

## 210MTB18

### 210-N-Type Mono TOPCon Bifacial SE Solar Cell

#### Product Feature

- High conversion efficiency  $\geq 25.0\%$ , Bifaciality  $\geq 85\%$
- Extremely low LID (Light Induced Degradation)
- High resistance of PID (Potential Induced Degradation)
- Weak light response( $200W/m^2$ )  $\geq 97\%$
- Lower CTM loss, better for the high efficiency module

#### Quality Control

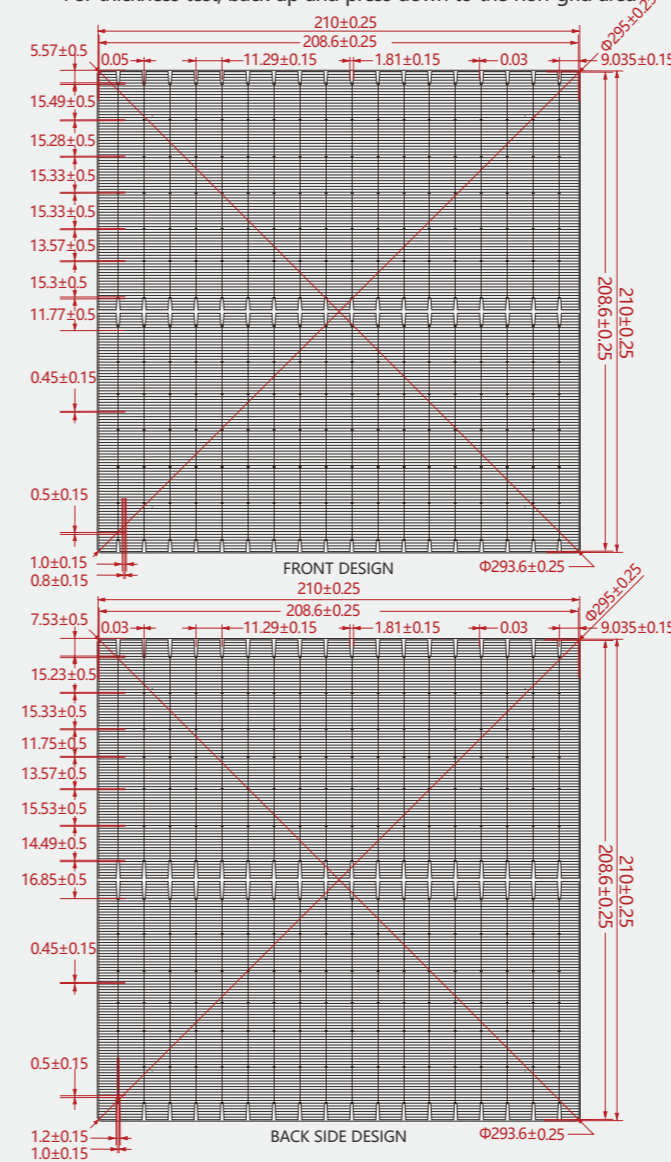
- Efficiency test accuracy is  $\pm 0.1\%$
- Automatic inspection of IV/EL/Appearance
- Calibration Cell source to Fraunhofer ISE
- Stringent testing for material delivery, warehouse delivery and packaging



**Comprehensive Products and System Certificates**  
 IEC61215/IEC61730/IEC61701/IEC62716  
 ISO 9001: Quality Management System  
 ISO 14001: Environmental Management System  
 ISO14064: Greenhouse Gases Emissions Verification  
 OHSAS 18001: Occupational Health and Safety Management System

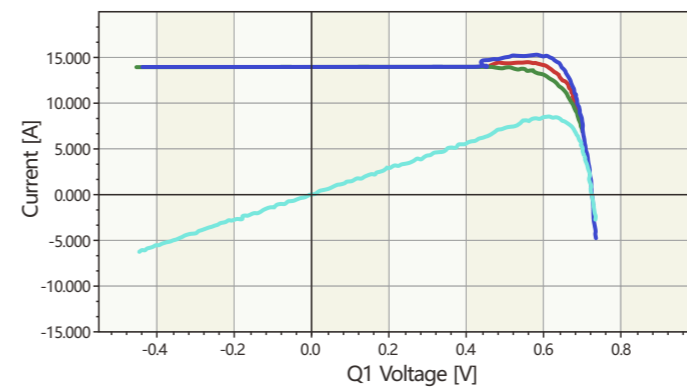
#### Cell graphics and sizes

For thickness test, back up and press down to the non-grid area

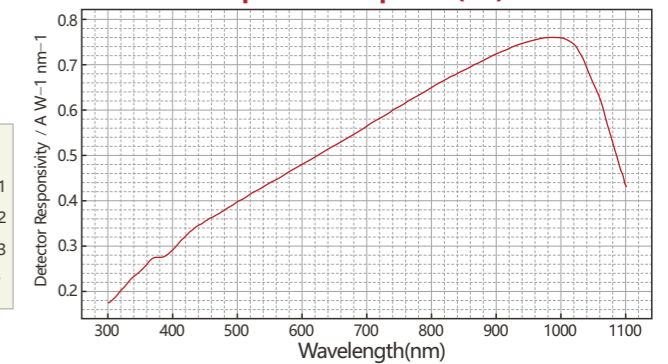


#### I-V Curve

(1000W/m<sup>2</sup>, AM 1.5G, 25°C)



#### Spectral Response(SR)



#### Product Appearance

Appearance	Length (mm)	Width (mm)	Diagonal length (mm)	Thickness (μm)
Dimension	182/210	210	272/295	130
Common difference	±0.25	±0.25	±0.25	±14

#### Product Parameters

Front side	16/18 Bus-bars (Silver), 0.03±0.015mm wide Bus-bars, 14 PAD 168 Fingers (Silver/Aluminum) Blue silicon oxynitride anti-reflective coating (SiOxNy)
Back side	16/18 Bus-bars (Silver), 0.03±0.015mm wide Bus-bars, 14 PAD 174 Fingers (Silver) Blue silicon nitride coating (SiN)

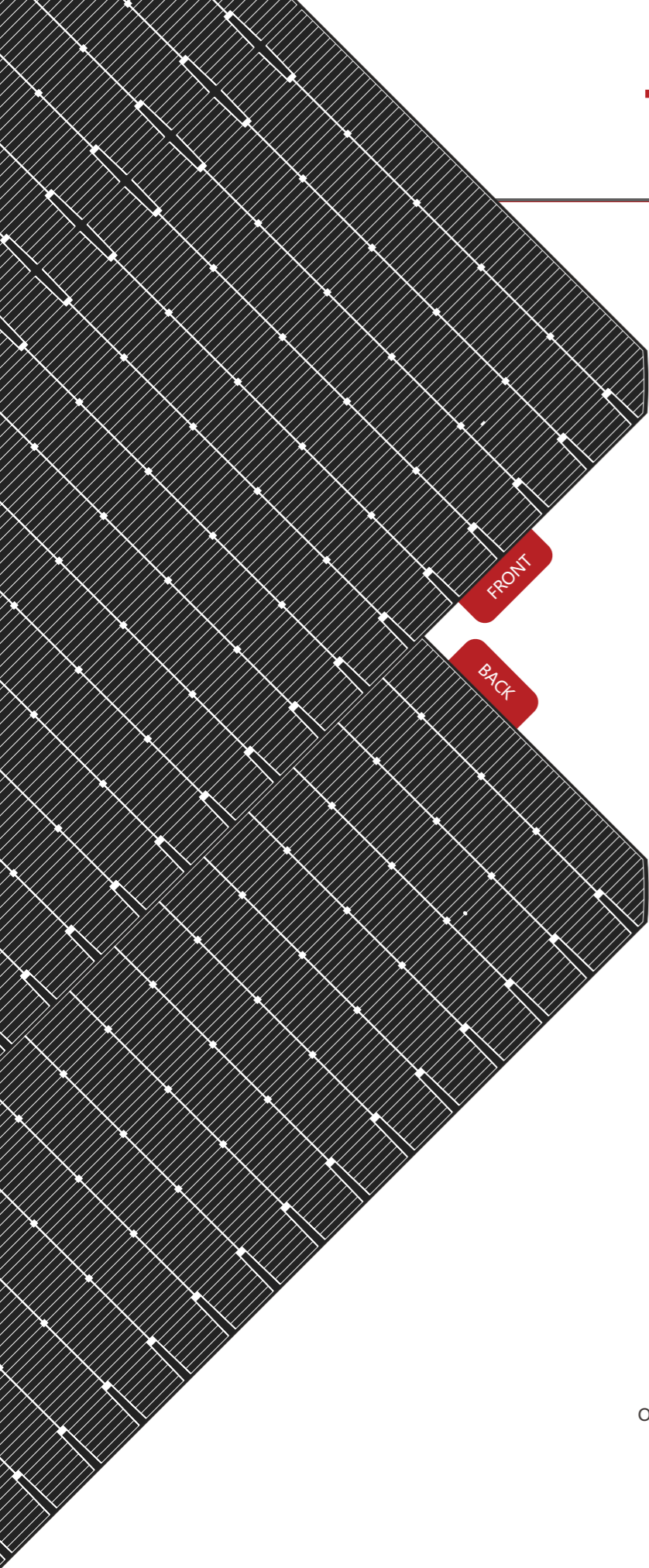
#### Temperature Coefficients

Current Temperature Coefficient(%/K)	+0.045
Voltage Temperature Coefficient(%/K)	-0.25
Power Temperature Coefficient(%/K)	-0.30

