

# LESSO

SOLAR PV MODULES

**Lesso New Energy Global Trading Private Limited**

One Raffles Quay, North Tower, #19-03, Singapore 048583

LESSO Group (2128) is listed in the Stock Exchange of Hong Kong.

 [www.lessosolar.com](http://www.lessosolar.com)  [info@lessosolar.com](mailto:info@lessosolar.com)     LESSO Solar

**SOLAR SOLUTIONS  
MANUFACTURER**



# CONTENT

- OVERVIEW** ..... 01
- MANUFACTURING GIANT** ..... 02
- GLOBAL FOOTPRINT** ..... 06
- PRODUCTS** ..... 08
- PROJECT HIGHLIGHT** ..... 18

## A Bright and Exciting Journey

LESSO Group is a Hong Kong-listed (2128.HK) manufacturer of building materials with an annual revenue of over USD4.38 billion from its global operations.

LESSO Solar, a flagship division of LESSO Group, specialises in manufacturing solar panels, inverters, and energy storage systems, and providing solar-energy solutions.

Since launching its global expansion strategy in 2022, LESSO Solar has been growing at a spectacular pace, extending its reach to over 50 countries worldwide with dedicated global support teams.

-  **USD4.38 bil**  
Annual Sales Revenue
-  **4 major**  
Production Bases
-  **40 years**  
Production Experience
-  **50+ countries**  
Global Support Teams



# Leading the Future with Intelligent Manufacturing

Our 4 production bases aim to grow into a large-scale global manufacturer of solar solutions, introduce advanced equipment, and create intelligent and automated production lines for intelligent building photovoltaic integrated BIPV, solar PV modules, and solar cells.

## Our Production Bases



**Chongkou Factory**  
Foshan, China

Solar Modules



**Chaoyang Factory**  
Foshan, China

Solar Modules & Energy Storage



**Heshan Factory**  
Jiangmen, China

Solar Cells



**Indonesia Factory**  
Demak, Indonesia

Solar Modules



By utilizing only the finest raw materials and cutting-edge technology, we meticulously oversee every stage of the production process to provide our customers with the highest-quality products.



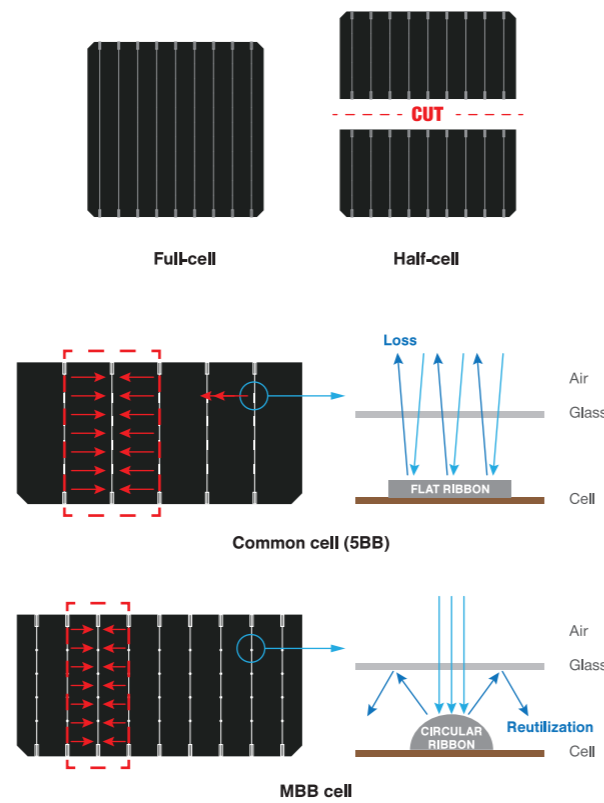
## Our Certificates

- IEC 61215, IEC 61730
- ISO 9001:2015 Quality Management System
- ISO 14001:2015 Environment Management System
- ISO 45001:2018 Occupational Health and Safety Management System



### HALF-CELL TECHNOLOGY

By adopting half-cell technology, electrical current density is reduced by 50%, resulting in a 25% decrease in internal power loss and an increase in rated output power.

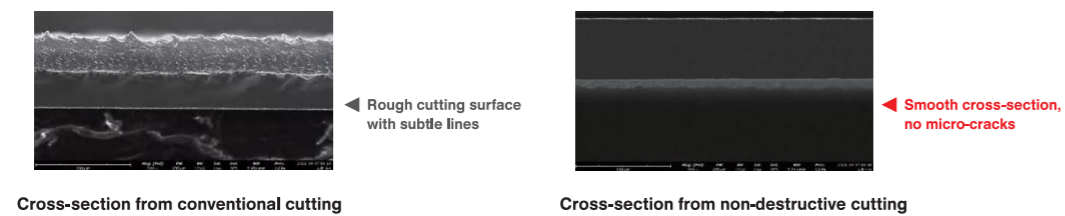


### MBB TECHNOLOGY

MBB technology shortens the current collection path by over 50%, minimizes lateral resistance losses, and enhances component poweroutput. LESSO PV modules utilize circular ribbons to reduce shading areasand optimize light reflection for improved energy generation.

### NON-DESTRUCTIVE CUTTING TECHNOLOGY

Featuring non-destructive cutting technology, this process ensures smooth cross-sections, reduces micro-crack risks, enhances cell strength. and delivers superior mechanical performance.



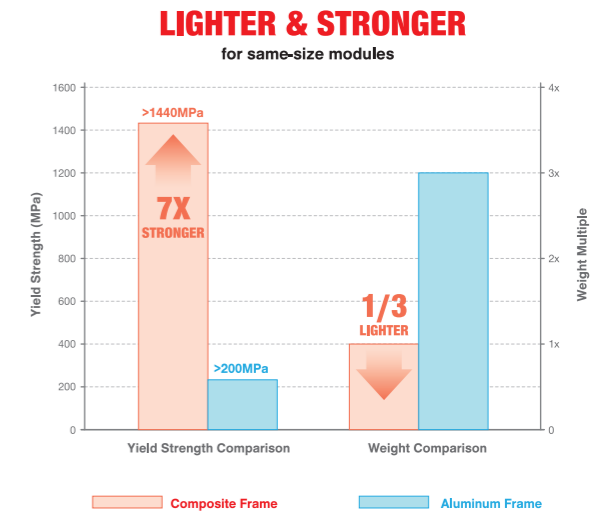
### HIGH-DENSITY PACKAGING TECHNOLOGY

Through high-density packaging technology, the effective power-generating area of modules is maximized under the same footprint, improving efficiency without compromising reliability.



