eterbright®

CdF-1000A1 Series

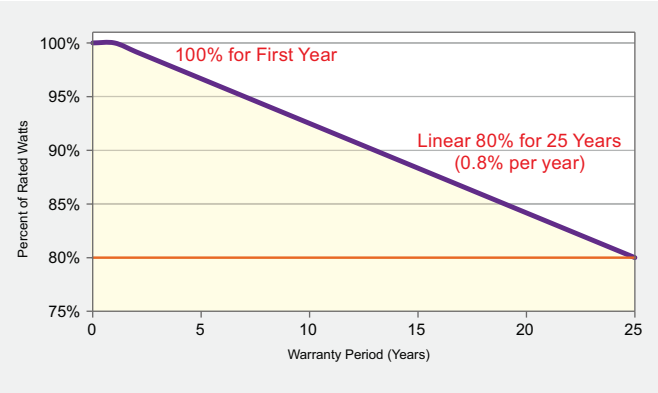
High Performance Cd-Free CIGS Thin Film Modules

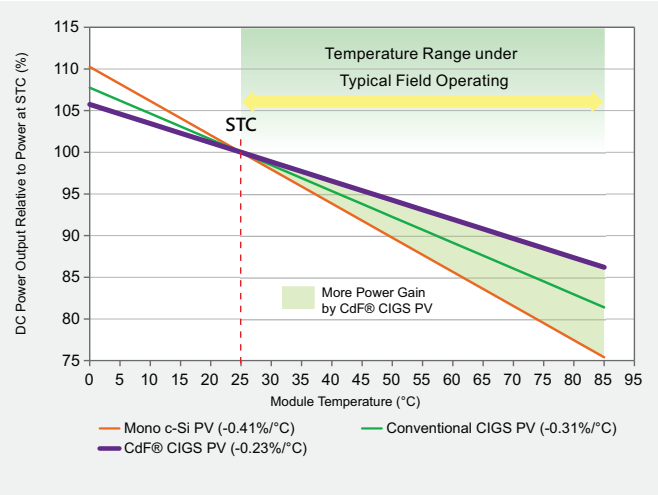
MAX SYSTEM 1000V CIGS MODULES

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

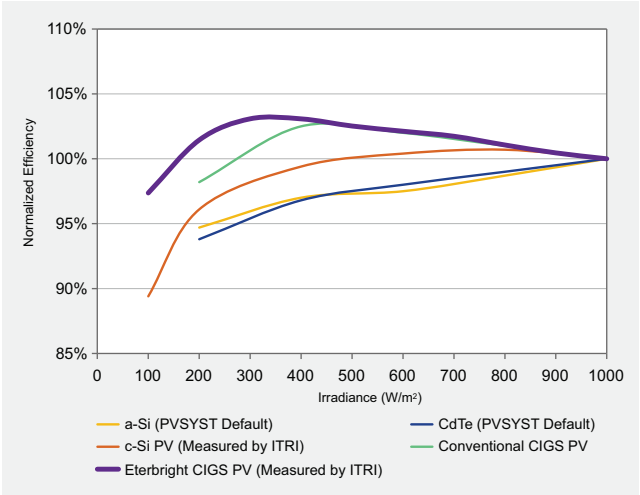
Linear Pmax. Performance Warranty





In tropical areas i.e. desert regions, equatorial regions, subtropical regions or high temperature areas, CIGS module will be the only choice.

The Comparison of Normalized Efficiency between Eterbright CIGS and Others



Eterbright Cd-Free CIGS PV performs better normalized efficiency under lower irradiance.

