



POWER GENERATION  
FOR GENERATIONS

# **LEARN HOW TO ACHIEVE GREEN & SUSTAINABLE ARCHITECTURE & BUILDINGS!**





Building integrated photovoltaics (termed as BIPV commonly) are photovoltaic solar panels or solar integrated products that are used to replace conventional building materials such as the facade, roof, skylights, etc. BIPV is gaining lot of popularity and acceptance in the last few years due to it's multiple benefit of serving as the construction material as well as serving the purpose of generating solar power also.

One of the big advantage of building integrated photovoltaic over more common non-integrated systems is that the initial cost can be offset by reducing the amount spent on building materials and labour that would normally be used to construct the part of the building that the BIPV modules replace.

Another term commony used for BIPV is building-applied photovoltaic (BAPV).

BAPV is sometimes used to refer to PV products that are a retrofit, i.e. integrated into the building after construction is complete. Most building integrated installations can be actually referred to as BAPV. Manufacturers and builders may differentiate new construction BIPV from BAPV.

## **SOME OF THE COMMON TYPES OF BIPV PRODUCTS ARE :**

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- Solar glass panels which can be used on facades or for glazing. Solar glass panels can also be used for application over rooftops or other areas on top of the roof.
- Solar roof shingles or solar cell based roof tiles which can be placed like normal shingles and tiles while at same time generating solar energy
- Solar Panels incorporated on top of parking structures
- Flexible solar panels placed on top of curved or dome like structures as a lay on over the main structure.

# VARIOUS ADVANTAGES OF BIPV

- Reduce solar heat gain on your building. Due to the conversion of solar energy being transmitted on the BIPV panels being converted into electrical energy, the heat gain on the building is reduced. Thus helping in keeping the buildings cooler and also reducing air conditioning requirements and loads.
- Possibility to integrate solar systems in buildings with limited roof space or high rise buildings
- Wide variety of BIPV options allow a beautiful and seamless building design
- Choice of colors and sizes allow one to have BIPV integration in any type of project and construction.



Range of Technology options  
to match your project requirements



Range of colours to match  
your project requirements



Range of dimension & thickness to  
match your project requirements



Usages- On Facade, Roof, Canopy,  
Parking Lot, Window, Shelter, Balcony Etc.



With our very high efficiency technology you  
can generate more power per sq.mtr.



