employees and installation technicians
- Sales documentation and advertising material for installers and operators
- Support in advertising and trade fair appearances
- Personalizable marketing tools, e.g. advertisements
- Certification as official partner
- Listing as official partner on Q-Cells websites and advertising materials

## CONTACT

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The logo for Q.CELLS, featuring the word "Q.CELLS" in a bold, blue, sans-serif font. The "Q" is slightly larger and more prominent than the other letters.