

Solar Panel, Solar Modules, Solar Photovoltaic Modules, PV Modules

430W 435W 445W 450W 455W

MONO HALF -CELL

Explain Model No	Model	Half-Cell	Solar Cell Type	Wattage	Silicon Type
	450W	120PCS	182 × 182 mm	450W	M:Monocrystalline

Remark: 450W is most common model.

Features

■ High module conversion efficiency

Module efficiency up to 21.02%

■ Half-cell Design

Less energy loss cased by shading due to new cell string layout and lower cell connection power loss due to half-cell design.

■ Excellent weak light performance

More power output in weak light condition such as cloudy, morning and sunset

■ Higher Durability against harsh environment

Reliable quality leads to a better sustainability even in harsh environment

■ Lower operating temperature

Lower operating temperature and temperature coefficient increases the power output

■ Anti-PID (Potential induced degradation)

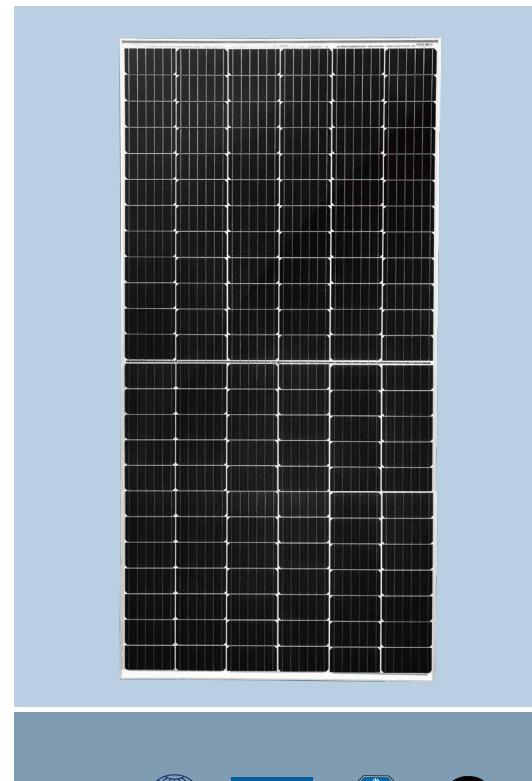
Excellent Anti-PID performance

■ Lower LCOE

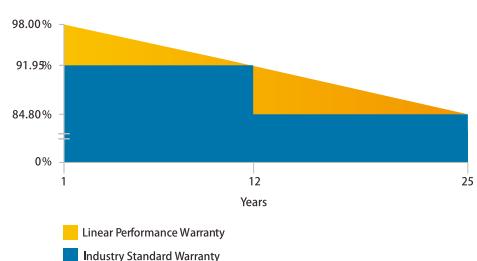
2% more power generation, lower LCOE



Warning: Read the Installation and User Manual in its entirety before handling, installing, and operating smart Solar modules.



25 Years Linear Warranty



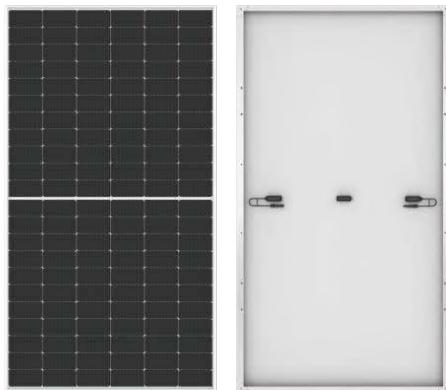
Note: This publication summarizes product warranty and Specification which are subject to change without notice

25 Years Linear Power Output
12 Years Materials and Workmanship

ELECTRICAL PERFORMANCE

Electrical Parameters at Standard Test Conditions (STC)					
Module Type	435W	440 W	445W	450W	455W
Power Output (Pmax / W)	435W	440W	445W	450W	455W
Power Output Tolerances	±3%	±3%	±3%	±3%	±3%
Module Efficiency (η_m)	20.09%	20.33%	20.56%	20.79%	21.02%
Voltage at Pmax (Vmp / V)	34.09V	34.28V	34.48V	34.67V	34.87V
Current at Pmax (Imp / A)	12.77A	12.84A	12.91A	12.98A	13.05A
Open-circuit Voltage (Voc / V)	40.8V	40.95V	41.1V	41.25V	41.04V
Short-circuit Current (Isc / A)	13.67A	13.74A	13.82A	13.89A	13.97A

STC:1000W/m² irradiance,25°C module temperature,AM1.5g Spectrum according to EN 60904-3.



Electrical parameters at NMOT (Irradiance 800 W/m ² , ambient temperature 20 °C, AM=1.5, wind speed 1 m)					
Module Type	435W	440 W	445W	450W	455W
Power Output (Pmax / W)	324	328	332	336	339
Voltage at Pmax (Vmp / V)	32.1V	32.1V	32.2V	32.4V	32.6V
Current at Pmax (Imp / A)	10.01A	10.23A	10.3A	10.36A	10.42A
Open-circuit Voltage (Voc / V)	38.5V	38.6V	38.7V	38.9V	39.1V
Short-circuit Current (Isc / A)	10.97A	11.04A	11.11A	11.17A	11.24A

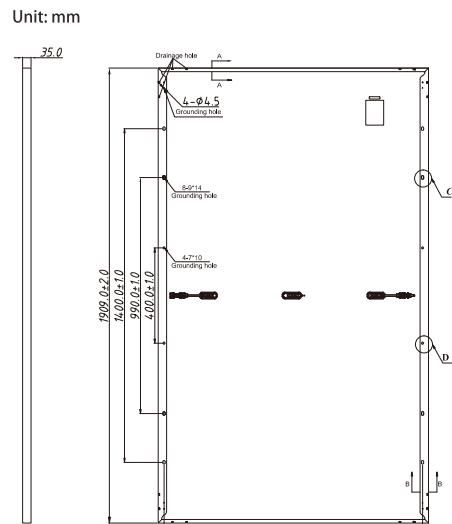
Thermal Characteristics			
Normal operating cell temperature	NMOT	°C	45±2
Temperature coefficient of Pmax	γ	%/°C	43
Temperature coefficient of Voc	βvoc	%/°C	-0.27
Temperature coefficient of Isc	αisc	%/°C	0.05
Temperature coefficient of Vmpp	βvmpp	%/°C	-0.42

Operating Conditions	
Max.system voltage	1500Vdc
Max.series fuse rating	20A
Operating temperature range	-40°C to 85°C
Max.static load,front(e.g.,snow)	5400Pa
Max.static load,back(e.g.,wind)	2400Pa
Max.hailstone impact(diameter)	25mm/23m/s

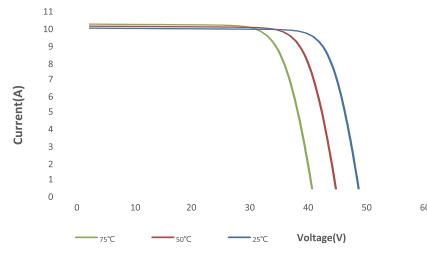
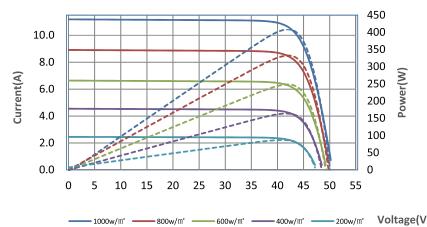
Construction Materials	
Front cover(material/thickness)	low-iron tempered glass/3.2mm
Cell(QTY)	132PCS Mono Perc (182MM)
Frame(Materials)	anodized aluminum alloy/silver/clear
Junction box(protection degree)	≥IP68
Cable (length/cross-sectional area)	300mm/4mm ²

General Characteristics	
Products Dimension(L/W/H)	1909*1134*35mm
Weight	24KGS
QTY of per pallet	30pcs per pallet
Packaging box dimensions	2115*1110*1145MM
No. of pallets for 40HQ containers	22 Pallets (660PCS, GW: 760KGS)

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I-V Curves



Solar Panel, Solar Modules, Solar Photovoltaic Modules, PV Modules

530W 535W 540W 545W 550W

MONO HALF-CELL 10BB

Explain Model No	Product name	Half-Cell	Solar Cell Type	Wattage	Silicon Type
	550W	144 PCS	182 × 182 mm	550W	M:Monocrystalline

Remark: 550W is most common model.

