

# UKS-S132/M12H-xxx-BG 210mm Bifacial Series 640-665W

210mm cells half cut cell technology

## Product Advantages



### High customer value

Lower LCOE (Levelized Cost Of Energy), reduced BOS (Balance Of System) cost, shorter payback time  
Lower guaranteed first year and annual degradation  
Designed for compatibility with existing mainstream system components  
Higher return on Investment



### High power up to 665W

Large area cells based on 210mm silicon wafers and half-cut cell technology  
Up to 21.4% module efficiency with high density interconnect technology  
Multi-busbar technology for better light trapping effect, lower series resistance and improved current collection



### High reliability

Minimized micro-cracks with innovative non-destructive cutting technology Ensured PID resistance through cell process and module material control Resistant to harsh environments such as salt, ammonia, sand, high temperature and high humidity areas. Mechanical performance up to 5400 Pa positive load and 2400 Pa negative load



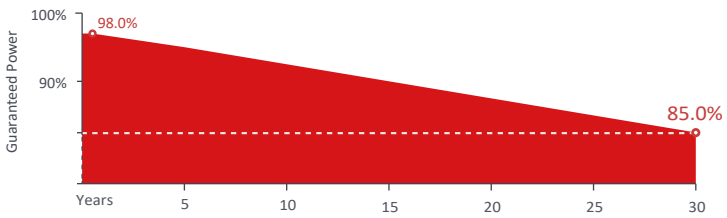
### High energy yield

Excellent IAM(Incident Angle Modifier)and low irradiation performance, validated by 3rd party certifications  
The unique design provides optimized energy production under inter-row shading conditions

**21.4%**  
Module efficiency

**665W**  
Highest power output

## Performance Warranty



**- 2.00%**  
First year power degradation

**- 0.45%**  
Annual degradation

**12**  
Years

Materials and workmanship warranty

**30**  
Years

Linear power warranty



LOW RISK BRITISH PROCUREMENT



BRITISH TECHNICAL SUPPORT



ALWAYS GRADE "A" CELLS

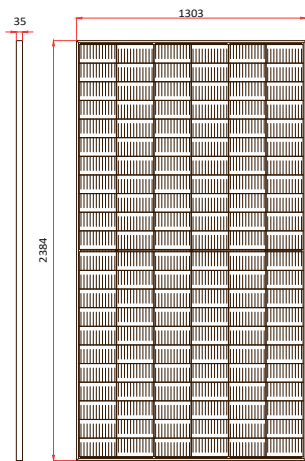


BRITISH QUALITY STANDARDS

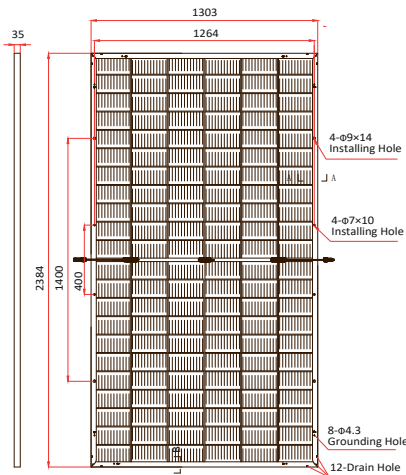


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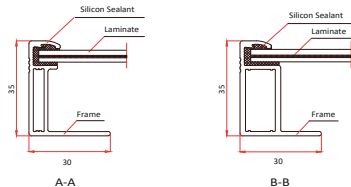
## DIMENSIONS OF PV MODULE(mm)



