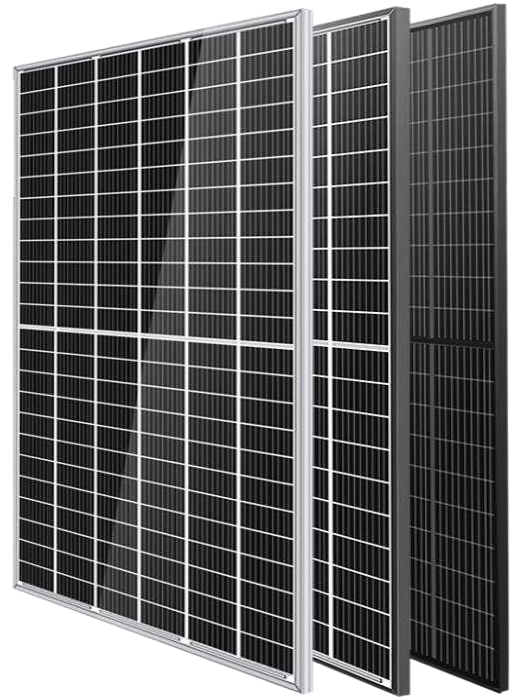


COULEE ULTRA SOLAR MODULE

Mono PERC Half-cut Cell Series



72 × 2 CELL
MONOCRYSTALLINE MODULE

430-450W
POWER OUTPUT RANGE

20.4%
MAXIMUM EFFICIENCY

0 - +3%
POSITIVE POWER TOLERANCE



Coulee Ultra is the top performance reference solar module series. Based on the advanced mono wafer and PERC Half-cut technology, Ultra offers as much power as 450W with outstanding cell efficiency up to 22.3% and module efficiency 20.4%

Thanks to the Half-Cut technology, the cell internal resistance is reduced, which provides an additional module power even while shading, cloudy weather, and in low light conditions.

9BB cells: More uniform current collection capability, reducing the current heat loss of the internal cells.

Product Certificates

IEC/EN 61215, IEC/EN 61730



CAUTIONS:
READ SAFETY AND INSTALLATION INSTRUCTIONS BEFORE USING THE PRODUCT.

Ideal For Large Scale Installations

- Reduce BOS cost by connecting more modules in a string
- Up to 1500VDC system voltage

Maximum Limited Space

- Up to 204W/m² power density

Highly Reliable Due to Stringent Quality Control

- Over 30 in-house tests (UV, TC, HF, etc.)
- In-house testing goes well beyond certification requirements
- Fire Class A tested
- 100% EL double inspection

