

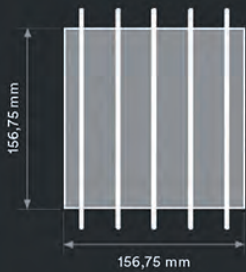


**ENGEL**

Quality is an attitude

# BIPV

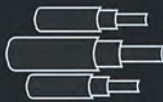
One of the great advantages of Solar Innova's architectural integration photovoltaic glasses is that they act as a filter for ultraviolet and infrared radiation, both harmful to health, in addition to generating clean and free energy thanks to the sun.



- sc-Si PV
- 5bb connection
- high efficiency

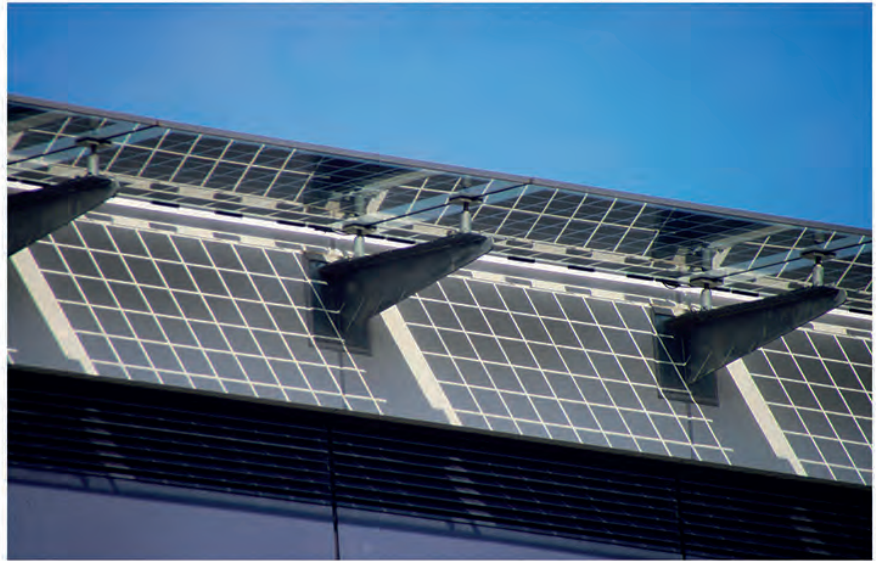
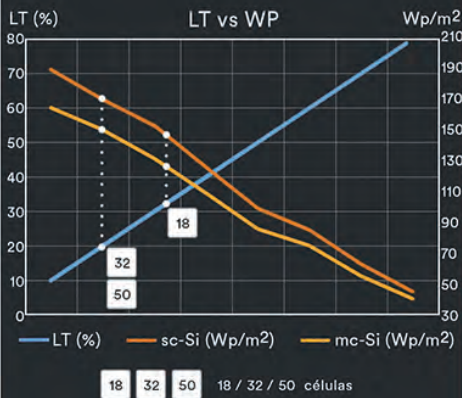
Cable:

4 mm<sup>2</sup>



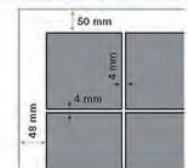
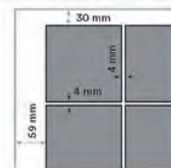
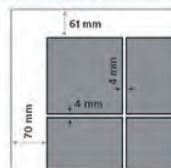
Connectors:

Type 3  
Type 4



## 4 models

Model	BIPV-CT-M156-18	BIPV-CT-P156-18	BIPV-CT-M156-32	BIPV-CT-P156-32	BIPV-CT-M156-50	BIPV-CT-P156-50
Cell type	Monocrystalline	Polycrystalline	Monocrystalline	Polycrystalline	Monocrystalline	Polycrystalline
Cells number	18 uds	18 uds	32 uds	32 uds	50 uds	50 uds
Cell size	156.75 x 156.75 mm	156.75 x 156.75 mm	156.75 x 156.75 mm	156.75 x 156.75 mm	156.75 x 156.75 mm	156.75 x 156.75 mm
Size	1100 x 600 mm	1100 x 600 mm	1400 x 700 mm	1400 x 700 mm	1700 x 900 mm	1700 x 900 mm
Thickness	14 mm	14 mm	14 mm	14 mm	14 mm	14 mm
Area	0.66 m <sup>2</sup>	0.66 m <sup>2</sup>	0.98 m <sup>2</sup>	0.98 m <sup>2</sup>	1.53 m <sup>2</sup>	1.53 m <sup>2</sup>
Power	100 Wp	85 Wp	175 Wp	150 Wp	270 Wp	235 Wp
Transparency	33.0 %	33.0 %	19.8 %	19.8 %	19.7 %	19.7 %



+ Energy + Saving - Outlay - CO<sub>2</sub>

- CE** 2014/35/EU EN 50583-1
- ISO** ISO 9001 ISO 14001 ISO 45001
- IEC** IEC/EN 61215 IEC/EN 61730

- nZEB Nearly Zero Energy Buildings
- ISO 1064 Protocolo GHG
- WEEE 2002/96/CE

- Fast Return Of Investment material
- 12/25 years guarantee
- Photovoltaic Architecture

- High satisfaction
- High resistance
- Low deterioration

Best solution  
Better integration

# BIPV RAILINGS

## PV Railing

### MATERIALS

- 10 mm tempered glass  
high-transparency
- 0.76 mm PVB layer
- 0.21 mm monocrystalline  
PV cells 156x156 mm
- 0.76 mm PVB layer
- 10 mm tempered glass

### Composition:



Size: 1000 x 1260 x 22 mm  
Weight: 66.5 kg

### 28 CELLS RAILING

Matrix: 4 x 7  
Transparency: 45.4 %  
Power: M156-148W  
P156-131W

### 30 CELLS RAILING

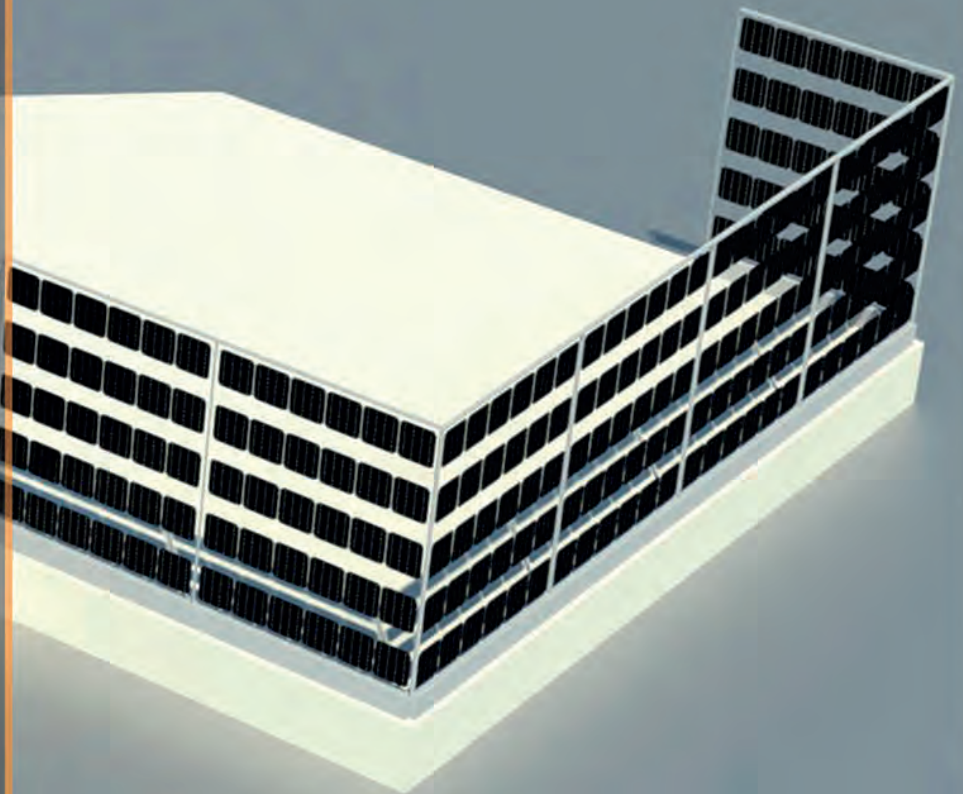
Matrix: 6 x 5  
Transparency: 41.5 %  
Power: M156-158W  
P156-142W

### 42 CELLS RAILING

Matrix: 6 x 7  
Transparency: 18.1 %  
Power: M156-222W  
P156-198W

### 750 CELLS RAILING

Matrix: 6 x 125  
Transparency: 53.3 %  
Power: M156-103W  
P156-90W

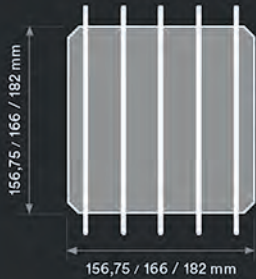


**S**olar railings are a perfect solution as they constitute a range of active technological glass capable to generate electrical energy, which can be used in **new construction** and **renovation buildings**, allowing electrical autonomy and energy savings.

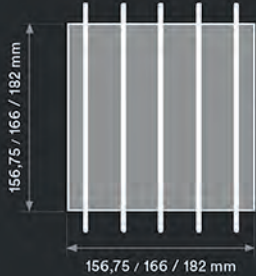


# BIPV

The architectural **integration** of photovoltaic facades in construction makes it possible to create glazed surfaces that, in addition to being an **esthetic and functional novelty**, generate electrical energy.



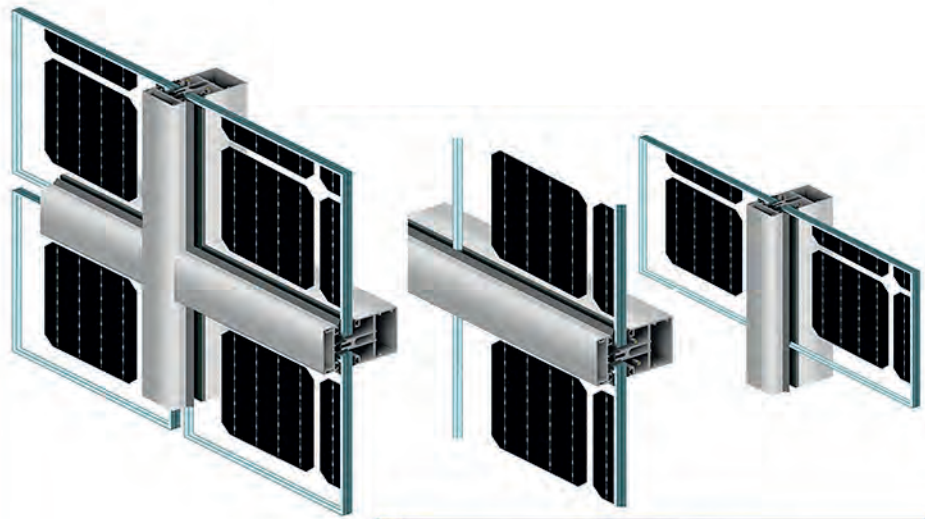
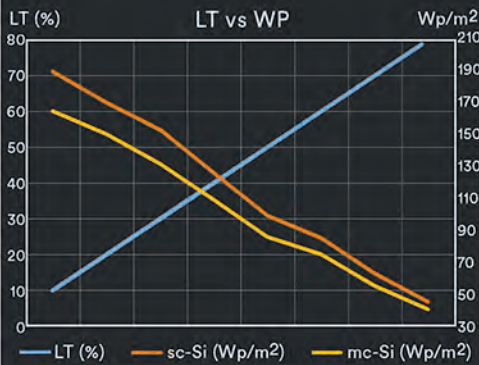
**Monocrystalline**  
 • sc-Si PV  
 • 5bb connection  
 • high efficiency



