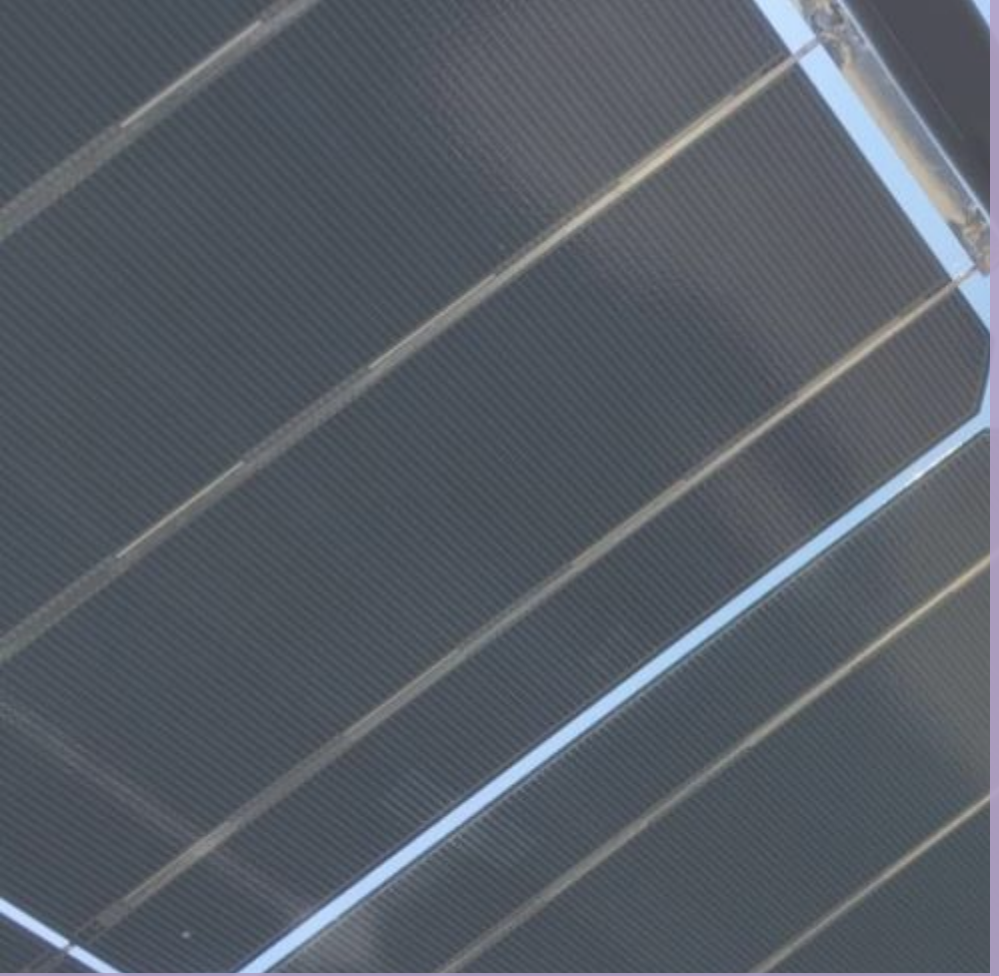
# UNITED RENEWABLE ENERGY Co., Ltd.

22th April 2021



# WHO WE ARE

‘We, United Renewable Energy, are single biggest, largest and most vertical integrated solar company in Taiwan. Our customers are all over the Americas, Europe, Australia and Asia. With the support of government develop fund, it further enhances our financial strength as well as long term sustainability. As a leading green energy company, we advocate the importance of green energy in the world and encourage to utilize the renewable energy to treat our earth well.