#### Electrical characteristics

Eff(%)	Power Pmpp(W)	Max. Power Voltage Vmpp(V)	Max. Current Imp(A)	Open Circuit Voltage Voc(V)	Short Circuit Current Isc(A)	FF(%)
25.4	11.20	0.625	17.909	0.721	18.664	83.21
25.3	11.16	0.625	17.864	0.721	18.648	83.02
25.2	11.11	0.624	17.817	0.720	18.649	82.77
25.1	11.07	0.623	17.777	0.719	18.633	82.58
25.0	11.02	0.622	17.726	0.719	18.600	82.48
24.9	10.98	0.621	17.675	0.718	18.573	82.36
24.8	10.94	0.621	17.613	0.717	18.548	82.24
24.7	10.89	0.620	17.562	0.716	18.520	82.13
24.6	10.85	0.619	17.513	0.715	18.495	82.01
24.5	10.80	0.619	17.464	0.714	18.478	81.89
24.4	10.76	0.618	17.410	0.713	18.461	81.76
24.3	10.72	0.617	17.367	0.712	18.441	81.64
24.2	10.67	0.616	17.323	0.711	18.412	81.52
24.1	10.63	0.615	17.280	0.710	18.389	81.39
24.0	10.58	0.614	17.236	0.709	18.360	81.30

\*Standard test condition: 1000W/m<sup>2</sup>, AM 1.5G, 25°C



## 182MTB16

### 182-N-Type Mono TOPCon Bifacial SE Solar Cell

#### Product Feature

- High conversion efficiency  $\geq 25.0\%$ , Bifaciality  $\geq 85\%$
- Extremely low LID (Light Induced Degradation)
- High resistance of PID (Potential Induced Degradation)
- Weak light response( $200W/m^2$ )  $\geq 97\%$
- Lower CTM loss, better for the high efficiency module

#### Quality Control

- Efficiency test accuracy is  $\pm 0.1\%$
- Automatic inspection of IV/EL/Appearance
- Calibration Cell source to Fraunhofer ISE
- Stringent testing for material delivery, warehouse delivery and packaging

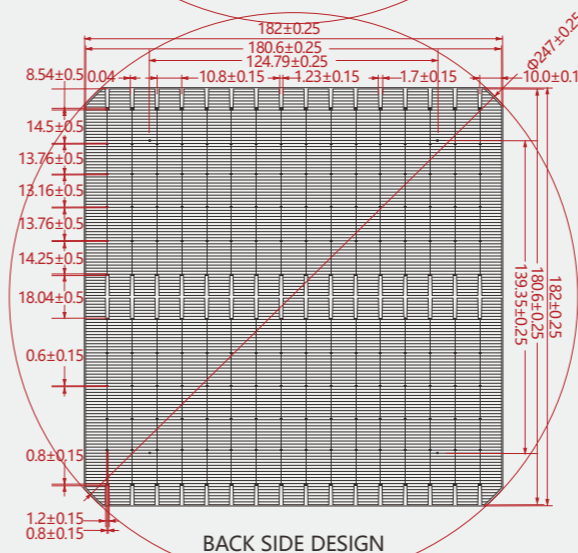
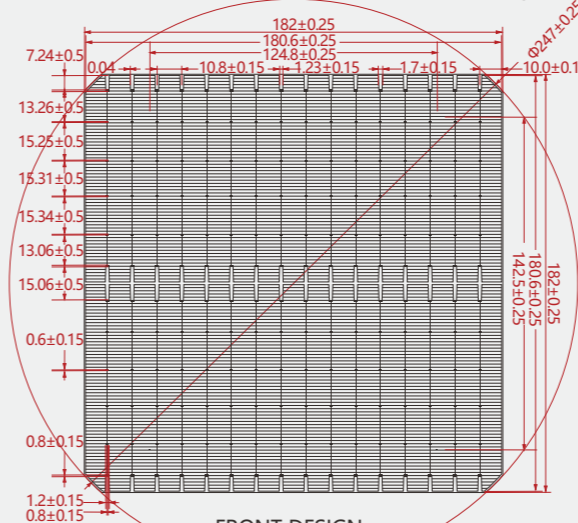


**Comprehensive Products and System Certificates**  
 IEC61215/IEC61730/IEC61701/IEC62716  
 ISO 9001: Quality Management System  
 ISO 14001: Environmental Management System  
 ISO14064: Greenhouse Gases Emissions Verification  
 OHSAS 18001: Occupational Health and Safety Management System



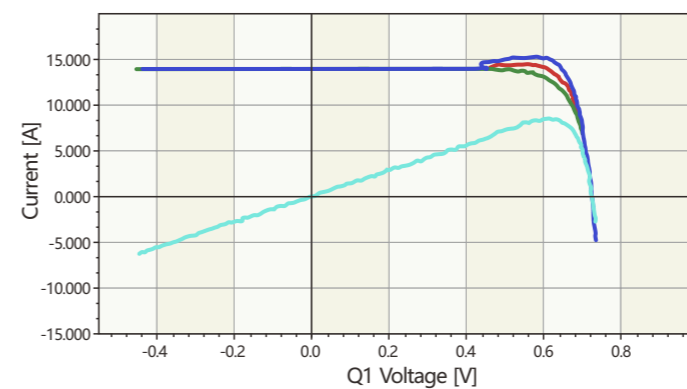
#### Cell graphics and sizes

For thickness test, back up and press down to the non-grid area



#### I-V Curve

(1000W/m<sup>2</sup>, AM 1.5G, 25°C)



#### Product Appearance

Appearance	Length (mm)	Width (mm)	Diagonal length (mm)	Thickness (μm)
Dimension	182/182.2	182/182.2	247	130
Common difference	$\pm 0.25$	$\pm 0.25$	$\pm 0.25$	$\pm 14$

#### Product Parameters

Front side	16 Bus-bars (Silver), 0.03 $\pm$ 0.015mm wide Bus-bars, 12 PAD 160 Fingers (Silver/Aluminum) Blue silicon oxynitride anti-reflective coating (SiOxNy)
Back side	16 Bus-bars (Silver), 0.03 $\pm$ 0.015mm wide Bus-bars, 12 PAD 164 Fingers (Silver) Blue silicon nitride coating (SiN)

#### Temperature Coefficients

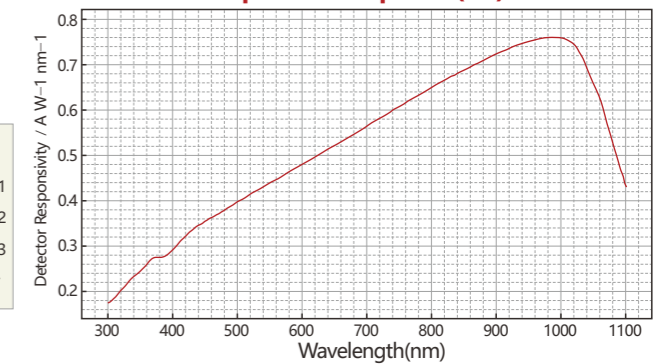
Current Temperature Coefficient(%/K)	+0.045
Voltage Temperature Coefficient(%/K)	-0.25
Power Temperature Coefficient(%/K)	-0.30

