

# Solar Panel Specifications:

<b>Factor/ Parameter</b>	<b>Monocrystalline Panel</b>	<b>Polycrystalline Panel</b>
<b>Silicon Arrangement</b>	One pure silicon crystal layer	Many silicon fragments melded together
<b>Cost</b>	More expensive	Less expensive
<b>Appearance</b>	Panels have black hue	Panels have blue hue
<b>Efficiency</b>	More efficient	Less efficient
<b>Lifespan</b>	25-40 years	20-35 years
<b>Temperature Coefficient</b>	Lower temperature coefficient, Making them more efficient in heat.	Higher temperature coefficient, Making them less efficient in heat.
<b>Cost of inverters, wiring, electrical protections, racking and labour</b>	Same	Same

**M**onocrystalline and polycrystalline solar panels are the two most normal sorts of solar energy receptors. Both work utilizing photovoltaic cells made of silicon - the very material that is utilized in chips for electronic contraptions. The distinction between monocrystalline versus polycrystalline solar cells is the configuration of the silicon:

- Monocrystalline solar panels: Each solar PV cell is made of a solitary silicon crystal. These are in some cases alluded to as "mono solar panels."
- Polycrystalline solar panels: Each PV cell is made of numerous silicon crystals sections that are merged during assembling. You might see them called "multi-translucent panels" or "poly panels."

The two kinds of solar panels have a similar reason: changing over daylight into power. Notwithstanding, the translucent silicon construction of individual solar cells influences their exhibition and appearance. Indeed, you can recognize the sort of panel by just noticing the shape and shade of its solar cells.

## **Monocrystalline Solar Panels**

Monocrystalline solar panels are characterized by their black PV cells with rounded edges. They have a higher conversion efficiency than polycrystalline panels, which means they produce more kilowatt-hours of electricity. If you want to install a solar panel system but your space is limited, monocrystalline panels will be more productive per square foot.

While they're the most efficient solar panels, they're also the most expensive, since the manufacturing process of single-crystal silicon cells is more complex.

## **Polycrystalline Solar Panels**

Polycrystalline solar panels have blue-hued PV cells with straight edges. They have a lower efficiency compared with monocrystalline cells, which means you need more panels to reach the same power output. However, polycrystalline panels also have a lower price since their manufacturing process is simpler.

Polycrystalline panels are very durable, but they tend to last slightly less than monocrystalline panels. They are also affected more by high temperatures, which reduces their productivity on the hottest days.

## Solar Panel Cost

The silicon structure of each solar panel is the main factor that determines cost. To produce polycrystalline panels, manufacturers must simply pour molten silicon into square moulds, then cut the resulting wafers into individual cells. On the other hand, to produce single-crystal solar cells, the solidification of silicon must be controlled very carefully. Because of this more complex manufacturing process, mono panels are more expensive.

Here are a couple of things to keep in mind about the cost of solar panels:

- Monocrystalline solar panels have a higher cost when comparing only the panels.
- The cost of inverters, wiring, electrical protections, racking, and labour is the same for both solar panel types.
- Because monocrystalline panels are more efficient, you may get a better return on your investment.
- Homeowners are eligible for the federal solar tax credit whether they choose mono or poly panels.

## Efficiency and Temperature Coefficient

In general, polycrystalline solar panels tend to have higher temperature coefficients, which means they lose more productivity when they heat up. However, as technology improves, there are now solar panels of both types with similarly low temperature coefficients.

Solar panel efficiency is not a critical factor when you have plenty of space available. Since polycrystalline panels have a lower price, installing more to compensate for the lower efficiency is not a problem. However, when you have limited space, installing more panels is not an option, so monocrystalline panels will maximize electricity production in the available area.

## Appearance and Lifespan

The appearance of solar cells is also a result of their silicon structure, since it determines how they interact with sunlight and how they are perceived by human eyesight. The single-crystal structure of monocrystalline cells gives them a black colour, while polycrystalline cells are blue.



Both solar panel types have a long lifespan, while their payback period is less than five years in many cases. Solar manufacturers normally offer a 25-year power production warranty, but some brands now come with 30-year warranty coverage.

## **Are Monocrystalline or Polycrystalline Solar Panels Best for You?**

Each type of solar panel has advantages and disadvantages, and you can get an excellent return on investment with both. However, to make your choice easier, consider the following factors when picking the best solar panels for your home:

### **Do you want solar panels of a specific colour?**

Keep in mind that monocrystalline panels are black, while polycrystalline panels are blue. If you prefer one over the other, you can buy solar panels to suit your taste.

### **How much space do you have for solar panels?**

The exact dimensions of home solar panels depend on their brand and manufacturer. The typical dimensions are 65 inches by 39 inches, equivalent to 17.6 square feet per panel, but monocrystalline panels offer more watts per square foot. Here's a simplified example of how you can install more kilowatts in each area by using monocrystalline panels:

- You may find that a polycrystalline panel produces 300W, while an equally sized monocrystalline panel produces 350W.
- If you have space for 20 of them, you will reach 7 kW with the monocrystalline panels, but only 6 kW with the polycrystalline panels.

### **What do your budget and financing options look like?**

Polycrystalline solar panels are more affordable, but monocrystalline panels are more productive. If you have access to a solar loan with favourable interest rates, you can finance your solar installation and pay the loan off with the money you save on utility bills. In this case, the extra cost of monocrystalline panels is not an issue.



Also, make sure you compare several solar quotes. Monocrystalline solar panels are more expensive individually, but you must also consider other system components and installation costs. There may be cases in which a completed installation with monocrystalline panels is cheaper, even if a single panel costs more.

## **FAQ: Monocrystalline Vs. Polycrystalline Solar Panels**

### **Which solar panel type is better: monocrystalline or polycrystalline?**

Both monocrystalline and polycrystalline solar panels have certain pros and cons, which means the better choice for you will depend on your specific project. Monocrystalline panels are recommended when space is limited and when you are willing to make a larger investment to achieve top efficiency. On the other hand, polycrystalline solar panels are recommended when you want to reduce upfront costs and space is not a limitation.

### **Is monocrystalline more expensive than polycrystalline?**

When comparing the price of individual solar panels, monocrystalline products are more expensive. However, when comparing quotes for completed solar systems, you may find similar costs per kilowatt among both technologies. This is because, due to their high efficiency rates, you'll need to buy fewer mono panels overall.

### **What is the difference between polycrystalline and monocrystalline solar panels?**

Polycrystalline solar panels have blue cells made of multiple silicon crystals, and they are less efficient but more affordable. Monocrystalline panels have black cells made of single crystals, and they offer a higher efficiency at a higher price.

### **What is the price difference between monocrystalline and polycrystalline solar panels?**

This price difference between monocrystalline and polycrystalline solar panels varies depending on the exact solar panel models being compared. However, in general, the price difference is comparable to the efficiency difference — monocrystalline panels are around 20% more efficient, but they also cost around 20% more.

Comparing quotes for complete solar power systems is recommended, since they include all other system components and their installation costs.



Monocrystalline Solar Panel

**VS**



Polycrystalline Solar Panel