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# URECO- Our Products

PV Systems

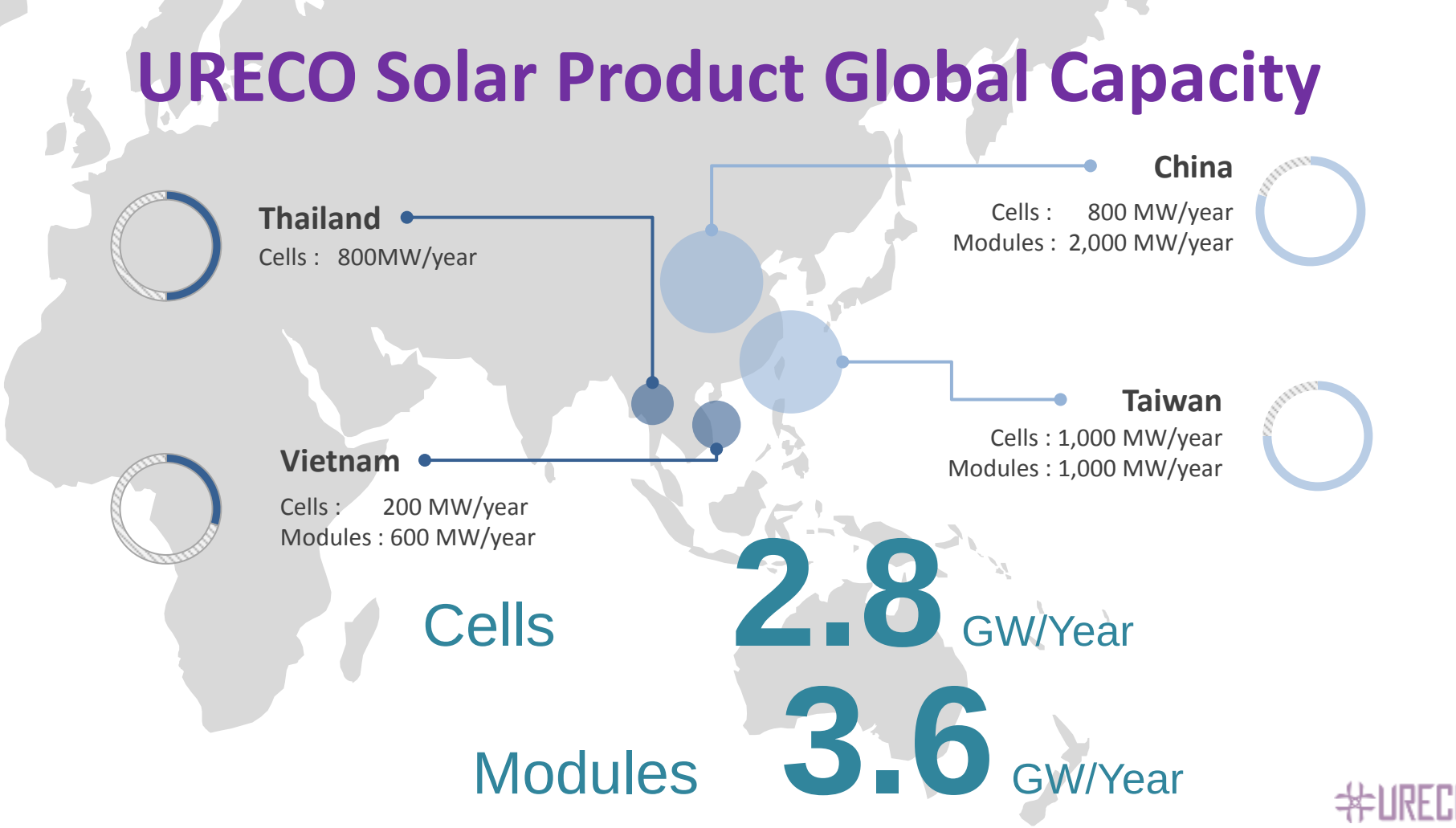
Solar Cells

Solar Modules

Storage

Hydrogen

# URECO Solar Product Global Capacity



**China**

Cells : 800 MW/year
Modules : 2,000 MW/year

**Thailand**

Cells : 800MW/year

**Taiwan**

Cells : 1,000 MW/year
Modules : 1,000 MW/year

**Vietnam**

Cells : 200 MW/year
Modules : 600 MW/year

Cells **2.8** GW/Year

Modules **3.6** GW/Year

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# 1

## United Renewable Energy: unique and aesthetically designed solar modules

URECO continues to develop forward-looking technologies, and actively supports the national solar energy mandate and policy with our advanced, high quality, solar modules. We continue to offer a board range of solar solutions for each market, and strive to achieve the goal of self-sufficient and sustainable green energy generation.

# SOLAR MODULES

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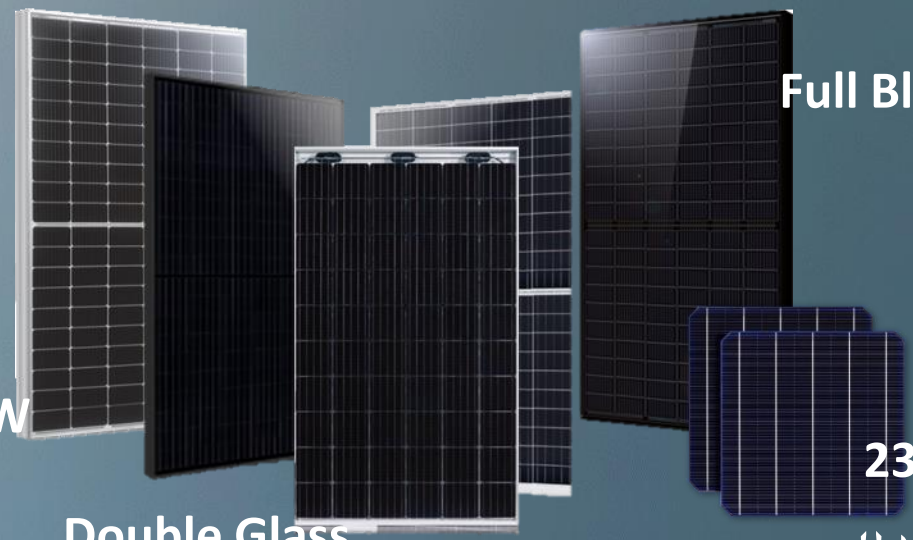
# Advanced Products

URE solar products feature high quality, outstanding performance and reliability.

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# Certificates

URE has been granted awards and certification by many third parties and institutions around the world.

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Monocrystalline

# PRODUCTS

## M6-166mm cells size-9BB Half-Cell Series

URECO

- 9BB Half-Cell Technology
- Better Shading tolerance by half-cut cell design
- Design for 1500 VDC reduce the system BOS effectively
- Multi-Busbar technology with better Micro-Crack Resistance

◆ 9BB Half- Cell-120PS FAK_E7X 370-375W

◆ 9BB Half- Cell-120PCS FAK_E7X 360-370W Black

◆ 9BB Half- Cell-144PCS FAK_E8X 440-460W

For URECO Internal Use Only

Monocrystalline

# PRODUCTS

## M10-182mm cells size-MBB Half-Cell Series

URECO

- MBB Half-Cell Technology
- Better Shading tolerance by half-cut cell design
- Design for 1500 VDC reduce the system BOS effectively
- Multi-Busbar technology with better Micro-Crack Resistance

- MBB Half- Cell-120PCS
  FBK_M7X 435-455W

- MBB Half- Cell-144PCS
  FBK_M8X 525-545W

For URECO Internal Use Only

# M6-Double Glass Series

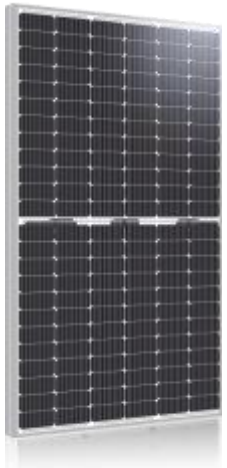
High Durability
Double glass design and high durability materials