Features

■ High module conversion efficiency

Module efficiency up to 21.3%

■ Half-cell Design

Less energy loss caused by shading due to new cell string layout and lower cell connection power loss due to half-cell design.

■ Excellent weak light performance

More power output in weak light condition such as cloudy, morning and sunset

■ Higher Durability against harsh environment

Reliable quality leads to a better sustainability even in harsh environment

■ Lower operating temperature

Lower operating temperature and temperature coefficient increases the power output

■ Anti-PID (Potential induced degradation)

Excellent Anti-PID performance

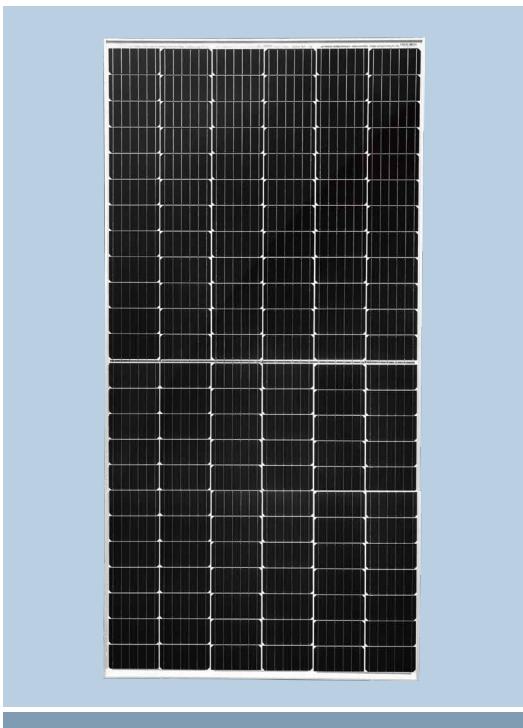
■ Lower LCOE

2% more power generation, lower LCOE

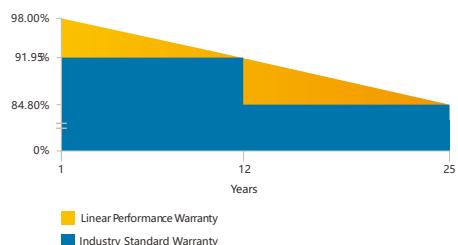


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25 Years Linear Warranty



25 Years Linear Power Output
12 Years Materials and Workmanship

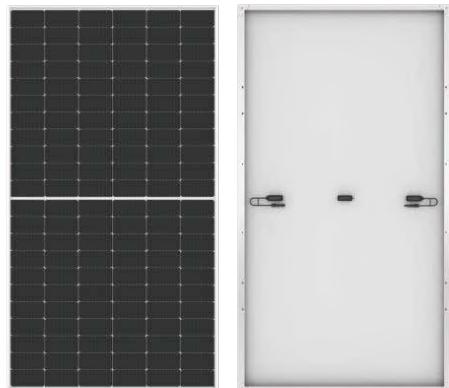
ELECTRICAL PERFORMANCE

Electrical Parameters at Standard Test Conditions(STC)

Module Type	530W	535W	540W	545W	550W
Power Output (Pmax / W)	530W	535W	540W	545W	550W
Power Output Tolerances	±3%	±3%	±3%	±3%	±3%
Module Efficiency (η_m)	20.50%	20.70%	20.89%	21.09%	21.30%
Voltage at Pmax (Vmpp / V)	40.8V	41V	41.19V	41.38V	41.57V
Current at Pmax (Imp / A)	12.99A	13.05A	13.11A	13.17A	13.23A
Open-circuit Voltage (Voc / V)	48.81V	49.02V	49.21V	49.43V	49.62V
Short-circuit Current (Isc / A)	13.83A	13.88A	13.93A	13.98A	14.03A

STC:1000W/m² irradiance,25°C module temperature,AM1.5g Specturm according to EN 60904-3.

Average relative efficiency reduction of 3.3% at 200W/m² according to EN 60904-1.



Electrical parameters at NMOT (Irradiance 800 W/m² , ambient temperature 20 °C, AM=1.5, wind speed 1 m)

Module Type	530W	535W	540W	545W	550W
Power Output (Pmax / W)	394W	398W	402W	405W	409W
Voltage at Pmax (Vmpp / V)	38.5V	38.6V	38.8V	38.9V	39.0V
Current at Pmax (Imp / A)	10.23A	10.3A	10.36A	10.42A	10.48A
Open-circuit Voltage (Voc / V)	46.1V	46.2V	46.4V	46.5V	46.7V
Short-circuit Current (Isc / A)	11.06A	11.12A	11.17A	11.23A	11.29A

Thermal Characteristics

Normal operating cell temperature	NOCT	°C	45±2
Temperature coefficient of Pmax	γ	%/°C	-0.35
Temperature coefficient of Voc	β_{voc}	%/°C	-0.27
Temperature coefficient of Isc	α_{isc}	%/°C	0.05
Temperature coefficient of Vmpp	β_{vmpp}	%/°C	-0.42

Operating Conditions

Max.system voltage	1500Vdc
Max.series fuse rating	20A
Operating temperature range	-40°C to 85°C
Max.static load,front(e.g.,snow)	5400Pa
Max.static load,back(e.g.,wind)	2400Pa
Max.hailstone impact(diameter)	25mm/23m/s

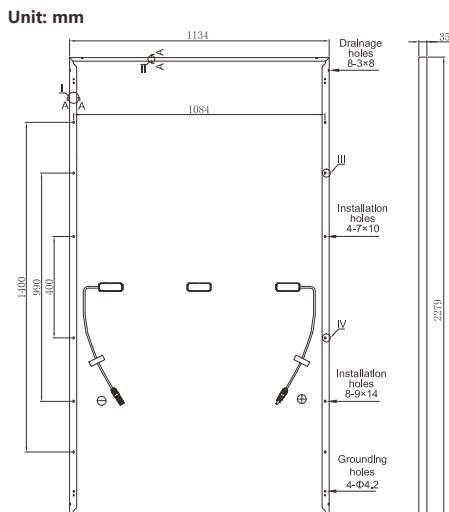
Construction Materials

Front cover(material/thickness)	low-iron tempered glass/3.2mm
Cell(QTY)	144PCS Mono Perc (182MM)
Frame(Materials)	anodized aluminum alloy/silver/clear
Junction box(protection degree)	≥IP68
Cable (length/cross-sectional area)	300mm/4mm ²

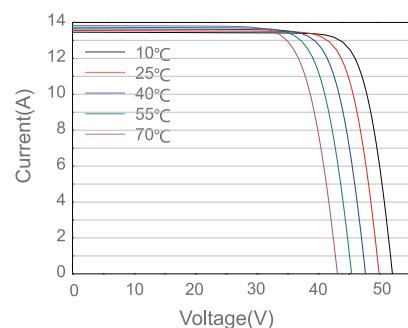
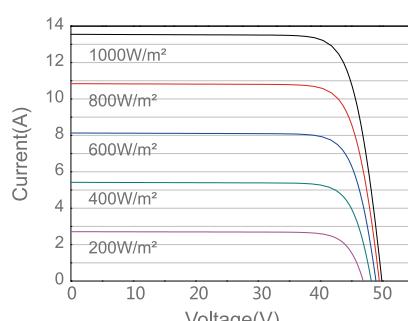
General Characteristics

Products Dimension(L/W/H)	2279*1134*35mm
Weight	28.5KGS
QTY of per pallet	31pcs per pallet
Packaging box dimensions	2295*1095*1145MM
No. of pallets for 40HQ containers	20 Pallets (620PCS, GW: 940KGS)

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I-V Curve



Solar Panel, Solar Modules, Solar Photovoltaic Modules, PV Modules

645W 650W 655W 660W 665W 670W 675W

MONO HALF-CELL 12BB

Explain Model No	Product name	Half-Cell	Solar Cell Type	Wattage	Silicon Type
	650W	132PCS	210 x 210mm	650W	M:Monocrystalline

Remark: 650W is most common model.

