



# **Monocrystalline Shingle Tiled PERC High Efficiency Seamless Soldering**

VICTOR uses a new unique Seamless Soldering Technology encapsulation with a solder ribbon to get a "Shingle Tiled" interconnection between the cells. It fully eliminates the standard 2 mm width gap between the cells, increases the efficiency, improves conductivity and shadow resistance and reduces the size of the module.



# Features

### Higher power per square metre

It uses a solder ribbon to achieve "tiled" interconnection of the cell, The cells do not need to be spaced apart like in conventional solar panels so the solar panel area can produce more energy

## Quality more stability

This technology is perfectly compatible with existing module encapsulation processes and equipment, has high mass production maturity and stability.

### Low BOM cost

Because of Seamless Soldering technology, it completely eliminating the typical 2mm wide cell gap, thus increasing module efficiency while reducing the BOM cost of the module.

## Better mechanical performance

Static and dynamic load tests show that the shingle approach is more resistant to failure due to external forces being applied to the solar panel compared to conventional solar panels.

## **15 years** enhanced product warranty on materials and workmanship\* **25 years** linear power output warranty\*

\*According to the applicable Victor Solar Limited Warranty Statement.

# **MANAGEMENT SYSTEM CERTIFICATES\***

ISO 9001:2015 / Quality management system

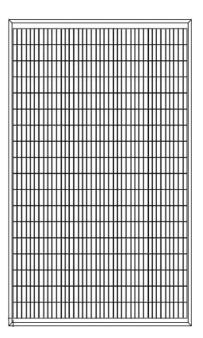
ISO 14001:2015 / Standards for environmental management system

As there are different certification requirements in different markets, please contact your local Victor Solar sales representative for the specific certificates applicable to the products in the region in which the products are to be used.

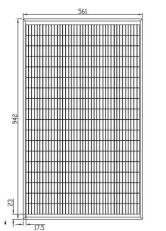
**VICTOR SOLAR** is committed to providing high quality solar products, solar system solutions and services to customers around the world. To be your trusted supplier for quality and performance/price ratio.

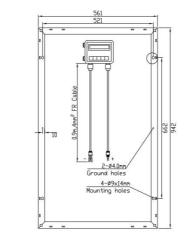
# Ningbo Victor Solar Technology Co.,Ltd.

Add:NO.555,RIXIAN ROAD,Binhai Economic Development Zone,Cixi City,Zhejiang Province

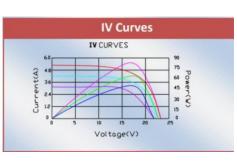


### **ENGINEERING DRAWING (mm)**





C76



### **I-V Curves**

#### Mechanical Properties

| E | lecti | rical | Pro | pert | ies ( | ST | $[C^*]$ | ) |
|---|-------|-------|-----|------|-------|----|---------|---|
|   |       |       |     |      |       |    |         |   |

| Cells                                | 180 pcs 10X18  | Model   | VSMH32-110-G1 |  |
|--------------------------------------|--|---|---------------|--|
| Cell Type                            | Monocrystalline PERC cells                             | Maximum Power (Pmax) [W]  | 110           |  |
| Cell Dimensions                      | 52.5x52.5 mm   | MPP Voltage (Vmpp) [V]  | 20.8          |  |
| Dimensions                           | 561 x 942 x 35 mm                                      | MPP Current (Impp) [A]  | 5.29          |  |
| $(L \times W \times H)$              | 22.08 x37.08 x 1.38 in                                 | Open Circuit Voltage (Voc) [V]  | 22.50         |  |
| Front Load                           | 5,400 Pa / 113 psf*                                    | Short Circuit Current (Isc) [A]   | 5.88          |  |
| Rear Load                            | 4,300 Pa / 90 psf*                                     | Module Efficiency [%]   | 20.81         |  |
| Weight                               | 6.3 kg / 13.86lb                                       | Operating Temperature [°C]  | -40 ~ +90     |  |
| Connector Type                       | MC4  | Maximum System Voltage [V]  | 1000 (IEC)    |  |
| Junction Box                         | IP68 with 2 Bypass Diodes                              | Maximum Series Fuse Rating [A]  | 12            |  |
| Cables                               | 900 mm x 2 ea / 35.43 in x 2 ea,<br>4.0mm <sup>2</sup> | Power Tolerance [%] 0 ~ ±3<br>* STC (Standard Test Condition): Irradiance 1000 W/m², cell   |               |  |
| Glass Tempered Glass with AR Coating |  | temperature 25 °C, AM 1.5   |               |  |
| Frame                                | Anodized Aluminium                                     | <ul> <li>The nameplate power output is measured and determined by Victor</li> <li>Solar at its sole and absolute discretion.</li> </ul> |               |  |
| * Please refer to<br>details.        | the installation manual for the                        | The Typical change in module efficiency at 200 W/m <sup>2</sup> in relation to 1000 W/m <sup>2</sup> is -2.0%.                          |               |  |

details.

| Certifications and Warranty |                                |  |  |  |  |
|-----------------------------|--------------------------------|--|--|--|--|
|                             | IEC 61215, IEC 61730-1/-2      |  |  |  |  |
|                             | UL 1703                        |  |  |  |  |
|                             | IEC 61701 (Salt mist corrosion |  |  |  |  |
| Certifications              | test)                          |  |  |  |  |
|                             | IEC 62716 (Ammonia             |  |  |  |  |
|                             | corrosion test)                |  |  |  |  |
|                             | ISO 9001                       |  |  |  |  |
| Module Fire Performance     | Type 1 (UL 1703)               |  |  |  |  |
|                             | Class C (ULC/ORD C 1703,       |  |  |  |  |
| Fire Rating                 | IEC 61730)                     |  |  |  |  |
| Product Warranty            | 25 Years                       |  |  |  |  |
|                             | 1                              |  |  |  |  |

Output Warranty of Pmax Linear Warranty\*

\* 1) 1st year : 98%, 2) after 1st year : 0.5%p annual degradation, 3) 86% for 25 years

The specifications and key features contained in this datasheet may deviate slightly from our actual products due to the on-going innovation and product enhancement. Victor Solar reserves the right to make necessary adjustment to the information described herein at any time without further notice.

#### **Temperature Characteristics**

| NOCT | [ °C ] | 45 ± 3 |
|------|--------|--------|
| Pmax | [%/°C] | -0.36  |
| Voc  | [%/°C] | -0.26  |
| lsc  | [%/°C] | 0.02   |



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