

ENERGY + FLEXIBILITY

LEXAN* BIPV PANELS

JULY 2012



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Lexan* BIPV (Building Integrated Photovoltaic) Panel.

Bringing the best out of two worlds together the Lexan* BIPV Panel combines Lexan Thermoclear* sheet with solar power panels. Known for its excellent thermal insulation properties, Lexan* Thermoclear* sheet can now support the production of renewable energy.



LEXAN* BIPV PANELS

Lexan* BIPV Panel combines
Lexan* Thermoclear* sheet



Flexible Photovoltaic panels

Lexan* BIPV Panel may offer:

- Building Integrated solar power solution for renewable energy
- High thermal Insulation
- Light management
- Optimized weight
- IEC Certification
- Flexible design solutions for roofing and facades.
- Easy and fast assembly
- Variety of colors, sizes and configurations.



WHY LEXAN* POLYCARBONATE SHEET?

Light weight & impact resistant virtually unbreakable

Ease of installation on site with conventional tools, saving time and cost

Excellent thermal insulation

Proprietary UV resistance surface best-in-class warranty for the lowest delta YI and delta LT values with 10-15 year limited written warranty option.

Aesthetics broad portfolio in variety of colors, structures and coatings

Fire resistant complies with EU fire standard EN 13501-1 and ASTM D-635 **CC1** and ASTM E-84 **Class A**

WHY LEXAN* BIPV PANEL?



Easy & Fast Installation

Saving installation time and cost



Light Weight & Easy Maintenance

It is much lighter than standard photovoltaic panel



High Thermal Insulation

U value can reach a value lower than 1 Watt/m²K



Flexibility

It can be bended thus allowing curvature shapes



Transparency

It is transparent or semitransparent, increasing the total light coming through



Energy Production

The efficiency is similar to the efficiency of a standard PV panel



Building Integration

It is not just a PV panel it can be also a cover or a wall cladding or a window

POTENTIAL APPLICATIONS

Canopies



Stadia



Roof cover



Free standing roof



Roof cover



Wall Cladding



POTENTIAL APPLICATIONS

Bus Shelters



Bike Shelters



Golf Karts



Electrical bus



Road Side Café



HOW DOES ONE SELECT THE
RIGHT MATERIAL ?

STEP 1

- Choose the Lexan* Thermoclear* sheet.
- Consider the desired U-value, weight and loading performances.

| Product Grade ** | Gauge [mm] | Weight [Kg/m ²] | U-value # [W/m ₂ K] | LT § [%LT] |
|------------------|---------------|--------------------------------|-----------------------------------|---------------|
| LT2UV105RS | 10 | 1.75 | 2.39 | 65 |
| LT2UV163TS | 16 | 2.7 | 2.27 | 74 |
| LT2UV169X | 16 | 2.5 | 1.77 | 54 |
| LT2UV209X | 20 | 2.8 | 1.59 | 53 |
| LT2UV259X | 25 | 3.0 | 1.40 | 51 |
| LT2UV509X | 40 | 4.8 | 0.99 | 50 |

** These property values have been derived from Lexan* resin data for the material used to produce this sheet product

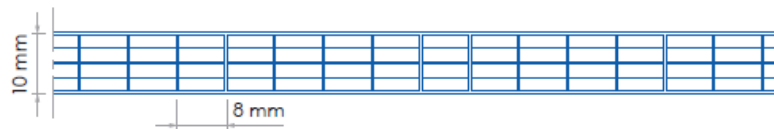
U-values based on Sabic calculated values according ISO 10077 (EN673)

§ LT (Light Transmission) measurements according ISO 9050 (EN 410) on 600x600 mm samples

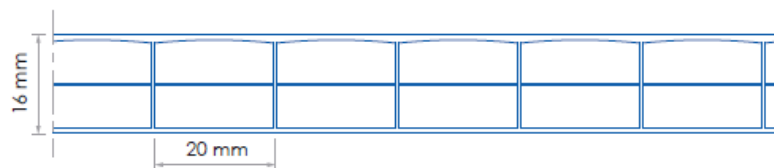


AVAILABLE LEXAN* SHEET STRUCTURES

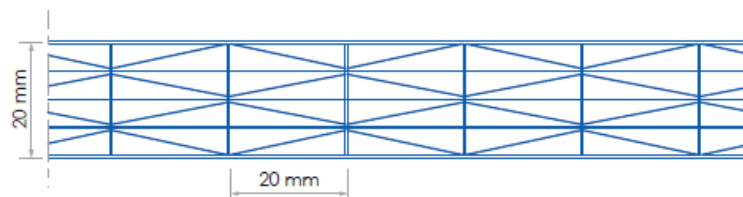
LT2UV105RS structure
 Thickness: 10mm
 Weight: 1.75Kg/m²
 Color: Transparent (112)