Design for 1500 VDC
reduce the system BOS effectively

Dual side power generation
Double side power generation technology

Multi-Busbar technology with better Micro-Crack Resistance

- **M6** 9BB Half-Cell-120PCS
  FAL_A7X 360-380W



- **M6** 9BB Half-Cell-144PCS
  FAL_A8X 430-450W

# Nitch Product-N-type HJT/ TOPCon

Superior temperature coefficient
Better performance in high temperature region

Zero light induced degradation effect
Enhanced performance warranty (NHJT)

Dual side power generation
Double side power generation technology

(IEC certificate only)

## NHJT

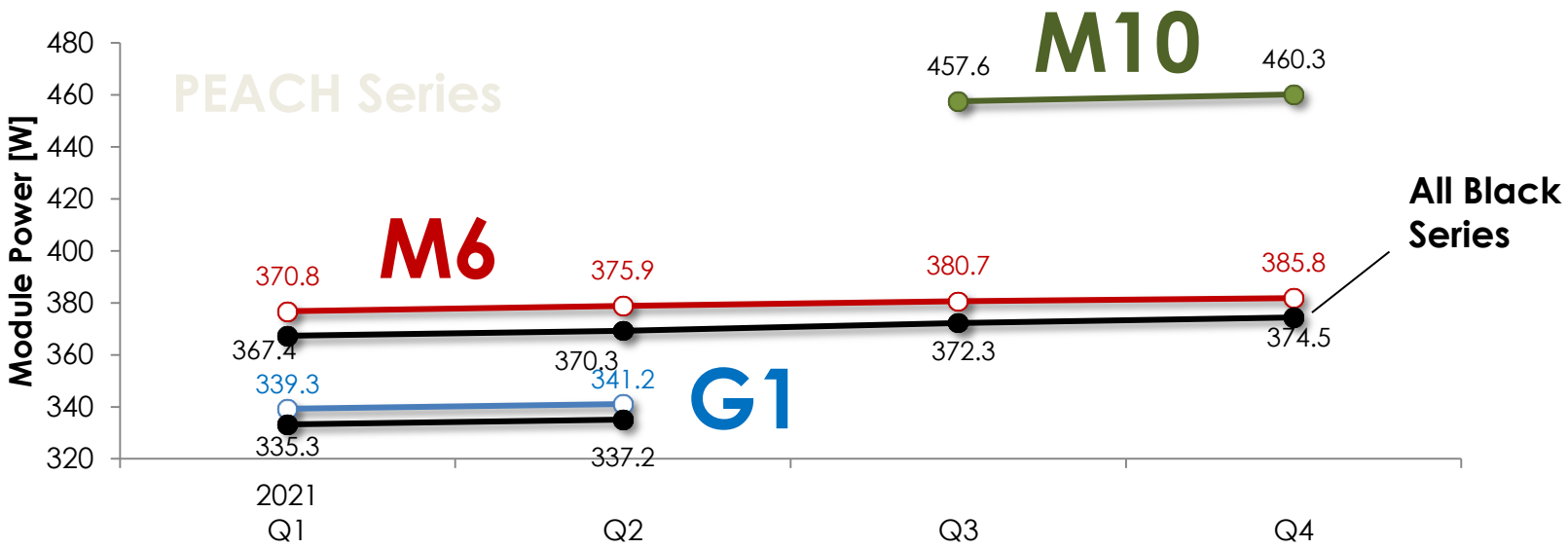
- M6 9BB Half- Cell-120PCS
  FAG_A7X 315-335W
  1780mm x 1038mm x 30mm

## N-TOPCon

- G1 9BB Half- Cell-156PCS
  F2I_AAX 425-450W
  2180mm x 996mm x 30mm

# URECO Power Roadmap

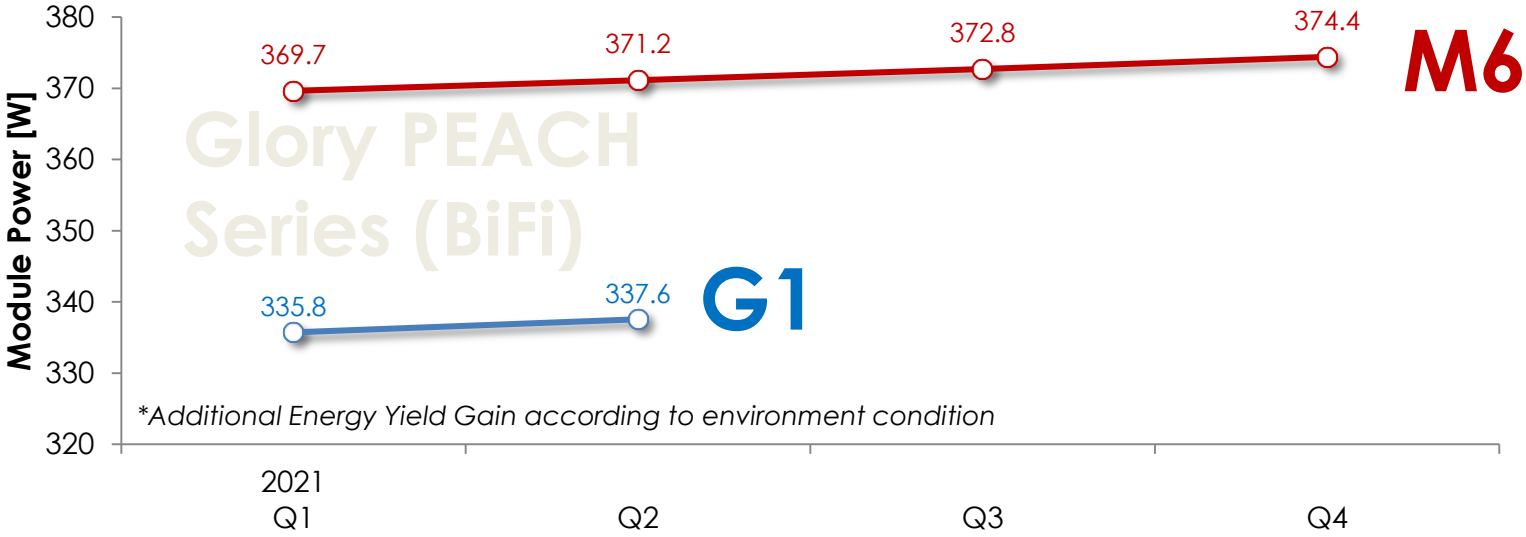
## PEACH Series 120 cells




- URE provide 370W+ power product solution for customer with 120 cells size.