### COMPOSITE FRAME (GLASS FIBER REINFORCED POLYURETHANE COMPOSITE)

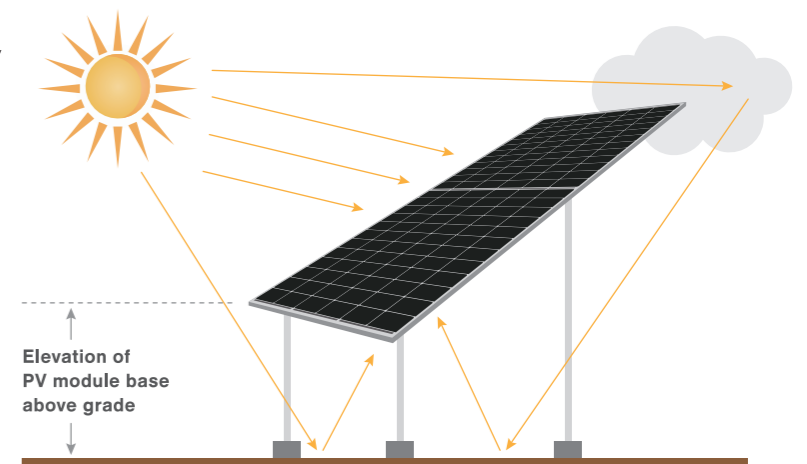
- Insulation & PID Prevention**  
 Excellent insulation requires no grounding and prevents PID, boosting power generation efficiency.
- Lightweight & Cost Saving**  
 20-30% lighter than aluminum frames, cutting logistics, installation, and reinforcement costs.
- High Strength & Stability**  
 Over 1440MPa yield strength (5-7x aluminum's) ensures no permanent deformation and solid structure.
- Matched CTE, No Warping**  
 CTE matches glass, preventing breakage and bending under thermal stress.
- All-Weather Resistance**  
 Rated C8 for salt spray, resisting acid, alkali, and corrosion in harsh environments.



- Low Carbon, Lower Cost**  
 14.5% the carbon footprint of aluminum, reducing carbon tariffs and enabling greener manufacturing.

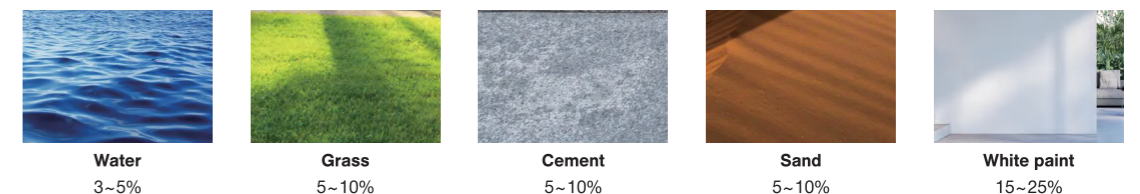
### BIFACIAL TECHNOLOGY

Bifacial modules leverage reflected and scattered light, excelling in high-reflectivity environments with proven long-term reliability and superior quality.



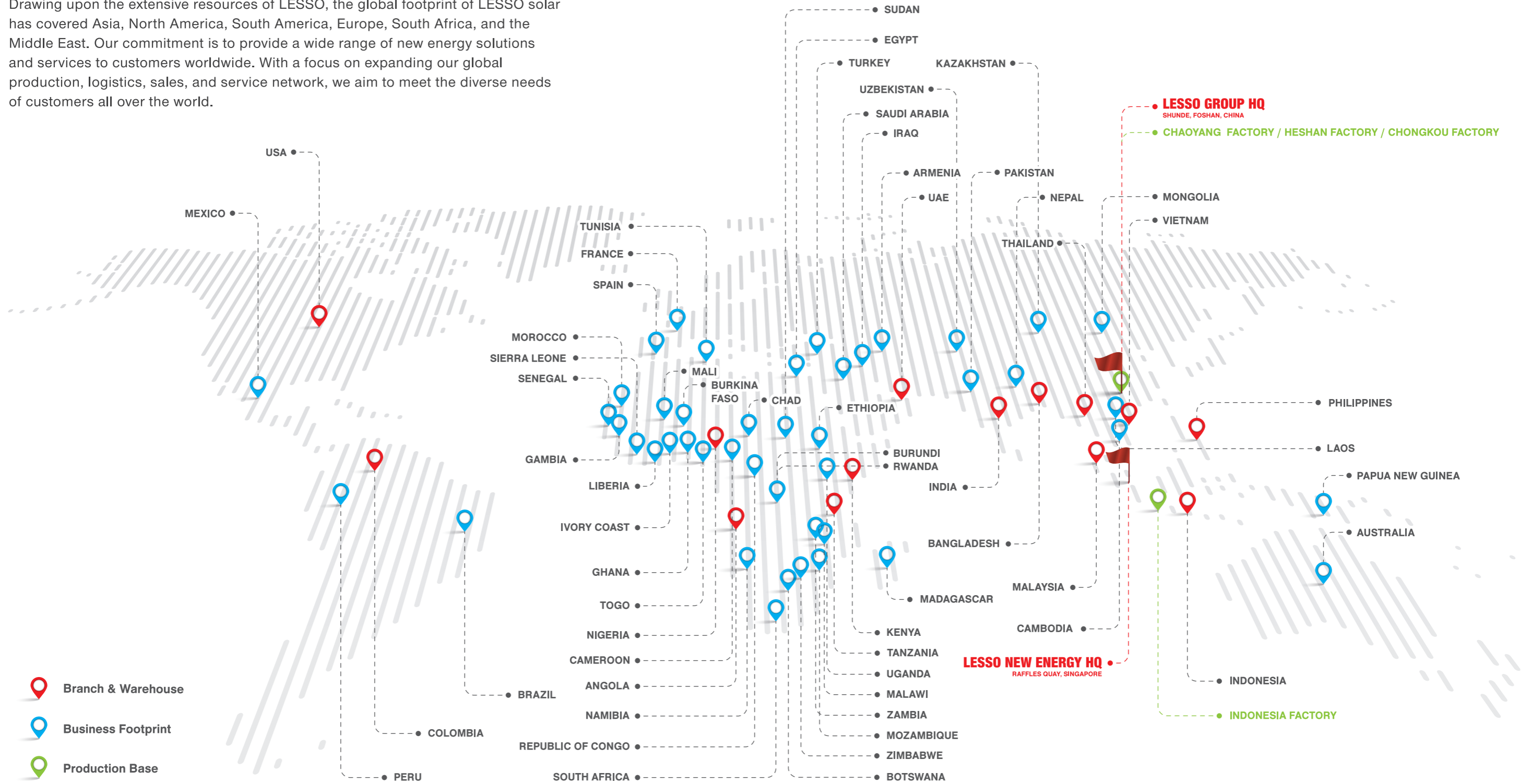
LESSO BIFACIAL MODULE DELIVERS UP TO 25% POWER GAIN

Power generation gain in different scenarios (%)



