

Hi-MO 4_m

OPTONICA SOLAR

LR4-72HPH 445~465M

- Suitable for ground power plants and distributed projects
- Advanced module technology delivers superior module efficiency
 - M6 Gallium-doped Wafer
 - 9-busbar Half-cut Cell
- Excellent outdoor power generation performance
- High module quality ensures long-term reliability

12

12-year Warranty for
Materials and Processing

25

25-year Warranty for Extra
Linear Power Output

Complete System and Product Certifications

IEC 61215, IEC 61730, UL 61730

ISO9001:2015: ISO Quality Management System

ISO14001: 2015: ISO Environment Management System

ISO45001: 2018: Occupational Health and Safety

IEC62941: Guideline for module design qualification and type approval

LONGI



21.4%
MAX MODULE
EFFICIENCY

0~3%
POWER
TOLERANCE

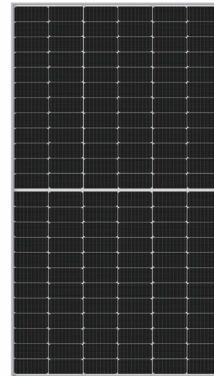
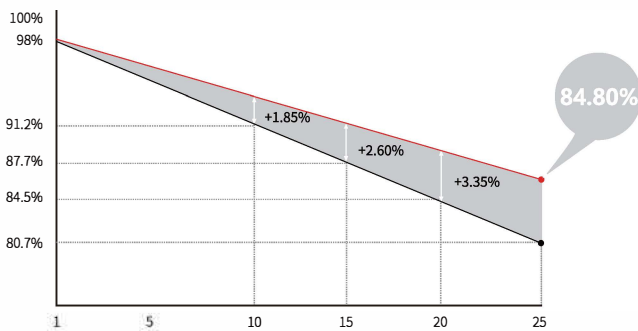
<2%
FIRST YEAR
POWER DEGRADATION

0.55%
YEAR 2-25
POWER DEGRADATION

HALF-CELL
Lower operating temperature

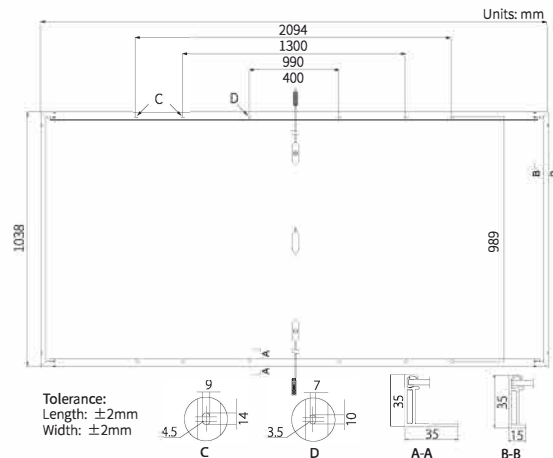
Additional Value

25-Year Power Warranty



Mechanical Parameters

Cell Orientation	144 (6×24)
Junction Box	IP68, three diodes
Output Cable	4mm ² , +400, -200mm/±1400mm length can be customized
Glass	Single glass, 3.2mm coated tempered glass
Frame	Anodized aluminum alloy frame
Weight	24.3kg
Dimension	2094×1038×35mm
Packaging	30pcs per pallet / 150pcs per 20' GP / 660pcs per 40' HC



Electrical Characteristics

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

Module Type	LR4-72HPH-445M		LR4-72HPH-450M		LR4-72HPH-455M		LR4-72HPH-460M		LR4-72HPH-465M	
	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Testing Condition	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Maximum Power (P _{max} /W)	445	334.3	450	338.0	455	341.8	460	345.5	465	349.3
Open Circuit Voltage (V _{oc} /V)	49.1	46.2	49.3	46.4	49.5	46.5	49.7	46.7	49.9	46.9
Short Circuit Current (I _{sc} /A)	11.53	9.35	11.60	9.41	11.66	9.46	11.73	9.51	11.79	9.56
Voltage at Maximum Power (V _{mp} /V)	41.3	38.4	41.5	38.6	41.7	38.8	41.9	39.0	42.1	39.2
Current at Maximum Power (I _{mp} /A)	10.78	8.70	10.85	8.75	10.92	8.81	10.98	8.86	11.05	8.91
Module Efficiency(%)	20.5		20.7		20.9		21.2		21.4	

Operating Parameters

Operational Temperature	-40°C ~ +85°C
Power Output Tolerance	0 ~ 3%
V _{oc} and I _{sc} Tolerance	±3%
Maximum System Voltage	DC1500V (IEC/UL)
Maximum Series Fuse Rating	20A
Nominal Operating Cell Temperature	45±2°C
Protection Class	Class II
Fire Rating	UL type 1 or 2 IEC Class C

Mechanical Loading

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

Temperature Ratings (STC)

Temperature Coefficient of I _{sc}	+0.050%/°C
Temperature Coefficient of V _{oc}	-0.265%/°C
Temperature Coefficient of P _{max}	-0.340%/°C