# URECO Power Roadmap

## Glory PEACH Series 120 cells size (G2G Bifacial)

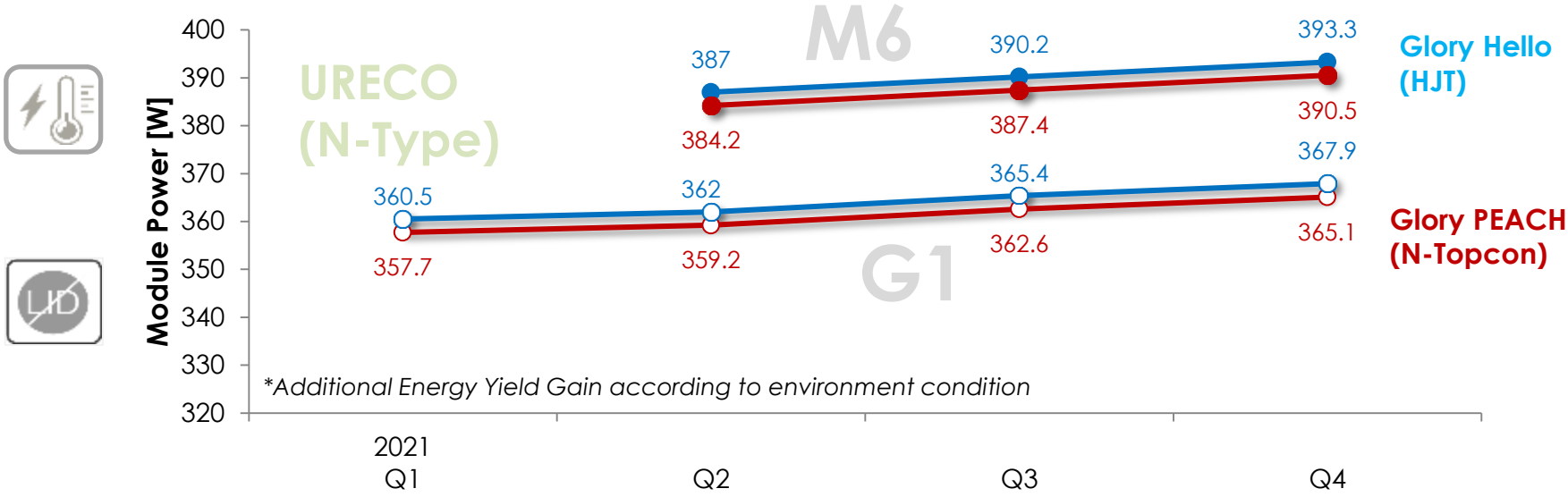



- URE high durability bifacial module can achieve 370+W front side power with 120 cells size.
- Additional power gain from rear side by bifacial technology.

# URECO Power Roadmap

## Glory PEACH N-Type Series 120 cells size (G2G Bifacial)

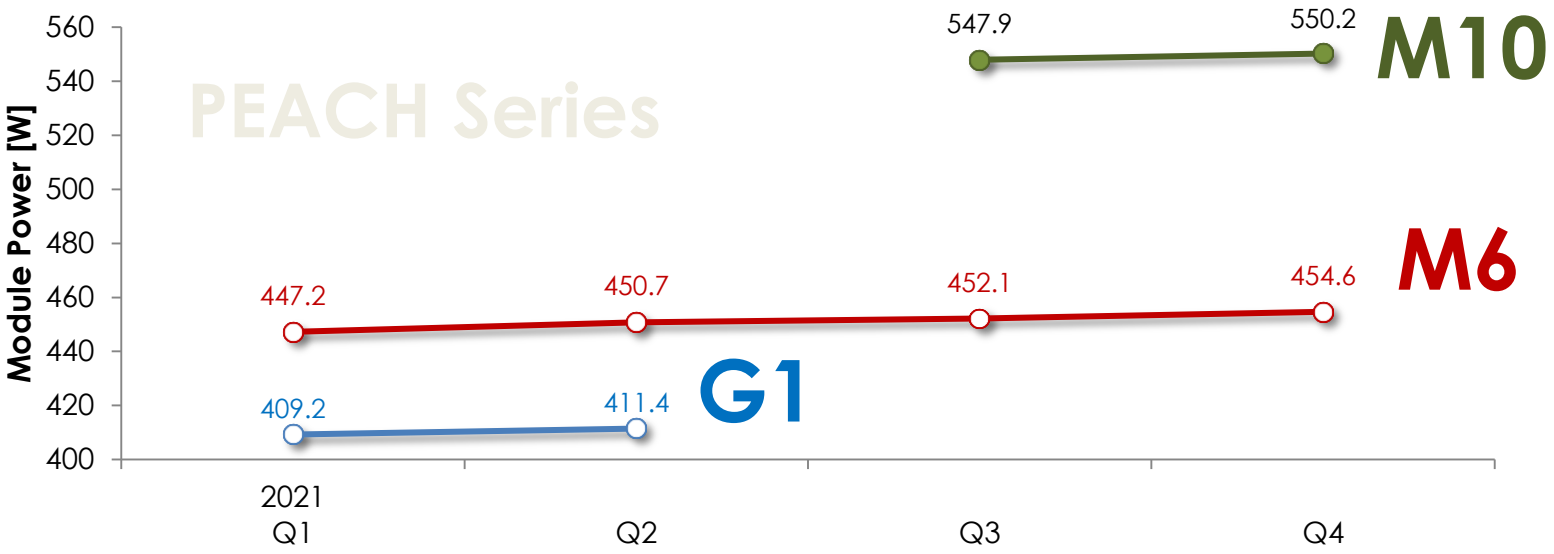
(IEC certificate only)




- URE high durability bifacial module can achieve 360+W front side power with 120 cells size.
- Additional power gain from rear side by bifacial technology.

