




OCULAR



# IQ HOME SOLAR FAQs

Version 2.1

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## DOES THE CHARGER NEED TO BE CONNECTED TO THE INTERNET?

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The charger must be connected to the internet to function normally.

- Ethernet using a CAT 6 cable to your internet modem
- WIFI to the charger
  - Installer will need to enter the WIFI name and password into the charger backend.
  - Please note a minimum of 4 bands is required to have a strong and stable connection.
  - It is the homeowner's responsibility to supply a reliable internet connection where the charger is to be installed.
  - If either of these is unable to be implemented then we recommended a TP link WI-FI extender.

## WHAT HAPPENS IF MY CHARGER GOES OFFLINE OR LOSSES INTERNET?

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If the unit goes offline the charger will actively try to re-connect. The app will not work if the WI-FI has dropped out. If this happens charger will not work unless "plug and charge" was set on the app or until the WI-FI signal returns. If you change WI-FI password you will need to refer to the installation guide to reset it.

## HOW FAR CAN THE CHARGER BE FROM MY ELECTRICITY SUPPLY?

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The CT Clamps that come with the charger have a cable length of 20 metres. If the charger needs to be installed further way from the switch box than 20m, the installing electrician can extend the CT clamp cables by following the instructions in the installation guide. The CT clamps can be extended up to 75 metres.

## SHOULD I PURCHASE A SINGLE PHASE (7KW) OR THREE PHASE (22KW) CHARGER?

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The 7kW option available is a single phase (1P) charger whereas the 22kW option is a three phase (3P) charger. Which phase charger you chose depends on the phase of your EV, house supply and solar inverter. If you're not sure what type of power supply you have in your home, please speak to your electrician.

EV	House Supply	Solar Inverter	Recommended Charger
1P	1P	1P	1P
3P	1P	1P	1P
1P	3P	1P	1P
3P	3P	1P	1P or 3P*
1P	3P	3P	3P
3P	3P	3P	3P

\*For max charging speed priority choose 3P whereas for max solar consumption choose 1P.

## IS THE OCULAR IQ HOME SOLAR COMPATIBLE WITH ALL EVS?

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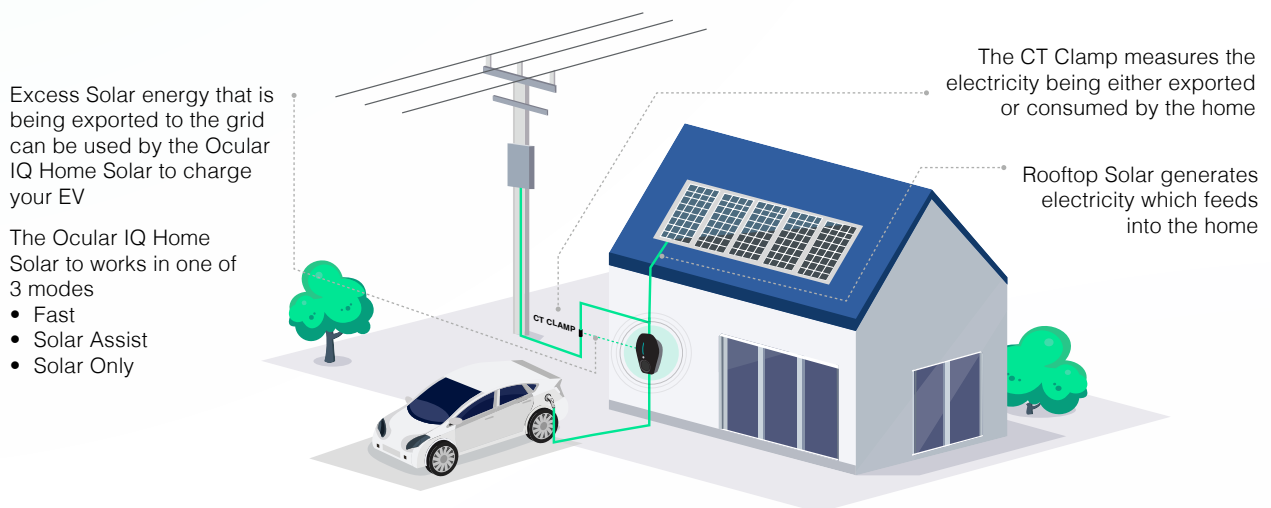
Yes, The IQ Home Solar is compatible with every EV in Australia and New Zealand that use and adhere to the Type 2 charging standard.

