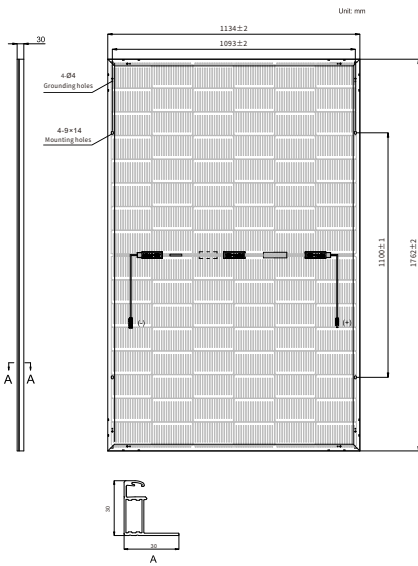


Dimensions of PV Module



ELECTRICAL DATA (STC)

Model Type	RSM96-11-440BNDG	RSM96-11-445BNDG	RSM96-11-450BNDG	RSM96-11-455BNDG	RSM96-11-460BNDG
Rated Power in Watts-Pmax(Wp)	440	445	450	455	460
Open Circuit Voltage-Voc(V)	34.98	35.19	35.40	35.59	35.79
Short Circuit Current-Isc(A)	15.98	16.06	16.14	16.22	16.30
Maximum Power Voltage-Vmpp(V)	29.50	29.70	29.90	30.10	30.28
Maximum Power Current-Impp(A)	14.92	14.99	15.06	15.12	15.22
Module Efficiency (%) *	22.0	22.3	22.5	22.8	23.0
Short Circuit Current-Isc-aBSI(A)	19.82	19.91	20.01	20.11	20.21

STC: Irradiance 1000 W/m<sup>2</sup>, Cell Temperature 25°C, Air Mass AM 1.5 according to EN 60904-3

\* Module Efficiency(%): Round-off to the nearest number

Power sorting and binning tolerances:0-5W; Power measurement tolerance:±3%

Short Circuit Current tolerance:±5%, Open Circuit Voltage tolerance: ±5%

25 Years Limited Product Warranty (Intended for rooftop applications only); 30 Years Limited Power Warranty, only applicable to the front side (STC conditions);

Bifacial factor:80±5(%)

The first year degradation:1%,annual degradation:0.4%,power retention rate within 30 years:87.4%

φVoc=95%±5%, φIsc=80%±10%, φPmax=80%±5%;

Module Temperature rating [T98]max of 70°C;

aBSI: front irradiance 1000W/m<sup>2</sup>, rear irradiance 300W/m<sup>2</sup>

ELECTRICAL DATA (BNPI)

Total Equivalent power -Pmax (Wp) (±3%)	488	493	499	504	510
Open Circuit Voltage-Voc(V) (±5%)	34.98	35.19	35.40	35.59	35.79
Short Circuit Current-Isc(A) (±5%)	17.71	17.79	17.88	17.97	18.06
Maximum Power Voltage-Vmpp(V)	29.50	29.70	29.90	30.10	30.28
Maximum Power Current-Impp(A)	16.53	16.60	16.68	16.75	16.83

BNPI:front irradiance 1000W/m<sup>2</sup>, rear irradiance 135W/m<sup>2</sup>

Electrical characteristics with 10% rear side power gain

Total Equivalent power -Pmax (Wp)	484	490	495	501	507
Open Circuit Voltage-Voc(V)	34.98	35.19	35.40	35.59	35.79
Short Circuit Current-Isc(A)	17.58	17.67	17.75	17.84	17.93
Maximum Power Voltage-Vmpp(V)	29.50	29.70	29.90	30.10	30.28
Maximum Power Current-Impp(A)	16.41	16.49	16.57	16.63	16.74

Rear side power gain: The additional gain from the rear side compared to the power of the front side at the standard test condition. It depends on mounting (structure, height, tilt angle etc.) and albedo of the ground.

MECHANICAL DATA

Solar cells	n-type TOPCon
Cell configuration	96 cells (6×8+6×8)
Module dimensions	1762×1134×30mm
Weight	21.5kg
Superstrate	High Transmission, Low Iron, Semi-Tempered ARC Glass
Substrate	Semi-Tempered Glass
Frame	Anodized Aluminium Alloy, Black
J-Box	Potted, IP68, 1500VDC, 3 Schottky by pass diodes
Cables	4.0mm <sup>2</sup> , Positive(+)1200mm, Negative(-)1200mm (Connector Included), or customized length
Connector	Zhejiang Twinsel Electronic Technology Co., Ltd. PV-SY02 Staubli Electrical Connectors AG PV-KST4-EV02/xy, PV-KBT4EV02/xy

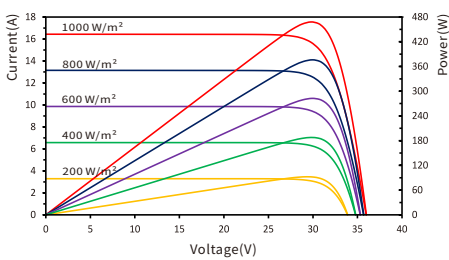
TEMPERATURE & MAXIMUM RATINGS

Nominal Module Operating Temperature (NMOT)	44°C±2°C
Temperature Coefficient of Voc	-0.25%/°C
Temperature Coefficient of Isc	0.046%/°C
Temperature Coefficient of Pmax	-0.29%/°C
Operational Temperature	-40°C~+70°C
Maximum System Voltage	1500VDC
Fire Class According to UL790	CLASS C
Max Series Fuse Rating	35A
Limiting Reverse Current	35A

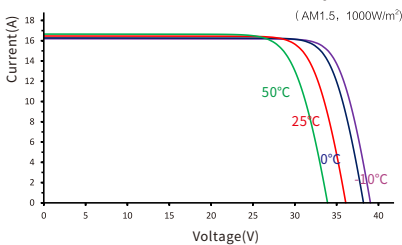
\*Note: For specific dimensions and tolerance ranges, please refer to the corresponding detailed module drawings.

RSM96-11-470BNDG

I-V characteristics at different irradiances



I-V characteristics at different temperatures



PACKAGING CONFIGURATION

	40ft(HQ)	20ft
Number of modules per container	936	216
Number of modules per pallet	36	36
Number of pallets per container	26	6
Packaging box dimensions (LxWxH) in mm	1785×1110×1260	
Box gross weight[kg]	818	

risen

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Website: www.risen.com

CAUTION: READ SAFETY AND INSTALLATION INSTRUCTIONS BEFORE USING THE PRODUCT.

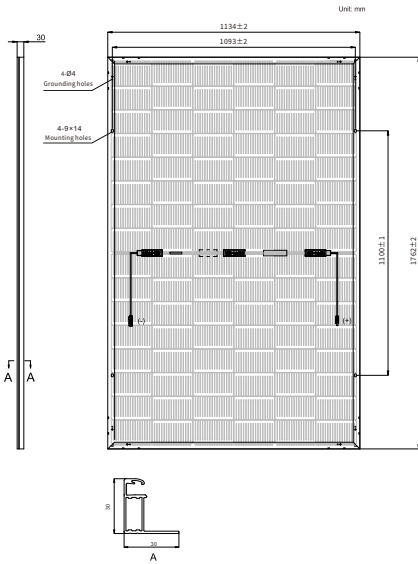
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No special undertaking or warranty for the suitability of special purpose or being installed in extraordinary surroundings is granted unless as otherwise specifically committed by manufacturer in contract document.

