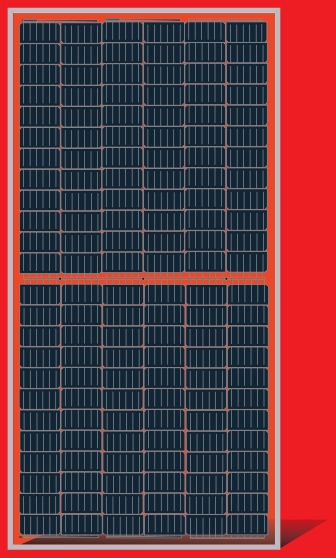
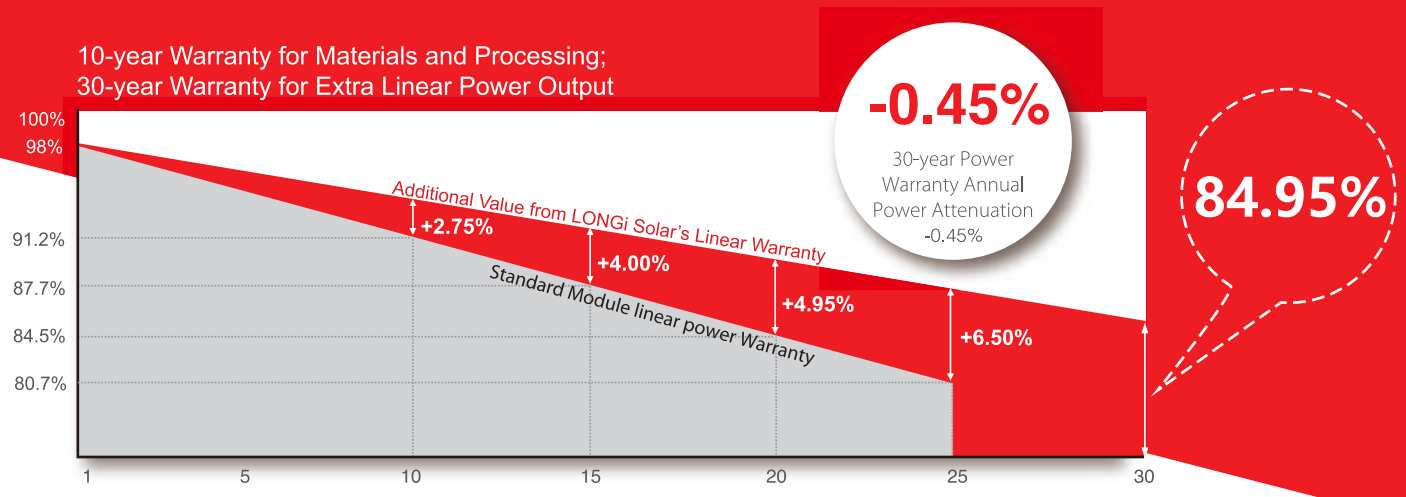
# LR4-72HBD
# 415~435M

Hi-MO4



## *High Efficiency*
## *Low LID Bifacial PERC with*
## *Half-cut Technology*




**Complete System and Product Certifications**

IEC 61215, IEC61730, UL1703

ISO 9001:2008: ISO Quality Management System

ISO 14001: 2004: ISO Environment Management System

TS62941: Guideline for module design qualification and type approval

OHSAS 18001: 2007 Occupational Health and Safety

* Specifications subject to technical changes and tests. LONGi Solar reserves the right of interpretation.

**Front side performance equivalent to conventional low LID mono PERC:**
- High module conversion efficiency (up to 19.4%)
- Better energy yield with excellent low irradiance performance and temperature coefficient
- First year power degradation <2%

**Bifacial technology** enables additional energy harvesting from rear side (up to 25%)

**Glass/glass lamination** ensures 30 year product lifetime, with annual power degradation < 0.45%, 1500V compatible to reduce BOS cost

**Solid PID resistance** ensured by solar cell process optimization and careful module BOM selection

**Reduced resistive loss** with lower operating current

**Higher energy yield** with lower operating temperature

**Reduced hot spot risk** with optimized electrical design and lower operating current

LONGi Solar

Room 801, Tower 3, Lujiazui Financial Plaza, No.826 Century Avenue, Pudong Shanghai, 200120, China
Tel: +86-21-80162606 E-mail: module@longi-silicon.com Facebook: www.facebook.com/LONGi Solar

Note: Due to continuous technical innovation, R&D and improvement, technical data above mentioned may be of modification accordingly. LONGi Solar have the sole right to make such modification at anytime without further notice; Demanding party shall request for the latest datasheet for such as contract need, and make it a consisting and binding part of lawful documentation duly signed by both parties.