Features

■ High module conversion efficiency

Module efficiency up to 21.5%

■ Sand blowing test

Sand blowing test, salt mist test and ammonia test passed to endure harsh environments

■ Special cutting and soldering technology

Special cutting and soldering technology leads to low hotspot risk

■ Optimized system

Optimized system performance due to module level current sorting

■ Highly transparent self-cleaning glass

Highly transparent self-cleaning glass brings additional yield and easy maintenance

■ Anti-PID (Potential induced degradation)

Selected encapsulating material and stringent production process control ensure the product is highly PID resistant and snail trails free

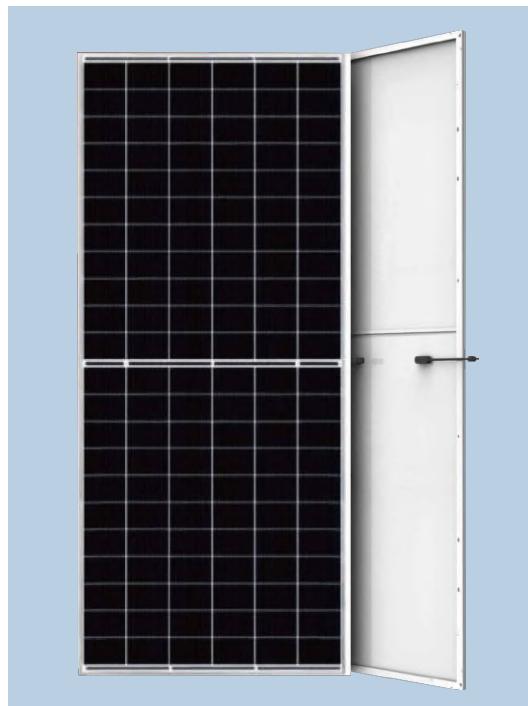
■ Rigorous quality control

Rigorous quality control to meet the highest standard: ISO9001:2015, ISO14001:2015 and OHSAS: 18001 2007

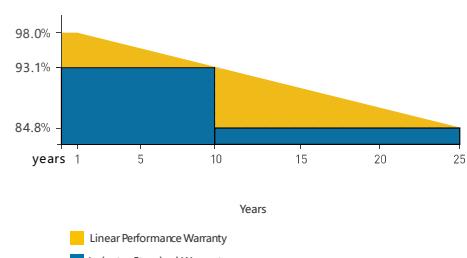


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25 Years Linear Warranty



25 Years Linear Power Output
12 Years Materials and Workmanship

ELECTRICAL PERFORMANCE

Electrical Parameters at Standard Test Conditions(STC)

Module Type	650W	655W	660W	665W	670W
Power Output (Pmax / W)	650W	655W	660W	665W	670W
Power Output Tolerances	(0, +5W)				
Module Efficiency (η_m)	20.9%	21.0%	21.2%	21.4%	21.5%
Voltage at Pmax (Vm _p / V)	37.4V	37.6V	37.8V	38.0V	38.2V
Current at Pmax (I _m / A)	17.38A	17.42A	17.46A	17.50A	17.54A
Open-circuit Voltage (V _{oc} / V)	45.2V	45.4V	45.2V	45.8V	46.0V
Short-circuit Current (I _{sc} / A)	18.46A	18.50A	18.46A	18.60A	18.65A

STC:1000W/m² irradiance,25°C module temperature,AM1.5g Specturm according to EN 60904-3.

Average relative efficiency reduction of 3.3% at 200W/m² according to EN 60904-1.

Electrical parameters at NMOT (Irradiance 800 W/m² , ambient temperature 20 °C , AM=1.5, wind speed 1 m)

Module Type	650W	655W	660W	665W	670W
Power Output (Pmax / W)	492W	496W	500W	504W	509W
Voltage at Pmax (Vm _p / V)	34.9V	35.1V	35.3V	35.5V	35.7V
Current at Pmax (I _m / A)	14.09A	14.13A	14.13A	14.22A	14.27A
Open-circuit Voltage (V _{oc} / V)	42.6V	42.8V	43.0V	43.2V	43.4V
Short-circuit Current (I _{sc} / A)	14.85A	14.88A	14.92A	14.96A	15.00A

Thermal Characteristics

Normal operating cell temperature	NOCT	°C	43±2
Temperature coefficient of Pmax	γ	%/°C	-0.340
Temperature coefficient of V _{oc}	β_{voc}	%/°C	-0.250
Temperature coefficient of I _{sc}	α_{isc}	%/°C	+0.040
Temperature coefficient of V _{mpp}	β_{vmpp}	%/°C	-0.42

Operating Conditions

Max.system voltage	1500Vdc
Max.series fuse rating	25A
Operating temperature range	-40°C to 85°C
Max.static load,front(e.g.,snow)	5400Pa
Max.static load,back(e.g.,wind)	2400Pa
Max.hailstone impact(diameter)	25mm/23m/s

Construction Materials

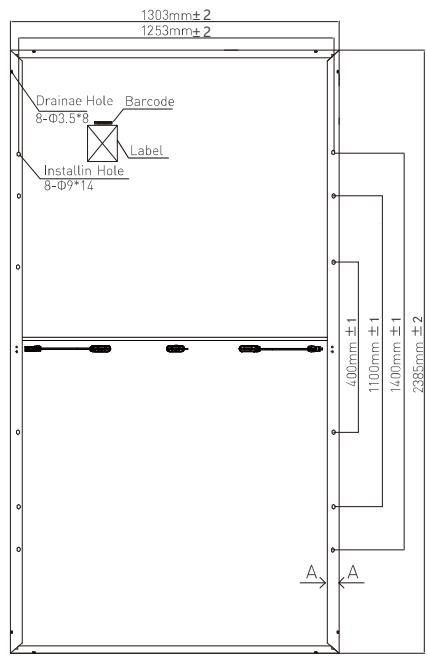
Front cover(material/thickness)	low-iron tempered glass/3.2mm
Cell(QTY)	132PCS Mono Perc (210MM)
Frame(Materials)	anodized aluminum alloy/silver/clear
Junction box(protection degree)	≥IP68
Cable (length/cross-sectional area)	300mm/4mm ²

General Characteristics

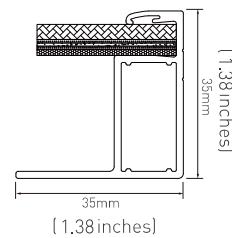
Products Dimension(L/W/H)	2385*1303*35mm
Weight	35.7KGS
QTY of per pallet	31pcs per pallet
Packaging box dimensions	2295*1095*1145MM
No. of pallets for 40HQ containers	6 Pallets (558PCS, for 40HQ) GW: 788KGS/Pallet

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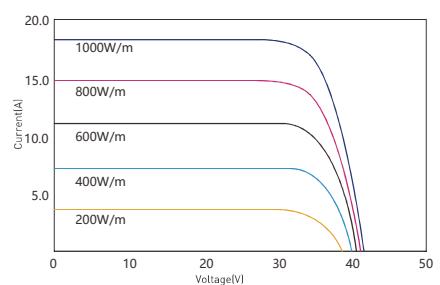
Module Dimension



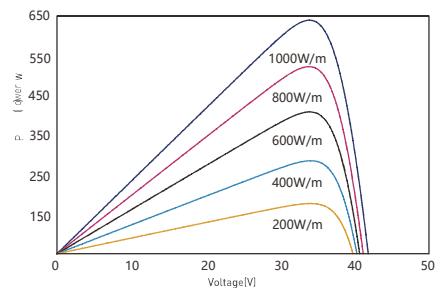
Back View



I-V Curve at Different Temperature (645W)