THE POWER OF RISING VALUE

Version: REM96-BNDG-EN-H1-1-2026-AU-CEC

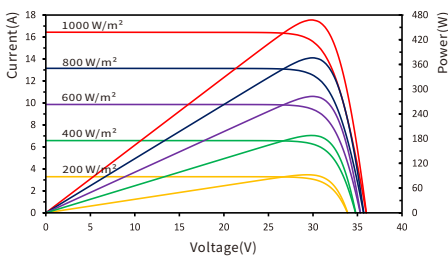
Dimensions of PV Module



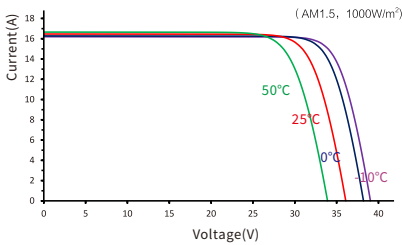
\*Note: For specific dimensions and tolerance ranges, please refer to the corresponding detailed module drawings.

RSM96-11-470BNDG

I-V characteristics at different irradiancies



I-V characteristics at different temperatures



PACKAGING CONFIGURATION

	40ft(HQ)	20ft
Number of modules per container	936	216
Number of modules per pallet	36	36
Number of pallets per container	26	6
Packaging box dimensions (LxWxH) in mm	1785×1110×1260	
Box gross weight[kg]	818	

ELECTRICAL DATA (STC)

Model Type	RSM96-11-465BNDG	RSM96-11-470BNDG	RSM96-11-475BNDG
Rated Power in Watts-Pmax(Wp)	465	470	475
Open Circuit Voltage-Voc(V)	36.00	36.21	36.42
Short Circuit Current-Isc(A)	16.38	16.46	16.52
Maximum Power Voltage-Vmpp(V)	30.44	30.62	30.78
Maximum Power Current-Impp(A)	15.30	15.38	15.46
Module Efficiency (%) *	23.3	23.6	23.8
Short Circuit Current-Isc-aBSI(A)	20.31	20.41	20.48

STC: Irradiance 1000 W/m<sup>2</sup>, Cell Temperature 25°C, Air Mass AM 1.5 according to EN 60904-3

\* Module Efficiency(%): Round-off to the nearest number

Power sorting and binning tolerances:0-5W; Power measurement tolerance:±3%

Short Circuit Current tolerance:±5%, Open Circuit Voltage tolerance: ±5%

25 Years Limited Product Warranty (Intended for rooftop applications only); 30 Years Limited Power Warranty, only applicable to the front side (STC conditions);

Bifacial factor:80±5%

The first year degradation:1%,annual degradation:0.4%,power retention rate within 30 years:87.4%

φVoc=95%±5%, φIsc=80%±10%, φPmax=80%±5%;

Module Temperature rating [T98]max of 70°C;

aBSI: front irradiance 1000W/m<sup>2</sup>, rear irradiance 300W/m<sup>2</sup>

ELECTRICAL DATA (BNPI)

Total Equivalent power -Pmax (Wp) (±3%)	515	521	526
Open Circuit Voltage-Voc(V) (±5%)	36.00	36.21	36.42
Short Circuit Current-Isc(A) (±5%)	18.15	18.24	18.30
Maximum Power Voltage-Vmpp(V)	30.44	30.62	30.78
Maximum Power Current-Impp(A)	16.93	17.01	17.10

BNPI:front irradiance 1000W/m<sup>2</sup>, rear irradiance 135W/m<sup>2</sup>

Electrical characteristics with 10% rear side power gain

Total Equivalent power -Pmax (Wp)	512	517	523
Open Circuit Voltage-Voc(V)	36.00	36.21	36.42
Short Circuit Current-Isc(A)	18.02	18.11	18.17
Maximum Power Voltage-Vmpp(V)	30.44	30.62	30.78
Maximum Power Current-Impp(A)	16.83	16.92	17.01

Rear side power gain: The additional gain from the rear side compared to the power of the front side at the standard test condition. It depends on mounting (structure, height, tilt angle etc.) and albedo of the ground.

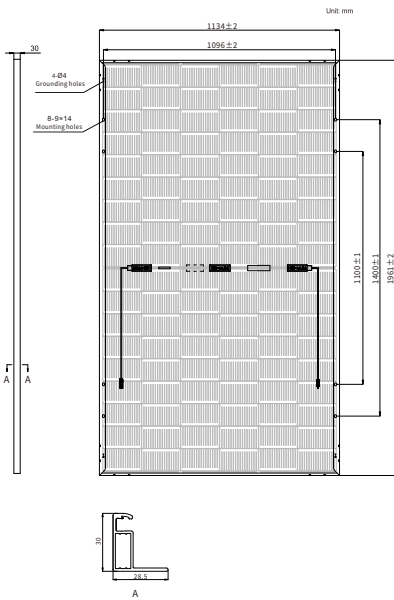
MECHANICAL DATA

Solar cells	n-type TOPCon
Cell configuration	96 cells (6×8+6×8)
Module dimensions	1762×1134×30mm
Weight	21.5kg
Superstrate	High Transmission, Low Iron, Semi-Tempered ARC Glass
Substrate	Semi-Tempered Glass
Frame	Anodized Aluminium Alloy, Black
J-Box	Potted, IP68, 1500VDC, 3 Schottky by pass diodes
Cables	4.0mm <sup>2</sup> , Positive(+)1200mm, Negative(-)1200mm (Connector Included), or customized length
Connector	Zhejiang Twinsel Electronic Technology Co., Ltd. PV-SY02 Staubli Electrical Connectors AG PV-KST4-EV02/xy, PV-KBT4EV02/xy

TEMPERATURE & MAXIMUM RATINGS

Nominal Module Operating Temperature (NMOT)	44°C±2°C
Temperature Coefficient of Voc	-0.25%/°C
Temperature Coefficient of Isc	0.046%/°C
Temperature Coefficient of Pmax	-0.29%/°C
Operational Temperature	-40°C~+70°C
Maximum System Voltage	1500VDC
Fire Class According to UL790	CLASS C
Max Series Fuse Rating	35A
Limiting Reverse Current	35A

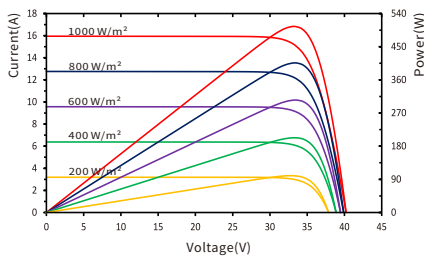
Dimensions of PV Module



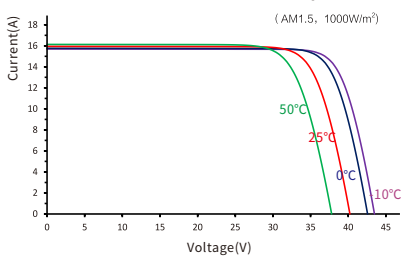
\*Note: For specific dimensions and tolerance ranges, please refer to the corresponding detailed module drawings.