# LESSO Solar Global Footprint

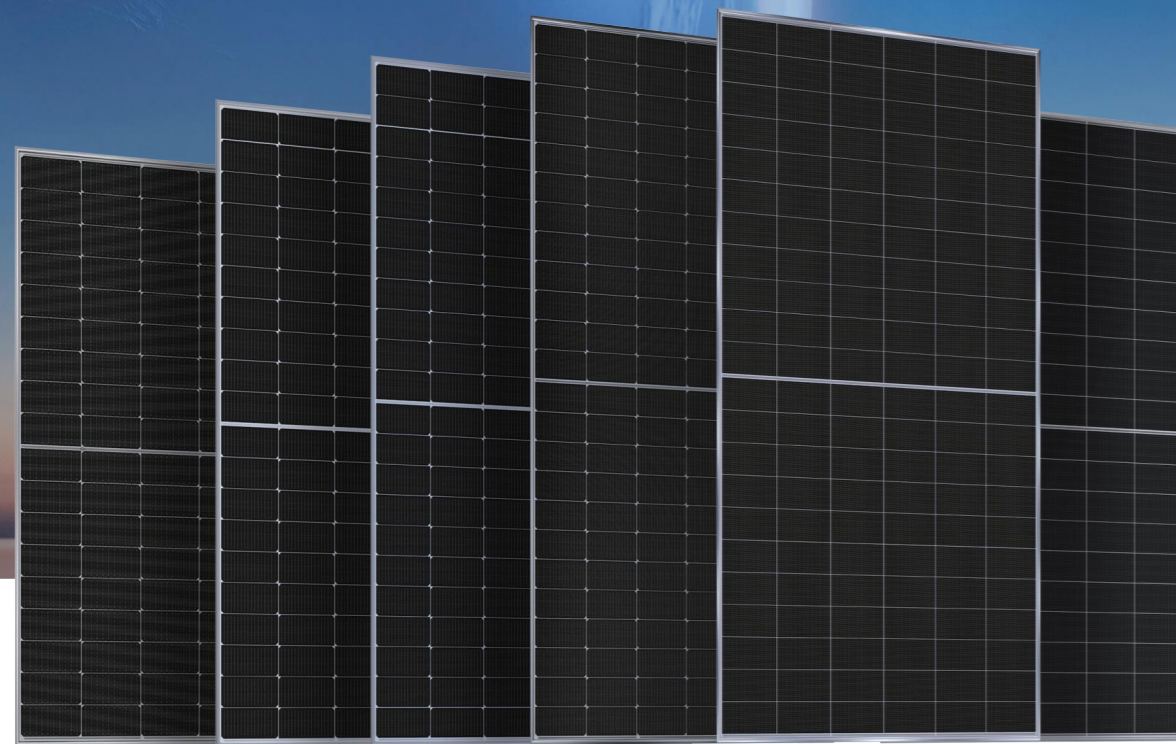
Drawing upon the extensive resources of LESSO, the global footprint of LESSO solar has covered Asia, North America, South America, Europe, South Africa, and the Middle East. Our commitment is to provide a wide range of new energy solutions and services to customers worldwide. With a focus on expanding our global production, logistics, sales, and service network, we aim to meet the diverse needs of customers all over the world.



# LTH series

## Unleash Unlimited Power, Pioneering Innovation

The LESSO Solar LTH Series leverages advanced TOPCon technology to achieve a maximum module efficiency of 23.51%. Featuring N-type cells with zero light-induced degradation (LID), this series ensures superior energy yield. With an annual degradation rate of just 1% in the first year and 0.4% thereafter, the LTH Series delivers exceptional long-term power generation performance, maximizing revenue potential for customers.



**TOPCon Technology**  
Higher Power Generation



**MBB Technology**  
Reducing String & Busbar Loss



**High Density Packaging**  
Improving Energy Density



**Even Cloudy or Foggy Days**  
Better Weak Illumination Response



**Zero LID**  
Increase Power Generation



**Better Temperature Coefficient**  
More Power Generation



**Higher Power Output**  
Lower BOS Cost



**Multiple Weather Resistance Tests**  
Wider Applicability



**Double-sided Generation**  
Powerfully Energy Boost

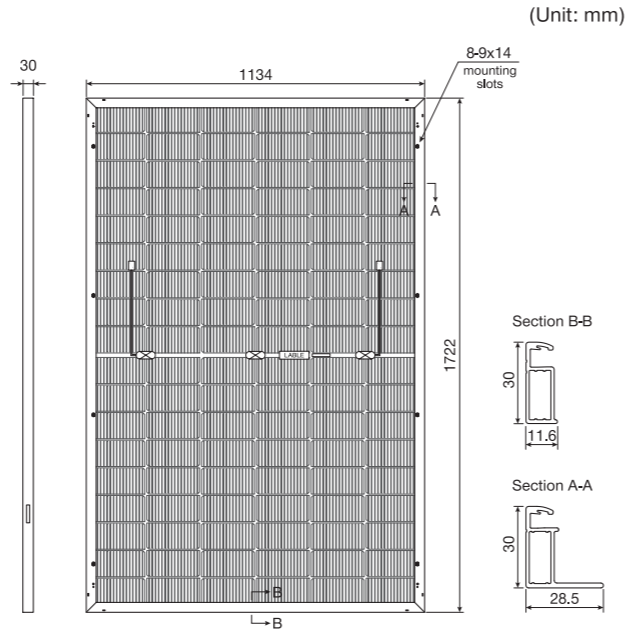
# 182 N-TOPCon Dual-glass Bifacial Module (54)

Power Range  
**430W ~ 450W**

Maximum Efficiency  
**23.04%**

## Structure Performance

Solar Cell Type	182mm N-TOPCon Mono Cell (Half Cell)
Solar Cell Arrangement	108pcs(6×18)
Module Dimension	1722×1134×30mm
Weight	23.1kg
Front Glass	2.0mm, highly transparent tempered glass with anti-reflective coating
Frame	Anodized Aluminum Alloy
Junction Box	IP68 rated
Cable	4mm <sup>2</sup> , portrait 400mm(+), 200mm(-), landscape 1400mm(+), 1400mm(-) Length can be customized
Diode Quantity	3 pcs
Front side / Rear side	5400pa / 2400pa
Connector	MC4 Compatible
Per Pallet	36pcs
Per Container(40'HQ)	936pcs

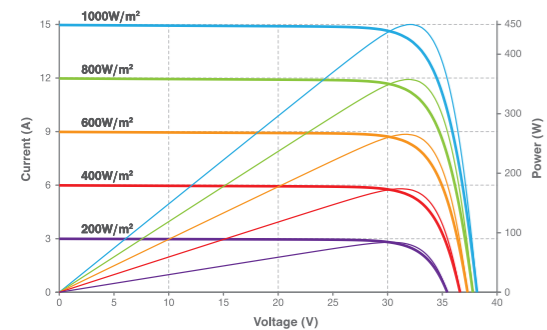


## Electrical Performance Parameters

Model Type		430C(HBD)54(182)	435C(HBD)54(182)	440C(HBD)54(182)	445C(HBD)54(182)	450C(HBD)54(182)
Nominal Max. Power	$P_{MAX}$ (W)	430	435	440	445	450
Max. Power Voltage	$V_{MP}$ (V)	31.88	32.11	32.34	32.57	32.80
Max. Power Current	$I_{MP}$ (A)	13.49	13.55	13.61	13.67	13.73
Open Circuit Voltage	$V_{OC}$ (V)	37.37	37.57	37.77	37.97	38.17
Short Circuit Current	$I_{SC}$ (A)	14.73	14.79	14.85	14.91	14.97
Module Efficiency	(%)	22.02	22.28	22.53	22.79	23.04

