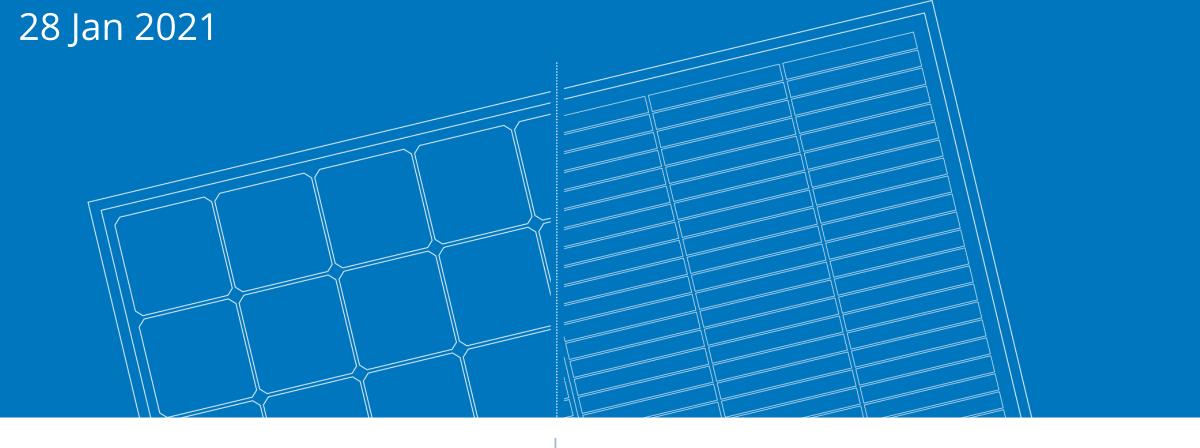
INTRODUCING MAXEON 5 AC



SUNPOWER

FROM MAXEON SOLAR TECHNOLOGIES





AGENDA

Overview

- 1. The Most Advanced Module on the Market
- 2. Guaranteed to Maximise what Home Solar Can Do
- 3. Designed for your Unique Customer Needs

Summary & STCs

HOME SOLAR'S MOST ADVANCED TECHNOLOGY. INTEGRATED.

THE FUTURE IS HERE

Differentiate with SunPower







The old "Good, better, best" offering.



The full portfolio approach with SunPower.



SUNPOWER

MAXEON 5

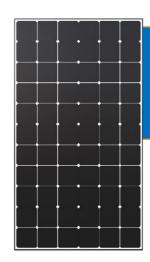


MAXEON 5 AC 415W, 410W, 400W Making the best, even better.

Introducing Maxeon 5. The first of its kind AC module in Australia.

PREMIER

Differentiate with Two Best-in-Class Category Leaders



SUNPOWER

FROM MAXEON SOLAR TECHNOLOGIES

+



Home Panel

Home Solar Panel Power¹ (415W)



Global Microinverter Market Share²



36 million

solar panels

600,000+

900+



patents

27 million

microinverters

1 million +

370+

Home solar's most advanced technology.

PREMIER

Australia's strongest warranty - a panel and inverter 25-year guarantee

SUNPOWER | MAXEON 5

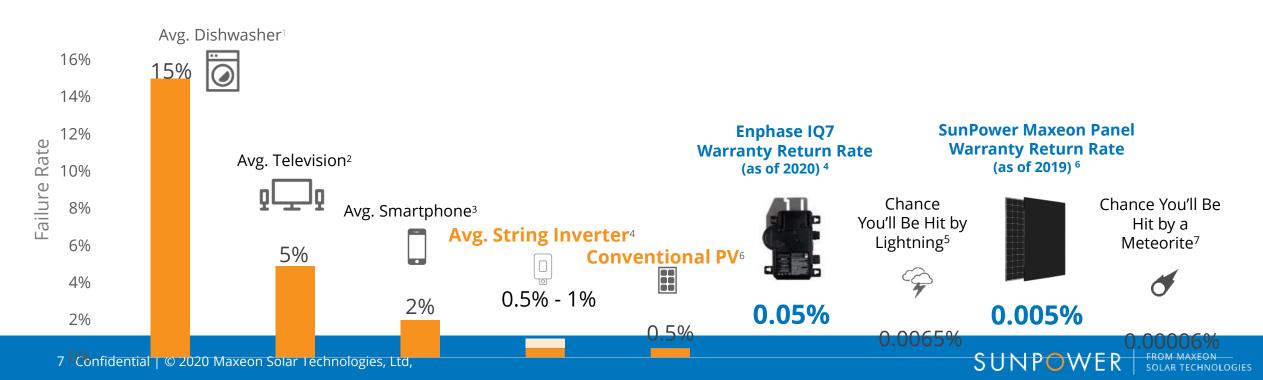






PV Category's Best Combined Power, Product and Service Warranty¹ Microinverter Category's Longest Product Warranty²





GUARANTEED TO MAXIMISE WHAT HOME SOLAR CAN DO.