# URECO Power Roadmap

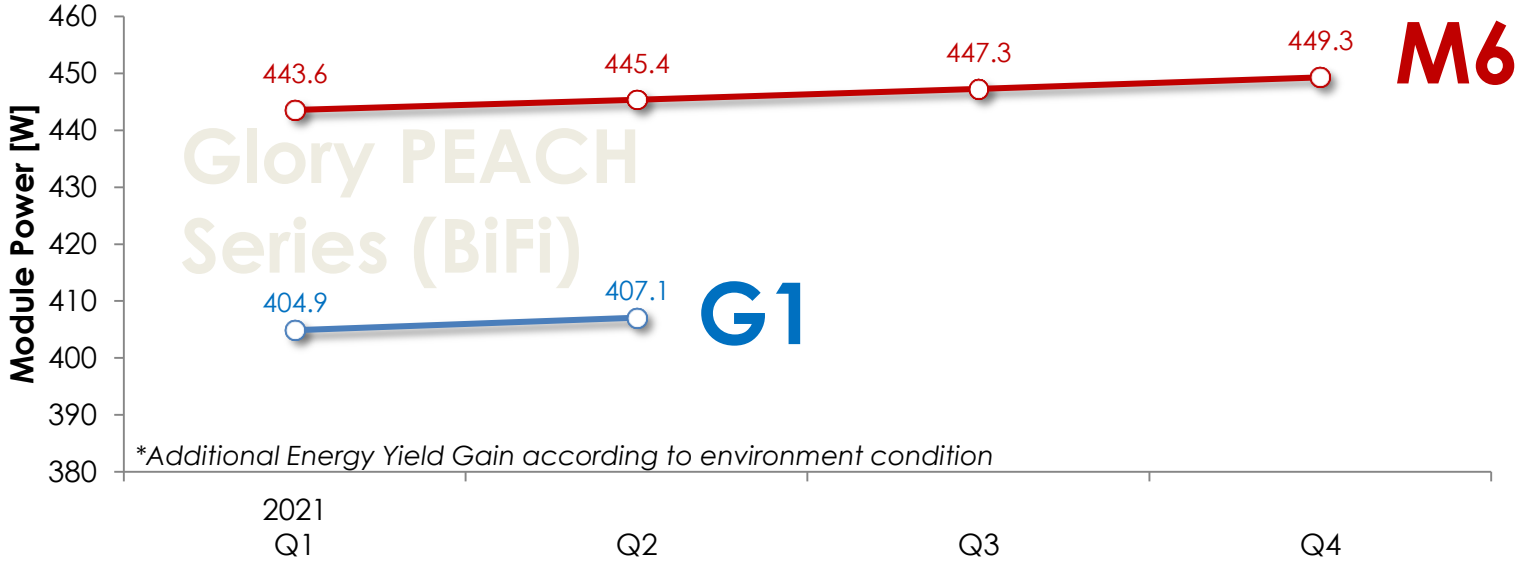
## PEACH Series 144 cells




- URE provide 450W+ power product solution for customer.

# URECO Power Roadmap

## Glory PEACH Series 144 cells size (G2G Bifacial)

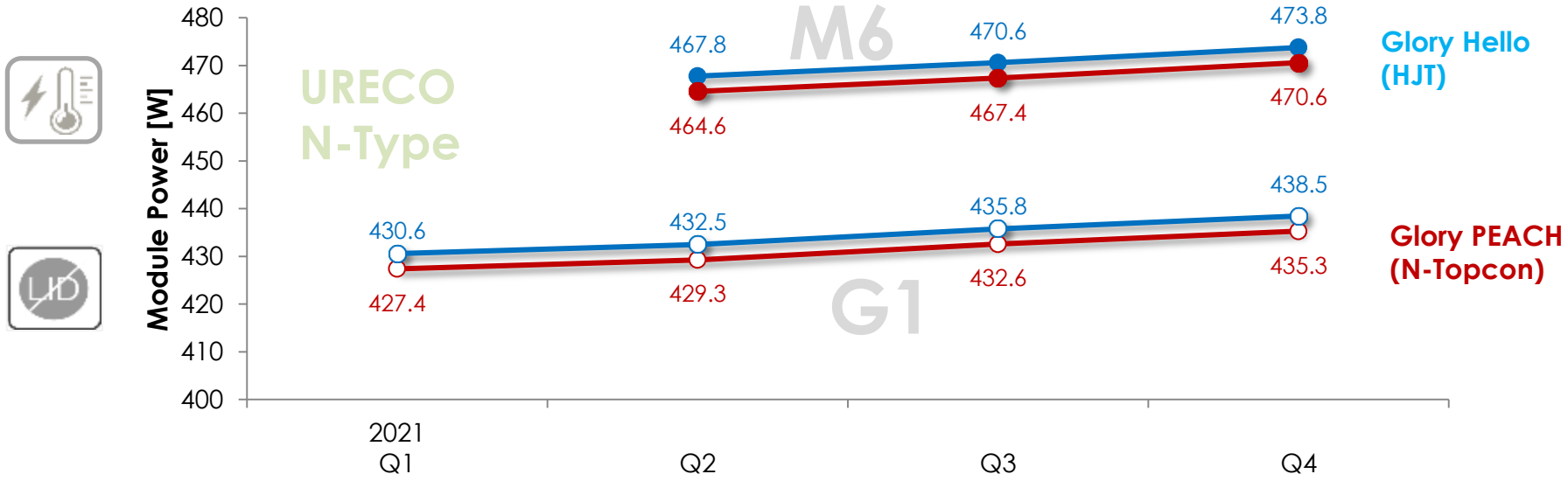



- URE high durability bifacial module can achieve 440+W front side power.
- Additional power gain from rear side by bifacial technology.