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

## Current-Voltage & Power-Voltage Curve (450W)



## Bifacial Output-rearside Power Gain

			452	457	462	467	473
5%	Maximum Power	$P_{MAX}$ (W)					
	Module Efficiency	(%)	23.12	23.39	23.66	23.93	24.20
10%	Maximum Power	$P_{MAX}$ (W)	473	479	484	490	495
	Module Efficiency	(%)	24.22	24.50	24.79	25.07	25.35
25%	Maximum Power	$P_{MAX}$ (W)	538	544	550	556	563
	Module Efficiency	(%)	27.53	27.85	28.17	28.49	28.81

## Temperature Characteristics

Nominal Module Operating Temperature	44±2°C	Temperature Coefficient ( $V_{OC}$ )	-0.25%
Temperature Coefficient ( $I_{SC}$ )	+0.043%	Temperature Coefficient ( $P_{MAX}$ )	-0.30%

## Maximum Parameters

Working Temperature	-40~+85°C
Maximum System Voltage	1500V DC
Nominal Maximum Fuse Current	30A

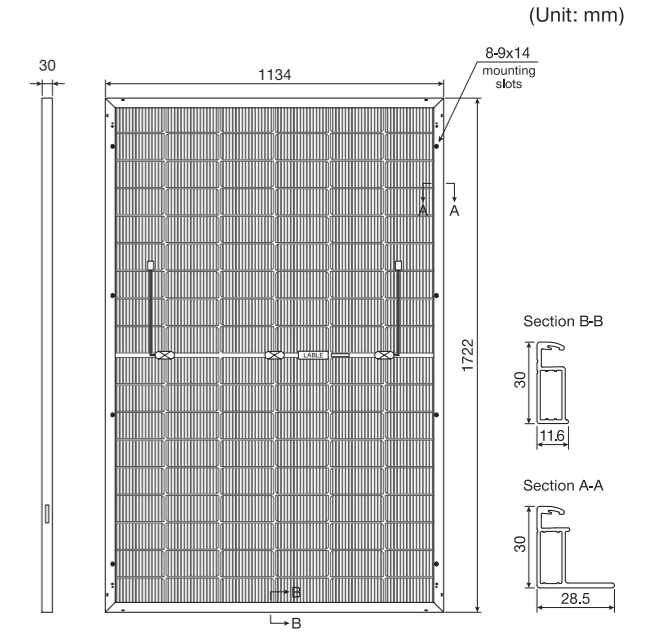
# 182 N-TOPCon Pure-black Dual-glass Bifacial Module (54)

Power Range  
**430W ~ 450W**

Maximum Efficiency  
**23.04%**

## Structure Performance

Solar Cell Type	182mm N-TOPCon Mono Cell (Half Cell)
Solar Cell Arrangement	108pcs(6×18)
Module Dimension	1722×1134×30mm
Weight	23.1kg
Front Glass	2.0mm, highly transparent tempered glass with anti-reflective coating
Frame	Anodized Aluminum Alloy (Black)
Junction Box	IP68 rated
Cable	4mm <sup>2</sup> , portrait 400mm(+), 200mm(-), landscape 1400mm(+), 1400mm(-) Length can be customized
Diode Quantity	3 pcs
Front side / Rear side	5400pa / 2400pa
Connector	MC4 Compatible
Per Pallet	36pcs
Per Container(40'HQ)	936pcs

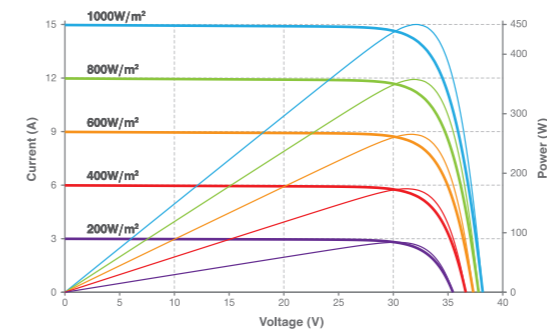


## Electrical Performance Parameters

Model Type		430C(BBD)54(182)	435C(BBD)54(182)	440C(BBD)54(182)	445C(BBD)54(182)	450C(BBD)54(182)
Nominal Max. Power	$P_{MAX}$ (W)	430	435	440	445	450
Max. Power Voltage	$V_{MP}$ (V)	31.69	31.92	32.15	32.38	32.61
Max. Power Current	$I_{MP}$ (A)	13.57	13.63	13.69	13.75	13.81
Open Circuit Voltage	$V_{OC}$ (V)	37.15	37.35	37.55	37.75	37.95
Short Circuit Current	$I_{SC}$ (A)	14.82	14.88	14.94	15.00	15.06
Module Efficiency	(%)	22.02	22.28	22.53	22.79	23.04

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

## Current-Voltage & Power-Voltage Curve (450W)



## Bifacial Output-rearside Power Gain

			452	457	462	467	473
5%	Maximum Power	$P_{MAX}$ (W)					
	Module Efficiency	(%)	23.12	23.39	23.66	23.93	24.20
10%	Maximum Power	$P_{MAX}$ (W)	473	479	484	490	495
	Module Efficiency	(%)	24.22	24.50	24.79	25.07	25.35
25%	Maximum Power	$P_{MAX}$ (W)	538	544	550	556	563
	Module Efficiency	(%)	27.53	27.85	28.17	28.49	28.81

## Temperature Characteristics

Nominal Module Operating Temperature	44±2°C	Temperature Coefficient ( $V_{OC}$ )	-0.25%
Temperature Coefficient ( $I_{SC}$ )	+0.043%	Temperature Coefficient ( $P_{MAX}$ )	-0.30%

## Maximum Parameters

Working Temperature	-40~+85°C
Maximum System Voltage	1500V DC
Nominal Maximum Fuse Current	30A

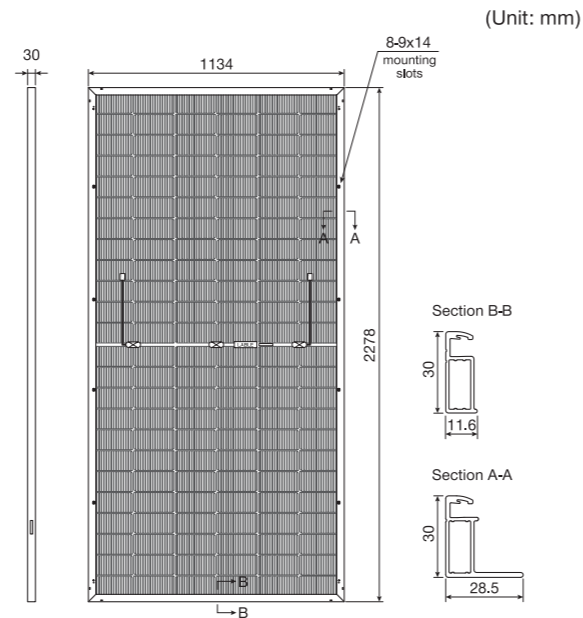
# 182 N-TOPCon Dual-glass Bifacial Module (72)

