

## Product Specifications 156 Sq Multi Crystalline Solar cells.

Last updated: 20-12-2008

### 1. Highlights:

- ✓ Narrow cell banding offers best cell to module wattage realization.
- ✓ 100% grading on "Peak Power".
- ✓ 100% check on visual appearance.
- ✓ Each cell produced at our facility undergoes a series of through quality test.

### 2. Cell Characteristics: General

- 2.1 Type of cell : Multi crystalline  
2.2 Geometry (Square, Pseudo square) : Square

### 3. Cell Characteristics: Mechanical

- 3.1 Length : 156.0±0.5 mm  
3.2 Width : 156.0±0.5 mm  
3.3 Nominal surface area : 243.36 cm<sup>2</sup>  
3.4 Accuracy of angles : 90° ± 0.5°  
3.5 Thickness : 200 ± 30 / 180 ±0.30 µm  
3.6 Maximum bow : < 1.5 mm  
3.7 Bus bar width (Front) : 2.0 mm  
3.8 Continuous Pad width (Back) : 2.5 mm  
3.9 Distance between bus bars : 75.0 mm

### 4. Cell Characteristics: Visual

- 4.1 A.R. coating : Silicon nitride  
4.2 Back side surface : Aluminum  
4.3 Bus bar material front : Silver  
4.4 Bus bar material back : Silver Aluminum  
4.5 Micro Cracks : Free from micro cracks

## 5. Cell Characteristics: Electrical

Cells are graded at Peak power with 50 mW banding, the typical grading criteria bin is given below,

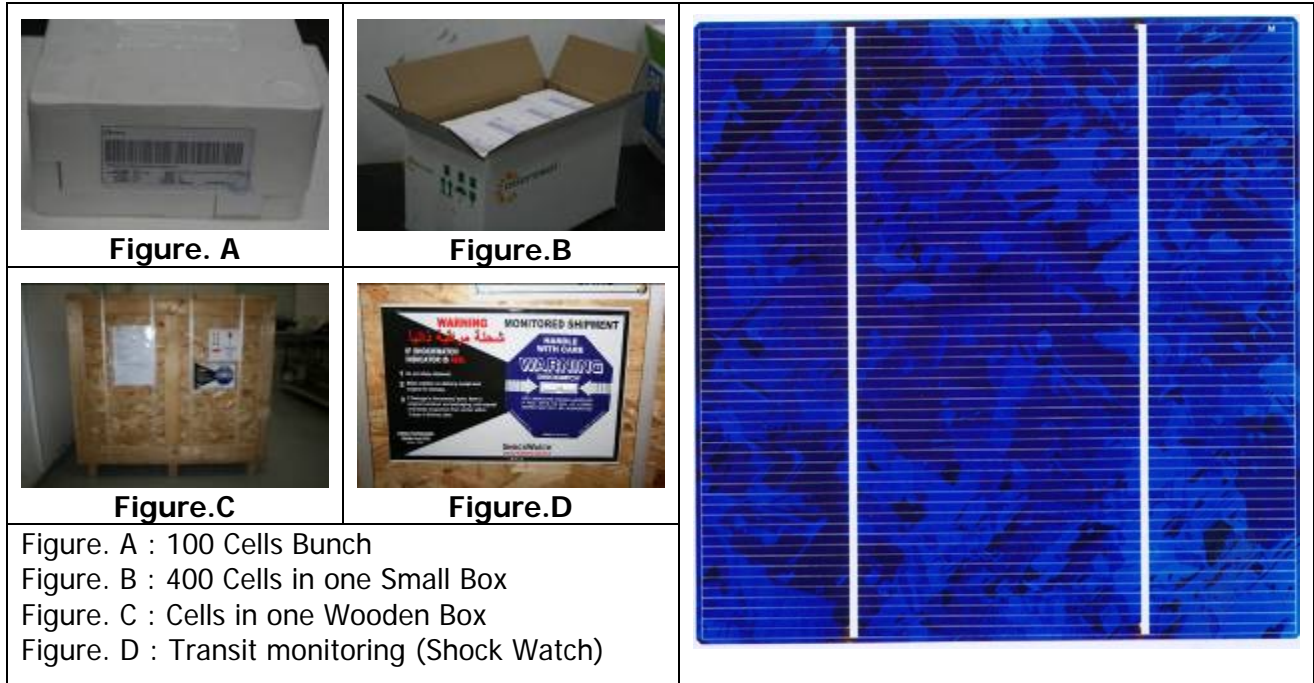
### 5.1 Wattage Table

Wattage		LABEL wattage	Efficiency %	TYPICAL PARAMETERS		
From	To			VOC	ISC	VMP
3.75	< 3.80	3.75	15.4	0.614	7.69	0.516
3.70	< 3.75	3.70	15.2	0.612	7.66	0.515
3.65	< 3.70	3.65	15.0	0.610	7.63	0.512
3.60	< 3.65	3.60	14.8	0.607	7.59	0.510
3.55	< 3.60	3.55	14.6	0.604	7.56	0.507
3.50	< 3.55	3.50	14.4	0.601	7.52	0.505
3.45	< 3.50	3.45	14.2	0.598	7.49	0.499
3.40	< 3.45	3.40	14.0	0.595	7.45	0.494
3.35	< 3.40	3.35	13.8	0.592	7.42	0.491
3.30	< 3.35	3.30	13.6	0.589	7.37	0.489
3.25	< 3.30	3.25	13.4	0.586	7.33	0.486
3.20	< 3.25	3.20	13.1	0.588	7.27	0.488
3.15	< 3.20	3.15	12.9	0.585	7.24	0.486

Note: Parameters specified, are at standard test condition STC, 25°C Ambient, 100 mW/cm<sup>2</sup> irradiance.

- 5.2 Shunt Resistance : Greater than 4 ohms at-12V
- 5.3 Method of measurement : Dark IV
- 5.4 Polarity : Front negative, back positive
- 5.5 Temperature Coefficient
  - A. Open circuit Voltage (dV<sub>oc</sub>/dt) : -2.210 mV/K (- 0.363% of Voc/ K)
  - B. Short circuit current (dI<sub>sc</sub>/dt) : +3.341 mA/K (+0.0434% of I<sub>sc</sub>/K)
  - C. Fill factor (dV<sub>FF</sub>/dt) : -0.102 %/K
  - D. Peak Power : -0.45500% / deg K

## 6. Packing



## 7. Cell Drawing