RSM108-11-505BNDG

I-V characteristics at different irradiances



I-V characteristics at different temperatures



PACKAGING CONFIGURATION

	40ft(HQ)	20ft
Number of modules per container	864	180
Number of modules per pallet	36	36
Number of pallets per container	24	5
Packaging box dimensions (LxWxH) in mm	1985×1110×1260	
Box gross weight[kg]	1022	

ELECTRICAL DATA (STC)

Model Type	RSM108-11-495BNDGRSM108-11-500BNDGRSM108-11-505BNDGRSM108-11-510BNDGRSM108-11-515BNDG
Rated Power in Watts-Pmax(Wp)	<b>495</b> <b>500</b> <b>505</b> <b>510</b> <b>515</b>
Open Circuit Voltage-Voc(V)	39.81      40.02      40.22      40.42      40.62
Short Circuit Current-Isc(A)	15.81      15.88      15.95      16.02      16.08
Maximum Power Voltage-Vmpp(V)	32.85      33.05      33.25      33.45      33.64
Maximum Power Current-Impp(A)	15.07      15.13      15.19      15.25      15.31
Module Efficiency (%) *	22.3      22.5      22.7      22.9      23.1
Short Circuit Current-Isc-aBSI(A)	19.60      19.69      19.78      19.86      19.94

STC: Irradiance 1000 W/m<sup>2</sup>, Cell Temperature 25°C, Air Mass AM 1.5 according to EN 60904-3

\* Module Efficiency(%): Round-off to the nearest number

Sorting and binning tolerances: 0-5W ;Power measurement tolerance: ±3%

Short Circuit Current tolerance:±5%, Open Circuit Voltage tolerance: ±5%

15 Years Limited Product Warranty; 30 Years Limited Power Warranty, only applicable to the front side (STC conditions);

Bifacial factor:80±5(%)

The first year degradation:1%,annual degradation:0.4%,power retention rate within 30 years:87.4%

φVoc=95%±5%, φIsc=80%±10%, φPmax=80%±5%;

Module Temperature rating [T98]max of 70°C;

aBSI: front irradiance 1000W/m<sup>2</sup>, rear irradiance 300W/m<sup>2</sup>

ELECTRICAL DATA (BNPI)

Total Equivalent power -Pmax (Wp) (±3%)	548	554	560	565	571
Open Circuit Voltage-Voc(V) (±5%)	39.81	40.02	40.22	40.42	40.62
Short Circuit Current-Isc(A) (±5%)	17.52	17.60	17.67	17.75	17.82
Maximum Power Voltage-Vmpp(V)	32.85	33.05	33.25	33.45	33.64
Maximum Power Current-Impp(A)	16.70	16.76	16.83	16.89	16.96

BNPI:front irradiance 1000W/m<sup>2</sup>, rear irradiance 135W/m<sup>2</sup>

Electrical characteristics with 10% rear side power gain

Total Equivalent power -Pmax (Wp)	545	550	556	561	567
Open Circuit Voltage-Voc(V)	39.81	40.02	40.22	40.42	40.62
Short Circuit Current-Isc(A)	17.39	17.47	17.55	17.62	17.69
Maximum Power Voltage-Vmpp(V)	32.85	33.05	33.25	33.45	33.64
Maximum Power Current-Impp(A)	16.58	16.64	16.71	16.78	16.84

Rear side power gain: The additional gain from the rear side compared to the power of the front side at the standard test condition. It depends on mounting (structure, height, tilt angle etc.) and albedo of the ground.

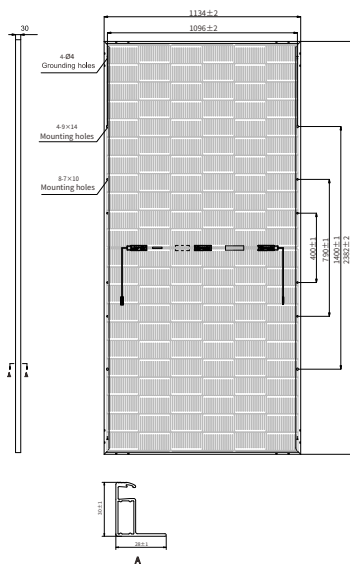
MECHANICAL DATA

Solar cells	n-type TOPCon
Cell configuration	108cells (6×9+6×9)
Module dimensions	1961×1134×30mm (77.20×44.65×1.18 in)
Weight	27kg
Superstrate	High Transmission, AR Coated Heat Strengthened Glass
Substrate	Heat Strengthened Glass
Frame	Anodized Aluminium Alloy, Silver Color
J-Box	Potted, IP68, 1500VDC, 3 Schottky by pass diodes
Cables	4.0mm <sup>2</sup> , 1400mm(55.12 in) (+), 1400mm(55.12 in) (-), connector included, or customized length
Connector	Zhejiang Twinsel Electronic Technology Co., Ltd. PV-SY02

TEMPERATURE & MAXIMUM RATINGS

Nominal Module Operating Temperature (NMOT)	44°C±2°C
Temperature Coefficient of Voc	-0.25%/°C
Temperature Coefficient of Isc	0.046%/°C
Temperature Coefficient of Pmax	-0.29%/°C
Operational Temperature	-40°C~+70°C
Maximum System Voltage	1500VDC
Fire Class According to UL790	CLASS C
Max Series Fuse Rating	35A
Limiting Reverse Current	35A

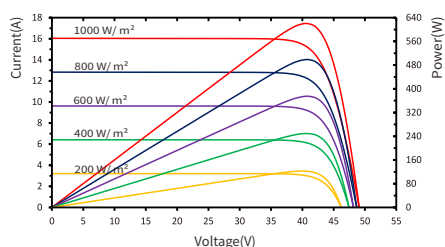
Dimensions of PV Module Unit: mm



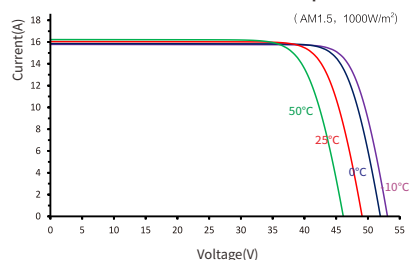
\*Note: For specific dimensions and tolerance ranges, please refer to the corresponding detailed module drawings.

RSM132-11-620BNDG

I-V characteristics at different irradiances



I-V characteristics at different temperatures



PACKAGING CONFIGURATION

	40ft(HQ)	20ft
Number of modules per container	720	144
Number of modules per pallet	36	36
Number of pallets per container	20	4
Packaging box dimensions (LxWxH) in mm	2395×1110×1260	
Box gross weight[kg]	1238	

ELECTRICAL DATA (STC)

Model Type	RSM132-11-610BNDGRSM132-11-615BNDGRSM132-11-620BNDGRSM132-11-625BNDGRSM132-11-630BNDGRSM132-11-635BNDG
Rated Power in Watts-Pmax(Wp)	<b>610 615 620 625 630 635</b>
Open Circuit Voltage-Voc(V)	48.69 48.89 49.08 49.27 49.46 49.65
Short Circuit Current-Isc(A)	15.92 15.98 16.04 16.10 16.16 16.22
Maximum Power Voltage-Vmpp(V)	40.46 40.64 40.81 40.98 41.17 41.36
Maximum Power Current-Impp(A)	15.08 15.14 15.20 15.26 15.31 15.36
Module Efficiency (%) *	22.6 22.8 22.9 23.1 23.3 23.5
Short Circuit Current-Isc-aBSI(A)	19.74 19.82 19.89 19.96 20.04 20.11

STC: Irradiance 1000 W/m<sup>2</sup>, Cell Temperature 25°C, Air Mass AM 1.5 according to EN 60904-3

