

EXTRA BLACK

WA54HD(BK)

Product Range

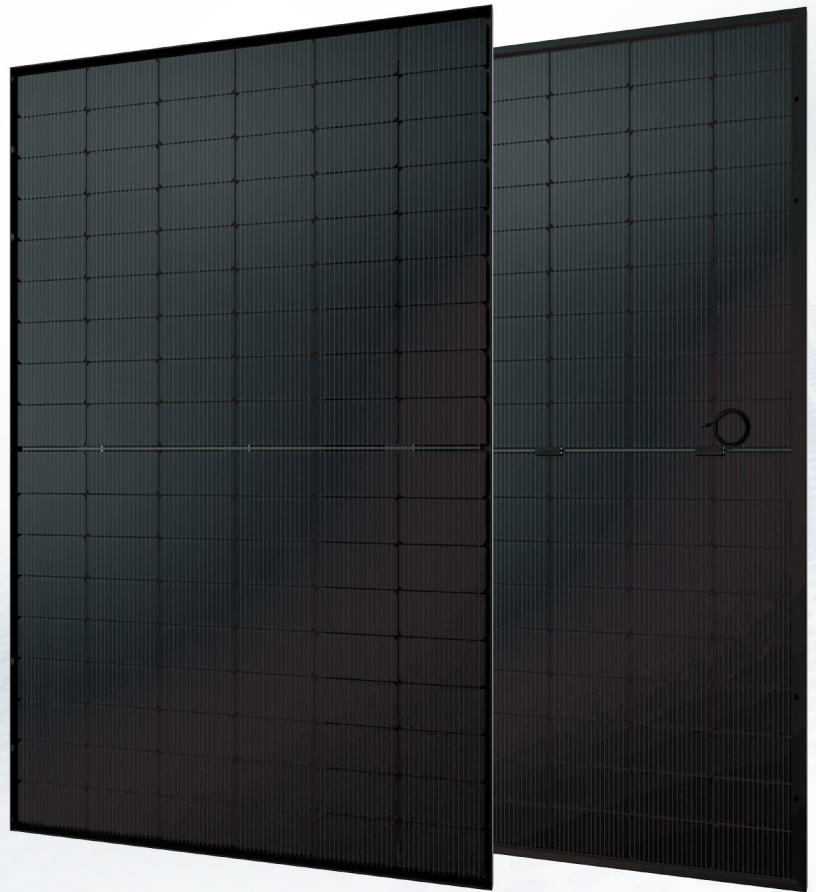
430 - 450W

N-Type Bifacial Double Glass High Efficiency

450W
maximum power output

0~+5W
Positive Power Tolerance

22.8%
Maximum Efficiency



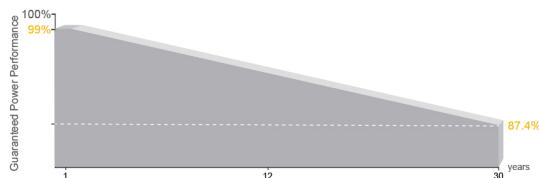
Linear Performance Warranty

25 Year Product Warranty

30 Year Linear Power Warranty

<1% First year Power Degradation

<0.4% Year 2-30 Power Degradation



Certifications

Quality Management System and Product Certification.

IEC61215(2021), IEC61730(2023), IEC61701

IEC61215-2 (bifaciality): 2021

ISO9001:2015: Quality Management System

ISO14001:2015: Environment Management System

ISO45001:2018: Occupational health and safety management systems



MBB Half-Cut Rectangle Solar Cell

182x186/188mm, 108 cells.



Small In Size, Bigger On Power

Up to 455W, 22.8% module efficiency with high density interconnect technology.



Transparent Dual-glass Design

Excellent fire rating, with better temperature coefficient.



Universal Solution For Residential And C&I Rooftops

Perfect size and low weight for handling and installation.

