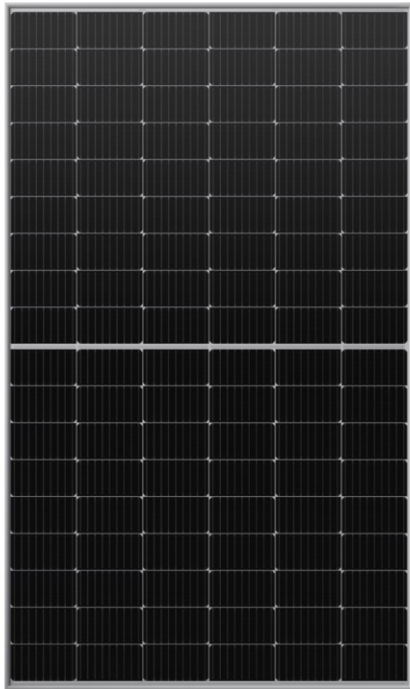




**TOENERGY**  
Way to Solar Energy



# 182 Series

## 410-430W

### N-type Half-cell Module

POWER OUTPUT RANGE

**410-430W**



MAXIMUM MODULE EFFICIENCY

**22.0%**



POWER WARRANTY

**30 years**



## Characteristic



### Higher Power Output

Multi-busbar technology  
1500V system voltage, reduce the BOS cost



### Guaranteed Output Power

Module power positive tolerance



### Ultra-low Degradation

N-type modules are more reliable  
with less LID/LETID



### Best Solution to Harsh Conditions

Pass the mechanical load test, front  
5400Pa and back 2400Pa



### Excellent PID Resistance

Excellent Anti-PID Performance,  
guarantee less power degradation



### High Reliability Based On Strict Quantity Control

Over 100 internal tests including ultraviolet irradiation, heat-recycling, damp heat(DH) test, humidity-freeze(HF) test and etc.



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## Electrical Data @STC

Peak power-Pmax(Wp)	410	415	420	425	430
Power tolerance(W)	±3%				
Open circuit voltage - Voc(V)	36.8	37.1	37.3	37.5	37.7
Maximum power voltage - Vmpp(V)	32.1	32.3	32.5	32.7	32.9
Short circuit current - Im(A)	13.41	13.47	13.56	13.65	13.74
Maximum power current - Imp(A)	12.78	12.85	12.93	13.00	13.07
Module efficiency $\eta$ (%)	21.0	21.2	21.5	21.8	22.0

Standard testing condition(STC): Irradiance 1000W/m<sup>2</sup>, Temperature 25°C, AM 1.5

## Mechanical Data

Cell size	N-type 182×182mm
NO.of cells	108Half Cells ( 6×18)
Dimension	1723*1134*35mm
Weight	22.0kg
Glass	3.2mm high transmission, Anti-reflection coating toughened glass
Frame	Anodized aluminum alloy
Junction box	Separated Junction box IP68 3 bypass diodes
Connector	AMPHENOLH4/MC4 connector
Cable	4.0mm <sup>2</sup> , 300mm PV CABLE, length can be customized

## Temperature Ratings

Nominal operating cell temperature	45±2°C
Temperature coefficient of Pmax	-0.35%/°C
Temperature coefficients of Voc	-0.27%/°C
Temperature coefficients of Isc	0.048%/°C

## Maximum Ratings

Operating temperature	-40°C to +85°C
Maximum system voltage	1500v DC (IEC/UL)
Maximum series fuse rating	25A
Pass hail test	Diameter 25mm, speed 23m/s

## Warranty

12 Years Workmanship Warranty
30 Years Performance Warranty

## Packing Data

Modules per pallet	31 PCS
Modules per 40HQ container	806 PCS
Modules per 13.5m long flatcar	930 PCS
Modules per 17.5m long flatcar	1240 PCS

## Dimension

