

Delivery Easy and Secure Turnkey Energy Solutions



Solar Panel Catalogue 2024



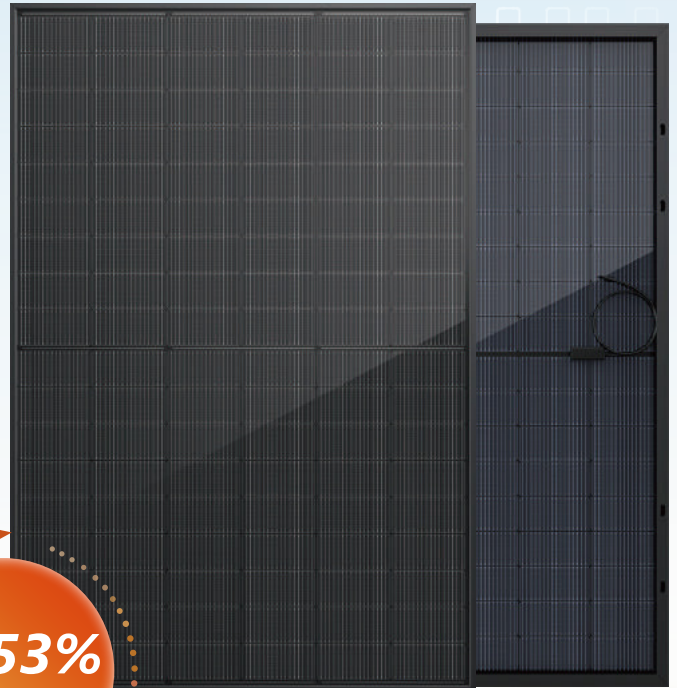
A professional energy storage solution provider

UNI T

UE440T-54HBD

420-440W

N-type TOPCon Bifacial Ultra black Dual Glass Solar Module



22.53%
Max Module Eff.



Positive power tolerance
(0-+5W) guaranteed



High module conversion efficiency
(up to 22.53%)



Slower power degradation
enabled by low LID Mono PERC technology: first year < 1%,
0.40% year 2-30



Solid PID resistance
ensured by solar cell process optimization and careful
module BOM selection



Reduced resistive loss
with lower operating current



Higher energy yield
with lower operating temperature



Reduced hot spot risk
with lower operating electrical design and lower operating
current

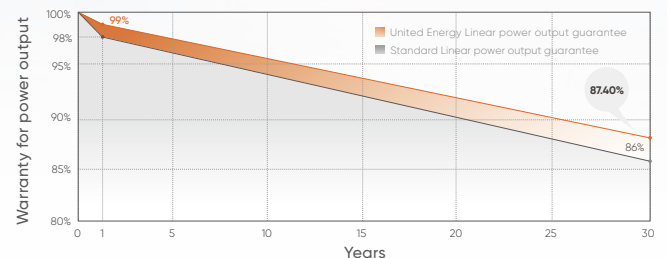


Quality Management System and Product Certification

- IEC 61215, IEC 61730, UL 61730
- ISO9001: 2015: ISO Quality Management System.
- ISO14001: 2015:ISO Environmental Management System.
- ISO45001: 2018: Occupation Health and Safety.
- IEC62941:Guideline for module design qualification and type approval.

Quality Guarantee

15 year Materials Warranty **30** year Power Warranty



Electrical Parameters(STC*)

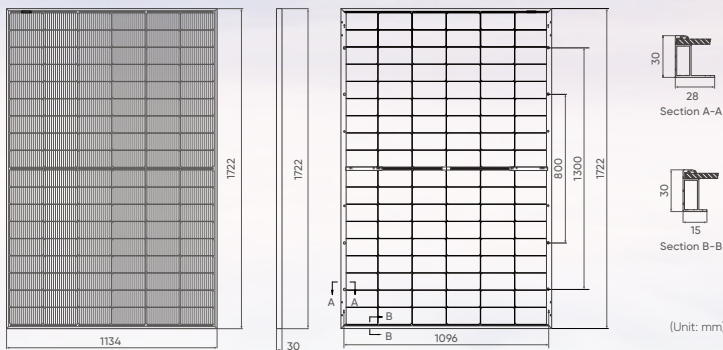
| Module Type | 420 | 425 | 430 | 435 | 440 |
|-----------------------------------|-------|-------|-------|-------|-------|
| Maximum power (Pmax/W) | 420 | 425 | 430 | 435 | 440 |
| Open Circuit Voltage (Voc/V) | 38.49 | 38.73 | 38.96 | 39.20 | 39.44 |
| Short Circuit Current (Isc/A) | 13.99 | 14.06 | 14.13 | 14.20 | 14.27 |
| Voltage at Maximum power (Vmpp/V) | 31.63 | 31.84 | 32.04 | 32.25 | 32.45 |
| Current at Maximum Power (Imp/A) | 13.28 | 13.35 | 13.42 | 13.49 | 13.56 |
| Module Efficiency(%) | 21.51 | 21.76 | 22.02 | 22.28 | 22.53 |

Bifacial Output Rear side Power Gain

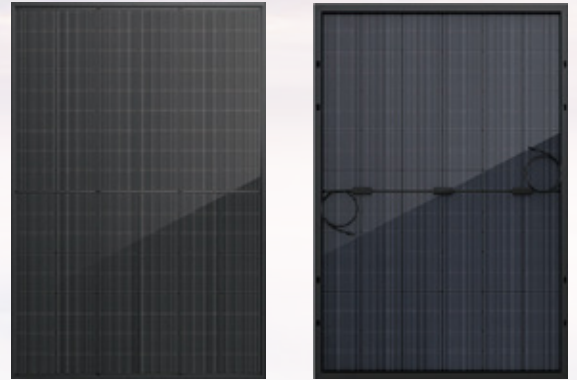
| 5% | Maximum power (Pmax/W) | 441 | 446 | 452 | 457 | 462 |
|-----|---------------------------|-------|-------|-------|-------|-------|
| | Module Efficiency STC (%) | 22.58 | 22.85 | 23.12 | 23.36 | 23.63 |
| 15% | Maximum power (Pmax/W) | 483 | 489 | 495 | 500 | 506 |
| | Module Efficiency STC (%) | 24.73 | 25.03 | 25.32 | 25.59 | 25.88 |
| 25% | Maximum Power (Pmax/W) | 525 | 531 | 538 | 544 | 550 |
| | Module Efficiency STC (%) | 26.89 | 27.21 | 27.53 | 27.82 | 28.14 |

- Standard Test Conditions [STC]: irradiance 1000W/m²; AM 1.5; ambient temperature 25°C according to EN 60904-3;
- Tolerance of Pm: 0~+5W, Measuring uncertainty of power: ±3%. Performance deviation of Voc [V], Isc [A], Vm [V] and Im [A]: ±3%.

Design(mm)



Product Image



Design(mm)

| | |
|----------------------|--|
| Solar Cells | N-type Mono |
| No. of Cells | 108 (6×18) |
| Dimensions | 1722 × 1134 × 30mm |
| Weight | 23.5kg |
| Glass | Front: 2.0mm coated semi-tempered glass; Back: 2.0mm semi-tempered glass |
| Frame | Anodized aluminium alloy |
| Junction Box | Ip68 rated (3 Bypass Diodes) |
| Output Cables | 4mm ² , 300mm (+) / 300mm (-), Length can be customized |
| Connectors | Mc4 compatible |
| Mechanical load test | 5400Pa |
| Packaging | 36pcs/box, 936pcs/40'HQ |

Operating Characteristics

| | |
|------------------------------|----------------|
| Operating Module Temperature | -40°C to +85°C |
| Maximum System Voltage | 1500V DC (IEC) |
| Maximum Series Fuse Rating | 30A |
| Power Tolerance | 0/+5W |

Temperature Characteristics

| | |
|--------------------------------------|------------|
| Nominal Operating Temperature (NMOT) | 45±2°C |
| Temperature Coefficient of Pmax | -0.29%/°C |
| Temperature Coefficient of Voc | -0.25%/°C |
| Temperature Coefficient of Isc | +0.045%/°C |



UNI H

UE450H-54HBD

N-type HJT Bifacial Dual Glass Solar Module



HJT 2.0 Technology

Combining gettering process and single-side $\mu\text{-Si}$ technology to ensure higher cell efficiency and higher module power.



-0.26%/°C Pmax temperature coefficient

More stable power generation performance and even better in hot climate.



SMBB design with Half-Cut Technology

Shorter current transmission distance, less resistive loss and higher cell efficiency.



Up to 90% Bifaciality

Natural symmetrical bifacial structure bringing more energy yield from the backside.



Sealing with PIB based sealant

Stronger water resistance, greater air impermeability to extent module lifespan.