# URE Power Roadmap

## Glory PEACH N-Type Series 144 cells size (G2G Bifacial)

(IEC certificate only)




- URE high durability bifacial module can achieve 460+W front side power with 144 cells size.
- Additional power gain from rear side by bifacial technology.

# Bloomberg Tier 1 (since 2017)

URECO is long-term listed in Bloomberg Tier 1

| Firm/ brand | Annual module capacity, MW/year | Firm/ brand | Annual module capacity, MW/year |
|---|---|---|---|
| ZNShine | 6,000 | Leapton Energy | 600 |
| Waaree* | 2,000 | Kyocera | 600 |
| VSUN Solar* | 2,600 | Jolywood* | 3,000 |
| Vikram Solar* | 1,200 | Jinneng/ Jinergy | 2,700 |
| Ulica Solar | 1,000 | Jinko* | 30,000 |
| Trina Solar* | 21,500 | Jetion | 2,500 |
| Talesun* | 10,000 | JA Solar* | 23,200 |
| Swelect | 140 | HT-SAAE* | 2,000 |
| Suntech* | 10,000 | Heliene | 390 |
| SunPower/ Maxeon* | 2,800 | Hanwha Q Cells* | 10,700 |
| Sumec/ Phono Solar* | 2,000 | Hansol Technics | 600 |
| Shinsung | 300 | Haitai New Energy | 5,000 |
| Sharp | 210 | First Solar* | 6,500 |
| Seraphim / SEG* | 5,500 | ET Solar* | 1,600 |
| S-Energy | 530 | Eging | 5,200 |
| Risen Energy* | 14,000 | Chint/ Astronergy* | 5,000 |
| Renesola Yixing | 1,500 | Canadian Solar | 16,100 |
| Recom | 460 | BYD | 2,400 |
| REC Group* | 1,800 | Boviet* | 1,500 |
| Neo Solar Power/ URE | 1,800 | AE Solar | 2,025 |
| Longi* | 45,000 | Adani/Mundra* | 1,500 |
| | | **Total** | **253,455** |

Neo Solar Power/ URE 1,800

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# Additional Product Warranty (optional)

URE can give optional reinsurance
of product and performance warranty

# 2

## United Renewable Energy: PV System projects

United Renewable's business model is based on system business and module brands. We actively engage in the development and construction of solar power generation systems and provide power station asset management services.

# SOLAR SYSTEM

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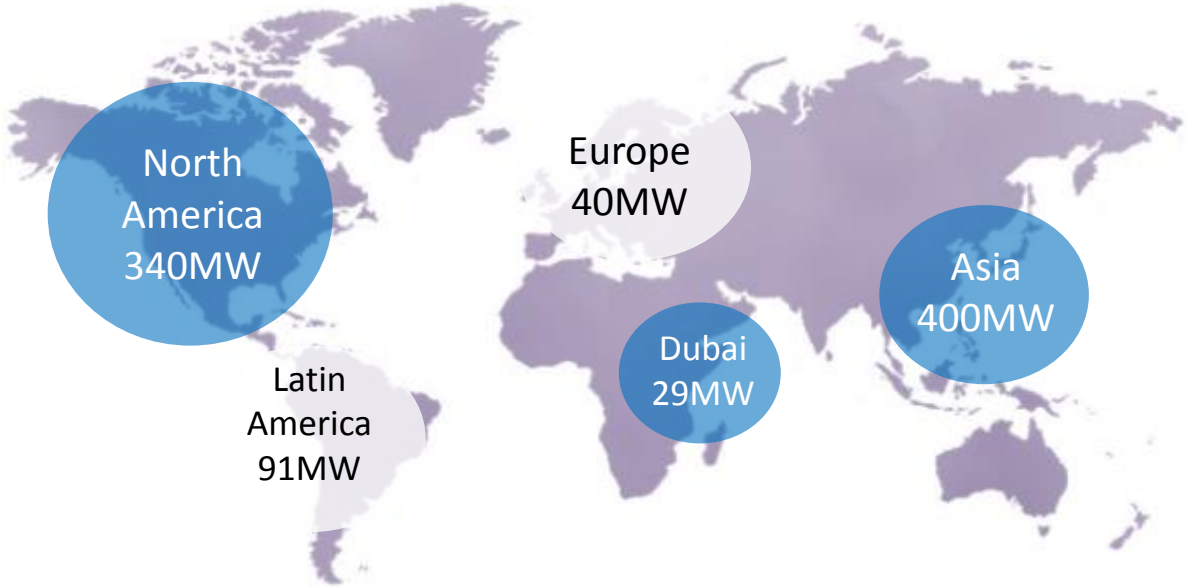
# URE Solar Systems around the world

URE has built up its core competencies in development, construction, sales, and financing of global solar system projects.




- Accumulated on-grid solar system projects exceed 600 MW.
- Undergoing pipelines are reaching 1 GW.

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# Signature US Solar Projects with URECO Panels

C&I System



Ground-Mounted System

Airport System

Commercial Rooftop & Solar Carport Systems

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# Examples of Projects in the U.K.