Power Range  
**580W ~ 600W**

Maximum Efficiency  
**23.23%**

## Structure Performance

Solar Cell Type	182mm N-TOPCon Mono Cell (Half Cell)
Solar Cell Arrangement	144pcs(6x24)
Module Dimension	2278x1134x30mm
Weight	31.2kg
Front Glass	2.0mm, highly transparent tempered glass with anti-reflective coating
Frame	Anodized Aluminum Alloy
Junction Box	IP68 rated
Cable	4mm <sup>2</sup> , portrait 400mm(+), 200mm(-), landscape 1400mm(+), 1400mm(-) Length can be customized
Diode Quantity	3 pcs
Front side / Rear side	5400pa / 2400pa
Connector	MC4 Compatible
Per Pallet	37pcs
Per Container(40'HQ)	740pcs

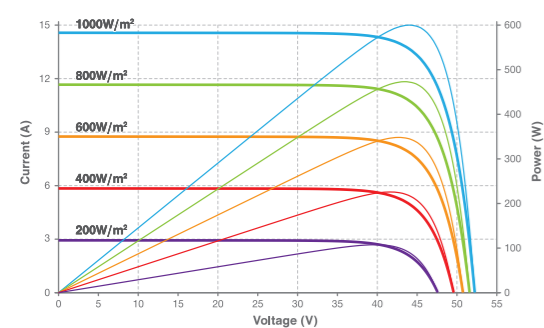


## Electrical Performance Parameters

Model Type	580C(HBD)72(182)	585C(HBD)72(182)	590C(HBD)72(182)	595C(HBD)72(182)	600C(HBD)72(182)
Nominal Max. Power $P_{max}$ (W)	580	585	590	595	600
Max. Power Voltage $V_{MP}$ (V)	42.75	42.89	43.04	43.18	43.33
Max. Power Current $I_{MP}$ (A)	13.57	13.64	13.71	13.78	13.85
Open Circuit Voltage $V_{OC}$ (V)	51.43	51.63	51.83	52.03	52.23
Short Circuit Current $I_{SC}$ (A)	14.33	14.39	14.45	14.51	14.57
Module Efficiency (%)	22.45	22.65	22.84	23.03	23.23

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

## Current-Voltage & Power-Voltage Curve (600W)



## Bifacial Output-rearside Power Gain

Gain	Parameter	Unit	Maximum Power $P_{MAX}$ (W)				
			580	585	590	595	600
5%	Maximum Power $P_{MAX}$ (W)		609	614	620	625	630
	Module Efficiency (%)		23.57	23.78	23.98	24.18	24.39
10%	Maximum Power $P_{MAX}$ (W)		638	644	649	655	660
	Module Efficiency (%)		24.70	24.91	25.12	25.34	25.55
25%	Maximum Power $P_{MAX}$ (W)		725	731	738	744	750
	Module Efficiency (%)		28.07	28.31	28.55	28.79	29.03

## Temperature Characteristics

Nominal Module Operating Temperature	44±2°C	Temperature Coefficient ( $V_{OC}$ )	-0.25%
Temperature Coefficient ( $I_{SC}$ )	+0.043%	Temperature Coefficient ( $P_{MAX}$ )	-0.30%

## Maximum Parameters

Working Temperature	-40~+85°C
Maximum System Voltage	1500V DC
Nominal Maximum Fuse Current	30A

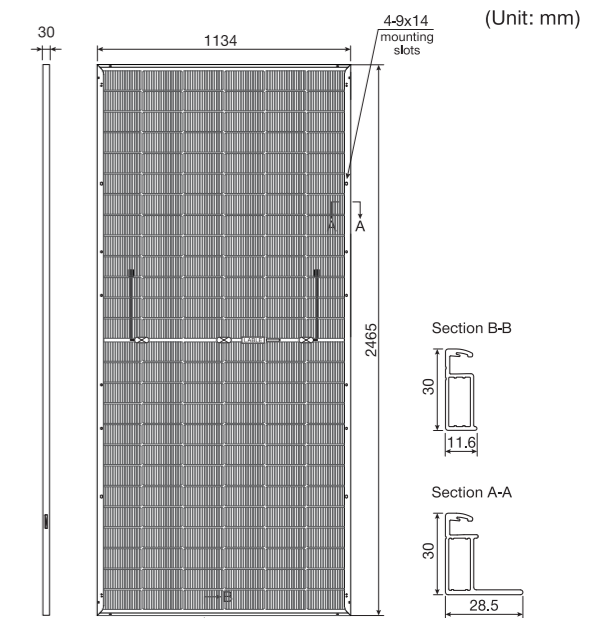
# 182 N-TOPCon Dual-glass Bifacial Module (78)

Power Range  
**630W ~ 650W**

Maximum Efficiency  
**23.25%**

## Structure Performance

Solar Cell Type	182mm N-TOPCon Mono Cell (Half Cell)
Solar Cell Arrangement	156pcs(6x26)
Module Dimension	2465x1134x30mm
Weight	33.5kg
Front Glass	2.0mm, highly transparent tempered glass with anti-reflective coating
Frame	Anodized Aluminum Alloy
Junction Box	IP68 rated
Cable	4mm <sup>2</sup> , portrait 400mm(+), 200mm(-), landscape 1400mm(+), 1400mm(-) Length can be customized
Diode Quantity	3 pcs
Front side / Rear side	5400pa / 2400pa
Connector	MC4 Compatible
Per Pallet	36pcs
Per Container(40'HQ)	576pcs

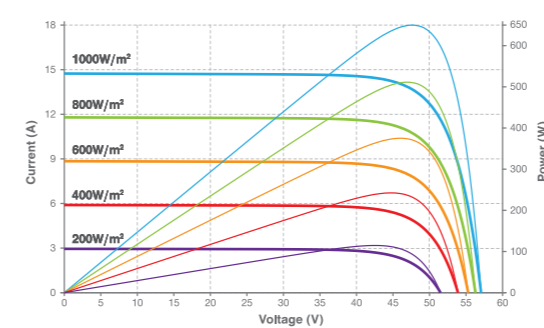


## Electrical Performance Parameters

Model Type	630C(HBD)78(182)	635C(HBD)78(182)	640C(HBD)78(182)	645C(HBD)78(182)	650C(HBD)78(182)
Nominal Max. Power $P_{max}$ (W)	630	635	640	645	650
Max. Power Voltage $V_{MP}$ (V)	46.37	46.50	46.63	46.76	46.89
Max. Power Current $I_{MP}$ (A)	13.59	13.66	13.73	13.80	13.87
Open Circuit Voltage $V_{OC}$ (V)	56.46	56.61	56.76	56.91	57.06
Short Circuit Current $I_{SC}$ (A)	14.42	14.50	14.58	14.66	14.74
Module Efficiency (%)	22.54	22.72	22.90	23.07	23.25

