

# Hi-MO 4

## LR4-72HBD 440~460M

- Suitable for ground power plants and large C&I projects
- Advanced module technology delivers superior module efficiency
  - M6 Gallium-doped Wafer
  - 9-busbar Half-cut Cell
- Globally validated bifacial energy yield
- High module quality ensures long-term reliability

12

12-year Warranty for  
Materials and Processing

30

30-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



**21.2%**  
MAX MODULE  
EFFICIENCY

**0~3%**  
POWER  
TOLERANCE

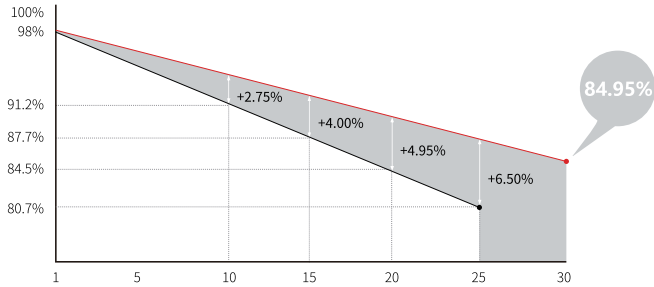
**<2%**  
FIRST YEAR  
POWER DEGRADATION

**0.45%**  
YEAR 2-30  
POWER DEGRADATION

**HALF-CELL**  
Lower operating temperature

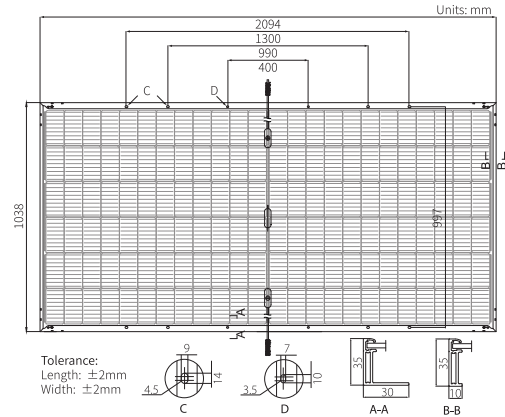
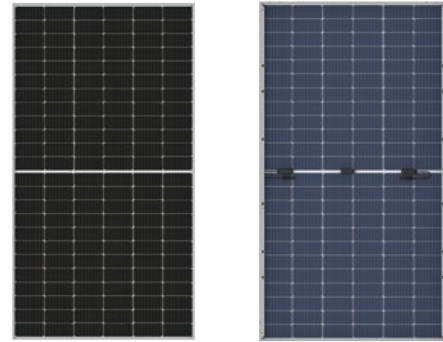
## Additional Value

### 30-Year Power Warranty



## Mechanical Parameters

|                  |   |
|------------------|---|
| Cell Orientation | 144 (6×24)  |
| Junction Box     | IP68, three diodes  |
| Output Cable     | 4mm <sup>2</sup> , +400, -200mm/±1400mm<br>length can be customized |
| Glass            | Dual glass, 2.0+2.0mm heat strengthened glass                       |
| Frame            | Anodized aluminum alloy frame                                       |
| Weight           | 27.5kg  |
| Dimension        | 2094×1038×35mm  |
| Packaging        | 31pcs per pallet / 155pcs per 20' GP / 682pcs per 40' HC            |



## Electrical Characteristics

STC : AM1.5 1000W/m<sup>2</sup> 25°C

NOCT : AM1.5 800W/m<sup>2</sup> 20°C 1m/s

Test uncertainty for Pmax: ±3%

| Module Type                      | LR4-72HBD-440M |       | LR4-72HBD-445M |       | LR4-72HBD-450M |       | LR4-72HBD-455M |       | LR4-72HBD-460M |       |
|----------------------------------|----------------|-------|----------------|-------|----------------|-------|----------------|-------|----------------|-------|
|                                  | STC            | NOCT  | STC            | NOCT  | STC            | NOCT  | STC            | NOCT  | STC            | NOCT  |
| Maximum Power (Pmax/W)           | 440            | 329.8 | 445            | 333.6 | 450            | 337.3 | 455            | 341.1 | 460            | 344.8 |
| Open Circuit Voltage (Voc/V)     | 49.2           | 46.3  | 49.4           | 46.5  | 49.6           | 46.6  | 49.8           | 46.8  | 50.0           | 47.0  |
| Short Circuit Current (Isc/A)    | 11.45          | 9.23  | 11.52          | 9.28  | 11.58          | 9.34  | 11.65          | 9.39  | 11.73          | 9.45  |
| Voltage at Maximum Power (Vmp/V) | 41.0           | 38.4  | 41.2           | 38.6  | 41.4           | 38.8  | 41.6           | 38.9  | 41.8           | 39.1  |
| Current at Maximum Power (Imp/A) | 10.73          | 8.60  | 10.80          | 8.65  | 10.87          | 8.70  | 10.93          | 8.76  | 11.01          | 8.82  |
| Module Efficiency(%)             | 20.2           |       | 20.5           |       | 20.7           |       | 20.9           |       | 21.2           |       |

## Electrical characteristics with different rear side power gain (reference to 450W front)

| Pmax/W | Voc/V | Isc/A | Vmp/V | Imp/A | Pmax gain |
|--------|-------|-------|-------|-------|-----------|
| 473    | 49.6  | 12.16 | 41.4  | 11.41 | 5%        |
| 495    | 49.6  | 12.74 | 41.4  | 11.95 | 10%       |
| 518    | 49.7  | 13.32 | 41.5  | 12.50 | 15%       |
| 540    | 49.7  | 13.90 | 41.5  | 13.04 | 20%       |
| 563    | 49.7  | 14.48 | 41.5  | 13.58 | 25%       |

## Operating Parameters

|                                    |                           |
|------------------------------------|---------------------------|
| Operational Temperature            | -40°C ~ +85°C             |
| Power Output Tolerance             | 0 ~ 3%                    |
| Voc and Isc Tolerance              | ±3%                       |
| Maximum System Voltage             | DC1500V (IEC/UL)          |
| Maximum Series Fuse Rating         | 25A                       |
| Nominal Operating Cell Temperature | 45±2°C                    |
| Protection Class                   | Class II                  |
| Bifaciality                        | 70±5%                     |
| Fire Rating                        | UL type 29<br>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 Isc  | +0.050%/°C |
| Temperature Coefficient of Voc  | -0.265%/°C |
| Temperature Coefficient of Pmax | -0.340%/°C |