430-450W



Quality Management System and Product Certification

IEC 61215, IEC 61730, UL 61730

ISO9001: 2015: ISO Quality Management System.

ISO14001: 2015: ISO Environmental Management System.

ISO45001: 2018: Occupation Health and Safety.

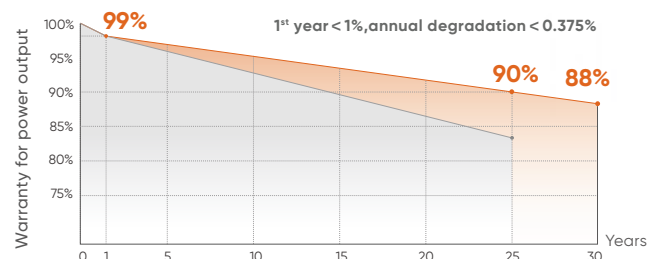
IEC62941: Guideline for module design qualification and type approval.



Quality Guarantee

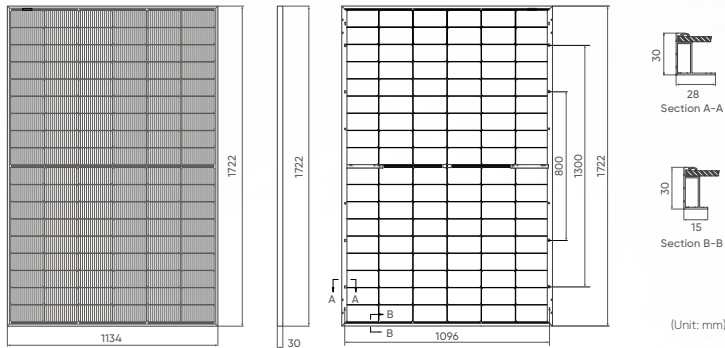
15 Year Materials Warranty

30 Year Power Warranty

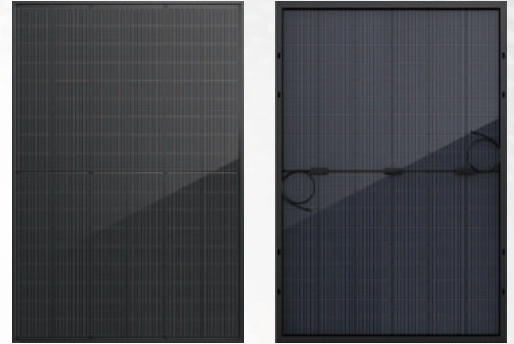


Less than 1% attenuation in the 1st year, the annual attenuation from the 2nd year is no more than 0.375%, and the power is no less than 88% until the 30th year.

Drawings



Product Image



Mechanical Characteristics

| | |
|----------------------|---|
| Solar Cells | HJT Mono 182×91.75mm |
| No. of Cells | 108 (6×18) |
| Dimensions | 1722 × 1134 × 30mm |
| Weight | 23.5kg |
| Glass Thickness | (F) 2.0mm anti-reflective solar glass (B) 2.0mm solar glass |
| Frame | Anodized aluminium alloy |
| Junction Box | IP68 |
| Output Cables | 4mm ² , 300mm in length, length can be customized / UV resistant |
| Connectors | MC4 original /MC4 compatible |
| Mechanical load test | 5400Pa |
| Packaging | 36pcs/box, 936pcs/40'HQ |

Operating Characteristics

| | |
|------------------------------|---------------|
| Operating Module Temperature | -40°C ~ +85°C |
| Maximum System Voltage | DC 1500 (IEC) |
| Maximum Series Fuse Rating | 30A |
| Power Tolerance | 0~+5W |
| Bifaciality | 85%±5% |

Temperature Characteristics

| | |
|-------------------------------------|-----------|
| Nominal Operating Cell Temp. (NOCT) | 44±2°C |
| Temperature Coefficient of Pmax | -0.26%/°C |
| Temperature Coefficient of Voc | -0.24%/°C |
| Temperature Coefficient of Isc | 0.04%/°C |

Electrical Parameters (STC*)

| Module Type: | 430 | 435 | 440 | 445 | 450 |
|-----------------------------------|-------|-------|-------|-------|-------|
| Maximum Power (Pmax/W) | 430 | 435 | 440 | 445 | 450 |
| Module Efficiency (%) | 22.02 | 22.28 | 22.53 | 22.79 | 23.04 |
| Optimum Operating Voltage (Vmp/V) | 34.60 | 34.86 | 35.12 | 35.38 | 35.63 |
| Optimum Operating Current (Imp/A) | 12.43 | 12.48 | 12.53 | 12.58 | 12.63 |
| Open Circuit Voltage (Voc/V) | 41.37 | 41.64 | 41.91 | 42.18 | 42.44 |
| Short Circuit Current (Isc/A) | 12.95 | 13.00 | 13.05 | 13.10 | 13.15 |

BSTC*

| | | | | | |
|-----------------------------------|-------|-------|-------|-------|-------|
| Maximum Power (Pmax/W) | 473 | 479 | 484 | 489.5 | 495 |
| Optimum Operating Voltage (Vmp/V) | 34.60 | 34.86 | 35.12 | 35.38 | 35.63 |
| Optimum Operating Current (Imp/A) | 13.67 | 13.73 | 13.78 | 13.84 | 13.89 |
| Open Circuit Voltage (Voc/V) | 41.37 | 41.64 | 41.91 | 42.18 | 42.44 |
| Short Circuit Current (Isc/A) | 14.25 | 14.30 | 14.35 | 14.41 | 14.47 |

*STC: Irradiance 1000 W/m², cell temperature 25°C, AM=1.5. Tolerance of Pmax is within +/- 3%.

*BSTC: Front side irradiation 1000W/m², back side reflection irradiation 135W/m², AM=1.5, ambient temperature 25°C.

UNI T

UE450T-54HBD

430-450W

**N-type TOPCon Bifacial Black Frame
Dual Glass Solar Module**



23.04%
Max Module Eff.



Positive power tolerance
(0-+5W) guaranteed



High module conversion efficiency
(up to 23.04%)



Slower power degradation
enabled by low LID Mono PERC technology: first year <1%,
0.40% year 2-30



Solid PID resistance
ensured by solar cell process optimization and careful
module BOM selection



Reduced resistive loss
with lower operating current



Higher energy yield
with lower operating temperature



Reduced hot spot risk
with lower operating electrical design and lower operating
current



Quality Management System and Product Certification

IEC 61215, IEC 61730, UL 61730

ISO9001: 2015: ISO Quality Management System.

ISO14001: 2015: ISO Environmental Management System.

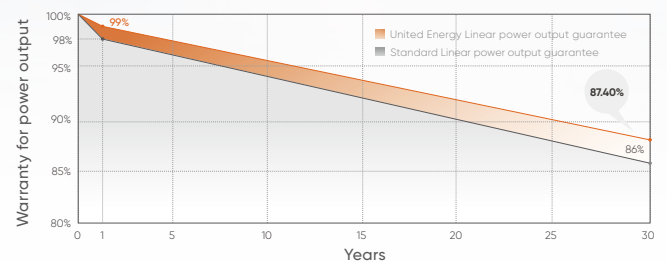
ISO45001: 2018: Occupation Health and Safety.

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Quality Guarantee

15 year Materials Warranty

30 year Power Warranty



Electrical Parameters(STC*)

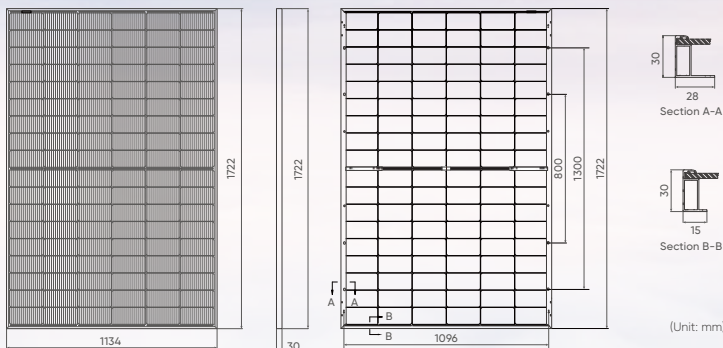
| Module Type | 430 | 435 | 440 | 445 | 450 |
|-----------------------------------|-------|-------|-------|-------|-------|
| Maximum power (Pmax/W) | 430 | 435 | 440 | 445 | 450 |
| Open Circuit Voltage (Voc/V) | 38.96 | 39.20 | 39.44 | 39.68 | 39.92 |
| Short Circuit Current (Isc/A) | 14.13 | 14.20 | 14.27 | 14.34 | 14.41 |
| Voltage at Maximum power (Vmpp/V) | 32.04 | 32.25 | 32.45 | 32.66 | 32.86 |
| Current at Maximum Power (Imp/A) | 13.42 | 13.49 | 13.56 | 13.63 | 13.70 |
| Module Efficiency(%) | 22.02 | 22.28 | 22.53 | 22.79 | 23.04 |