More Reliable - Corrosion and Temperature Swing Risk

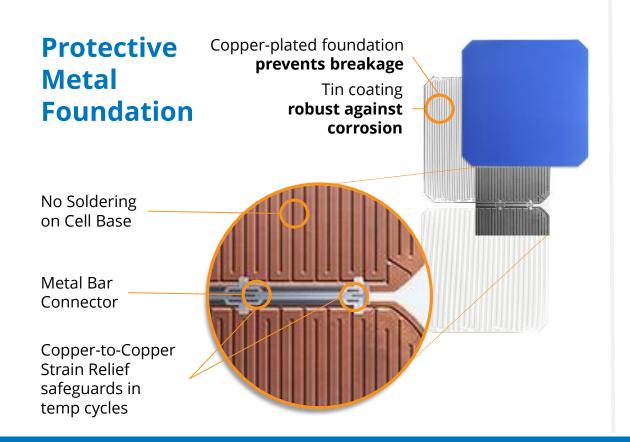


SUNPOWER | MAXEON GEN 5 solar cell





microinverter



IP67-rated enclosure protects against moisture

Air Gap allows airflow between MI and module

Protective Enclosure



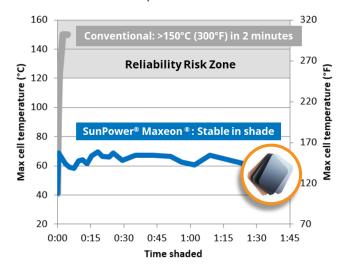
75% fewer components than strings and optimizers¹

No moving parts or fans Engineered specifically to Maxeon 5 specs Integrated to solar module at qualitycontrolled factory, reducing field wiring operations

¹ Source: Enphase analysis.

Reliable in Shade - Hot Spot Resistant, Cooler Operating Temps

Shaded Cell Temperature without diodes¹



Each product is demonstrated to remain cool under partially shaded conditions.



- Unique architecture manages shade differently
- When shaded, generate 90% less heat and spread the heat uniformly across cell, so the temp. stays lower - a key factor in optimizing performance and mitigating hotspots¹

- Internal temp. typically <10° C over external ambient²
- Reduces stress on internal components
- Compares favorably to internal string inverter temps²

¹Campeau, Z. et al. "SunPower Panel Degradation Rate," SunPower white paper, 2013 ² Enphase analysis.

More Reliable | **Tested Beyond Industry Standards**



SUNPOWER | MAXEON 5 solar panels

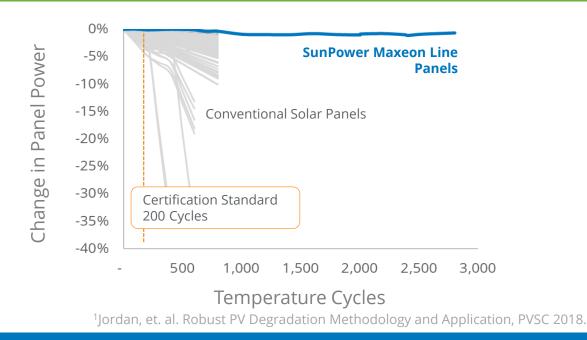


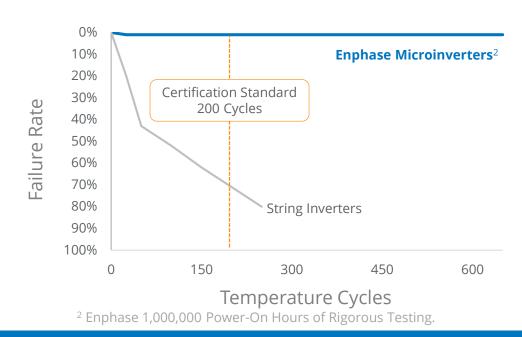


✓ Highest durability panels you can buy¹

✓ More than 1 million hours of testing

Excellent Reliability in Long-Term Thermal Cycling Tests





SAFER

Reliability - Lower Voltage



Reliably safe during installation

- ✓ Low voltage mitigates arc-fault risk
- ✓ Integrated MIs mean less wiring on the roof
- ✓ No more 600 1000V (DC) lines for your crews

Reliable for any roof.