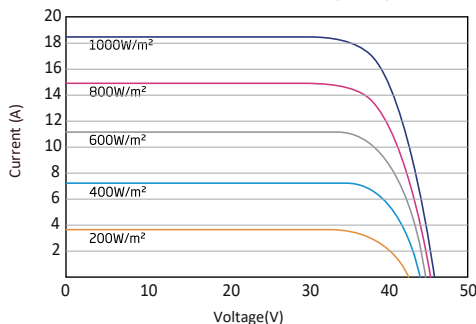
Front View



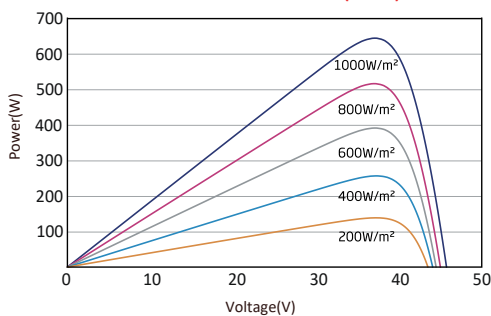
Back View



## I-V CURVES OF PV MODULE(645W)



## P-V CURVES OF PV MODULE(645W)



## ELECTRICAL DATA (STC)

Peak Power Watts-P <sub>MAX</sub> (Wp)*	640	645	650	655	660	665
Maximum Power Voltage-V <sub>MP</sub> (V)	37.3	37.5	37.7	37.9	38.1	38.3
Maximum Power Current-I <sub>MP</sub> (A)	17.19	17.23	17.27	17.31	17.35	17.39
Open Circuit Voltage-V <sub>OC</sub> (V)	45.1	45.3	45.5	45.7	45.9	46.1
Short Circuit Current-I <sub>SC</sub> (A)	18.26	18.31	18.35	18.40	18.45	18.50
Module Efficiency η <sub>m</sub> (%)	20.6	20.8	20.9	21.1	21.2	21.4
Power Tolerance(W)	0~+5					

STC:Irradiance 1000W/m<sup>2</sup>,module temperature 25°C,AM=1.5; \*Measuring tolerance: ±3%

## ELECTRICAL DATA (NMOT)

Maximum Power-P <sub>MAX</sub> (Wp)	484	488	492	495	499	504
Maximum Power Voltage-V <sub>MP</sub> (V)	34.7	34.9	35.1	35.2	35.4	35.6
Maximum Power Current-I <sub>MP</sub> (A)	13.94	13.98	14.01	14.05	14.10	14.16
Open Circuit Voltage-V <sub>OC</sub> (V)	42.5	42.7	42.9	43.0	43.2	43.4
Short Circuit Current-I <sub>SC</sub> (A)	14.71	14.75	14.79	14.83	14.87	14.91

NMOT:Irradiance 800W/m<sup>2</sup>,ambient temperature 20°C,AM=1.5,wind speed 1m/s

## Electrical characteristics with different power bin (reference to 10% Irradiance ratio)

Maximum Power-P <sub>MAX</sub> (Wp)	685	690	696	701	706	712
Maximum Power Voltage-V <sub>MP</sub> (V)	37.3	37.5	37.7	37.9	38.1	38.3
Maximum Power Current-I <sub>MP</sub> (A)	18.39	18.44	18.48	18.52	18.56	18.60
Open Circuit Voltage-V <sub>OC</sub> (V)	45.1	45.3	45.5	45.7	45.9	46.1
Short Circuit Current-I <sub>SC</sub> (A)	19.54	19.59	19.63	19.69	19.74	19.79
Irradiance ratio (rear/front)	10 %					

NMOT:Irradiance 800W/m<sup>2</sup>,ambient te

## MECHANICAL DATA

Solar Cells	Monocrystalline
No.of cells	210x105mm 132pcs
Module Dimensions	2384x1303x35mm
Weight	38.7 kg
Glass	2.0 mm, High Transmission, AR Coated Heat Strengthened Glass
Encapsulant Material	EVA/POE
Back Glass	2.0mm, Heat Strengthened Glass (White Grid Glass)
Frame	35 mm Anodized Aluminium Alloy
J-Box	IP 68 rated
Cables	Photovoltaic Technology Cable 4.0mm <sup>2</sup> Cable length 350mm or customized length
Connector	MC4 Compatible

## TEMPERATURE RATINGS

NMOT (Nominal Module Operating Temperature)	43°C(±2°C)
Temperature Coefficient of P <sub>max</sub>	- 0.34%/°C
Temperature Coefficient of V <sub>oc</sub>	- 0.25%/°C
Temperature Coefficient of I <sub>sc</sub>	0.04%/°C

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

## WARRANTY

12 year Product Workmanship Warranty
30 year Power Warranty
2% first year degradation
0.45% Annual Power Attenuation

(Please refer to product warranty for details)

## MAXIMUM RATINGS

Operational Temperature	-40~+85°C
Maximum System Voltage	1500V DC (IEC)
Max Series Fuse Rating	35A

## PACKAGING CONFIGURATION

Modules per box: 31 pieces
Modules per 40' container: 558 pieces