

# PV20/330 PV30/500 Solar Photovoltaic Panels

# Clearline® PV



- Simple roof integration with clean, low-profile aesthetic for new build and retrofit
- Range of sizes can be joined or spaced apart on the roof
- Compatible with the widest range of roof coverings
- Fitted during the normal roofing programme, enabling clarity of responsibility and safe working practices
- Properly tested as a building material
- Combines seamlessly with Clearline heating panels

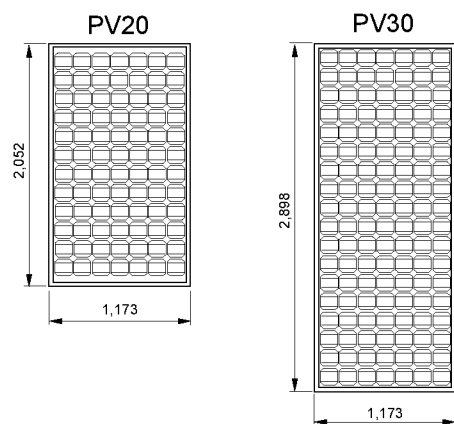
## Mechanical Specification

| Model                             | PV                | 20/330                        | 30/500 |
|-----------------------------------|-------------------|-------------------------------|--------|
| Aperture Area                     | m <sup>2</sup>    | 2.1                           | 3.0    |
| Width (across roof)               | mm                | 1,173                         | 1,173  |
| Height (up roof)                  | mm                | 2,052                         | 2,898  |
| Thickness                         | mm                | 82                            | 82     |
| Weight                            | kg                | 41.0                          | 57.0   |
| Static roof loading (distributed) | kg/m <sup>2</sup> | 17.0                          | 16.6   |
| Characteristic Wind Resistance    | kPa               | 3.4                           |        |
| Ultimate Design Load <sup>1</sup> | kPa               | 2.4                           |        |
| Fire Rating to BS 476-3           |                   | AA                            |        |
| Power Warranty                    | % rated           | 60% 10 years, 80% 25 years    |        |
| Standards                         |                   | IEC61215, 61730, TUV MCS, BBA |        |

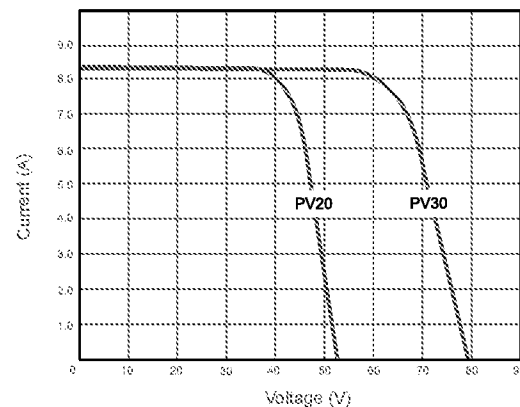
Clearline PV solar panels have been thoroughly tested, not only as energy generating equipment, but also as a building component and were the first solar pv panel to achieve a BBA certificate.

## Electrical Specification

| Model                                    | PV               | 20/330                  | 30/500 |
|------------------------------------------|------------------|-------------------------|--------|
| Peak Power <sup>2</sup>                  | Wp               | 330                     | 500    |
| Module Efficiency <sup>3</sup>           | %                | 15.7                    | 16.7   |
| Number of Cells                          |                  | 84                      | 126    |
| Maximum Power Voltage (V <sub>mp</sub> ) | V                | 42.8                    | 63.3   |
| Maximum Power Current (I <sub>mp</sub> ) | A                | 7.8                     | 7.9    |
| Open Circuit Voltage (V <sub>oc</sub> )  | V                | 53.0                    | 79.5   |
| Short Circuit Current (I <sub>sc</sub> ) | A                | 8.4                     | 8.5    |
| NOCT <sup>4</sup>                        | °C               | 44.8                    | 44.6   |
| Cell Type                                |                  | Monocrystalline Silicon |        |
| Maximum System Voltage                   | V <sub>sys</sub> | 1,000                   |        |
| Power Temperature Coefficient            | % / °C           | -0.509                  | -0.509 |
| Current Temperature Coefficient          | % / °C           | 0.043                   | 0.043  |
| Voltage Temperature Coefficient          | % / °C           | -0.337                  | -0.337 |
| Safety Classification                    |                  | Class II                |        |



## I-V Curves



Also available



Clearline Fusion



Clearline  
Solar heating panels



Pod PV



1. Design instructions to ultimate loads includes a partial material safety factor of 1.44  
 2. Subject to a manufacturing tolerance of +0/-3%  
 3. Based on aperture area  
 4. Nominal Operating Cell Temperature  
 Electrical specifications measured under standard test conditions: Irradiation 1 kW/m<sup>2</sup> with light spectrum AM 1.5 and a cell temperature of 25 °C.