Excellent performance  
in low light conditions



Achieve green building  
& sustainable architecture



Make your building  
power self-reliant

**The most popular application in BIPV is using glass based solar BIPV panels for a variety of applications such as:-**

**Facade Glazing**





## Facade Glazing





Facade Glazing



Balcony





Balcony





Rooftop





Rooftop





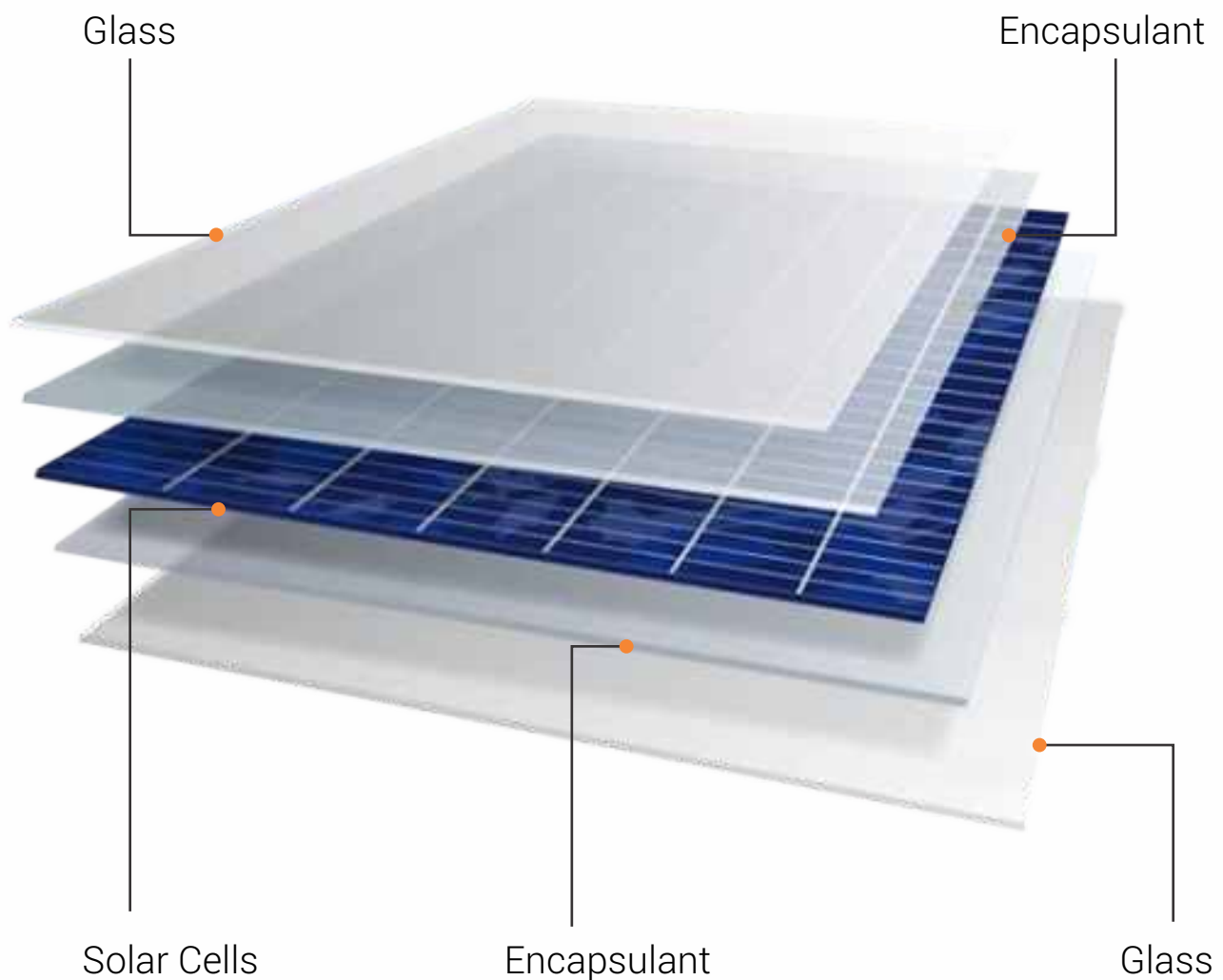
# CONSTRUCTION OF A TYPICAL SOLAR GLASS BASED BIPV PANEL.

The basic construction of glass based solar panels is typically of 2 layers of special solar glass.

The top layer (outer facing layer) is a toughened glass layer so as to ensure a very good strength and safety.

After the top glass is an encapsulation layer made with an EVA material. After this EVA layer is the solar cells or active layer. Then there is another layer of EVA behind the active layer. Finally comes the back glass layer. The back glass (inner layer) is a non tempered solar glass.

Of course the solar cells are interconnected by various solders and buses so as the carry the power generated out to the positive and negative leads.



