

July 10, 2023

City of Mountain Brook
Mountain Brook Planning Commission
56 Church Street
Mountain Brook, AL 35213

Request Review of Solar Energy Systems Municipal Code 129-292
Mountain Brook Planning Commission Meeting – August 7, 2023

Enclosed is a request for the City of Mountain Brook Planning Commission to review and approve the installation of Solar Panels as part of a Solar Energy System at the following addresses:

Physical Address : **4 Office Park Circle, Mountain Brook, AL 35223**
Owner: **MTB Office Park, LLC**
Property Mailing address: 6 Office Park Circle STE 111, Birmingham, AL 35223

Scope of Project

Four hundred twenty-four (424) Solar panels will be installed on the flat roof of the existing commercial building at 4 Office Park Circle to generate energy to be consumed on site. Maximum AC output is 200 kW. The building has two wings (4 Office Park Circle and 6 Office Park Circle), but only one address for parcel ID and Alabama Power metering.

The solar panels and racking will be installed at a 5% tilt on the flat roof and will not extend more than 12 inches from the surface of the roof. The height of the building relative to adjacent land will shield the solar panels from public view.

A 4' setback will be mandated from each roof edge.

No part of the roof-mounted Solar Energy System will extend beyond the edge of the roof.

The panels and system are designed to blend into the architecture of the building.

No portion of the Solar Energy System will be visible from any public street or public ROW. Photos attached illustrating that the top of building, where solar will be installed, is not visible.

Any external electrical lines and conduit will be painted or blended to match the color of the adjacent roofing and walls.

The roof-mounted Solar Energy System will not increase the height of the building.

Attached:

Certified copy of Jefferson Co Tax Assessor record of adjoining property owners.

Solar panel specification sheet.

Jefferson Co tax map of property and adjoining parcels

Aerial map/ satellite image of property

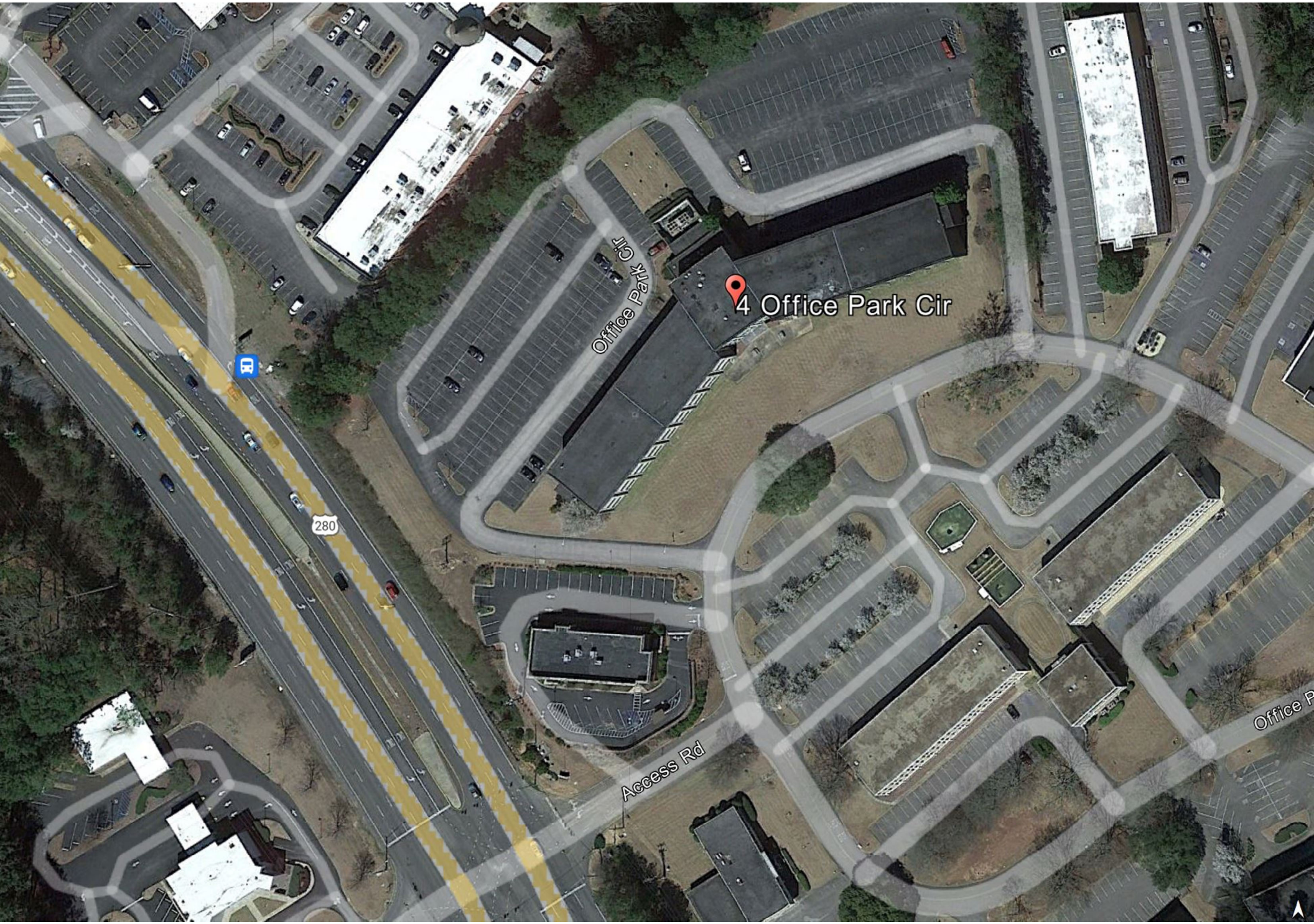
Aerial view of solar array design on roof top.

