

## Frequently Asked Questions

### Construction and Manufacturing

#### 1. How are Solaria modules different than other modules?

Standard modules utilise copper ribbons to interconnect all the cells in the module together by means of high-temperature soldering processes. Although this method is certainly the most common it is not the most efficient. The busbars need to cover a portion of the solar cells (as much as 3.5%) and require the cells to be spaced apart from one other. There is typically over 30 meters of ribbon per module to enable all these connections. That is a lot of copper and lot of potential failure points. Solaria modules remove this cumbersome element increasing the module power, efficiency and long-term reliability.

#### 2. Why is your product higher power?

PowerXT® “cell shingling” allows more cells to be placed into the module and is further able to extract more power per cell due to reduction of wasted “white space” and shading from the busbars. Because we dice the cells prior to interconnecting it allows us more control over the final size of the module. The Solaria module is wider than a typical module which also helps boost the power. Thus, PowerXT has higher power AND higher efficiency than typical panels.

#### 3. Explain how you make your modules.

Solaria utilises a unique and proprietary process for dicing and connecting solar cells into a format that enables them to be “shingled” together instead of connected with traditional bussing ribbons. This unique format allows us to make higher power modules that still fall in typical Voltage and Current requirements for standard DC conditioning equipment used in PV systems such as inverters, battery chargers and power optimisers.

#### 4. Where are PowerXT® modules manufactured?

Solaria modules are currently produced in South Korea at two different facilities to ensure steady supply.

#### 5. What do the part numbers mean?

PowerXT® is available in two formats, -PD and -PM. Both use the same cell technology and all black construction described above. The -PD uses premium efficiency PERC cells and are best suited for applications where the highest efficiencies are important. The -PM is a larger format panel based on the same technology as the PD but with a larger cell size. Both versions offer amazing aesthetics for rooftop applications with the same reliability and warranty. The three digits in the part number indicate the peak power rating in watts.

## Warranty

### 6. What is your warranty and power degradation rate?

Solaria makes it easy for the installer and homeowner with a simple, 25-year, “bumper-to-bumper” linear power and workmanship warranty: [AU Solaria Limited Product Warranty.pdf](#)

Based on the nameplate rating of the module the guaranteed maximum power degradation rate is as follows:

- No more than -2% in the first year
- No more than -0.5%/year thereafter through year 25
- Minimum power after 25 years is 86% of the initial nameplate value

## Performance

### 7. Can I simulate energy yield?

Yes, The PowerXT® product datasheet includes all the relevant information that a trained contractor can use to accurately estimate the energy yield of your PV system. PVSYST is the industry standard software for estimating PV system energy yields and utilises the “.PAN” file format for specific modules. PAN files for Solaria modules are available upon request. PowerXT panels are also listed in Open Solar, Aurora and Helioscope design software. Ask us about our custom Open Solar design tool specially for Solaria dealers.

### 8. Why do the PowerXT® modules have better shade tolerance and energy yield?

The PowerXT® module utilises more diodes and parallel cell connections than standard modules which makes them more tolerant of partial shading thus yielding higher energy output on typical residential applications. Typical module construction has all the cells series. Even with bypass diodes this makes shading much more disruptive to their output. Please see our Enhanced Shading Performance White Paper for details on this unique aspect of Solaria PowerXT panels.

### 9. What are the extreme weather ratings for PowerXT®?

PowerXT® modules are rated for a maximum snow load of 5400Pa (113 psf) and a maximum wind uplift resistance of 3600Pa (75 psf). See Installation manual for specific mounting instructions to achieve maximum snow and wind resistance.

For hail resistance PowerXT® modules have passed the following testing standards:

- UL 1703: “A module ... is to be subjected to a 5 ft-lb (6.78 J) impact normal to the surface resulting from a 2-in (51-mm) diameter smooth steel sphere weighing 1.18 lb (535 g) falling through a distance of 51 in (1.295 m). The module or panel is to be struck at any point considered most vulnerable... there shall be no accessible live parts... Breakage of the superstrate material is acceptable provided there are no particles larger than 1 square in (6.5 cm<sup>2</sup>) released from their normal mounting position.”

- IEC 61215: "A 25mm ice ball weighing 7.53g is shot at the module at a speed of 23 m/sec. 11 shots are fired at specific locations around the module that are considered to be the most vulnerable. No permanent damage can result for a Pass."

## Compatibility

### **10. Are there any special requirements for mounting PowerXT®?**

No, we use an industry standard 40mm anodized aluminum frame which is compatible with most UL2703 certified racking systems. Check with your installer for specific mounting options available to you. The PowerXT® Installation Manual describes allowable mounting methods in more detail.

### **11. Does your panel work with Microinverters and Power Optimisers?**

Yes, although the power is higher than standard modules the voltage and current characteristics of the module are within the allowable operating window of most major suppliers of Module Level Power Electronics (MLPE) including Enphase, SolarEdge and APSystems. We recommend always checking the latest manufacturer specs to ensure compatibility with Solaria PowerXT® modules.