Double Glass, 54-CELL HALF-CUT SERIES

ELECTRICAL PARAMETERS AT STC

Module Type:	WA54HD(BK)	430M	435M	440M	445M	450M
Maximum Power(Wp)		430W	435W	440W	445W	450W
Open Circuit Voltage(Voc)		38.50V	38.70V	38.90V	39.10V	39.30V
Short Circuit Current(Isc)		14.14A	14.23A	14.31A	14.40A	14.48A
Maximum Power Voltage(Vm)		32.12V	32.29V	32.47V	32.65V	32.82V
Maximum Power Current(Im)		13.39A	13.47A	13.55A	13.63A	13.71A
Module Efficiency		21.50%	21.80%	22.00%	22.30%	22.50%
Maximum Series Fuse		30A				
Watts Positive Tolerance		0~+5W				
Number Of Diode		3				
Standard Test Conditions		1000W/M ² , 25°C, AM1.5				
Maximum System Voltage		1500V/DC				
Temperature-Coefficient Isc		+0.046%/°C				
Temperature-Coefficient Voc		-0.26%/°C				
Temperature-Coefficient Pmpp		-0.30%/°C				
Operating Temperature		-40°C...+85°C				
Normal Operating Cell Temperature		45±2				
Load Capacity For The Cover Of The Module (Glass)		3600Pa(IEC61215)(snow)				
Load Capacity For The Front & Back Of The Module		2400Pa(IEC61215)(wind)				

ELECTRICAL CHARACTERISTICS WITH 10% SOLAR IRRADIATION RATIO

Module Type:	WA54HD(BK)	430M	/	435M	/	440M	/	445M	/	450M
Maximum Power(Wp)		464W		470W		475W		481W		486W
Open Circuit Voltage(Voc)		38.50V		38.70V		38.90V		39.10V		39.30V
Short Circuit Current(Isc)		15.27A		15.36A		15.46A		15.55A		15.64A
Maximum Power Voltage(Vm)		32.11V		32.29V		32.47V		32.65V		32.82V
Maximum Power Current(Im)		14.46A		14.55A		14.63A		14.72A		14.81A
Irradiation Ratio (Rear/Front)									10%	
*Bifaciality=Pmax,Rear/Rated Pmax,Front										

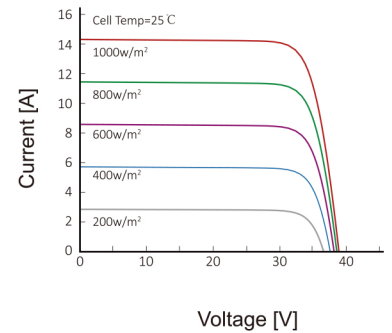
MECHANICAL CHARACTERISTICS

Front/Back Cover (Material / Thickness)	low-iron tempered glass 1.6 / 1.6 mm
Cell (Quantity / Material / Dimensions)	108(6x18) / monocrystalline silicon
Frame (Material / Color)	aluminum hollow-chamber frame on each side anodized aluminum alloy / Black
Junction Box (Protection Degree)	≥IP68
Cables & Plug Connectors	4mm ² , 300mm in length, length can be customized
Module Dimensions (L / W / H)	1762±2mmx1134±2mmx30±1mm
Module Weight	22.5 kg
Application Class	Class A
Electrical Protection Class	Class II
Fire Safety Class	Class C

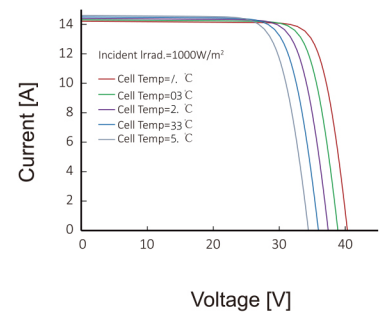
PACKING

Container Size	Units/Pallet (PCS)	Weight/Pallet (KG)	Pallet Measurement (mm)	Units/Container (PCS)
40HQ	36	845	1790x1120x1260	936

CURRENT-VOLTAGE CURVES:



Module characteristics at constant module temperatures of 25°C and variable levels of irradiance



Module characteristics at variable module temperatures and constant module irradiance of 1.000 W/m²

MODULE DIAGRAM:

