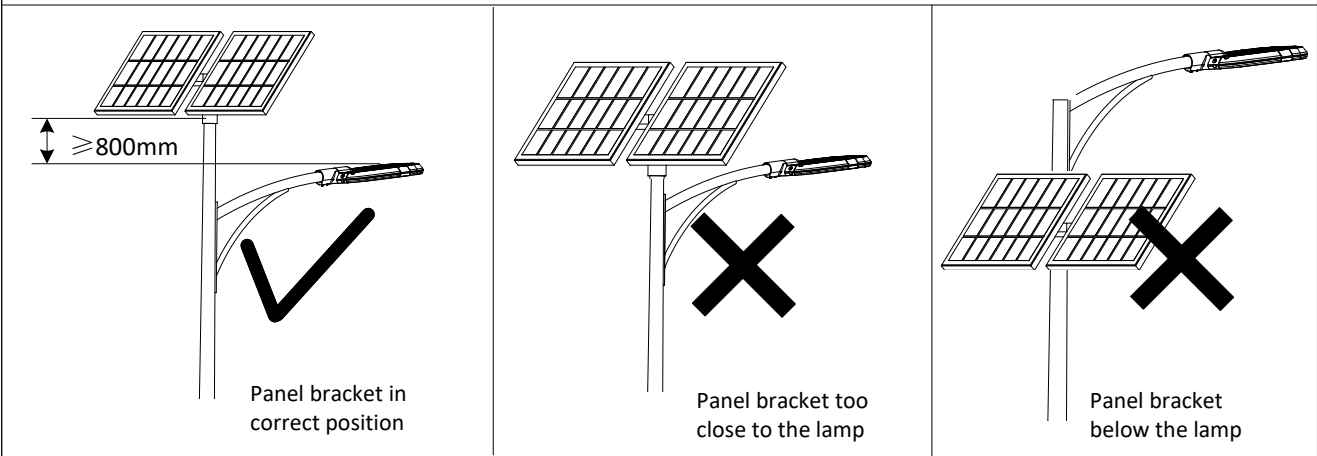
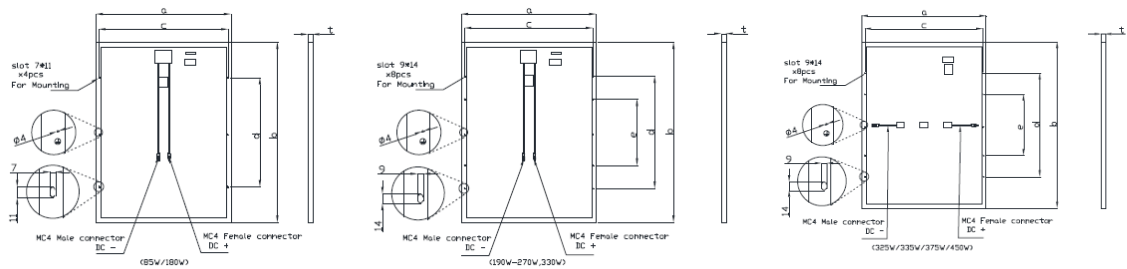


PV Panel Position

The vertical distance from bracket bottom to lamp arm must be more than 800 mm, avoiding conflict between the PV and luminaire.