\* Module Efficiency(%): Round-off to the nearest number

Power sorting and binning tolerances:0-5W; Power measurement tolerance: ±3%

Short Circuit Current tolerance:±5%; Open Circuit Voltage tolerance: ±5%

15 Years Limited Product Warranty; 30 Years Limited Power Warranty, only applicable to the front side (STC conditions);

Bifacial factor:80±5(%)

The first year degradation:1%,annual degradation:0.4%,power retention rate within 30 years:87.4%

φVoc=95%±5%, φIsc=80%±10%, φPmax=80%±5%;

Module Temperature rating [T98]max of 70°C;

aBSI: front irradiance 1000W/m<sup>2</sup>, rear irradiance 300W/m<sup>2</sup>

ELECTRICAL DATA (BNPI)

Total Equivalent power -Pmax (Wp) (±3%)	676	681	687	693	698	704
Open Circuit Voltage-Voc(V) (±5%)	48.69	48.89	49.08	49.27	49.46	49.65
Short Circuit Current-Isc(A) (±5%)	17.64	17.71	17.77	17.84	17.91	17.97
Maximum Power Voltage-Vmpp(V)	40.46	40.64	40.81	40.98	41.17	41.36
Maximum Power Current-Impp(A)	16.70	16.77	16.83	16.90	16.96	17.01

BNPI:front irradiance 1000W/m<sup>2</sup>, rear irradiance 135W/m<sup>2</sup>

Electrical characteristics with 10% rear side power gain

Total Equivalent power -Pmax (Wp)	671	677	682	688	693	699
Open Circuit Voltage-Voc(V)	48.69	48.89	49.08	49.27	49.46	49.65
Short Circuit Current-Isc(A)	17.51	17.58	17.64	17.71	17.78	17.84
Maximum Power Voltage-Vmpp(V)	40.46	40.64	40.81	40.98	41.17	41.36
Maximum Power Current-Impp(A)	16.59	16.65	16.72	16.79	16.84	16.90

Rear side power gain: The additional gain from the rear side compared to the power of the front side at the standard test condition. It depends on mounting (structure, height, tilt angle etc.) and albedo of the ground.

MECHANICAL DATA

Solar cells	n-type TOPCon
Cell configuration	132 cells (6×11+6×11)
Module dimensions	2382×1134×30mm
Weight	32.5kg
Superstrate	High Transmission, Low Iron, Semi-Tempered ARC Glass
Substrate	Semi-Tempered Glass
Frame	Anodized Aluminium Alloy, Silver Color
J-Box	Potted, IP68, 1500VDC, 3 Schottky by pass diodes
Cables	4.0mm <sup>2</sup> , Positive(+)350mm, Negative(-)230mm (Connector Included), or customized length
Connector	Zhejiang Twinsel Electronic Technology Co., Ltd. PV-SY02

TEMPERATURE & MAXIMUM RATINGS

Nominal Module Operating Temperature (NMOT)	44°C±2°C
Temperature Coefficient of Voc	-0.25%/°C
Temperature Coefficient of Isc	0.046%/°C
Temperature Coefficient of Pmax	-0.29%/°C
Operational Temperature	-40°C~+70°C
Maximum System Voltage	1500VDC
Fire Class According to UL790	CLASS C
Max Series Fuse Rating	35A
Limiting Reverse Current	35A

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CAUTION: READ SAFETY AND INSTALLATION INSTRUCTIONS BEFORE USING THE PRODUCT.

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No special undertaking or warranty for the suitability of special purpose or being installed in extraordinary surroundings is granted unless as otherwise specifically committed by manufacturer in contract document.

THE POWER OF RISING VALUE

Version: REM132-BNDG-EN-H1-1-2026-AU-CEC

**ELECTRICAL DATA (STC)**

Model Type	RSM132-8-705BNDGRSM132-8-710BNDGRSM132-8-715BNDGRSM132-8-720BNDGRSM132-8-725BNDGRSM132-8-730BNDG
Rated Power in Watts-Pmax(Wp)	<b>705</b> <b>710</b> <b>715</b> <b>720</b> <b>725</b> <b>730</b>
Open Circuit Voltage-Voc(V)	48.57    48.75    48.94    49.13    49.31    49.50
Short Circuit Current-Isc(A)	18.45    18.51    18.56    18.61    18.66    18.71
Maximum Power Voltage-Vmpp(V)	40.62    40.78    40.96    41.14    41.32    41.49
Maximum Power Current-Impp(A)	17.36    17.42    17.46    17.51    17.55    17.60
Module Efficiency (%) *	22.7      22.9      23.0      23.2      23.3      23.5
Short Circuit Current-Isc-aBSI(A)	22.88    22.95    23.01    23.08    23.14    23.20

STC: Irradiance 1000 W/m<sup>2</sup>, Cell Temperature 25°C, Air Mass AM 1.5 according to EN 60904-3

\* Module Efficiency(%): Round-off to the nearest number

Sorting and binning tolerances: 0-5W ;Power measurement tolerance: ±3%

Short Circuit Current tolerance:±5%, Open Circuit Voltage tolerance: ±5%

15 Years Limited Product Warranty; 30 Years Limited Power Warranty, only applicable to the front side (STC conditions);

Bifacial factor:80±5(%)

The first year degradation:1%,annual degradation:0.4%,power retention rate within 30 years:87.4%

φVoc=95%±5%, φIsc=80%±10%, φPmax=80%±5%;

Module Temperature rating [T98]max of 70°C;

aBSI: front irradiance 1000W/m<sup>2</sup>, rear irradiance 300W/m<sup>2</sup>

**ELECTRICAL DATA (BNPI)**

Total Equivalent power -Pmax (Wp) (±3%)	781	787	792	798	803	809
Open Circuit Voltage-Voc(V) (±5%)	48.57	48.75	48.94	49.13	49.31	49.50
Short Circuit Current-Isc(A) (±5%)	20.44	20.51	20.56	20.62	20.68	20.73
Maximum Power Voltage-Vmpp(V)	40.62	40.78	40.96	41.14	41.32	41.49
Maximum Power Current-Impp(A)	19.23	19.29	19.34	19.39	19.44	19.49

BNPI:front irradiance 1000W/m<sup>2</sup>, rear irradiance 135W/m<sup>2</sup>

**Electrical characteristics with 10% rear side power gain**

Total Equivalent power -Pmax (Wp)	777	782	788	793	798	803
Open Circuit Voltage-Voc(V)	48.57	48.75	48.94	49.13	49.31	49.50
Short Circuit Current-Isc(A)	20.19	20.24	20.30	20.35	20.39	20.46
Maximum Power Voltage-Vmpp(V)	40.62	40.78	40.96	41.14	41.32	41.49
Maximum Power Current-Impp(A)	19.12	19.17	19.23	19.27	19.31	19.36

Rear side power gain: The additional gain from the rear side compared to the power of the front side at the standard test condition. It depends on mounting (structure, height, tilt angle etc.) and albedo of the ground.