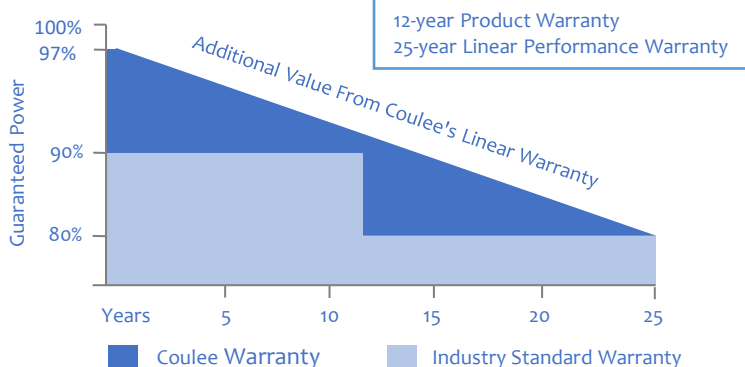
Severe Weather Resilience

- 2400Pa wind load
- 5400Pa snow load
- 35mm hail stones at 97km/h

Reduced Hot Spot Risk

- With optimized electrical design and lower operating current

Linear Performance Warranty



Construction Materials

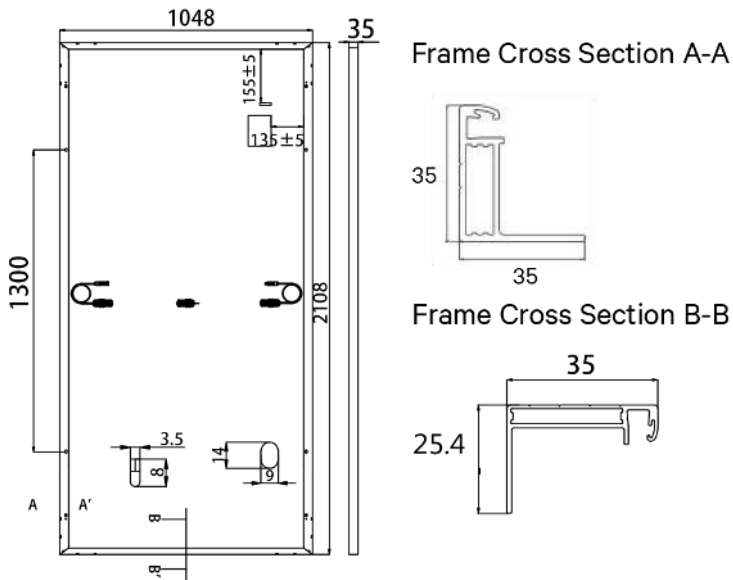
Front Glass	3.2mm, Low Iron, Tempered Glass
Frame	Anodized Aluminum Alloy
Junction Box	IP68 Rated
Output Cables	4mm ² , Landscape: 1300mm, Portrait: N 150mm/P 300mm
Connector	MC4 Compatible
Encapsulation Material	EVA
Backsheet	TPT (White OR Black)
Fixing Adhesive	Silicone Sealant

Mechanical Data

Solar Cells	Mono 166mm × 83mm
Number of Cells	72 × 2pcs
Module Dimensions	2108mm × 1048mm × 35mm
Weight	24.1kg

Temperature Coefficient

Power Tolerance	0 ~ +3%
Temperature Coefficient of Pmax	-0.36%/°C
Temperature Coefficient of Voc	-0.28%/°C
Temperature Coefficient of Isc	+0.05%/°C
NOTC	(45 ± 2) °C

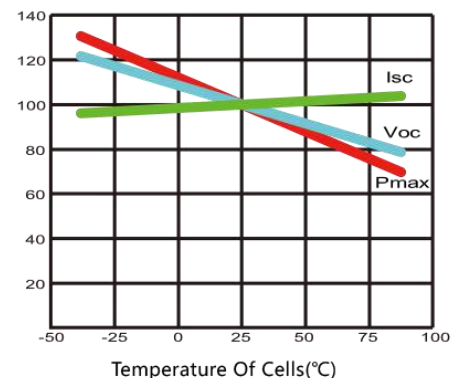
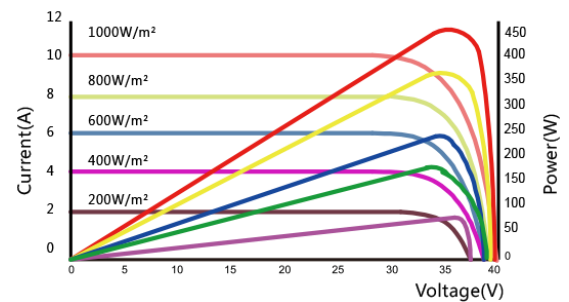
Mechanical Diagrams

Operating Conditions

Max. System Voltage	1500VDC (IEC)
Max. System Fuse Rating	20A
Operating Temperature	-40 ~ +85°C
Max. Static Load, Front (Snow)	5400Pa
Max. Static Load, Back (Wind)	2400Pa

Electrical Parameters at STC

Module type	CLM-450M-72 Series				
Rated Maximum Power (Pmax/W)	430	435	440	445	450
Maximum Power Voltage (Vmp/V)	40.6	40.8	41.0	41.2	41.4
Open-circuit Voltage (Voc/V)	49.2	49.4	49.6	49.8	50.0
Maximum Power Current (Imp/A)	10.61	10.67	10.74	10.81	10.88
Short-circuit Current (Isc/A)	11.19	11.26	11.33	11.40	11.47
Module Efficiency (%)	19.5	19.7	19.9	20.1	20.4

STC: Irradiance 1000W/m, Cell Temperature 25°C, AM = 1.5

IV Curves

Packaging Configuration

Pieces Per Pallet: 66 | Pallets Per 40HQ: 11 | Pieces Per 40HQ: 726