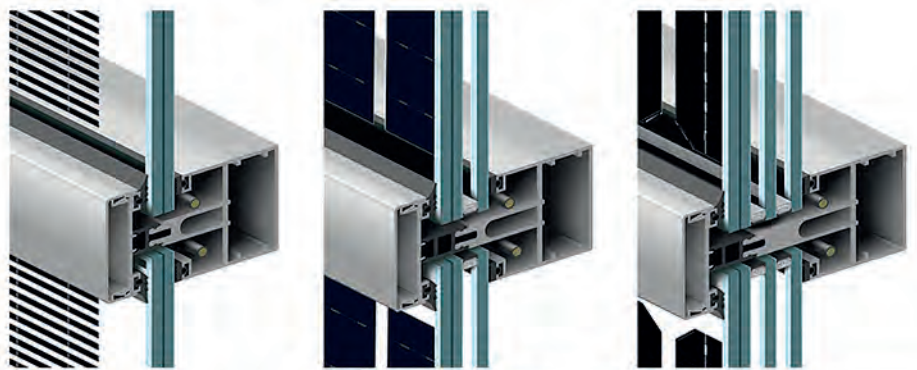
**Polycrystalline**  
 • mc-Si PV  
 • 5bb connection  
 • high efficiency



**Monocrystalline**  
 • sc-Si PV  
 • 5bb connection  
 • high efficiency

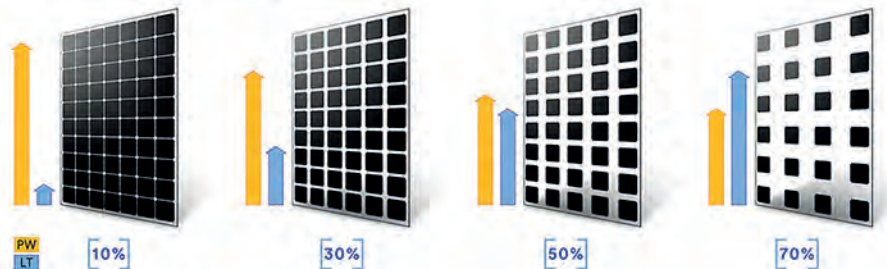


**Mullions & Transoms**



**Thickness & Insulation**

### Customized Transparency



**+ Energy + Saving - Outlay - CO<sub>2</sub>**



2014/35/EU  
EN 50583-1



ISO 9001  
ISO 14001  
ISO 45001



IEC/EN 61215  
IEC/EN 61730



nZEB Nearly  
Zero Energy  
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ISO 1064  
GHG Protocol



WEEE  
2002/96/CE



Fast Return Of  
Investment  
material



12/25 years  
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Photovoltaic  
Architecture



High  
satisfaction



High  
resistance



Low  
deterioration

Best solution  
Better integration

# BIPV VENTILATED FACADE

## PV Panel

### MATERIALS

- 3 - 12 mm tempered glass  
high-transparency
- 0.76 mm PVB layer
- 0.21 mm PhotoVoltaic cells
- 0.76 mm PVB layer
- 3 - 12 mm tempered glass

### COMPOSITION



#### Size:

Min: 180 x 180 mm  
Max: 4500 x 2500 mm

#### Junction Box:

Border  
Back

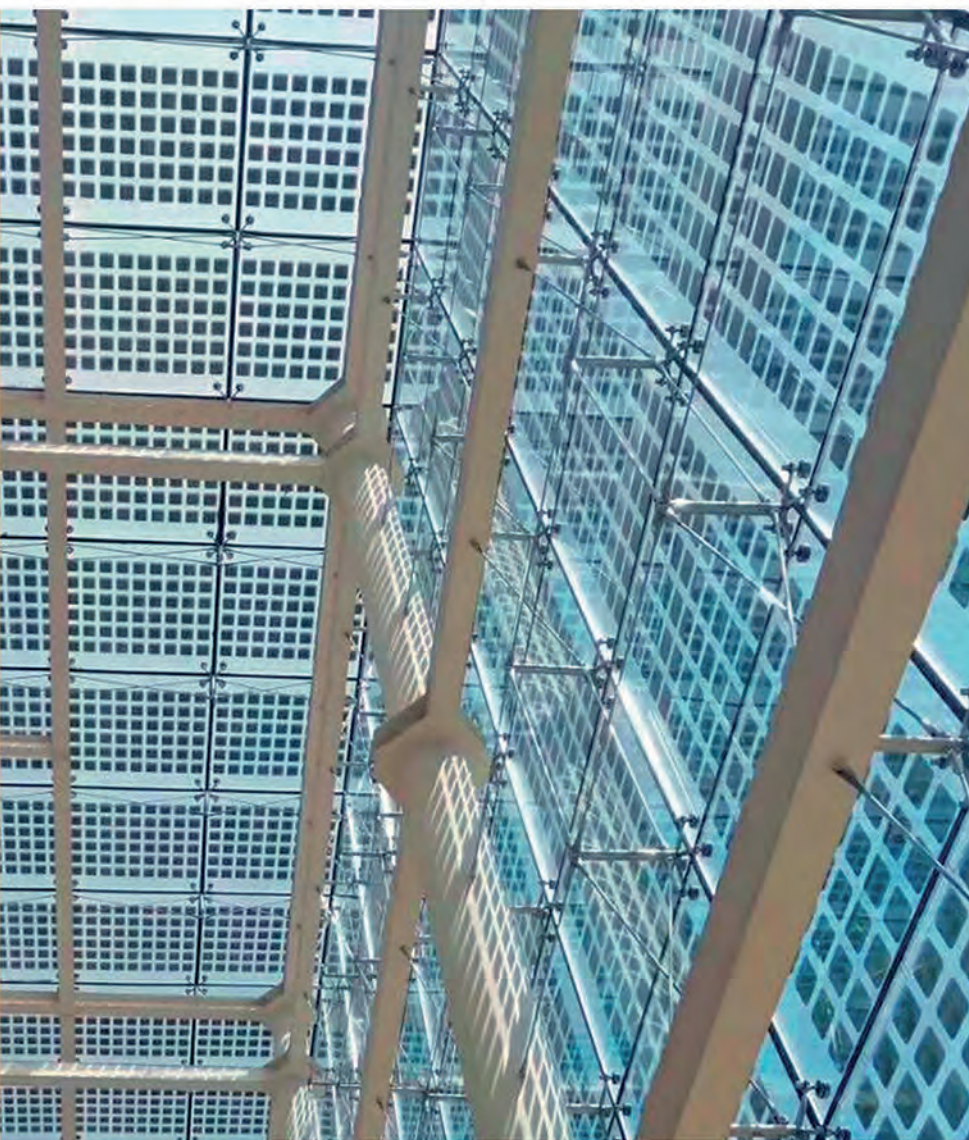
#### Cable:

4 mm<sup>2</sup>

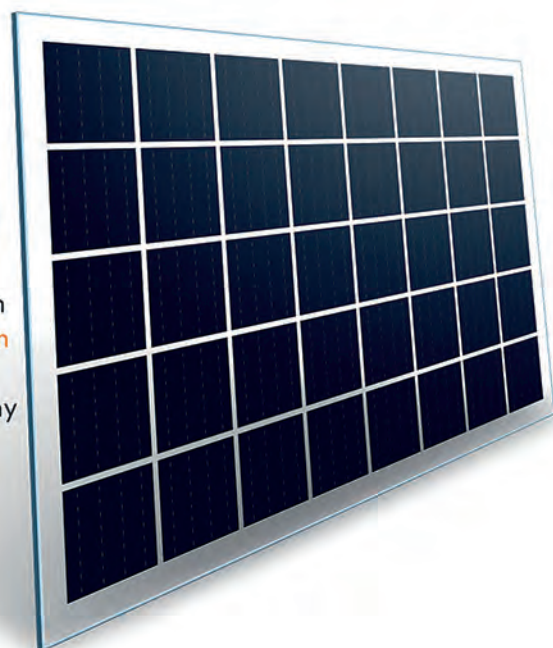


#### Connectors:

Type 3  
Type 4

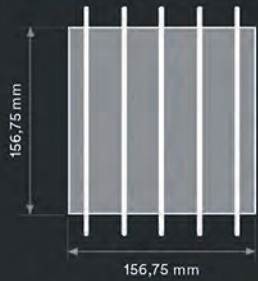


**S**olar **Ventilated Facade** are a perfect solution as they constitute a range of active technological glass capable to generate electrical energy, which can be used in **new construction** and **renovation buildings**, allowing electrical autonomy and energy savings.

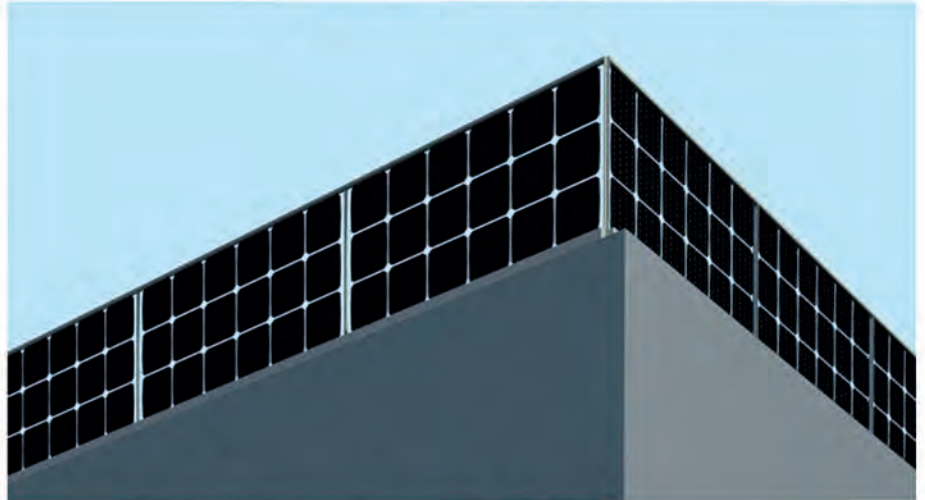
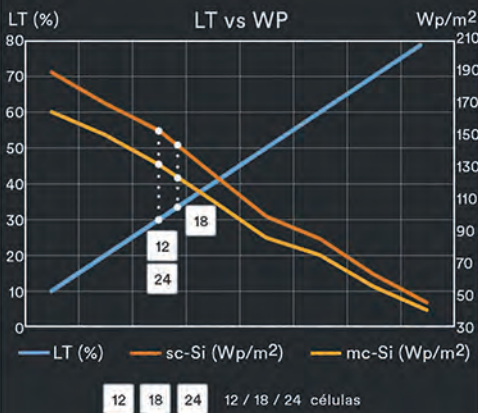
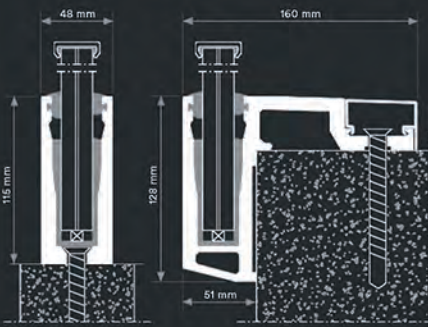


# BIPV

One of the great advantages of Solar Innova's architectural integration photovoltaic glasses is that they act as a filter for ultraviolet and infrared radiation, both harmful to health, in addition to generating clean and free energy thanks to the sun.