## DOES THE OCULAR IQ HOME SOLAR WORK WITH ANY SOLAR SYSTEM?

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Yes. If you have a solar system that is constantly exporting electricity to the grid, then the Ocular IQ Home Solar will allow you to use that excess solar efficiently to recharge your vehicle's battery. CT Clamps installed on the incoming mains supply are used to measure the excess solar being sent to the grid in real time.

### How the Ocular IQ Home Solar understands your homes electricity usage



## DO I NEED SOLAR TO USE THE OCULAR IQ HOME SOLAR?

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No, the hardware unit can be operated as a smart EV charger that can still schedule, record and monitor all your charging sessions. Solar modes or CT clamps can be connected in the future for an added cost. The CT clamps will also allow the charger to be load managed, meaning that your home is protected from overloading during charging sessions.

## WHAT HAPPENS IF I HAVE A HOME BATTERY?

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For the most part, any excess solar produced by the system will be absorbed by the battery. The Ocular IQ Home Solar modes work by using CT clamps to understand what you are exporting out to the grid. You may find that the home battery is absorbing most of your excess solar generated first and so what's going out to the grid is minimal. Despite this, it's fine to still install a charger, but you may find the Solar Assist mode best to draw a small amount from the grid/battery when no excess solar is being produced. If there is excess solar available, it can then utilise the available excess solar that the battery is not taking. Every battery system behaves differently, and the ocular team cannot guarantee the interaction between the charger and the battery.

## HOW MANY CT CLAMPS ARE PROVIDED?

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One CT for single-phase versions and three for three-phase versions. You must only use the CT clamps provided or an approved CT from the Ocular team. This is to ensure that the solar and load control readings are accurate at all times. CTs are supplied in the charger box.

## DOES THE UNIT CONNECT DIRECTLY TO A HOME BATTERY?

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The unit does not connect directly to the battery. It uses CTs to monitor the excess solar being exported to the grid at the home's switchboard. We do not connect directly to any battery system.

## WHAT MODE SHOULD I CHOOSE BASED ON MY SOLAR PRODUCTION?

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This depends on the mode you have set the IQ Home Solar to.



### Fast Mode

In this mode, the vehicle will be charged at maximum power. This power can come from solar panels, the grid or both. If you have set a current limit on the schedule or by the electrician during installation that will determine maximum power. There is NO minimum amount of excess solar energy required for use.



### Solar Assist

This mode will charge your EV at a minimum of 6 Amps plus any excess solar produced. If solar production is low, power will be drawn from the grid. This is the preferred solar mode, particularly on cloudy days or when you have a smaller solar system. This will ensure a continuous charge plus any excess solar that your home generates. There is NO minimum amount of excess solar energy required for use.



### Solar Only

This mode charges your EV only when enough excess solar is produced.

For a single phase charger, the minimum excess solar needed is 7 Amps exported to the grid, roughly equivalent to 2kW. For a three-phase charger, the minimum power being exported to the grid needs to be 21 Amps total across the three phases, which is roughly equivalent to 5kW. For three phase chargers the 21 Amps export can come from any combination of the phases, even if one or more of them are importing.

If the solar production drops below the indicated threshold the charging will pause and then restart after 2-3 minutes of continuous excess solar above the threshold. We recommend this mode when you have a clear excess of solar power produced. Use Solar Assist when your production is low or intermittent such as on a cloudy day.

Our experience shows that large variable loads like air conditioning can absorb most of the solar generation. Use the Energy tab on the Ocular app to understand the excess available and choose the Solar Assist mode if excess generation is consistently below the Single and Three phase threshold.

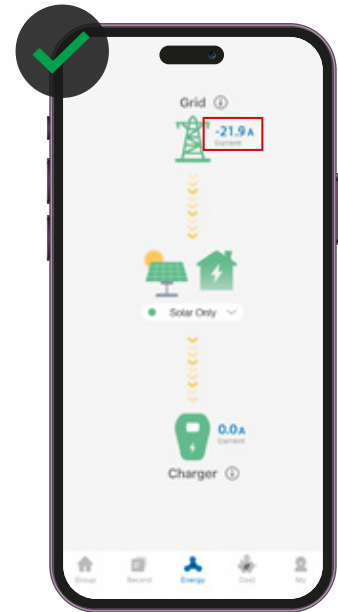


## HOW MUCH EXCESS SOLAR ENERGY IS MY HOME IS PRODUCING?

You can tell this from the Energy tab on the Ocular app. This will differ slightly depending on whether your system is single or three phase. For single-phase, only one (1) value will be shown on this screen. Reading this is important for determining whether Solar Only can be used.