More Reliable | System Design - Shade Risk

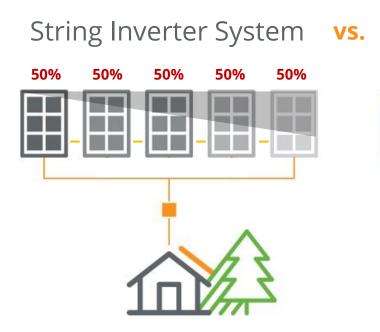


Because they function independently, microinverters create a more reliable system.

No 'Christmas light effect' due to:

- ✓ Shading and obstruction
- ✓ Non-linear degradation
- ✓ Temperature difference
- ✓ Soiling
- ✓ Module mismatch

Don't make your system only as strong as it's weakest link.





(performs at level of weakest panel)

Microinverter System



84% System Power

(max energy harvest)

Topology for illustrative purposes only.

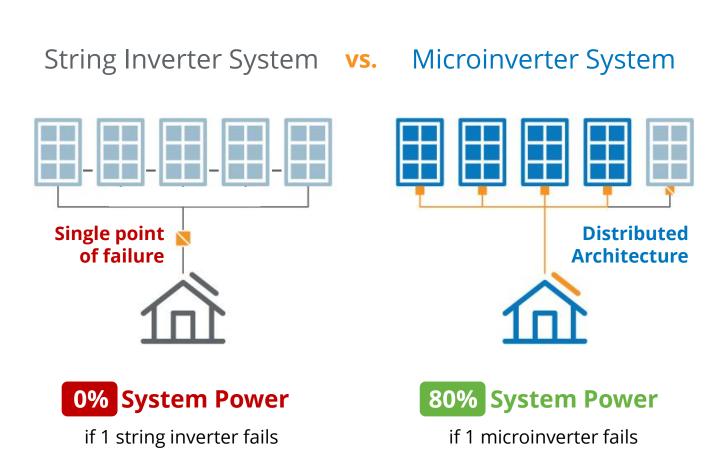
More Reliable | **System Design – Inverter Risk**



Because they function independently, microinverters create a more reliable system.

- ✓ More system uptime
- ✓ No total system outages

Don't make your system only as strong as it's weakest link.



Spectral Response Advantage



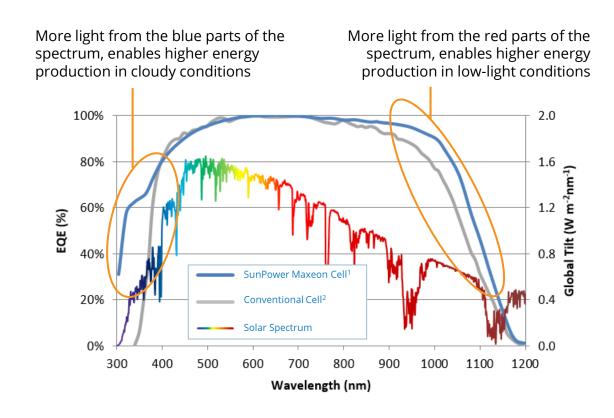
Each product is demonstrated to produce more on cloudy days and during sunrise and sunset.

Maxeon solar cells

- ✓ More receptive to blue and red spectrum
- ✓ Superior spectral performance

Enphase microinverter

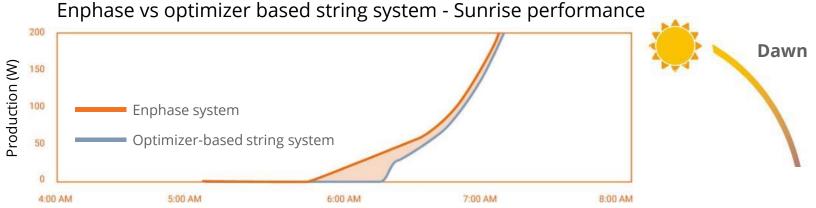
- ✓ 'Burst Mode' increases efficiency under low light conditions
- ✓ Requires only 22V DC to activate

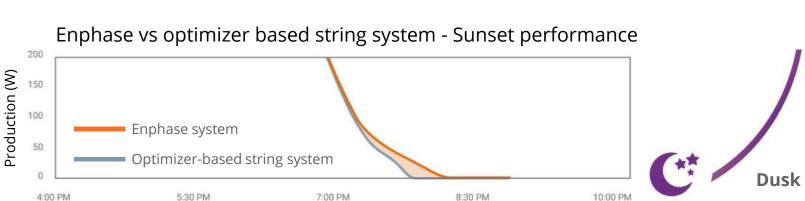


¹ National Renewable Energy Lab measurements. ² Green, M. et al., "Solar cell efficiency tables (version 36)" Progress in Photovoltaics, 18(5), 46–352.

