Frequently Asked Questions

Construction and Manufacturing

1. How are Solaria modules different than other modules?

Standard modules utilize 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 100 feet 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 utilizes 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 optimizers.

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.

6. How do I clean my Solaria panels?

a. Keeping your panels clean is important to ensure maximum system performance.
Under most weather conditions, the average rainfall is sufficient to keep the panel glass surface clean. Note that panels mounted at a small tilt angle might not self-clean as quickly as panels that are mounted at larger tilt angles.

b. If dirt build-up becomes excessive, clean the glass surface with an all-purpose detergent and warm water

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applied with a soft sponge or soft cloth. This is the safest and easiest cleaning method. It may also be helpful to use a squeegee.

NOTE: Solaria panels have a proprietary, anti-reflective coating on the glass that can be damaged if subject to abrasive cleaning materials. Damage to this coating will reduce the output of the panel.

c. If you live near high traffic of heavy equipment area, we recommend cleaning twice a year to ensure maximum energy harvest.

d. On rare occasions, oily stains may appear on the panel glass surface. In these instances Solaria recommens gently wiping the affected area with isopropyl alcohol and a soft cloth.

e. DO NOT ATTEMPT to clean the back surface of the panel. It is not necessary for proper operation and may damage the electrical components of the panel.

f. Cleaning panels on the roof should be done by a licensed solar contractor. Always wear proper safety equipment including hard hats and harnesses when working on rooftops.

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: **www.solaria.com/additional-product-information/**
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

7. What is the warranty on AC Modules? Is the AC unit also covered for 25 years?

Yes, the solaria AC module is also warranted for a full 25 years including the AC unit itself. Enphase is our exclusive customer care provider for this product. Using their "Enlighten" monitoring system they can diagnose issues remotely to determine the best course for remedy. For any issues with PowerXT® AC Modules over time please contact Enphase Support at:

- (877) 797-4743
- **https://enphase.com/en-us/support/contact**

If Enphase determines the DC module component is underperforming per the warranty they will coordinate with Solaria to ensure a replacement solution is offered.

Performance

8. 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 utilizes the ".PAN" file format for specific modules. PAN files for Solaria modules are

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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.

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

The PowerXT® module utilizes 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.

10. 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 cm2) 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

11. 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.

12. Does your panel work with Microinverters and Power Optimizers?

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.

Solaria is also proud to partner with Enphase to offer an integrated AC module solution available now. The Solaria AC Module offers an elegant, pre-engineered and integrated solution that reduces system design and installation time for the installer and enables more energy production for the homeowner in partial shade conditions or multi-faceted roof arrangements. AC modules also allow for greater system modularity and design flexibility by enabling

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single module building blocks rather than requiring full strings. Talk to your local installer to find out if AC modules are a good fit for your application.

Financing

13. Can I get a loan to finance a system with Solaria modules?

Yes, Solaria is on the Approved Supplier Lists (ASL) for most major Solar lenders in the US including but not limited to: Mosaic, LoanPal, Sungage, Sunlight, Dividend

For a complete list of qualified finance partners go to: **www.solaria.com**. Please note financing terms are predicated on customer credit worthiness and not guaranteed.

Property Assessed Clean Energy (PACE) is another financing mechanism that enables low-cost, long-term funding for energy efficiency and renewable energy projects to be financed and repaid as an assessment on the homeowner's regular property tax bill. PACE financing can offer payment terms of up to 20 years with no out-of-pocket costs. We recommend Renew Financial as the leader in solar PACE financing: **https://renewfinancial.com/** . Additional information on PACE financing can be found here: **http://pacenation.us/what-is-pace/**

15. Can I get a loan to finance a system with Solaria modules?

Yes, MOSAIC is the national leader in renewable and solar financing for homeowners. Solaria is proud to be on their list of approved solar module products. Visit them at: **https://joinmosaic.com/**

For a complete list of qualified finance partners got to: **www.solaria.com**

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Solaria PowerXT 400W PM Solar Panel

1. Why are you creating a new "PowerXT-xxxR-PM" format?

Solaria is committed to providing a power product roadmap. Current and next generation cell technologies are being more commonly produced on larger wafer formats. In order to continue to access the best technologies in our panels now and in the future, we need to change the format to accommodate the higher power cells. With less panels the installation is typically easier, faster and more attractive. The PowerXT 400W PM panel is the same weight as the smaller format PowerXT 360-370W PD series, making installation handling safer and more efficient.

2. The Solaria PowerXT 400W PM panel is larger. Will they work with my roof layout?

Although the panel footprint is slightly larger, the new form factor is designed to generally fit the same or better as the Solaria PowerXT 360-370W PD series for most system layouts.

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3. How does Solaria PowerXT 400W PM compare to other solar premium brands and products?

Solaria is unique in the solar industry as the company is the only US-based, premium panel provider dedicated to the US residential rooftop market as a distribution-based product available to all dealers. Solaria's focus is to always provide the best, most advanced technology. The Solaria PowerXT 400W PM offers best-in-class power, performance, aesthetics and reliability.

4. I like the existing PowerXT PD-series panels, will I still be able to get these?

Solaria is committed to providing Solaria PowerXT PD panels as long as customers demand them. The Solaria PowerXT 400W solar panel is a high power, premium solar panel.

5. What Enphase microinverter do you recommend for the Solaria PowerXT 400W PM?

Both the Enphase IQ7+ and the IQ7A microinverters are fully compatible with the Solaria PowerXT 400W PM. Which unit you use comes down to system economics. We encourage installers to model their systems with both and select based on total system value. For more details on how the microinverter selection effects system performance see our Technical Bulletin, "Why Is My PV Module Rating Larger Than My Inverter Rating?"

6. What SolarEdge optimizer do you recommend for the Solaria PowerXT 400W PM?

Solaria recommends the SolarEdge P400 optimizer for the Solaria PowerXT 400W solar panel for SolarEdge based systems.

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