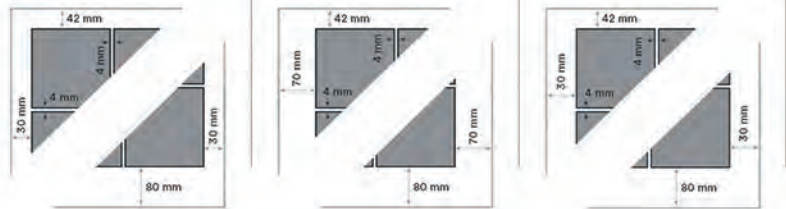


- sc-Si PV
- 5bb connection
- high efficiency



4 models

Model	BIPV-CT-M156-18	BIPV-CT-P156-18	BIPV-CT-M156-18	BIPV-CT-P156-18	BIPV-CT-M156-24	BIPV-CT-P156-24
Cell type	Monocrystalline	Polycrystalline	Monocrystalline	Polycrystalline	Monocrystalline	Polycrystalline
Cells number	12 uds	12 uds	18 uds	18 uds	24 uds	24 uds
Cell size	156.75 x 156.75 mm	156.75 x 156.75 mm	156.75 x 156.75 mm	156.75 x 156.75 mm	156.75 x 156.75 mm	156.75 x 156.75 mm
Size	700 x 600 mm	700 x 600 mm	1100 x 600 mm	1100 x 600 mm	1400 x 600 mm	1400 x 600 mm
Thickness	14 mm	14 mm	14 mm	14 mm	14 mm	14 mm
Area	0.42 m²	0.42 m²	0.66 m²	0.66 m²	0.84 m²	0.84 m²
Power	65 Wp	55 Wp	100 Wp	85 Wp	130 Wp	115 Wp
Transparency	29.8 %	29.8 %	33.0 %	33.0 %	29.8 %	29.8 %



+ Energy + Saving - Outlay - CO2

CE 2014/35/EU  
EN 50583-1

ISO 9001  
ISO 14001  
ISO 45001

IEC IEC/EN 61215  
IEC/EN 61730

nZEB Nearly  
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Buildings

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Fast Return Of  
Investment  
material

12/25 years  
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Photovoltaic  
Architecture

High  
satisfaction

High  
resistance

Low  
deterioration

Best solution  
Better integration

# BIPV PARKING

## PV Parkings

### MATERIALS

- 4 mm tempered glass  
high-transparency
- 0.76 mm PVB layer
- 0.21 mm PhotoVoltaic cells
- 0.76 mm PVB layer
- 4 mm tempered glass

### Composition:



### 24 CELLS PV PANEL

#### SI-ESF-M-BIPV-CT-M156-24

Size: 1100 x 740 x 10 mm

Weight: 18.5 kg

Matrix: 6 x 4

Transparency: 27.5 %

Power: 130 Wp

Connectors: Type 3

### CONFIGURATIONS

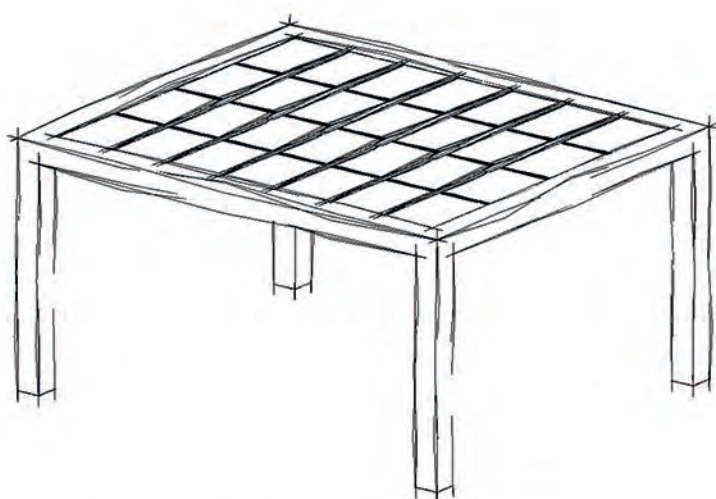
#### CHARACTERISTICS

	4 x 4	4 x 7
Parking places	1	2
N° Modules	16	28
Width (m)	5040	5040
Long (m)	3600	5850
Area (m <sup>2</sup> )	18.1	29.5
Max Power (Wp)	2080	3640

### PERGOLA HEIGHT:

Free: 2.7 m

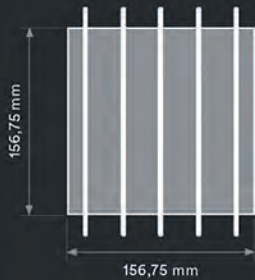
Total: 3 m



**T**he **photovoltaic** parkings are an alternative form to replace the materials which traditionally are only used in the construction to generate **shades**.

# BIPV

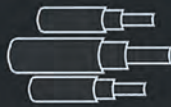
One of the great advantages of Solar Innova's architectural integration photovoltaic glasses is that they act as a filter for ultraviolet and infrared radiation, both harmful to health, in addition to generating clean and free energy thanks to the sun.



- sc-Si PV
- 5bb connection
- high efficiency

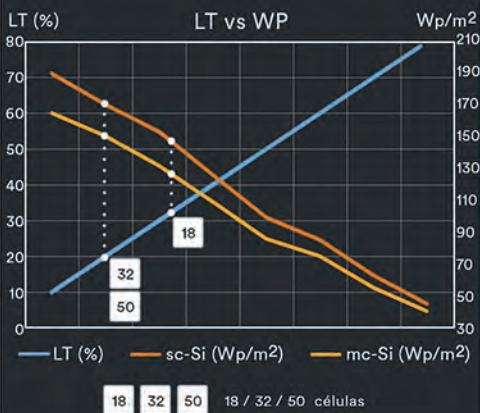
Cable:

4 mm<sup>2</sup>



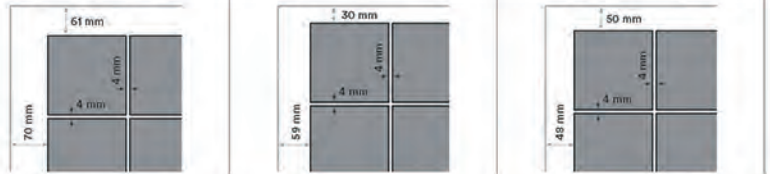
Connectors:

Type 3  
Type 4



## 4 models

Model	BIPV-CT-M156-18	BIPV-CT-P156-18	BIPV-CT-M156-32	BIPV-CT-P156-32	BIPV-CT-M156-50	BIPV-CT-P156-50
Cell type	Monocrystalline	Polycrystalline	Monocrystalline	Polycrystalline	Monocrystalline	Polycrystalline
Cells number	18 uds	18 uds	32 uds	32 uds	50 uds	50 uds
Cell size	156.75 x 156.75 mm	156.75 x 156.75 mm	156.75 x 156.75 mm	156.75 x 156.75 mm	156.75 x 156.75 mm	156.75 x 156.75 mm
Size	1100 x 600 mm	1100 x 600 mm	1400 x 700 mm	1400 x 700 mm	1700 x 900 mm	1700 x 900 mm
Thickness	14 mm	14 mm	14 mm	14 mm	14 mm	14 mm
Area	0.66 m <sup>2</sup>	0.66 m <sup>2</sup>	0.98 m <sup>2</sup>	0.98 m <sup>2</sup>	1.53 m <sup>2</sup>	1.53 m <sup>2</sup>
Power	100 Wp	85 Wp	175 Wp	150 Wp	270 Wp	235 Wp
Transparency	33.0 %	33.0 %	19.8 %	19.8 %	19.7 %	19.7 %



+ Energy + Saving - Outlay - CO<sub>2</sub>



2014/35/EU  
EN 50583-1



ISO 9001  
ISO 14001  
ISO 45001



IEC/EN 61215  
IEC/EN 61730



nZEB Nearly  
Zero Energy  
Buildings



ISO 1064  
Protocolo GHG



WEEE  
2002/96/CE



Fast Return Of  
Investment  
material



12/25 years  
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Photovoltaic  
Architecture



High  
satisfaction



High  
resistance



Low  
deterioration



Best solution  
Better integration

# BIPV ROOF TILES

## PV Roof Tile

### MATERIALS

- 4 mm High transmission tempered glass
- 0.76 mm PVB layer
- 0.21 mm monocrystalline PV cells 156x156 mm
- 0.76 mm PVB layer
- 4 mm tempered glass

### Composition:



### HORIZONTAL

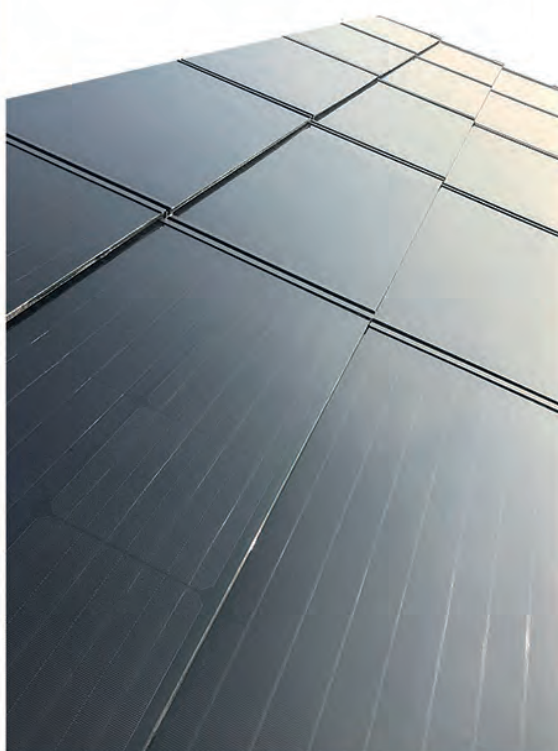
#### SI-ESF-M-BIPV-TL

Size: 710 x 410 x 9 mm  
Weight: 6.5 kg  
Matrix: 4 x 2  
Transparency: 0/32 %  
Power:  
M156-8H-40W  
P156-8H-35W

### VERTICAL

#### SI-ESF-M-BIPV-TL

Size: 350 x 740 x 9 mm  
Weight: 6.5 kg  
Matrix: 2 x 4  
Transparency: 0/32 %  
Power:  
M156-8V-40W  
P156-8V-35W



**S**olar roof tiles are a perfect solution by constituting an active technological glass range being able to produce electrical energy, used on new buildings and refurbishment.

Best solution  
Better integration

# BIPV AWNING

## PV Awnings

### MATERIALS

- 6 mm tempered glass  
high-transparency
- 0.76 mm PVB layer
- 0.21 mm PhotoVoltaic cells
- 0.76 mm PVB layer
- 6 mm tempered glass

### Composition:

#### 18 CELLS PV PANEL

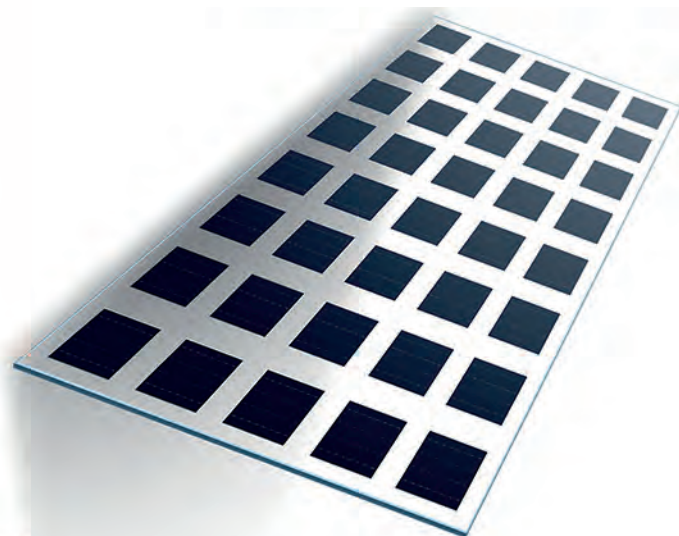
Size: 1100 x 600 x 14 mm  
Weight: 21.7 kg  
Matrix: 6 x 3  
Transparency: 33.0 %  
Power:  
M156-18-100W  
P156-18-85W

#### 32 CELLS PV PANEL

Size: 1400 x 700 x 14 mm  
Weight: 32.1 kg  
Matrix: 8 x 4  
Transparency: 19.8 %  
Power:  
M156-18-175W  
P156-18-150W

#### 50 CELLS PV PANEL

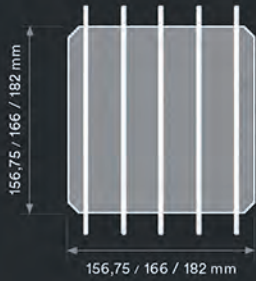
Size: 1700 x 900 x 14 mm  
Weight: 49.9 kg  
Matrix: 10 x 5  
Transparency: 19.7 %  
Power:  
M156-18-270W  
P156-18-235W



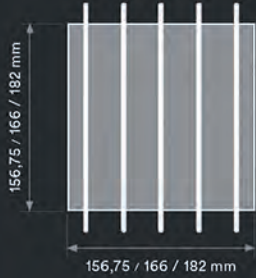
**T**he **photovoltaic** awnings are an alternative form to replace the materials which traditionally are only used in the construction to generate **shades**.

