

# URE

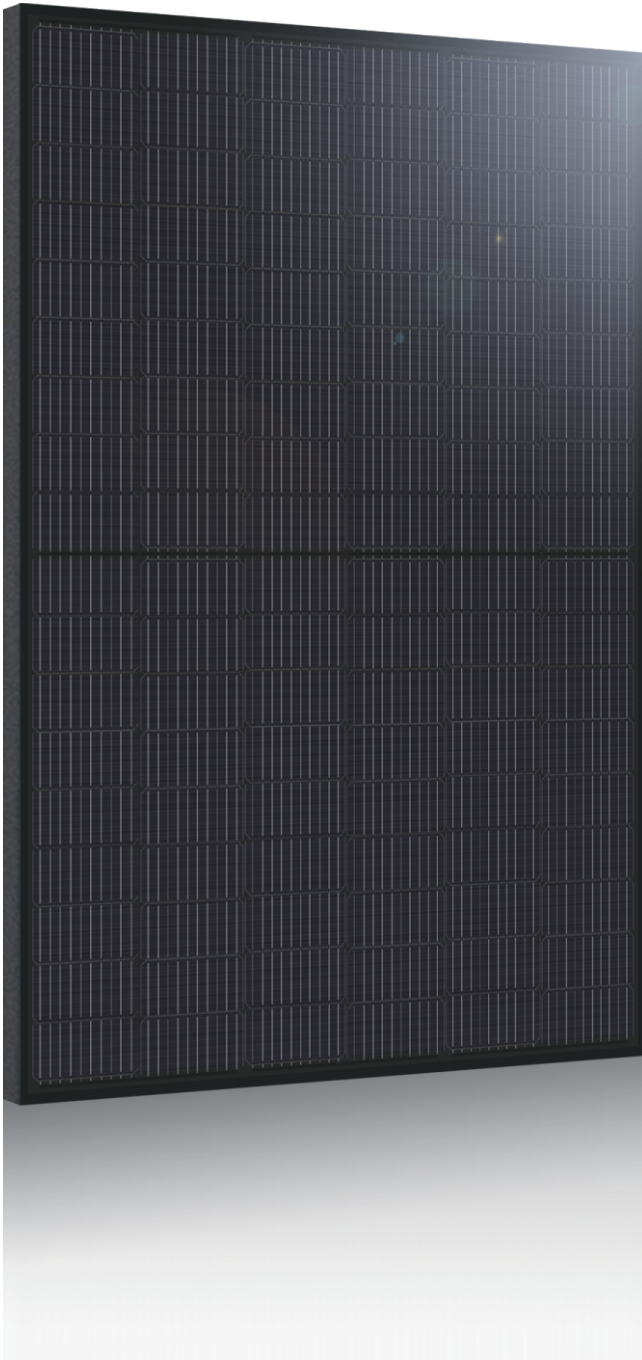
UNITED RENEWABLE ENERGY

## FBM445M7G-BB / 120 cells 445 Watt Mono-Crystalline PV Module

URE modules use state-of-the-art cell cutting technology, and advanced module manufacturing experience to provide leading power density and long term reliability.



UL 61730, CE-compliant  
Quality Controlled PV-TÜV  
SUD IEC 61215:2016,  
IEC 61730:2016  
Type 1/Class C Fire Rating



### Key Features



At 445 Watts and 20.57% Efficiency URE Solar Panels are Industry Leaders in Output and Efficiency



25 Year Output Warranty and 25 Year Product Guarantee



Super All Black Design with more Uniform Appearance for High Profile Residential Installations



High Quality Solar Cell Technology allows URE to be a major international exporter to Solar Module manufacturers in the United States and Europe



Excellent Performance in Low Light and Poor Weather Conditions to Maximize Energy Harvest



Winner of Taiwan Excellence Award 7 Consecutive Years for Highest Efficiency Module

### THE IDEAL SOLUTION FOR:



Rooftop arrays on residential buildings



Residential ground mount arrays



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## Electrical Data

Model - STC		FBM440M7G-BB	FBM445M7G-BB	FBM450M7G-BB	FBM455M7G-BB
Maximum Rating Power (Pmax)	[W]	440	445	450	455
Module Efficiency	[%]	20.34	20.57	20.80	21.03
Open Circuit Voltage (Voc)	[V]	41.70	41.90	42.10	42.30
Maximum Power Voltage	[V]	34.60	34.80	35.00	35.20
Short Circuit Current (Isc)	[A]	13.41	13.48	13.56	13.63
Maximum Power Current	[A]	12.72	12.79	12.86	12.93

