evergreensolar

MORE electricity

People don't buy solar panels. They buy electricity. The more electricity the panels make the better. But since a panel's output is dependent on many variables, determining exactly how much electricity a panel will produce over time is not easy.

Manufacturers assign power ratings to panels which are determined under "ideal" test conditions. The problem is that this only tells you how much power (in watts) the panel produces under conditions that are literally never seen in the real world.

Another metric commonly assumed to determine panel output is efficiency. That is a measure of power generated by every square metre of the panel's surface (also determined under "ideal" test conditions). But higher efficiency doesn't necessarily mean more electricity. It only means that less space is required to generate that electricity. And since high-efficiency panels usually come with high price tags, it is only in heavily space-constrained applications that efficiency is a driving consideration.

So how do you judge a panel's performance? We think that all the technical specifications can be reduced to one simple question: *how much electricity will it make?* And here is why our String Ribbon™ panels make more.

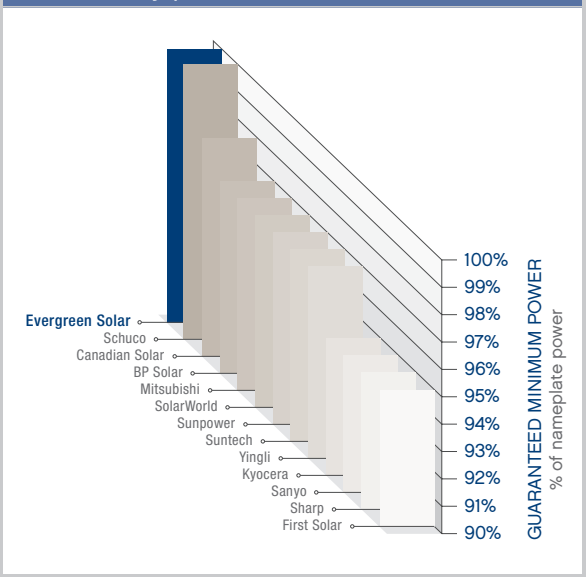
TO GIVE YOU MORE ELECTRICITY, we start by guaranteeing not to give you less

Guaranteed No Power Below Nameplate

It is a common industry practice to quote a "power rating" for a particular panel type with a range of up to +/-5%. That innocent little "+/-" means that, for example, a 200 watt rated panel can actually be anywhere between 190 and 210 watts. But manufacturer warranties typically only guarantee 190 watts rather than the 200 watts you paid for.

Evergreen panels, however, are specified with a power range of -0/+2.5%. That means you are guaranteed to get at least the nameplate power. In fact you will typically get more than the nameplate power by as much as 2.5%. That's 5 more watts for a 200W rated panel. All for free.

Evergreen guarantees more power from every panel



Source: Evergreen and Competitor Datasheets, May 2009

NO WEAK links

Optimizing Total System Power

But does that relatively small 5% power range for a typical panel really matter? More than you might think. Because the laws of physics determine that when panels are connected together each can work only as well as the lowest power panel in the system.

So if you have a system of 25 panels with 24 panels delivering over 200 watts and only one panel delivering 190 watts, the entire system will behave as if all 25 panels have only 190 watts. Multiply that performance difference over 25 years and the cumulative advantage of Evergreen's -0/+2.5% power specification becomes clear.

WE TEST then we test our tests

Independent Power Verification

With no international standards for the consistent use of standardized power test conditions by manufacturers, mistakes, inaccuracies and even manipulation can easily taint panel power results. And since you can't take a panel for a test drive before you buy it, you have no way of knowing if the power you're buying really is the power you will get. That's why Evergreen regularly sends sets of panels to four independent, certified test labs to ensure you get the power we promise.

Power testing labs

TÜV Rheinland®

Fraunhofer ISE Institut Solare Energiesysteme

NREL National Renewable Energy Laboratory

TÜV Rheinland PTL

MORE LIGHT MEANS more electricity

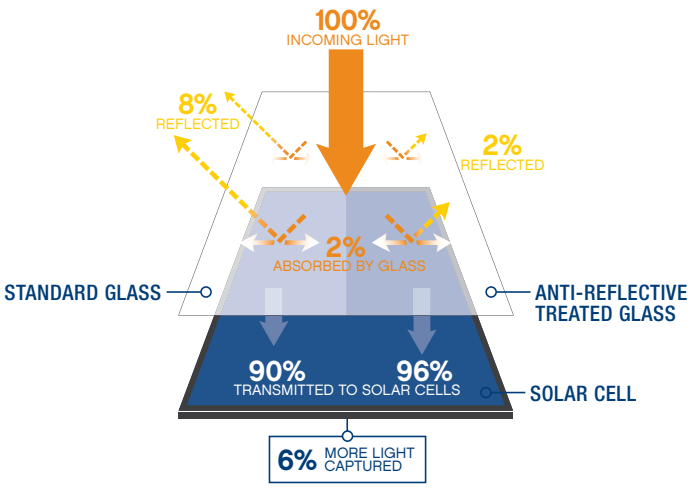
Anti-Reflective Glass Improves Power

The less sunlight a panel captures, the less electricity it will create—no matter how efficient the solar cells are. Conversely, the more sunlight a solar panel can capture, the more electricity it can create.