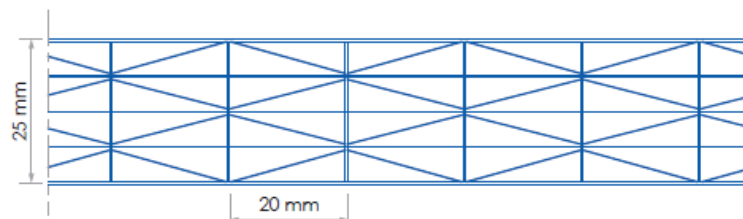
LT2UV163TS structure
 Thickness: 16mm
 Weight: 2.7Kg/m²
 Color: Transparent (112)



LT2UV209X structure
 Thickness: 20mm
 Weight: 2.8Kg/m²
 Color: Transparent (112)



LT2UV259X structure
 Thickness: 25mm
 Weight: 3.0Kg/m²
 Color: Transparent (112)



- **Gauge:** 10, 16, 20, 25, 40 mm
 - **9 wall X structure**, main product feature towards thermal insulation, available in gauges 16, 20, 25, 40, mm
 - **5 wall rectangular structure** product available in 10mm gauge
 - **3 wall rectangular structure**, product available gauge is 16mm
- **Colors:** clear, opal white, bronze, green, blue, grey,...

STEP 2

- Choose the solar power panel.
- Consider your energy needs. Higher power means optimized shading management.

| Characteristics | CV70 | CV80 | CV140 | CV160 |
|-----------------------|------------|------|-------|-------|
| Peak power [W] | 70 | 80 | 140 | 160 |
| Module efficiency [%] | 14 | 14 | 14.2 | 14.2 |
| N° Solar cells | 18 | 20 | 36 | 40 |
| Max Bending | 25% | 25% | 25% | 25% |
| Width [mm] | 380 | 670 | 745 | 1300 |
| Height [mm] | 1560 | 880 | 1560 | 880 |
| Weight [Kg] | 1.5 | 1.7 | 3.0 | 3.3 |



EXAMPLE

The size of your roof is 5m x 4m:

STEP 1

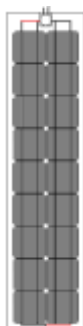
LT2UV163TS multiwall sheet with dimension 1x4m.



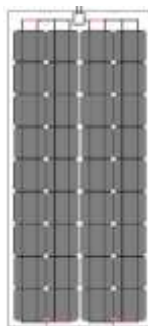
STEP 2

Power: 0.71 kW or 1.2 kW or 2.0 kW or more.