20190520-Draft

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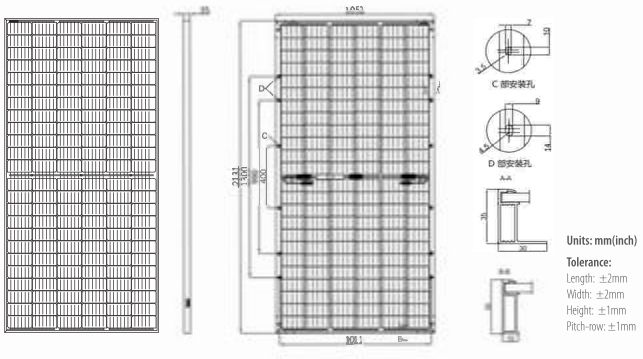
## Design （mm）




## Mechanical Parameters

Cell Orientation: 144（6×24）
Junction Box: IP68, three diodes
Output Cable: 4mm², 300mm in length, length can be customized
Glass: Dual glass 2.0mm tempered glass
Frame: Anodized aluminum alloy frame
Weight: 29.5kg
Dimension: 2131×1052×35mm
Packaging: 30pcs per pallet 150pcs per 20'GP 660pcs per 40'HC

## Operating Parameters

Operational Temperature: -40℃~+85℃
Power Output Tolerance: 0~+5 W
Voc and Isc Tolerance: ±3%
Maximum System Voltage: DC1500V (IEC/UL)
Maximum Series Fuse Rating: 20A
Nominal Operating Cell Temperature: 45±2℃
Safety Class: Class II
Fire Rating: UL type 6
Bifaciality: ≥75%

## Electrical Characteristics

Test uncertainty for Pmax: ±3%

| Model Number | LR4-72HBD-415M | | LR4-72HBD-420M | | LR4-72HBD-425M | | LR4-72HBD-430M | | LR4-72HBD-435M | |
|---|---|---|---|---|---|---|---|---|---|---|
| Testing Condition | STC | NOCT | STC | NOCT | STC | NOCT | STC | NOCT | STC | NOCT |
| Maximum Power (Pmax/W) | 415 | 308.6 | 420 | 312.3 | 425 | 316.0 | 430 | 319.7 | 435 | 323.5 |
| Open Circuit Voltage (Voc/V) | 49.0 | 45.6 | 49.2 | 45.8 | 49.4 | 46.0 | 49.6 | 46.2 | 49.8 | 46.4 |
| Short Circuit Current (Isc/A) | 10.89 | 8.82 | 10.96 | 8.87 | 11.02 | 8.93 | 11.09 | 8.98 | 11.16 | 9.04 |
| Voltage at Maximum Power (Vmp/V) | 40.6 | 37.7 | 40.8 | 37.9 | 41.0 | 38.1 | 41.2 | 38.2 | 41.4 | 38.4 |
| Current at Maximum Power (Imp/A) | 10.23 | 8.19 | 10.30 | 8.25 | 10.37 | 8.30 | 10.44 | 8.36 | 10.51 | 8.42 |
| Module Efficiency(%) | 18.5 | | 18.7 | | 19.0 | | 19.2 | | 19.4 | |

STC (Standard Testing Conditions): Irradiance 1000W/m², Cell Temperature 25℃, Spectra at AM1.5

NOCT (Nominal Operating Cell Temperature): Irradiance 800W/m², Ambient Temperature 20℃, Spectra at AM1.5, Wind at 1m/S

Electrical characteristics with different rear side power gain (reference to 425W front)

| Pmax /W | Voc/V | Isc /A | Vmp/V | Imp /A | Pmax gain |
|---|---|---|---|---|---|
| 446 | 49.4 | 11.58 | 41.0 | 10.88 | 5% |
| 468 | 49.4 | 12.13 | 41.0 | 11.40 | 10% |
| 489 | 49.5 | 12.68 | 41.1 | 11.92 | 15% |
| 510 | 49.5 | 13.23 | 41.1 | 12.44 | 20% |
| 531 | 49.5 | 13.78 | 41.1 | 12.96 | 25% |

## Temperature Ratings（STC）

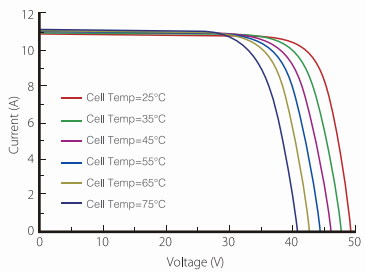
| | |
|---|---|
| **Temperature Coefficient of Isc** | +0.060%/℃ |
| **Temperature Coefficient of Voc** | -0.300%/℃ |
| **Temperature Coefficient of Pmax** | -0.370%/℃ |

## Mechanical Loading

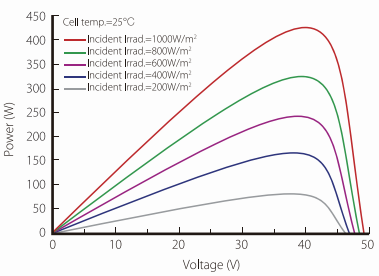
| | |
|---|---|
| **Front Side Maximum Static Loading** | 5400Pa |
| **Rear Side Maximum Static Loading** | 2400Pa |
| **Hailstone Test** | 25mm Hailstone at the speed of 23m/s |

## I-V Curve

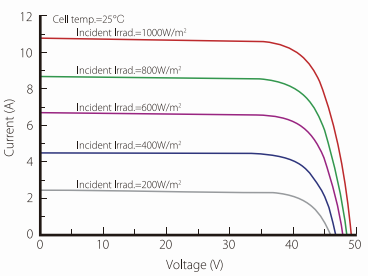
**Current-Voltage Curve (LR4-72HBD-425M)**




**Power-Voltage Curve (LR4-72HBD-425M)**




**Current-Voltage Curve (LR4-72HBD-425M)**

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