

## N-TOPCON

1/2 Cut

Double Glass 420-445W

MS(420-445)MDG-54H  
Mono N-Type 182mm 108 Cells

**New Technology Tailored  
for European Distribution**



### 30-Year Lifespan

Wide range of applications for severe weather with a service life of over 30 years.



### Lower Degradation

N-type solar technology gains slower power Degradation and excellent low-light performance.



### Elegance

Full-black aesthetics, the best choice for BAPV. More excellent for snowy environments.



### Adaptability

1/2-cut low-current cell technology adaptable to main-stream European inverters.



### Safety

Higher fire safety, more suitable for high density residential areas.



### High Power

Bifacial power generation with 5%-30% increase in output for different conditions.

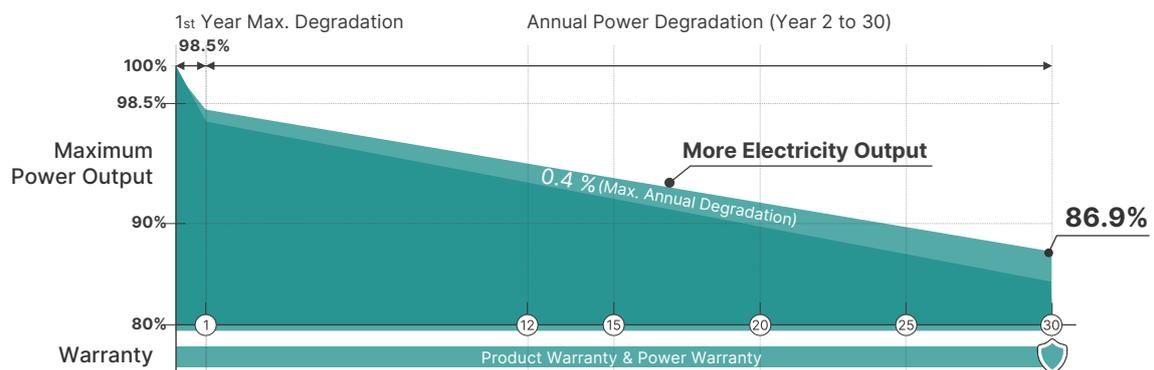


**22.80%**  
Maximum Efficiency

**0 ~ +5W**  
Positive Power Tolerance

**30 Years**  
Product Warranty

**30 Years**  
Power Warranty



## Electrical Data(STC / NOCT)

Test Conditions	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Peak Power Watts- $P_{MAX}$ (Wp)*	420	316	425	320	430	323	435	327	440	330	445	334
Power Tolerance- $P_{MAX}$ (W)	0 ~ +5											
Maximum Power Voltage- $V_{MPP}$ (V)	31.51	29.34	31.70	29.50	31.88	29.63	32.07	29.79	32.26	29.95	32.45	30.11
Maximum Power Current- $I_{MPP}$ (A)	13.33	10.76	13.41	10.83	13.49	10.91	13.57	10.98	13.65	11.06	13.73	11.14
Open Circuit Voltage- $V_{OC}$ (V)	38.11	36.20	38.30	36.38	38.49	36.56	38.68	36.74	38.87	36.92	39.06	37.10
Short Circuit Current- $I_{SC}$ (A)	14.07	11.36	14.15	11.42	14.23	11.49	14.31	11.55	14.39	11.61	14.47	11.67
Module Efficiency $\eta_m$ (%)	21.51	21.51	21.76	21.76	22.02	22.02	22.28	22.28	22.54	22.54	22.80	22.80

\* STC: Air Mass AM1.5, Irradiance at 1000W/m<sup>2</sup>, Cell Temperature 25°C / Measuring tolerance: ±3%.

\* NOCT: Irradiance at 800W/m<sup>2</sup>, Cell Temperature 20°C, Wind Speed 1m/s / Measuring tolerance: ±3%.