#### Electrical characteristics

Eff(%)	Power Pmpp(W)	Max. Power Voltage Vmpp(V)	Max. Power Current Imp(A)	Open Circuit Voltage Voc(V)	Short Circuit Current Isc(A)	FF(%)
25.4	8.39	0.628	13.347	0.723	14.033	82.71
25.3	8.35	0.628	13.303	0.722	14.002	82.67
25.2	8.32	0.628	13.257	0.721	13.965	82.64
25.1	8.29	0.627	13.208	0.720	13.924	82.61
25.0	8.25	0.627	13.162	0.720	13.889	82.58
24.9	8.22	0.626	13.126	0.719	13.852	82.53
24.8	8.19	0.626	13.086	0.718	13.819	82.50
24.7	8.15	0.625	13.043	0.717	13.785	82.47
24.6	8.12	0.625	13.005	0.716	13.759	82.43
24.5	8.09	0.621	13.032	0.713	13.772	82.35
24.4	8.05	0.620	13.003	0.711	13.756	82.33
24.3	8.02	0.618	12.975	0.710	13.742	82.20
24.2	7.99	0.617	12.941	0.709	13.690	82.28
24.1	7.96	0.615	12.933	0.709	13.680	82.07
24.0	7.92	0.613	12.924	0.709	13.673	81.78

\*Standard test condition: 1000W/m<sup>2</sup>, AM 1.5G, 25°C

#### Spectral Response(SR)





## 650W-182M/156TB

### N-TOPCon Bifacial Monocrystalline Module

- **Light Redirecting Film:** JWB TOPCON modules use gap Light Redirecting Film technology to ensure the bifaciality and reliability of the module, meanwhile effectively increasing the power performance.
- **No-Destructive Cutting:** JWB cells-cutting is using NDC (non-destructive) cutting technology to ensure the bifaciality and reliability of the module, meanwhile effectively increasing the power performance.
- **Junction Box Laser Welding Technology:** JWB uses the high energy density and precise positioning control capabilities of the laser to achieve high-quality welding. It can accurately control the junction box welding position and welding time to ensure welding quality and reliability, to improve module safety.

**2465×1134×35/30 182×91**

Dimensions (mm) Cell size (mm)

**156 CELL 610-650Wp**

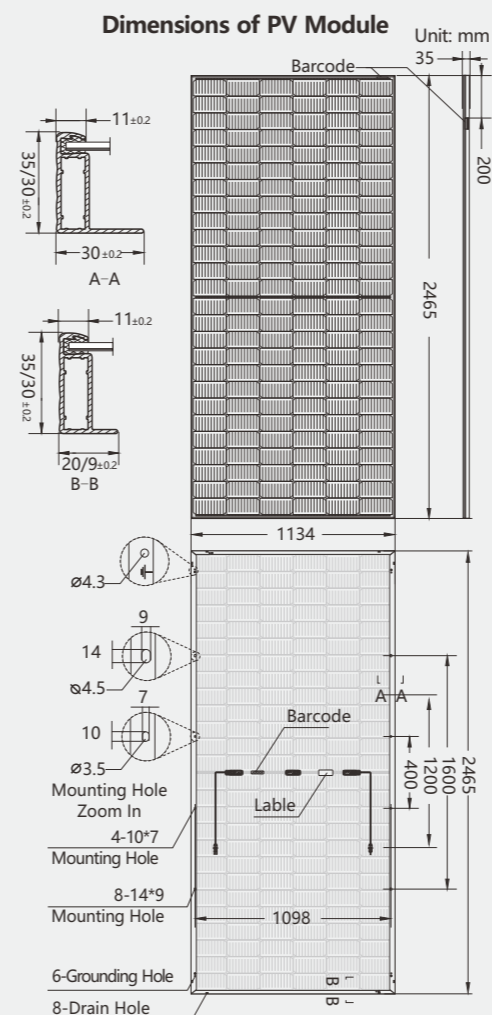
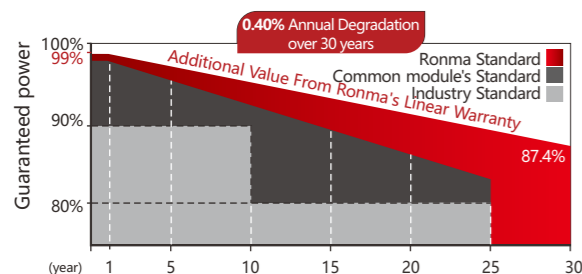
Mono TOPCon Power output

**1500V DC 23.25%**

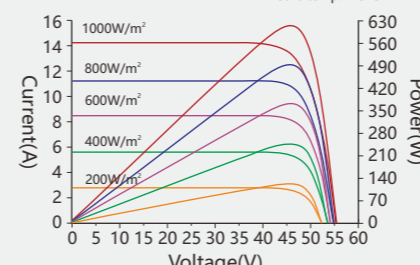
Max. system voltage Max. efficiency

#### LINEAR PERFORMANCE WARRANTY

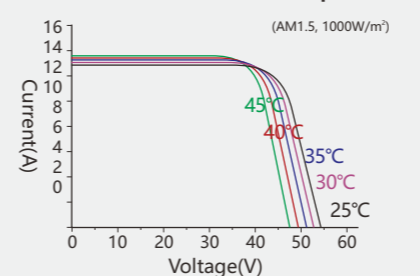
15-year product warranty / 30-year linear power warranty



**630W-182M/156TB**  
I-V characteristics at different irradiances  
Cells temp.=25°C



I-V characteristics at different temperatures  
(AM1.5, 1000W/m²)



#### ELECTRICAL CHARACTERISTICS (STC\*)

Rated Power in Watts-Pmax(Wp)	610	615	620	625	630	635	640	645	650
Open Circuit Voltage-Voc(V)	55.31	55.44	55.58	55.72	55.86	55.99	56.12	56.25	56.38
Short Circuit Current-Isc(A)	14.03	14.11	14.19	14.27	14.35	14.43	14.51	14.59	14.67
Max. Power Voltage-Vmpp(V)	45.60	45.77	45.93	46.10	46.27	46.44	46.61	46.78	46.95
Max. Power Current-Impp(A)	13.38	13.44	13.50	13.56	13.62	13.68	13.71	13.80	13.86
Module Efficiency(%)	21.82	22.00	22.18	22.36	22.54	22.72	22.89	23.07	23.25
Maximum system voltage	1500V DC								
Fuse Rating(A)	30								
Temperature coefficient Pmax	-0.30%/°C								
Temperature coefficient Isc	0.046%/°C								
Temperature coefficient Voc	-0.25%/°C								
Refer. Bifacial Factor	80±5%								

\*STC: Irradiance 1000W/m², module temperature 25°C, AM=1.5

#### WORKING CHARACTERISTICS (NOCT\*)

Rated Power in Watts-Pmax(Wp)	455	459	462	466	470	474	478
Open Circuit Voltage-Voc(V)	52.41	52.54	52.66	52.79	52.93	53.15	53.28
Short Circuit Current-Isc(A)	11.26	11.33	11.39	11.46	11.52	11.58	11.64
Max. Power Voltage-Vmpp(V)	42.23	42.35	42.46	42.57	42.68	42.79	42.90
Max. Power Current-Impp(A)	10.77	10.83	10.89	10.95	11.01	11.07	11.13
Power tolerance	0~+3%						
NOCT	45°C±2°C						
Operating Temperature	-40°C~85°C						

\*NOCT: Irradiance 800W/m², ambient temperature 20°C, wind speed 1m/s

#### Electrical characteristics with different rear side power gain

Power gain	Pmax(Wp)	635	641	646	651	656
5%	Efficiency(%)	22.73	22.91	23.10	23.29	23.48
15%	Pmax(Wp)	696	702	707	713	719
15%	Efficiency(%)	24.89	25.10	25.30	25.51	25.71
25%	Pmax(Wp)	756	763	769	775	781
25%	Efficiency(%)	27.05	27.28	27.50	27.73	27.95

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 CHARACTERISTICS

Number of cells	156pcs	Type of frame	Anodized Aluminum Alloy
Size of cell(mm)	182×91	Size of module(mm)	2465×1134×35/30
Type of cell	N-TOPCon Mono	Weight(kg)	34
Thickness of glass(mm)	2.0	Cables/connectors	4.0mm², MC4 compatible
Junction box	IP68, 1500V DC, 3 Diodes	Length of Cable	+300mm/-200mm(connector included)
Length can be customized			

#### PACKAGING CONFIGURATION

Height of Modules (mm)	35	30
Number of Modules Per Pallet	31	36
Packaging Box Dimensions (l×w×h) (mm)	2485×1120×1260	1260×1120×2595
Box Gross Weight (kg)	1080	1250
Number of Modules Per 40ft (HQ) Container	496	576
Number of Pallets Per 40ft (HQ) Container	16	16

CAUTION: READ SAFETY AND INSTALLATION INSTRUCTIONS BEFORE USING THE PRODUCT



## 625W-182M/156TB

### N-TOPCon Bifacial Monocrystalline Module

- **Light Redirecting Film:** JWB TOPCON modules use gap Light Redirecting Film technology to ensure the bifaciality and reliability of the module, meanwhile effectively increasing the power performance.
- **No-Destructive Cutting:** JWB cells-cutting is using NDC (non-destructive) cutting technology, the cutting surface is smooth, which avoids the loss of the mechanical structure of the cells and ensures sufficient current.
- **Junction Box Laser Welding Technology:** JWB uses the high energy density and precise positioning control capabilities of the laser to achieve high-quality welding. It can accurately control the junction box welding position and welding time to ensure welding quality and reliability, to improve module safety.