**Residential Rooftop System**

- Location: Manchester
- Total solar system: 8 MW

**Ground-Mounted Systems**

- Location: Wales, Shropshire, Cumbria, etc.
- Total solar system: 30 MW

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# Projects in Japan

## Ground-Mounted Systems

- Location: Fukushima
- Total solar system: 14 MW
- The largest solar plant sold to Clean Energy Canada in 2017

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# Projects in the Middle East

**Rooftop Systems**

- Location: Dubai
- Total solar system: 28 MW
- The largest rooftop system in Middle East area.

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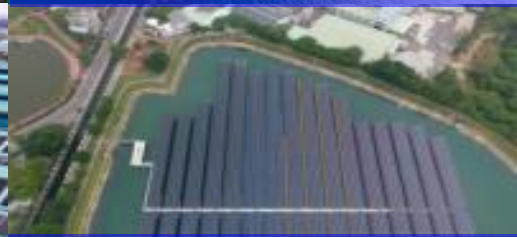
# Projects in Taiwan

+15.1% 300KW|0.8yrs

+12.3% 100MW|1.3yrs

+12.5% 19.5MW|1.2yrs



+5.0% Floating System 300KW|1.1yrs

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# 3

## United Renewable Energy: Our own custom designed solar storage systems

United Regeneration has developed and designed energy storage related products. They range from small and medium-sized household energy storage, to industrial-grade energy storage system including lithium battery power packs. At present, our large-scale industrial-grade energy storage system is the first in Taiwan to obtain UL9540 certification from the UL laboratory in the United States.

# SOLAR STORAGE

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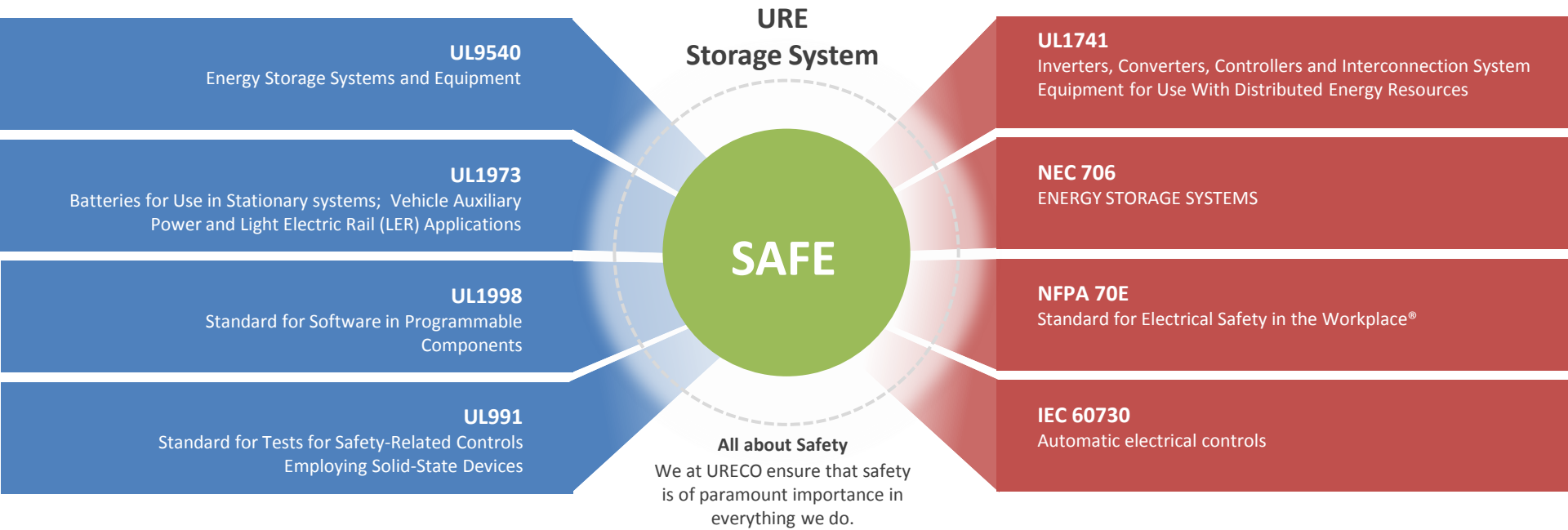
# URECO- All about SAFE



# ZEUS

Battery Energy Storage System

The world's first large-scale industrial and commercial energy storage system has achieved

## UL9540 certification

UL9540
UL1973
UL1998
UL991
UL1741
NEC 706
NFPA 70E

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## C&I

Large Storage Device
250KWh~1MWh

- Peak saving
- Voltage and frequency regulation
- Micro grid application
- Demand response

## Residential

- Energy independence
- Reduce electricity cost
- Backup power
- Environmental friendly

Storage Device
5KWh~20kWh

## UPS

*Lithium-Ion Battery Pack*

- UPS LFP Battery
- Customize Lithium-Ion Battery Pack
- Specialized Mobile Radio

400KVA~800KVA

## Portable

- Energy independence (mobility)
- Outdoor activities and rescue tools
- Backup power

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# Thank You for Your Attention
# Please Visit Our Website


| | |
|---|---|
| For more information: | http://www.urecorp.com/ |
| Solar Module /Solar Cell: | Sales@urecorp.com |
| Storage: | BESS.sales@urecorp.com |
| Contact: | +886-3-5780011 |

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EN

PEACH

FAK_E7D / 120 cells
355W-375 W
Mono-Crystalline PV Module

URE Peach module uses URE state-of -the art cell cutting technology, and advanced module manufacturing experiences.

