

# HYUNDAI SOLAR MODULE

**PI**  
SERIES

## Mono-Crystalline Type

HiS-S390PI HiS-S395PI HiS-S400PI HiS-S405PI



**144**

Bifacial Cells



For commercial  
& Utility  
Applications



UL 1,500V  
IEC 1,500V  
Saves BOS Costs



More Power  
Generation  
In Low Light



### PERL Technology

PERL technology provides ultra-high efficiency with better performance in low irradiation. Maximizes installation capacity in limited space.



### Anti-LID / PID

Both LID(Light Induced Degradation) and PID(Potential Induced Degradation) are strictly eliminated to ensure higher actual yield during lifetime.



### Mechanical Strength

Tempered glass and reinforced frame design withstand rigorous weather conditions such as heavy snow and strong wind.



### Reliable Warranty

Global brand with powerful financial strength provide reliable 25-year warranty.



### Corrosion Resistant

Various tests under harsh environmental conditions such as ammonia and salt-mist passed.



### UL / VDE Test Labs

Hyundai's R&D center is an accredited test laboratory of both UL and VDE.

### Hyundai's Warranty Provisions

**12**  
YEARS

- 12-Year Product Warranty
- Materials and workmanship

**25**  
YEARS

- 25-Year Performance Warranty
- Initial year : 97.6%
- Linear warranty after second year: with 0.6%p annual degradation, 83.2% is guaranteed up to 25 years

### About Hyundai Energy Solutions

Established in 1972, Hyundai Heavy Industries Group is one of the most trusted names in the heavy industries sector and is a Fortune 500 company. As a global leader and innovator, Hyundai Heavy Industries is committed to building a future growth engine by developing and investing heavily in the field of renewable energy.

As a core energy business entity of HHI, Hyundai Energy Solutions has strong pride in providing high-quality PV products to more than 3,000 customers worldwide.

### Certification



· UL61730 certified by UL, Type 1(for Fire Class A)



## Electrical Characteristics

		Mono-Crystalline Type(HiS-S PI)			
		390	395	400	405
Nominal Output (P <sub>mpp</sub> )	W	390	395	400	405
Open Circuit Voltage (V <sub>oc</sub> )	V	48.5	48.8	49.1	49.4
Short Circuit Current (I <sub>sc</sub> )	A	10.18	10.23	10.28	10.33
Voltage at P <sub>max</sub> (V <sub>mpp</sub> )	V	40.2	40.5	40.8	41.1
Current at P <sub>max</sub> (I <sub>mp</sub> )	A	9.72	9.77	9.82	9.87
Module Efficiency	%	19.1	19.4	19.6	19.8
Cell Type	-	Mono-crystalline, 9busbar, bifacial			
Maximum System Voltage	V	1,500			
Temperature Coefficient of P <sub>max</sub>	%/K	-0.417			
Temperature Coefficient of V <sub>oc</sub>	%/K	-0.306			
Temperature Coefficient of I <sub>sc</sub>	%/K	0.046			

\*All data at STC (Standard Test Conditions). Above data may be changed without prior notice.

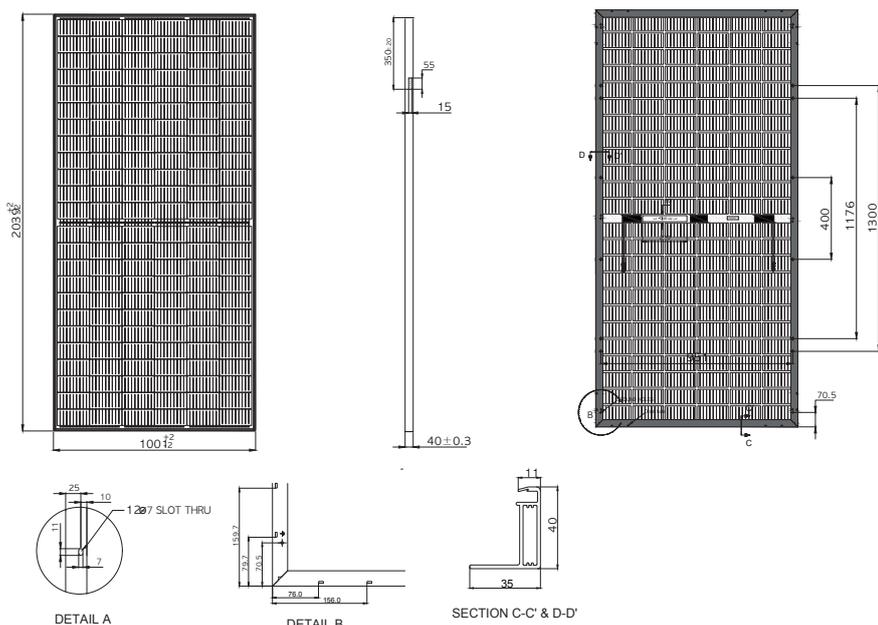
Additional Power Gain		390	395	400	405
5%	W	410	415	420	425
15%	W	449	454	460	466
25%	W	488	494	500	506

## Mechanical Characteristics

Dimensions	2,039mm(W) x 1,001mm(L) x 40 mm(H) / 80.3" x 39.4" x 1.6"
Weight	Approx. 22.2 kg / 48.9.lbs
Solar Cells	144 half cut bifacial cells (2 parallel x 72 half cells in series)
Output Cables	4 mm <sup>2</sup> (12AWG) cables with polarized weatherproof connectors, IEC certified (UL listed and UL 4703 certified), Length 1.4 m (55")
Junction Box	IP68, weatherproof, IEC certified (UL listed)
Bypass Diodes	3 bypass diodes to prevent power decrease by partial shade
Construction	Front : Anti-reflection coated glass Encapsulant : EVA   Back Sheet : Transparent Back Sheet (White grid)
Frame	Clear anodized aluminum alloy type 6063

### Module Diagram (unit : mm)

Mono-Crystalline  
Si Type-Front Side View



## Installation Safety Guide

- Only qualified personnel should install or perform maintenance.
- Be aware of dangerous high DC voltage.
- Do not damage or scratch the rear surface of the module.
- Do not handle or install modules when they are wet.

Nominal Operating Cell Temperature	45°C ± 2
Operating Temperature	-40°C ~ +85°C
Maximum System Voltage	DC 1,500V
Maximum Reverse Current	20A
Maximum Test Load	Front 113 psf (5,400 Pa) Rear 50 psf (2,400 Pa)

## I-V Curves