Bifacial Output Rear side Power Gain

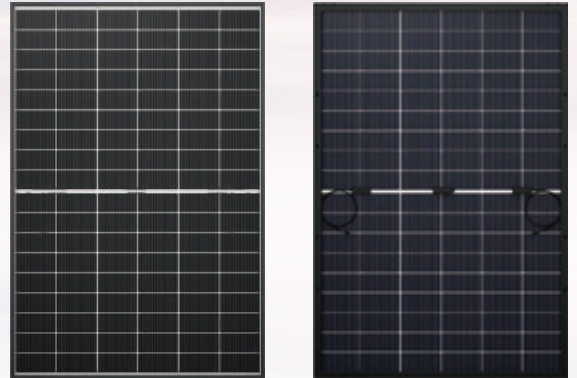
| 5% | Maximum power (Pmax/W) | 452 | 457 | 462 | 467 | 473 |
|-----|---------------------------|-------|-------|-------|-------|-------|
| | Module Efficiency STC (%) | 23.12 | 23.36 | 23.63 | 23.93 | 24.20 |
| 15% | Maximum power (Pmax/W) | 495 | 500 | 506 | 512 | 518 |
| | Module Efficiency STC (%) | 25.32 | 25.59 | 25.88 | 26.20 | 26.50 |
| 25% | Maximum Power (Pmax/W) | 538 | 544 | 550 | 556 | 563 |
| | Module Efficiency STC (%) | 27.53 | 27.82 | 28.14 | 28.50 | 28.80 |

- Standard Test Conditions [STC]: irradiance 1000W/m²; AM 1.5; ambient temperature 25°C according to EN 60904-3;
- Tolerance of Pm: 0~+5W, Measuring uncertainty of power: ±3%. Performance deviation of Voc [V], Isc [A], Vm [V] and Im [A]: ±3%.

Design(mm)



Product Image



Design(mm)

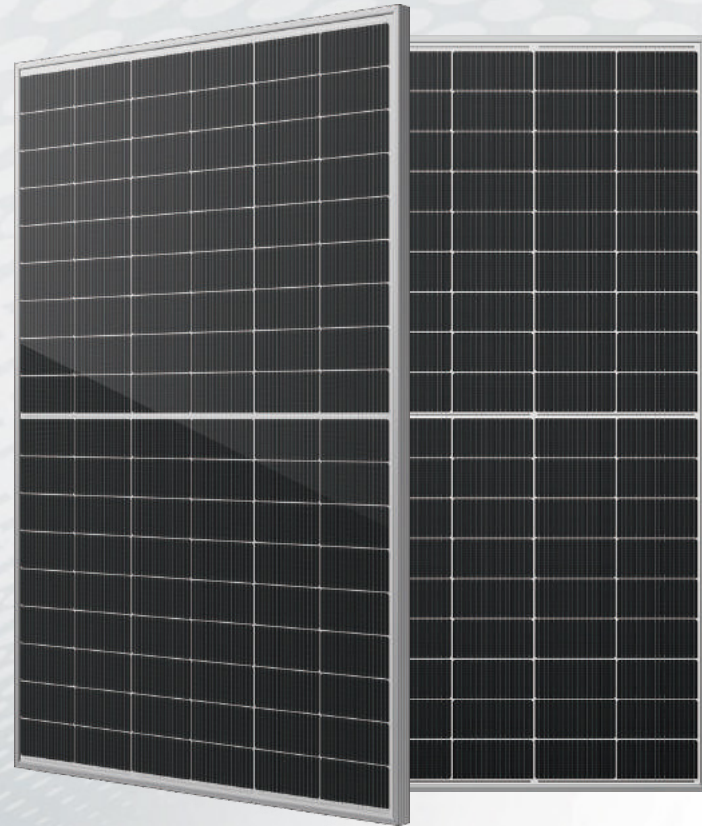
| | |
|----------------------|--|
| Solar Cells | N-type Mono |
| No. of Cells | 108 (6×18) |
| Dimensions | 1722 × 1134 × 30mm |
| Weight | 23.5kg |
| Glass | Front: 2.0mm coated semi-tempered glass; Back: 2.0mm semi-tempered glass |
| Frame | Anodized aluminium alloy |
| Junction Box | Ip68 rated (3 Bypass Diodes) |
| Output Cables | 4mm ² , 300mm (+) / 300mm (-), Length can be customized |
| Connectors | Mc4 compatible |
| Mechanical load test | 5400Pa |
| Packaging | 36pcs/box, 936pcs/40'HQ |

Operating Characteristics

| | |
|------------------------------|----------------|
| Operating Module Temperature | -40°C to +85°C |
| Maximum System Voltage | 1500V DC (IEC) |
| Maximum Series Fuse Rating | 30A |
| Power Tolerance | 0/+5W |

Temperature Characteristics

| | |
|--------------------------------------|------------|
| Nominal Operating Temperature (NMOT) | 45±2°C |
| Temperature Coefficient of Pmax | -0.29%/°C |
| Temperature Coefficient of Voc | -0.25%/°C |
| Temperature Coefficient of Isc | +0.045%/°C |



UNI H

UE460H-54H

N-type HJT Monofacial Solar Module



HJT 2.0 Technology

Combining gettering process and single-side $\mu\text{-Si}$ technology to ensure higher cell efficiency and higher module power.



-0.26%/°C Pmax temperature coefficient

More stable power generation performance and even better in hot climate.



SMBB design with Half-Cut Technology

Shorter current transmission distance, less resistive loss and higher cell efficiency.



Up to 90% Bifaciality

Natural symmetrical bifacial structure bringing more energy yield from the backside.



Sealing with PIB based sealant

Stronger water resistance, greater air impermeability to extend module lifespan.

440-460W



Quality Management System and Product Certification

IEC 61215, IEC 61730, UL 61730

ISO9001: 2015: ISO Quality Management System.

ISO14001: 2015: ISO Environmental Management System.

ISO45001: 2018: Occupation Health and Safety.

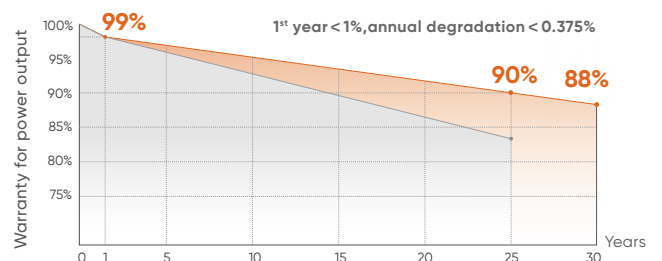
IEC62941: Guideline for module design qualification and type approval.



Quality Guarantee

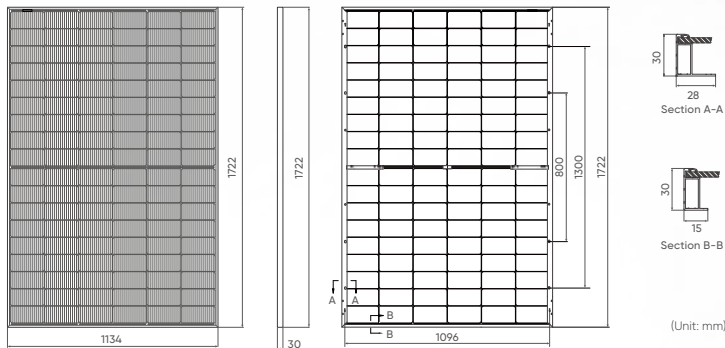
15 Year Materials Warranty

30 Year Power Warranty

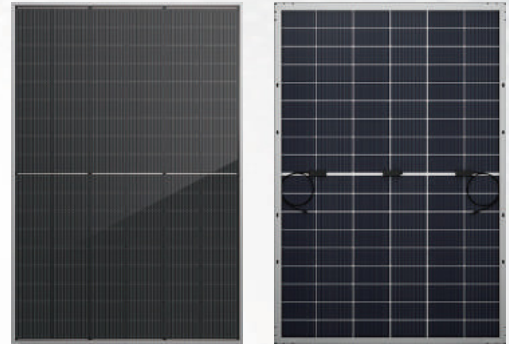


Less than 1% attenuation in the 1st year, the annual attenuation from the 2nd year is no more than 0.375%, and the power is no less than 88% until the 30th year.