Photographs of existing building as viewed from the Office Park Circle.

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(205) 202-2208, pfreeman@eaglesolarandlight.com



4
OFFICE PARK
CIRCLE



4 Office Park Cir

Office Park Cir

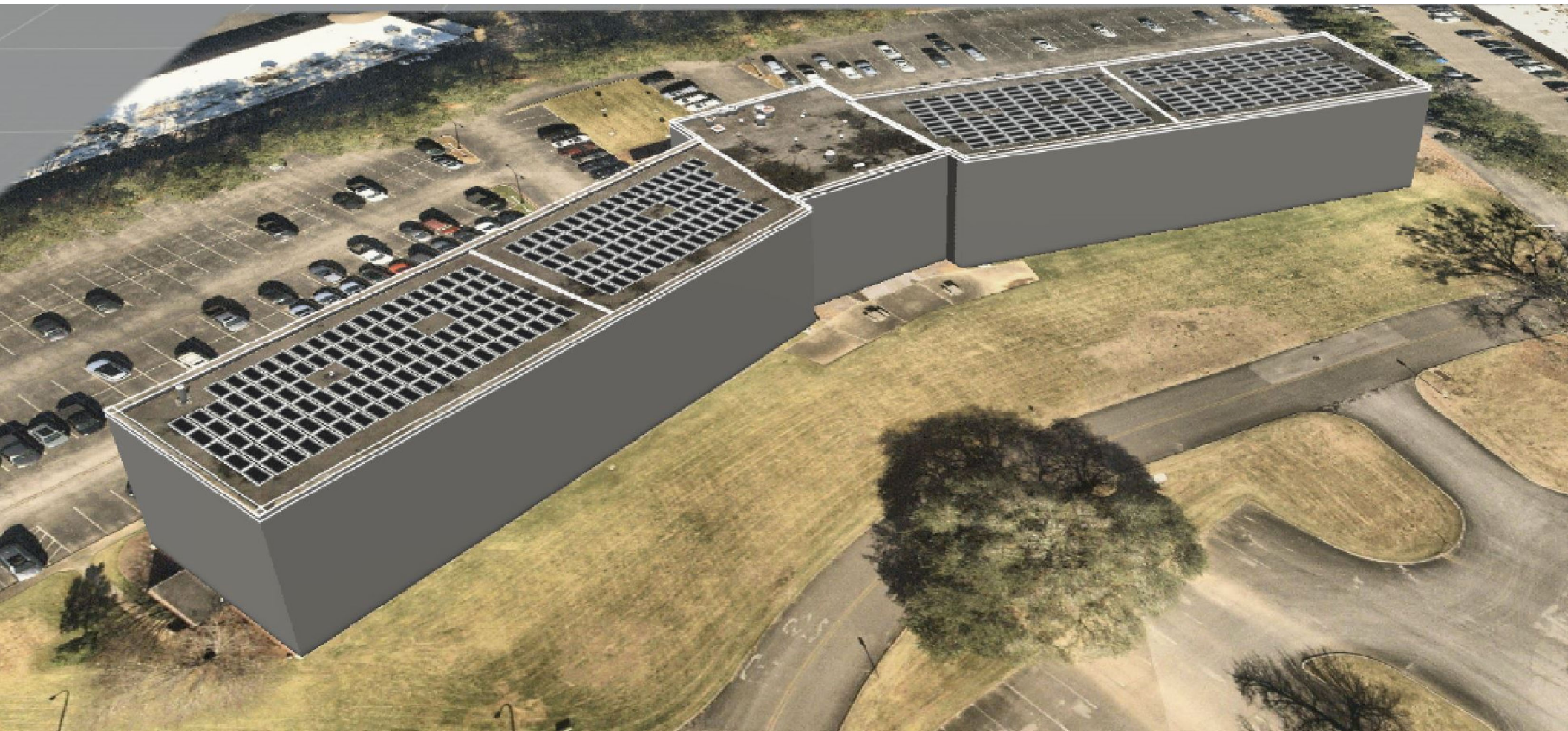
Access Rd

Office P

280

E





ZXM7-SHLDD144 Series ZNSHINESOLAR

Znshinesolar 10BB HALF-CELL Bifacial Light-Weight Double Glass Monocrystalline PERC PV Module

525W | 530W | 535W | 540W | 545W | 550W



Excellent cells efficiency

MBB technology decreases the distance between busbar and finger grid line which is benefit to power increase.



Better Weak Illumination Response

More power output in weak light condition, such as haze, cloudy, and early morning.



Anti PID

Ensured PID resistance through the quality control of cell manufacturing process and raw materials.



Adapt To Harsh Outdoor Environment

Resistant to harsh environments such as salt, ammonia, sand, high temperature and high humidity environment.



TIER 1

Global, Tier 1 bankable brand, with independently certified state-of-the-art automated manufacturing.



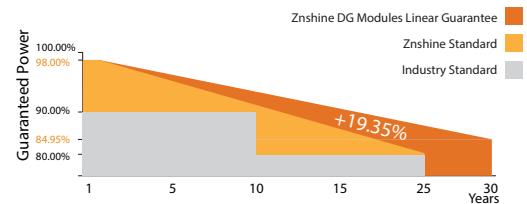
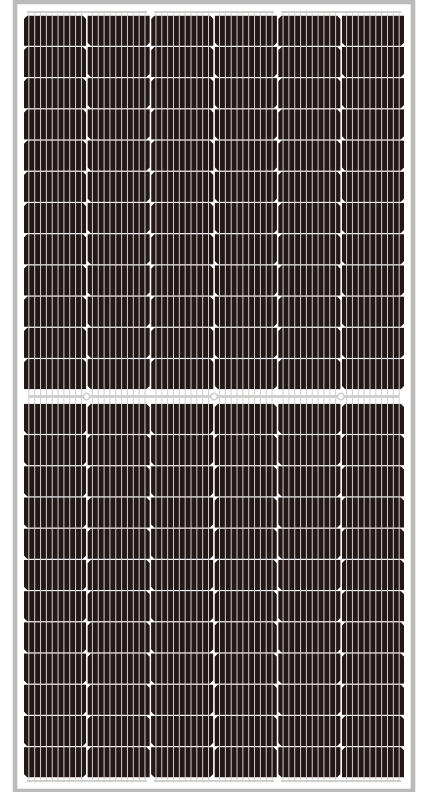
Excellent Quality Management System