### Single Phase

The negative sign indicates that power is in excess and is being exported from the solar panels to the grid. When this number is consistently between 0 and -7 Amps there is not sufficient excess solar to use solar only.



### Three Phase

There will be three numbers presented on the app. You can find the net power exported or drawn from the grid by adding the numbers together.

Solar Only mode will only work when all three (3) phases are exporting greater than 21 Amps in total.

In this example. The Solar Only mode will work as more than 21 Amps is being exported to the grid across the three phase.

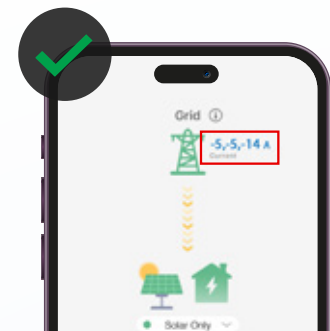
$5+5+14 = 24$  Amps total export.

Solar Only mode will not work when all three (3) phases are exporting less than 21 Amps. This means that there is no clear excess when summing all three (3) phases.

When summing up all 3 phases, the solar is only exporting 4 Amps, which is less than the required 21 Amps before charging.

Solar excess is indicated by a negative (-) value.

In this case, choose Solar Assist or Fast Mode if you would like to charge your car.



## **WHAT IS NET METERING?**

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Net metering is a function specific to 3 Phase installations and only affects solar only and solar assist modes. The charger monitors the solar excess on all three phases and will charge if the total excess across all phases is greater than 21 Amps, rather than needing 7 Amps individually across each phase. This means that if one phase has a high load, for example the rest of the household load, the charger will still operate as long as the other phases are exporting enough for the total to be more than 21 Amps.

## **CAN I USE MY OWN INSTALLER?**

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If you wish to use your own installer, they must be a fully qualified electrician. Ocular cannot be held responsible for any issues or failures of any products caused by the installation process or from a result of an incorrect setup and configuration.

## **WHAT IS LOAD MANAGEMENT?**

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The Ocular IQ Home Solar CT Clamps can perform both solar and load management. If set up by the electrician, the CT clamps will monitor the home's power consumption. The Ocular IQ Home Solar will then balance the charging speed based on the real-time load in the house to prevent the home's electricity from overloading.

## **WHERE DO I DOWNLOAD THE OCULAR APP?**

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The Ocular app is required to use the charger. Click on the Apple or Google app store to download the Ocular app or search via your relevant app store.



## **CAN YOU SCHEDULE A CHARGING SESSION?**

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Yes, you can schedule multiple sessions per day and also adjust your charging speed. Take advantage of solar daytime charging or schedule to charge off-peak. You must be plugged in before the start time for the schedule to work. Otherwise, you need to press start on the app.

## **DO I HAVE TO BE PLUGGED INTO THE CHARGER BEFORE A SCHEDULED APP CHARGING SESSION?**

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Yes, you must be plugged in before the start of the app scheduled session to have the schedule function work. Eg. if you set a schedule from 6 pm to 7 pm you must be plugged in before 6 pm for the scheduling to start. If you plug in after 6 pm then you need to press the start button on the app to start a charging session. This will override the schedule for the individual charging session for the day.

## **IS THE OCULAR IQ HOME SOLAR OCPP COMPATIBLE?**

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Yes, the Ocular IQ Home Solar is OCPP compatible. Please note, if an OCPP software platform is enabled on the charger, the Ocular app and some of the local functions of the unit will not be available.

## **WILL THE OCULAR IQ HOME SOLAR WORK WITH OFF-GRID SOLAR SYSTEMS?**

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No. We require a grid connection to ensure reliable charging. A very minimal amount of electricity may be taken from the grid for a short period of time if solar production drops suddenly.

## **WHAT IS THE REFRESH RATE FOR THE ENERGY TAB?**

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The energy tab will be refreshed every 30 seconds via the cloud servers which are hosted in Australia.