Drawings



Product Image



Mechanical Characteristics

| | |
|----------------------|---|
| Solar Cells | HJT Mono 182×91.75mm |
| No. of Cells | 108 (6×18) |
| Dimensions | 1722 × 1134 × 30mm |
| Weight | 23.5kg |
| Glass Thickness | (F) 2.0mm anti-reflective solar glass |
| Frame | Anodized aluminium alloy |
| Junction Box | IP68 |
| Output Cables | 4mm ² , 300mm in length, length can be customized / UV resistant |
| Connectors | MC4 original /MC4 compatible |
| Mechanical load test | 5400Pa |
| Packaging | 36pcs/box, 936pcs/40'HQ |

Operating Characteristics

| | |
|------------------------------|---------------|
| Operating Module Temperature | -40°C ~ +85°C |
| Maximum System Voltage | DC 1500 (IEC) |
| Maximum Series Fuse Rating | 30A |
| Power Tolerance | 0~+5W |
| Bifaciality | 85%±5% |

Temperature Characteristics

| | |
|-------------------------------------|-----------|
| Nominal Operating Cell Temp. (NOCT) | 44±2°C |
| Temperature Coefficient of Pmax | -0.26%/°C |
| Temperature Coefficient of Voc | -0.24%/°C |
| Temperature Coefficient of Isc | 0.04%/°C |

Electrical Parameters (STC*)

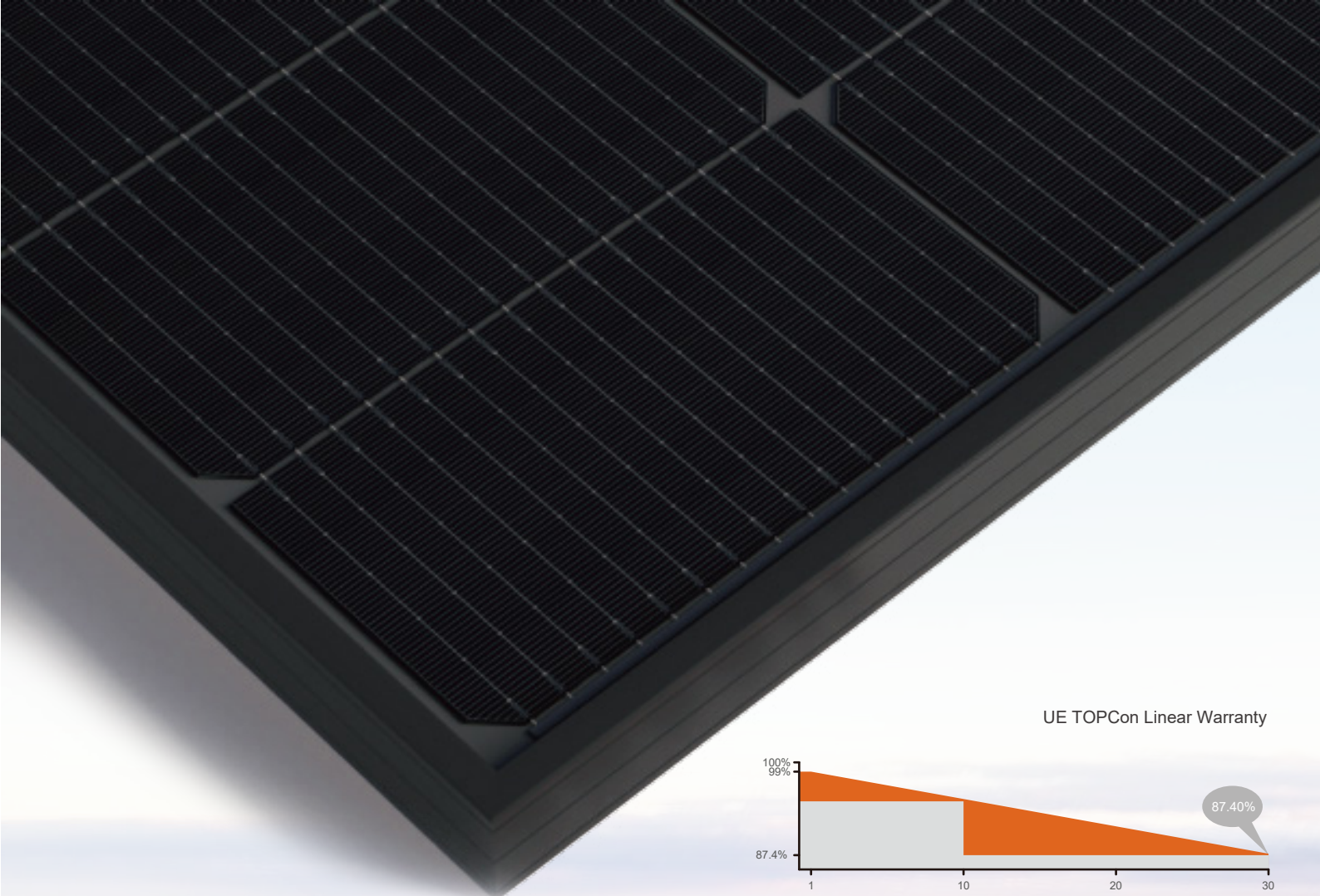
| Module Type: | 440 | 445 | 450 | 455 | 460 |
|-----------------------------------|-------|-------|-------|-------|-------|
| Maximum Power (Pmax/W) | 440 | 445 | 450 | 455 | 460 |
| Module Efficiency (%) | 22.53 | 22.79 | 23.04 | 23.30 | 23.56 |
| Optimum Operating Voltage (Vmp/V) | 35.12 | 35.38 | 35.64 | 35.89 | 36.13 |
| Optimum Operating Current (Imp/A) | 12.53 | 12.58 | 12.63 | 12.68 | 12.73 |
| Open Circuit Voltage (Voc/V) | 41.91 | 42.18 | 42.44 | 42.70 | 42.96 |
| Short Circuit Current (Isc/A) | 13.05 | 13.10 | 13.15 | 13.20 | 13.25 |

BSTC*

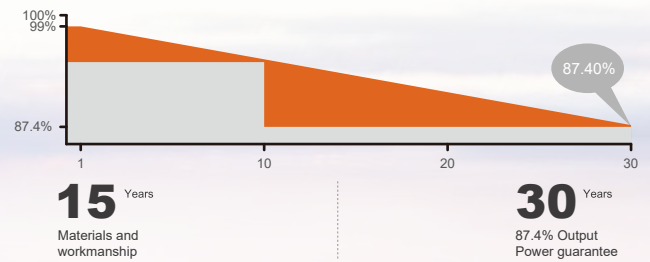
| | | | | | |
|-----------------------------------|-------|-------|-------|-------|-------|
| Maximum Power (Pmax/W) | 473 | 479 | 484 | 489.5 | 495 |
| Optimum Operating Voltage (Vmp/V) | 34.60 | 34.86 | 35.12 | 35.38 | 35.63 |
| Optimum Operating Current (Imp/A) | 13.67 | 13.73 | 13.78 | 13.84 | 13.89 |
| Open Circuit Voltage (Voc/V) | 41.37 | 41.64 | 41.91 | 42.18 | 42.44 |
| Short Circuit Current (Isc/A) | 14.25 | 14.30 | 14.35 | 14.41 | 14.47 |

*STC: Irradiance 1000 W/m², cell temperature 25°C, AM=1.5. Tolerance of Pmax is within +/- 3%.

*BSTC: Front side irradiation 1000W/m², back side reflection irradiation 135W/m², AM=1.5, ambient temperature 25°C.



UE TOPCon Linear Warranty



UE480H-54HBD

460-480W

182mm 16BB 108Cells
All Black Double Glass Bifacial.

TOPCon Mono Half Cell
PV Module Series



SMBB Technology
Half Cut TOPCon Cell



High Energy
Performance



100% Inspection
30years Guarantee



Fire Class A



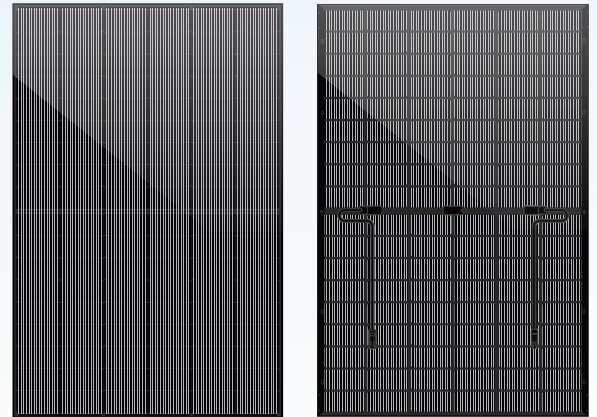
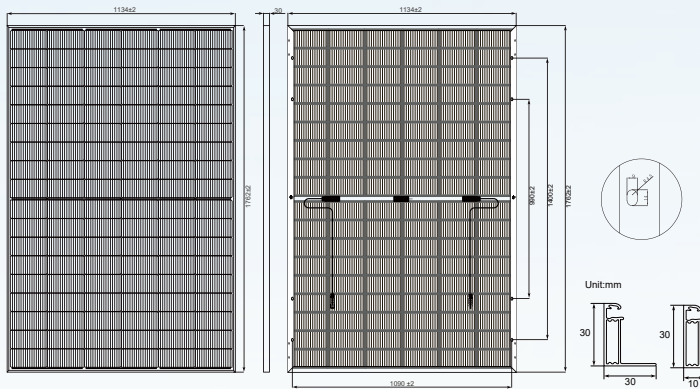
5400Pa
Strengthened
Mechanical Load



Advanced Bifacial
Efficiency



**UNITED
ENERGY**



All Dimensions in mm
The above drawing is a graphical representation of the product.
For engineering quality drawings please contact UE.