Warranted reliability and stringent quality assurances well beyond certified requirements.



Bifacial Technology

Up to 25% additional power gain from back side depending on albedo.



12 years product guarantee
30 years output guarantee



0.45% annual degradation
over 30 years



IEC61215/IEC61730/IEC61701/IEC62716/UL61730

ISO 9001: Quality Management System

ISO 14001: Environmental Management System

ISO45001: Occupational Health and Safety Management System

Founded in 1988, ZNShine solar is a world's leading high-tech PV module manufacturer. With the state-of-the-art production lines, the company boasts module capacity of 6GW. Bloomberg has listed ZNShine as a global Tier 1 PV module maker. Today Znshine has distributed its sales to more than 60 countries around the globe.

www.znshinesolar.com

ELECTRICAL CHARACTERISTICS | STC*

Nominal Power Watt Pmax(W)*	525	530	535	540	545	550
Power Output Tolerance Pmax(%)	0~+3	0~+3	0~+3	0~+3	0~+3	0~+3
Maximum Power Voltage Vmp(V)	40.90	41.10	41.30	41.50	41.70	41.90
Maximum Power Current Imp(A)	12.85	12.91	12.96	13.02	13.07	13.13
Open Circuit Voltage Voc(V)	49.20	49.40	49.60	49.80	50.00	50.20
Short Circuit Current Isc(A)	13.59	13.65	13.71	13.77	13.83	13.89
Module Efficiency (%)	20.32	20.52	20.71	20.90	21.10	21.29