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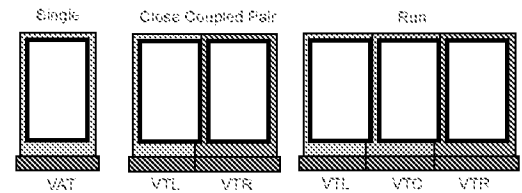


## Pitched Roof Integration

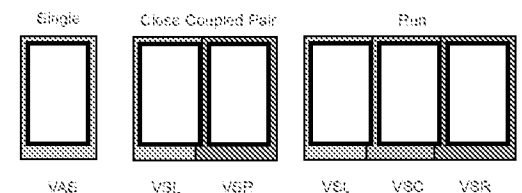
Clearline solar panels are only 82mm thin and fit over tile battens with no modification to the roof structure. When integrated with rolling tiles, the panels finish flush with the tile surface. Connections are neatly tucked away behind and hidden from sight. The choice of panel sizes, together with options to install either joined together or spaced apart on the roof, gives a wide range of options to integrate renewable energy and remain in harmony with the building design.



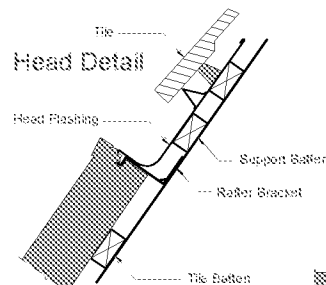
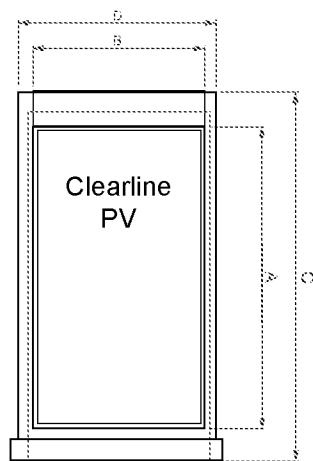
**T Series  
Tiled Roof**  
Interlocking and plain tiles  
Thickness > 10mm  
Pitch 20-80°



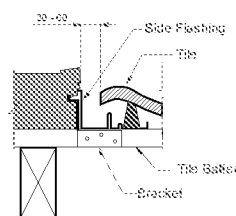
**S Series  
Slate Roof**  
Natural and artificial slates  
Thickness > 10mm  
Pitch 20-80°



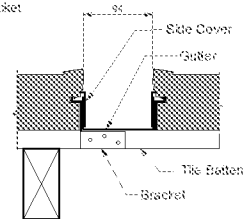
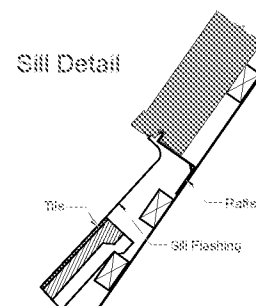
## T Series Flashings



|      | PV20  | PV30  |
|------|-------|-------|
| A mm | 2,062 | 2,868 |
| B mm | 1,173 | 1,173 |
| C mm | 2,545 | 3,353 |
| D mm | 1,362 | 1,362 |

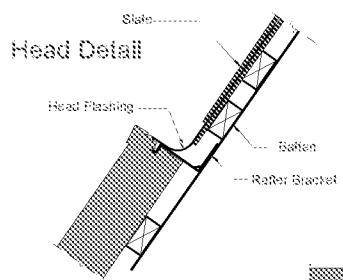
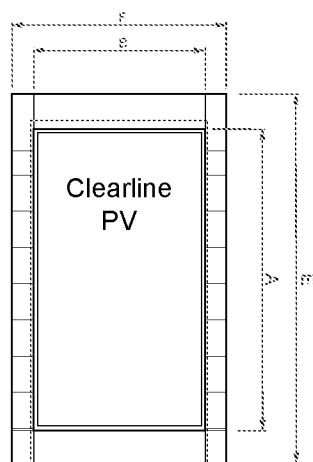


Side Detail

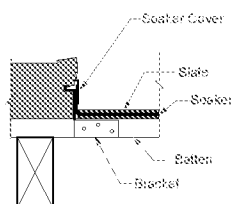


Gutter Detail  
(joined flashings)

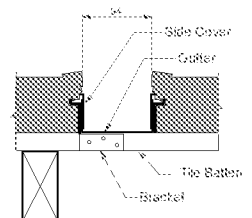
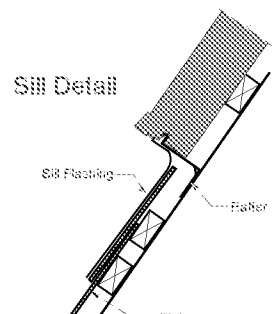
## S Series Flashings



|      | PV20  | PV30  |
|------|-------|-------|
| A mm | 2,062 | 2,868 |
| B mm | 1,173 | 1,173 |
| C mm | 2,943 | 3,353 |
| D mm | 1,445 | 1,445 |



Side Detail



Gutter Detail  
(joined flashings)