Electrical Characteristics (STC/NOCT)

| Module Type | UE460H-54HBD | | UE465H-54HBD | | UE470H-54HBD | | UE475H-54HBD | | UE480H-54HBD | |
|---------------------------------|--------------|-------|--------------|-------|--------------|-------|--------------|-------|--------------|-------|
| | STC | NOCT | STC | NOCT | STC | NOCT | STC | NOCT | STC | NOCT |
| Maximum Power- Pmax(W) | 460 | 347 | 465 | 351 | 470 | 355 | 475 | 359 | 480 | 363 |
| Open Circuit Voltage - Voc(V) | 40.24 | 38.21 | 40.46 | 38.41 | 40.68 | 38.61 | 40.90 | 38.81 | 41.12 | 39.01 |
| Short- Circuit Current - Isc(A) | 14.10 | 11.39 | 14.16 | 11.44 | 14.22 | 11.49 | 14.28 | 11.54 | 14.34 | 11.59 |
| Voltage at Pmax -Vmp(V) | 33.59 | 31.49 | 33.79 | 31.72 | 33.99 | 31.95 | 34.19 | 32.18 | 34.39 | 32.41 |
| Current at Pmax - Imp(A) | 13.70 | 11.03 | 13.77 | 11.08 | 13.84 | 11.13 | 13.91 | 11.18 | 13.98 | 11.23 |
| Module Efficiency -ηm(%) | 23.02 | | 23.27 | | 23.52 | | 23.77 | | 24.02 | |

STC : Irradiance 1000W/m², Cell Temperature 25°C, Air Mass 1.5

Mechanical Specifications

| | |
|--------------------------------|--|
| External Dimensions | 1762x1134x30mm |
| Weight | 22kg |
| Solar Cells | N-Type 16BB 182x94mm (2x54pcs) |
| Front Glass | AR Coated 1.6+1.6 mm tempered glass |
| Frame | Anodized aluminum alloy |
| Junction Box | IP68 |
| Output Cables | 4.0mm ² , 1200mm (+),1200mm (-), length can be customized |
| Connector | MC4 Compatible |
| Mechanical Load | Front Side Max. 5400Pa, Rear Side Max. 2400Pa |
| Power Tolerance(W) | (0 ~+5W) |
| Maximum System Voltage(V) | 1500Vdc (IEC / UL) |
| Maximum Series Fuse Rating (A) | 30A |

Packing Configuration

| | |
|-----------------------|----------------|
| Container | 1762x1134x30mm |
| Container | 40'HQ |
| Pieces per Pallet | 36 |
| Pallets per Container | 26 |
| Pieces per Container | 936 |

Temperature Characteristics

| | |
|--|------------|
| Pmax Temperature Coefficient | -0.290%/°C |
| Voc Temperature Coefficient | -0.250%/°C |
| Isc Temperature Coefficient | +0.045%/°C |
| Operating Temperature | -40~+85°C |
| Nominal Operating Cell Temperature(NOCT) | 45±2°C |



UNI S N-TYPE

UE480M-48H

Shingled Monofacial Ultra Black PV Module



Shingling Technology

Innovative Structure, low-temperature adhesive bonding, high-density layout.



Beautiful Appearance

Uniform layout, better aesthetic.



Superior Safety and Reliability

No hidden welding crack, low operating temperature, high pressure resistance.



Low System Cost

High module efficiency, reducing system cost.



Low Hot Spot Risk

Parallel circuit design reduces shading loss, module lifespan.



Eco-friendly

Adhering to green philosophy, no fluorine and low lead.



Low Shading Loss

Full parallel arrangement brings high effective power generation hours.

470-490W



Quality Management System and Product Certification

IEC 61215, IEC 61730, UL 61730

ISO9001: 2015: ISO Quality Management System.

ISO14001: 2015: ISO Environmental Management System.

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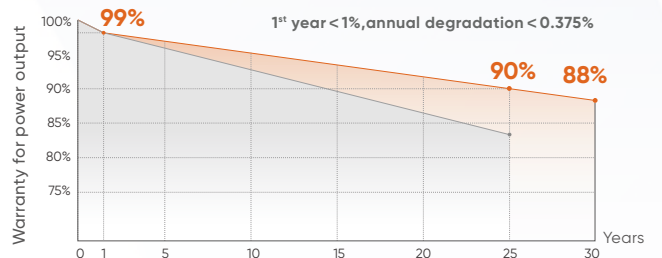
IEC62941: Guideline for module design qualification and type approval.



Quality Guarantee

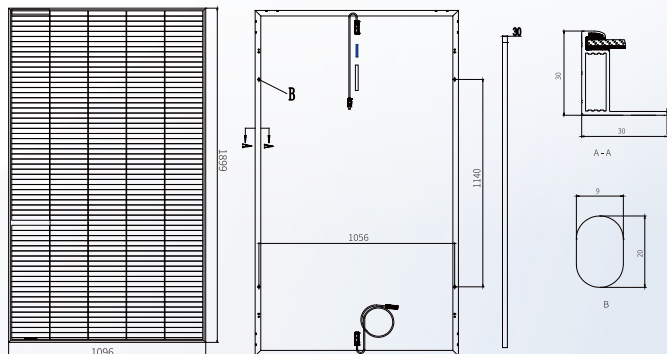
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30 Year Power Warranty

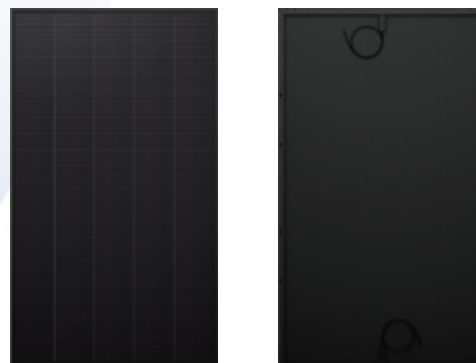


Less than 1% attenuation in the 1st year, the annual attenuation from the 2nd year is no more than 0.375%, and the power is no less than 88% until the 30th year.

Drawings



Product Image



Mechanical Characteristics

| | |
|-------------------|--|
| Solar Cells | Mono-crystalline silicon |
| No. of Cells | 320 (5×64) |
| Dimensions | 1899 × 1096 × 30mm |
| Weight | 21.8kg |
| Glass Thickness | 3.2mm high transmittance tempered glass |
| Frame | Anodized aluminium alloy |
| Junction Box | IP68 |
| Output Cables | 4mm ² , +300/-1000mm(Vertical), +220/-180mm(Horizontal) |
| Connectors | MC4 original /MC4 compatible |
| Withstanding Hail | Maximum diameter of 25 mm with impact speed of 23 m/s |
| Packaging | 36pcs/box, 864pcs/40'container |

Operating Characteristics

| | |
|------------------------------------|-----------------------|
| Maximum Surface Load Capacity [Pa] | Front 5400/ Back 2400 |
| Maximum System Voltage | DC 1500V/1000V (IEC) |
| Maximum Series Fuse Rating | 20A |
| Power Tolerance | 0~+5W |

Temperature Characteristics

| | |
|---------------------------------|---------------|
| Operating Module Temperature | -40°C ~ +85°C |
| Temperature Coefficient of Voc | -0.24%/°C |
| Temperature Coefficient of Isc | +0.04%/°C |
| Temperature Coefficient of Pmax | -0.26%/°C |

Electrical Parameters (STC*)

| Module Type: | 470 | 475 | 480 | 485 | 490 |
|-----------------------------------|-------|-------|-------|-------|-------|
| Maximum Power (Pmax/W) | 470 | 475 | 480 | 485 | 490 |
| Module Efficiency (%) | 22.6 | 22.8 | 23.1 | 23.3 | 23.5 |
| Optimum Operating Voltage (Vmp/V) | 36.90 | 37.00 | 37.10 | 37.20 | 37.30 |
| Optimum Operating Current (Imp/A) | 12.74 | 12.84 | 12.95 | 13.05 | 13.15 |
| Open Circuit Voltage (Voc/V) | 44.30 | 44.40 | 44.50 | 44.60 | 44.70 |
| Short Circuit Current (Isc/A) | 13.56 | 13.67 | 13.78 | 13.89 | 13.99 |