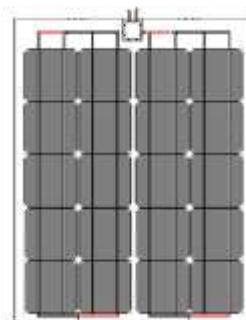
CV 70



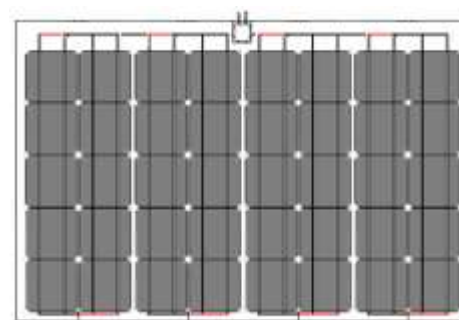
CV 140



CV 80

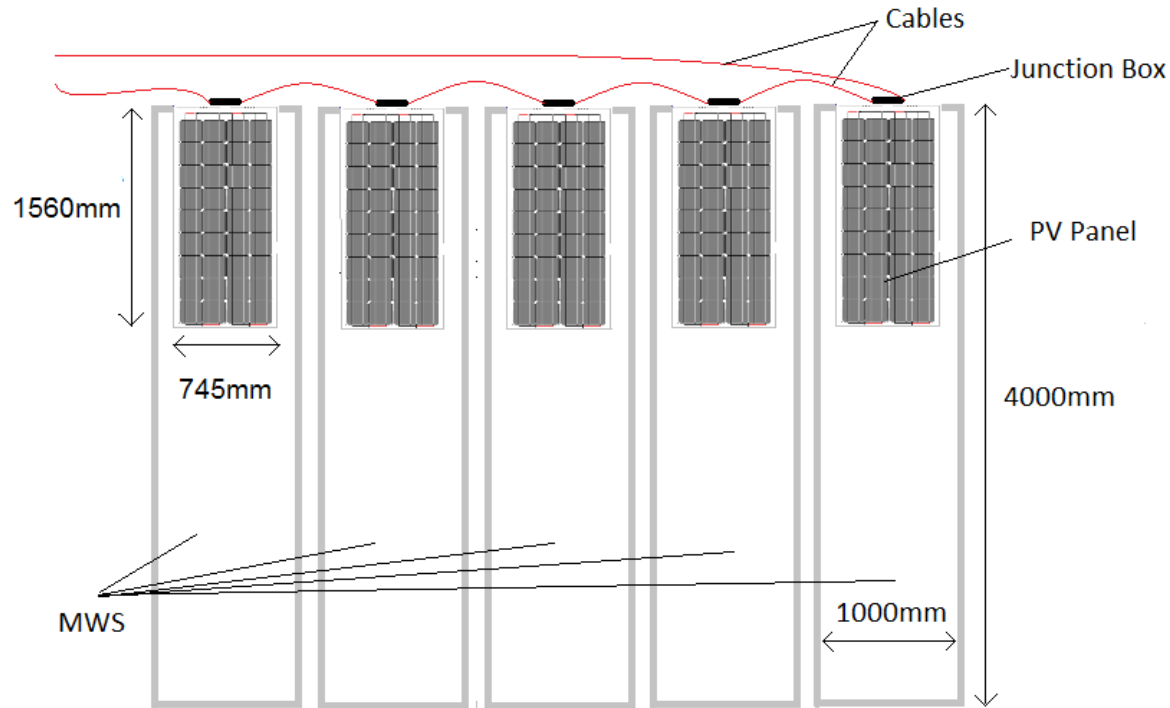


CV 160



EXAMPLES

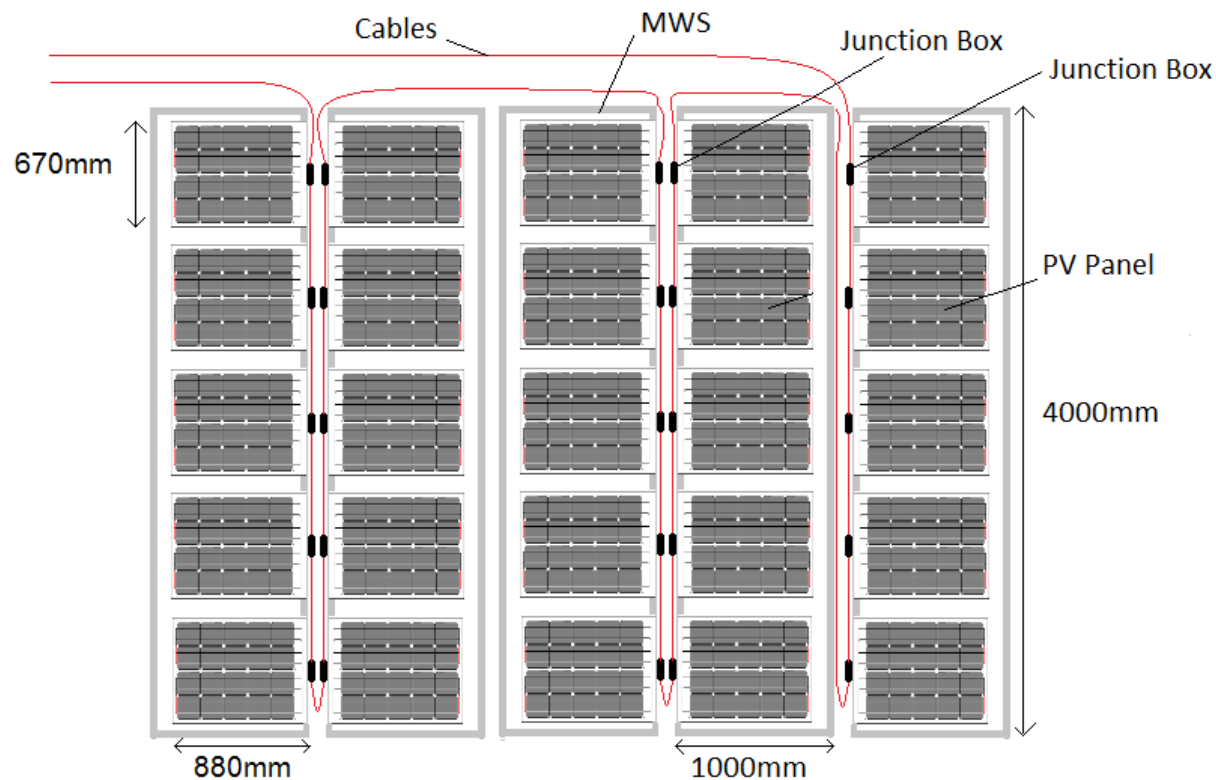
First solution:



- Power: 710 Watt
- LT of the part of panel with the cells will be about 20%
- LT of the part of panel without the cells will be about 74%
- On average the LT will be about 53%

EXAMPLES

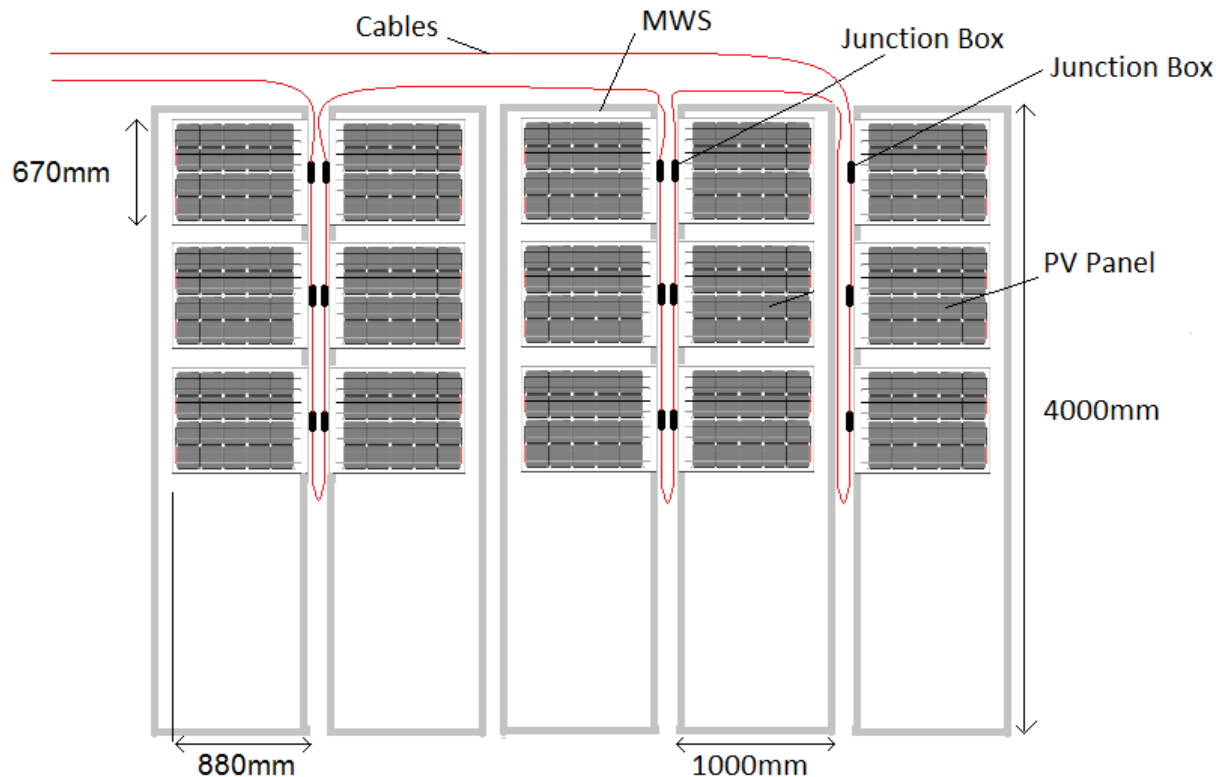
Second solution:



- Power: 2000 Watt
- LT of the panel with the cells will be about 15%
- All the junction boxes and cables will be covered by the profiles and will not be visible on the outside structure

EXAMPLES

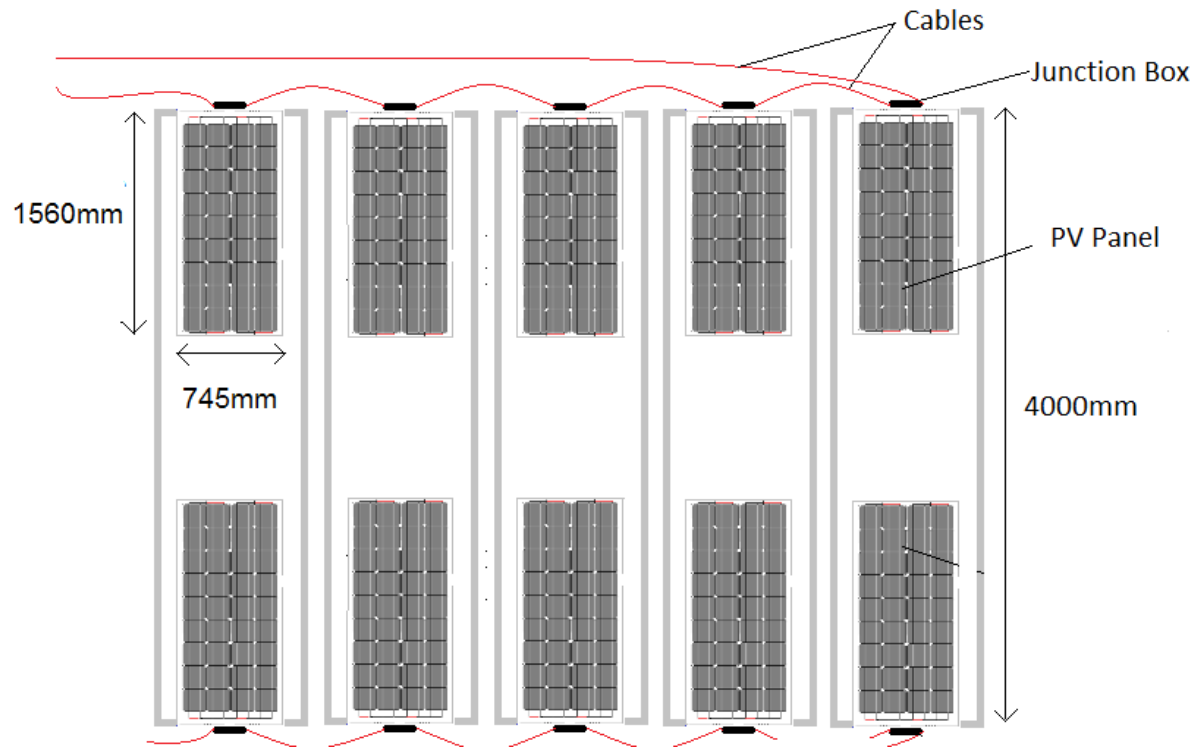
Third solution:



- Power: 1200 Watt
- LT of the part of panel with the cells will be about 15%
- LT of the part of panel without the cells will be about 74%
- On average the LT will be about 39%

EXAMPLES

Fourth solution:



- Power: 1420 Watt
- LT of the part of panel with the cells will be about 20%
- LT of the part of panel without the cells will be about 74%
- All the JB and the cables will be covered by the profiles

SUMMARY

LEXAN* BIPV PANELS may offer

- Building Integrated solar power solution for renewable energy
- High thermal Insulation
- Light management
- Optimized weight
- IEC Certification
- Flexible design solutions for roofing and facades
- Easy and fast assembly
- Variety of colors, sizes and configurations.

CONTACT US FOR MORE INFO

Please contact our Inside Sales Team Or your Commercial Representative For:

- Product guides
- Property datasheets
- Material Safety Datasheets
- Product specifications
- Product certification (SGS/UL)
- Material availability & lead-times
- Samples

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