Enphase "Burst Mode" Advantage vs DC Optimizers





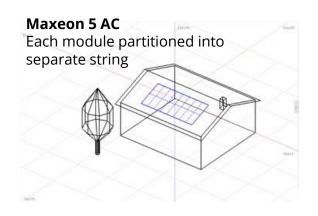


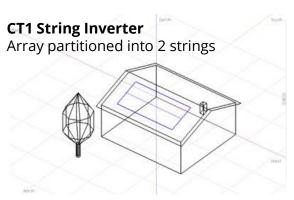
Burst Mode ensures
that Enphase
microinverters produce
more power and have
more energy yield on
cloudy days and during
sunrise and sunset



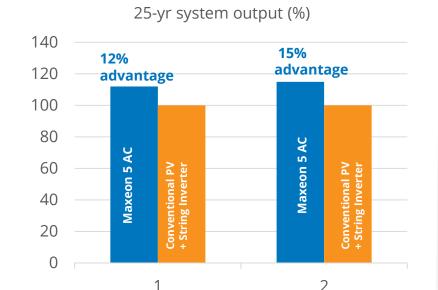
Efficiency advantages exposed by real world environments

The SunPower AC Module yield advantage is even stronger in partial shade.1

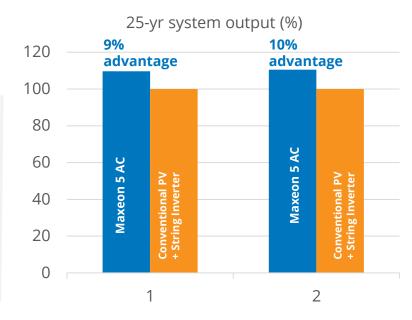




Maxeon 5 vs CT1 String



Maxeon 5 vs CT1 DC Optimisers

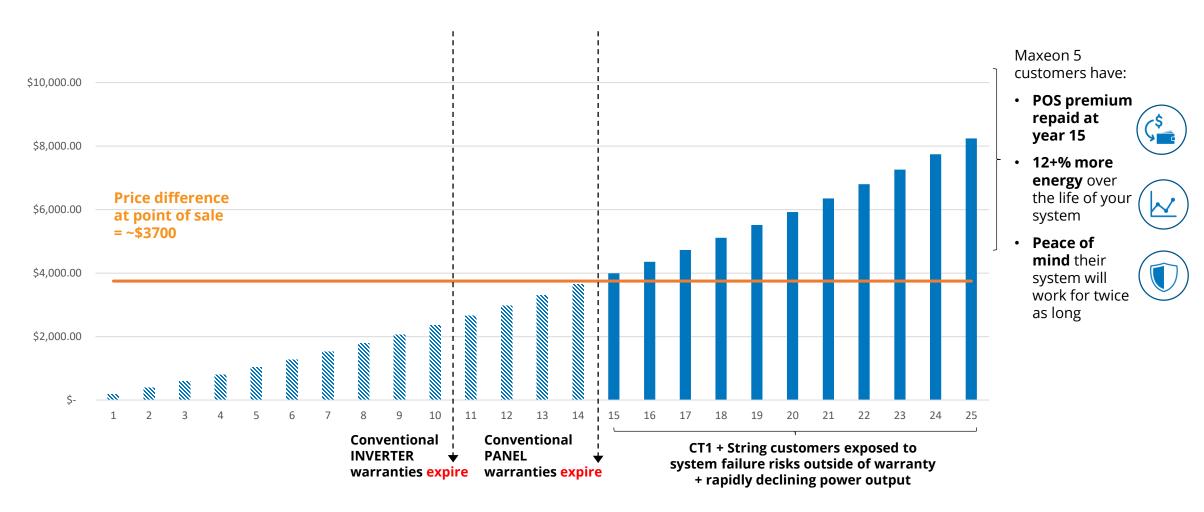


¹Source: PVsyst simulation. Assumptions: Sydney residential roof at 20 deg tilt with portrait installation. Soiling: 0.8% (As per Enphase PVSyst Guidelines), 2% for String Inverter. Azimuth: True North. SunPower Maxeon ACM module: Max5 AC 415W (Enphase IQ7A-72-x-INT). Conventional modules: Mono PERC 370W (0,55% annual degradation rate) + leading string inverter. Feed in tarrif rate: \$0.15/kWh. Self-consumption rate: \$0.35/kWh. Self-consumption percentage: 70%. Degradation - Module warranted degradation + PVSyst aging degradation (DC string mismatch losses)

