

HD HYUNDAI SOLAR MODULE

YH Series

Dual Black Max

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



Maximum Test Load
Front 5,400Pa
Rear 5,400Pa



More Power Generation In Low Light



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



High Reliability
in all-weather



For Residential
(Full Black Design)

HD Hyundai's Warranty Provisions



- 25-Year Product Warranty
 - Materials and workmanship



- **25-Year Performance Warranty**
 - First year degradation: 2%
 - Linear warranty after initial year: with 0.54%p annual degradation, 85.0% is guaranteed up to 25years

Certification



- UL61730 certified by UL
- IEC 61215: 2016 Hailstone 40mm by kiwa PVEL
- ISO 9001: 2015 Quality management systems
- ISO 14001: 2015 Environmental management systems
- ISO 45001: 2018 Occupational health and safety management systems

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

Electrical Characteristics

HiS-SxxxYH(BK)		HiS-S400YH(BK)		HiS-S405YH(BK)		HiS-S410YH(BK)	
Item	Unit	BNPI**		BNPI		BNPI	
Nominal Output (Pmax)	W	400	430	405	435	410	440
Open Circuit Voltage (Voc)	V	45.30	45.42	45.60	45.73	45.90	45.99
Short Circuit Current (Isc)	A	11.25	12.16	11.33	12.24	11.40	12.32
Voltage at Pmax (Vmpp)	V	37.7	37.4	37.9	37.7	38.1	37.9
Current at Pmax (Impp)	A	10.61	11.54	10.69	11.61	10.76	11.69
Module efficiency	%	20.0		20.3		20.5	
Power Class Sorting	W	0 ~ +5					
Temperature Coefficient of Pmax	%/K	-0.347					
Temperature Coefficient of Voc	%/K	-0.268					
Temperature Coefficient of Isc	%/K	0.032					

*All data at STC / Measurement uncertainty for Pmax ±3%; Isc; Voc ±3%. Above data may be changed without prior notice
 **The electrical properties of BNPI are measured under the irradiance corresponding to 1000 W/m² on the module front and 135 W/m² on the module rear.

Additional Power Gain from rear side					
Pmpp gain	Pmpp [W]	Vmpp [V]	Impp [A]	Voc [V]	Isc [A]
5%	431	38.10	11.30	45.90	11.97
15%	472	38.10	12.37	45.90	13.11
25%	513	38.10	13.45	45.90	14.25

*Electrical characteristics with different rear power gain (reference to 410W)

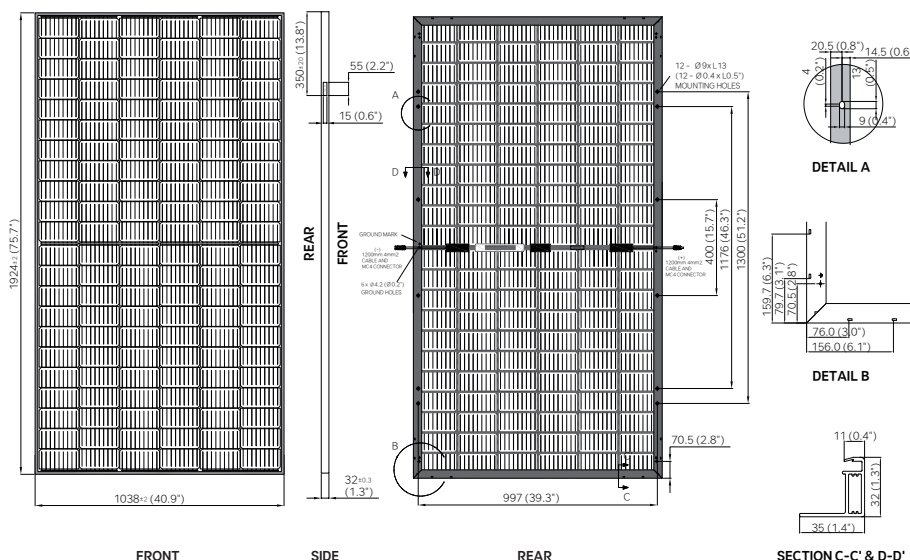
Mechanical Characteristics

Dimensions	1,924mm (L) x 1,038mm (W) x 32mm (H) (75.7in x 40.9in x 1.3in)
Weight	21.1 kg (Approx. 46.5 lbs)
Solar Cells	Mono PERC, 132 (6x22) monocrystalline half-cut bifacial cells
Output Cables	Cable : (+)1,200mm(47.2in), (-)1,200mm(47.2in) / Customized length available Connector : Stäubli MC4 genuine Connector
Junction Box	3-part, 3 bypass diodes, IP68 rated
Construction	Front : 3.2mm(0.13in) full-tempered solar glass with high transmittance, and antireflective coating Rear : Highly resistant and weatherproof film (Black meshed transparent)
Frame	Anodized aluminum alloy

Shipping Configurations

Container Size (HC)	40'	Modules Per Pallet (pcs)	32
Pallets Per Container	24	Modules Per Container (pcs)	768

Module Diagram [unit : mm (in)]



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 Module Operation Temperature	45.5°C ± 2°C
Operating Temperature	-40°C~+85°C
Maximum System Voltage	DC 1,500 V
Maximum Reverse Current	20A
Maximum Test Load	Front 5,400Pa Rear 5,400Pa
Fire Performance	Type 1

I-V Curves (HiS-S400YH(BK))