**2382×1134×35/30 210×91**

Dimensions (mm) Cell size (mm)

**132 CELL 605-625Wp**

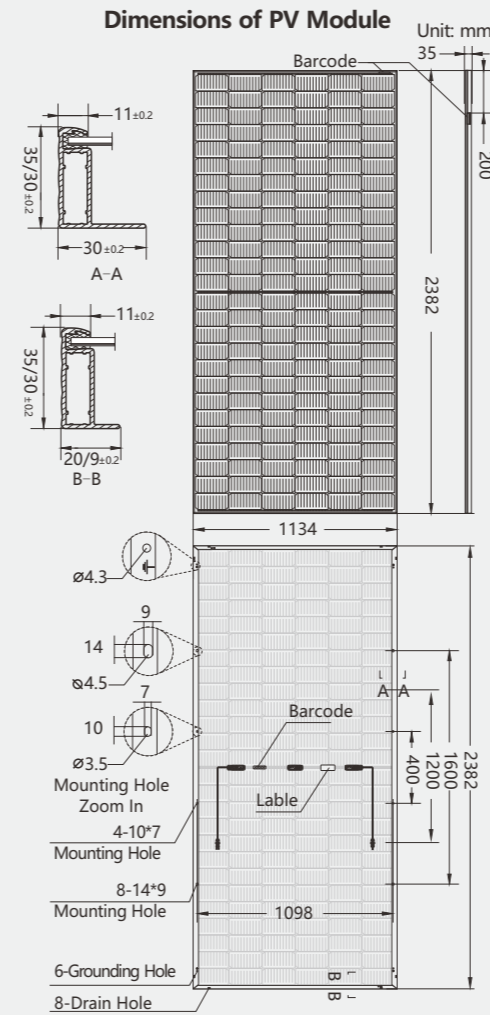
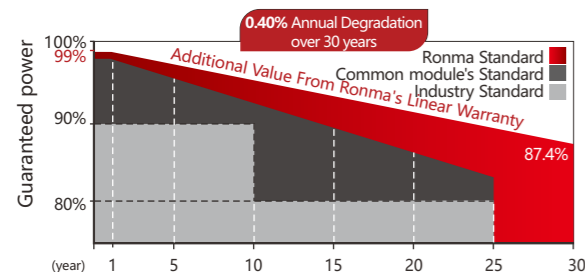
Mono TOPCon Power output

**1500V DC 23.69%**

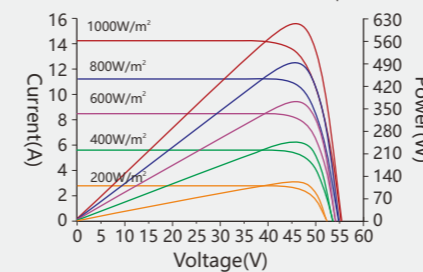
Max. system voltage Max. efficiency

#### LINEAR PERFORMANCE WARRANTY

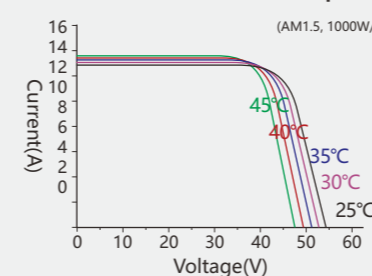
15-year product warranty / 30-year linear power warranty



I-V characteristics at different irradiances  
Cells temp.=25°C



I-V characteristics at different temperatures  
(AM1.5, 1000W/m²)



#### ELECTRICAL CHARACTERISTICS (STC\*)

Rated Power in Watts-Pmax(Wp)	605	610	615	620	625
Open Circuit Voltage-Voc(V)	40.29	40.43	40.57	40.72	40.86
Short Circuit Current-Isc(A)	15.02	15.09	15.16	15.23	15.30
Max. Power Voltage-Vmpp(V)	48.40	48.62	48.82	49.02	49.22
Max. Power Current-Impp(A)	15.92	15.98	16.04	16.10	16.16
Module Efficiency(%)	22.40	22.58	22.77	22.95	23.69
Maximum system voltage	1500V DC				
Fuse Rating(A)	30				
Temperature coefficient Pmax	-0.30%/°C				
Temperature coefficient Isc	0.046%/°C				
Temperature coefficient Voc	-0.25%/°C				
Refer. Bifacial Factor	80±5%				

\*STC: Irradiance 1000W/m², module temperature 25°C, AM=1.5

#### WORKING CHARACTERISTICS (NOCT\*)

Rated Power in Watts-Pmax(Wp)	457	461	465	469	473
Open Circuit Voltage-Voc(V)	37.75	37.92	38.09	38.26	38.44
Short Circuit Current-Isc(A)	12.11	12.16	12.21	12.26	12.31
Max. Power Voltage-Vmpp(V)	46.03	46.22	46.41	46.60	46.70
Max. Power Current-Impp(A)	12.86	12.92	12.98	13.04	13.10
Power tolerance	0~+3%				
NOCT	45°C±2°C				
Operating Temperature	-40°C~85°C				

\*NOCT: Irradiance 800W/m², ambient temperature 20°C, wind speed 1m/s

#### Electrical characteristics with different rear side power gain

Power gain (%)	Pmax(Wp)	Efficiency(%)	635.30	640.50	645.80	651.00	656.30
5%			23.50	23.70	23.90	24.10	24.30
15%			25.80	26.00	26.20	26.40	26.60
25%			28.00	28.20	28.50	28.70	28.90

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 CHARACTERISTICS

Number of cells	132pcs	Type of frame	Anodized Aluminum Alloy
Size of cell(mm)	210×91	Size of module(mm)	2382×1134×35/30
Type of cell	N-TOPCon Mono	Weight(kg)	33.5
Thickness of glass(mm)	2.0	Cables/connectors	4.0mm², MC4 compatible
Junction box	IP68, 1500V DC, 3 Diodes	Length of Cable	+300mm/-200mm(connector included)
Length can be customized			

#### PACKAGING CONFIGURATION

Height of Modules (mm)	35	30
Number of Modules Per Pallet	31	36
Packaging Box Dimensions (l×w×h) (mm)	2485×1120×1260	1260×1120×2595
Box Gross Weight (kg)	1080	1250
Number of Modules Per 40ft (HQ) Container	496	720
Number of Pallets Per 40ft (HQ) Container	16	10

CAUTION: READ SAFETY AND INSTALLATION INSTRUCTIONS BEFORE USING THE PRODUCT



## 600W-182M/144TB

### N-TOPCon Bifacial Monocrystalline Module

- **Light Redirecting Film:** JWB TOPCON modules use gap Light Redirecting Film technology to ensure the bifaciality and reliability of the module, meanwhile effectively increasing the power performance.
- **No-Destructive Cutting:** JWB cells-cutting is using NDC (non-destructive) cutting technology, the cutting surface is smooth, which avoids the loss of the mechanical structure of the cells and ensures sufficient current.
- **Junction Box Laser Welding Technology:** JWB uses the high energy density and precise positioning control capabilities of the laser to achieve high-quality welding. It can accurately control the junction box welding position and welding time to ensure welding quality and reliability, to improve module safety.