P-V Curve at Different Irradiation (645W)



385~410 Watt Full Black PV Module

Solar Panel, Solar Modules, Solar Photovoltaic Modules, PV Modules

390W Full Black 395W Full Black 400W Full Black

405W Full Black 410W Full Black

MONO PERC

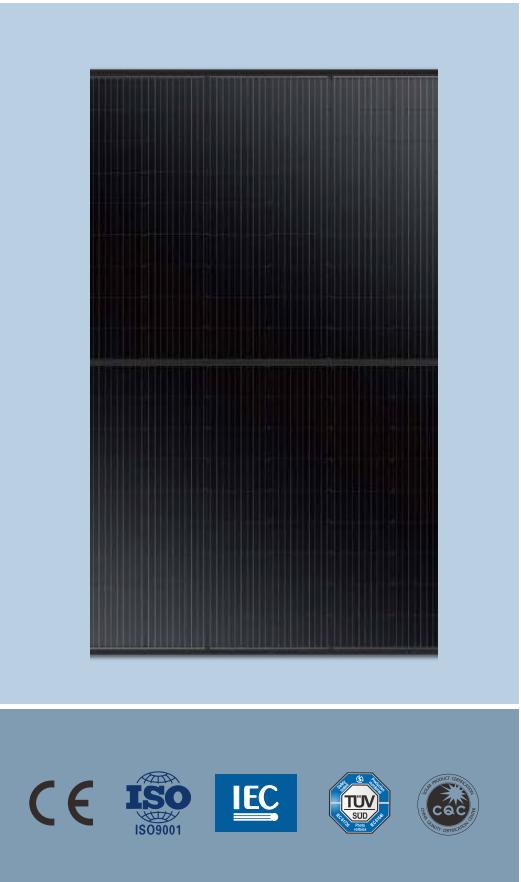
Explain Model No	Model	Half-Cell	Solar Cell Type	Wattage	Silicon Type
	405W Full Black	108PCS	182 x 182 mm	405W	M:Monocrystalline

Remark: 405W Full Black is most common model.

Features

■ High module conversion efficiency

Module efficiency up to 21%



■ Mono PERC Design

Less energy loss cased by shading due to new cell string layout and lower cell connection power loss due to Mono PERC design.

■ Excellent weak light performance

More power output in weak light condition such as cloudy, morning and sunset

■ Higher Durability against harsh environment

Reliable quality leads to a better sustainability even in harsh environment

■ Lower operating temperature

Lower operating temperature and temperature coefficient increases the power output

■ Anti-PID (Potential induced degradation)

Excellent Anti-PID performance



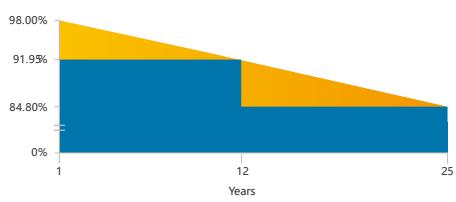
■ Anti-LID (Light Induced Degradation)

Excellent Anti-LID performance

■ Lower LCOE

2% more power generation, lower LCOE

25 Years Linear Warranty



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25 Years Linear Power Output
12 Years Materials and Workmanship

ELECTRICAL PERFORMANCE

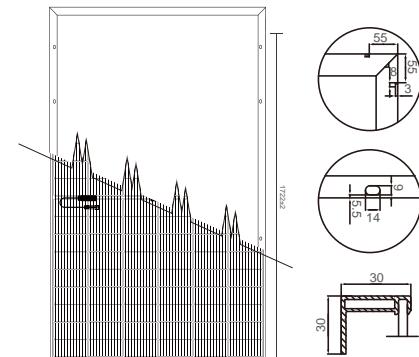
Electrical Parameters at Standard Test Conditions (STC)					
Module Type	390W Full Black	395W Full Black	400W Full Black	405W Full Black	410W Full Black
Power Output (Pmax / W)	390W	395W	400W	405W	410W
Power Output Tolerances	(0, +4.99W)				
Module Efficiency (η m)	20.00%	20.20%	20.50%	20.8%	21.00%
Voltage at Pmax (Vmp / V)	30.64V	30.84V	31.01V	31.21V	31.45V
Current at Pmax (Imp / A)	12.73A	12.81A	12.90A	12.98A	13.04A
Open-circuit Voltage (Voc / V)	36.85V	36.98V	37.07V	37.23V	37.32V
Short-circuit Current (Isc / A)	13.61A	13.70A	13.79A	13.87A	13.95A

STC:1000W/m² irradiance,25°C module temperature,AM1.5g Spectrum according to EN 60904-3.
Average relative efficiency reduction of 3.3% at 200W/m² according to EN 60904-1.



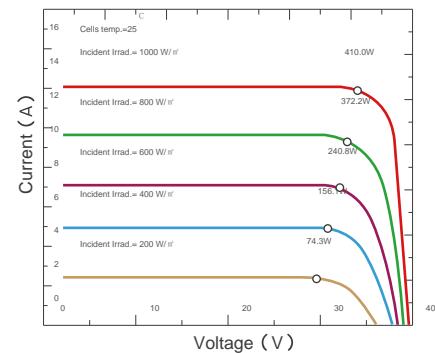
Electrical parameters at NMOT (Irradiance 800 W/m ² , ambient temperature 20 °C, AM = 1.5, wind speed 1 m)					
Module Type	390W Full Black	395W Full Black	400W Full Black	405W Full Black	410W Full Black
Power Output (Pmax / W)	294W	298W	302W	306W	310W
Voltage at Pmax (Vmp / V)	28.87V	29.08V	29.26V	29.47V	29.72V
Current at Pmax (Imp / A)	10.18A	10.25A	10.32A	10.38A	10.43A
Open-circuit Voltage (Voc / V)	34.62V	34.75V	34.88V	35.12V	35.23V
Short-circuit Current (Isc / A)	10.89A	10.96A	11.03A	11.10A	11.16A

Temperature Characteristics			
Normal operating cell temperature	NOCT	°C	45±2
Temperature coefficient of Pmax	γ	%/°C	-0.35
Temperature coefficient of Voc	βvoc	%/°C	-0.275
Temperature coefficient of Isc	αisc	%/°C	0.045
Temperature coefficient of Vmpp	βvmpp	%/°C	-0.275

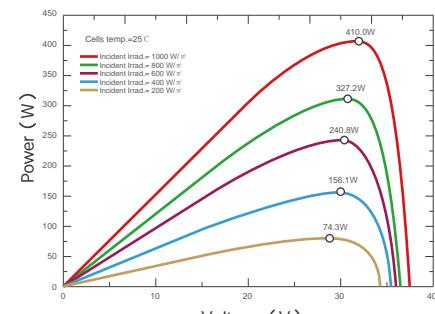


All Dimensions in mm
The above drawing is a graphical representation of the product.
For engineering quality drawings please contact SankoPower.

Operating Conditions	
Max.system voltage	1500Vdc
Max.series fuse rating	25A
Operating temperature range	-40°C to 85°C
Max.static load,front(e.g.,snow)	5400Pa
Max.static load,back(e.g.,wind)	2400Pa
Max.hailstone impact(diameter)	23.5mm/23m/s



Construction Materials	
Front Glass	AR Coated 3.2mm tempered glass
Cell(QTY)	108PCS Mono Perc (182MM)
Frame(Materials)	anodized aluminum alloy
Junction box(protection degree)	≥IP68
Cable (length/cross-sectional area)	300mm/4mm ²



General Characteristics	
Products Dimension(L/W/H)	1722*1134*35mm
Weight	20.5KGS
QTY of per pallet	36pcs per pallet
Packaging box dimensions	1820*1150*1200MM
No. of pallets for 40HQ containers	6 pallets(216pcs for 20GP)/26 Pallets (936PCS, for 40HQ) GW.: 788KGS/Pallet

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395~415 Watt PV Module (Mini Size)

Solar Panel, Solar Modules, Solar Photovoltaic Modules, PV Modules

395W Mini 400W Mini 405W Mini
410W Mini 415W Mini

MONO PERC

Explain Model No	Model	Half-Cell	Solar Cell Type	Wattage	Silicon Type
	410W Mini	108PCS	182 x 91 mm	410 W	M:Monocrystalline

Remark: 410W Mini is most common model.

