

	<b>MULTICRYSTALLINE SILICON SOLAR CELLS</b>	<b>PRODUCT</b>	<b>SIZE</b>
		I6MU	156X156 mm

### PRODUCT DESCRIPTION

Indosolar I6MU series cells are high performance solar cells with average efficiencies up to 16.60%. All the cells are classified into narrow efficiency bands. Inline visual checks are performed using digital cameras during every stage of production to avoid any possible visual defects and micro cracks. Cells are tested using Standard Test Conditions (STC) and as per internationally accepted IEC standards.

Cells are produced in fully automatic production line with each and every individual cell is picked up by robots and flex pickers. This avoids breakage of cells at customer end. High purity multi-crystalline wafers and chemicals are used during the manufacturing. Strict quality controls are followed during the production starting from testing of incoming raw materials till final product dispatch to customers. Product quality is consistently monitored using both in-line and offline measurement equipment to control product quality on real time basis. Cells are tested with tester calibrated and traceable to Institute for Solar Energy system ISE, Fraunhofer.

### MECHANICAL DATA AND DESIGN

Product Format : 156 mm X 156 mm  $\pm$  0.5 mm  
Average thickness : 220 $\mu$ m  $\pm$  30 $\mu$ m  
Substrate Material : p-Type multi crystalline silicon wafer  
Front contact (-) : 2 nos., 2 mm wide silver bus bar  
Back Contacts (+) : 2 nos., 3 mm wide soldering silver bus bars  
with Aluminum back surface field

Anti reflection coating: Blue Anti-reflecting coating (Silicon Nitride)

### TEMPERATURE COEFFICIENT

Tk Voltage : - 0.3323% / $^{\circ}$ K  
Tk Current : +0.0654% / $^{\circ}$ K  
Tk Power : -0.403% / $^{\circ}$ K

### PRODUCT DETAILS (ELECTRICAL)

Part No.	Efficiency (%)	P <sub>m</sub> (Wp)	V <sub>mp</sub> (V)*	I <sub>mp</sub> (A)*	V <sub>oc</sub> (V)*	I <sub>sc</sub> (A)*	Current (A) at 0.5 V
I6MU1660	16.60	4.03	0.516	7.781	0.621	8.391	$\geq$ 8.00
I6MU1640	16.40	3.99	0.513	7.760	0.617	8.250	$\geq$ 7.89
I6MU1620	16.20	3.94	0.511	7.701	0.615	8.240	$\geq$ 7.82
I6MU1600	16.00	3.89	0.509	7.635	0.613	8.160	$\geq$ 7.75
I6MU1580	15.80	3.85	0.508	7.578	0.612	8.110	$\geq$ 7.65
I6MU1560	15.60	3.80	0.505	7.510	0.610	8.060	$\geq$ 7.57
I6MU1540	15.40	3.75	0.504	7.443	0.608	8.000	$\geq$ 7.49
I6MU1520	15.20	3.70	0.501	7.384	0.606	7.940	$\geq$ 7.39
I6MU1500	15.00	3.65	0.498	7.324	0.603	7.880	$\geq$ 7.30

Note: All data are at Standard Testing Condition i.e. Irradiance 1000 W/m<sup>2</sup> with AM1.5 spectrum, Cell temperature 25 $^{\circ}$ C. Test method according to IEC-60904-1

Tolerance Efficiency:  $\pm$  0.2% abs, PMPP (P<sub>m</sub>):  $\pm$  1.5% rel.

\* These column gives typical average value of current production performance and subject to change time to time as process keeps on improving