*STC (Standard Test Condition): Irradiance 1000W/m², Module Temperature 25°C, AM 1.5

*Measuring tolerance: ±3%

ELECTRICAL CHARACTERISTICS | NMOT*

Maximum Power Pmax(Wp)	392.70	396.40	399.90	403.60	406.80	410.80
Maximum Power Voltage Vmp(V)	38.00	38.20	38.40	38.50	38.80	38.90
Maximum Power Current Imp(A)	10.33	10.38	10.42	10.47	10.49	10.56
Open Circuit Voltage Voc(V)	46.00	46.20	46.30	46.50	46.70	46.90
Short Circuit Current Isc(A)	10.98	11.02	11.07	11.12	11.17	11.22

*NMOT(Nominal module operating temperature):Irradiance 800W/m², Ambient Temperature 20°C,AM 1.5,Wind Speed 1m/s

ELECTRICAL CHARACTERISTICS WITH 25% REAR SIDE POWER GAIN

Front power Pmax/W	525	530	535	540	545	550
Total power Pmax/W	656	663	669	675	681	688
Vmp/V(Total)	41.00	41.20	41.40	41.60	41.80	42.00
Imp/A(Total)	16.01	16.08	16.15	16.23	16.30	16.37
Voc/V(Total)	49.30	49.50	49.70	49.90	50.10	50.30
Isc/A(Total)	16.95	17.02	17.10	17.17	17.25	17.32

MECHANICAL DATA

Solar cells	Mono PERC
Cells orientation	144 (6×24)
Module dimension	2278×1134×30 mm(With Frame)
Weight	33.5 kg
Glass	2.0 mm+2.0mm, High Transmission, AR Coated Heat Strengthened Glass
Junction box	IP 68, 3 diodes
Cables	4 mm ² ,350 mm
Connectors	MC4-compatible

TEMPERATURE RATINGS

NMOT	44°C ±2°C	Maximum system voltage	1500 V DC
Temperature coefficient of Pmax	-0.35%/°C	Operating temperature	-40°C~+85°C
Temperature coefficient of Voc	-0.29%/°C	Maximum series fuse	30 A
Temperature coefficient of Isc	0.05%/°C	Maximum load(snow/wind)	5400 Pa / 2400 Pa
Refer.Bifacial Factor	70±5%		

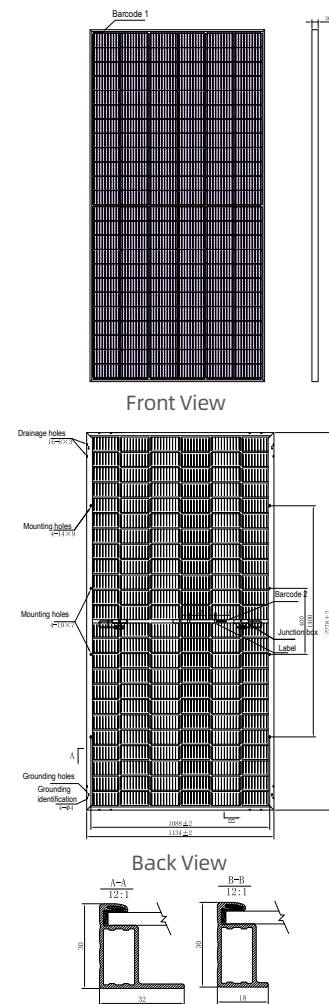
*Do not connect Fuse in Combiner Box with two or more strings in parallel connection

*Remark:Electrical data in this catalog do not refer to a single module and they are not part of the offer.They only serve for comparison among different module types.

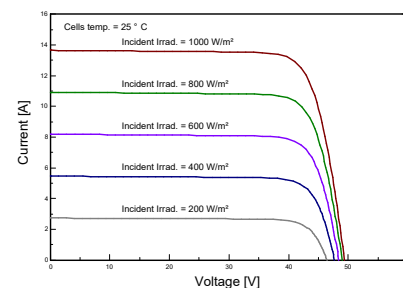
PACKAGING CONFIGURATION

Piece/Box	36	
Piece/Container(40'HQ)	720	*Please be kindly advised that PV modules should be handled and installed by qualified people who have professional skills and please carefully read the safety and installation instructions before using our PV modules.
Piece/Container(with additional small package)	/	

DIMENSIONS(MM)



I-V CURVES OF PV MODULE(530W)



P-V CURVES OF PV MODULE(530W)