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

## Current-Voltage & Power-Voltage Curve (650W)



## Bifacial Output-rearside Power Gain

Gain	Parameter	Unit	Maximum Power $P_{MAX}$ (W)				
			630	635	640	645	650
5%	Maximum Power $P_{MAX}$ (W)		662	667	672	677	683
	Module Efficiency (%)		23.66	23.85	24.04	24.23	24.42
10%	Maximum Power $P_{MAX}$ (W)		693	699	704	710	715
	Module Efficiency (%)		24.79	24.99	25.19	25.38	25.58
25%	Maximum Power $P_{MAX}$ (W)		788	794	800	806	813
	Module Efficiency (%)		28.17	28.40	28.62	28.84	29.07

## Temperature Characteristics

Nominal Module Operating Temperature	44±2°C	Temperature Coefficient ( $V_{OC}$ )	-0.25%
Temperature Coefficient ( $I_{SC}$ )	+0.043%	Temperature Coefficient ( $P_{MAX}$ )	-0.30%

## Maximum Parameters

Working Temperature	-40~+85°C
Maximum System Voltage	1500V DC
Nominal Maximum Fuse Current	30A

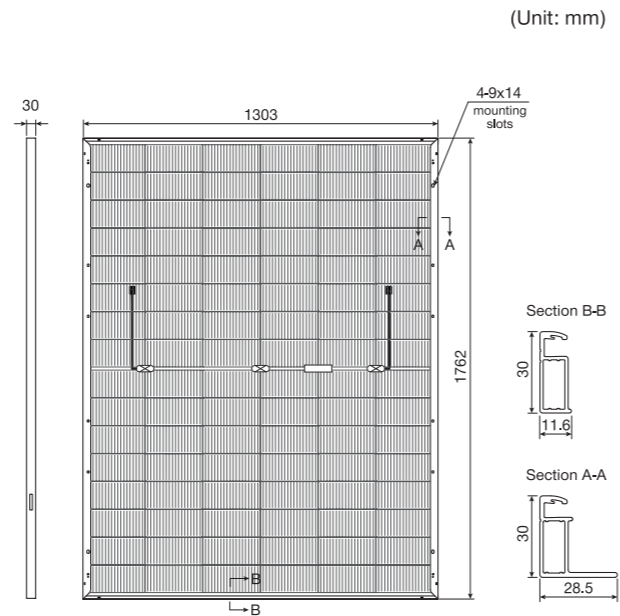
## 210 N-TOPCon Dual-glass Bifacial Module (48)

Power Range  
**510W ~ 530W**

Maximum Efficiency  
**23.08%**

### Structure Performance

Solar Cell Type	210mm N-TOPCon Mono Cell (Half Cell)
Solar Cell Arrangement	96pcs(6x16)
Module Dimension	1762×1303×30mm
Weight	28.8kg
Front Glass	2.0mm, highly transparent tempered glass with anti-reflective coating
Frame	Anodized Aluminum Alloy
Junction Box	IP68 rated
Cable	4mm <sup>2</sup> , portrait 400mm(+) 200mm(-), landscape 1400mm(+) 1400mm(-) Length can be customized
Diode Quantity	3 pcs
Front side / Rear side	5400pa / 2400pa
Connector	MC4 Compatible
Per Pallet	36pcs
Per Container(40'HQ)	648pcs



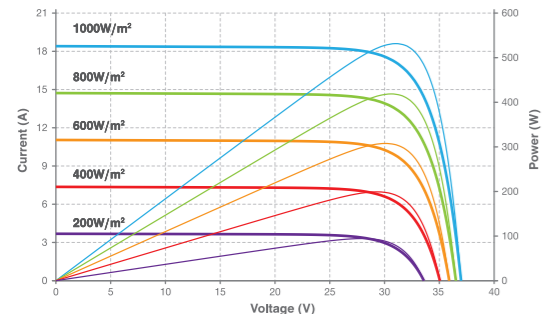
(Unit: mm)

### Electrical Performance Parameters

Model Type	510C(HBD)48(210)	515C(HBD)48(210)	520C(HBD)48(210)	525C(HBD)48(210)	530C(HBD)48(210)
Nominal Max. Power $P_{max}$ (W)	510	515	520	525	530
Max. Power Voltage $V_{MP}$ (V)	29.18	29.35	29.52	29.69	29.85
Max. Power Current $I_{MP}$ (A)	17.48	17.55	17.62	17.69	17.76
Open Circuit Voltage $V_{OC}$ (V)	36.83	37.00	37.18	37.35	37.52
Short Circuit Current $I_{SC}$ (A)	18.20	18.24	18.28	18.32	18.36
Module Efficiency (%)	22.21	22.43	22.65	22.87	23.08

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

### Current-Voltage & Power-Voltage Curve (530W)



### Bifacial Output-rearside Power Gain

			536	541	546	551	557
5%	Maximum Power $P_{MAX}$ (W)						
	Module Efficiency (%)		23.32	23.55	23.78	24.01	24.24
10%	Maximum Power $P_{MAX}$ (W)		561	567	572	578	583
	Module Efficiency (%)		24.44	24.67	24.91	25.15	25.39
25%	Maximum Power $P_{MAX}$ (W)		638	644	650	656	663
	Module Efficiency (%)		27.77	28.04	28.31	28.58	28.86

### Temperature Characteristics

Nominal Module Operating Temperature	44±2°C	Temperature Coefficient ( $V_{OC}$ )	-0.25%
Temperature Coefficient ( $I_{SC}$ )	+0.043%	Temperature Coefficient ( $P_{MAX}$ )	-0.30%

### Maximum Parameters

Working Temperature	-40~+85°C
Maximum System Voltage	1500V DC
Nominal Maximum Fuse Current	35A

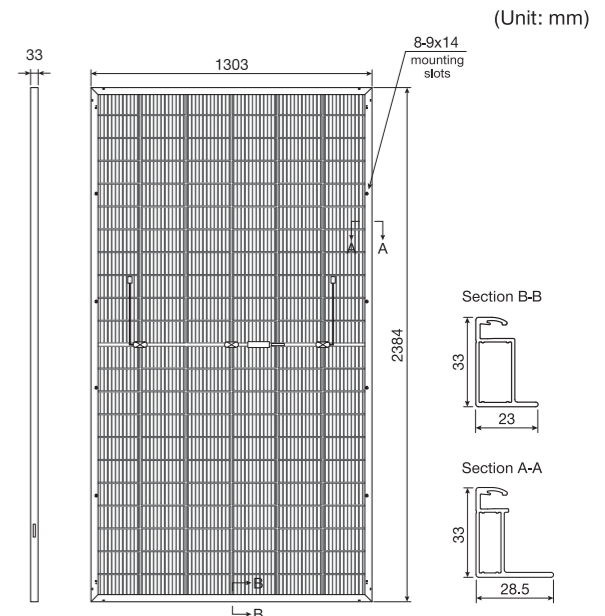
## 210 N-TOPCon Dual-glass Bifacial Module (66)

