Monocrystalline solar cell

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As subject matter experts, we provide only objective information. We design every article to provide you with deeply-researched, factual, useful information so that you can make informed home electrification and financial decisions. We have:

Incorporated third-party data and information from primary sources, government agencies, educational institutions, peer-reviewed research, or well-researched nonprofit organizations.

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When you evaluate solar panels for your photovoltaic (PV) system, you"ll encounter two main categories of panels: monocrystalline solar panels (mono) and polycrystalline solar panels (poly). Both types produce energy from the sun, but there are some key differences to be aware of.

Monocrystalline solar panels have black-colored solar cells made of a single silicon crystal and usually have a higher efficiency rating. However, these panels often come at a higher price.

Polycrystalline solar panels have blue-colored cells made of multiple silicon crystals melted together. These panels are often a bit less efficient but are more affordable.

When comparing mono vs. poly solar panels, both will save you money on electricity. The choice comes down to your personal preference, space constraints, and the best financing option.

Both monocrystalline and polycrystalline solar panels serve the same function, and the science behind them is simple: they capture energy from the sun (solar energy) and turn it into electricity. They"re both made from silicon; many solar panel manufacturers produce monocrystalline and polycrystalline panels.

Both monocrystalline and polycrystalline solar panels can be good choices for your home, but there are key differences you should understand before making a decision. The main difference between the two technologies is the type of silicon solar cell they use: monocrystalline solar panels have solar cells made from a single silicon crystal. In contrast, polycrystalline solar panels have solar cells made from many silicon fragments melted together.

Because a monocrystalline cell is composed of a single crystal, the electrons that generate a flow of electricity have more room to move. As a result, monocrystalline solar cells are more efficient than their polycrystalline solar cell counterparts.

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Polycrystalline solar panels are also made from silicon. However, instead of using a single silicon crystal, manufacturers melt many silicon fragments together to form wafers for the panel. Polycrystalline solar cells are also called "multi-crystalline" or many-crystal silicon.

Polycrystalline solar panels generally have lower efficiencies than monocrystalline cell options because there are many more crystals in each cell, meaning less freedom for the electrons to move. Due to the easier manufacturing process, these panels have a lower price point on average. In addition, polycrystalline solar panels tend to have a blue hue instead of the black hue of monocrystalline solar panels. Because they are less efficient than other panels, you will need more to provide electricity for your home, but their individual cost is lower.