WORTH THE INVESTMENT



Cumulative revenue comparing yield & degradation of ACPV vs CT1 370W String



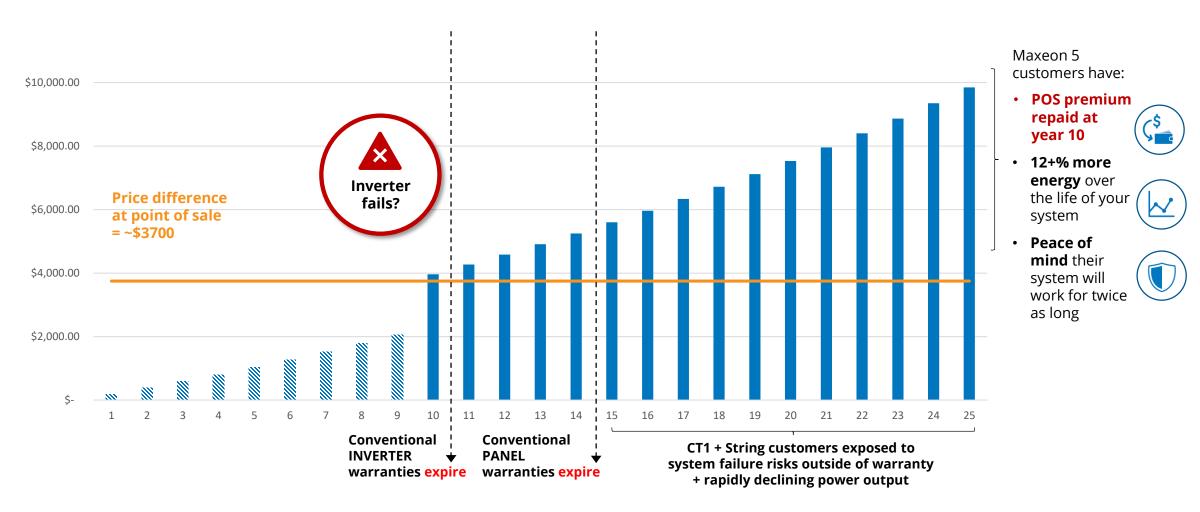
¹Source: PVsyst simulation. Assumptions: Sydney residential roof at 20 deg tilt with portrait installation. Soiling: 0.8% (As per Enphase PVSyst Guidelines), 2% for String Inverter. Azimuth: True North. SunPower Maxeon ACM module: Max5 AC 415W (Enphase IQ7A-72-x-INT), Conventional modules: Mono PERC 370W (0.55% annual degradation rate) + leading string inverter. Feed in tarrif rate: \$0.15/kWh. Self-consumption rate: \$0.35/kWh. Self-consumption percentage: 70%. Degradation



WORTH THE INVESTMENT



Cumulative revenue comparing yield & degradation of ACPV vs CT1 370W String



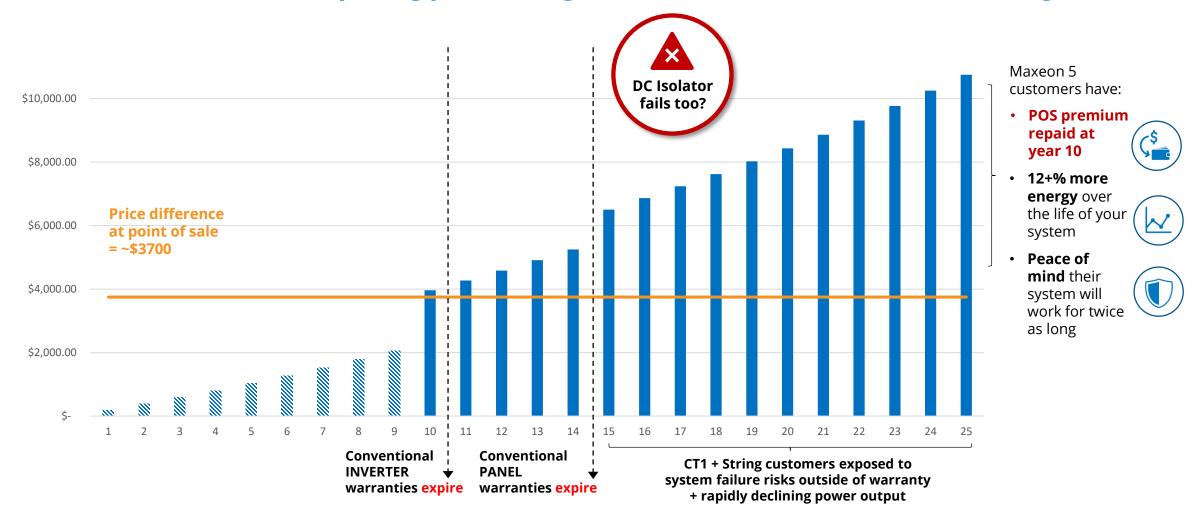
¹Source: PVsyst simulation. Assumptions: Sydney residential roof at 20 deg tilt with portrait installation. Soiling: 0.8% (As per Enphase PVSyst Guidelines), 2% for String Inverter. Azimuth: True North. SunPower Maxeon ACM module: Max5 AC 415W (Enphase IQ7A-72-x-INT), Conventional modules: Mono PERC 370W (0.55% annual degradation rate) + leading string inverter. Feed in tarrif rate: \$0.15/kWh. Self-consumption rate: \$0.35/kWh. Self-consumption percentage: 70%. Degradation



