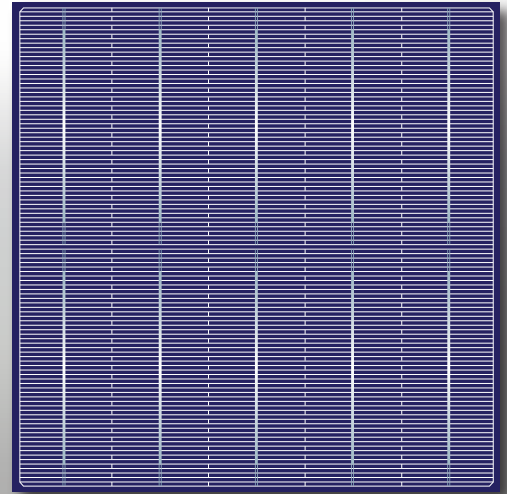




## Black Silicon Cell

# M-156-5 ver.G



## Multicrystalline Solar Cell [Half-cut design]

### Features

- High-efficiency solar cells with an isotropically etched surface
- Silicon nitride anti-reflection coating
- Silver front contact bars and full surface aluminum back contact field

### Performance and Quality

- Proper handling from incoming inspection through production, outgoing inspection and packaging
- 100% checked for reverse current and visual appearance
- Calibrated against Fraunhofer ISE
- RoHS compliance
- **100% PID Resistance**

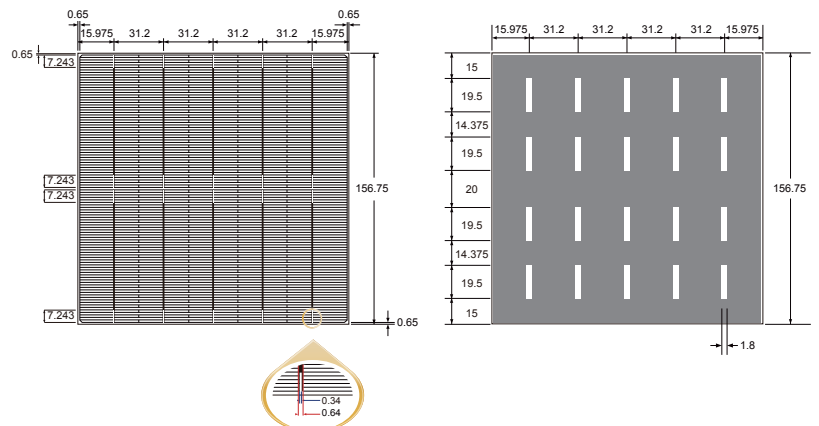
### Packaging

- Minimize the risk of broken cells with special design
- Label with product information

### Physical Characteristics

Dimension	156.75 mm x 156.75 mm ± 0.3 mm
Thickness (si)	180 μm - 20 / + 30 μm 200 μm ± 30 μm
Front Side (-)	Silicon nitride anti-reflection coating 0.64 mm silver busbar
Back Side (+)	Full surface aluminum back surface field 1.8 mm (silver) discontinuous soldering pads

### Cell Layout



# Black Silicon Cell M-156-5 ver.G



## Multicrystalline Solar Cell [Half-cut design]

### Electrical Characteristics

Class	Efficiency Range (%)	Rated Power (Wp)	*Maximum Power Current (A)	*Short Circuit Current (A)	*Maximum Power Voltage (V)	*Open Circuit Voltage (V)
180	18.0-18.1	4.423	8.351	8.828	0.532	0.625
181	18.1-18.2	4.447	8.379	8.855	0.533	0.626
182	18.2-18.3	4.472	8.408	8.882	0.534	0.627
183	18.3-18.4	4.496	8.450	8.916	0.534	0.627
184	18.4-18.5	4.521	8.478	8.947	0.535	0.629
185	18.5-18.6	4.546	8.509	8.979	0.536	0.631
186	18.6-18.7	4.570	8.537	9.007	0.538	0.632
187	18.7-18.8	4.595	8.563	9.034	0.539	0.634
188	18.8-18.9	4.619	8.590	9.059	0.540	0.635
189	18.9-19.0	4.644	8.617	9.086	0.541	0.635
190	19.0-19.1	4.668	8.635	9.102	0.542	0.637
191	19.1-19.2	4.693	8.664	9.126	0.543	0.637
192	19.2-19.3	4.718	8.689	9.150	0.544	0.639
193	19.3-19.4	4.742	8.714	9.175	0.546	0.640
194	19.4-19.5	4.767	8.738	9.199	0.547	0.641
195	19.5-19.6	4.791	8.763	9.223	0.548	0.643

Test condition : 1000 W / m<sup>2</sup>, AM 1.5, 25°C Power measuring tolerance: ±1.5% rel.

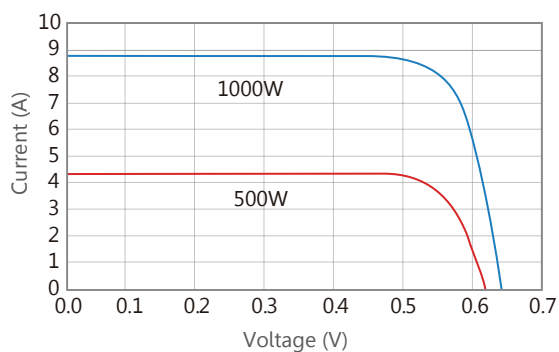
### Temperature coefficients

Current (%/K)	0.0611
Voltage (%/K)	-0.3238
Power (%/K)	-0.3782

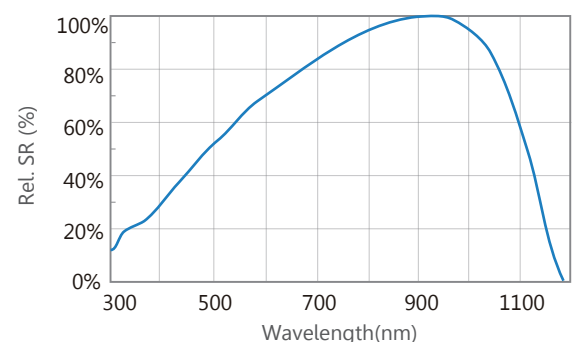
### Light Intensity Dependence

Intensity [W/m <sup>2</sup> ]	V <sub>mpp</sub>	I <sub>mpp</sub>
1000	1.000	1.000
900	0.996	0.900
500	0.974	0.498
300	0.949	0.297
200	0.929	0.197

### IV-Curve



### Spectral Response



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