Electrical Characteristics (NMOT*)

| | | | | | |
|-----------------------------------|-------|-------|-------|-------|-------|
| Maximum Power (Pmax/W) | 355 | 359 | 363 | 367 | 371 |
| Optimum Operating Voltage (Vmp/V) | 35.20 | 35.30 | 35.40 | 35.50 | 35.60 |
| Optimum Operating Current (Imp/A) | 10.09 | 10.17 | 10.26 | 10.34 | 10.43 |
| Open Circuit Voltage (Voc/V) | 42.30 | 42.40 | 42.50 | 42.60 | 42.70 |
| Short Circuit Current (Isc/A) | 10.95 | 11.04 | 11.13 | 11.22 | 11.31 |

1. Standard Test Conditions [STC]: Irradiance 1000W/m²; AM 1.5; ambient temperature 25°C according to EN 60904-3;

2. Nominal Module Operating Temperature (NMOT): Irradiance 800W/m²; wind speed 1m/s, ambient temperature 20°C.

3. Tolerance of Pm: 0~+5W, Measuring uncertainty of power: ±3%. Performance deviation of Voc [V], Isc [A], Vm [V] and Im [A]: ±3%.

UNI T

UE580T-72H

570-590W

N-type TOPCon Monofacial Solar Module



22.45%
Max Module Eff.



N-type Technology

N-type modules with Tunnel Oxide Passivating Contacts (TOPCon) technology offer lower LID/LeTID degradation and better low light performance.



HOT 2.0 Technology

N-type modules with UESolar's HOT 2.0 technology offer better reliability and efficiency.



Durability Against Extreme Environment

High salt mist and ammonia resistance.



Mechanical Load Enhanced

Certified to withstand:
5400 Pa front side max static test load
2400 Pa rear side max static test load



SMBB Technology

Better light trapping and current collection to improve module power output and reliability.



Anti-PID Guarantee

Minimizes the chance of degradation caused by PID phenomena through optimization of cell production technology and material control.

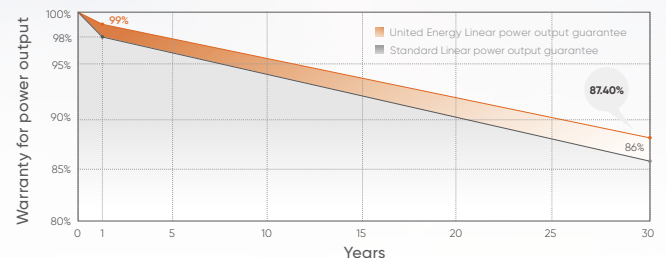


Quality Management System and Product Certification

- IEC 61215, IEC 61730, UL 61730
- ISO9001: 2015: ISO Quality Management System.
- ISO14001: 2015: ISO Environmental Management System.
- ISO45001: 2018: Occupation Health and Safety.
- IEC62941: Guideline for module design qualification and type approval.

Quality Guarantee

12 year Materials Warranty **30** year Power Warranty



Electrical Parameters(STC*)

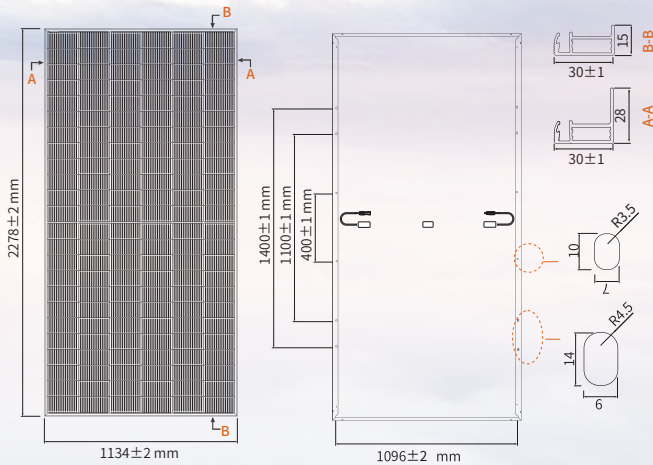
| Module Type | 570 | 575 | 580 | 585 | 590 |
|-----------------------------------|-------|-------|-------|-------|-------|
| Maximum power (Pmax/W) | 570 | 575 | 580 | 585 | 590 |
| Open Circuit Voltage (Voc/V) | 51.99 | 51.15 | 51.31 | 52.31 | 52.63 |
| Short Circuit Current (Isc/A) | 13.89 | 13.95 | 14.01 | 14.01 | 14.13 |
| Voltage at Maximum power (Vmpp/V) | 42.99 | 43.17 | 43.35 | 43.53 | 43.71 |
| Current at Maximum Power (Imp/A) | 13.26 | 13.32 | 13.38 | 13.44 | 13.50 |
| Module Efficiency(%) | 22.07 | 22.26 | 22.45 | 22.65 | 22.84 |

Specifications(NOCT)

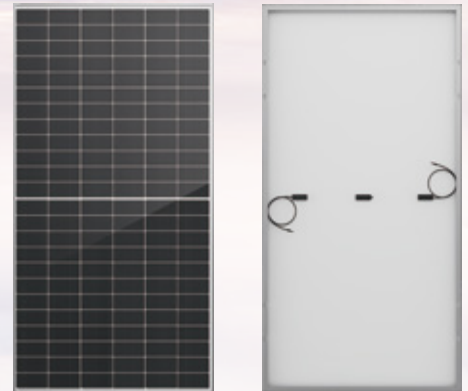
| Maximum power (Pmax/W) | 430 | 433 | 437 | 441 | 445 |
|-------------------------------|-------|-------|-------|-------|-------|
| Maximum power Voltage (Vmp/V) | 40.37 | 40.54 | 40.70 | 40.86 | 41.05 |
| Maximum power Current (Imp/A) | 10.64 | 10.69 | 10.74 | 10.79 | 10.83 |
| Open Circuit Voltage (Voc/V) | 49.38 | 49.54 | 49.69 | 49.84 | 49.99 |
| Short Circuit Current (Isc/A) | 11.21 | 11.26 | 11.31 | 11.36 | 11.41 |

1. Standard Test Conditions [STC]: irradiance 1000W/m²; AM 1.5; ambient temperature 25°C according to EN 60904-3;
2. Tolerance of Pm: 0~+5W, Measuring uncertainty of power: ±3%. Performance deviation of Voc [V], Isc [A], Vm [V] and Im [A]: ±3%.

Design(mm)



Product Image



Design(mm)

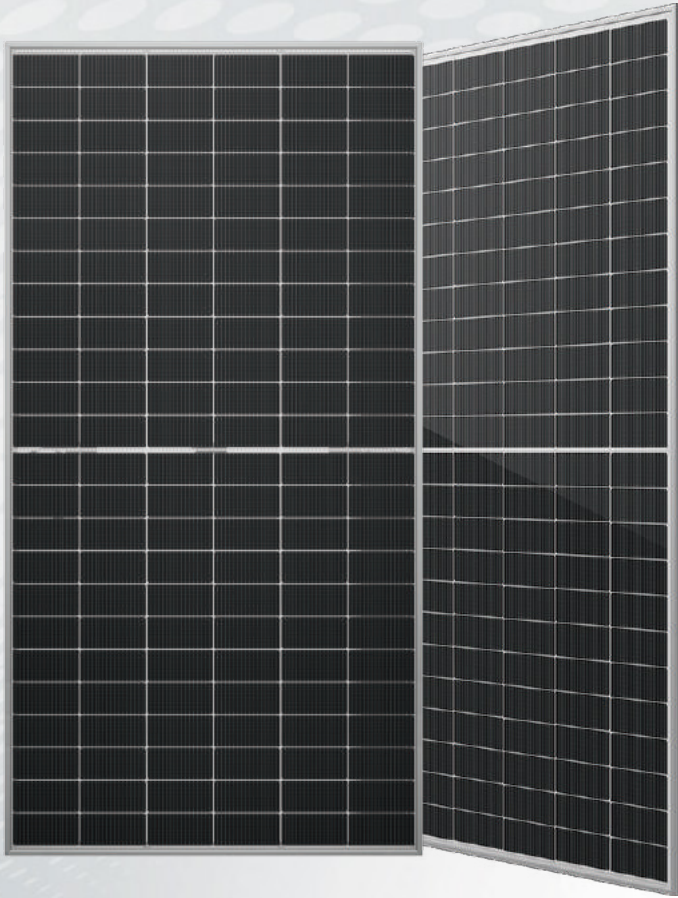
| | |
|----------------------|---|
| Solar Cells | N-type Mono |
| No. of Cells | 144 (6×24) |
| Dimensions | 2278 × 1134 × 30mm |
| Weight | 27.0kg |
| Front Glass | 3.2mm, Anti-Reflection Coating; High Transmission, Low Iron, Tempered Glass |
| Frame | Anodized aluminium alloy |
| Junction Box | Ip68 rated (3 Bypass Diodes) |
| Output Cables | 4mm ² , 400mm (+) / 200mm (-), or customized Length |
| Connectors | Mc4 compatible |
| Mechanical load test | 5400Pa |
| Packaging | 36pcs/box, 720pcs/40'HQ |