Features

■ Higher system voltages

Higher system voltages can effectively reduce BOS

■ Lower operating temperature

Lower operating temperature and temperature coefficient, obtain higher profit

■ Significantly reduce the effect

Significantly reduce the effect of hot spot temperature and shadow shielding

■ Half-cut design

Half-cut design for better mechanical load performance

■ Ease of use

Ease of use in more demanding environments

■ Anti-PID (Potential induced degradation)

Excellent Anti-PID performance

■ Anti-LID (Light Induced Degradation)

Excellent Anti-LID performance

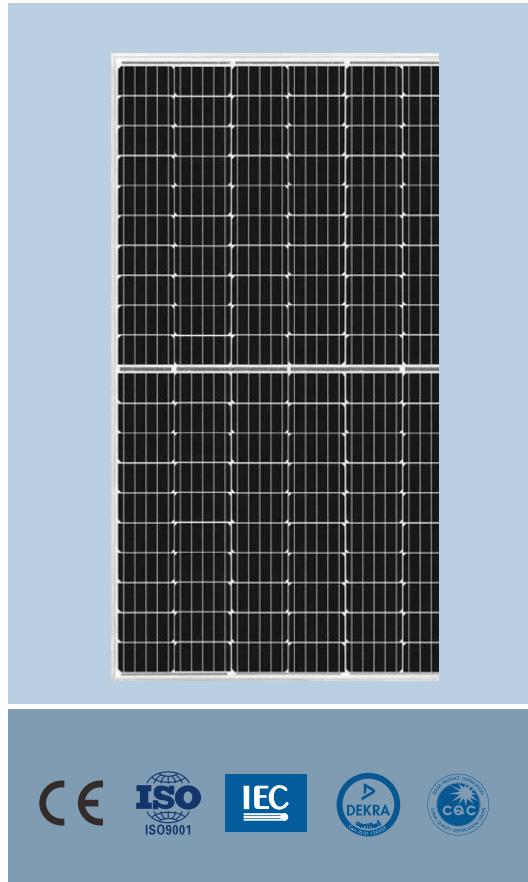
■ Lower LCOE

2% more power generation, lower LCOE

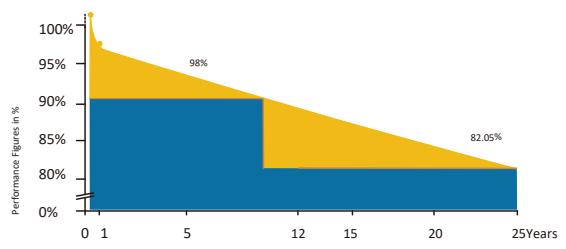


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25 Years Linear Warranty



25 Years Linear Power Output
12 Years Materials and Workmanship

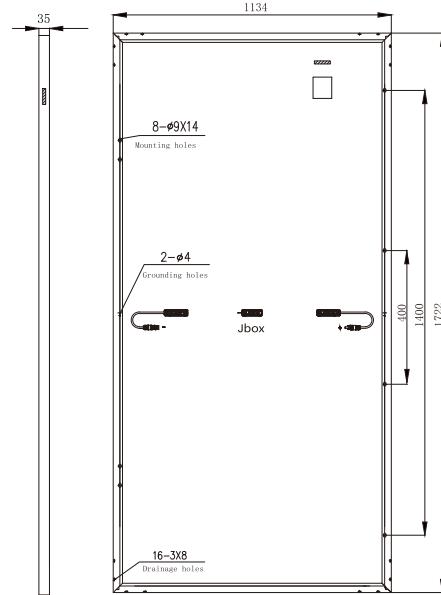
ELECTRICAL PERFORMANCE

Electrical Parameters at Standard Test Conditions(STC)

Module Type	395W Mini	400W Mini	405W Mini	410W Mini	415W Mini
Power Output (Pmax / W)	395W	400W	405W	410W	415W
Power Tolerance (%)	(0, +3W)				
Voltage at Pmax (Vmpp / V)	30.32V	30.42V	30.52V	30.62V	30.79V
Current at Pmax (Impp / A)	13.03A	13.15A	13.27A	13.39A	13.48A
Open-circuit Voltage (Voc / V)	36.90V	36.98V	37.06V	37.14V	37.31V
Short-circuit Current (Isc / A)	13.71A	13.78A	13.85A	13.92A	14.01A
Module Efficiency (η %)	20.23%	20.48%	20.74%	21.00%	21.25%

STC:1000W/m² irradiance,25°C module temperature,AM1.5g Specturm according to EN 60904-3.

Average relative efficiency reduction of 3.3% at 200W/m² according to EN 60904-1.



Electrical parameters at NMOT (Irradiance 800 W/m² , ambient temperature 20 °C, AM=1.5, wind speed 1 m)

Module Type	395W Mini	400W Mini	405W Mini	410W Mini	415W Mini
Power Output (Pmax / W)	294W	298W	301W	305W	309W
Voltage at Pmax (Vmpp / V)	28.26V	28.42V	28.56V	28.72V	28.88V
Current at Pmax (Impp / A)	10.40A	10.47A	10.55A	10.62A	10.69A
Open-circuit Voltage (Voc / V)	34.83V	34.90V	34.98V	35.05V	35.21V
Short-circuit Current (Isc / A)	11.07A	11.13A	11.19A	11.24A	11.32A

Temperature Characteristics

Normal operating cell temperature	NOCT	°C	45±2
Temperature coefficient of Pmax	γ	%/°C	-0.32
Temperature coefficient of Voc	β_{VOC}	%/°C	-0.26
Temperature coefficient of Isc	α_{ISC}	%/°C	0.054

Operating Conditions

Max.system voltage	1500Vdc
Max.series fuse rating	25A
Operating temperature range	-40°C to 85°C
Max.static load,front(e.g.,snow)	5400Pa
Max.static load,back(e.g.,wind)	2400Pa
Max.hailstone impact(diameter)	23.5mm/23m/s

Construction Materials

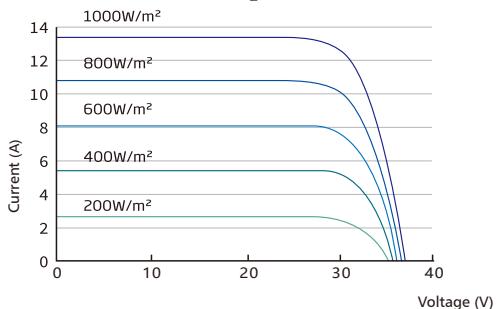
Front Glass	AR Coated 3.2mm tempered glass
Cell(QTY)	108PCS Mono Perc (182MM)
Frame(Materials)	anodized aluminum alloy
Junction box(protection degree)	≥IP68
Cable (length/cross-sectional area)	350mm/4mm ²

General Characteristics

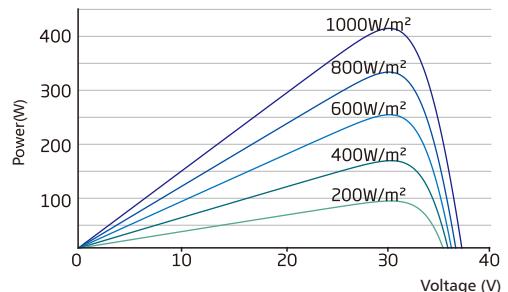
Products Dimension(L/W/H)	1722*1134*35mm
Weight	22KGS
QTY of per pallet	31pcs per pallet
Packaging box dimensions	1758*1170*1220MM
No. of pallets for 40HQ containers	26 Pallets (806PCS, for 40HQ) GW: 788KGS/Pallet

Note: This publication summarizes product warranty and specification which are subject to change without notice.