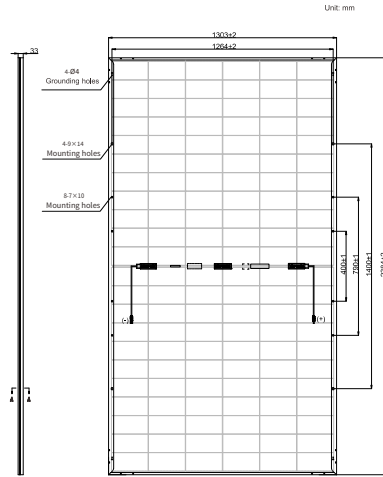
**MECHANICAL DATA**

Solar cells	n-type TOPCon
Cell configuration	132 cells (6×11+6×11)
Module dimensions	2384×1303×33mm
Weight	37.5kg
Superstrate	High Transmission, Low Iron, Semi-Tempered ARC Glass
Substrate	Semi-Tempered Glass
Frame	Anodized Aluminium Alloy, Silver Color
J-Box	Potted, IP68, 1500VDC, 3 Schottky bypass diodes
Cables	4.0mm <sup>2</sup> , Positive(+)350mm, Negative(-)230mm (Connector Included), or customized length
Connector	Zhejiang Twinsel Electronic Technology Co., Ltd. PV-SY02

**TEMPERATURE & MAXIMUM RATINGS**

Nominal Module Operating Temperature (NMOT)	44°C±2°C
Temperature Coefficient of Voc	-0.25%/°C
Temperature Coefficient of Isc	0.046%/°C
Temperature Coefficient of Pmax	-0.29%/°C
Operational Temperature	-40°C~+70°C
Maximum System Voltage	1500VDC
Fire Class According to UL790	CLASS C
Max Series Fuse Rating	35A
Limiting Reverse Current	35A

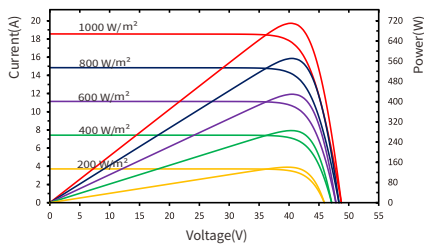
**Dimensions of PV Module**



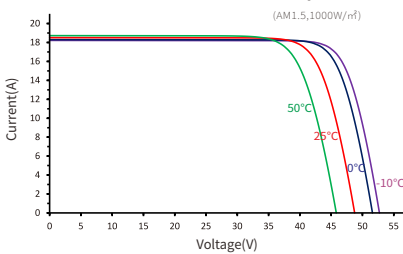
\*Note: For specific dimensions and tolerance ranges, please refer to the corresponding detailed module drawings.

**RSM132-8-710BNDG**

**I-V characteristics at different irradiances**



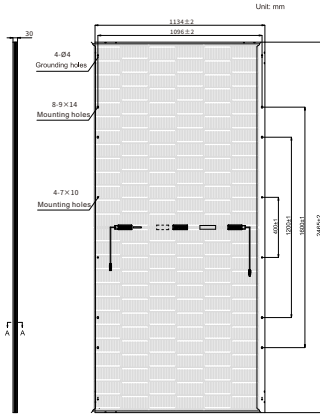
**I-V characteristics at different temperatures**



**PACKAGING CONFIGURATION**

	40ft(HQ)
Number of modules per container	594
Number of modules per pallet	33
Number of pallets per container	18
Packaging box dimensions (LxWxH) in mm	1320×1125×2520
Box gross weight[kg]	1289

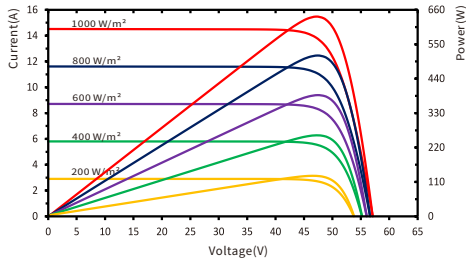
Dimensions of PV Module



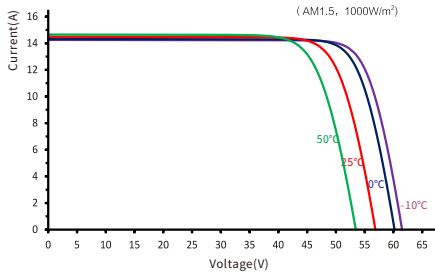
\*Note: For specific dimensions and tolerance ranges, please refer to the corresponding detailed module drawings.

RSM156-9-655BNDG

I-V characteristics at different irradiances



I-V characteristics at different temperatures



PACKAGING CONFIGURATION

	40ft(HQ)	20ft
Number of modules per container	576	144
Number of modules per pallet	36	36
Number of pallets per container	16	4
Packaging box dimensions (LxWxH) in mm	2485 × 1110 × 1260	
Box gross weight[kg]	1270	

ELECTRICAL DATA (STC)

Model Type	RSM156-9-640BNDG	RSM156-9-645BNDG	RSM156-9-650BNDG	RSM156-9-655BNDG	RSM156-9-660BNDG
Rated Power in Watts-Pmax(Wp)	640	645	650	655	660
Open Circuit Voltage-Voc(V)	56.60	56.79	56.99	57.19	57.39
Short Circuit Current-Isc(A)	14.38	14.44	14.48	14.53	14.57
Maximum Power Voltage-Vmpp(V)	47.31	47.47	47.67	47.87	48.07
Maximum Power Current-Impp(A)	13.54	13.60	13.64	13.69	13.73
Module Efficiency (%) *	22.9	23.1	23.3	23.4	23.6
Short Circuit Current-Isc-aBSI(A)	17.83	17.91	17.96	18.02	18.07

STC: Irradiance 1000 W/m<sup>2</sup>, Cell Temperature 25°C, Air Mass AM 1.5 according to EN 60904-3

\* Module Efficiency(%): Round-off to the nearest number

Power sorting and binning tolerances:0-5W; Power measurement tolerance: ±3%

Short Circuit Current tolerance:±5%; Open Circuit Voltage tolerance: ±5%

15 Years Limited Product Warranty; 30 Years Limited Power Warranty, only applicable to the front side (STC conditions);

Bifacial factor:80±5(%)

The first year degradation:1%,annual degradation:0.4%,power retention rate within 30 years:87.4%

φVoc=95%±5%, φIsc=80%±10%, φPmax=80%±5%;

Module Temperature rating [T98]max of 70°C;

aBSI: front irradiance 1000W/m<sup>2</sup>, rear irradiance 300W/m<sup>2</sup>

ELECTRICAL DATA (BNPI)

Total Equivalent power -Pmax (Wp) (±3%)	709	715	720	726	731
Open Circuit Voltage-Voc(V) (±5%)	56.60	56.79	56.99	57.19	57.39
Short Circuit Current-Isc(A) (±5%)	15.93	16.00	16.04	16.10	16.14
Maximum Power Voltage-Vmpp(V)	47.31	47.47	47.67	47.87	48.07
Maximum Power Current-Impp(A)	14.99	15.05	15.11	15.16	15.21

BNPI:front irradiance 1000W/m<sup>2</sup>, rear irradiance 135W/m<sup>2</sup>

Electrical characteristics with 10% rear side power gain

Total Equivalent power -Pmax (Wp)	704	710	715	721	726
Open Circuit Voltage-Voc(V)	56.60	56.79	56.99	57.19	57.39
Short Circuit Current-Isc(A)	15.82	15.88	15.93	15.98	16.03
Maximum Power Voltage-Vmpp(V)	47.31	47.47	47.67	47.87	48.07
Maximum Power Current-Impp(A)	14.89	14.96	15.00	15.06	15.10

Rear side power gain: The additional gain from the rear side compared to the power of the front side at the standard test condition. It depends on mounting (structure, height, tilt angle etc.) and albedo of the ground.

