## ExcelTon III, 6" Mono-crystalline, 4BB, Solar Cell

## Characteristics

Dimensions
$156.75 \mathrm{~mm} \times 156.75 \mathrm{~mm} \pm 0.25 \mathrm{~mm}$, With $210 \mathrm{~mm} \pm 0.25 \mathrm{~mm}$ diagonal
Thickness(Si) $180 \mu \mathrm{~m} \pm 20 \mu \mathrm{~m} / 200 \mu \mathrm{~m} \pm 20 \mu \mathrm{~m}$
Front Silver bus bars; Blue/Purple Silicon nitride anti-reflection coating Back Silver bus bars; Full-surface aluminum BSF

## Features

1. $2.2 \%$ larger area \& power for same efficiency bin
2. High conversion efficiency
3. Improved red response
4. Advanced passivation technology
5. Excellent solder-ability and adhesion strength
6. Low breakage rate
7. Good color uniformity
8. Vacuum package to avoid oxidation
9. Four bus bars to reduce series resistance and improve module power
10. PID free
11. Both efficiency and Impp sorting to enhance module output power.
12. 100\% in-line inspection of optical, Irev (<2.0A @ -10V, <2.5A @ -12V) and Rsh (>10 ohm).
13. Long term efficiency stability and excellent reliability.
14. ISO 9001, ISO 14001 and OHSAS 18001 certified.


| Efficiency <br> Code | Efficiency <br> $(\%)$ | Charged <br> Power (Wp) | $\mathbf{I}_{\text {mp }}(\mathbf{A})$ | $\mathbf{V}_{\text {mp }}(\mathbf{V})$ | $\mathbf{I}_{\text {sc }}(\mathbf{A})$ | Voc (V) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ETS6-2110 | $21.10 \%$ | 5.16 | 9.26 | 0.557 | 9.86 | 0.659 |
| ETS6-2100 | $21.00 \%$ | 5.13 | 9.25 | 0.555 | 9.85 | 0.658 |
| ETS6-2090 | $20.90 \%$ | 5.11 | 9.23 | 0.554 | 9.85 | 0.657 |
| ETS6-2080 | $20.80 \%$ | 5.08 | 9.21 | 0.552 | 9.84 | 0.656 |
| ETS6-2070 | $20.70 \%$ | 5.06 | 9.20 | 0.550 | 9.82 | 0.654 |
| ETS6-2060 | $20.60 \%$ | 5.03 | 9.18 | 0.548 | 9.80 | 0.653 |
| ETS6-2050 | $20.50 \%$ | 5.01 | 9.17 | 0.546 | 9.79 | 0.650 |
| ETS6-2040 | $20.40 \%$ | 4.98 | 9.16 | 0.543 | 9.78 | 0.649 |
| ETS6-2030 | $20.30 \%$ | 4.96 | 9.15 | 0.542 | 9.76 | 0.646 |
| ETS6-2020 | $20.20 \%$ | 4.94 | 9.14 | 0.540 | 9.75 | 0.643 |

* Under standard test condition: $1000 \mathrm{~W} / \mathrm{m}^{2}$, $\mathrm{AM} 1.5,25^{\circ} \mathrm{C}$
* Average accuracy of all tested figures is $\pm 1.0 \%$ rel.

Temperature Coefficient

| Current (Alpha) | $0.043 \% /{ }^{\circ} \mathrm{C}$ |
| :---: | :---: |
| Voltage (Beta) | $-0.317 \% /{ }^{\circ} \mathrm{C}$ |
| Power (Gamma) | $-0.439 \% /{ }^{\circ} \mathrm{C}$ |


| Light Intensity $\left(\mathrm{W} / \mathrm{m}^{2}\right)$ | Voc | Isc |
| :---: | :---: | :---: |
| $\mathbf{1 0 0 0}$ | 1.000 | 1.0 |
| $\mathbf{8 0 0}$ | 0.989 | 0.8 |
| $\mathbf{6 0 0}$ | 0.976 | 0.6 |
| $\mathbf{4 0 0}$ | 0.956 | 0.3 |
| $\mathbf{3 0 0}$ | 0.951 | 0.3 |

## Solderability $\quad>1.2 \mathrm{~N} / \mathrm{mm}$ for $70 \%$ measured points

These results can be obtained by soldering at $250-350^{\circ} \mathrm{C}$ with Eton regular flux, ribbon (Pb free), soldering \& pulling machine.

Results may vary by different flux, ribbons, soldering method used.

Spectrum Response (SR)


IV-Curve


## Packaging

The goods are packed into the container with good quality, which protects them from damage during the transportation.
Every 100 cells are sealed by vacuum package.

## Handling

Avoid handlings happened as follows because they may cause electrical or soldering performance degradation.
a. Avoid handling with hands without plastic gloves
b. Avoid careless and violent handling since this causes damage or cracks
c. Contacting with corrosive chemicals or gases
d. Scrubbing the surface

## Storage

Keeping away from corrosive chemicals or gases and keeping in the storage room with temperature at $25 \pm 5^{\circ} \mathrm{C}$, humidity less than $65 \%$. Do not expose cells to the air. It is recommended to use the cells ASAP after unpacking.

## E-Ton Solar Tech. Co., Ltd.