**2279×1134×35/30**    **182×91**

Dimensions (mm)                      Cell size (mm)

**144 CELL**                      **560-600Wp**

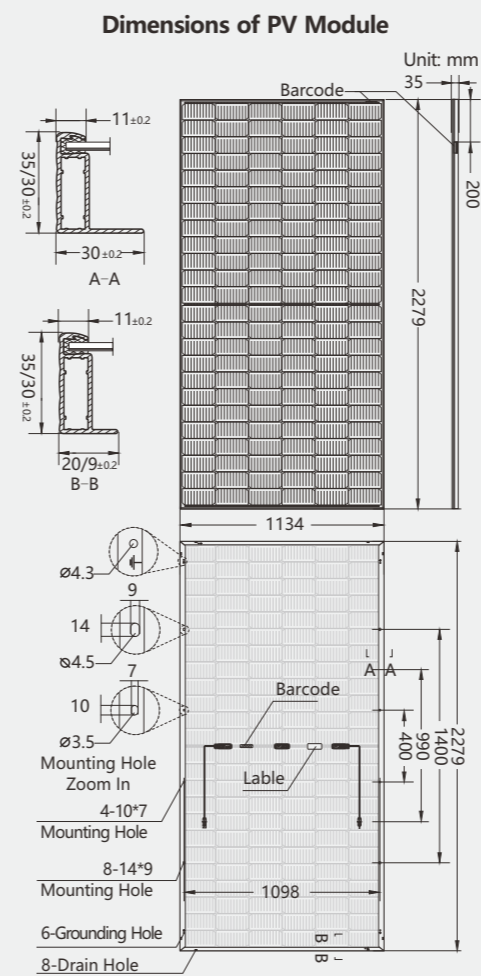
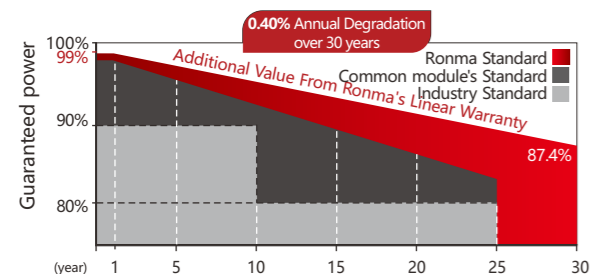
Mono TOPCon                      Power output

**1500V DC**                      **23.22%**

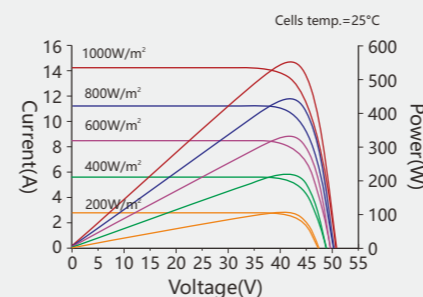
Max. system voltage                      Max. efficiency

#### LINEAR PERFORMANCE WARRANTY

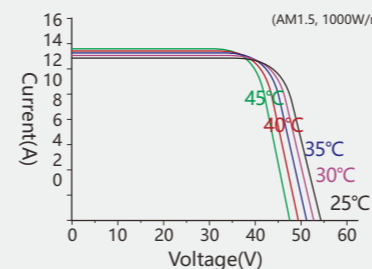
15-year product warranty / 30-year linear power warranty



**580W-182M/144TB**  
I-V characteristics at different irradiances



I-V characteristics at different temperatures



#### ELECTRICAL CHARACTERISTICS (STC\*)

Rated Power in Watts-Pmax(Wp)	560	565	570	575	580	585	590	595	600
Open Circuit Voltage-Voc(V)	50.67	50.87	51.07	51.27	51.47	51.50	51.70	51.90	52.27
Short Circuit Current-Isc(A)	14.13	14.19	14.25	14.31	14.37	14.36	14.45	14.53	14.61
Max. Power Voltage-Vmpp(V)	41.95	42.14	42.29	42.44	42.59	43.27	43.45	43.61	43.19
Max. Power Current-Impp(A)	13.35	13.41	13.48	13.55	13.62	13.52	13.58	13.64	13.90
Module Efficiency(%)	21.67	21.86	22.06	22.25	22.44	22.6	22.8	23.02	23.22
Maximum system voltage	1500V DC								
Fuse Rating(A)	30								
Temperature coefficient Pmax	-0.29%/°C								
Temperature coefficient Isc	0.045%/°C								
Temperature coefficient Voc	-0.25%/°C								
Refer. Bifacial Factor	80±5%								

\*STC: Irradiance 1000W/m², module temperature 25°C, AM=1.5

#### WORKING CHARACTERISTICS (NOCT\*)

Rated Power in Watts-Pmax(Wp)	421	425	429	432	436	440
Open Circuit Voltage-Voc(V)	48.13	48.32	48.51	48.70	48.89	49.08
Short Circuit Current-Isc(A)	11.41	11.46	11.50	11.55	11.60	11.65
Max. Power Voltage-Vmpp(V)	39.39	39.52	39.65	39.78	39.87	40.00
Max. Power Current-Impp(A)	10.69	10.75	10.81	10.87	10.94	11.01
Power tolerance	0~+3%					
NOCT	45°C±2°C					
Operating Temperature	-40°C~85°C					

\*NOCT: Irradiance 800W/m², ambient temperature 20°C, wind speed 1m/s

#### Electrical characteristics with different rear side power gain

Power gain (%)	Pmax(Wp)	Efficiency(%)	588	593	599	604	609
5%			22.77	22.97	23.17	23.37	23.57
15%			24.93	25.15	25.37	25.60	25.82
25%			27.10	27.34	27.58	27.82	28.07

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 CHARACTERISTICS

Number of cells	144pcs	Type of frame	Anodized Aluminum Alloy
Size of cell(mm)	182×91	Size of module(mm)	2279×1134×35
Type of cell	N-TOPCon Mono	Weight(kg)	32
Thickness of glass(mm)	2.0	Cables/connectors	4.0mm², MC4 compatible
Junction box	IP68, 1500V DC, 3 Diodes	Length of Cable	+300mm/-200mm(connector included) Length can be customized

#### PACKAGING CONFIGURATION

Height of Modules (mm)	35	30
Number of Modules Per Pallet	31	36
Packaging Box Dimensions (l×w×h) (mm)	2300×1120×1260	2300×1120×1260
Box Gross Weight (kg)	1020	1180
Number of Modules Per 40ft (HQ) Container	620	720
Number of Pallets Per 40ft (HQ) Container	20	20

CAUTION: READ SAFETY AND INSTALLATION INSTRUCTIONS BEFORE USING THE PRODUCT



**500W-182M/120TB**
**N-TOPCon**  
**Bifacial Monocrystalline Module**

- **Light Redirecting Film:** JWB TOPCON modules use gap Light Redirecting Film technology to ensure the bifaciality and reliability of the module, meanwhile effectively increasing the power performance.
- **No-Destructive Cutting:** JWB cells-cutting is using NDC (non-destructive) cutting technology, the cutting surface is smooth, which avoids the loss of the mechanical structure of the cells and ensures sufficient current.
- **Junction Box Laser Welding Technology:** JWB uses the high energy density and precise positioning control capabilities of the laser to achieve high-quality welding. It can accurately control the junction box welding position and welding time to ensure welding quality and reliability, to improve module safety.

**1996×1134×35/30**    **182×91.87**

Dimensions (mm)    Cell size (mm)

