

 **Features**

- ❖ Uniform Color.
- ❖ Low breakage rate.
- ❖ High conversion efficiencies resulting.
- ❖ Superior output power in any condition.
- ❖ 100% inspected performance of products.
- ❖ All products conform to the regulation of RoHS.
- ❖ Excellent mechanical performance proven by all customers.
- ❖ Regularly monitor product performance and soldering properties.
- ❖ Less power deviation of modules ensured by precise matching of cells, sorted 100% in narrow current classes at constant test voltage.

 **Electrical Performance**

Efficiency Code		221	220	219	218	217	216
Efficiency	Eff(%)	22.10	22.00	21.90	21.80	21.70	21.60
Rated Power	Pmpp(W)	5.399	5.375	5.350	5.326	5.302	5.277
Max Power Voltage	Vmp(V)	0.579	0.577	0.575	0.573	0.571	0.569
Max Power Current	Imp(A)	9.325	9.316	9.304	9.295	9.284	9.273
Open Circuit Voltage	Voc(V)	0.670	0.669	0.668	0.667	0.666	0.665
Short Circuit Current	Isc(A)	9.803	9.797	9.793	9.789	9.779	9.771
Efficiency Code		215	214	213	212	211	
Efficiency	Eff(%)	21.50	21.40	21.30	21.20	21.10	
Rated Power	Pmpp(W)	5.253	5.228	5.204	5.179	5.155	
Max Power Voltage	Vmp(V)	0.568	0.566	0.564	0.563	0.562	
Max Power Current	Imp(A)	9.246	9.235	9.227	9.197	9.171	
Open Circuit Voltage	Voc(V)	0.663	0.662	0.661	0.660	0.659	
Short Circuit Current	Isc(A)	9.757	9.736	9.722	9.707	9.680	

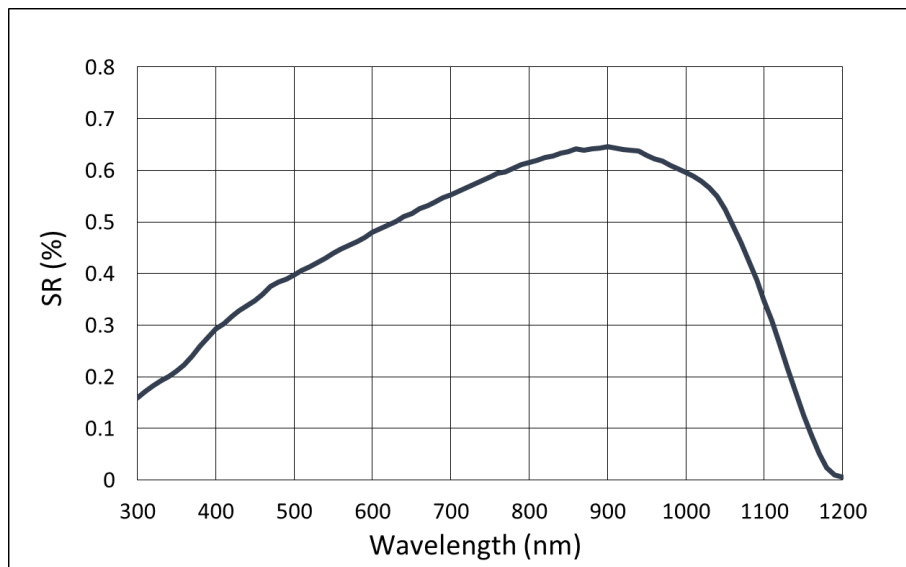
*Standard testing conditions(STC): 1000 W/m², AM 1.5, 25 °C. Measuring tolerance: Pmpp(W) ± 1.5% rel.