Current--Voltage



Power--Voltage



360~380 Mono Half-Cut Module (Mini Size)

Solar Panel, Solar Modules, Solar Photovoltaic Modules, PV Modules

360W Mini

365W Mini

370W Mini

375W Mini

380W Mini

MONO PERC

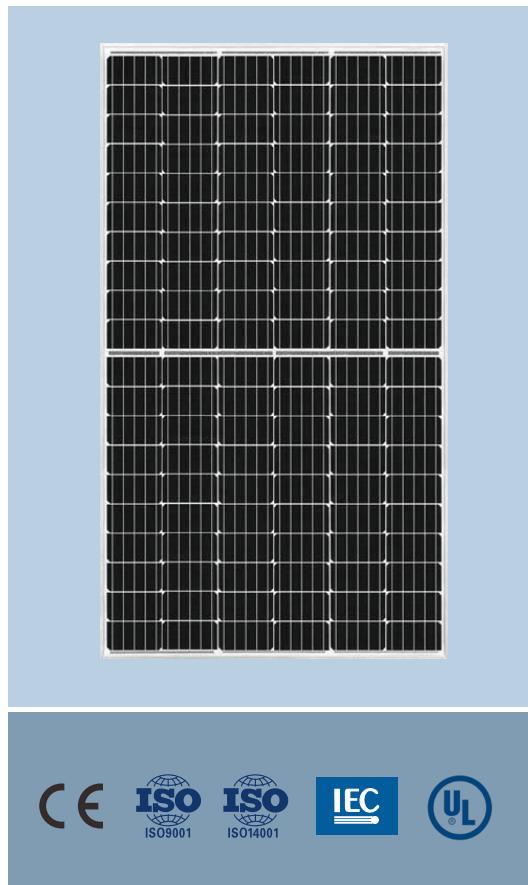
Explain Model No	Model	Half-Cell	Solar Cell Type	Wattage	Silicon Type
	375W Mini	120PCS	166 x 166 mm	375 W	M:Monocrystalline

Remark: 375W Mini is most common model.

Features

■ High module conversion efficiency

Module efficiency up to 21.02%



■ Conforms with Standards

Conforms with IEC 61215:2016, IEC 61730:2016, UL 61730 PV Standards, PID Test

■ Mechanical Load Capability

Mechanical Load Capability of up to 5400 Pa

■ Easy Installation

Easy Installation and Handling for Various Applications

■ Safety

Application Class A, Safety Class II, Fire Rating C(IEC) or Type 1(US)

■ Anti-PID (Potential induced degradation)

Excellent Anti-PID performance



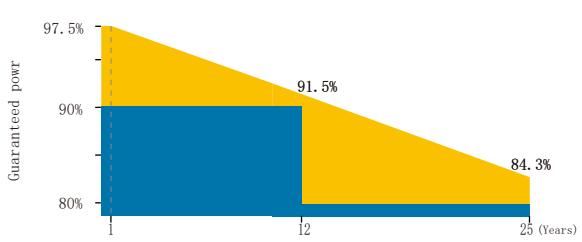
■ Anti-LID (Light Induced Degradation)

Excellent Anti-LID performance

■ Lower LCOE

2% more power generation, lower LCOE

25 Years Linear Warranty



Warning: Read the Installation and User Manual in its entirety before handling, installing, and operating smart Solar modules.

Note: This publication summarizes product warranty and specification which are subject to change without notice

25 Years Linear Power Output
12 Years Materials and Workmanship

ELECTRICAL PERFORMANCE

Electrical Parameters at Standard Test Conditions (STC)

Module Type	360W Mini	365W Mini	370W Mini	375W Mini	380W Mini
Power Output (Pmax / W)	360W	365W	370W	375W	380W
Power Tolerance (%)	(0, +5W)				
Module Efficiency (η_m)	19.76%	20.04%	20.31%	20.59%	20.86%
Voltage at Pmax (Vmp / V)	34.0V	34.2V	34.4V	34.6V	34.8V
Current at Pmax (Imp / A)	10.59A	10.68A	10.76A	10.84A	10.92A
Open-circuit Voltage (Voc / V)	40.5V	40.7V	40.9V	41.1V	41.3V
Short-circuit Current (Isc / A)	11.35A	11.43A	11.52A	11.60A	11.69A

STC: 1000W/m² irradiance, 25°C module temperature, AM1.5g Specturm according to EN 60904-3.

Average relative efficiency reduction of 3.3% at 200W/m² according to EN 60904-1.

Electrical parameters at NMOT (Irradiance 800 W/m², ambient temperature 20 °C, AM=1.5, wind speed 1 m)

Module Type	360W Mini	365W Mini	370W Mini	375W Mini	380W Mini
Power Output (Pmax / W)	267W	270W	274W	278W	282W
Voltage at Pmax (Vmp / V)	31.1V	31.3V	31.5V	31.7V	31.9V
Current at Pmax (Imp / A)	8.57A	8.64A	8.71A	8.78A	8.85A
Open-circuit Voltage (Voc / V)	38.20V	38.40V	38.50V	38.70V	38.90V
Short-circuit Current (Isc / A)	9.03A	9.09A	9.17A	9.26A	9.34A

Temperature Characteristics

Normal operating cell temperature	NOCT	°C	45±2
Temperature coefficient of Pmax	γ	%/°C	-0.348
Temperature coefficient of Voc	β_{voc}	%/°C	-0.27
Temperature coefficient of Isc	α_{isc}	%/°C	0.048

Operating Conditions

Max.system voltage	1500Vdc
Max.series fuse rating	20A
Operating temperature range	-40°C to 85°C
Max.static load,front(e.g.,snow)	5400Pa
Max.static load,back(e.g.,wind)	2400Pa
Max.hailstone impact(diameter)	23.5mm/23m/s

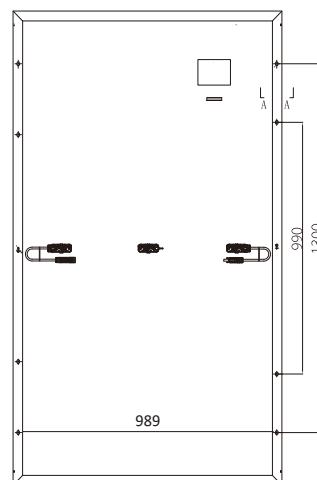
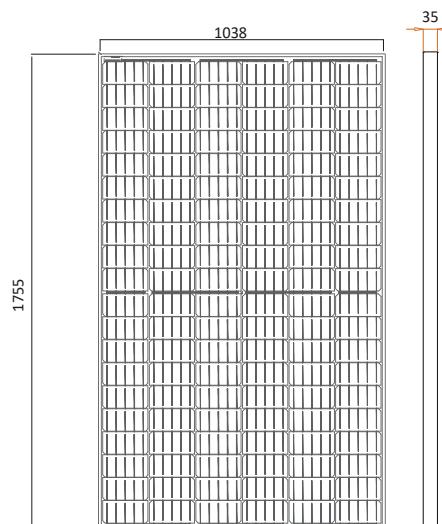
Construction Materials

Front Glass	AR Coated 3.2mm tempered glass
Cell(QTY)	120PCS Mono Perc (166MM)
Frame(Materials)	anodized aluminum alloy
Junction box(protection degree)	≥IP68
Cable (length/cross-sectional area)	350mm/4mm ²

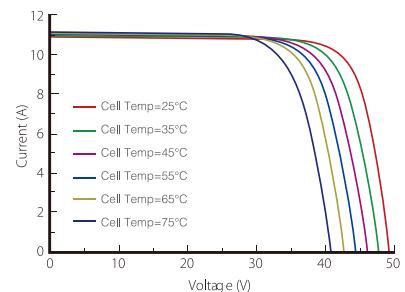
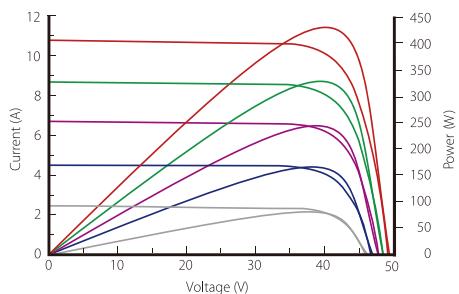
General Characteristics

Products Dimension(L/W/H)	1755*1038*35mm
Weight	19.5KGS
QTY of per pallet	31pcs per pallet
Packaging box dimensions	1758*1170*1220MM
No. of pallets for 40HQ containers	6 pallets(186pcs for 20GP)/26 Pallets (806PCS, for 40HQ) GW.: 788KGS/Pallet

Note: This publication summarizes product warranty and specification which are subject to change without notice.



