

# Mono

# 60cells

## (280~310Watt)



Those who dream of a better future can help lead to a more meaningful and enriched world. As a leading solar module manufacturer in Korea, we never stop to achieve competitiveness through differentiation, implement the maximum value, and commit to sustainable development with customers.

### Certificates



#### Quality

ISO 9001:2015      ISO 14001:2015  
OHSAS 18001:2007    ISO/TS 16949:2009  
Bankability Tier1 PV module manufacturer



#### Product

IEC 61215 / IEC 61730 : TUV / CE  
IEC 61701 Salt Mist Corrosion Level 6(Optional)  
UL 1703 Fire Rating Type1  
Assembled in Korea

### Key Features



#### Linear Performance Warranty

12 Years product warranty  
25 Years linear performance warranty



#### 1,500V

Designed for UL and IEC 1,500V  
Saving BoS costs



#### Certified Durability

5,400 Pa snow load  
2,400 Pa wind load



#### PID Free(Optional)

Anti-PID Cell  
Anti-PID encapsulation technology

### Optional Features



#### Perfect Black

Black anodized frame  
Black back sheet  
Black string ribbon



#### Floating PV Installation

Module backside blocks moisture permeability

# Mono- Crystalline Solar Module (UB-AN1)

## 60cells (280~310 Watt)

Electrical Data / STC (UB-AN1) : Irradiance of 1000W/m<sup>2</sup>, spectrum AM 1.5 and cell temperature of 25 °C

Nominal Max Power	Pmax(Wp)	280	285	290	295	300	305	310
Voltage at Pmax	Vmp(V)	30.9	31.3	31.7	32.1	32.5	32.9	33.3
Current at Pmax	Imp(A)	9.07	9.11	9.16	9.20	9.24	9.28	9.32
Open Circuit Voltage	Voc(V) ±3%	38.7	39.1	39.5	39.9	40.3	40.7	41.1
Short Circuit Current	Isc(A) ±3%	9.58	9.62	9.67	9.71	9.75	9.79	9.83
Module Efficiency	%	16.77%	17.07%	17.37%	17.66%	17.96%	18.26%	18.56%
Operating Temperature		-40°C ~ +85°C						
Max. System Voltage		1500 Vdc						
Max. Series Fuse Rating		20A						
Max. Reverse Current		20A						
Power tolerance		0 ~ +4.99W						

Electrical Data / NOCT (UB-AN1) : Irradiance of 800W/m<sup>2</sup>, spectrum AM 1.5 and Ambient Temperature 20°C, wind speed 1m/s

Nominal Max Power	Pmax(Wp)	207.7	211.3	215.1	218.8	222.4	226.1	229.7
Voltage at Pmax	Vmp(V)	28.8	29.2	29.5	29.9	30.3	30.6	30.9
Current at Pmax	Imp(A)	7.21	7.24	7.28	7.32	7.35	7.38	7.43
Open Circuit Voltage	Voc(V)	35.9	36.2	36.6	37.0	37.3	37.7	38.0
Short Circuit Current	Isc(A)	7.74	7.78	7.82	7.85	7.88	7.91	7.95

### Mechanical Data

Cell Type	Mono-crystalline
Cell Arrangement	60 (6 x 10)
Dimensions	1670x1000x35mm / (65.75x39.37x1.38in)
Weight	18.9kg(41.7 lbs)
Stand. Packaging	29pcs (Vertical)
Module Pieces per Container	754pcs
Pallets per Container	26
Frame	Anodized aluminum
Front Glass	3.2mm Tempered glass
J-Box	IP68, 3 diodes
Output Cable	(+)1000mm(39.37in), (-)1000mm(39.37in), 12AWG
Connectors	QC4.10-35
Module Fire Performance	Type 1

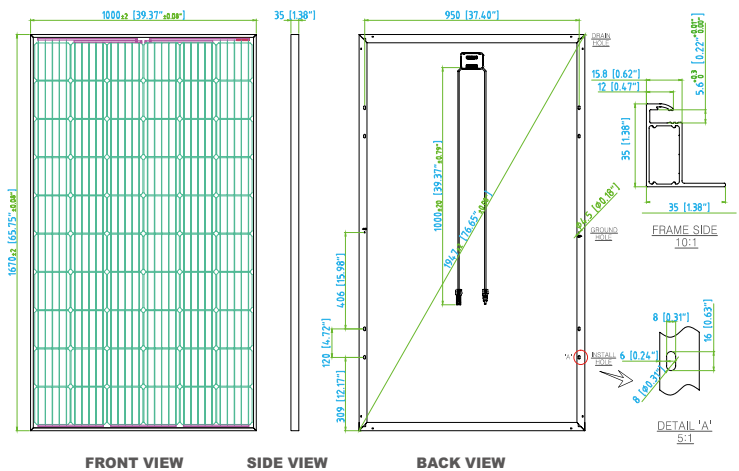
### Warranties

Product	12 years
Performance	25 years linear power warranty (>82.2%)

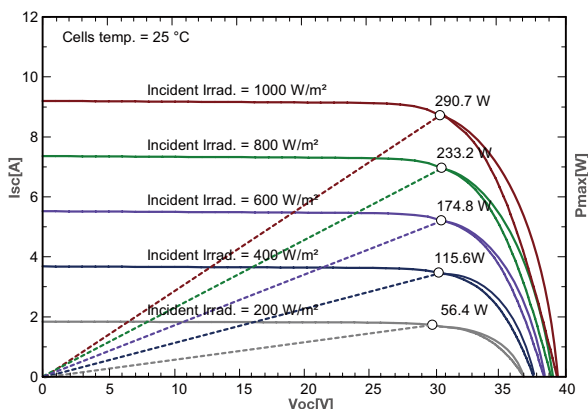
### Temperature Characteristics

Specifications	Data
Temperature coefficient (Pmax)	-0.37
Temperature coefficient (Voc)	-0.28
Temperature coefficient (Isc)	0.05
Normal Operating Cell Temperature	46.0 ± 2°C

### MODULE DIAGRAM unit : mm(inch)



### I-V Curve according to Irradiance



**Hansol**  
<http://solar.hansoltechnics.com>

140, Gwahaksanup 1-ro, Oksan-myeon, Heungdeok-gu,  
 Cheongju-si, Chungcheongbuk-do 28122, Korea  
 Tel : +82-43-219-3462, US Office : +1-213-793-3688, Fax : +82-43-219-3410  
 E-mail : solar@hansol.com