## Key Features

- **Positive power tolerance**
  +0 ~ +4.99 watt
- **100% EL inline inspection**
  Better module reliability
- **Withstand heavy loading**
  front load 5400 Pa & rear load 2400 Pa
- **Design for 1500 VDC**
  Reduce the system BOS effectively
- **Excellent low light performance**
  3.5% relative eff. Reduction at low-irradiance (200W/m²)

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For more information, please visit us at ***www.urecorp.com***

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## Electrical Data

| Model - STC | | FAK355E7D | FAK360E7D | FAK365E7D | FAK370E7D | FAK375E7D |
|---|---|---|---|---|---|---|
| Maximum Rating Power (Pmax) | [W] | 355 | 360 | 365 | 370 | 375 |
| Module Efficiency | [%] | 19.48 | 19.76 | 20.03 | 20.31 | 20.58 |
| Open Circuit Voltage (Voc) | [V] | 40.69 | 40.87 | 41.06 | 41.28 | 41.49 |
| Maximum Power Voltage | [V] | 33.78 | 34.00 | 34.21 | 34.42 | 34.63 |
| Short Circuit Current (Isc) | [A] | 11.00 | 11.08 | 11.16 | 11.24 | 11.32 |
| Maximum Power Current | [A] | 10.51 | 10.59 | 10.67 | 10.75 | 10.83 |

*Standard Test Condition (STC): Cell Temperature 25 °C, Irradiance 1000 W/m², AM 1.5
*Values without tolerance are typical numbers.Measurement tolerance: ±3%

## Mechanical Data

| Item | Specification |
|---|---|
| Dimensions | 1755mm (L)[1] x 1038 mm (W)[1] x 35 mm (D)[2] / 69.09 " (L)[1] x 40.87 " (W)[1] x 1.38 " (D)[2] |
| Weight | 19.2 kg / 42.33 lbs |
| Solar Cell | Mono / 83 mm x 166mm |
| Front Glass | 3.2mm thickness |
| Junction Box | IP 68 , 3 diodes |
| Frame | Anodized Aluminum Alloy |
| Connector type | MC4 Compatible |
| Cable | 4.0 mm² |
| Package Configuration | 30pcs Per Pallet, 780 pcs per 40' HQ container |

[1] : With assembly tolerance of ± 2 mm [ ± 0.08 " ]
[2] : With assembly tolerance of ± 0.8 mm [ ± 0.03 " ]

## Operating Conditions

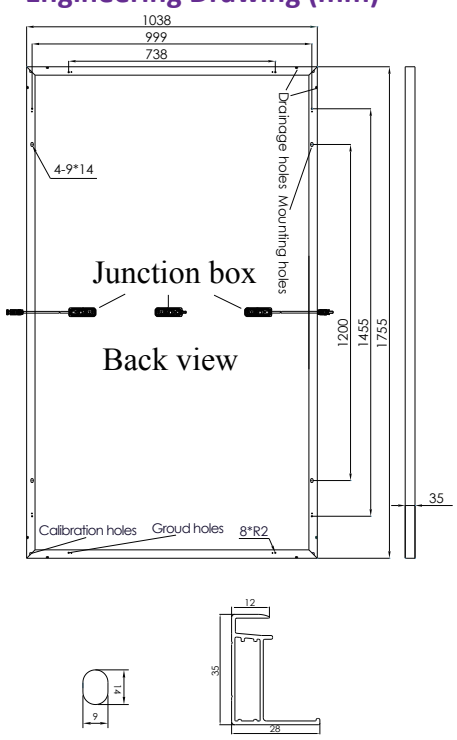
| Item | Specification |
|---|---|
| Mechanical Load | 5400 Pa |
| Maximum System Voltage | 1500 VDC |
| Series Fuse Rating | 20 A |
| Operating Temperature | -40 to 85 °C |

## Temperature Characteristics

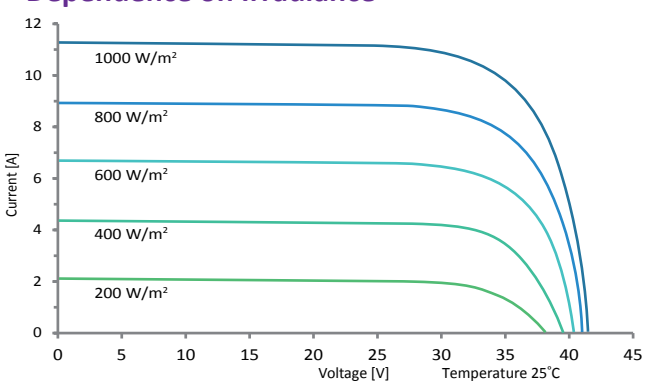
| Item | Specification |
|---|---|
| Nominal Module Operating Temperature | 43°C ± 2°C |
| Temperature Coefficient of Isc | 0.039 % / °C |
| Temperature Coefficient of Voc | -0.295 % / °C |
| Temperature Coefficient of Pmax | -0.39% / °C |

*Nominal module operating temperature (NMOT): Air mass AM 1.5, irradiance 800W/m², temperature 20°C, windspeed 1 m/s.
*Reduction in efficiency from 1000W/m² to 200W/m² at 25°C: 3.5 ± 2%.

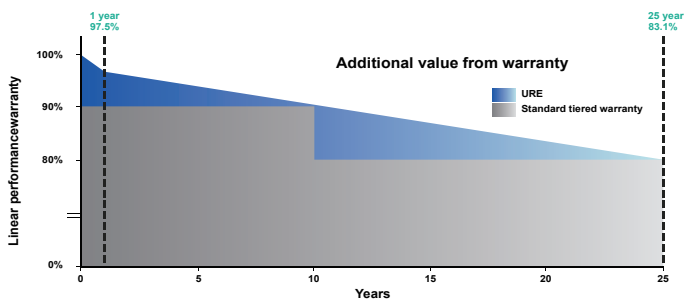
## Engineering Drawing (mm)




## Dependence on Irradiance




## Reliability with Warranty




Output warranty 25 Years

Product Gurantee 12 Years

For more information, please visit us at ***www.urecorp.com***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