MECHANICAL DATA

Solar cells	n-type TOPCon
Cell configuration	156 cells (6×13+6×13)
Module dimensions	2465×1134×30mm
Weight	33.5kg
Superstrate	High Transmission, Low Iron, Semi-Tempered ARC Glass
Substrate	Semi-Tempered Glass
Frame	Anodized Aluminium Alloy, Silver Color
J-Box	Potted, IP68, 1500VDC, 3 Schottky by pass diodes
Cables	4.0mm <sup>2</sup> , Positive(+)350mm, Negative(-)230mm (Connector Included), or customized length
Connector	Zhejiang Twinsel Electronic Technology Co., Ltd. PV-SY02

TEMPERATURE & MAXIMUM RATINGS

Nominal Module Operating Temperature (NMOT)	44°C ±2°C
Temperature Coefficient of Voc	-0.25%/°C
Temperature Coefficient of Isc	0.046%/°C
Temperature Coefficient of Pmax	-0.29%/°C
Operational Temperature	-40°C~+70°C
Maximum System Voltage	1500VDC
Fire Class According to UL790	CLASS C
Max Series Fuse Rating	30A
Limiting Reverse Current	30A



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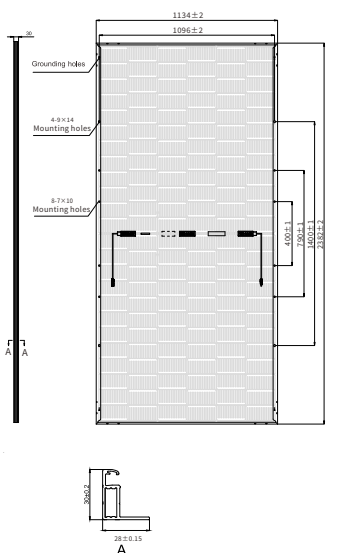


**ELECTRICAL DATA (STC)**

Model Type	RSM144-10-615BNDG	RSM144-10-620BNDG	RSM144-10-625BNDG	RSM144-10-630BNDG
Rated Power in Watts-Pmax(Wp)	615	620	625	630
Open Circuit Voltage-Voc(V)	52.62	52.82	53.00	53.17
Short Circuit Current-Isc(A)	14.82	14.88	14.94	15.01
Maximum Power Voltage-Vmpp(V)	43.72	43.90	44.08	44.26
Maximum Power Current-Impp(A)	14.07	14.13	14.20	14.26
Module Efficiency (%) *	22.8	23.0	23.2	23.3
Short Circuit Current-Isc-aBSI(A)	18.15	18.23	18.30	18.39

STC: Irradiance 1000 W/m<sup>2</sup>, Cell Temperature 25°C, Air Mass AM 1.5 according to EN 60904-3  
 \* Module Efficiency (%): Round-off to the nearest number  
 Power sorting and binning tolerances: 0-5W; Power measurement tolerance: ±3%  
 Short Circuit Current tolerance: ±4% Open Circuit Voltage tolerance: ±3%  
 15 Years Limited Product Warranty; 30 Years Limited Power Warranty;  
 Bifacial factor: 80±10% \* Module Efficiency (%): Round-off to the nearest number  
 The first year degradation: 1% annual degradation: 0.4%, power retention rate within 30 years: 87.4%  
 ρVoc=95±5%, ρIsc=80±10%, ρPmax=80±10%;

**Dimensions of PV Module** Unit: mm



**ELECTRICAL DATA (BNPI)**

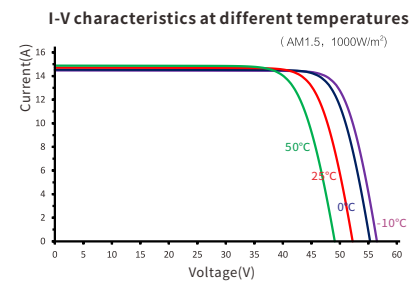
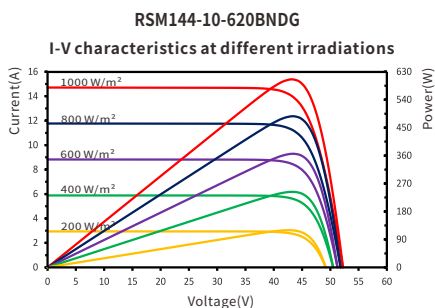
	676	682	688	694
Total Equivalent power -Pmax (Wp)	676	682	688	694
Open Circuit Voltage-Voc(V)	52.62	52.82	53.00	53.17
Short Circuit Current-Isc(A)	16.30	16.36	16.43	16.51
Maximum Power Voltage-Vmpp(V)	43.72	43.90	44.08	44.26
Maximum Power Current-Impp(A)	15.47	15.54	15.61	15.69

The electrical data of the 10% rear side power gain is consistent with the BNPI data.  
 BNPI: front side irradiance 1000 W/m<sup>2</sup>, back side irradiance 135 W/m<sup>2</sup>, 25 °C, AM 1.5 according to IEC TS 60904.

**ELECTRICAL DATA (NMOT)**

Model Type	RSM144-10-615BNDG	RSM144-10-620BNDG	RSM144-10-625BNDG	RSM144-10-630BNDG
Maximum Power-Pmax (Wp)	465.6	469.7	473.8	477.9
Open Circuit Voltage-Voc (V)	48.94	49.12	49.29	49.45
Short Circuit Current-Isc (A)	12.15	12.20	12.25	12.31
Maximum Power Voltage-Vmpp (V)	40.57	40.74	40.91	41.07
Maximum Power Current-Impp (A)	11.48	11.53	11.58	11.64

NMOT: Irradiance at 800 W/m<sup>2</sup>, Ambient Temperature 20°C, Wind Speed 1 m/s.



**MECHANICAL DATA**

Solar cells	n-type TOPCon
Cell configuration	144 cells (6 × 12 + 6 × 12)
Module dimensions	2382 × 1134 × 30mm
Weight	32kg
Superstrate	High Transmission, Low Iron, Semi-Tempered ARC Glass
Substrate	Semi-Tempered Glass
Frame	Anodized Aluminium Alloy, Silver Color
J-Box	Potted, IP68, 1500VDC, 3 Schottky by pass diodes
Cables	4.0mm <sup>2</sup> , Positive(+)350mm, Negative(-)230mm (Connector Included)
Connector	Zhejiang Twinsel Electronic Technology Co.,Ltd. PV-SY02, IP68

**TEMPERATURE & MAXIMUM RATINGS**

Nominal Module Operating Temperature (NMOT)	44°C ± 2°C
Temperature Coefficient of Voc	-0.25%/°C
Temperature Coefficient of Isc	0.046%/°C
Temperature Coefficient of Pmax	-0.29%/°C
Operational Temperature	-40°C ~ +85°C
Maximum System Voltage	1500VDC
Fire Class According to UI790	CLASS C
Max Series Fuse Rating	30A

**PACKAGING CONFIGURATION**

	40ft(HQ)	20ft
Number of modules per container	720	144
Number of modules per pallet	36	36
Number of pallets per container	20	4
Packaging box dimensions (LxWxH) in mm	2395 × 1110 × 1260	
Box gross weight [kg]	1220	