**120 CELL**    **495-500Wp**

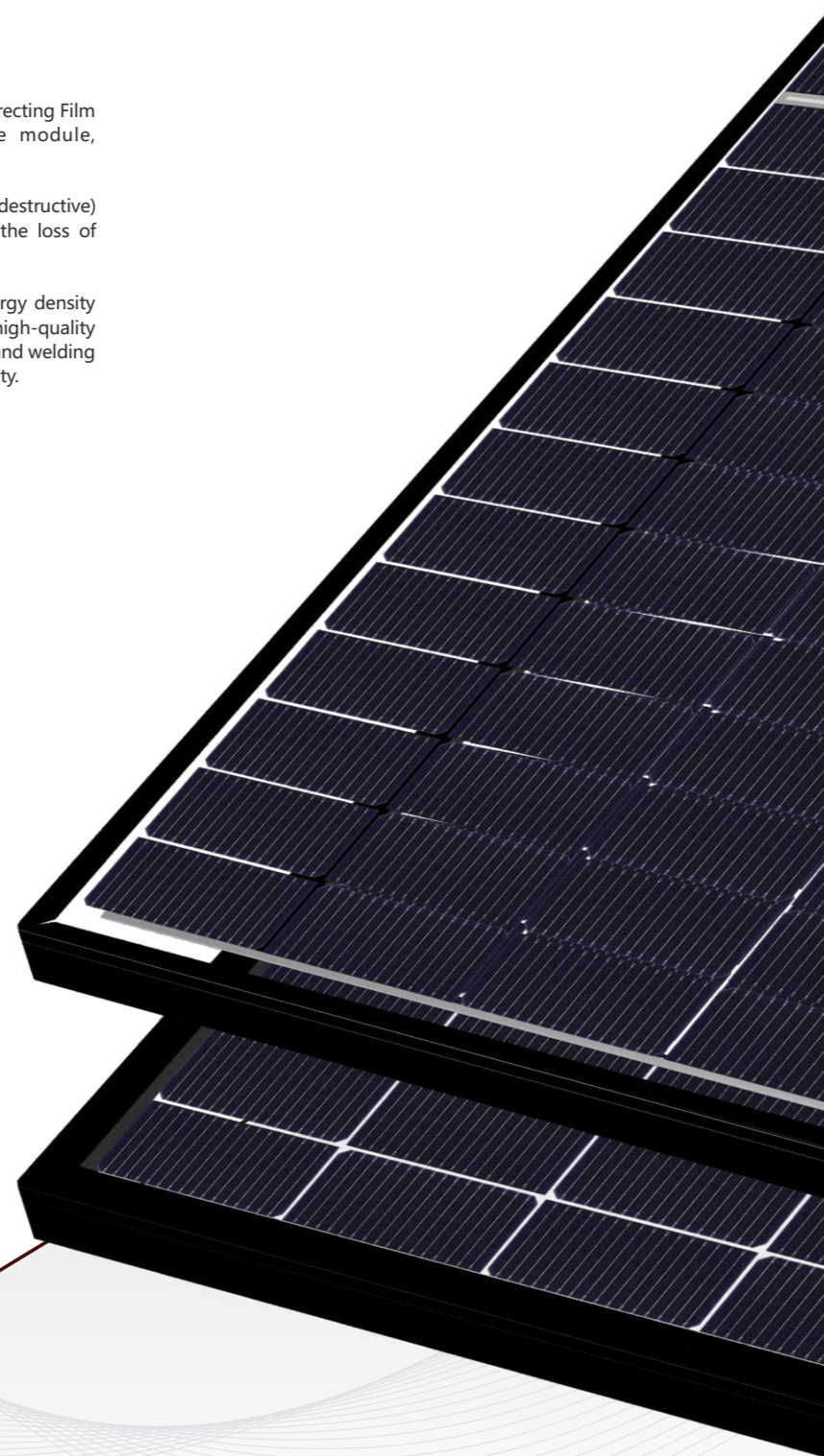
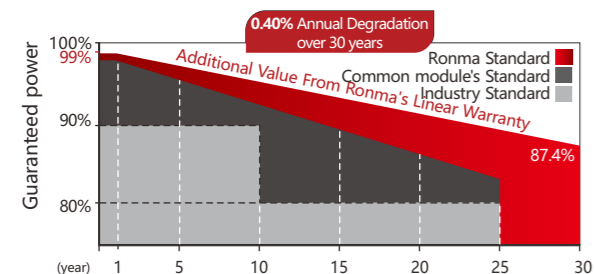
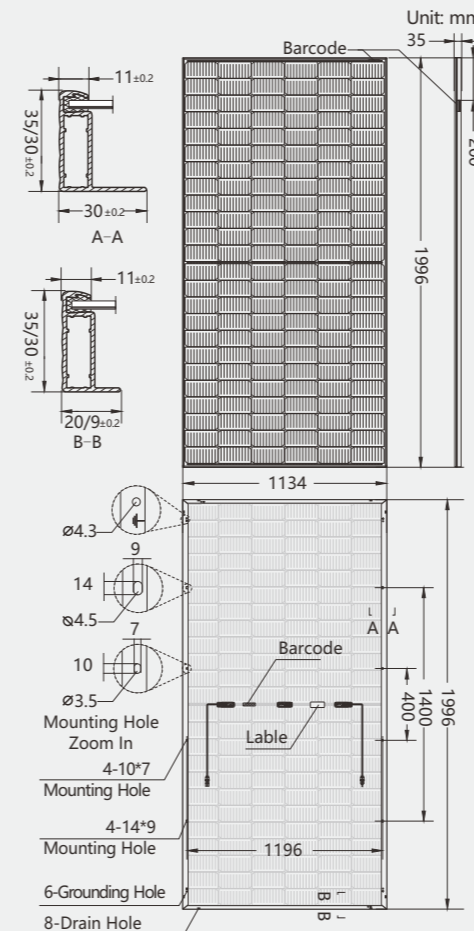
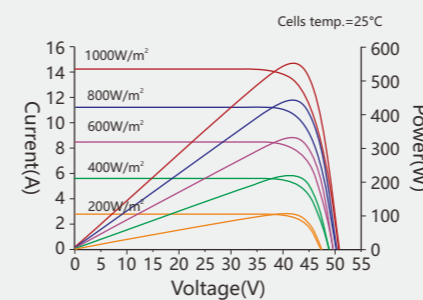
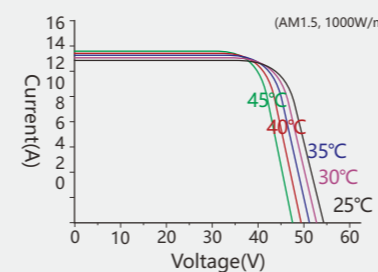
Mono TOPCon    Power output

**1500V DC**    **22.09%**

Max. system voltage    Max. efficiency

**LINEAR PERFORMANCE WARRANTY**

15-year product warranty / 30-year linear power warranty


**Dimensions of PV Module**

**500W-182M/120TB**
**I-V characteristics at different irradiances**

**I-V characteristics at different temperatures**

**ELECTRICAL CHARACTERISTICS (STC\*)**

Rated Power in Watts-Pmax(Wp)	495	500
Open Circuit Voltage-Voc(V)	43.52	43.65
Short Circuit Current-Isc(A)	14.37	14.47
Max. Power Voltage-Vmpp(V)	36.76	36.88
Max. Power Current-Impp(A)	13.46	13.56
Module Efficiency(%)	21.86	22.09
Maximum system voltage	1500V DC	
Fuse Rating(A)	30	
Temperature coefficient Pmax	-0.29%/°C	
Temperature coefficient Isc	0.045%/°C	
Temperature coefficient Voc	-0.25%/°C	
Refer. Bifacial Factor	80±5%	

 \*STC: Irradiance 1000W/m<sup>2</sup>, module temperature 25°C, AM=1.5

**WORKING CHARACTERISTICS (NOCT\*)**

Rated Power in Watts-Pmax(Wp)	421	425	429	432	436
Open Circuit Voltage-Voc(V)	48.13	48.32	48.51	48.70	48.89
Short Circuit Current-Isc(A)	11.41	11.46	11.50	11.55	11.60
Max. Power Voltage-Vmpp(V)	39.39	39.52	39.65	39.78	39.87
Max. Power Current-Impp(A)	10.69	10.75	10.81	10.87	10.94
Power tolerance	0~+3%				
NOCT	45°C±2°C				
Operating Temperature	-40°C~85°C				

 \*NOCT: Irradiance 800W/m<sup>2</sup>, ambient temperature 20°C, wind speed 1m/s

**MECHANICAL CHARACTERISTICS**

Number of cells	120pcs	Type of frame	Anodized Aluminum Alloy
Size of cell(mm)	182×91	Size of module(mm)	1996×1134×35/30
Type of cell	N-TOPCon Mono	Weight(kg)	28
Thickness of glass(mm)	2.0	Cables/connectors	4.0mm <sup>2</sup> , MC4 compatible
Junction box	IP68, 1500V DC, 3 Diodes	Length of Cable	+300mm/-200mm(connector included)
			Length can be customized

**PACKAGING CONFIGURATION**

Height of Modules (mm)	35	30
Number of Modules Per Pallet	31	36
Packaging Box Dimensions (l×w×h) (mm)	2300×1120×1260	2300×1120×1260
Box Gross Weight (kg)	1084	1210
Number of Modules Per 40ft (HQ) Container	620	720
Number of Pallets Per 40ft (HQ) Container	20	20

CAUTION: READ SAFETY AND INSTALLATION INSTRUCTIONS BEFORE USING THE PRODUCT



## 450W-182M/108TB

### N-TOPCon Bifacial Monocrystalline Module

- **Light Redirecting Film:** JWB TOPCON modules use gap Light Redirecting Film technology to ensure the bifaciality and reliability of the module, meanwhile effectively increasing the power performance.
- **No-Destructive Cutting:** JWB cells-cutting is using NDC (non-destructive) cutting technology, the cutting surface is smooth, which avoids the loss of the mechanical structure of the cells and ensures sufficient current.
- **Junction Box Laser Welding Technology:** JWB uses the high energy density and precise positioning control capabilities of the laser to achieve high-quality welding. It can accurately control the junction box welding position and welding time to ensure welding quality and reliability, to improve module safety.