# BIPV

The architectural **integration** of photovoltaic ventilated facades in construction makes it possible to create glazed surfaces that, in addition to being an **esthetic and functional novelty**, generate electrical energy.



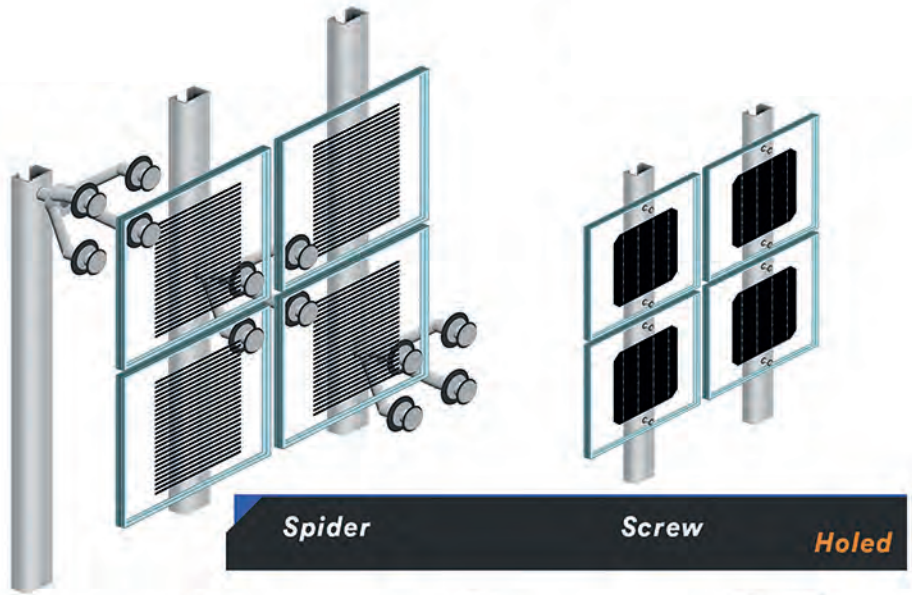
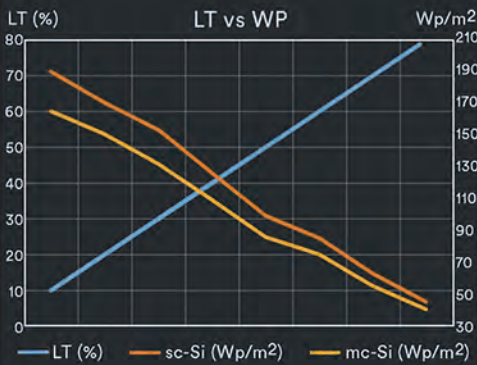
Monocrystalline  
• sc-Si PV  
• 5bb connection  
• high efficiency



Polycrystalline  
• mc-Si PV  
• 5bb connection  
• high efficiency



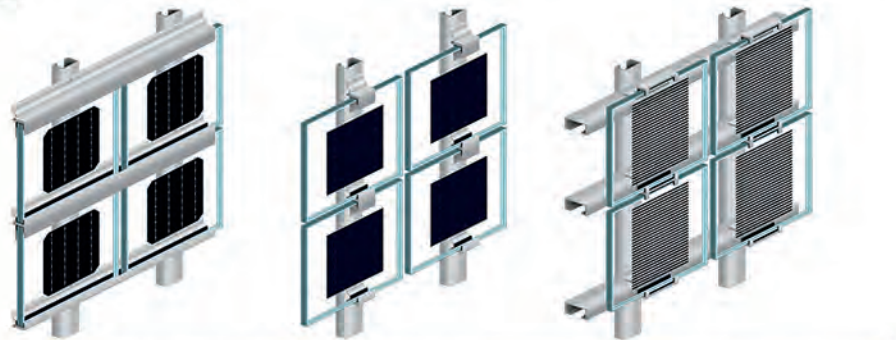
Monocrystalline  
• sc-Si PV  
• 5bb connection  
• high efficiency



Spider

Screw

Holed



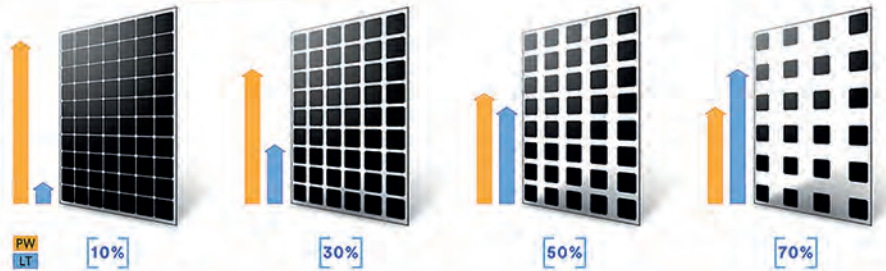
Extended

Detailed

Staple

Linear

## Customized Transparency



+ Energy + Saving - Outlay - CO2



2014/35/EU  
EN 50583-1



ISO 9001  
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Photovoltaic  
Architecture



High  
satisfaction



High  
resistance



Low  
deterioration

Best solution  
Better integration

# BIPV SPANDREL

## PV Spandrels

### MATERIALS

- 6 mm tempered glass  
high-transparency
- 0.76 mm PVB layer
- 0.21 mm PhotoVoltaic cells
- 0.76 mm PVB layer
- 6 mm tempered glass

### Composition:

#### 12 CELLS PV PANEL

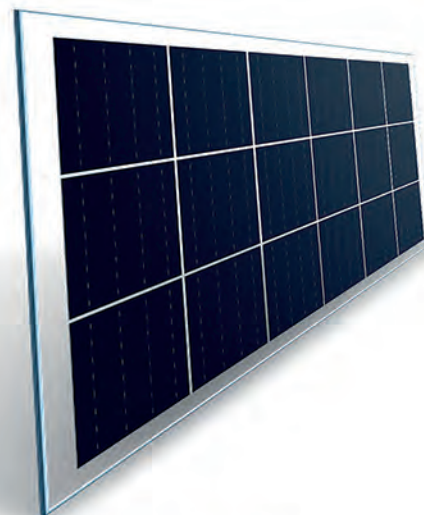
Size: 700 x 600 x 14 mm  
Weight: 13.9 kg  
Matrix: 4 x 3  
Transparency: 29.8 %  
Power:  
M156-18-65W  
P156-18-55W

#### 18 CELLS PV PANEL

Size: 1100 x 600 x 14 mm  
Weight: 21.7 kg  
Matrix: 6 x 3  
Transparency: 33.0 %  
Power:  
M156-18-100W  
P156-18-85W

#### 24 CELLS PV PANEL

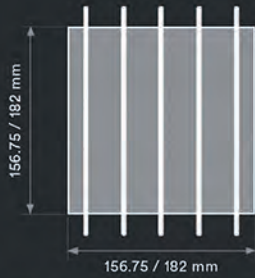
Size: 1400 x 600 x 14 mm  
Weight: 27.6 kg  
Matrix: 8 x 3  
Transparency: 29.8 %  
Power:  
M156-18-130W  
P156-18-115W



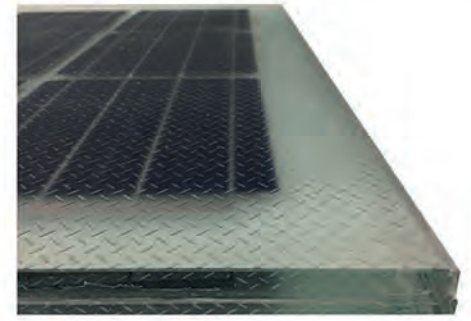
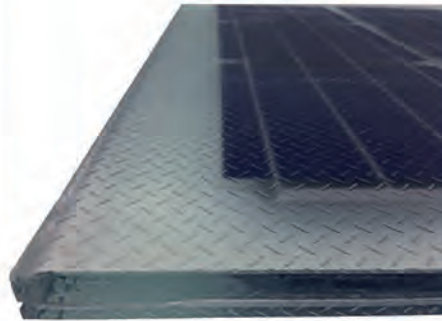
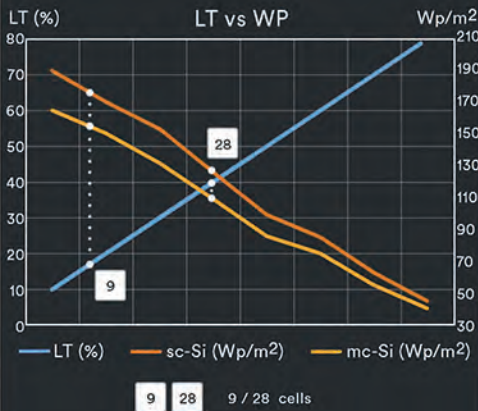
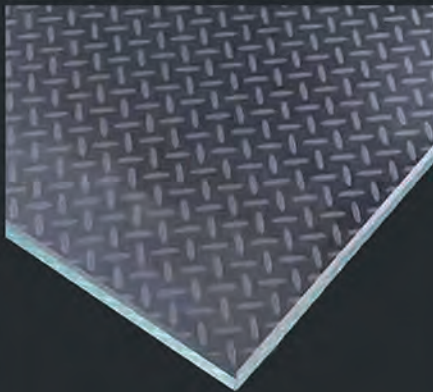
**T**he **photovoltaic** spandrels are an alternative form to replace the materials which traditionally are only used in the construction to generate **shades**.

# BIPV

The architectural integration of photovoltaic floors in construction makes it possible to create glazed surfaces that, in addition to being an **esthetic and functional** novelty, generate electrical energy.

