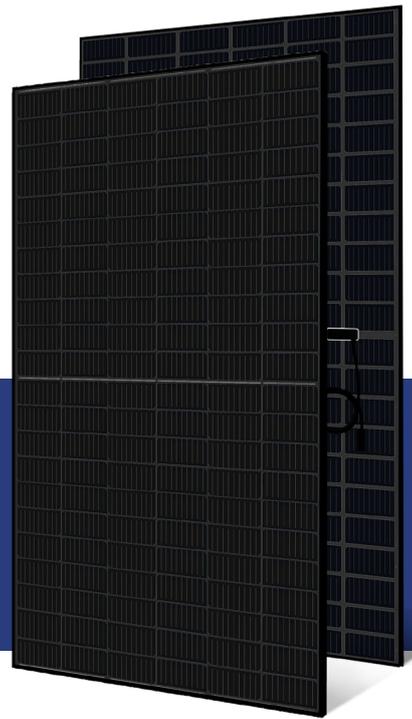


HD HYUNDAI SOLAR MODULE



YH
SERIES

Dual Black Max

HiS-S400YH(BK) HiS-S405YH(BK) HiS-S410YH(BK)



Bifacial Cells
132



More Power Generation
In Low Light



All black Module
For Sleek Design
(Black Meshed
T-Backsheet)



Hyundai Cell



**Maximized Power
Generation**

Increased total power output through capturing light from both the front and back of Bifacial solar modules. Back side power gain up to 25% of the front output depending on PV system design.



**Half-Cut &
Multi-Wire Technology**

Improved current flow with half-cut technology and 9 thin wiring technology allows high module efficiency of up to 20.5%. It also reduces power generation loss due to micro-cracks.



Anti-LID / PID

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



Mechanical Strength

Tempered glass and reinforced frame design withstand rigorous weather conditions such as heavy snow(5,400Pa) and strong wind(5,400Pa).



UL / VDE Test Labs

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



Reliable Warranty

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

Hyundai's Warranty Provisions



- 25-Year Product Warranty
- Materials and workmanship



- 25-Year Performance Warranty
- Initial year : 98.0%
- Linear warranty after second year: with 0.54%p annual degradation, 85.0% is guaranteed up to 25 years

Certification



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

About HD Hyundai Energy Solutions

Established in 1972, HD Hyundai 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, HD Hyundai 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 HD, HD Hyundai Energy Solutions has strong pride in providing high-quality PV products to more than 3,000 customers worldwide.



Electrical Characteristics

		Mono-Crystalline Type(HiS-____YH(BK))		
		400	405	410
Nominal Output (P _{mpp})	W	400	405	410
Open Circuit Voltage (V _{oc})	V	45.3	45.6	45.9
Short Circuit Current (I _{sc})	A	11.25	11.33	11.40
Voltage at P _{max} (V _{mpp})	V	37.7	37.9	38.1
Current at P _{max} (I _{mpp})	A	10.61	10.69	10.76
Module Efficiency	%	20.0	20.3	20.5
Cell Type	-	Mono crystalline, 9busbar		
Maximum System Voltage	V	1,500		
Temperature Coefficient of P _{max}	%/K	-0.347		
Temperature Coefficient of V _{oc}	%/K	-0.268		
Temperature Coefficient of I _{sc}	%/K	+0.032		

*All data at STC / Measurement tolerances P_{mpp} ±3%; I_{sc} ; V_{oc} ±3%. Above data may be changed without prior notice.

Additional Power Gain from rear side		400	405	410
5%	W	415	425	431
15%	W	454	466	472
25%	W	494	506	513

Mechanical Characteristics

Dimensions	75.7 in (L) x 40.9 in (W) x 1.3 in (H) (1,924mm x 1,038mm x 32mm)
Weight	Approx. 46.5 lbs (21.1 kg)
Solar Cells	132 half cut bifacial cells (2 parallel x 66 half cells in series)
Output Cables	Cable : 47.2 in (1,200mm) / 4mm ² Connector : MC4 genuine connector
Junction Box	IP68, weatherproof, IEC certified (UL listed)
Bypass Diodes	3 bypass diodes to prevent power decrease by partial shade
Construction	Front : 3.2mm, High Transmission, AR Coated Tempered Glass Encapsulant : EVA Back Sheet : Black Meshed Transparent Backsheet
Frame	Anodized aluminum alloy type 6063

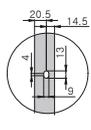
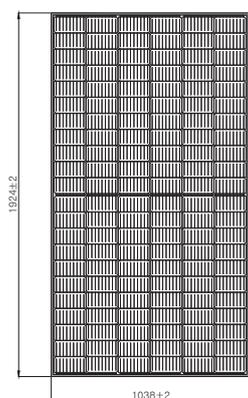
Installation Safety Guide

- 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.

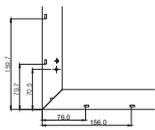
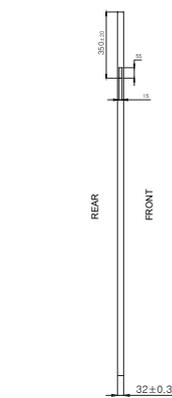
Nominal Operating Cell Temperature	113.9°F ± 3.6°F (45.5°C ± 2°C)
Operating Temperature	-40°F ~ + 185°F (-40°C ~ + 85°C)
Maximum System Voltage	DC 1,500V
Maximum Reverse Current	20A
Maximum Test Load	Front 5,400 Pa (113 psf) Rear 5,400 Pa (113 psf)

Module Diagram (unit : mm)

Front Side View

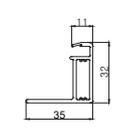
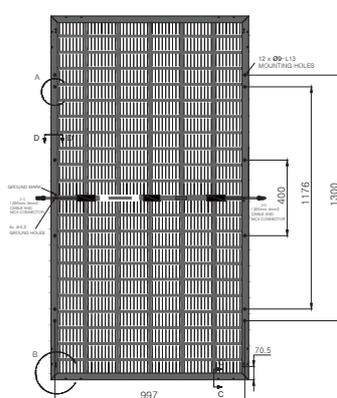


DETAIL A



DETAIL B

Rear Side View



SECTION C-C' & D-D'

I-V Curves