PV Panel Dimensions



| 12NC         | SAP                          | Power Output (Pmax W) | Current at Pmax(Imp) | Voltage at Pmax (Vmp) | Short circuit current (Isc) | Open circuit voltage (Voc) | Operating Temp (°C) | Max. Wind load (Pa) | Module Efficiency (%) | Materials |
|--------------|------------------------------|-----------------------|----------------------|-----------------------|-----------------------------|----------------------------|---------------------|---------------------|-----------------------|-----------|
| 91140185670  | 85Wp 21V Monocrystalline PV  | 85                    | 4.01                 | 21.2                  | 4.27                        | 24.66                      | -40 to 85           | 3600Pa/1600pa       | 18.10%                | EVA       |
| 91140185680  | 180Wp 21V Monocrystalline PV | 180                   | 4.43                 | 42.55                 | 4.43                        | 49.46                      | -40 to 85           | 3600Pa/1600pa       | 19.81%                | EVA       |
| 91140185690  | 195Wp 21V Monocrystalline PV | 195                   | 4.74                 | 41.08                 | 5.03                        | 48.7                       | -40 to 85           | 3600Pa/1600pa       | 18.93%                | EVA       |
| 91140186280  | 220Wp 21V Monocrystalline PV | 220                   | 5.19                 | 42.49                 | 5.47                        | 48.84                      | -40 to 85           | 3600Pa/1600pa       | 19.86%                | EVA       |
| 91140185700  | 220Wp 21V Monocrystalline PV | 220                   | 10.22                | 21.52                 | 10.8                        | 25.15                      | -40 to 85           | 3600Pa/1600pa       | 19.89%                | EVA       |
| 91140185710  | 270Wp 21V Monocrystalline PV | 270                   | 6.35                 | 42.55                 | 6.68                        | 49.46                      | -40 to 85           | 3600Pa/1600pa       | 20.33%                | EVA       |
| 91140185720  | 325Wp 34V Monocrystalline PV | 325                   | 9.34                 | 34.8                  | 10.05                       | 40.74                      | -40 to 85           | 3600Pa/1600pa       | 19.26%                | EVA       |
| 91140186200  | 330Wp 38V Polycrystalline PV | 330                   | 8.6                  | 38.38                 | 9.18                        | 45.44                      | -40 to 85           | 3600Pa/1600pa       | 16.64%                | EVA       |
| 91140185730  | 335Wp 35V Monocrystalline PV | 335                   | 9.53                 | 35.16                 | 10.2                        | 40.92                      | -40 to 85           | 3600Pa/1600pa       | 19.85%                | EVA       |
| 911401857402 | 375Wp 34V Monocrystalline PV | 375                   | 10.89                | 34.45                 | 11.43                       | 41.61                      | -40 to 85           | 3600Pa/1600pa       | 20.45%                | EVA       |
| 911401857502 | 450Wp 41V Monocrystalline PV | 450                   | 10.82                | 41.6                  | 11.38                       | 49.8                       | -40 to 85           | 3600Pa/1600pa       | 20.37%                | EVA       |

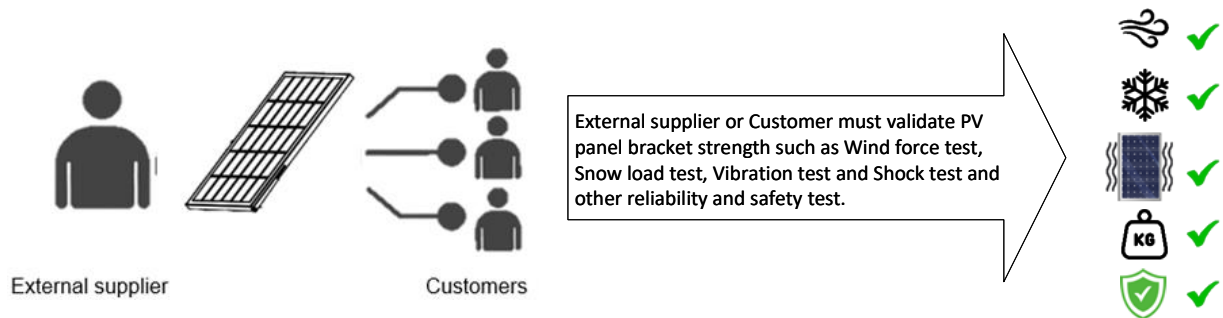
Notice: All the data above are tested in STC: AM=1.5, E=1000W/m<sup>2</sup>, Tc=25°C

Note:

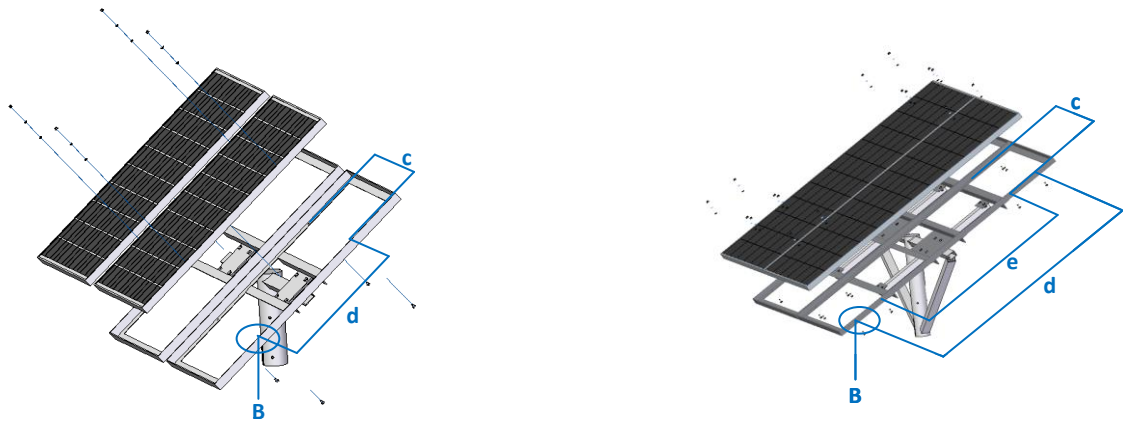
- Refer to next page for important notice for PV panel addition.
- All the mounting holes which are given by Signify on the PV panel must be fixed well.
- The description information and dimensions may be different due to PV technical development. You should ask Signify representative to get the newest list.