# TYPES OF BIPV GLASS PANEL

## (I) Double glass crystalline PV panels

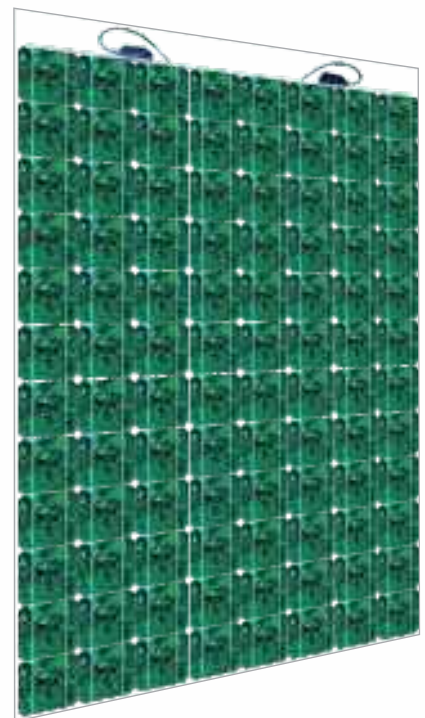
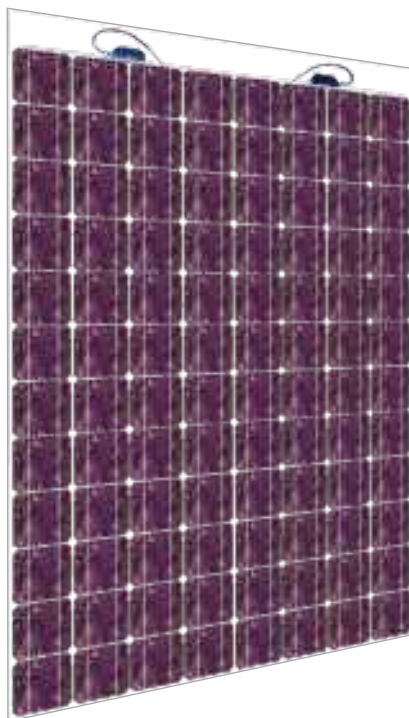
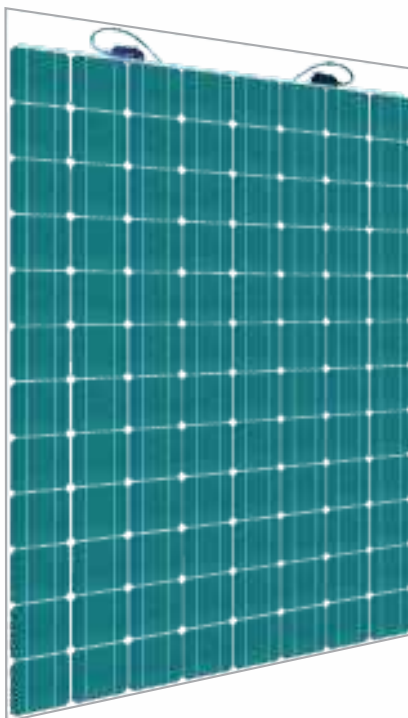
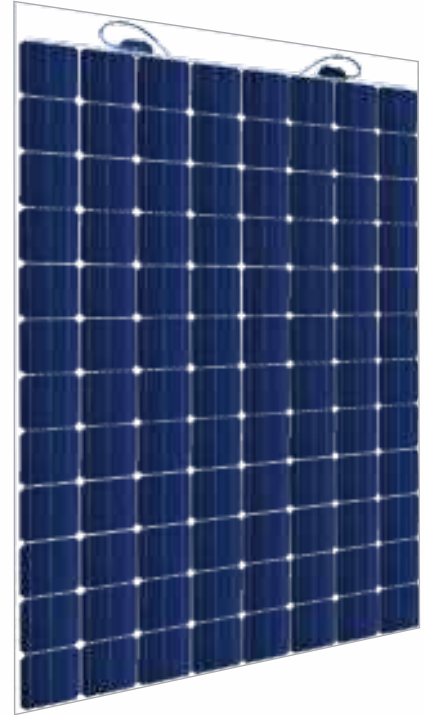
These are solar modules with glass on both sides and crystalline cells in between. They are usually available in partial transparency options or opaque options. They allow the flexibility to be used anywhere such as facade, glazing, balcony, window, canopy, parking lot, etc.

### Common sizes are:

- » 1978 x 992 mm
- » 1658 x 992 mm

### Also available in various color options

- » Blue Knight
- » Forest Crystal
- » Lavendar Blossom
- » Grey Stone
- » Brown Teak
- » Green Leaf





## (II) See through glass panels

These are solar modules with glass on both sides and a solar active layer coating in between.

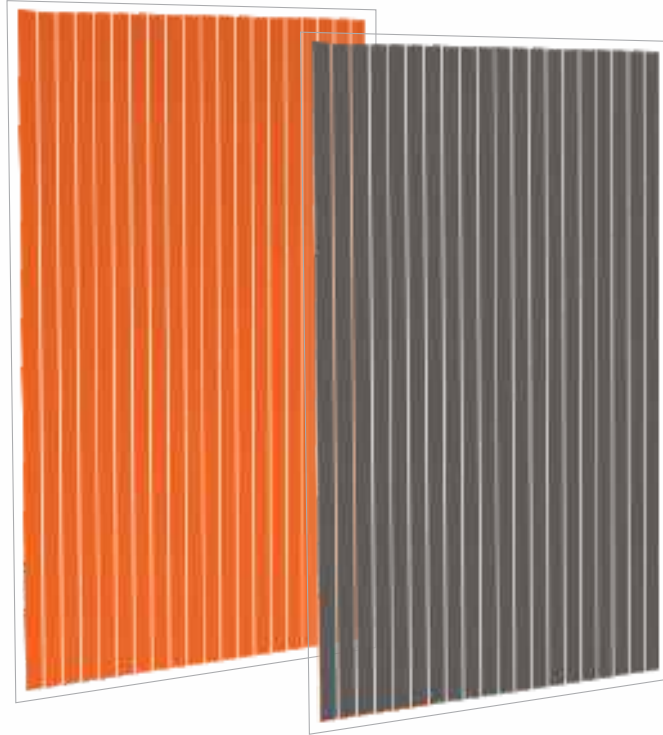
They have the unique capability of having an active solar layer, but at same time being semi transparent or see through. They allow the flexibility to be used anywhere such as facade, glazing, balcony, window, canopy, parking lot, etc.

### Common sizes are:

- » 1978 x 992 mm
- » 1658 x 992 mm

### Also available in various color options

- » Light brown
- » Grey



## (III) PV Colorshine Opaque

These range of BIPV models also have glass on both sides and a solar cells layer in between.

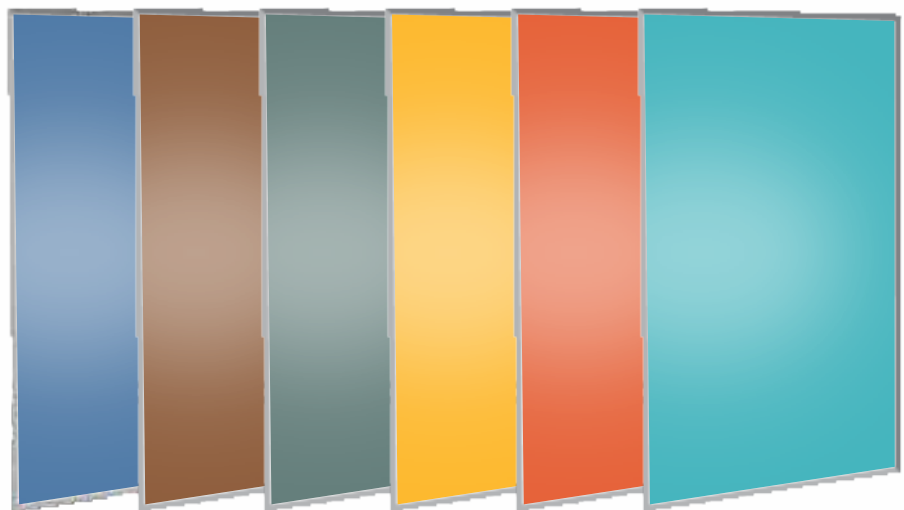
They are opaque and hence not allowing any transparency . Usually they can only be used in facade application where the visibility is not required.


### Common sizes are:

- » 1978 x 992 mm
- » 1559 x 1046 mm

### Also available in various color options

- » Sky blue
- » Terracotta
- » Green
- » Turquoise
- » Orange
- » Yellow
- » Grey





Get green & sustainable architecture from Solar.  
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