Operating Characteristics

| | |
|------------------------------|----------------|
| Operating Module Temperature | -40°C - +85°C |
| Maximum System Voltage | 1500V DC (IEC) |
| Maximum Series Fuse Rating | 25A |
| Power Tolerance | 0/+5W |

Temperature Characteristics

| | |
|--------------------------------------|------------|
| Nominal Operating Temperature (NMOT) | 45±2°C |
| Temperature Coefficient of Pmax | -0.29%/°C |
| Temperature Coefficient of Voc | -0.25%/°C |
| Temperature Coefficient of Isc | +0.045%/°C |



UNI H

UE600H-72HBD

N-type HJT Bifacial Dual Glass Solar Module



HJT 2.0 Technology

Combining gettering process and single-side $\mu\text{-Si}$ technology to ensure higher cell efficiency and higher module power.



-0.26%/°C Pmax temperature coefficient

More stable power generation performance and even better in hot climate.



SMBB design with Half-Cut Technology

Shorter current transmission distance, less resistive loss and higher cell efficiency.



Up to 90% Bifaciality

Natural symmetrical bifacial structure bringing more energy yield from the backside.



Sealing with PIB based sealant

Stronger water resistance, greater air impermeability to extend module lifespan.

580-600W



Quality Management System and Product Certification

IEC 61215, IEC 61730, UL 61730

ISO9001: 2015: ISO Quality Management System.

ISO14001: 2015: ISO Environmental Management System.

ISO45001: 2018: Occupation Health and Safety.

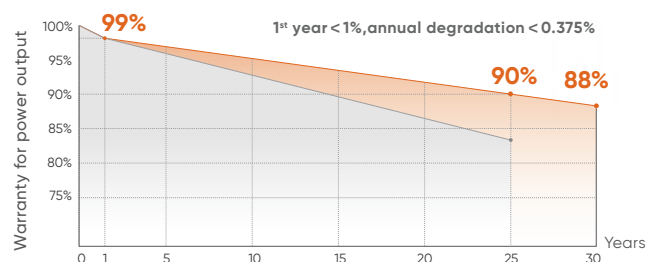
IEC62941: Guideline for module design qualification and type approval.



Quality Guarantee

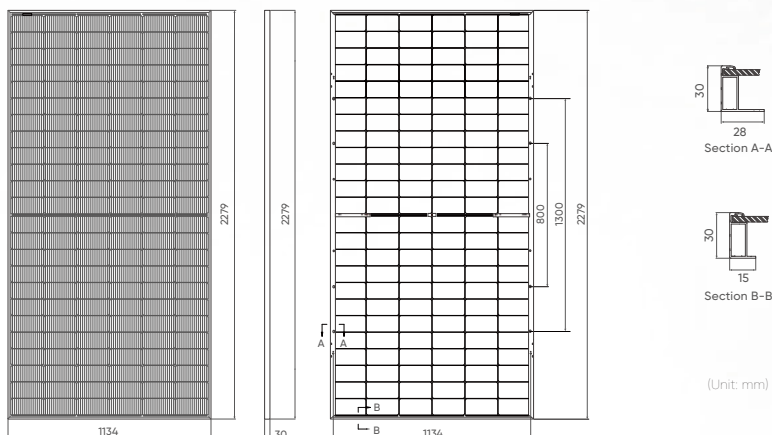
15 Year Materials Warranty

30 Year Power Warranty

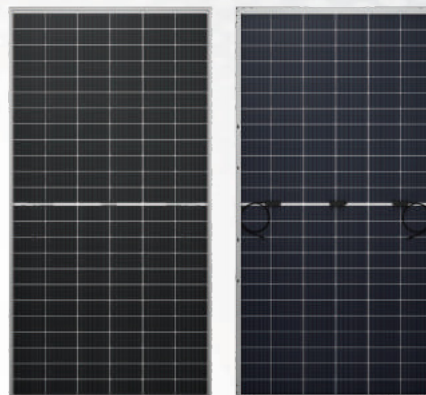


Less than 1% attenuation in the 1st year, the annual attenuation from the 2nd year is no more than 0.375%, and the power is no less than 88% until the 30th year.

Drawings



Product Image



Mechanical Characteristics

| | |
|----------------------|--|
| Solar Cells | N-type HJT |
| No. of Cells | 144 (6×24) |
| Dimensions | 2279 × 1134 × 30mm |
| Weight | 31.5kg |
| Glass | Front: 2.0mm coated semi-tempered glass; Back: 2.0mm semi-tempered glass |
| Frame | Anodized aluminium alloy |
| Junction Box | Ip68 rated (3 by pass diodes) |
| Output Cables | 4mm ² , 300mm (+) / 300mm (-), Length can be customized |
| Connectors | Mc4 compatible |
| Mechanical load test | 5400Pa |
| Packaging | 36pcs/box, 720pcs/40'HQ |

Operating Characteristics

| | |
|------------------------------|----------------|
| Operating Module Temperature | -40°C to +85°C |
| Maximum System Voltage | DC1500V(IEC) |
| Maximum Series Fuse Rating | 30A |
| Power Tolerance | 0/+5W |

Temperature Characteristics

| | |
|--------------------------------------|-----------|
| Nominal Operating Temperature (NMOT) | 44±2°C |
| Temperature Coefficient of Pmax | -0.26%/°C |
| Temperature Coefficient of Voc | -0.24%/°C |
| Temperature Coefficient of Isc | +0.04%/°C |

Electrical Parameters (STC*)

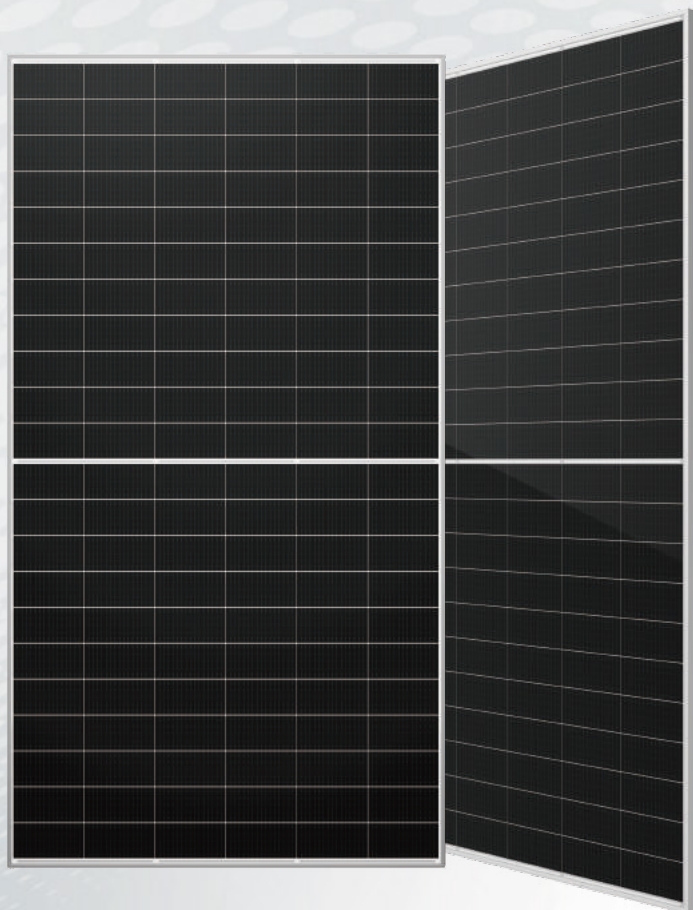
| Module Type: | 580 | 585 | 590 | 595 | 600 |
|----------------------------------|-------|-------|-------|-------|-------|
| Maximum Power (Pmax/W) | 580 | 585 | 590 | 595 | 600 |
| Open Circuit Voltage (Voc/V) | 53.92 | 54.12 | 54.31 | 54.50 | 54.70 |
| Short Circuit Current (Isc/A) | 13.35 | 13.40 | 13.45 | 13.50 | 13.55 |
| Voltage at Maximum power (Vmp/V) | 45.00 | 45.21 | 45.42 | 45.63 | 45.84 |
| Current Maximum Power (Imp/A) | 12.89 | 12.94 | 12.99 | 13.04 | 13.09 |
| Module Efficiency (%) | 22.44 | 22.64 | 22.83 | 23.02 | 23.22 |

