THIN-FILM **CIGS** PV SOLAR MODULE

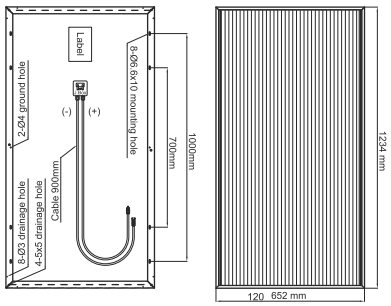
CIGS Competitive Advantages

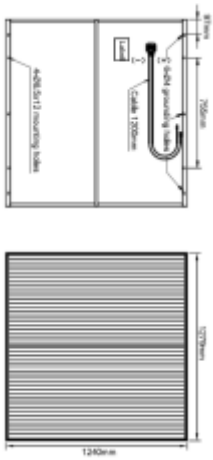
- PID- free, LID-free
- No microcrack problem
- Less solder joints than C-Si
- No glint/glare problem
- Low shadow impact
- RoHs compliant
- Free of Lead, Cadmium, Tellurium, Arsenic

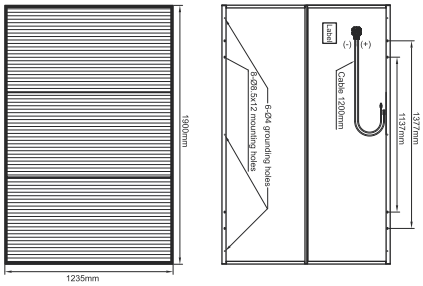
eterbright®

Mechanical Data:

	110W	230W	335W, 350W
Dimensions	1234mm x 652mm x 35mm (48.6 inches x 25.7 inches x 1.38 inches)	1279mm x 1240mm x 40mm (50.4 inches x 48.8 inches x 1.57 inches)	1900mm x 1235mm x 45mm (74.8 inches x 48.6 inches x 1.8 inches)
Weight	12.9 kg (28.44lbs)	23 kg (50.71lbs)	33.3 kg (73.41lbs)
Cell type	CIGS thin film	CIGS thin film	CIGS thin film
Front cover	3.2mm tempered glass with ARC	2.5mm tempered glass with ARC	2.5mm tempered glass with ARC
Cell substrates	1.8mm ultra-thin soda lime glass	1.8mm ultra-thin soda lime glass	1.8mm ultra-thin soda lime glass x 3
Back cover	Al back sheet	Al back sheet	Al back sheet
Encapsulant	EVA	EVA	EVA
Frame	Anodized Al frame (black) with L-Key mounting		
Junction Box	IP67 rated with bypass diode	IP67 rated with bypass diode	IP67 rated with bypass diode
Connectors	MC4 compatible	MC4 compatible	MC4 compatible
Cable length	900mm (35.4 inches)	1200mm (47.2 inches)	1200mm (47.2 inches)







Electrical Specification

*Power performance at STC (STC: 1000W/m², 25°C/77°F, AM 1.5)**

Module Models	CdF-	1100A1	2300A1	3350A1	3500A1
Nominal power	P_{MPP} [W]	110	230	335	350
Power tolerance	[W]	0~+5	0~+5	0~+5	0~+5
Open circuit voltage	V_{OC} [V]	75.4	75.5	75.3	76.1
Short circuit current	I_{SC} [A]	2.20	4.43	6.44	6.44
Voltage at P_{MPP}	V_{MPP} [V]	56.5	57.4	56.8	58.7
Current at P_{MPP}	I_{MPP} [A]	1.94	4.00	5.89	5.95
Module efficiency	[%]	≧ 13.7	≧ 14.5	≧ 14.2	≧ 14.9

Power performance at NOCT (NOCT: 800W/m². 20°C/68°F

Module Models	CdF-	1100A1	2300A1	3350A1	3500A1
Nominal power	P_{MPP} [W]	84.9	175.6	256.1	267.4
Open circuit voltage	V_{OC} [V]	72.6	71.9	71.8	72.5
Short circuit current	I_{SC} [A]	1.76	3.56	5.16	5.16
Voltage at P_{max}	V_{MPP} [V]	54.0	54.6	54.7	56.4
Current at P_{max}	I_{MPP} [A]	1.57	3.21	4.68	4.74

*All STC characteristics are measured after pre-treatment of 43kWh/m² light soaking.
Measurement uncertainty: (P_{MPP} : +5%/-3% ; I_{SC}, V_{OC}, I_{MPP}, V_{MPP} : ±10%)

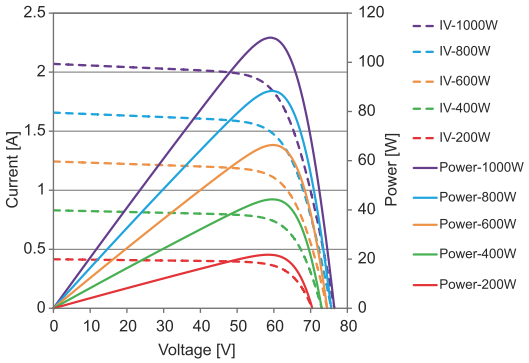
Temperature coefficients

NOCT	TC I_{SC} (α)	TC V_{OC} (β)	TC P_{MPP}(δ)
46°C	+0.01%/°C	-0.31%/°C	-0.23%/°C

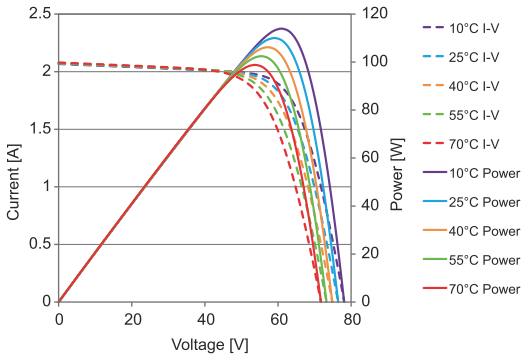
Properties for solar system construction design

Max. system voltage (V_{SYS})	Max. series overcurrent protective devices	Mechanical load	Safety class	Fire rating	Operating temperature
1000V	5A	2400Pa	II	Class C(IEC)	-40 ~ 85°C

I-V curves at various irradiation



I-V curves at various temperatures



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