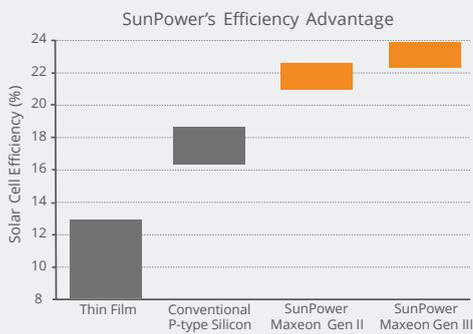


# MAXEON™ GEN III SOLAR CELLS

## Power Advantage

SunPower designs, manufactures, and delivers high-performance solar electric technology worldwide. SunPower™ cells produce 25-35% more power compared to Conventional Cells<sup>1</sup> with outstanding aesthetics.



## Energy Advantage

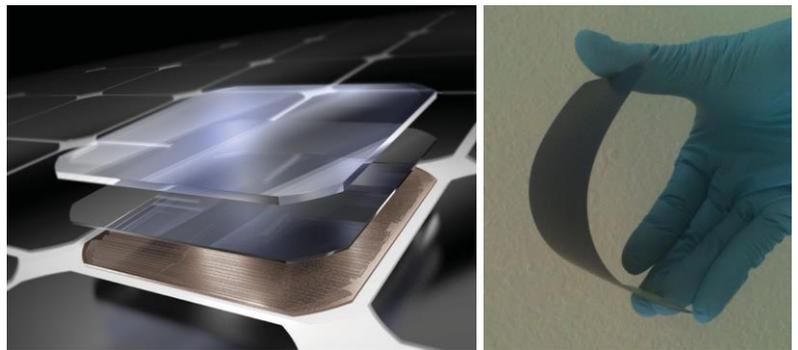
SunPower panels deliver the highest energy per rated watt compared to a Conventional Panel. (Photon International, Mar 2013, out of 151 panels tested).

- No Light-Induced Degradation = 2 - 3% more energy.
- Low Temperature Coefficient = 1 - 2% more energy at 35-40°C ambient temperature.
- Low Light and Broad Spectral Response = up to 1% more energy in overcast and low-light conditions.

<sup>1</sup> As used throughout, "Conventional Cells" are silicon cells that have many thin metal lines on the front and 2 or 3 interconnect ribbons soldered along the front and back. "Conventional Panel" means a panel with 240W, 15% efficiency and approximately 1.6 m<sup>2</sup> made with Conventional Cells.

## Durability Advantage

The Maxeon cell has strength and durability to survive extreme conditions year after year, enabling SunPower to provide superior, long-term performance in a broad range of applications.



- Corrosion Resistance: SunPower's tin-copper metal system is more corrosion resistant compared to the porous metal paste used in Conventional Cells, which can crack more easily and corrode.
- Crack Resistance: SunPower's cells are thinner and more flexible than Conventional Cells. When a SunPower cell does crack, the backside copper metal foundation keeps the cell intact and maintains a high power output. When Conventional Cells crack, the cell breaks apart with typically a significant loss of power.
- Eco-Friendly: SunPower cells solder to lead-free components and are RoHS compliant. Conventional Cells often require components with lead.



Photo courtesy of 3S Photovoltaics



# MAXEON™ GEN III SOLAR CELLS

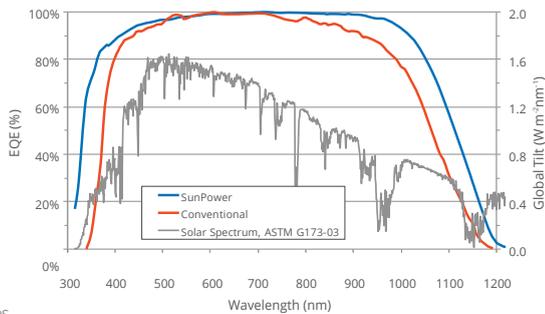
## Electrical Characteristics of a typical Maxeon Gen III Cell At Standard Test Conditions (STC) STC: 1000W/m<sup>2</sup>, AM 1.5g and cell temp 25°C

	Pmpp (Wp)	Eff. (%)	Vmpp (V)	Impp (A)	Voc (V)	Isc (A)
Ultra Premium Performance	3.63	23.7	0.632	5.9	0.73	6.15
Ultra High Performance	3.54	23.1	0.621	5.8	0.72	6.12
Ultra Performance	3.46	22.6	0.612	5.8	0.71	6.08

Electrical parameters are nominal values.

Temp. Coefficients in SunPower Panels: Voltage: -1.74mV/°C, Power: -0.30%/°C

## Spectral Response

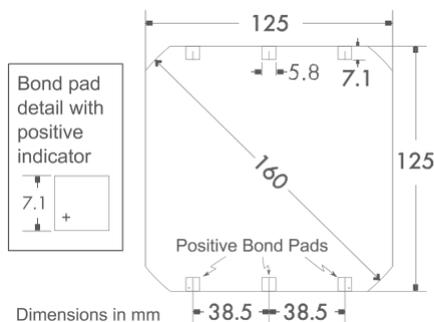


References

SunPower: NREL data, commissioned by SPWR  
Conventional: Progress in Photovoltaics: Research and Applications, Solar cell efficiency tables version 36 18(5), (2010) 46–352

## Cell Physical Characteristics

Wafer:	Monocrystalline silicon
Design:	All back contact
Front:	Uniform, black antireflection coating
Back:	Tin-coated, copper metal grid
Cell Thickness:	165µm +/- 40µm



Bond pad area dimensions are 5.8mm x 7.1mm.  
Metal finger pitch between positive and negative fingers is 471µm.  
Positive/Negative pole bond pad sides have "+/-" indicators on leftmost and rightmost bond pads

## Positive Electrical Grounding

If the cell voltage is below frame ground the cell power output will be reduced. Therefore, modules and systems produced using these cells should be configured as "positive ground systems." If this creates a problem, please consult With SunPower.

## Interconnect Tab and Process Recommendations



SunPower recommends customers use SunPower's patented tin-plated copper strain-relieved interconnect tabs, which can be purchased from SunPower. These interconnects are easily solderable and compatible with lead free processing.

Our patented interconnect tabs are packaged in boxes of 3600 or 36,000 each.

<http://us.sunpower.com/about/sunpower-technology/patents/>

SunPower suggests that the cells are built into modules using SunPower's proprietary encapsulant for optimal performance. Encapsulant is available in rolls of 0.8m or 1m wide by 140m long.

## Production Quality

ISO 9001:2008 certified

Soft handling procedures to reduce breakage and crack formation

100% cell performance testing and visual inspection

## Packaging

Cells are packed in boxes of 1500 each; grouped in 10 shrink-wrapped stacks of 150 with interleaving. Minimum order size is 1 box. 24 boxes are packed in a water-resistant "Master Carton" containing 36,000 cells suitable for air transport.

## Purchase Terms

Customers shall not reverse engineer, disassemble or analyze the Solar Cells or any prototype, process, product, or other item that embodies Confidential Information of SunPower. Customers shall not cause or allow any inspection, analysis, or characterization of any properties (whether mechanical, structural, chemical, electrical, or otherwise) of the Solar Cells, whether by itself or by a third party.

Customer agrees that it will not transfer (whether by sale, loan, gift, or other conveyance) the Solar Cells from its possession.

SunPower solar cells are provided "AS IS" without warranty.

Full terms and conditions are in the Cell Purchase Agreement