



# WE GO THE EXTRA MILE TO ENSURE YOUR INVESTMENT IS SAFE: YINGLI SOLAR MARATHON TESTS



## THE RESULTS OF THE MARATHON TESTS

- Prove that Yingli Solar products rank amongst the best in terms of reliability and robustness
- Demonstrate our dedication to innovation
- Show Yingli Solar's leadership in both new technology and sustainability
- Prove the high quality and longevity of our products

## MARATHON TESTS RAISING THE BAR FOR MODULE RELIABILITY TESTING

To prove that our products set standards which are amongst the highest in the industry, we have asked TÜV Rheinland to perform Marathon Tests. This unique assessment protocol proves that Yingli Solar PV modules pass reliability tests which are far more stringent than industry norms. The Marathon Test criteria significantly exceed those set for the photovoltaic industry by the International Electro technical Commission (IEC), the international body which approves and oversees standards globally.



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## Marathon Tests\*

Reference: IEC 61215 Test Conditions

The test suite defined by the IEC in its norm 61215 is globally accepted as an industry standard for the certification of PV modules.

### YINGLI SOLAR MARATHON TESTS VERSUS IEC 61215 TEST CONDITIONS

1. Thermal Cycling (TC) – Cycles from -40°C to +85°C	IEC Standard	TC200	200 cycles						
	Yingli Solar Marathon Test	6 Times the IEC 61215							PASS
2. Damp Heat (DH) – Constant conditions of +85°C, 85% relative humidity	IEC Standard	DH1000	1000 hours						
	Yingli Solar Marathon Test	4 Times the IEC 61215							PASS
3. Humidity Freeze (HF) – Cycles from -40°C to +85°C at 85% relative humidity	IEC Standard	HF10	10 cycles						
	Yingli Solar Marathon Test	6 Times the IEC 61215							PASS
4. Mechanical load test	IEC Standard	Pa 5400							
	Yingli Solar Marathon Test	Pa 6000 for front side							PASS
5. Hail impact test	IEC Standard	25 mm diameter ice ball at 23 m/s							
	Yingli Solar Marathon Test	The kinetic energy of the ice ball is nearly twice the IEC standard							PASS



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## CONTINUOUS TESTING

### Independently Verified

Customers do not have to take our word for it: the Marathon Tests were performed by an independent expert body, the internationally acclaimed testing laboratories of TÜV Rheinland.

We plan to conduct further Marathon Tests, pushing our PV modules to the limit and then work with our partners to transfer knowledge from the test results to the field and also apply test insights into our new product designs to further improve reliability. This way we ensure that the performance and reliability of our products exceed the highest industry standards.

\*Tests conducted during 2010