**1722×1134×35/30**    **182×91.87**

Dimensions (mm)                      Cell size (mm)

**108 CELL**                      **425-450Wp**

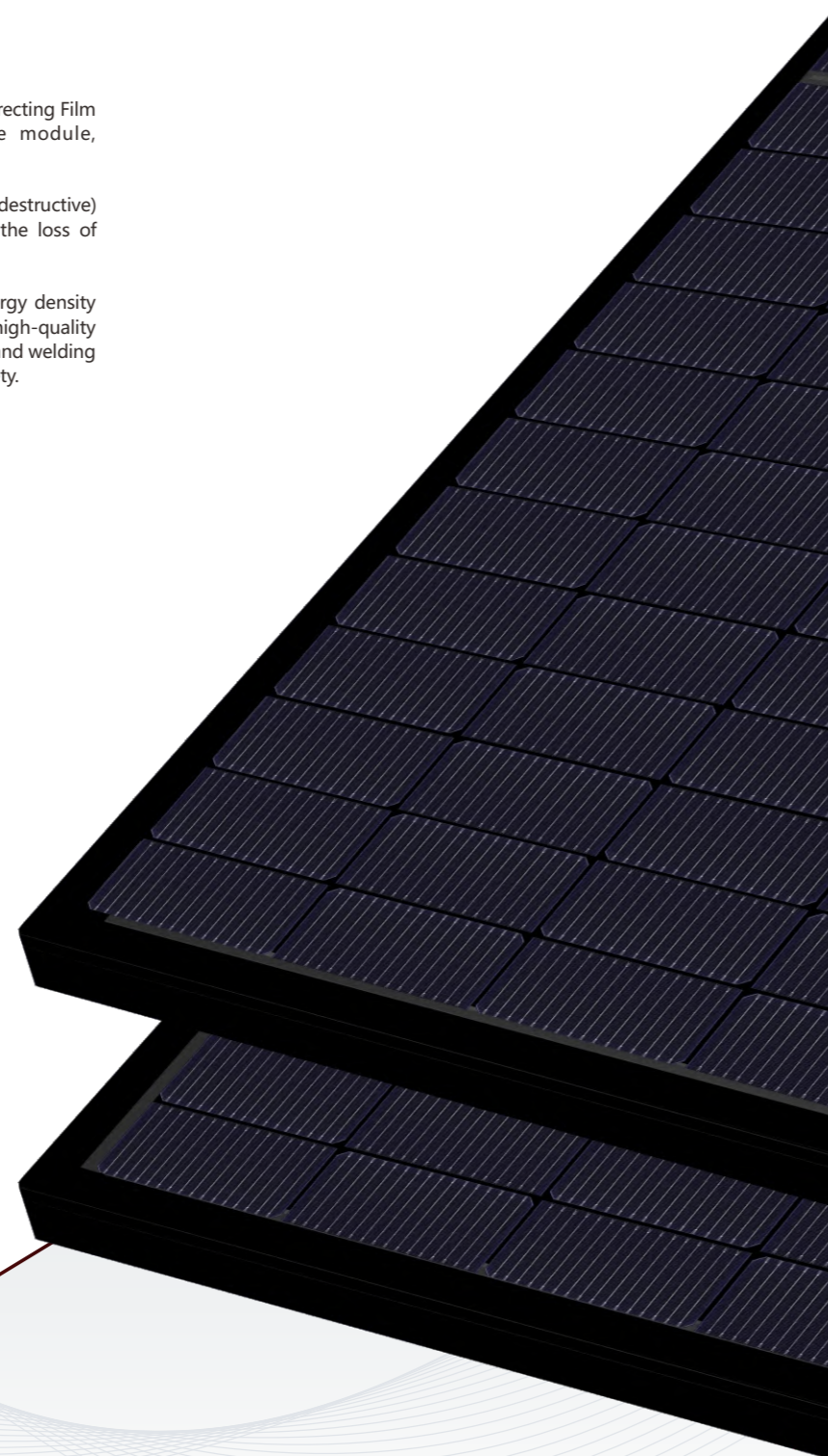
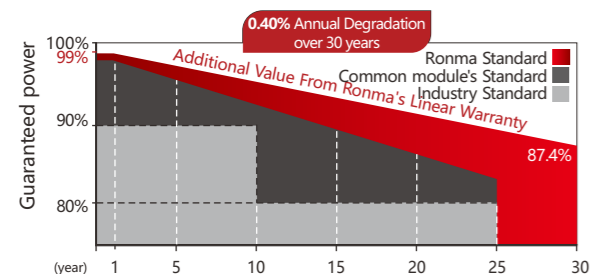
Mono TOPCon                      Power output

**1500V DC**                      **22.52%**

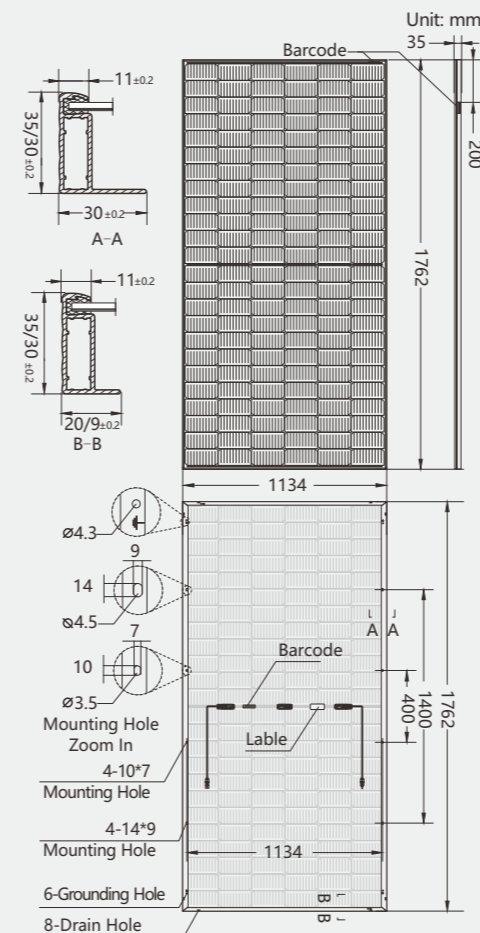
Max. system voltage                      Max. efficiency

#### LINEAR PERFORMANCE WARRANTY

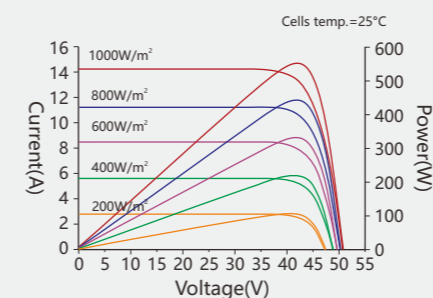
15-year product warranty / 30-year linear power warranty



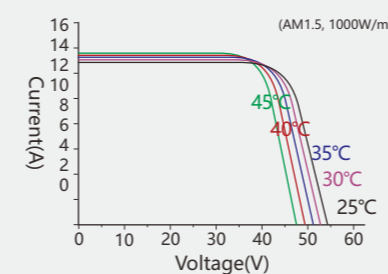
#### Dimensions of PV Module



#### 435W-182M/120TB I-V characteristics at different irradianations



#### I-V characteristics at different temperatures



#### ELECTRICAL CHARACTERISTICS (STC\*)

Rated Power in Watts-Pmax(Wp)	425	430	435	440	445	450
Open Circuit Voltage-Voc(V)	39.04	39.18	39.35	39.52	39.69	39.86
Short Circuit Current-Isc(A)	13.59	13.64	13.70	13.76	13.82	13.88
Max. Power Voltage-Vmpp(V)	33.15	33.34	33.52	33.73	33.91	34.09
Max. Power Current-Impp(A)	12.83	12.90	12.98	13.05	13.12	13.19
Module Efficiency(%)	21.27	21.52	21.77	22.02	22.27	22.52
Maximum system voltage	1500V DC					
Fuse Rating(A)	30					
Temperature coefficient Pmax	-0.29%/°C					
Temperature coefficient Isc	0.045%/°C					
Temperature coefficient Voc	-0.25%/°C					
Refer. Bifacial Factor	80±5%					

