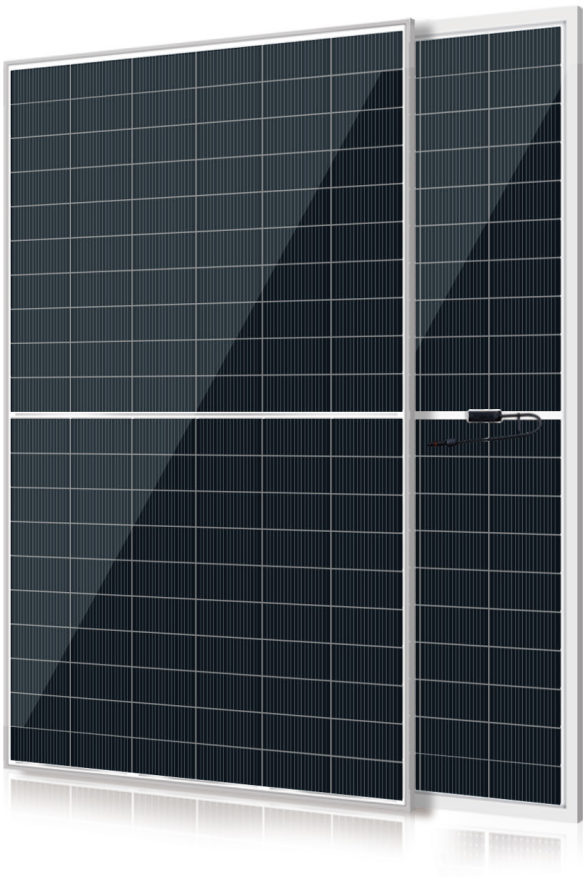
HuaYaoPV

630~650W **HY650-N120CDD**

Hyper N60

N-TOPCon, Bi-facial
120-cell, 210mm, MBB
0~+3% positive tolerance



KEY FEATURES

Mbb half cell design
Half-cut cells brings lower cell connection loss and lower thermal coefficients to ensures higher power output

More Power
Industry leading N-TOPCon technology applied to generate ultra-high power up to 650 Wp with optimized temperature coefficient and lower working temperature

High Reliability
Strict outsourcing BOM materials quality control and 100% in-house wafer and the TOPCon cell performance boost the power warranty to 30 Year

Excellent Low-light Performance
Advanced N-TOPCon solar cell technology allows for excellent performance in low-light environments

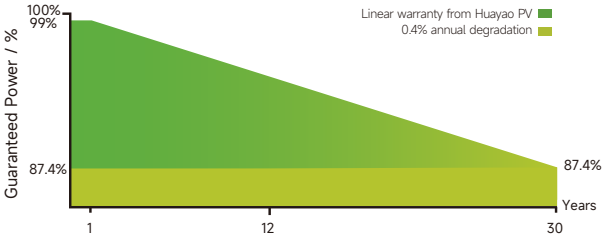
Highly Strengthened Design
Certified to withstand 5400Pa snow load and 2400Pa wind load

PID Resistant
Excellent PID resistance performance optimized by unique cell process design and BOM material control

Fire resistance
Class of reaction to Class A

LINEAR PERFORMANCE WARRANTY

15 Year Product Warranty
30 Year Linear Power Warranty



IEC 61215 (2016), IEC 61730 (2016)

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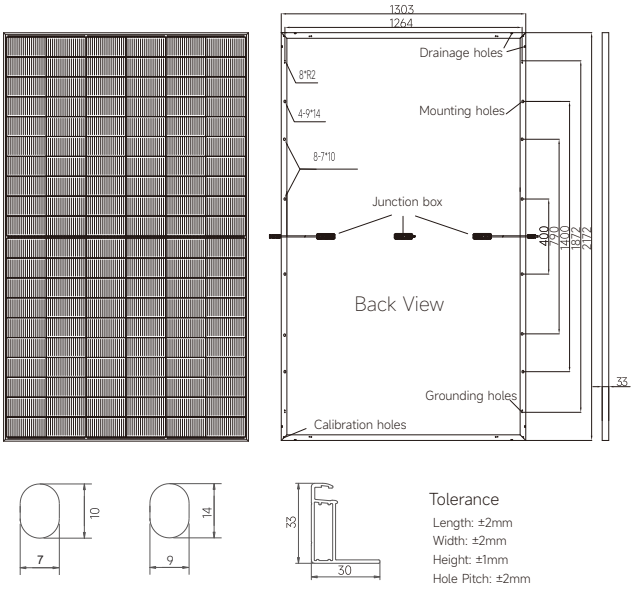
HY650-N120CDD