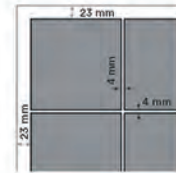
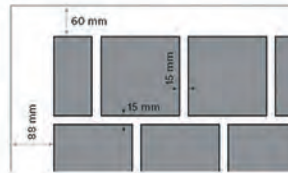


- sc/mc-Si PV
- 5bb connection
- high efficiency



## 4 types


				
Model	BIPV-RD-P156-28	BIPV-RD-M156-28	BIPV-FL-P182-9	BIPV-FL-M182-9
Cell type	Polycrystalline	Monocrystalline	Polycrystalline	Monocrystalline
Cells number	28 pcs	28 pcs	9 pcs	9 pcs
Cell size	156.75 x 156.75 mm	156.75 x 156.75 mm	182 x 182 mm	182 x 182 mm
Size	1437 x 792 mm	1437 x 792 mm	600 x 600 mm	600 x 600 mm
Thickness	18 mm	18 mm	18 mm	18 mm
Power	135 Wp	145 Wp	55 Wp	65 Wp




- ✓ DIN 51097 (barefoot) ; Class C  $\geq 24^\circ$
- ✓ DIN 51130 (in shoes) ; R12  $> 27^\circ - 35^\circ$
- ✓ EN 41901 / EN 41902 (Pendulum Method) ; Rd  $> 45$  Class 3
- ✓ ASTM C-1028 (Dynamometer Method)

## Anti-slip Rules

+ Energy + Saving - Outlay - CO2

 2014/35/EU  
EN 50583-1

 ISO 9001  
ISO 14001  
ISO 45001


 IEC/EN 61215  
IEC/EN 61730

 nZEB Nearly Zero Energy Buildings

 ISO 1064  
GHG Protocol

 WEEE  
2002/96/CE


 Fast Return Of Investment material

 12/25 years guarantee

 Photovoltaic Architecture

 High satisfaction

 High resistance

 Low deterioration

Best solution  
Better integration

# BIPV CORNICE

## PV Cornices

### MATERIALS

- 6 mm tempered glass  
high-transparency
- 0.76 mm PVB layer
- 0.21 mm PhotoVoltaic cells
- 0.76 mm PVB layer
- 6 mm tempered glass

### Composition:

#### 18 CELLS PV PANEL

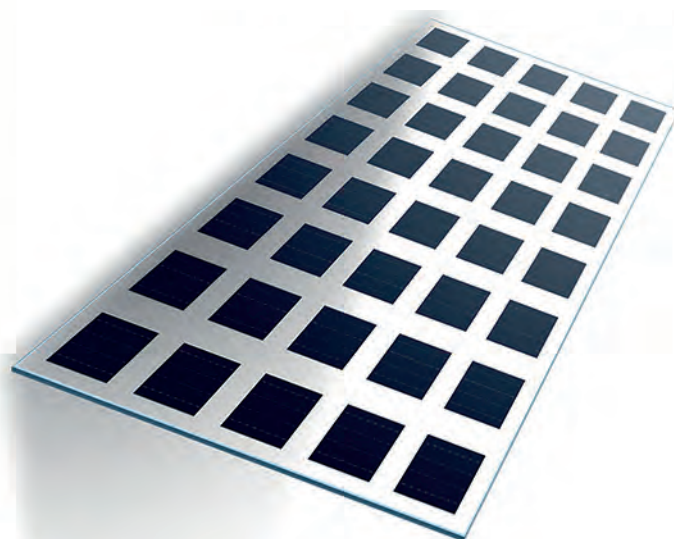
Size: 1100 x 600 x 14 mm  
Weight: 21.7 kg  
Matrix: 6 x 3  
Transparency: 33.0 %  
Power:  
M156-18-100W  
P156-18-85W

#### 32 CELLS PV PANEL

Size: 1400 x 700 x 14 mm  
Weight: 32.1 kg  
Matrix: 8 x 4  
Transparency: 19.8 %  
Power:  
M156-18-175W  
P156-18-150W

#### 50 CELLS PV PANEL

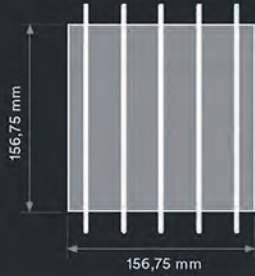
Size: 1700 x 900 x 14 mm  
Weight: 49.9 kg  
Matrix: 10 x 5  
Transparency: 19.7 %  
Power:  
M156-18-270W  
P156-18-235W



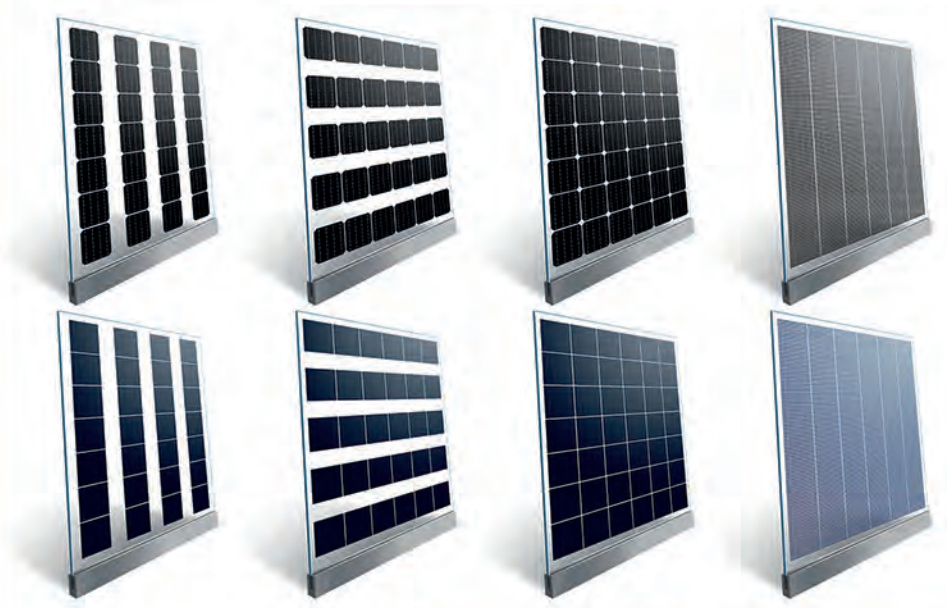
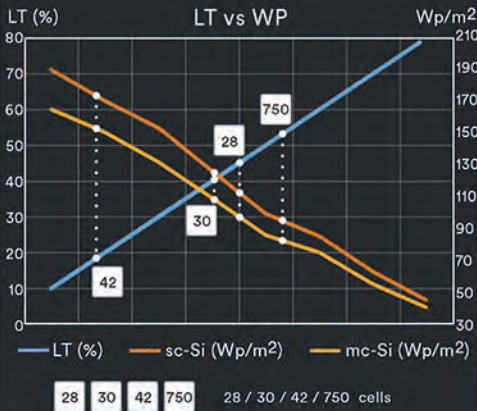
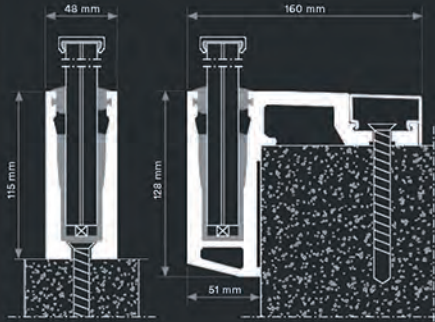
**T**he **photovoltaic** cornices are an alternative form to replace the materials which traditionally are only used in the construction to generate **shades**.

# BIPV

The architectural **integration** of photovoltaic balconies in construction makes it possible to create glazed surfaces that, in addition to being an **esthetic and functional novelty**, generate electrical energy.

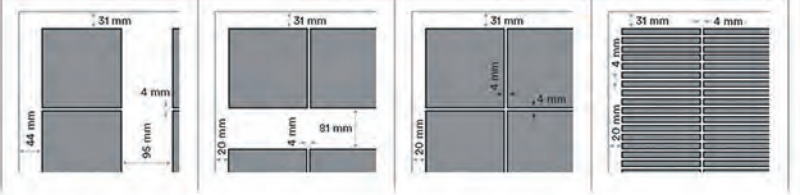


- sc/mc-Si FV
- 5bb connection
- high efficiency



## 8 models

Model	BIPV-BL-M156-28	BIPV-BL-P156-28	BIPV-BL-M156-30	BIPV-BL-P156-30	BIPV-BL-M156-42	BIPV-BL-P156-42	BIPV-BL-M156-750	BIPV-BL-P156-750
Cell type	Monocrystalline	Polycrystalline	Monocrystalline	Polycrystalline	Monocrystalline	Polycrystalline	Monocrystalline	Polycrystalline
Cells number	28 uds	28 uds	30 uds	30 uds	42 uds	42 uds	750 uds	750 uds
Cell size	156.75 x 156.75 mm	156.75 x 156.75 mm	156.75 x 156.75 mm	156.75 x 156.75 mm	156.75 x 156.75 mm	156.75 x 156.75 mm	156.75 x 5 mm	156.75 x 5 mm
Size	1000 x 1260 mm	1000 x 1260 mm	1000 x 1260 mm	1000 x 1260 mm	1000 x 1260 mm	1000 x 1260 mm	1000 x 1260 mm	1000 x 1260 mm
Thickness	22 mm	22 mm	22 mm	22 mm	22 mm	22 mm	22 mm	22 mm
Power	148 Wp	131 Wp	156 Wp	140 Wp	222 Wp	196 Wp	103 Wp	90 Wp
Transparency	45.40 %	45.40 %	41.50 %	41.50 %	18.10 %	18.10 %	53.35 %	53.35 %



## + Energy + Saving - Outlay - CO2

- CE** 2014/35/EU EN 50583-1
- ISO** ISO 9001, ISO 14001, ISO 45001
- IEC** IEC/EN 61215, IEC/EN 61730

- nZEB** Nearly Zero Energy Buildings
- ISO 1064** GHG Protocol
- WEEE** 2002/96/CE
- Fast Return Of Investment** material
- 12/25 years** guarantee
- Photovoltaic Architecture**
- High satisfaction**
- High resistance**
- Low deterioration**

Best solution  
Better integration

# BIPV FLOOR TILES & PAVEMENTS

## PV Floors

### MATERIALS

- 8 mm tempered glass anti-slip
- 0.76 mm PVB layer
- 0.21 mm PhotoVoltaic cells
- 0.76 mm PVB layer
- 8 mm tempered glass

### Composition:

## 9 CELLS FLOOR TILE

### SI-ESF-M-BIPV-FL

Size: 600 x 600 x 18 mm

Weight: 16 kg

Matrix: 3 x 3

Power:

M156-9-65W

P156-9-55W

## 28 CELLS PAVEMENT

### SI-ESF-M-BIPV-FL

Size: 1437 x 792 x 18 mm


Weight: 48 kg

Matrix: 7 x 4

Power:

M156-28-145W

P156-28-135W



SOLAR  
TRANSITABLE

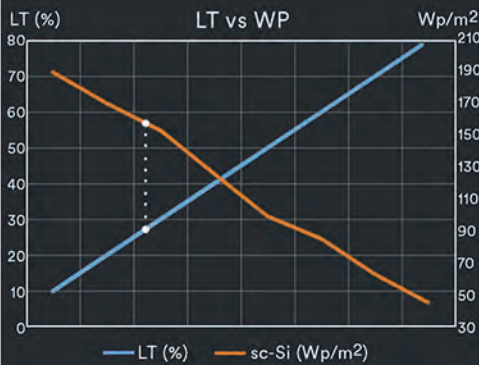
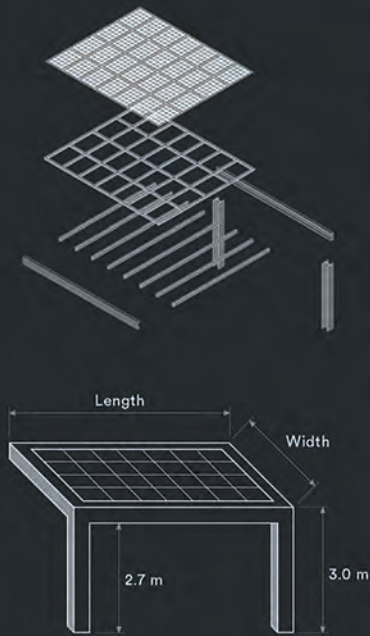


**W**ith photovoltaic floors, sustainability and architecture are connected to create unique spaces in that which we are able to generate free electricity without wasting **useful space** that it takes up.



# BIPV

One of the great advantages of Solar Innova's architectural integration photovoltaic glasses is that they act as a filter for ultraviolet and infrared radiation, both harmful to health, in addition to generating clean and free energy thanks to the sun.



## Integrated Photovoltaic

		N° Moduls	Max Power	Width m	Length m	Area m <sup>2</sup>
	2 x 2	4	520	2.8	2.1	5.9
	2 x 3	6	780	2.8	2.8	8
	2 x 4	8	1040	2.8	3.6	10
	2 x 5	10	1300	2.8	4.3	12.2
	2 x 6	12	1560	2.8	5.1	14.3
	2 x 7	14	1820	2.8	5.8	16.4
	3 x 2	6	780	3.9	2.1	8.2
	3 x 3	9	1170	3.9	2.8	11.2
	3 x 4	12	1560	3.9	3.6	14.1
	3 x 5	15	1950	3.9	4.3	17.1
	3 x 6	18	2340	3.9	5.1	20
	3 x 7	21	2730	3.9	5.8	23
	4 x 2	8	1040	5	2.1	10.6
	4 x 3	12	1560	5	2.8	14.4
	4 x 4	16	2080	5	3.6	18.1
	4 x 5	20	2600	5	4.3	22
	4 x 6	24	3120	5	5.1	25.7
	4 x 7	28	3640	5	5.8	29.5

+ Energy + Saving - Outlay - CO<sub>2</sub>

2014/35/EU  
EN 50583-1

ISO 9001  
ISO 14001  
ISO 45001

IEC/EN 61215  
IEC/EN 61730

nZEB Nearly  
Zero Energy  
Buildings

ISO 1064  
Protocolo GHG

WEEE  
2002/96/CE

Fast Return Of  
Investment  
material

12/25 years  
guarantee

Photovoltaic  
Architecture

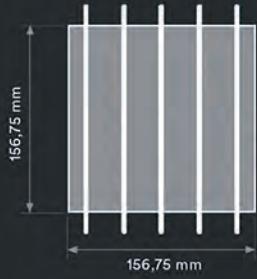
High  
satisfaction

High  
resistance

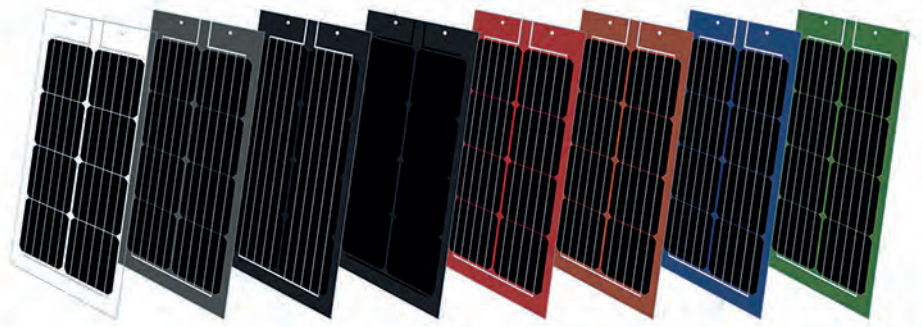
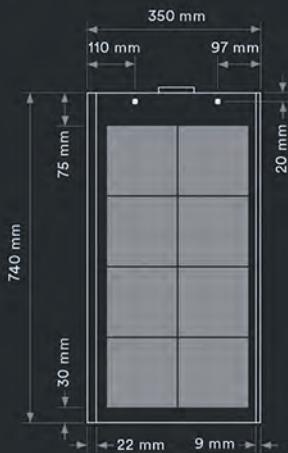
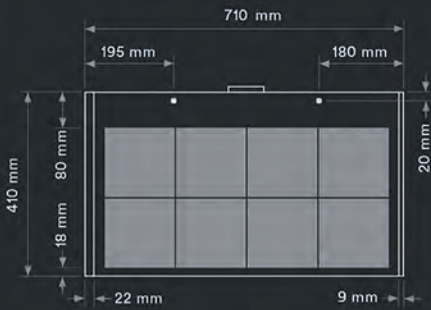
Low  
deterioration

# BIPV

The photovoltaic BIPV roof tiles of Solar Innova are perfectly **integrated** on the top of buildings replacing the conventional tiles, preserving the **esthetics** thanks to the diversity of possible configurations.

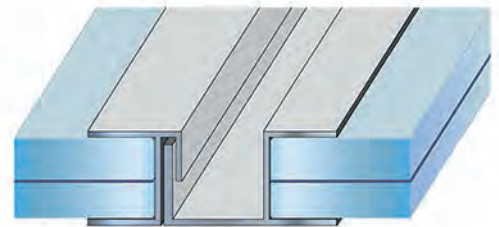


- sc/mc-Si PV
- 5bb connection
- high efficiency

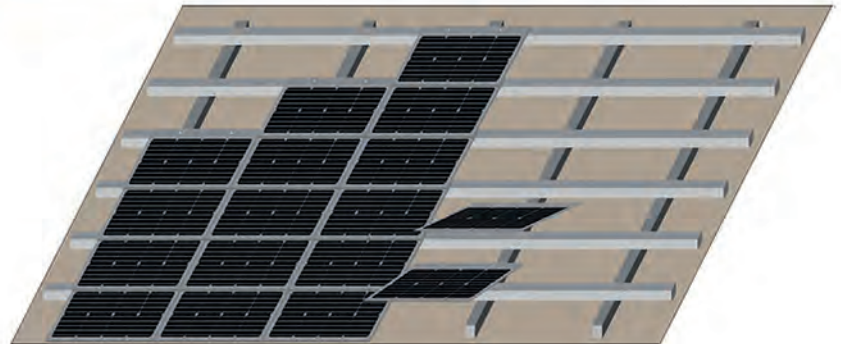


RAL COLORS

Mounting system



Traditional anchoring on battens



+ Energy + Saving - Outlay - CO<sub>2</sub>



2014/35/EU  
EN 50583-1



ISO 9001  
ISO 14001  
ISO 45001



IEC/EN 61215  
IEC/EN 61730



nZEB Nearly  
Zero Energy  
Buildings



ISO 1064  
GHG Protocol



WEEE  
2002/96/EC



Fast Return Of  
Investment  
material



12/25 years  
guarantee



Photovoltaic  
Architecture



High  
satisfaction



High  
resistance



Low  
deterioration

Best solution  
Better integration

# BIPV PARAPET

## PV Parapets

### MATERIALS

- 6 mm tempered glass  
high-transparency
- 0.76 mm PVB layer
- 0.21 mm PhotoVoltaic cells
- 0.76 mm PVB layer
- 6 mm tempered glass

### Composition:

#### 12 CELLS PV PANEL

Size: 700 x 600 x 14 mm  
Weight: 13.9 kg  
Matrix: 4 x 3  
Transparency: 29.8 %  
Power:  
M156-18-65W  
P156-18-55W

#### 18 CELLS PV PANEL

Size: 1100 x 600 x 14 mm  
Weight: 21.7 kg  
Matrix: 6 x 3  
Transparency: 33.0 %  
Power:  
M156-18-100W  
P156-18-85W

#### 24 CELLS PV PANEL

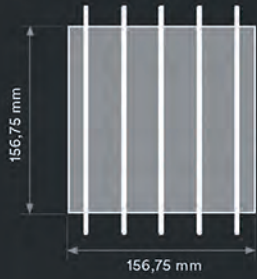
Size: 1400 x 600 x 14 mm  
Weight: 27.6 kg  
Matrix: 8 x 3  
Transparency: 29.8 %  
Power:  
M156-18-130W  
P156-18-115W



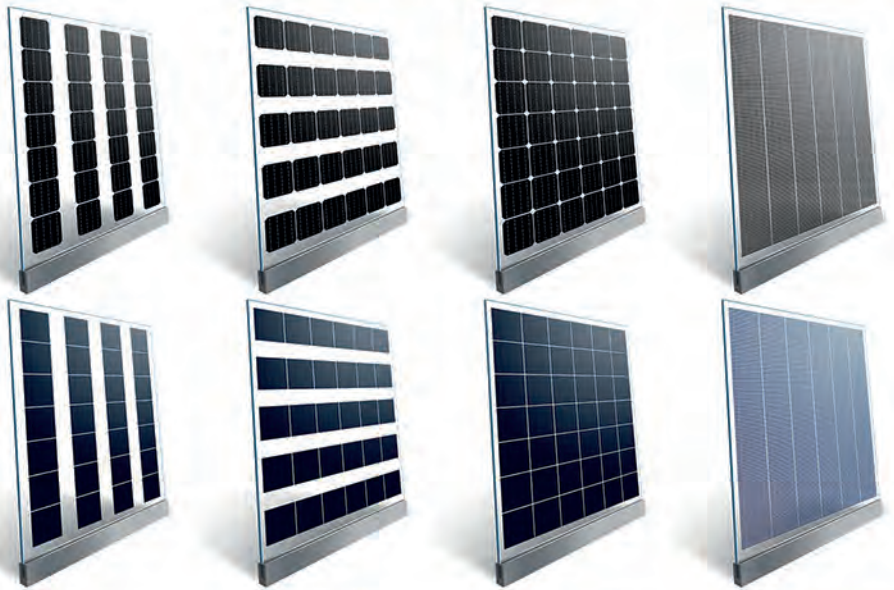
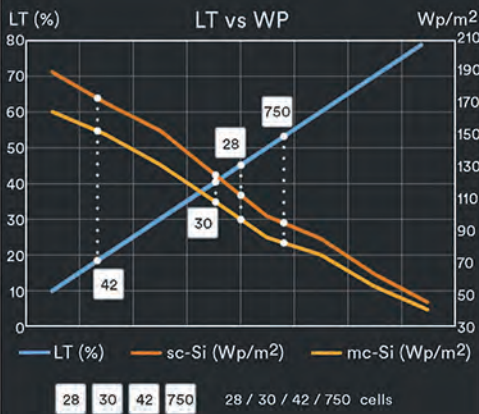
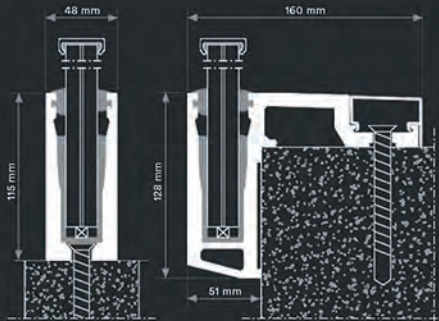
**T**he **photovoltaic** parapets are an alternative form to replace the materials which traditionally are only used in the construction to generate **shades**.

# BIPV

The architectural integration of photovoltaic railings in construction makes it possible to create glazed surfaces that, in addition to being an **esthetic and functional** novelty, generate electrical energy.