## Electrical Characteristics With Different Rear Side Power Gain

10% Maximum Power- $P_{MAX}$ (Wp)	462	467.5	473	478.5	484	489.5
10% Module Efficiency $\eta_m$ (%)	23.66	23.94	24.22	24.51	24.80	25.09
20% Maximum Power- $P_{MAX}$ (Wp)	504	510	516	522	528	534
20% Module Efficiency $\eta_m$ (%)	25.81	26.11	26.42	26.74	27.06	27.38
30% Maximum Power- $P_{MAX}$ (Wp)	546	552.5	559	565.5	572	578.5
30% Module Efficiency $\eta_m$ (%)	27.96	28.29	28.63	28.96	29.29	29.62

\* Power Bifaciality: 80±5%

## Mechanical Data

Solar Cells	Monocrystalline
Cell Orientation	N-TOPCon 108cells (6 x 18)
Module Dimensions	1722mm × 1134mm × 30mm
Weight	24.00kg
Front Glass	2.0mm, Low Iron, AR Coated Heat Strengthened Glass
Encapsulant material	POE
Back Glass	2.0mm, Low Iron, AR Coated Heat Strengthened Glass
Frame	30mm Black,, Anodized Aluminium Alloy
J-Box	IP 68 Rated(3 Bypass Diodes)
Cables	Photovoltaic Technology Cable 4.0mm <sup>2</sup> Portrait: N 1000mm / P 1000mm Length Can be Customized
Connector	MC4 Compatible

\* Please refer to regional datasheet for specific connector.

## Temperature Ratings

NOCT(Nominal Operating Cell Temperature)	43°C (±2°C)
Temperature Coefficient of $P_{MAX}$	-0.320% / °C
Temperature Coefficient of $V_{OC}$	-0.270% / °C
Temperature Coefficient of $I_{SC}$	0.048% / °C

\* Do not connect fuse in combiner box with two or more strings in parallel connection.

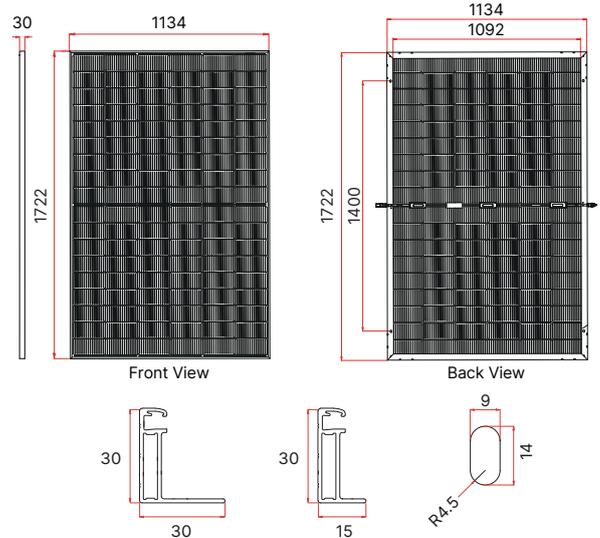
## Application Environment

Operational Temperature	-40 ~ +85°C
Maximum System Voltage	1500V DC
Max Series Fuse Rating	(IEC)25A
Mechanical Performance	P 5400Pa / N 2400Pa

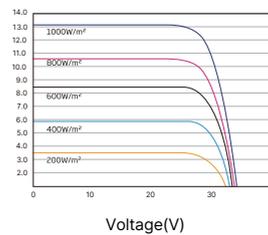
## Packaging Configuration

Modules Per Pallet: 36 Pieces
Modules Per 40' Container: 936 Pieces

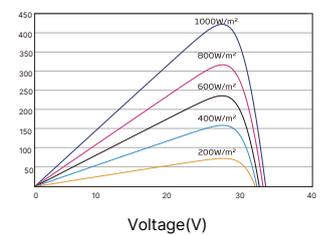
## Dimensions of PV Module (mm)



I-V Curves of PV Module (420W)



P-V Curves of PV Module (420W)



## Warranty

30 Years Product Warranty

30 Years Power Warranty

1.5% First Year Degradation

0.4% Annual Power Degradation

\* Please refer to product warranty for details.