Making the difference with ultra-black glass

Growth is rapid, demand is strong and technology is advancing, but letting high standards slip now is an unthinkable option for those companies who are innovating in the solar sector. Ultra-black double-glass panels present an opportunity to offer customers the best of all worlds, but where might this innovation go next?

Belinus is a premium brand oriented on high-end customers to give them secure, trustworthy solar solutions. Its portfolio currently includes three products: M8 IBC ultra-black double-glass, M8 HJT double-glass and M7 ultra-black double-glass, alongside two solar energy storage batteries: Energiewall LV 10 kWh and Energiewall HV 11 kWh.

As a brand, it is on a mission to create a better home concept for its high-end clients.

Placing importance on offering solar solutions that deliver customer satisfaction and build trust, all its products are manufactured in Tier 1 factories, to exacting European quality standards. The business is confident that it has achieved this too, as in addition to its high quality modules, it also provides an unmatched all-in-one, complete system warranty covering 35 years for modules and 12 years for batteries.

Higher efficiency results in better panel performance

Aside from quality, what makes Belinus different from others on the market? Importantly, it is the only company offering IBC Ultra-black double-glass solar panels under the M8 name, while also offering M7 ultra-black double-glass panels too.

Belinus' new solar panel is manufactured with the IBC and glass-glass technology and provides an ultra-high efficiency of as much as 22%. Practicalities aside, the ultra-black design also provides an elegant look and status on your roof. Suitable for private roofs, commercial and industrial applications, the M8 ultra black double glass module, measuring 166 x 83 mm, consists of N-type IBC, with 120 cells. IBC stands for Interdigitated Back Contact, which means that the solar cells have contact points on both the front and back of the panel. This reduces shading at the front of the cell, which in turn increases efficiency.

The M7 ultra-black double glass module, measuring 166 x 83 mm also consists of 120 cells and has an efficiency of 21% and a temperature co-efficient of 0.27%/C°. Although the maximum power of M7 panels is slightly higher than that of the M8 IBC panels, this does not necessarily mean that the M7 panels are better. Another important factor is the efficiency of the panels. Higher efficiency results in better panel performance. In particular, the N-type silicon cells are better than P-type silicon cells because the temperature coefficient is lower and the power degradation over time is less.

The yield plays an important role in determining the surface area of the roof. Panels with a higher efficiency generate more energy per square meter and therefore require less surface area. This is perfect for roofs with a small surface area. The temperature co-efficient also affects the total power of the panels. When the temperature of a solar panel exceeds 25C°, the solar panel power will decrease according to the temperature coefficient value. At a lower value, the performance of the panel is higher.

This means that M8 IBC panels have an advantage over M7 panels in this case. The temperature co-efficient is important, but not the only factor to consider when calculating the long-term performance of your solar system. As mentioned earlier, the efficiency of the panels, the energy production capacity and the rate of degradation over time should also be considered.

Although the maximum power of the M7 panel is 10W higher, the M8 IBC is still better than the M7. Mainly because of the higher panel efficiency, the lower temperature coefficient and the fact that there is no potential induced (PID) or light-induced degradation (LID).

In a period of very fast growth and high demand, the objective remains to maintain the highest quality standards and keep the promise to its end users.

Whatever the weather

Solar panels still generate electricity on cloudy, rainy days or in foggy weather. A little bit of snow is even good for cleaning solar panels, and the snow doesn't impede their production significantly since some sunlight can still pass through a thin coat of snow. And because the panels are typically installed at an angle to help with sun reflection, the tilt of the panels also acts as a slide for the snow to naturally fall off. A big snow storm with a large blanket of snow around your home and street could increase your solar production because the sun reflecting off the snow acts as a mirror, boosting the intensity of the sunlight reaching your panels.

Most solar panels are produced to withstand an average-sized hail storm and winds of about 50 mph. There is always a chance that severe weather, such as large hail, lightning or hurricane-force winds, could damage a residential solar energy system, but these situations are rare. Cooler, sunny days are the most efficient in terms of solar energy production.

However, in the northeast, cold, sunny days are equated with late fall, winter and early spring, which also means shorter daylight hours. So while energy production is at an optimum peak, the number of hours that sunlight is hitting the panels is at its lowest point of the year. Belinus partner installers calculate annual, monthly and seasonal shading percentages at home which allow them and us to design a system that meets your specific energy needs.

The future is brighter with solar

So in a fast-moving industry where demand is growing rapidly, what's next for Belinus? It's R&D team, naturally, is always striving to stay ahead of industry trends, with two new PV modules currently in the planning stages. In a period of very fast growth and high demand, the objective remains to maintain the highest quality standards and keep the promise to its end users.

In terms of where the market may go next, Photovoltaics (PV) and concentrating solar power are likely to continue to grow rapidly. Also, battery capacity, which is critical for storing solar energy, is on track to more than double this year.

And it's not just the demand for solar panels and clean energy that's growing. Demand for better batteries to store that solar energy to use later is growing too. Technology is catching up. Because of all the interest in storage now and interest in going green, long-duration batteries are starting to enter the market, such as the Energiewall LV 10 kWh and Energiewall HV 11 kWh.

In short, the future of solar is bright and Belinus will keep it up, supporting European companies in designing solar panels and managing supply chain risks and working hard to fulfill its mission to turn buildings into power plants with its energy modules.

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