WORTH THE INVESTMENT



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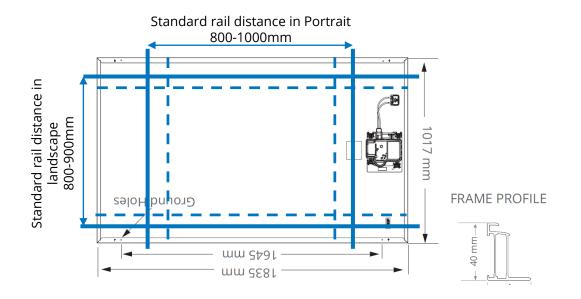
DESIGNED FOR YOUR UNIQUE CUSTOMER NEEDS.

SIMPLER



Easy to install

- ✓ Easy fit to portrait and landscape configuration with a module length of 1.83m
- Easy handling with module width of 1.02m combined with a new frame
- ✓ Easy AC cabling with AC wire close to rail support



Flexible to Design

- ✓ No string sizing
- ✓ All-AC design
- ✓ Flexible panel placement
- ✓ No need to ID string inverter location



SIMPLER

Easy to monitor for the partner and the end customer



Monitoring and Installer Support provided by Enphase



Installer Toolkit

Enable crew to configure and verify the operation of each system.



Enlighten™ manager

Panel level monitoring. Over-the-air firmware updates. Early failure protection.



MyEnlighten™ App

Energy performance and education for the homeowner.



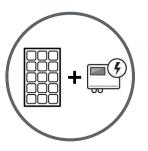
MAXEON 5 AC 100% VISIBILITY

INCLUDED:

- SYSTEM LEVEL MONITORING PANEL LEVEL MONITORING
- CONSUMPTION MONITORING



The only reliable way to estimate the right battery is by having an accurate history of production paired with consumption.



Avg PV + String Inverter ~30% VISIBILITY

INCLUDED:

SYSTEM LEVEL MONITORING

AT ADDITIONAL COST:

- (\$) PANEL LEVEL MONITORING
- (s) CONSUMPTION MONITORING



Want to save time and money?

Panel level monitoring and early detection by the customer allows installers to remotely troubleshoot potential issues and efficiently schedule repairs.

TROUBLESHOOTING & CUSTOMER SERVICE



What if I have an issue?

1. Remotely troubleshoot the issue.

Enlighten manager allows panel level monitoring and overthe-air firmware updates.

If the system is connected to the Enlighten monitoring platform you can run diagnosis remotely with or without Enphase support team.

2. If an issue is detected, **contact the Enphase Support Team** to open a ticket before going on site.

3. If there is need for a replacement,

Tier 1 support will be provided through
Enphase support team.

If the issue concern:

- microinverter:
 Enphase will support the case according to its warranty
- DC panel:
 Maxeon Solar
 Technologies will support the case according to its warranty.

4. The issue will be replaced at the component level before replacing the whole panel.

You can replace the microinverter keeping the same PV panel. No need to replace both. Microinverter can be easily swapped with a new one on the roof.

SIMPLER

Simple to Upgrade





Easily expand system and upgrade with total design flexibility.

The solution is designed to be future proof.





Easily add panels





Support home electrification



Electric Vehicle



Air Conditioner, Kitchen Appliances





AC storage

KEY TAKEAWAYS



KEY MAXEON 5 ADVANTAGES





Most Powerful Residential Panel on the Market

- More power in smaller area
- Industry-leading shade performance



Higher Reliability

- Prolonged usable sunlight
- POS premium repaid over time while ensuring reliable system output for 2x the time



100% Visibility at the **Panel Level**



Flexible Design

- No string sizing
- Unlimited configurations



Greater Durability

- Australia's strongest warranty
- Redundant pathways for energy to flow



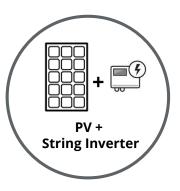
Future proof

- Easily build on to system
- Remote access for future regulations



Increased Safety

- Low voltage on roof
- Rapid shutdown is standard



Less Durable

- Single point of system failure
 - On average 5x shorter warranty

Less Reliable

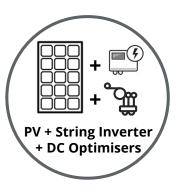
- Productivity varies by string length
 - Performance inhibited by shade/soiling
- **Incomplete monitoring**