\*STC: Irradiance 1000W/m<sup>2</sup>, module temperature 25°C, AM=1.5

#### WORKING CHARACTERISTICS (NOCT\*)

Rated Power in Watts-Pmax(Wp)	317	320	324	328	331
Open Circuit Voltage-Voc(V)	36.85	36.98	37.14	37.30	37.47
Short Circuit Current-Isc(A)	10.98	11.02	11.07	11.12	11.17
Max. Power Voltage-Vmpp(V)	31.03	31.21	31.38	31.58	31.74
Max. Power Current-Impp(A)	10.21	10.27	10.33	10.38	10.44
Power tolerance	0~+3%				
NOCT	45°C±2°C				
Operating Temperature	-40°C~85°C				

\*NOCT: Irradiance 800W/m<sup>2</sup>, ambient temperature 20°C, wind speed 1m/s

#### MECHANICAL CHARACTERISTICS

Number of cells	108pcs	Type of frame	Anodized Aluminum Alloy
Size of cell(mm)	182×91.87	Size of module(mm)	1722×1134×35/30
Type of cell	N-TOPCon Mono	Weight(kg)	25.5
Thickness of glass(mm)	2.0	Cables/connectors	4.0mm <sup>2</sup> , MC4 compatible
Junction box	IP68, 1500V DC, 3 Diodes	Length of Cable	+300mm/-200mm (connector included) Length can be customized

#### PACKAGING CONFIGURATION

Height of Modules (mm)	35	30
Number of Modules Per Pallet	31	36
Packaging Box Dimensions (l×w×h) (mm)	1750×1120×1260	1750×1120×1260
Box Gross Weight (kg)	706	802
Number of Modules Per 40ft (HQ) Container	806	936
Number of Pallets Per 40ft (HQ) Container	26	26

CAUTION: READ SAFETY AND INSTALLATION INSTRUCTIONS BEFORE USING THE PRODUCT



## 455W-182M/108TB

### N-TOPCon Bifacial Monocrystalline Module

- **Light Redirecting Film:** JWB TOPCON modules use gap Light Redirecting Film technology to ensure the bifaciality and reliability of the module, meanwhile effectively increasing the power performance.
- **No-Destructive Cutting:** JWB cells-cutting is using NDC (non-destructive) cutting technology, the cutting surface is smooth, which avoids the loss of the mechanical structure of the cells and ensures sufficient current.
- **Junction Box Laser Welding Technology:** JWB uses the high energy density and precise positioning control capabilities of the laser to achieve high-quality welding. It can accurately control the junction box welding position and welding time to ensure welding quality and reliability, to improve module safety.

**1722×1134×35/30**    **182×91**

Dimensions (mm)                      Cell size (mm)

**108 CELL**                      **420-455Wp**

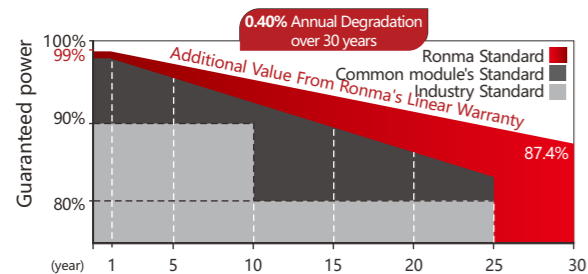
Mono TOPCon                      Power output

**1500V DC**                      **23.30%**

Max. system voltage                      Max. efficiency

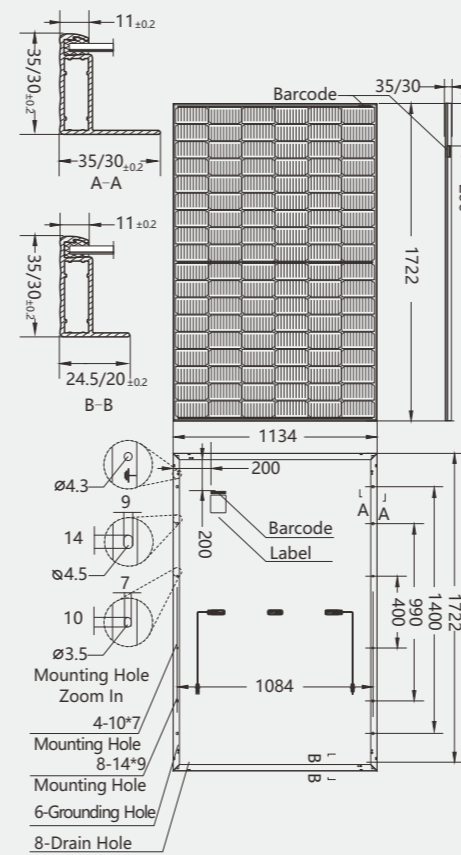
#### LINEAR PERFORMANCE WARRANTY

15-year product warranty / 30-year linear power warranty

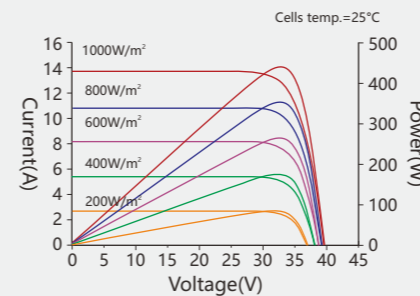


#### Dimensions of PV Module

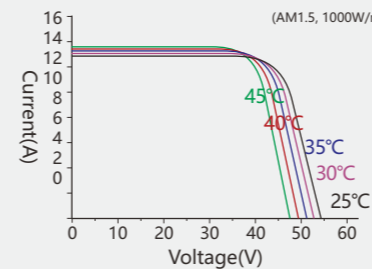
Unit: mm



#### 435W-182M/108T I-V characteristics at different irradiances



#### I-V characteristics at different temperatures



#### ELECTRICAL CHARACTERISTICS (STC\*)

	415	420	425	430	435	440	445	450	455
Rated Power in Watts-Pmax(Wp)	415	420	425	430	435	440	445	450	455
Open Circuit Voltage-Voc(V)	37.92	38.11	38.30	38.49	38.65	38.81	38.97	39.13	39.29
Short Circuit Current-Isc(A)	13.99	14.07	14.15	14.23	14.32	14.41	14.50	14.59	14.68
Max. Power Voltage-Vmpp(V)	31.32	31.51	31.70	31.88	32.06	32.24	32.41	32.58	32.76
Max. Power Current-Impp(A)	13.25	13.33	13.41	13.49	13.57	13.65	13.73	13.81	13.90
Module Efficiency(%)	21.25	21.51	21.76	22.02	22.28	22.53	22.79	23.04	23.30
Maximum system voltage	1500V DC								
Fuse Rating(A)	25								
Temperature coefficient Pmax	-0.30%/°C								
Temperature coefficient Isc	0.046%/°C								
Temperature coefficient Voc	-0.25%/°C								

\*STC: Irradiance 1000W/m<sup>2</sup>, module temperature 25°C, AM=1.5

#### WORKING CHARACTERISTICS (NOCT\*)

Model Number	RM-410W-182M/108T	RM-415W-182M/108T	RM-420W-182M/108T	RM-425W-182M/108T	RM-430W-182M/108T
Rated Power in Watts-Pmax(Wp)	309	312	316	320	323
Open Circuit Voltage-Voc(V)	36.40	36.60	36.80	37.00	37.20
Short Circuit Current-Isc(A)	10.79	10.85	10.91	10.96	11.02
Max. Power Voltage-Vmpp(V)	29.58	29.73	29.95	30.19	30.30
Max. Power Current-Impp(A)	10.44	10.49	10.55	10.60	10.66
Power tolerance	0~+3%				
NOCT	45°C±2°C				
Operating Temperature	-40°C~85°C				

\*NOCT: Irradiance 800W/m<sup>2</sup>, ambient temperature 20°C, wind speed 1m/s

#### MECHANICAL CHARACTERISTICS

Number of cells	108pcs
Size of cell(mm)	182×91
Type of cell	N-TOPCon Mono
Thickness of glass(mm)	2.0
Junction box	IP68, 1500V DC, 3 Diodes
Type of frame	Anodized Aluminum Alloy
Size of module(mm)	1722×1134×35/30
Weight(kg)	25.5
Cables/connectors	4.0mm <sup>2</sup> , MC4 compatible
Length of Cable	+300mm/-200mm (connector included) Length can be customized

#### PACKAGING CONFIGURATION

Height of Modules (mm)	35	30
Number of Modules Per Pallet	31	36
Packaging Box Dimensions (l×w×h) (mm)	1750×1120×1260	1750×1120×1260
Box Gross Weight (kg)	706	802
Number of Modules Per 40ft (HQ) Container	806	936
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CAUTION: READ SAFETY AND INSTALLATION INSTRUCTIONS BEFORE USING THE PRODUCT