Power Range  
**710W ~ 730W**

Maximum Efficiency  
**23.50%**

### Structure Performance

Solar Cell Type	210mm N-TOPCon Mono Cell (Half Cell)
Solar Cell Arrangement	132pcs(6x22)
Module Dimension	2384×1303×33mm
Weight	37.8kg
Front Glass	2.0mm, highly transparent tempered glass with anti-reflective coating
Frame	Anodized Aluminum Alloy
Junction Box	IP68 rated
Cable	4mm <sup>2</sup> , portrait 400mm(+) 200mm(-), landscape 1400mm(+) 1400mm(-) Length can be customized
Diode Quantity	3 pcs
Front side / Rear side	5400pa / 2400pa
Connector	MC4 Compatible
Per Pallet	33pcs
Per Container(40'HQ)	594pcs



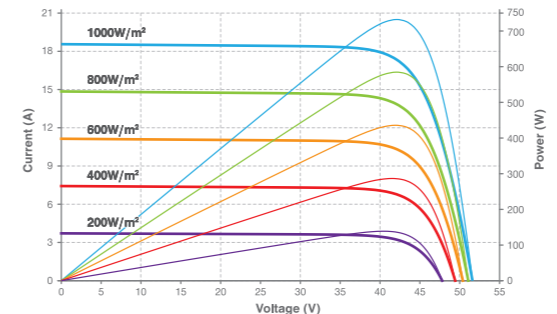
(Unit: mm)

### Electrical Performance Parameters

Model Type	710C(HBD)66(210)	715C(HBD)66(210)	720C(HBD)66(210)	725C(HBD)66(210)	730C(HBD)66(210)
Nominal Max. Power $P_{max}$ (W)	710	715	720	725	730
Max. Power Voltage $V_{MP}$ (V)	40.51	40.72	40.94	41.16	41.37
Max. Power Current $I_{MP}$ (A)	17.53	17.56	17.59	17.62	17.65
Open Circuit Voltage $V_{OC}$ (V)	50.76	50.97	51.18	51.39	51.60
Short Circuit Current $I_{SC}$ (A)	18.45	18.49	18.53	18.57	18.61
Module Efficiency (%)	22.86	23.02	23.18	23.34	23.50

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

### Current-Voltage & Power-Voltage Curve (730W)



### Bifacial Output-rearside Power Gain

			746	751	756	761	767
5%	Maximum Power $P_{MAX}$ (W)						
	Module Efficiency (%)		24.00	24.17	24.34	24.51	24.68
10%	Maximum Power $P_{MAX}$ (W)		781	787	792	798	803
	Module Efficiency (%)		25.14	25.32	25.50	25.67	25.85
25%	Maximum Power $P_{MAX}$ (W)		888	894	900	906	913
	Module Efficiency (%)		28.57	28.77	28.97	29.17	29.38

### Temperature Characteristics

Nominal Module Operating Temperature	44±2°C	Temperature Coefficient ( $V_{OC}$ )	-0.25%
Temperature Coefficient ( $I_{SC}$ )	+0.043%	Temperature Coefficient ( $P_{MAX}$ )	-0.30%

### Maximum Parameters

Working Temperature	-40~+85°C
Maximum System Voltage	1500V DC
Nominal Maximum Fuse Current	35A

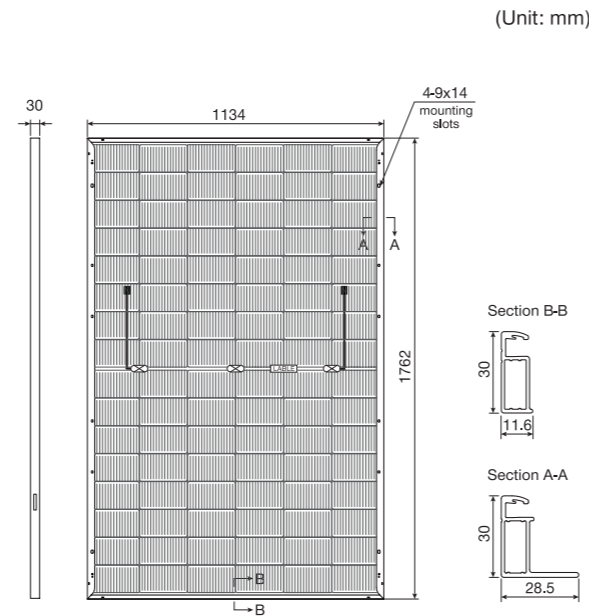
## 210R N-TOPCon Dual-glass Bifacial Module (48)

Power Range  
**445W ~ 465W**

Maximum Efficiency  
**23.27%**

### Structure Performance

Solar Cell Type	210R N-TOPCon Mono Cell (Half Cell)
Solar Cell Arrangement	96pcs(6x16)
Module Dimension	1762×1134×30mm
Weight	24.7kg
Front Glass	2.0mm, highly transparent tempered glass with anti-reflective coating
Frame	Anodized Aluminum Alloy
Junction Box	IP68 rated
Cable	4mm <sup>2</sup> , portrait 400mm(+), 200mm(-), landscape 1400mm(+), 1400mm(-) Length can be customized
Diode Quantity	3 pcs
Front side / Rear side	5400pa / 2400pa
Connector	MC4 Compatible
Per Pallet	36pcs
Per Container(40'HQ)	936pcs



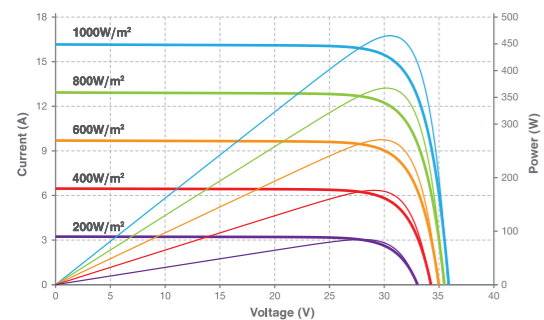
(Unit: mm)

### Electrical Performance Parameters

Model Type	445C(HBD)48(210R)	450C(HBD)48(210R)	455C(HBD)48(210R)	460C(HBD)48(210R)	465C(HBD)48(210R)
Nominal Max. Power $P_{max}$ (W)	445	450	455	460	465
Max. Power Voltage $V_{MP}$ (V)	30.05	30.19	30.34	30.48	30.63
Max. Power Current $I_{MP}$ (A)	14.81	14.91	15.00	15.09	15.19
Open Circuit Voltage $V_{OC}$ (V)	35.20	35.35	35.50	35.65	35.80
Short Circuit Current $I_{SC}$ (A)	15.83	15.92	16.00	16.08	16.16
Module Efficiency (%)	22.27	22.52	22.77	23.02	23.27

