

HT²¹⁰ TOPCon Bifacial Series

635~655W

HY-NT12/60GDF



Main Features

N-TYPE TOPCON TECH

- Lower LID
- Excellent Low Irradiance Performance

SMBB + HALF-CELL TECH NON-DESTRUCTIVE CUTTING

- Reduced Internal Current Loss
- Minimized Micro-Crack Impact

HIGH RELIABILITY

- Salt Mist Resistance, Ammonia Resistance, Sand & Dust Resistance
- Anti-PID

HIGH CONVERSION EFFICIENCY

- Module Conversion Efficiency Up to 23.1%
- Bifaciality Rate Up to 80-85%

SUPERIOR POWER GENERATION PERFORMANCE

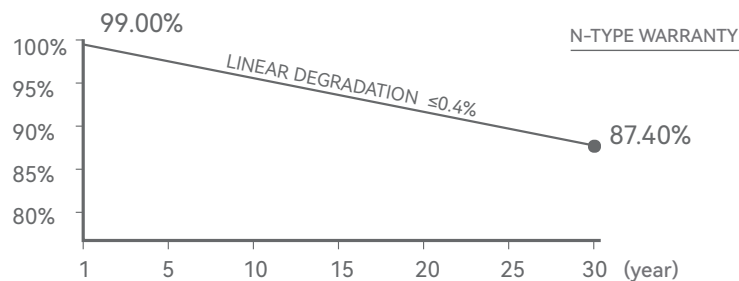
- Low Temperature Coefficient: $-0.29\%/^{\circ}\text{C}$
- Lower Operating Temperature

LOWER LEVELIZED COST OF ELECTRICITY

- Lower BOS and LCOE
- Higher ROI

Comprehensive Products and System Certificates

- IEC 61215, IEC 61730
- ISO 9001:2015
- ISO 14001:2015
- ISO 45001:2018



Munich RE

15 YEAR

Product Workmanship Warranty

30 YEAR

Linear Power Warranty

≤1%

First - year power attenuation

≤0.4%

Linear power attenuation



HONGYUAN GREEN ENERGY CO.,LTD.

© HONGYUAN GREEN ENERGY CO.,LTD. all rights reserved.
The product specifications are subject to change without prior notice.
Please use our latest version.

Group Headquarter: Building 7, Changguangxi Wetland Park,
Lihu Avenue, Binhu District, Wuxi City, Jiangsu Province, China

Tel: +86 0510-85958787

E-mail: info@hysolar.com

Web: <https://www.hysolar.com>

N-Type Bifacial Series HY-NT12/60GDF

635~655W
POWER RANGE

23.1%
EFFICIENCY

0~+5W
POWER SORTING

ELECTRICAL PERFORMANCE PARAMETERS

***STC** : Irradiance 1000W/m², Cell Temperature 25° C, AM=1.5

Rated output (Pmpp/Wp)	635	640	645	650	655
Rated voltage (Vmpp/V)	36.40	36.60	36.80	37.00	37.17
Rated current (Impp/A)	17.50	17.55	17.60	17.65	17.67
Open circuit voltage (Voc/V)	43.98	44.18	44.38	44.58	44.75
Short-circuit current (Isc/A)	18.22	18.26	18.30	18.34	18.37
Module efficiency	22.4%	22.6%	22.8%	23.0%	23.1%

NMOT : Irradiance 800W/m², Ambient Temperature 20° C, AM=1.5, Wind Speed 1m/s

Rated output (Pmpp/Wp)	483.4	487.6	491.8	496.1	499.0
Rated voltage (Vmpp/V)	34.31	34.51	34.71	34.91	35.07
Rated current (Impp/A)	14.09	14.13	14.17	14.21	14.23
Open circuit voltage (Voc/V)	41.85	42.05	42.25	42.45	42.61
Short-circuit current (Isc/A)	14.74	14.78	14.82	14.86	14.88

DIFFERENT REAR POWER GAINS (645W)

Power gains	Pmpp/Wp	Vmpp/V	Impp/A	Voc/V	Isc/A
5%	677	36.80	18.40	44.38	19.22
15%	742	36.80	20.16	44.38	21.05
25%	806	36.80	21.91	44.38	22.88