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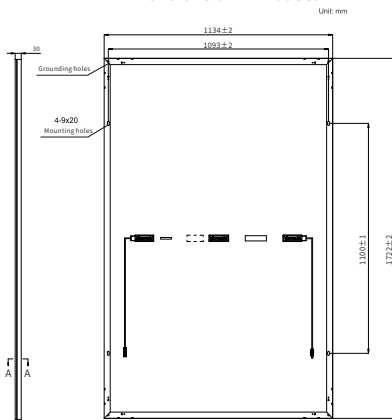
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Dimensions of PV Module



ELECTRICAL DATA (STC)

Model Type	RSM108-9-440NDG
Rated Power in Watts-Pmax(Wp)	440
Open Circuit Voltage-Voc(V)	39.65
Short Circuit Current-Isc(A)	14.09
Maximum Power Voltage-Vmpp(V)	33.38
Maximum Power Current-Impp(A)	13.19
Module Efficiency (%) ★	22.5

STC: Irradiance 1000 W/m<sup>2</sup>, Cell Temperature 25°C, Air Mass AM 1.5 according to EN 60904-3

\* Module Efficiency(%): Round-off to the nearest number

Sorting and binning tolerances: 0-5W Measurement tolerance: ±3%

Short Circuit Current tolerance ±4% Open Circuit Voltage tolerance: ±3%

15 Years Limited Product Warranty; 30 Years Limited Power Warranty

The first year degradation:1%, annual degradation:0.4%, power retention rate within 30 years:87.4%

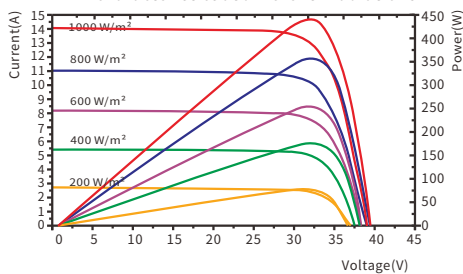
ELECTRICAL DATA (NMOT)

Model Type	RSM108-9-440NDG
Maximum Power-Pmax (Wp)	333.4
Open Circuit Voltage-Voc (V)	36.84
Short Circuit Current-Isc (A)	11.55
Maximum Power Voltage-Vmpp (V)	30.98
Maximum Power Current-Impp (A)	10.76

NMOT: Irradiance at 800 W/m<sup>2</sup>, Ambient Temperature 20°C, Wind Speed 1 m/s.

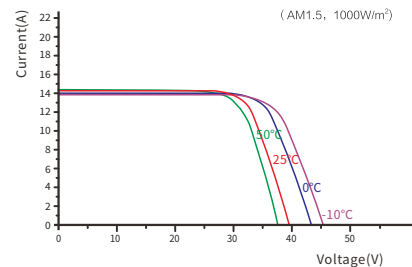
RSM108-9-425NDG

I-V characteristics at different irradiances



I-V characteristics at different temperatures

(AM1.5, 1000W/m<sup>2</sup>)



MECHANICAL DATA

Solar cells	n-type TOPCon
Cell configuration	108 cells (6×9+6×9)
Module dimensions	1722×1134×30/35mm
Weight	20.5~28.5kg
Superstrate	High Transmission, Low Iron, Semi-Tempered ARC Glass
Substrate	Semi-Tempered Glass
Frame	Anodized Aluminium Alloy, Silver Color
J-Box	Potted, IP68, 1500VDC, 3 Schottky by pass diodes
Cables	4.0mm <sup>2</sup> , Positive(+)1200mm, Negative(-)1200mm (Connector Included)
Connector	Zhejiang Twinsel Electronic Technology Co.,Ltd. PV-SY02, IP68

TEMPERATURE & MAXIMUM RATINGS

Nominal Module Operating Temperature (NMOT)	44°C±2°C
Temperature Coefficient of Voc	-0.25%/°C
Temperature Coefficient of Isc	0.046%/°C
Temperature Coefficient of Pmax	-0.29%/°C
Operational Temperature	-40°C~+85°C
Maximum System Voltage	1500VDC
Fire Class According to UL790	CLASS C
Max Series Fuse Rating	30A
Limiting Reverse Current	30A

PACKAGING CONFIGURATION

	40ft(HQ)	20ft
Number of modules per container	936	216
Number of modules per pallet	36	36
Number of pallets per container	26	6
Packaging box dimensions (LxWxH) in mm	1745×1110×1260	
Box gross weight[kg]	780	



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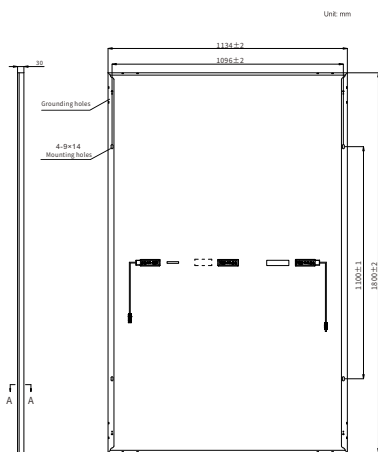
THE POWER OF RISING VALUE

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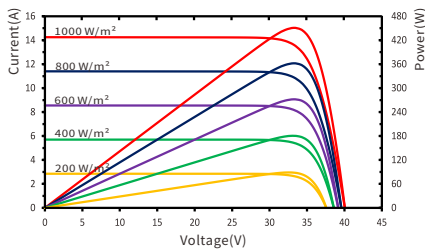
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Dimensions of PV Module

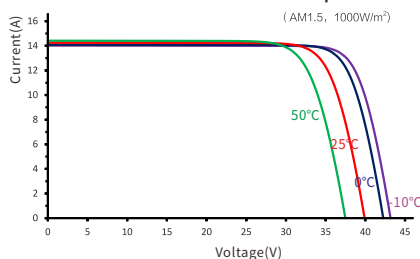


RSM108-10-455NDG

I-V characteristics at different irradiances



I-V characteristics at different temperatures



PACKAGING CONFIGURATION

	40ft(HQ)	20ft
Number of modules per container	864	216
Number of modules per pallet	36	36
Number of pallets per container	24	6
Packaging box dimensions (LxWxH) in mm	1820×1110×1260	
Box gross weight[kg]	950	

ELECTRICAL DATA (STC)

Model Type	RSM108-10-440NDG	RSM108-10-450NDG	RSM108-10-455NDG	RSM108-10-460NDG
Rated Power in Watts-Pmax(Wp)	440	450	455	460
Open Circuit Voltage-Voc(V)	38.61	39.05	39.26	39.47
Short Circuit Current-Isc(A)	14.55	14.66	14.72	14.79
Maximum Power Voltage-Vmpp(V)	32.08	32.44	32.64	32.84
Maximum Power Current-Impp(A)	13.74	13.88	13.94	14.01
Module Efficiency (%) *	21.6	22.1	22.3	22.5

STC: Irradiance 1000 W/m<sup>2</sup>, Cell Temperature 25°C, Air Mass AM 1.5 according to EN 60904-3

\* Module Efficiency(%): Round-off to the nearest number

Sorting and binning tolerances: 0-5W Measurement tolerance: ±3%

Short Circuit Current tolerance ±4% Open Circuit Voltage tolerance: ±3%

15 Years Limited Product Warranty; 30 Years Limited Power Warranty

The first year degradation:1%,annual degradation:0.4%,power retention rate within 30 years:87.4%

ELECTRICAL DATA (NMOT)

Model Type	RSM108-10-440NDG	RSM108-10-450NDG	RSM108-10-455NDG	RSM108-10-460NDG
Maximum Power-Pmax (Wp)	333.7	341.0	344.7	348.4
Open Circuit Voltage-Voc (V)	35.91	36.32	36.51	36.71
Short Circuit Current-Isc (A)	11.93	12.02	12.07	12.13
Maximum Power Voltage-Vmpp (V)	29.77	30.10	30.29	30.48
Maximum Power Current-Impp (A)	11.21	11.33	11.38	11.43

NMOT: Irradiance at 800 W/m<sup>2</sup>, Ambient Temperature 20°C, Wind Speed 1 m/s.