## Important Notice:

- PV panel bracket is not provided by Signify. It is designed and manufactured by external supplier or customers, etc. The design can be different depend on their FEM calculation and material choices according to local, state and Federal regulations.



- The fixing holes dimensions



### Notes:

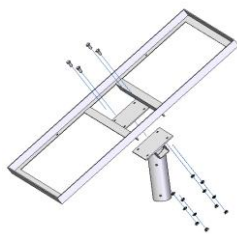
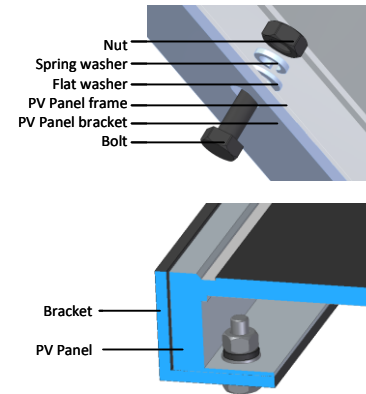
Each PV panel bracket design shall be validated by external supplier or customers before putting whole system on the pole by applying:

- 1) Vibration test according to ANSI C136.31.
- 2) Shock test by applying two pulses half sine 11ms of 40g one after another resulting with no damage, no breakage, no opening of the product.
- 3) Region specific requirements/specifications must be validated within region/customer.

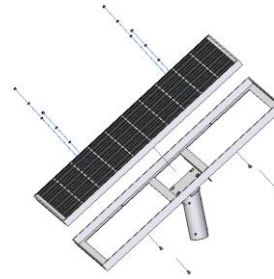
(Pictures are for reference only)

## PV Panel Bracket Diagram:

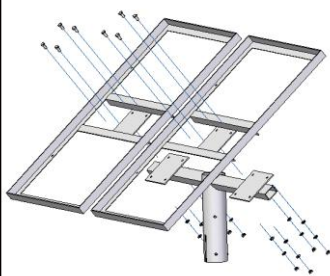
- A full frame bracket surrounding the PV panel is requested, the PV bracket/mounting support should cover rigidly and fully to all surface of PV panel integrated aluminum frame.
- All the mounting holes which are given by Signify on the PV panel must be fixed well.
- If mounting and installation outside Signify, mounting/installation safety, reliability should be validated by respective supplier/customer.
- Bracket, Bolts, Nuts, Flat washers and spring washers must be anti-corrosion.



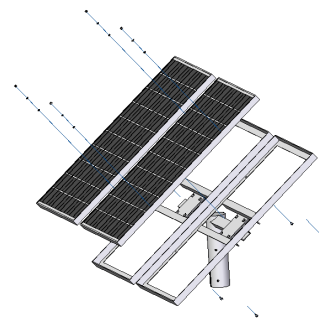
4pcs mounting holes on each PV panel.  
Mandatory to use 4pcs M6 bolts along with Nuts/  
flat washers/spring washers.



8pcs mounting holes on each PV panel.  
Mandatory to use 8pcs M8 bolts along with  
Nuts/flat washers/spring washers.



4pcs mounting holes on each PV panel.  
Mandatory to use 8pcs M6 bolts along with  
Nuts/flat washers/spring washers.



8pcs mounting holes on each PV panel.  
Mandatory to use 16pcs M8 bolts along with  
Nuts/flat washers/spring washers.