Drawing Only for Reference



300~320 Mono Solar Module

Solar Panel, Solar Modules, Solar Photovoltaic Modules, PV Modules

300W 305W 310W 315W 320W

MONO PERC

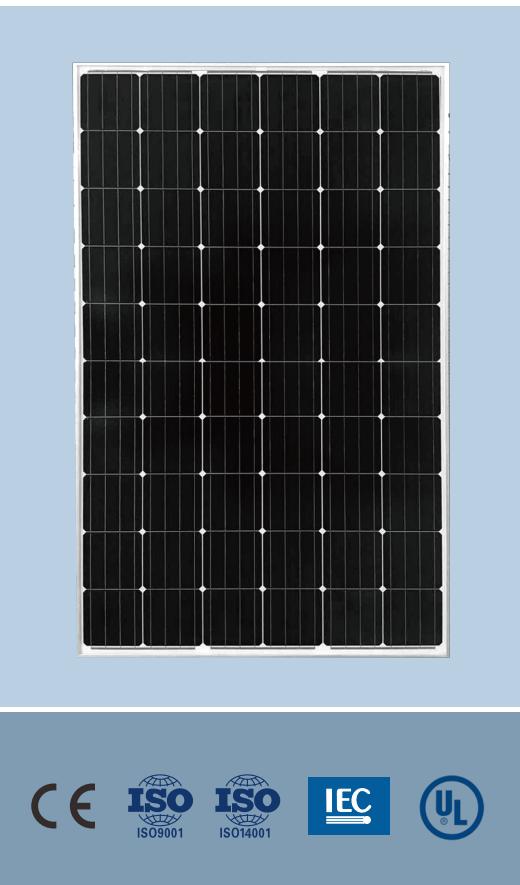
Explain Model No	Model	Half-Cell	Solar Cell Type	Wattage	Silicon Type
	300W	60PCS	157 x 157 mm	300W	M:Monocrystalline

Remark: 300W is most common model.

Features

■ High module conversion efficiency

Module efficiency up to 19.67%



■ Conforms with Standards

Conforms with IEC 61215:2016, IEC 61730:2016, UL 61730 PV Standards, PID Test

■ Mechanical Load Capability

Mechanical Load Capability of up to 5400 Pa

■ Easy Installation

Easy Installation and Handling for Various Applications

■ Safety

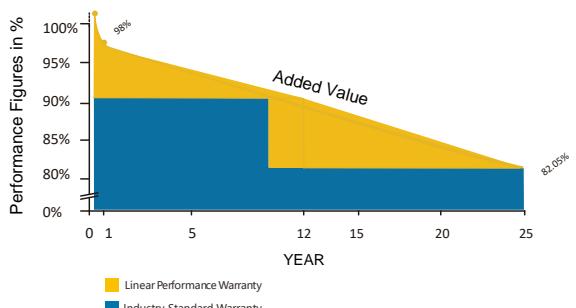
Application Class A, Safety Class II, Fire Rating C(IEC) or Type 1(US)



Warning: Read the Installation and User Manual in its entirety before handling, installing, and operating smart Solar modules.

Note: This publication summarizes product warranty and specification which are subject to change without notice

25 Years Linear Warranty



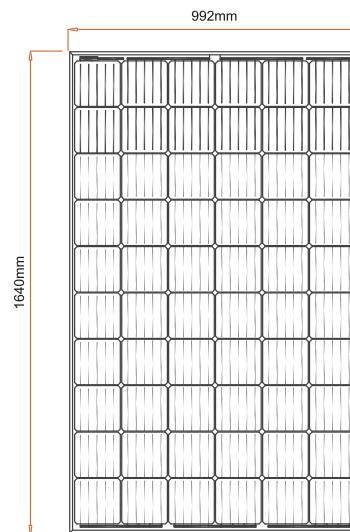
25 Years Linear Power Output
12 Years Materials and Workmanship

ELECTRICAL PERFORMANCE

Electrical Parameters at Standard Test Conditions(STC)					
Module Type	300W	305W	310W	315W	320W
Power Output (Pmax / W)	300W	305W	310W	315W	320W
Power Tolerance (%)	(0, +5W)				
Module Efficiency (η_{m})	18.45%	18.75%	19.07%	19.36%	19.67%
Voltage at Pmax (Vmp / V)	32.7V	32.8V	32.9V	33.1V	33.2V
Current at Pmax (Imp / A)	9.18A	9.30A	9.43A	9.53A	9.64A
Open-circuit Voltage (Voc / V)	39.7V	39.8V	39.9V	40.1V	40.2V
Short-circuit Current (Isc / A)	9.76A	9.85A	9.97A	10.04A	10.07A

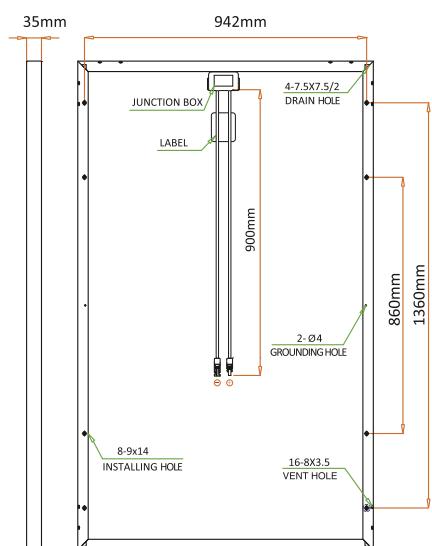
STC:1000W/m² irradiance,25°C module temperature,AM1.5g Specturm according to EN 60904-3.

Average relative efficiency reduction of 3.3% at 200W/m² according to EN 60904-1.



Electrical parameters at NMOT (Irradiance 800 W/m² , ambient temperature 20 °C , AM=1.5, wind speed 1 m)

Module Type	300W	305W	310W	315W	320W
Power Output (Pmax / W)	222W	226W	230W	234W	238W
Voltage at Pmax (Vmp / V)	30.2V	30.3V	30.4V	30.5V	30.6V
Current at Pmax (Imp / A)	7.36A	7.46A	7.57A	7.68A	7.78A
Open-circuit Voltage (Voc / V)	36.8V	36.9V	37.0V	37.1V	37.2V
Short-circuit Current (Isc / A)	7.98A	8.10A	8.20A	8.30A	8.40A



Temperature Characteristics

Normal operating cell temperature	NOCT	°C	45±2
Temperature coefficient of Pmax	γ	%/°C	-0.43
Temperature coefficient of Voc	β_{voc}	%/°C	-0.31
Temperature coefficient of Isc	α_{isc}	%/°C	0.03

Operating Conditions

Max.system voltage	1000Vdc
Max.series fuse rating	20A
Operating temperature range	-40°C to 85°C
Max.static load,front(e.g.,snow)	5400Pa
Max.static load,back(e.g.,wind)	2400Pa
Max.hailstone impact(diameter)	23.5mm/23m/s

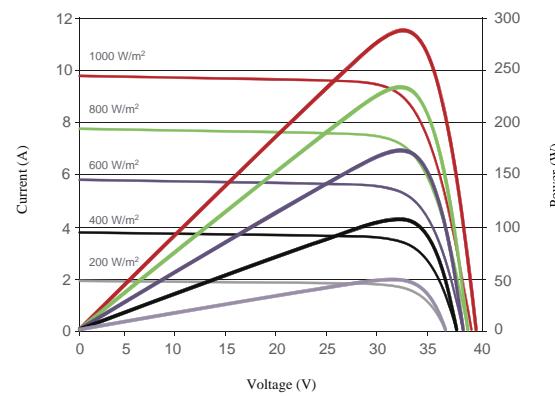
Construction Materials

Front Glass	High Transmission, Low Iron, Tempered Glass
Cell(QTY)	60PCS Mono Perc (157MM)
Frame(Materials)	Anodized Aluminum Alloy
Junction box(protection degree)	IP68 Rated, With Bypass Diodes
Cable (length/cross-sectional area)	4 mm ² (EU)/12 AWG (US), 900 mm

General Characteristics

Products Dimension(L/W/H)	1640*992*35mm
Weight	19KGS
QTY of per pallet	31pcs per pallet
Packaging box dimensions	1690*1102*1135MM
No. of pallets for 40HQ containers	12 pallets(372pcs for 20GP)/28pallets(868pcs for 40GP)/28 Pallets (938PCS, for 40HQ)

Note: This publication summarizes product warranty and specification which are subject to change without notice.