Hyper N60

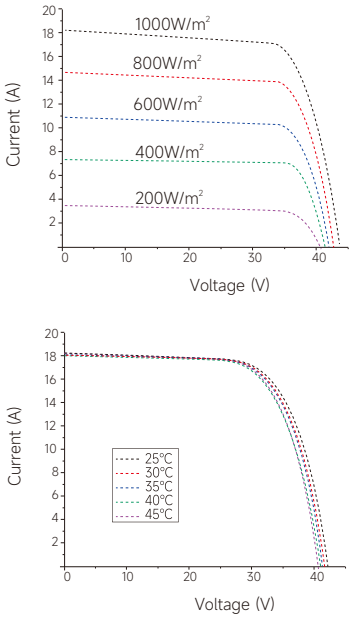
Engineering Drawings



Tolerance

Length: ±2mm
Width: ±2mm
Height: ±1mm
Hole Pitch: ±2mm

I-V Curves



Electrical Characteristics

	HY630-N120CDD	HY635-N120CDD	HY640-N120CDD	HY645-N120CDD	HY650-N120CDD
Pmax(W)	630	635	640	645	650
Vmp(V)	36.55	36.76	36.97	37.18	37.39
Imp(A)	17.24	17.28	17.32	17.36	17.40
Voc (V)	43.66	43.86	44.06	44.26	44.46
Isc(A)	18.24	18.28	18.32	18.36	18.40
Module efficiency(%)	22.26	22.44	22.61	22.79	22.97
Maximum system voltage(V)			1500		
Fuse Rating(A)			30		
Temperature coefficient Pmax(%℃)			-0.30		
Temperature coefficient Isc(%℃)			0.04		
Temperature coefficient Voc(%℃)			-0.25		

STC: Irradiance 1000W/m², module temperature 25℃, AM=1.5

Bifacial Output-Backside Power Gain

10%	Pmax(W)	693	698.5	704	709.5	715
	Module efficiency(%)	24.48	24.68	24.87	25.07	25.26
20%	Pmax(W)	756	762	768	774	780
	Module efficiency(%)	26.71	26.92	27.13	27.35	27.56

Working Characteristics

	HY630-N120CDD	HY635-N120CDD	HY640-N120CDD	HY645-N120CDD	HY650-N120CDD
Pmax(W)	480	484	488	491	495
Vmp(V)	34.31	34.52	34.72	34.86	35.06
Imp(A)	13.99	14.02	14.06	14.09	14.12
Voc(V)	41.12	41.42	41.58	41.71	42.01
Isc(A)	14.69	14.72	14.76	14.79	14.82
Power tolerance(%)			0~+3		
NOCT(℃)			44±2		

NOCT: Conditions:Irradiance 800W/m², ambient temperature 20℃, wind speed 1m/s

Mechanical Characteristics

Number of cells	120 pcs
Size of cell (mm)	210*105
Type of cell	N type Mono
Thickness of glass (mm)	2.0
Type of frame	Anodized aluminum alloy
Junction box	IP68
Size of module (mm)	2172*1303*33
Weight (kg)	35.6
Cables/connectors	4mm², MC4 compatible
Length of Cable	Portrait: +300mm/ -300mm

Packing Configuration

Pieces per pallet	33
Size of packing (mm)	1330*1130*2305
Weight of packing (kg)	1193
Pieces per container	594
Size of container	40' HQ

Maximum Ratings

Operating Temperature(℃)	-40~85
Operating humidity(%)	5-85
Allowable Hail Load	25mm ice-ball with velocity of 23m/s

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