This is why Evergreen uses a special anti-reflective treated glass on its solar panels. This advanced nano-technology means our panels can catch up to 6% more light at midday, and as much as 12% early and late in the day when the sun is lower on the horizon.

In a typical installation this means Evergreen panels can generate at least 2–3% more electricity than panels using standard glass. And because the anti-reflective treatment is a glass material, it is just as a durable as the panel itself.

Special glass captures up to 6% more light at midday



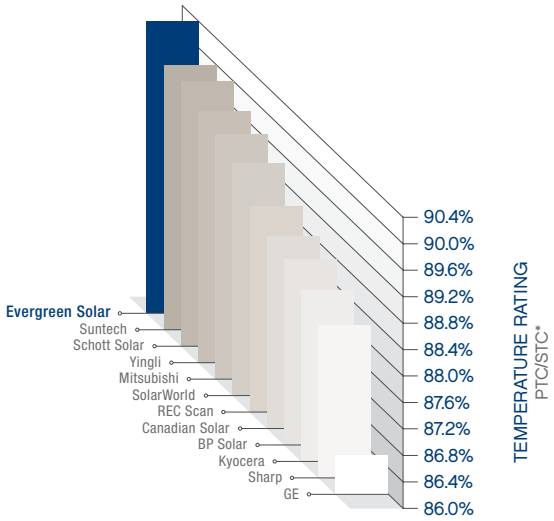
Source: Centrosolar Glass AG

BEATING THE heat

Lower Temperature Coefficient for More Power

An irony of solar power is that the hotter a panel gets, the less electricity it produces. The amount of power a panel loses when it gets hot is determined by its temperature rating. Engineering improvements have brought Evergreen's certified rating up to a category-leading 90%. This means our panels can produce up to 4% more power compared to panels that have ratings as low as 86%.

Evergreen panels deliver more power on hot days



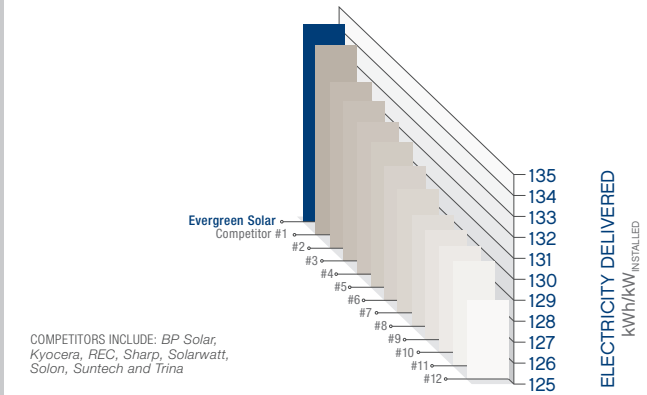
PTC: PV USA Test Conditions; STC: Standard Test Conditions; Source: California Energy Commission Listing of Eligible Photovoltaic Modules, Evergreen ES-A Series panels, May 2009; gosolarcalifornia.org/equipment/pvmodule.php

MORE electricity

In the end, when you install a solar system you aren't buying "efficiency" or a "power rating." You are buying electricity. That is why Evergreen builds String Ribbon™ panels that aren't designed just to perform well in a lab or on a spec sheet but to deliver more electricity in the real world.

And as the industry is increasingly testing panels by measuring how much electricity they generate using long-term, side-by-side field tests, we are happy to let the results speak for themselves.

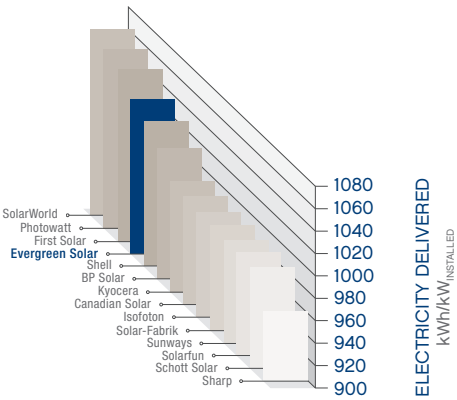
TÜV performance test results 2008



COMPETITORS INCLUDE: *BP Solar, Kyocera, REC, Sharp, Solarwatt, Solon, Suntech and Trina*

Tests from April to September 2008; data shown for June 2008 only; Cumulative electricity delivered by Evergreen panels over 6 months exceeded all others; Evergreen ES-190 panel tested; Evergreen evaluation of data provided by TÜV Rheinland

Photon panel test results 2008



Photon International, Issue 2-2009; Evergreen ES-180 panels tested from Jan.–Dec. 2008

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