- sc/mc-Si FV
- 5bb connection
- high efficiency



8 models

Model	BIPV-BL-M156-28	BIPV-BL-P156-28	BIPV-BL-M156-30	BIPV-BL-P156-30	BIPV-BL-M156-42	BIPV-BL-P156-42	BIPV-BL-M156-750	BIPV-BL-P156-750
Cell type	Monocrystalline	Polycrystalline	Monocrystalline	Polycrystalline	Monocrystalline	Polycrystalline	Monocrystalline	Polycrystalline
Cells number	28 uds	28 uds	30 uds	30 uds	42 uds	42 uds	750 uds	750 uds
Cell size	156,75 x 156,75 mm	156,75 x 156,75 mm	156,75 x 156,75 mm	156,75 x 156,75 mm	156,75 x 156,75 mm	156,75 x 156,75 mm	156,75 x 5 mm	156,75 x 5 mm
Size	1000 x 1260 mm	1000 x 1260 mm	1000 x 1260 mm	1000 x 1260 mm	1000 x 1260 mm	1000 x 1260 mm	1000 x 1260 mm	1000 x 1260 mm
Thickness	22 mm	22 mm	22 mm	22 mm	22 mm	22 mm	22 mm	22 mm
Power	148 Wp	181 Wp	156 Wp	140 Wp	222 Wp	196 Wp	103 Wp	90 Wp
Transparency	45,40 %	45,40 %	41,50 %	41,50 %	18,10 %	18,10 %	53,35 %	53,35 %

+ Energy + Saving - Outlay - CO2



2014/35/EU  
EN 50583-1



ISO 9001  
ISO 14001  
ISO 45001



IEC/EN 61215  
IEC/EN 61730



nZEB Nearly  
Zero Energy  
Buildings



ISO 1064  
GHG Protocol



WEEE  
2002/96/CE



Fast Return Of  
Investment  
material



12/25 years  
guarantee



Photovoltaic  
Architecture



High  
satisfaction



High  
resistance



Low  
deterioration

Best solution  
Better integration

# BIPV PORCH

## PV Porches

### MATERIALS

- 4 mm tempered glass  
high-transparency
- 0.76 mm PVB layer
- 0.21 mm PhotoVoltaic cells
- 0.76 mm PVB layer
- 4 mm tempered glass

### Composition:



### 24 CELLS PV PANEL

SI-ESF-M-BIPV-CT-M156-24

Size: 1100 x 740 x 10 mm

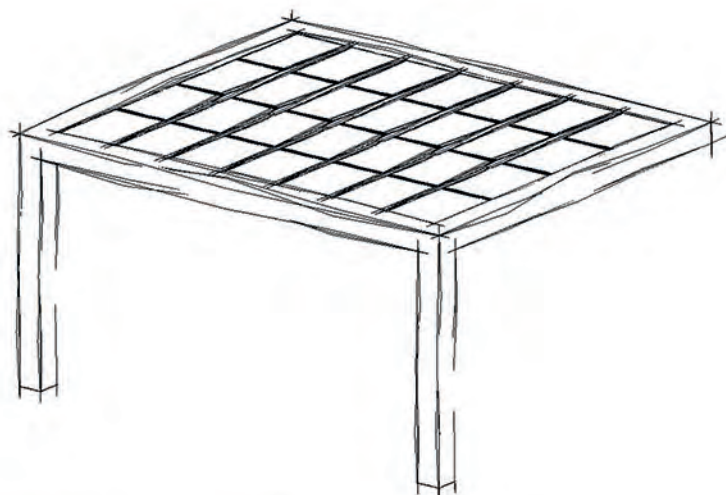
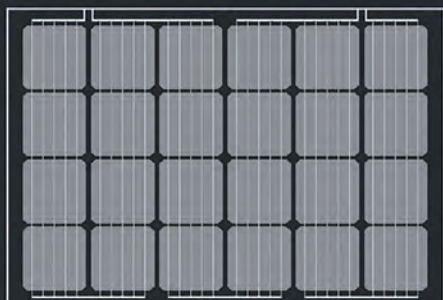
Weight: 18.5 kg

Matrix: 6 x 4

Transparency: 27.5 %

Power: 130 Wp

Connectors: Type 3



**T**he **photovoltaic** porches are an alternative form to replace the materials which traditionally are only used in the construction to generate **shades**.

Best solution  
Better integration

# BIPV BALCONY

## PV Balcony

### MATERIALS

- 10 mm tempered glass  
high-transparency
- 0.76 mm PVB layer
- 0.21 mm monocrystalline  
PV cells 156x156 mm
- 0.76 mm PVB layer
- 10 mm tempered glass

### Composition:



Size: 1000 x 1260 x 22 mm  
Weight: 66.5 kg

### 28 CELLS BALCONY

Matrix: 4 x 7  
Transparency: 45.4 %  
Power: M156-148W  
P156-131W

### 30 CELLS BALCONY

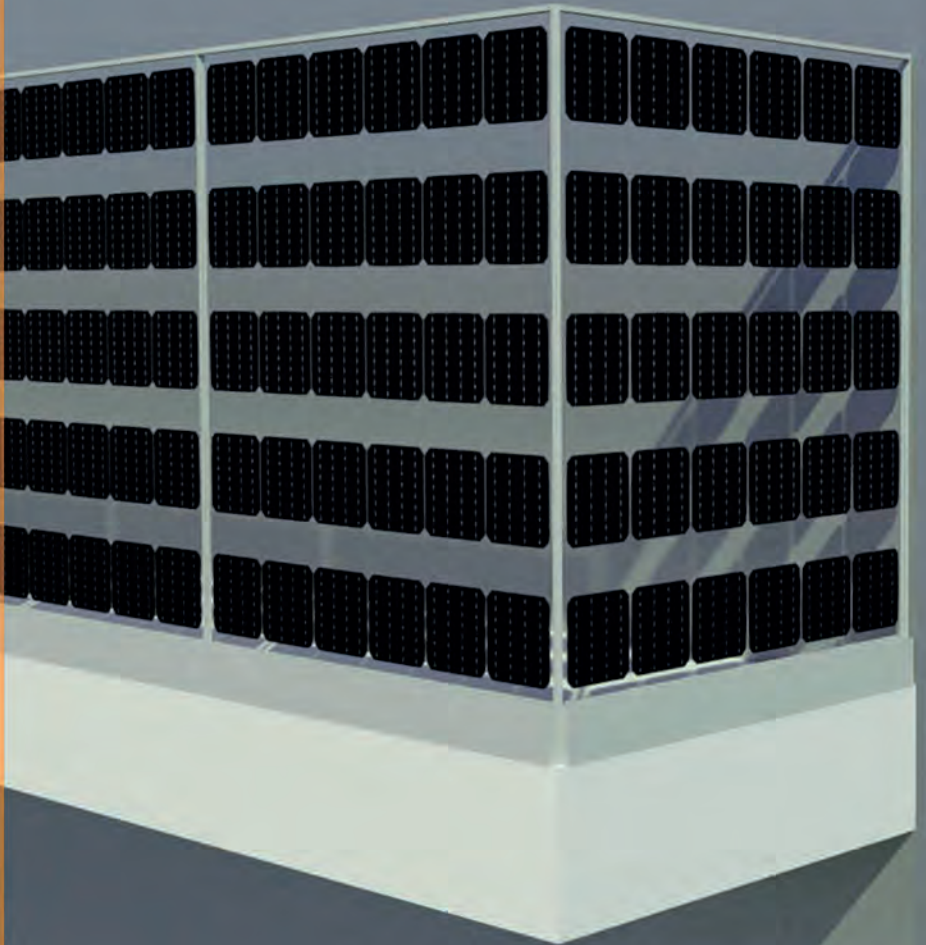
Matrix: 6 x 5  
Transparency: 41.5 %  
Power: M156-158W  
P156-142W

### 42 CELLS BALCONY

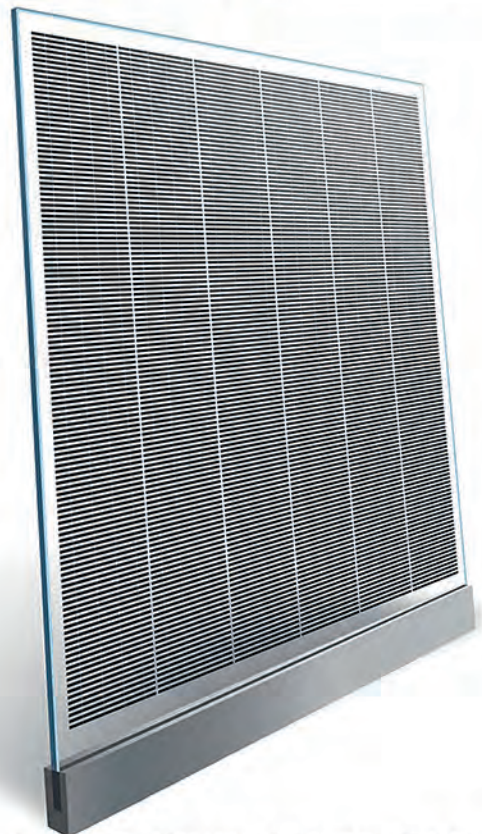
Matrix: 6 x 7  
Transparency: 18.1 %  
Power: M156-222W  
P156-198W

### 750 CELLS BALCONY

Matrix: 6 x 125  
Transparency: 53.3 %  
Power: M156-103W  
P156-90W

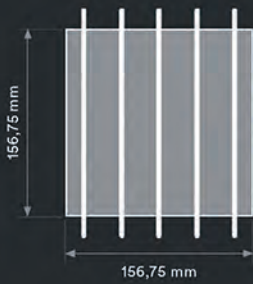


**S**olar balconies are a perfect solution as they constitute a range of active technological glass capable to generate electrical energy, which can be used in **new construction** and **renovation buildings**, allowing electrical autonomy and energy savings.



# BIPV

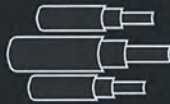
One of the great advantages of Solar Innova's architectural integration photovoltaic glasses is that they act as a filter for ultraviolet and infrared radiation, both harmful to health, in addition to generating clean and free energy thanks to the sun.



- sc-Si PV
- 5bb connection
- high efficiency

Cable:

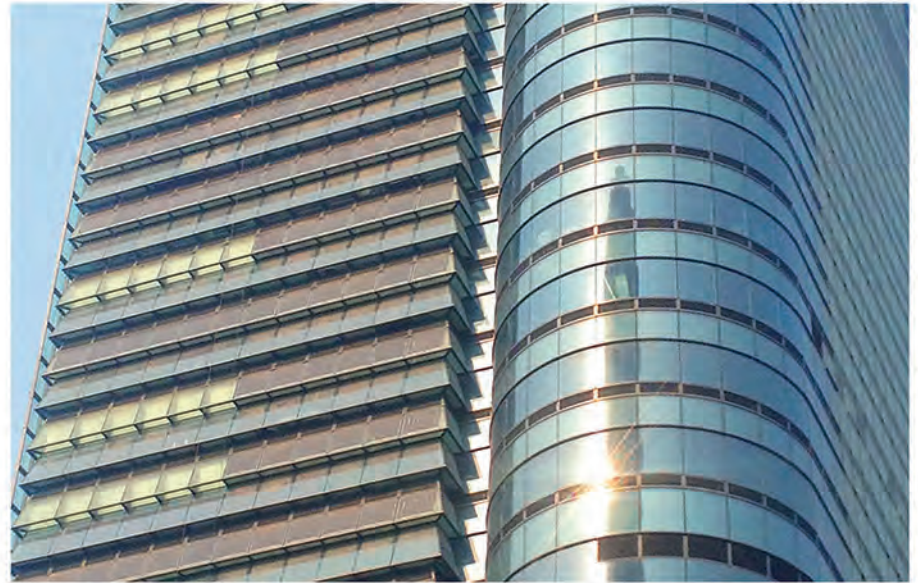
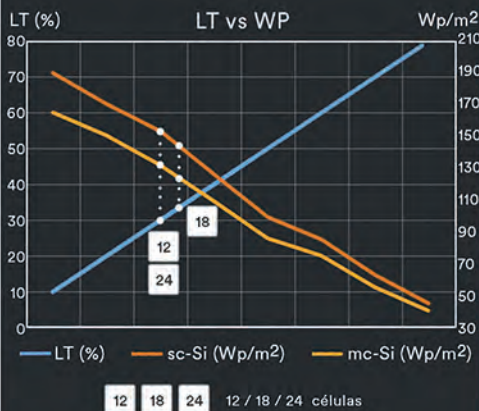
4 mm<sup>2</sup>



Connectors:

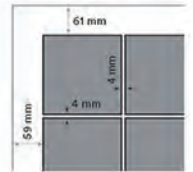
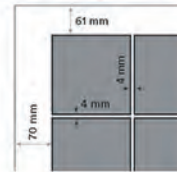
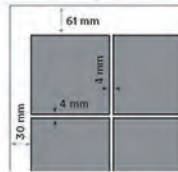
Type 3

