



Q CELLS
ERTRAGSSICHERUNG

- ✓ ANTI PID TECHNOLOGY (APT)
- ✓ ADDITIONAL POWER BOOST (APB)
- ✓ 360° EFFICIENCY (TDE)

CLAIMING LEADERSHIP MEANS PROVING IT

3x SAFE

WITH CIGS THIN-FILM SOLAR MODULES BY Q-CELLS

MADE IN GERMANY GUARANTEES FOR LONGEVITY!

Would you entrust your future to a complete stranger?

Neither would we at Q-Cells. That's why we still produce 100% of our CIGS thin-film solar modules at Bitterfeld-Wolfen, Germany. In our automated production lines we produce and test the CIGS modules of the Q.SMART series in accordance with strict German standards and highest global quality demands. Thus, we can guarantee the most important quality feature of solar modules: **Yield Security**. After all, you want your modules to reliably generate electricity for at least a quarter century.

Due to our **innovative Q-Cells technologies** and comprehensive quality controls we not only prevent power loss caused by potential induced degradation but also achieve excellent diffuse light and low light behaviour. Our positive sorting and the light soaking effect even allow for up to 15% of **additional module power** - free of additional cost.

Our CIGS solar modules are tested and certified in accordance with the comprehensive test criteria of industry standards IEC 61646 and IEC 61730 longevity and reliability. Furthermore, we **continuously test modules from serial production** in our own Module Test Center, thus ensuring that our Q.SMART modules achieve **secure yields over the course of 25 years**. This is backed up by the best warranties on the market.



ANTI PID TECHNOLOGY PREVENTS POWER LOSS!

When solar modules are interconnected, voltage differences between the module frame and the active layer can occur. If unchecked, voltage differences can cause leakage currents to develop, which can cause significant power loss within the first few months of operation. This phenomenon called potential induced degradation is best resolved on the cell level. With the new Anti PID Technology (APT), Q-Cells has optimized its production processes to prevent the negative effects of leakage currents. Due to this, our solar modules are **PID-free**¹.

ADDITIONAL POWER BOOST GIVES YOU AN EXTRA OF UP TO 15%!

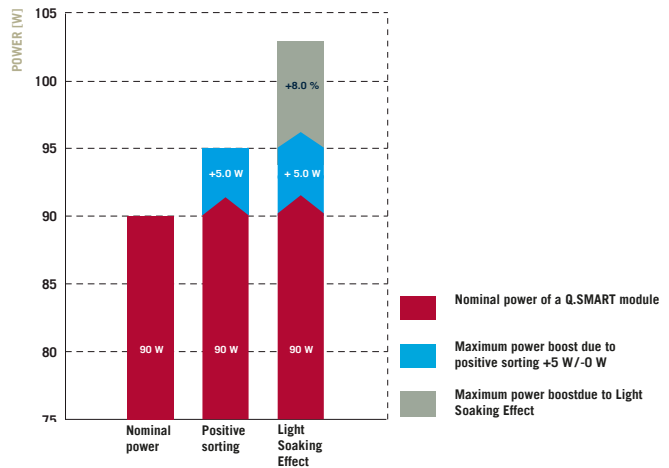
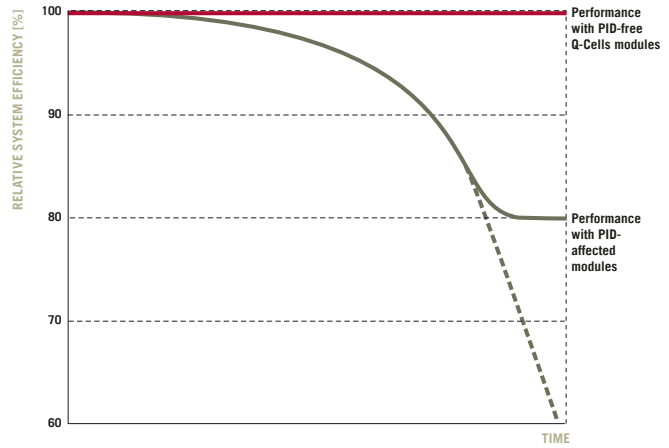
Q-Cells is the only producer of thin-film modules providing an additional power boost of its modules due to **positive sorting and the light soaking effect** to its customer. With positive sorting, a 95 W module exhibits a nominal power of at least 95 W but can achieve up to 99.99 W. The light soaking effect causes the optimization of the photo-active layer within the first months of operation due to insolation. Both factors increase the actual power of the module adding up to **15% additional power** after commissioning the system.

360° EFFICIENCY WINS ON EVERY ROOF ORIENTATION!

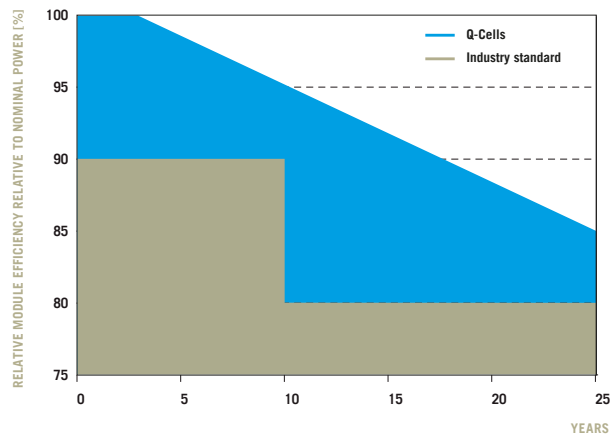
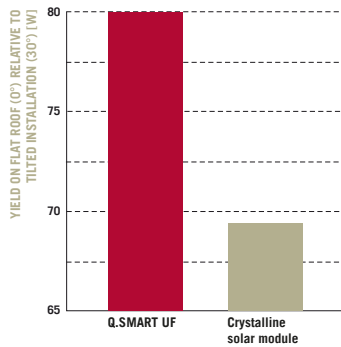
It's a well-known urban legend: Solar modules only work well on south-facing roofs at an inclination of 30°. Our Q.Smart installations have proven otherwise. Due to its excellent diffuse light and low light behaviour, Q.SMART modules achieve **high yields on every roof** - south, east, west or north, vertical, horizontal or tilted.

THE BEST WARRANTIES SECURE YOUR INVESTMENT!

Q-Cells offers the most reliable and safest solar modules on the market. This is backed up by an extended **10-year product warranty** as well as a **25-year linear performance warranty**, even for installations <30 kWp. We guarantee that the power of a new module achieves at least the nominal power within the first 3 years, decreases not more than 0.6% per year after that and still achieves at least 85% of the nominal power after 25 years. **Nobody offers better warranties.**



RESULTS ON AN INDEPENDENT TEST FIELD IN GERMANY



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