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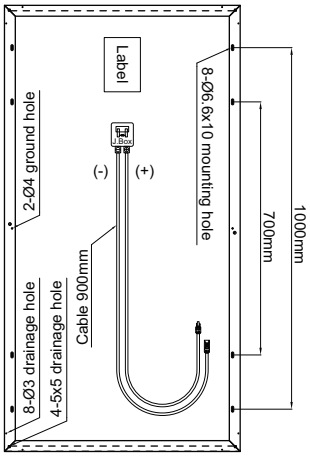
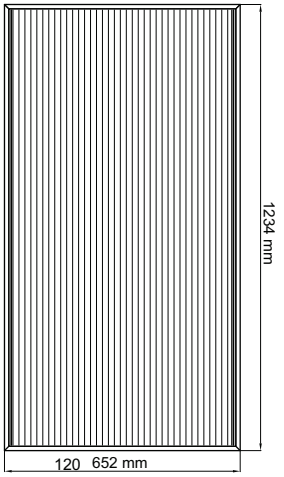
Mechanical Specification

Dimensions	1234mm x 652mm x 35mm (48.6 inches x 25.7 inches x 1.38 inches)
Weight	12.9 kg (28.44lbs)
Cell type	CIGS thin film
Front cover	3.2mm tempered glass with ARC
Cell substrates	1.8mm ultra-thin soda lime glass
Back cover	Al back sheet
Encapsulant	EVA
Frame	Anodized Al frame (black) with L-Key mounting
Junction Box	IP67 rated with bypass diode
Connectors	MC4 compatible
Cable length	900mm (35.4 inches)

Module Drawing





Electrical Specification

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

Module Models	CdF-	1000A1	1050A1	1100A1	1150A1	1200A1
Nominal power	P_{MPP} [W]	100	105	110	115	120
Power tolerance	[W]	0~+5	0~+5	0~+5	0~+5	0~+5
Open circuit voltage	V_{OC} [V]	75.2	75.3	75.4	75.5	75.6
Short circuit current	I_{SC} [A]	2.16	2.18	2.20	2.21	2.23
Voltage at P_{MPP}	V_{MPP} [V]	54.7	55.6	56.5	57.4	58.3
Current at P_{MPP}	I_{MPP} [A]	1.82	1.88	1.94	2.00	2.05
Module efficiency	[%]	≧ 12.4	≧ 13.1	≧ 13.7	≧ 14.3	≧ 14.9

*Power performance at NOCT (NOCT: 800W/m². 20°C/68°F, AM1.5)**

Module Models	CdF-	1000A1	1050A1	1100A1	1150A1	1200A1
Nominal power	P_{MPP} [W]	77.1	81.0	84.9	88.7	95.2
Open circuit voltage	V_{OC} [V]	72.3	72.5	72.6	72.6	72.7
Short circuit current	I_{SC} [A]	1.73	1.75	1.76	1.77	1.79
Voltage at P_{max}	V_{MPP} [V]	51.7	52.8	54.0	55.2	56.4
Current at P_{max}	I_{MPP} [A]	1.49	1.53	1.57	1.60	1.68

*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%)

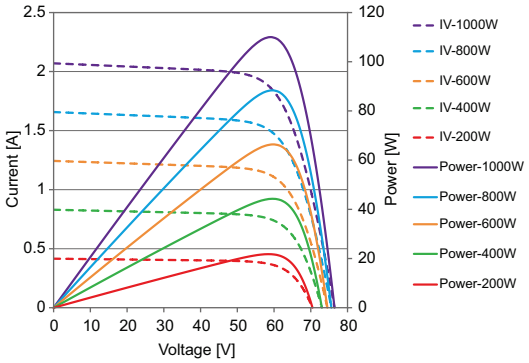
Temperature coefficients

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

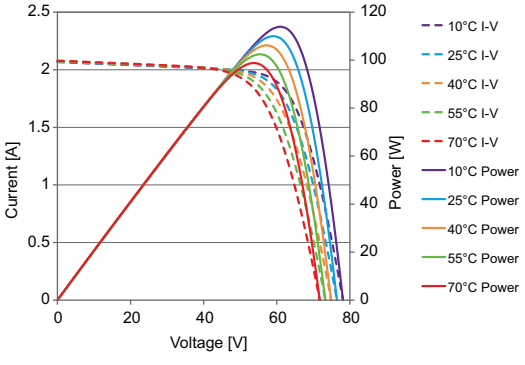
Properties for solar system construction design

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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