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

### Current-Voltage & Power-Voltage Curve (465W)



### Bifacial Output-rearside Power Gain

		$P_{MAX}$ (W)	Rearside Power Gain				
			5%	10%	25%	5%	10%
5%	Maximum Power	467	473	478	483	488	
	Module Efficiency (%)	23.38	23.65	23.91	24.17	24.44	
10%	Maximum Power	490	495	501	506	512	
	Module Efficiency (%)	24.50	24.77	25.05	25.32	25.60	
25%	Maximum Power	556	563	569	575	581	
	Module Efficiency (%)	27.84	28.15	28.46	28.78	29.09	

### Temperature Characteristics

Nominal Module Operating Temperature	44±2°C	Temperature Coefficient ( $V_{OC}$ )	-0.25%
Temperature Coefficient ( $I_{SC}$ )	+0.043%	Temperature Coefficient ( $P_{MAX}$ )	-0.30%

### Maximum Parameters

Working Temperature	-40~+85°C
Maximum System Voltage	1500V DC
Nominal Maximum Fuse Current	35A

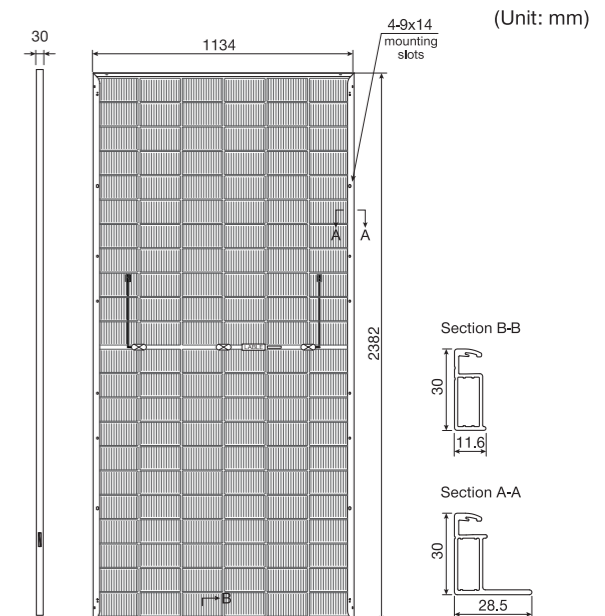
## 210R N-TOPCon Dual-glass Bifacial Module (66)

Power Range  
**615W ~ 635W**

Maximum Efficiency  
**23.51%**

### Structure Performance

Solar Cell Type	210R N-TOPCon Mono Cell (Half Cell)
Solar Cell Arrangement	132pcs(6x22)
Module Dimension	2382×1134×30mm
Weight	32.5kg
Front Glass	2.0mm, highly transparent tempered glass with anti-reflective coating
Frame	Anodized Aluminum Alloy
Junction Box	IP68 rated
Cable	4mm <sup>2</sup> , portrait 400mm(+), 200mm(-), landscape 1400mm(+), 1400mm(-) Length can be customized
Diode Quantity	3 pcs
Front side / Rear side	5400pa / 2400pa
Connector	MC4 Compatible
Per Pallet	37pcs
Per Container(40'HQ)	740pcs



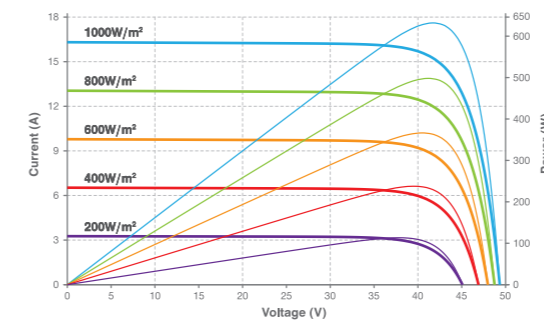
(Unit: mm)

### Electrical Performance Parameters

Model Type	615C(HBD)66(210R)	620C(HBD)66(210R)	625C(HBD)66(210R)	630C(HBD)66(210R)	635C(HBD)66(210R)
Nominal Max. Power $P_{max}$ (W)	615	620	625	630	635
Max. Power Voltage $V_{MP}$ (V)	40.76	40.88	40.99	41.12	41.24
Max. Power Current $I_{MP}$ (A)	15.09	15.17	15.25	15.33	15.40
Open Circuit Voltage $V_{OC}$ (V)	48.82	48.95	49.08	49.21	49.34
Short Circuit Current $I_{SC}$ (A)	15.98	16.06	16.15	16.23	16.31
Module Efficiency (%)	22.77	22.95	23.14	23.32	23.51

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

### Current-Voltage & Power-Voltage Curve (635W)



### Bifacial Output-rearside Power Gain

		$P_{MAX}$ (W)	Rearside Power Gain				
			5%	10%	25%	5%	10%
5%	Maximum Power	646	651	656	662	667	
	Module Efficiency (%)	23.91	24.10	24.29	24.49	24.68	
10%	Maximum Power	677	682	688	693	699	
	Module Efficiency (%)	25.04	25.25	25.45	25.66	25.86	
25%	Maximum Power	769	775	781	788	794	
	Module Efficiency (%)	28.46	28.69	28.92	29.15	29.39	

### Temperature Characteristics

Nominal Module Operating Temperature	44±2°C	Temperature Coefficient ( $V_{OC}$ )	-0.25%
Temperature Coefficient ( $I_{SC}$ )	+0.043%	Temperature Coefficient ( $P_{MAX}$ )	-0.30%

### Maximum Parameters

Working Temperature	-40~+85°C
Maximum System Voltage	1500V DC
Nominal Maximum Fuse Current	35A

# Project Highlights

Businesses can use the free electricity generated from Solar power stations directly, reducing consumption of electricity from the power grid, thereby enjoying immense savings on their electrical bill. If applicable, a Solar power station can even be connected to the power grid, allowing businesses to sell excess electricity to the grid to generate additional profit.



**Karamay Desert Solar Power Station (Phase I)**

**Location:** Karamay, Xinjiang, China  
**Project Capacity:** 600MW



**KEDA Ceramics Solar Power Station**

**Location:** Kajiado, Kenya  
**Project Capacity:** 8.57MW



**Rooftop Power Station Built in Indonesia's New Capital**

**Location:** Kalimantan, Indonesia  
**Project Capacity:** 1MW



**New Community Concentrated Solar Power Generation System**

**Location:** Saraburi Province, Thailand  
**Project Capacity:** 1MW



**Snowflake Ice Factory Solar Power Station**

**Location:** Phnom Penh, Cambodia  
**Project Capacity:** 500kW



**Solar Pumping Power Station**

**Location:** Egypt  
**Project Capacity:** 275kW



**UK MANAGEMENT COLLEGE Solar Power Station**

**Location:** North Shields, UK  
**Project Capacity:** 112kW



**CS International Rooftop Solar Power Station**

**Location:** Bangkok, Thailand  
**Project Capacity:** 100kW

# **LESSO, BUILDING A SOLAR-POWERED WORLD**



\* This catalog has been prepared as a support guide. Under no circumstance shall LESSO assume any liability or responsibility with the information in this catalog. Every effort has been made by LESSO to provide accurate and up to date information.