

UNI-450-120M-BB

450W

Highest power output

21.46%

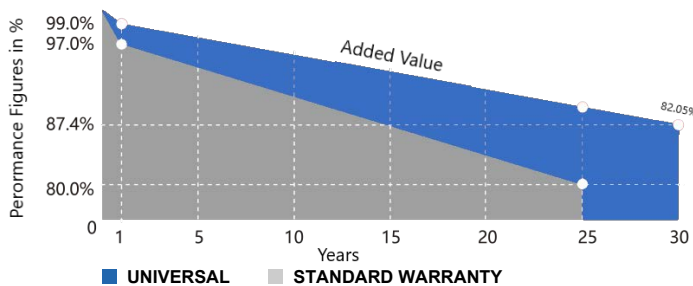
Module Efficiency


25 years


Material & Workmanship warranty


30 years


Linear power output warranty





 PERC cell technology


 Higher output power


 Lower risk of micro-crack


 Positive tolerance offer

 Lower risk of hot spot

 Better shading tolerance

 Certified for salt/ammonia corrosion resistance

 Load certificates: wind to 2400Pa and snow to 5400Pa

 Lower LCOE

Universal Solar is committed to providing readily available, high-quality, renewable energy products and services at competitive prices. This includes modules made in Panama, which are manufactured to the highest standards with all Tier 1 BOM, utilizing fully automated high-tech manufacturing lines and surpassing Tier 1 processes. Universal's modules are tariff-free, use WRO-compliant silicon, and can be delivered to any U.S. port in 5 days.



Electrical Characteristics at Standard Test Conditions (STC)

Module Type	UNI-460-120M-BB	UNI-455-120M-BB	UNI-450-120M-BB	UNI-445-120M-BB
Maximum Power - Pmax (W)	460	455	450	445
Open Circuit Voltage - Voc (V)	42.5	42.3	42.1	41.9
Short Circuit Current - Isc (A)	13.71	13.63	13.56	13.48
Maximum Power Voltage - Vmpp (V)	35.4	35.2	35	34.8
Maximum Power Current - Imp (A)	13	12.93	12.86	12.79
Module Efficiency	21.46%	21.23%	20.99%	20.76%

Standard Test Conditions(STC): irradiance 1,000W/m²; AM1,5; module temperature 25°C. Pmax Sorting: 0~5W. Measuring Tolerance: ±3%.
Remark: Electrical data do not refer to a single module and they are not part of the offer.They only serve for comparison among different module types.

Electrical Characteristics at Normal Operating Cell Temperature (NOCT)

Module Type	UNI-460-120M-BB	UNI-455-120M-BB	UNI-450-120M-BB	UNI-445-120M-BB
Maximum Power - Pmax (W)	339.5	335.8	332.1	328.4
Open Circuit Voltage - Voc (V)	39.7	39.5	39.4	39.2
Short Circuit Current - Isc (A)	11.07	11.01	10.95	10.89
Maximum Power Voltage - Vmpp (V)	33	32.8	32.7	32.5
Maximum Power Current - Imp (A)	10.29	10.23	10.17	10.11

Normal Operating Cell Temperature (NOCT): irradiance 800W/m²; wind speed 1m/s; ambient temperature 20°C. Measuring Tolerance: ±3%.

Temperature Characteristics

NOCT	45°C (±2°C)
Voltage Temperature Coefficient	-0.27%/°C
Current Temperature Coefficient	+0.048%/°C
Power Temperature Coefficient	-0.32%/°C

Maximum Ratings

Maximum System Voltage [V]	1500
Series Fuse Rating [A]	30

Material Characteristics

Dimensions	1914 × 1133 × 35mm (L×W×H)
Weight	24.0kg
Frame	Black anodized aluminum profile
Front Glass	White toughened safety glass, 3.2mm
Cell Encapsulation	EVA (Ethylene-Vinyl-Acetate)
Back Sheet	Composite film
Cells	12×10 pieces monocrystalline solar cells series strings
Junction Box	IP68, 3 diodes
Cable & Connector	Potrait: 500mm (cable length can be customized), 1×4 mm ² , compatible with MC4

Packaging

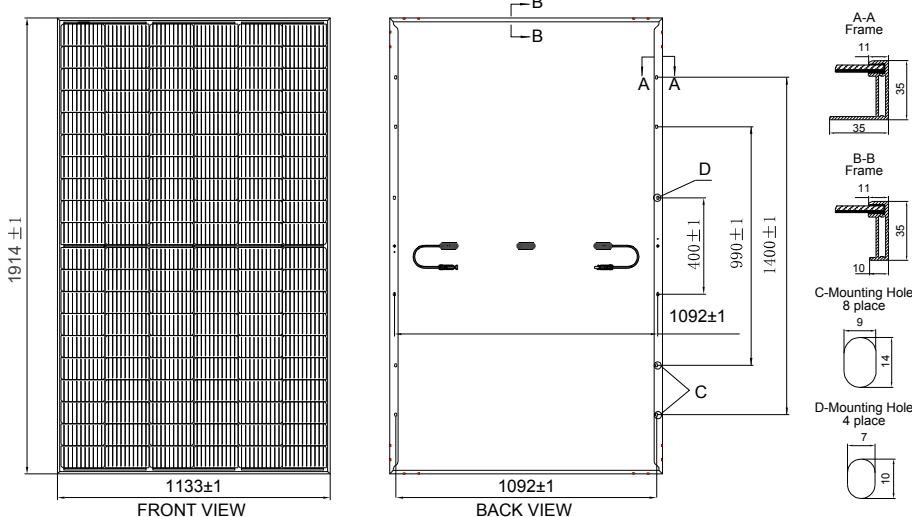
Dimensions (L×W×H)	1920×1125×1253mm
Container 20'	155
Container 40'	372
Container 40'HC	744

System Design

Temperature Range	-40°C to +85°C
Withstanding Hail	Maximum diameter of 25mm with impact speed of 23 m/s-1
Maximum Surface Load	5,400 Pa
Application Class	class A

Dimensions

Note:mm



IV-Curves