100W-Folding Solar Panel

Solar Panel Specification

Product Name	100W-Folding Solar Panel
Unfold size	1370*540*25mm
Fold size	620*540*25mm



Sankopower Solar Panel Parameters

Specifications			
Dimensions		Electrical Parameters at Standard Test Conditions	
Item	Specification	Item	Specification
Backboard(mm)	1.6mm	Solar Crystal Silicon	Sankopower
Colour	Black	Electrical Tolerance	Voltage(V)±8% Current(mA)±8%
Single Chip Size (mm)	166*41.5mm±0.1mm	VOC(V)	20.16V
ETFE Size(mm)	1400*580mm±0.2mm	ISC(mA)	4.96A
Thickness (mm)	3.0mm±0.3mm	Operating Voltage(V)	24V
Overall Size (mm)	1370*540mm±0.3mm	Operating Current(mA)	5.23A
Packaging Requirements	ETFE Lamination	Power(w)	100w
Output Interface	DC5521/DC6514	Module Efficiency	22.6%

Guarantee period:

1. Module guarantee period: one year

Standard Test Conditions and method:

1. After being laminated, the solar panel is mainly tested for its working current.
2. Solar radiation intensity : 1000W/ m² (100000LUX) or luminance of halogen tungsten lamp : 38000LUX without shielding.
3. Temperature: 25°C
4. Humidity: 10 ~ 90%
5. AM: AM1.5
6. Test method: load tester is used.

Current Test :

1. Adjust the light intensity to standard light intensity.
2. When load tester is used and the voltage is limited to 20.16V, it is qualified with line test, Working current no less than 9.42A is qualified.
3. Calibration of light intensity on time.

Environmental conditions for use and storage:

1. Storage conditions: room temperature, humidity not more than 60%.
2. Outdoors, uncovered, under the sun.
3. working ambient temperature: - 20°C~60°C
4. Solar panels of dust-proof and water-proof level: IP45

Precautions for transportation, use and storage environmental conditions:

1. This product shall not be in contact with highly corrosive substances.
2. Avoid scratching and hitting the surface of the solar panel.
3. Solar panels cannot withstand bending stress during transportation and assembly.

Appearance Standard:

Inspection standard: under **45° with** 45cm distance.

Check time:

Test	Front	Back
Time (Second)	5	3

1. Surface is clean.
2. No obvious color difference. (signed sample).
3. No serious breakage, crack, bubble, foreign body, dislocation of battery, no obvious color difference and white streak.
4. Edge breakage of battery sheet: the acceptance length is 5mm and the width is 0.2mm. A product can only have two places.
5. Cell missing Angle: the missing Angle of cell leads to copper leakage bright spot, the acceptable area is less than 0.6mm, no more than two places for one product.
6. Acceptable edge and middle part of blue light dot on the cell sheet, acceptable single area less than 1mm single, no more than two.
7. Scratches: acceptable less than 5* 0.15mm, a single product shall not exceed two.
8. White spots and impurities between cells, the accepted diameter shall not exceed 1.5mm, the color is dark, not too bright.
9. The accepted diameter of the pit point on the back plate is not more than 0.5mm and the depth is not more than 0.15mm, which is not obvious visually
10. Both ends of the battery and the edge of the edge part of the white streak is a normal phenomenon.
11. In case of any dispute over the above standards, the limited sample temporarily confirmed by both parties shall prevail .

Package:

1. Solar panels after been tested is qualified, packed in cartons.

200W-Folding Solar Panel

Solar Panel Specification

Product Name	200W-Folding Solar Panel
Unfold size	2385*540*25mm
Fold size	620*540*38mm



Sankopower Solar Panel Parameters

Specifications			
Dimensions		Electrical Parameters at Standard Test Conditions	
Item	Specification	Item	Specification
Backboard(mm)	1.6mm	Solar Crystal Silicon	Sankopower
Colour	Black	Electrical Tolerance	Voltage(V)±8% Current(mA)±8%
Single Chip Size (mm)	166*41.5mm±0.1mm	VOC(V)	20V
ETFE Size(mm)	2410*580mm±0.2mm	ISC(mA)	9.92A
Thickness (mm)	3.0mm±0.3mm	Operating Voltage(V)	24V
Overall Size (mm)	2385*540mm±0.3mm	Operating Current(mA)	10.46A
Packaging Requirements	ETFE lamination	Power(w)	200w
Output Interface	DC6530/MC4	Module Efficiency	22.6%

Guarantee period:

1. Module guarantee period: one year.

Standard Test Conditions and method:

1. After being laminated, the solar panel is mainly tested for its working current.
2. Solar radiation intensity : 1000W/ m² (100000LUX) or luminance of halogen tungsten lamp : 38000LUX without shielding.
3. Temperature: 25°C
4. Humidity: 10 ~ 90%
5. AM: AM1.5
6. Test method: load tester is used.

Current Test :

1. Adjust the light intensity to standard light intensity.
2. When load tester is used and the voltage is limited to 20.16V, it is qualified with line test, Working current no less than 9.42A is qualified.
3. Calibration of light intensity on time.

Environmental conditions for use and storage:

1. Storage conditions: room temperature, humidity not more than 60%.
2. Outdoors, uncovered, under the sun.
3. working ambient temperature: - 20°C~60°C
4. Solar panels of dust-proof and water-proof level: IP45

Precautions for transportation, use and storage environmental conditions:

1. This product shall not be in contact with highly corrosive substances.
2. Avoid scratching and hitting the surface of the solar panel.
3. Solar panels cannot withstand bending stress during transportation and assembly.

Appearance Standard:

Inspection standard: under **45° with** 45cm distance.

Check time:

Test	Front	Back
Time (Second)	5	3

1. Surface is clean.
2. No obvious color difference. (signed sample).
3. No serious breakage, crack, bubble, foreign body, dislocation of battery, noobvious color difference and white streak.
4. Edge breakage of battery sheet: the acceptance length is 5mm and the width is 0.2mm. A product can only have two places.
5. Cell missing Angle: the missing Angle of cell leads to copper leakage bright spot, the acceptable area is less than 0.6mm, no more than two places for one product.
6. Acceptable edge and middle part of blue light dot on the cell sheet, acceptable single area less than 1mm single, no more than two.
7. Scratches: acceptable less than 5* 0.15mm, a single product shall not exceed two.
8. White spots and impurities between cells, the accepted diameter shall not exceed 1.5mm, the color is dark, not too bright.
9. The accepted diameter of the pit point on the back plate is not more than 0.5mm and the depth is not more than 0.15mm, which is not obvious visually
10. Both ends of the battery and the edge of the edge part of the white streak is a normal phenomenon.
11. In case of any dispute over the above standards, the limited sample temporarily confirmed by both parties shall prevail .

Package:

1. Solar panels after been tested is qualified, packed in cartons.