Design Constraints

- Dependent on string sizing
 - Minimum of 8 panels
- Difficult to expand

Greater risk of failure

- Up to 600 volts DC on roof
 - Additional costs to be shutdown compliant



Less Durable

- Single point of system failure
- On average 2x shorter warranty

Less Reliable

- Productivity varies by string length
- Performance inhibited by shade/soiling
- **X** Incomplete monitoring

Design Constraints

- Dependent on string sizing
 - Minimum of 8 panels
- Difficult to expand

Greater risk of failure

- Up to 600 volts DC on roof
 - Additional costs to be shutdown compliant



THE DETAILS



DATASHEET REVIEW

DC Version + MI - CEC Listing





AC Version – Customer Sales Use



Please note: While the IEC and the CEC worked to develop a new certification process for ACMs, the SunPower Maxeon 5 module was registered as two separate components: a SunPower Maxeon 5 DC panel and the Enphase IQ7A microinverter.

STC ASSIGNMENT FORM

| | Address of installation¹: | | | | |
|----|--|-------------|-----------------|------------------------|-------------------|
| | | | | State | Postcode |
| | Is there more than one Solar PV install at this address? | ation | □ Yes | □ N | 0 |
| | If yes to above, please describe where system is installed in comparison to previous Solar PV systems at the address "Upgrade to original installation — Nanels lay to the west of original set' or roof of granny flat' | ess: New | | | |
| ‡÷ | Panel Brand | | Maxeon | | |
| | Panel Model | | SPR-MA | | |
| | Inverter Manufacturer Inverter Series | | Enphase | Energy New | v Zealand Limited |
| | | | IQ 7A | | |
| | Inverter Model Number | | IQ7A-72 | -2-INT | |
| | Number of panels | | <mark>16</mark> | | |
| | Panel serial number/s | | | 0937280, Q4 0937282 | 8M30937281, |
| | Installation date | | 22 Jan 2 | 021 | |
| | Rated power output (kW) | | 6.64 kW | | |

SUNPOWER MODEL: SPR-MAX5-415-E3-AC DC Section (certified as of SPR-MAX5-415) Rated DC Power (Pmax)1 (+5/0%) Voltage (Vmp) Current (Imp) 10.3 A 48.2 V Open-Circuit Voltage (Voc) (+/-3%) Short-Circuit Current (Isc) (+/-3%) 10.9 A Standard Test Conditions: 1000 W/m², AM 1.5, 25° C Suitable for ungrounded, positive, or negative grounded DC systems Field Wiring: Cu wiring only, min. 12 AWG/4 mm², insulated for 90° C min **AC Section** AC Output (Min./Nom./Max.) @ 230 V 219 V 230 V 264 V Oper. Freq. (Min./Nom./Max.) 45 Hz 50 Hz 55 Hz Output Power Factor (Nom.) 1.00 EnTEST (V) AC Max. Cont. Output Current @ 230 V 1.52 A AC Max. Cont. Output Power @ 230 V 349 VA 349 W AC Peak Output Power @ 230 V 366 VA 366 W Max. Units Per 20 A Branch Circuit @ 230 V 10 or 11 total (single phase)2 Max. Overcurrent Protection 20 A Max. Ambient Temp. +50° C ²According local regulation WARNING SEVERE ELECTRICAL HAZARD · Caution - Risk of Electrical Shock! · Refer servicing to qualified service personnel. · Solar module has a full voltage even in a very low light. · Connect only to a dedicated circuit Each circuit must be individually disconnected before servicing. SunPower Corporation Do not remove cover. No user serviceable parts inside. Both AC and DC voltage sources are terminated inside this equipment. Mexico

Enphase Energy New Zealand Limited

SunPower panels are manufactured by Maxeon Solar Technologies. View warranty, patent and trademark

Micro Inverter

| | MODEL NUMBER | CERTIFICATE NUMBER | SERIES TYPE | APPROVAL DATE | EXPIRY DATE | |
|-----|------------------|--------------------|-------------|---------------|-------------|---|
| ••• | IQ7-60-E-INT | SAA173188 | IQ7 | 22/10/2020 | 20/12/2022 | 1 |
| | IQ7X-96-E-INT | SAA173188 | IQ7X | 22/10/2020 | 20/12/2022 | 1 |
| | IQ7PLUS-72-E-INT | SAA173188 | IQ7PLUS | 22/10/2020 | 20/12/2022 | 1 |
| | IQ7A-72-2-INT | SAA173188 | IQ7A | 12/08/2020 | 20/12/2022 | 1 |

Source: http://www.cleanenergyregulator.gov.au/RET/Forms-and-resources/Forms-and-resources-for-agents-and-installers

QUESTIONS?