MECHANICAL DATA

Solar cells	n-type TOPCon
Cell configuration	108 cells (6×9+6×9)
Module dimensions	1800×1134×30/35mm
Weight	21.5~28.5kg
Superstrate	High Transmission, Low Iron, Semi-Tempered ARC Glass
Substrate	Semi-Tempered Glass
Frame	Anodized Aluminium Alloy, Silver Color
J-Box	Potted, IP68, 1500VDC, 3 Schottky by pass diodes
Cables	4.0mm <sup>2</sup> , Positive(+) 350mm, Negative(-) 230mm (Connector Included)
Connector	Zhejiang Twinsel Electronic Technology Co.,Ltd. PV-SY02, IP68

TEMPERATURE & MAXIMUM RATINGS

Nominal Module Operating Temperature (NMOT)	44°C±2°C
Temperature Coefficient of Voc	-0.25%/°C
Temperature Coefficient of Isc	0.046%/°C
Temperature Coefficient of Pmax	-0.29%/°C
Operational Temperature	-40°C~+85°C
Maximum System Voltage	1500VDC
Fire Class According to UI790	CLASS C
Max Series Fuse Rating	30A
Limiting Reverse Current	30A



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**ELECTRICAL DATA (STC)**

Model Type	RSM144-10-605BNDG	RSM144-10-610BNDG
Rated Power in Watts-Pmax(Wp)	605	610
Open Circuit Voltage-Voc(V)	52.24	52.43
Short Circuit Current-Isc(A)	14.71	14.77
Maximum Power Voltage-Vmpp(V)	43.40	43.56
Maximum Power Current-Impp(A)	13.95	14.01
Module Efficiency (%) *	22.4	22.6
Short Circuit Current-Isc-aBSI(A)	18.02	18.09

STC: Irradiance 1000 W/m<sup>2</sup>, Cell Temperature 25°C, Air Mass AM 1.5 according to EN 60904-3  
 \* Module Efficiency (%): Round-off to the nearest number  
 Sorting and binning tolerances: 0.5W Measurement tolerance: ±3%  
 Short Circuit Current tolerance: ±4% Open Circuit Voltage tolerance: ±3%  
 15 Years Limited Product Warranty; 30 Years Limited Power Warranty;  
 Bifacial factor: 80±10% \* Module Efficiency (%): Round-off to the nearest number  
 The first year degradation: 1% annual degradation: 0.4% power retention rate within 30 years: 87.4%  
 ϕVoc=95%±5%, ϕIsc=80%±10%, ϕPmax=80%±10%;

**Electrical characteristics with 13.5% rear side power gain**

Total Equivalent power -Pmax (Wp)	666	671
Open Circuit Voltage-Voc(V)	52.24	52.43
Short Circuit Current-Isc(A)	16.18	16.25
Maximum Power Voltage-Vmpp(V)	43.40	43.56
Maximum Power Current-Impp(A)	15.35	15.41

Rear side power gain: The additional gain from the rear side compared to the power of the front side at the standard test condition. It depends on mounting (structure, height, tilt angle etc.) and albedo of the ground.

**ELECTRICAL DATA (NMOT)**

Model Type	RSM144-10-605BNDG	RSM144-10-610BNDG
Maximum Power-Pmax (Wp)	458.5	462.1
Open Circuit Voltage-Voc (V)	48.58	48.76
Short Circuit Current-Isc (A)	12.06	12.11
Maximum Power Voltage-Vmpp (V)	40.28	40.42
Maximum Power Current-Impp (A)	11.38	11.43

NMOT: Irradiance at 800 W/m<sup>2</sup>, Ambient Temperature 20°C, Wind Speed 1 m/s.

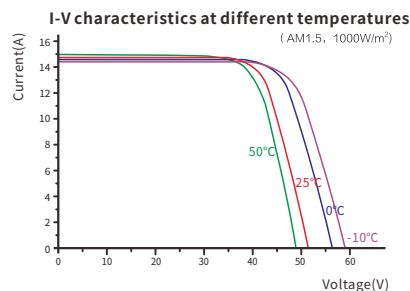
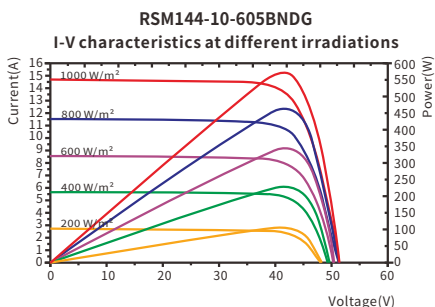
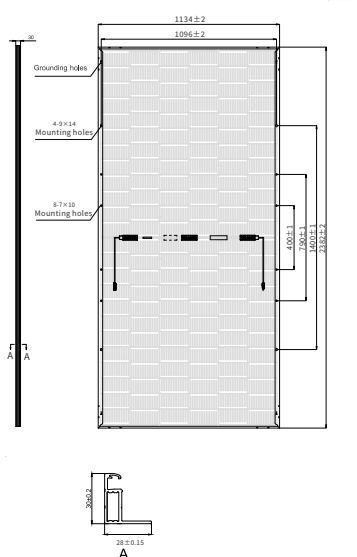
**MECHANICAL DATA**

Solar cells	n-type TOPCon
Cell configuration	144 cells (6×12×6×12)
Module dimensions	2382/2384×1134×30/35mm
Weight	30.0~38.0kg
Superstrate	High Transmission, Low Iron, Semi-Tempered ARC Glass
Substrate	Semi-Tempered Glass
Frame	Anodized Aluminium Alloy, Silver Color
J-Box	Potted, IP68, 1500VDC, 3 Schottky by pass diodes
Cables	4.0mm <sup>2</sup> , Positive(+)350mm, Negative(-)230mm (Connector Included)
Connector	Zhejiang Twinsel Electronic Technology Co.,Ltd. PV-SY02, IP68

**TEMPERATURE & MAXIMUM RATINGS**

Nominal Module Operating Temperature (NMOT)	44°C±2°C
Temperature Coefficient of Voc	-0.25%/°C
Temperature Coefficient of Isc	0.046%/°C
Temperature Coefficient of Pmax	-0.29%/°C
Operational Temperature	-40°C~+85°C
Maximum System Voltage	1500VDC
Fire Class According to UI790	CLASS C
Max Series Fuse Rating	30A
Limiting Reverse Current	30A

**Dimensions of PV Module**



**PACKAGING CONFIGURATION**

	40ft(HQ)	20ft
Number of modules per container	720	144
Number of modules per pallet	36	36
Number of pallets per container	20	4
Packaging box dimensions (LxWxH) in mm	2395×1110×1260	
Box gross weight [kg]	1220	



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CAUTION: READ SAFETY AND INSTALLATION INSTRUCTIONS BEFORE USING THE PRODUCT.

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