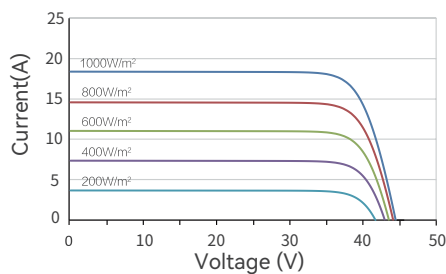
TEMPERATURE COEFFICIENT

Temperature coefficient (Pmpp)	-0.29%/°C
Temperature coefficient (Isc)	+0.043%/°C
Temperature coefficient (Voc)	-0.24%/°C
Nominal module operating temperature (NMOT)	42±2°C

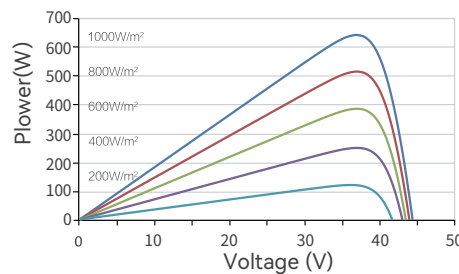
OPERATING PARAMETERS

Max. system voltage (IEC)	1500Vdc
Number of diodes	3
Junction box protection rating	IP 68
Max. series fuse rating	35A
Operational temperature	-40~+85°C
Bifaciality rate	80±5%

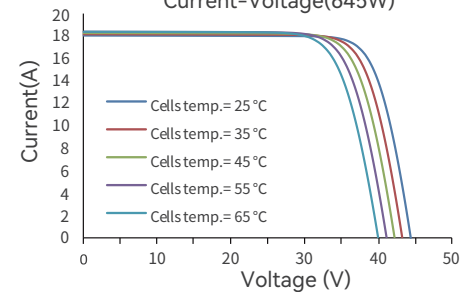
Current-Voltage(645W)



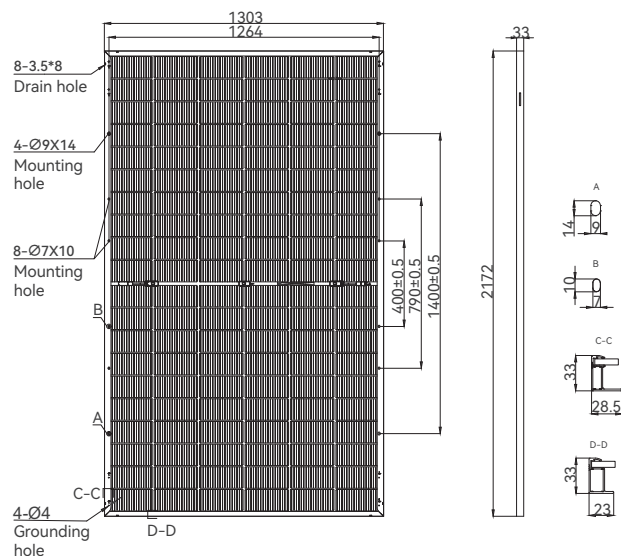
Power-Voltage(645W)



Current-Voltage(645W)



MECHANICAL PARAMETERS



Outer dimensions (L x W x H)	2172 x 1303 x 33 mm
Cell	N type mono-crystalline
Number of cells	120 (6*20)
Frame Type	Aluminum, silver anodized
Glass thickness	2.0+2.0 mm
Cable length (including connector)	Portrait: (+)300 mm,(-)300 mm; Customized length
Cable cross-sectional area (IEC)	4 mm ² / 12 AWG
① Maximum test mechanical load	5400Pa (front) /2400Pa(rear)
Connector type (IEC)	PV-HYC11xyz(standard)/MC4 EVO2(optional)
Module weight	34.9 kg
Packaging unit	33 pcs / box
Weight of packing unit	1212 kg / box
Modules per 40' HQ container	594 pcs

① Please refer to the installation manual or contact us to confirm. The maximum test mechanical load = 1.5× maximum design mechanical load.

*The data above is for reference only and the actual data is in accordance with the practical testing. Power Measurement Tolerance ±3% under STC standard.