Type 4



## 4 models

Model	BIPV-CT-M156-18	BIPV-CT-P156-18	BIPV-CT-M156-18	BIPV-CT-P156-18	BIPV-CT-M156-24	BIPV-CT-P156-24
Cell type	Monocrystalline	Polycrystalline	Monocrystalline	Polycrystalline	Monocrystalline	Polycrystalline
Cells number	12 uds	12 uds	18 uds	18 uds	24 uds	24 uds
Cell size	156.75 x 156.75 mm	156.75 x 156.75 mm	156.75 x 156.75 mm	156.75 x 156.75 mm	156.75 x 156.75 mm	156.75 x 156.75 mm
Size	700 x 600 mm	700 x 600 mm	1100 x 600 mm	1100 x 600 mm	1400 x 600 mm	1400 x 600 mm
Thickness	14 mm	14 mm	14 mm	14 mm	14 mm	14 mm
Area	0.42 m <sup>2</sup>	0.42 m <sup>2</sup>	0.66 m <sup>2</sup>	0.66 m <sup>2</sup>	0.84 m <sup>2</sup>	0.84 m <sup>2</sup>
Power	65 Wp	55 Wp	100 Wp	85 Wp	130 Wp	115 Wp
Transparency	29.8 %	29.8 %	33.0 %	33.0 %	29.8 %	29.8 %



+ Energy + Saving - Outlay - CO<sub>2</sub>



2014/35/EU  
EN 50583-1



ISO 9001  
ISO 14001  
ISO 45001



IEC/EN 61215  
IEC/EN 61730



nZEB Nearly  
Zero Energy  
Buildings



ISO 1064  
Protocolo GHG



WEEE  
2002/96/CE



Fast Return Of  
Investment  
material



12/25 years  
guarantee



Photovoltaic  
Architecture



High  
satisfaction



High  
resistance



Low  
deterioration

Best solution  
Better integration

# BIPV CURTAIN WALL

## PV Panel

### MATERIALS

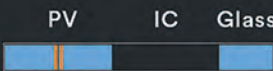
- 3 - 12 mm tempered glass  
high-transparency
- 0.76 mm PVB layer
- 0.21 mm PhotoVoltaic cells
- 0.76 mm PVB layer
- 3 - 12 mm tempered glass

### COMPOSITION



### Insulation Chamber/s:

- 6/9/12/15 mm (air/argon)



### Size:

- Min: 180 x 180 mm
- Max: 4500 x 2500 mm

### Junction Box:

- Border
- Back

### Cable:

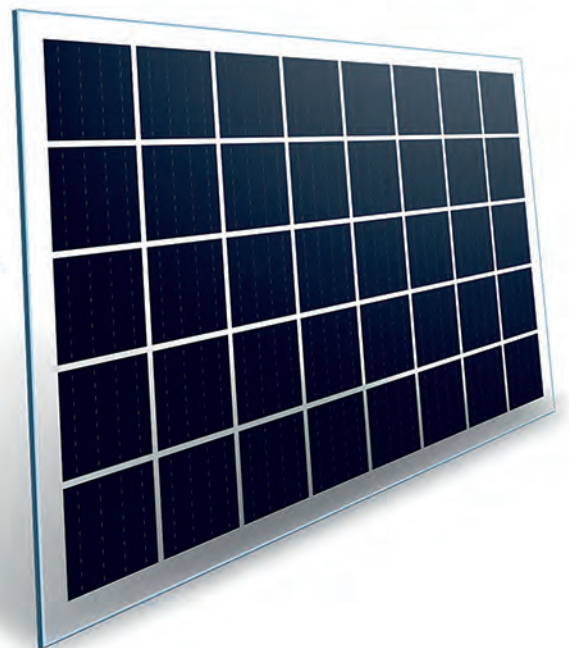
- 4 mm<sup>2</sup>

### Connectors:

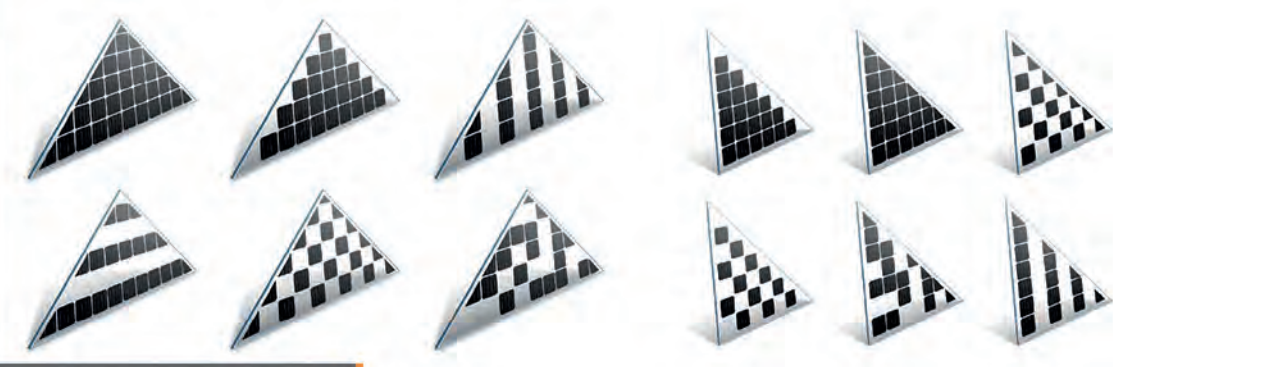
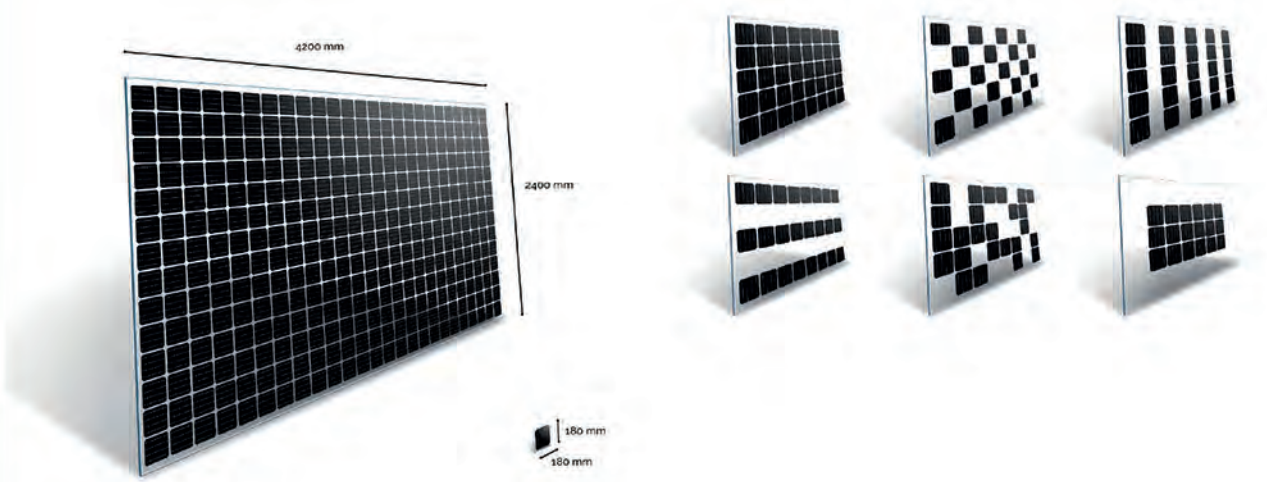
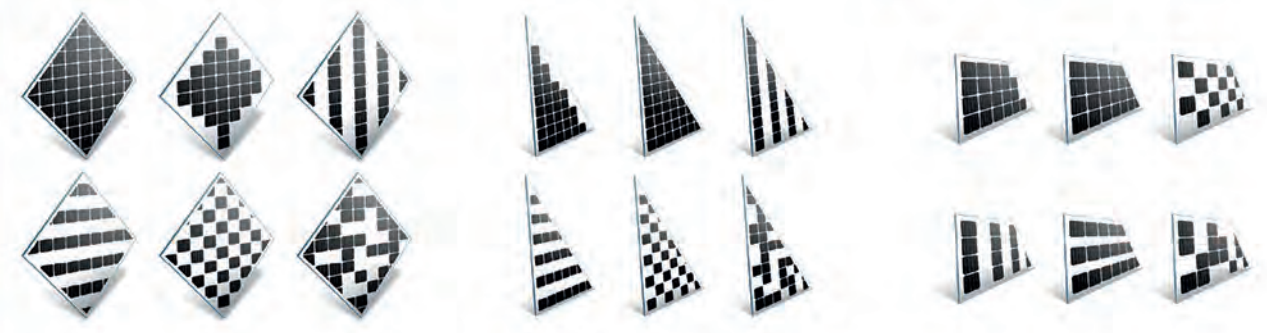
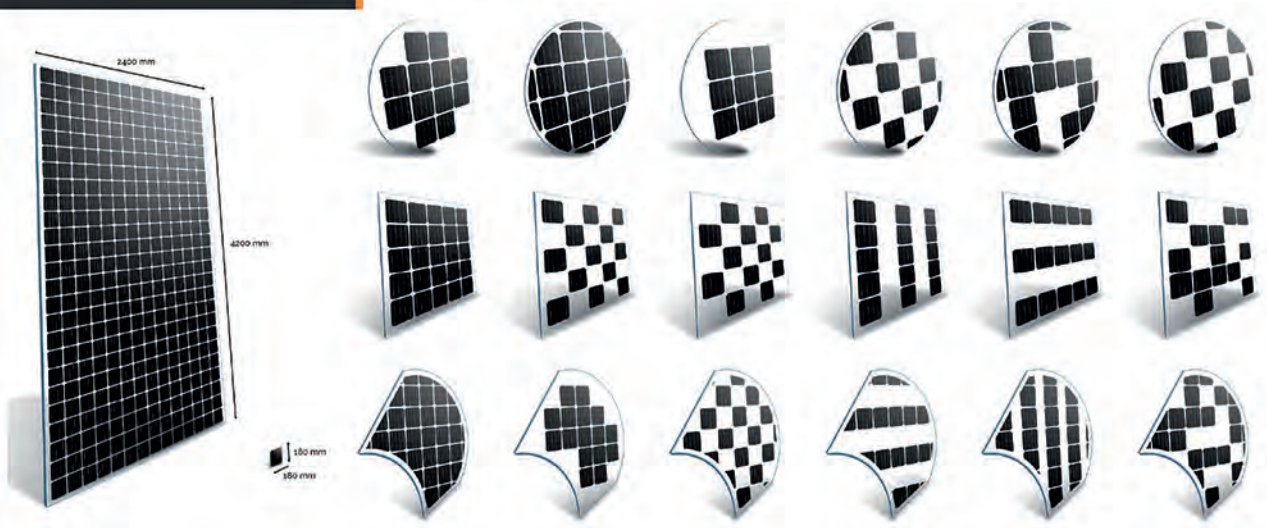
- Type 3
- Type 4



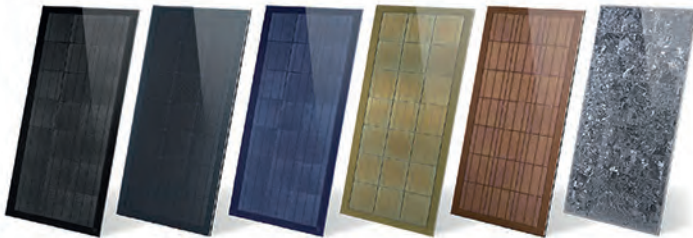
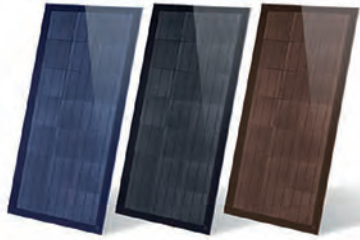
**S**olar **Curtain Wall** are a perfect solution as they constitute a range of active technological glass capable to generate electrical energy, which can be used in **new construction** and **renovation buildings**, allowing electrical autonomy and energy savings.







## BIPV color cells



## BIPV Glass+Glass Color Panel