The measurement of cell is calibrated by Fraunhofer ISE. Product part number = **HFA56**

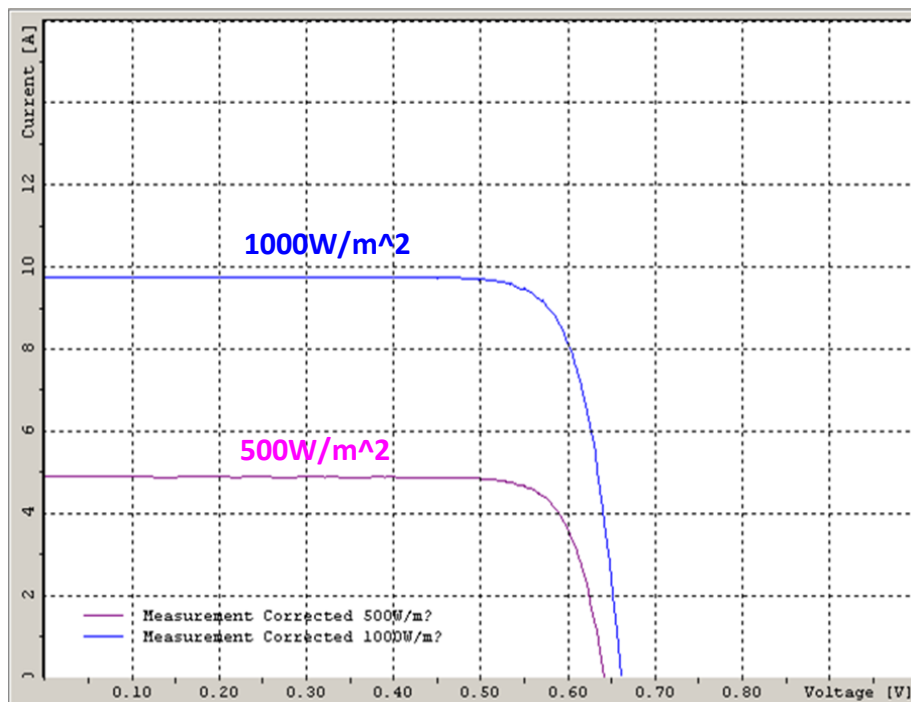
☀ Temperature Coefficients

- ❖ $V_{oc}(\alpha)$: -0.32 % / °C
- ❖ $I_{sc}(\beta)$: 0.05 % / °C
- ❖ $P_{mp}(\gamma)$: -0.37 % / °C

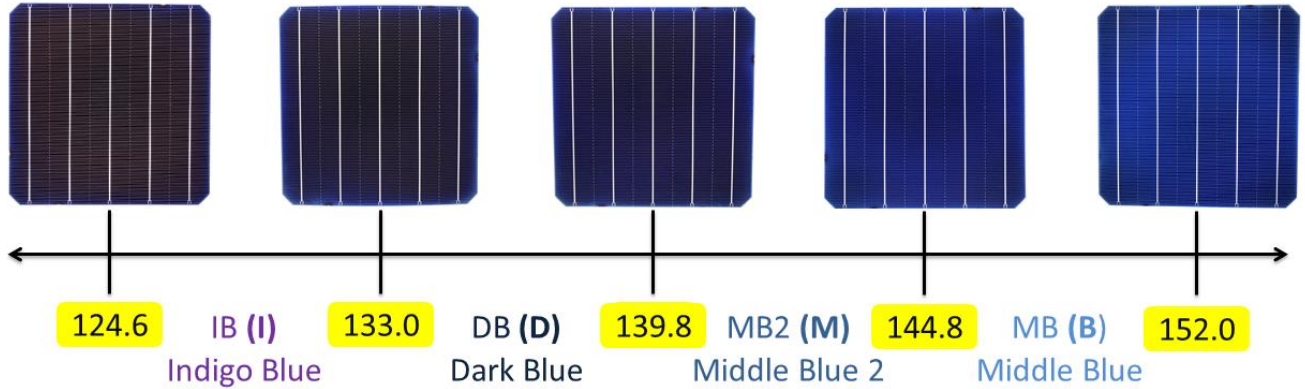
☀ Spectral Response (SR)



☀ IV- Curve



 **Color Specification**



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