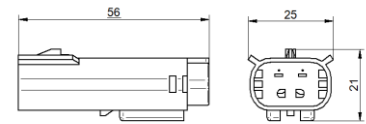


(Pictures are for reference only)

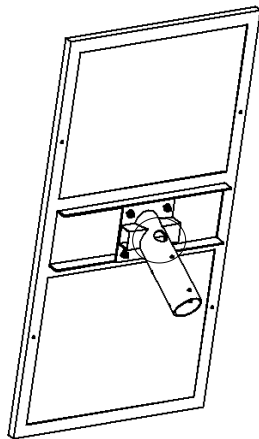
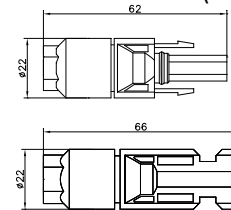
### Cable Entry Requirements on Bracket

1. The size of cable entry MUST NOT be less than  $\varnothing 40\text{mm}$ ;
2. The bracket must be well grounded with the pole, with a resistance value  $\leq 0.5\Omega$ ;
3. The type of cable entry may vary depend on bracket design. It must prevent rain from ingress and allow the cable connector to get through.
4. It is recommended to adopt a cover like below on the hole to avoid rain ingress.
5. Sealing the cable entry hole is prohibited to avoid hydrogen concentrate. (only for Lead Acid batteries)
6. A full frame bracket surrounding the PV panel is requested;

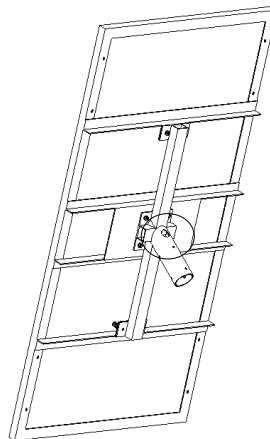
Cable connector size: (Molex)



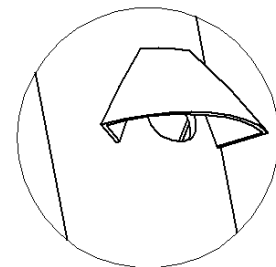
Cable connector size: (MC4)



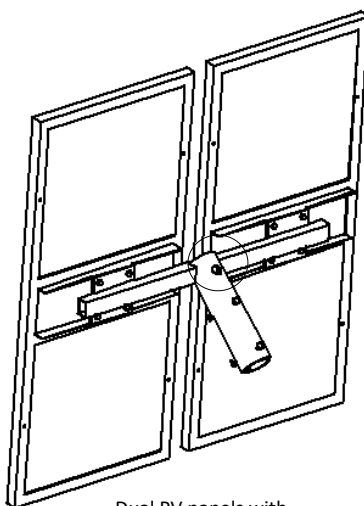
Single PV panel with  
4pcs mounting holes



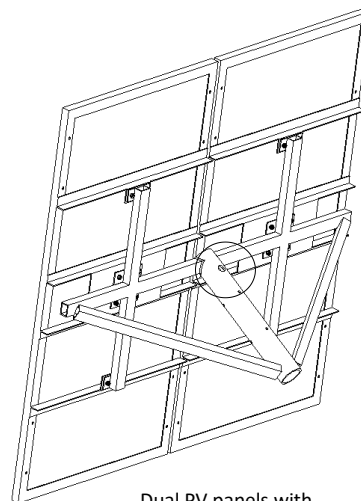
Single PV panel with  
8pcs mounting holes



Hole cover



Dual PV panels with  
4pcs mounting holes  
on each PV panel



Dual PV panels with  
8pcs mounting holes  
on each PV panel

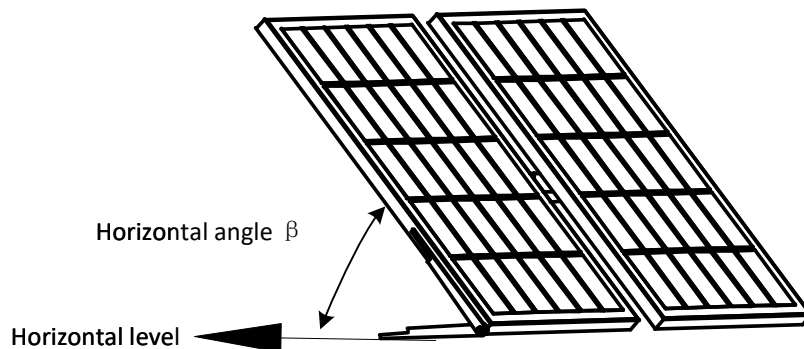
#### Note:

The picture showing bracket fixing is for instruction only.  
they should be designed by customer or bracket provider.

(Pictures are for reference only)

### Panel Bracket Tilt Angle

The tilt (horizontal angle  $\beta$ ) of the bracket must follow Signify's requirements to ensure the maximum amount of sunlight is gained. You can contact Signify representative to get it.



### Important Safety Notice

Use gloves to clean PV panel



Don't Step on the PV panel



Don't hit PV panel with a hammer



Disconnect before cleaning in hybrid



Do not clean broken PV panel