\*Standard Test Condition (STC): Cell Temperature 25 °C, Irradiance 1000 W/m<sup>2</sup>, AM 1.5  
 \*Values without tolerance are typical numbers. Measurement tolerance: ± 3%

## Mechanical Data

Item	Specification
Dimensions	1908 mm (L) <sup>1</sup> x 1134 mm (W) <sup>1</sup> x 35 mm (D) <sup>2</sup> / 75.12" (L) <sup>1</sup> x 44.65" (W) <sup>1</sup> x 1.38" (D) <sup>2</sup>
Weight	24.2 kg / 53.35 lbs
Solar Cell	12x10 pieces monocrystalline solar cells series strings
Front Glass	White toughened safety glass, 3.2mm thickness
Cell Encapsulation	EVA (Ethylene-Viny-Acetate)
Back Cover	Black composite film
Frame	Black anodized aluminum profile
Junction Box	IP 68, 3 diodes
Connectors Type	Staubli MC4
Cable	1200mm (cable length can be customized), 4mm <sup>2</sup>
Package Configuration	31 pcs Per Pallet, 744 pcs per 40' HQ container

<sup>1</sup> : With assembly tolerance of ± 2 mm [ ± 0.08" ]  
<sup>2</sup> : With assembly tolerance of ± 0.8 mm [ ± 0.03" ]

## Operating Conditions

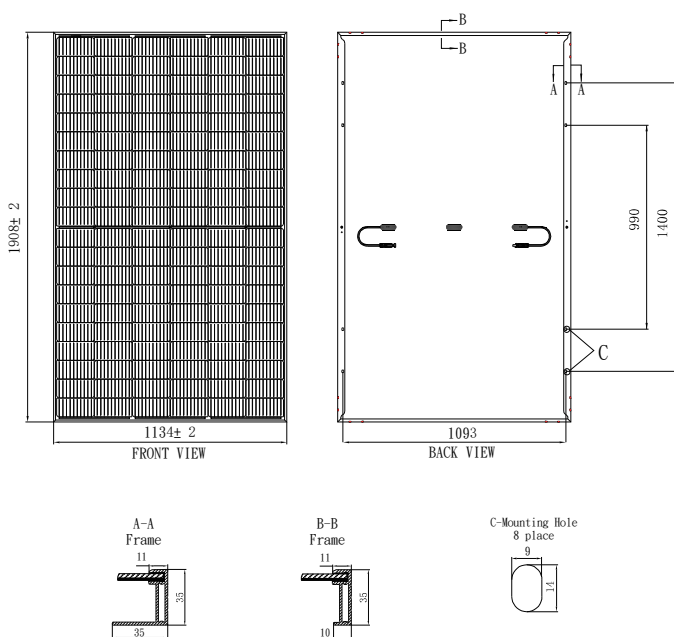
Item	Specification
Mechanical Load	5400 Pa
Maximum System Voltage	1000V
Series Fuse Rating	30 A
Operating Temperature	-40 to 85 °C

## Temperature Characteristics

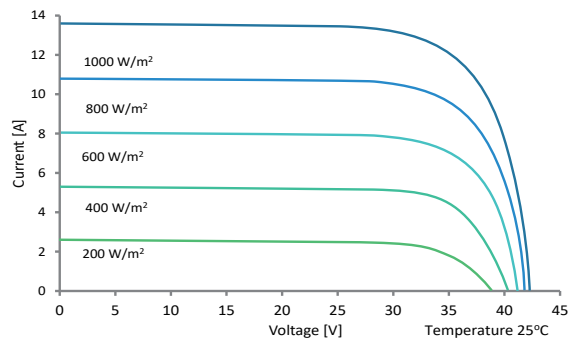
Item	Specification
Nominal Module Operating Temperature	45°C ± 2°C
Temperature Coefficient of Isc	0.048 % / °C
Temperature Coefficient of Voc	-0.27 % / °C
Temperature Coefficient of Pmax	-0.33 % / °C

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

## Engineering Drawing (mm)



## Dependence on Irradiance



## Reliability with Warranty