Bifacial Output-Rearside Power Gain

| | | 580 | 585 | 590 | 595 | 600 |
|-----|---------------------------|-------|-------|-------|-------|-------|
| 5% | Maximum Power (Pmax/W) | 641 | 646 | 652 | 657 | 663 |
| | Module Efficiency STC (%) | 23.57 | 23.78 | 23.98 | 24.18 | 24.39 |
| 15% | Maximum Power (Pmax/W) | 667 | 673 | 679 | 684 | 690 |
| | Module Efficiency STC (%) | 25.82 | 26.05 | 26.27 | 26.48 | 26.71 |
| 25% | Maximum Power (Pmax/W) | 725 | 731 | 738 | 744 | 750 |
| | Module Efficiency STC (%) | 28.06 | 28.31 | 28.55 | 28.79 | 29.04 |

1. Standard Test Conditions [STC]: irradiance 1000W/m²; AM 1.5; ambient temperature 25°C according to EN 60904-3;

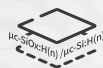
2. Tolerance of Pm: 0~+5W, Measuring uncertainty of power: ±3%. Performance deviation of Voc [V], Isc [A], Vm [V] and Im [A]: ±3%.



UNI H

UE720H-66HBD

N-type HJT Bifacial Dual Glass Solar Module



HJT 2.0 Technology

Combining gettering process and single-side $\mu\text{-Si}$ technology to ensure higher cell efficiency and higher module power.



-0.26%/°C Pmax temperature coefficient

More stable power generation performance and even better in hot climate.



SMBB design with Half-Cut Technology

Shorter current transmission distance, less resistive loss and higher cell efficiency.



Up to 90% Bifaciality

Natural symmetrical bifacial structure bringing more energy yield from the backside.



Sealing with PIB based sealant

Stronger water resistance, greater air impermeability to extent module lifespan.

700-720W



Quality Management System and Product Certification

IEC 61215, IEC 61730, UL 61730

ISO9001: 2015: ISO Quality Management System.

ISO14001: 2015: ISO Environmental Management System.

ISO45001: 2018: Occupation Health and Safety.

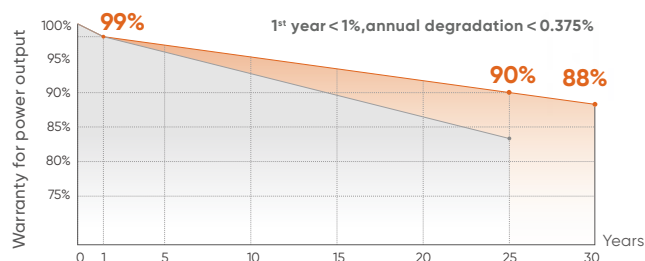
IEC62941: Guideline for module design qualification and type approval.



Quality Guarantee

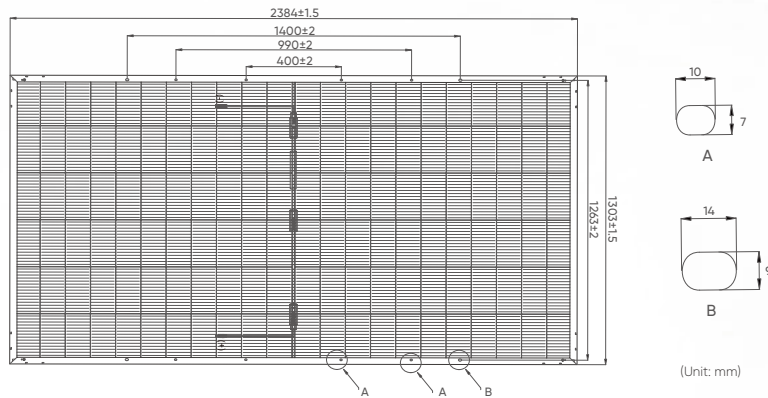
15 Year Materials Warranty

30 Year Power Warranty

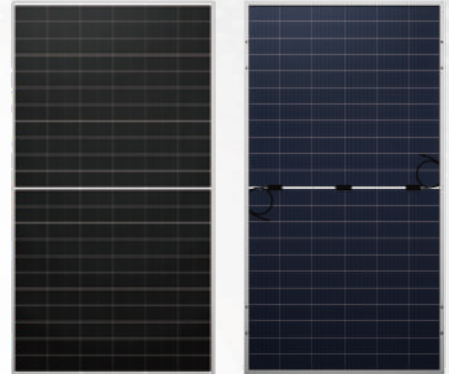


Less than 1% attenuation in the 1st year, the annual attenuation from the 2nd year is no more than 0.375%, and the power is no less than 88% until the 30th year.

Drawings



Product Image



Mechanical Characteristics

| | |
|----------------------|---|
| Solar Cells | HJT Mono 210×105mm |
| No. of Cells | 132 (6×22) |
| Dimensions | 2384 × 1303 × 35mm |
| Weight | 38.7kg |
| Glass Thickness | (F) 2.0mm anti-reflective solar glass (B) 2.0mm solar glass |
| Frame | Anodized aluminium alloy |
| Junction Box | IP68 |
| Output Cables | 4mm ² , 300mm in length, length can be customized / UV resistant |
| Connectors | MC4 original /MC4 compatible |
| Mechanical load test | 5400Pa |
| Packaging | 32pcs/Pallet, 576pcs/40'HQ |

Operating Characteristics

| | |
|------------------------------|---------------|
| Operating Module Temperature | -40°C ~ +85°C |
| Maximum System Voltage | DC 1500 (IEC) |
| Maximum Series Fuse Rating | 30A |
| Power Tolerance | 0~+5W |
| Bifaciality | 85%±5% |

Temperature Characteristics

| | |
|-------------------------------------|-----------|
| Nominal Operating Cell Temp. (NOCT) | 44±2°C |
| Temperature Coefficient of Pmax | -0.26%/°C |
| Temperature Coefficient of Voc | -0.24%/°C |
| Temperature Coefficient of Isc | 0.04%/°C |

Electrical Parameters (STC*)

| Module Type: | 700 | 705 | 710 | 715 | 720 |
|-----------------------------------|-------|-------|-------|-------|-------|
| Maximum Power (Pmax/W) | 700 | 705 | 710 | 715 | 720 |
| Module Efficiency (%) | 22.53 | 22.70 | 22.86 | 23.02 | 23.18 |
| Optimum Operating Voltage (Vmp/V) | 42.10 | 42.25 | 42.39 | 42.54 | 42.68 |
| Optimum Operating Current (Imp/A) | 16.63 | 16.69 | 16.75 | 16.81 | 16.87 |
| Open Circuit Voltage (Voc/V) | 50.13 | 50.29 | 50.44 | 50.59 | 50.74 |
| Short Circuit Current (Isc/A) | 17.43 | 17.49 | 17.55 | 17.61 | 17.67 |

BSTC*

| | | | | | |
|-----------------------------------|-------|-------|-------|-------|-------|
| Maximum Power (Pmax/W) | 770 | 775 | 780 | 785 | 790 |
| Optimum Operating Voltage (Vmp/V) | 42.10 | 42.25 | 42.39 | 42.54 | 42.68 |
| Optimum Operating Current (Imp/A) | 18.29 | 18.35 | 18.41 | 18.46 | 18.51 |
| Open Circuit Voltage (Voc/V) | 50.13 | 50.29 | 50.44 | 50.59 | 50.74 |
| Short Circuit Current (Isc/A) | 19.17 | 19.22 | 19.28 | 19.33 | 19.39 |

*STC: Irradiance 1000 W/m², cell temperature 25°C, AM=1.5. Tolerance of Pmax is within +/- 3%.

*BSTC: Front side irradiation 1000W/m², back side reflection irradiation 135W/m², AM=1.5, ambient temperature 25°C.

All products and service described and technical data are subject to change at any time without notice.

United Energy assumes no liability for typographical and other errors.

UNITED ENERGY

United Energy Co., Ltd. is a company dedicated to providing one-stop solutions for PV and Energy Storage Systems.

Focuses on providing customers with efficient, safe, and smart energy solutions to meet the growing energy demand while contributing to environmental protection.

More than 15 years of experience since 2009, UE has finalized more than 8,000 projects in more than 150 countries and regions around the world, including household, commercial, and large power stations.

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