

CLM-490M-54 Series — Infinite Possibilities

Premium back-contact dual-glass modules for high-end residential rooftops and compact commercial projects

HPBC 2.0 standard · ABC / TBC optional | OEM / ODM ready

475~500 W

108 half-cut BC cells · Bifacial

24.5%

MAX MODULE EFFICIENCY

0~3%

POWER TOLERANCE

1%

FIRST-YEAR POWER DEGRADATION

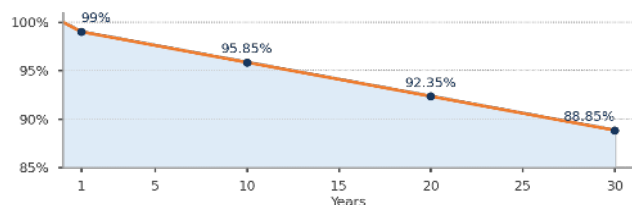
0.35%

YEAR 2-30 POWER DEGRADATION

BC-CELL

LOWER OPERATING TEMPERATURE

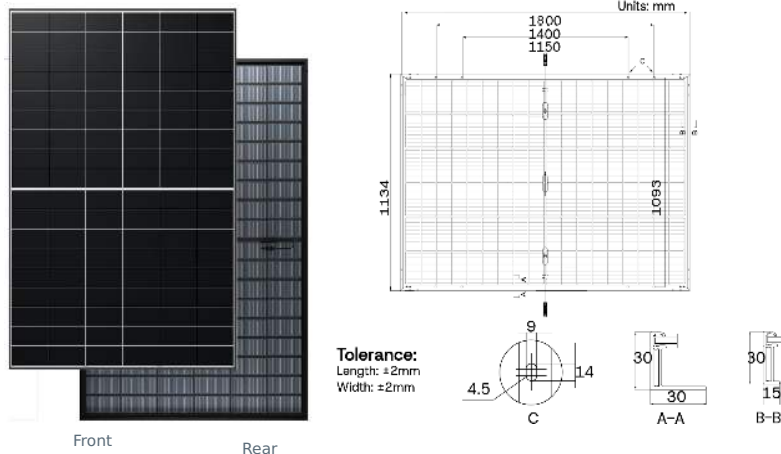
30-Year Power Warranty



Mechanical Parameters

Cell Type	N-type Back Contact (HPBC 2.0)
Cell Orientation	108 (6 × 18)
Junction Box	IP68, three diodes
Output Cable	4 mm ² , +400 / -200 mm (±1200 mm), customizable
Glass	Dual glass, 2.0 mm coated tempered + 1.6 mm semi-tempered
Frame	Black anodized aluminum alloy frame
Weight	23.5 kg
Dimensions (L × W × H)	1800 × 1134 × 30 mm
Packaging	36 pcs / pallet 432 pcs / 20' GP · 864 pcs / 40' HC

Module Views & Dimensions



Advanced: N-TaiRay + HPBC 2.0 + OBB

Higher Output: 24.5% Module Efficiency + Up to 25% Bifacial Power Gain

Aesthetic: Zero Front Gridlines + Seamless Integration

Safer: Enhanced Shade Tolerance + Lower Hot-Spot & Micro-Crack

Electrical Characteristics

STC: AM1.5, 1000 W/m², 25 °C · NOCT: AM1.5, 800 W/m², 20 °C, 1 m/s · Test uncertainty for P_{max} ±3%

Module Type	CLM-475M-54		CLM-480M-54		CLM-485M-54		CLM-490M-54		CLM-495M-54		CLM-500M-54	
Testing Condition	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Maximum Power (P _{max} / W)	475	361	480	365	485	369	490	373	495	377	500	381
Open Circuit Voltage (V _{oc} / V)	40.42	38.39	40.53	38.50	40.64	38.61	40.75	38.73	40.86	38.84	40.97	38.95
Short Circuit Current (I _{sc} / A)	14.88	11.93	14.98	12.02	15.08	12.10	15.18	12.19	15.28	12.27	15.38	12.35
Voltage at Max. Power (V _{mp} / V)	33.40	31.71	33.51	31.82	33.62	31.93	33.73	32.05	33.84	32.16	33.95	32.27
Current at Max. Power (I _{mp} / A)	14.23	11.39	14.33	11.48	14.43	11.56	14.53	11.65	14.63	11.73	14.73	11.81
Module Efficiency (%)	23.3		23.5		23.8		24.0		24.3		24.5	

Electrical Characteristics with Different Rear-Side Power Gain

Reference bin: CLM-480M-54 · bifaciality 65 ± 5%

P _{max} / W	V _{oc} / V	I _{sc} / A	V _{mp} / V	I _{mp} / A	P _{max} gain
480	40.53	14.98	33.51	14.33	0%
504	40.53	15.73	33.51	15.04	5%
528	40.53	16.48	33.51	15.76	10%
552	40.63	17.23	33.61	16.42	15%
576	40.63	17.98	33.61	17.14	20%
600	40.63	18.73	33.61	17.85	25%

Operating Parameters

Operational Temperature	-40 °C ~ +85 °C
Power Output Tolerance	0 ~ +3%
Maximum System Voltage	DC 1500 V (IEC)
Maximum Series Fuse Rating	30 A
Nominal Operating Cell Temperature	45 ± 2 °C
Bifaciality	65 ± 5%
Protection Class	Class II
Fire Rating	IEC Class C

Mechanical Loading

Front Side Maximum Static Loading	5400 Pa
Rear Side Maximum Static Loading	2400 Pa
Hailstone Test	25 mm hailstone at 23 m/s

Temperature Ratings (STC)

Temperature Coefficient of I _{sc}	+0.050 %/°C
Temperature Coefficient of V _{oc}	-0.200 %/°C
Temperature Coefficient of P _{max}	-0.260 %/°C

OEM / ODM: cell layout · size · voltage · frame colour · private-label · low MOQ
Email info@couleenergy.com · Tel +1 737 702 0119 · https://couleenergy.com

IEC
61215
DESIGN
QUAL.

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QUAL.

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