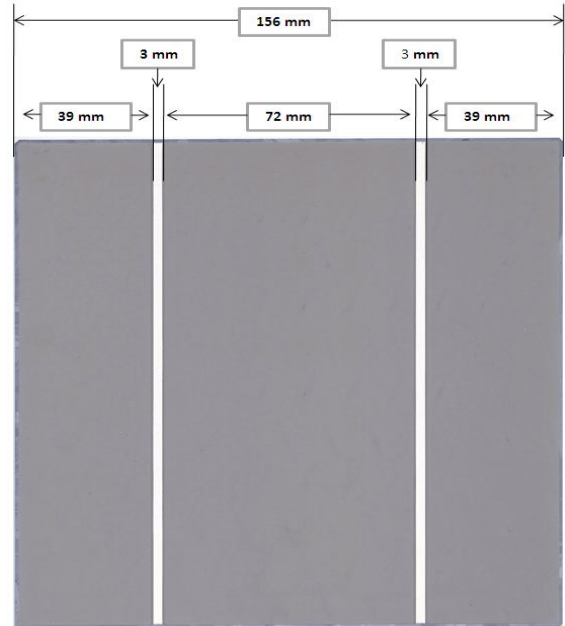
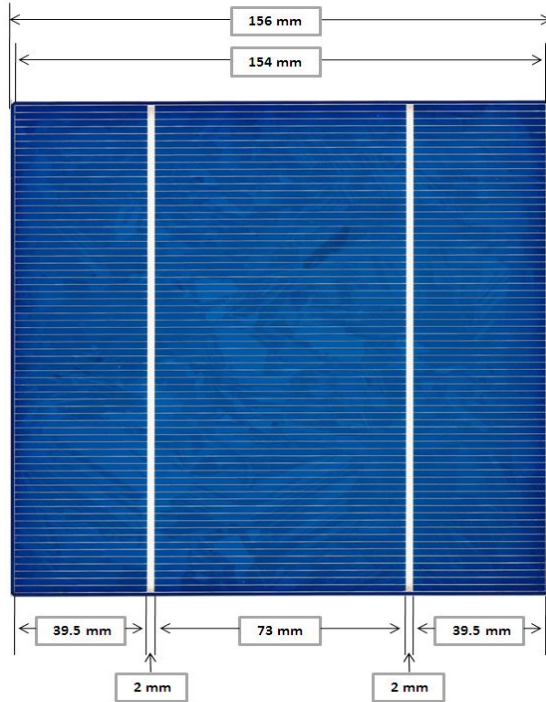
### INTENSITY DEPENDENCE

Intensity w/m <sup>2</sup>	I <sub>mpp</sub>	V <sub>mpp</sub>
1000	1.00	1.000
800	0.80	0.988
600	0.60	0.977
400	0.40	0.955
200	0.20	0.932

Ratio of V<sub>mpp</sub> (I<sub>mpp</sub>) at reduced intensity to V<sub>mpp</sub> (I<sub>mpp</sub>) at 1000 W/m<sup>2</sup>

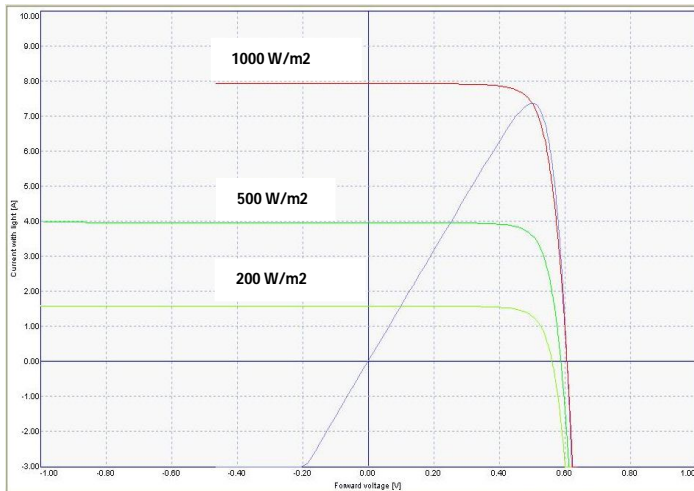
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**CELL LAYOUT**

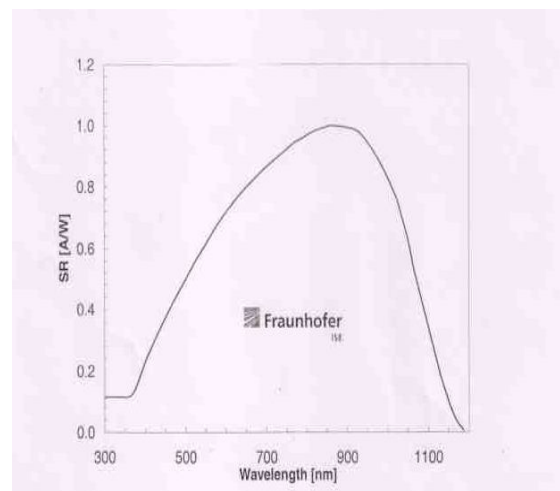


\* Drawings not on scale

**I-V CHARACTERISTICS AT 1000, 500 & 200 W/m<sup>2</sup>**



**SPECTRAL RESPONSE**



**PROCESSING RECOMMENDATION**

Solder Joint : Copper ribbons coated with 10-15  $\mu\text{m}$  62%Sn/36%Pb/2%Ag  
 Cells per by pass diode : Max. 20 cells per bypass diode.