Here to help:

- Madeline Belvin
 Marketing Manager
- Rob Chew
 Applications Engineer
- Matt Purvis
 National Sales Director, Australia



MAXEON 5



MAXEON 5 AC 415W, 410W, 400W

Making the best, even better.

Introducing
Maxeon 5. The
first of its kind
AC module in
Australia.

SUNPOWER

FROM MAXEON SOLAR TECHNOLOGIES

Q&A



PV panel

- What is the physical size of Maxeon 5 AC? Is it the same as Maxeon 3?
 - Maxeon 5 AC is slightly larger than Maxeon 3. The size is 1835mm x 1017mm x 40mm
- What is the efficiency of the Maxeon 5 415 Wp?
 - The efficiency is 22.2% for the 415 W version.
- Will you introduce the Maxeon 5 for residential without the microinverter?
 - No Residential DC at this time.
- Will you introduce the Maxeon 5 AC with a black backsheet?
 - Maxeon 5 is only available with white backsheet and black frame.
- Is this a SunPower by Maxeon Solar Technologies product or an Enphase product?
 - This is a joint development product. Maxeon Solar Technologies and Enphase worked together to create a high-end solution for residential PV applications. IQ7A was initially designed specifically for Maxeon 5 66c module.

Microinverter

- What is the efficiency of the microinverter?
 - IQ7A Microinverter EU weighted efficiency is 96.5%. This efficiency is the same as the combined efficiency of a DC Optimizer (99.0%) X String inverter (98.0%) X DC losses (99,2%) = 96.2%. The yield is roughly 1% higher than DC Optimizer + String due to the microinverter burst mode function and the perfect pairing with the Maxeon 5 PV panel.
- What is the maximum output power? How long can be sustained?
 - The microinverter can sustain the maximum output power (369 VA) as long as the temperature doesn't exceed the temperature limit for the microinverter. At that point it linearly reduces power to its nominal power.
- Do you have any stats regarding performance in high heat conditions?
 - We have data for different countries in Europe. For the hot climate we chose Madrid for our simulations and the performance of the microinverter is unaffected by the temperature. When the temperature is high the maximum power of the PV panel is much lower than nameplate power, meaning there's virtually no clipping in that conditions. Some clipping may happen in fresh and windy days with really high irradiance (a few hours in May and October) more than compensated by the better performance when the temperature is higher and the days longer.

Technical

- Can I use a Maxeon 5 AC to expand a conventional string inverter solution?
 - Yes, this is possible. You will need to install an additional AC line and circuit breaker.
- How are the microinverters connected to the internet?
 - The default option is to use the Wi-Fi infrastructure. You can connect a LAN cable (not provided) if you prefer. It is also possible to pair the Envoy gateway to a cellular connection solution (not provided, yet available through Enphase distribution channels).
- Is an Envoy gateway always needed?
 - Yes, the Envoy gateway is mandatory for system commissioning and product warranty.
- Is there a minimum number of Maxeon 5 AC that I need to install?
 - No. You can install 1 Maxeon 5 AC and it works.
- What happens in three phase?
 - It is possible to install a three phase system using additional Enphase accessories.

Warranty

- What is the warranty on the microinverter?
 - Enphase provide 25-years product warranty on the microinverter.

RMA process

- Is it possible to troubleshoot an AC panel remotely?
 - Yes. If the system is connected to the Enlighten monitoring platform you can run diagnosis remotely with or without Enphase support team. Please make sure to open a ticket with Enphase support team before actually going on site.
- If there is need for a replacement, who will provide the service?
 - Tier 1 support will be provided through Enphase support team. If the issue concern:
 - the microinverter: Enphase will support the case according to its warranty
 - the DC panel: Maxeon Solar Technologies will support the case according to its warranty.
- Will there be a field replacement or we need to replace the whole panel?
 - You can replace the microinverter keeping the same PV panel. No need to replace both.
 Microinverter can be easily swapped with a new one on the roof.

Datasheet / Certifications

- Is the Maxeon 5 AC panel provided with all PV panel certifications as well as inverter / grid connection certification?
 - You can ask for this document to your PSR (Partner Support Representative)
 - Maxeon 5 AC is tested to answer the future Standard on AC panel (IEC 62109-03), but today Maxeon 5 AC is certified as for DC panel (IEC 61215, 61730) and the microinverter certified as per IEC 62109-1 & 2.