

Hi-MO X10 Explorer

LR7-54HVH
475~490M

- Suitable for Distribution Market
- Highest efficiency with the best energy generation performance
- TaiRay wafer & BC technology enhances high product reliability
- Smart manufacturing & LONGi product lifecycle standards deliver exceptional product quality



15-year Warranty for
Materials and Processing



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



Hi-MO X10 Explorer

LR7-54HVH 475~490M

24.0%
MAX MODULE
EFFICIENCY

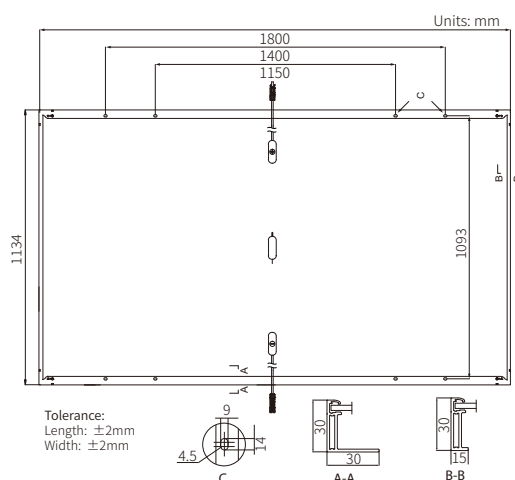
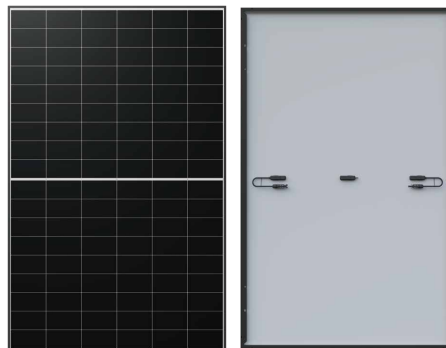
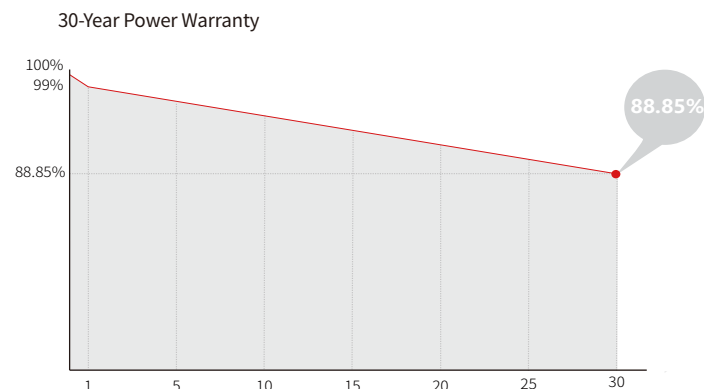
0~3%
POWER
TOLERANCE

<1%
FIRST YEAR
POWER DEGRADATION

0.35%
YEAR 2-30
POWER DEGRADATION

BC-CELL
LOWER OPERATING
TEMPERATURE

Additional Value



Mechanical Parameters

Cell Orientation	108 (6×18)
Junction Box	IP68, three diodes
Output Cable	4mm ² , +400, -200mm/ $\pm 1200\text{mm}$ length can be customized
Glass	Single glass, 3.2mm coated tempered glass
Frame	Anodized aluminum alloy frame
Weight	21.6kg
Dimension	1800×1134×30mm
Packaging	36pcs per pallet / 216pcs per 20' GP / 864pcs per 40' HC

Electrical Characteristics

STC: AM1.5 1000W/m² 25°C

NOCT: AM1.5 800W/m² 20°C 1m/s

Test uncertainty for Pmax: $\pm 3\%$

Module Type	LR7-54HVH-475M		LR7-54HVH-480M		LR7-54HVH-485M		LR7-54HVH-490M	
Testing Condition	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Maximum Power (Pmax/W)	475	362	480	365	485	369	490	373
Open Circuit Voltage (Voc/V)	40.18	38.18	40.29	38.29	40.40	38.39	40.52	38.51
Short Circuit Current (Isc/A)	15.03	12.08	15.13	12.16	15.23	12.24	15.33	12.32
Voltage at Maximum Power (Vmp/V)	33.16	31.52	33.28	31.63	33.40	31.74	33.51	31.85
Current at Maximum Power (Imp/A)	14.33	11.49	14.43	11.57	14.53	11.65	14.63	11.73
Module Efficiency(%)	23.3		23.5		23.8		24.0	

Operating Parameters

Operational Temperature	-40°C ~ +85°C
Power Output Tolerance	0 ~ 3%
Maximum System Voltage	DC1500V (IEC)
Maximum Series Fuse Rating	25A
Nominal Operating Cell Temperature	45 $\pm$ 2°C
Protection Class	Class II
Fire Rating	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	-0.200%/°C
Temperature Coefficient of Pmax	-0.260%/°C

LONGI

Specifications included in this datasheet are subject to change without notice.
LONGI reserves the right of final interpretation. (20241118 BGV02 Draft)

**Limited Warranty for LONGi Hi-MOX10 Solar
Modules
(Distributed Generation Market)**

1 Limited Warranty

The warranty start date of the Solar Modules stipulated under this Limited Warranty for Solar Modules (hereinafter referred to as “Limited Warranty”) is the date of delivery to the Initial Customer or 6 months after the modules are shipped out of the production plant, whichever is earlier (hereinafter referred to “Warranty Start Date”). For the avoidance of doubt, the Initial Customer means the Buyer or Purchaser as identified in the Sales Contract for the purchase of the Solar Modules, regardless of whether they are the end-user of the modules or not.

1.1 Limited Product Warranty

The Supplier warrants that for the Limited Product Warranty period since the Warranty Start Date that the Solar Modules (including the DC connectors and cables) will be free of defects in material or workmanship which affects the performance of the Solar Modules, provided that the Solar Modules are installed, utilized and maintained according to the stipulations of the Installation Manual provided by the Supplier, which may be updated from time to time by Supplier at its sole discretion. The Limited Product Warranty does not include changes in appearance or normal wear and tear of the Solar Modules that occur after installation. Performance warranty for the power output is not included here but it shall be specifically elaborated in the " Limited Performance Warranty" section below.

- A. Modules are only applicable to the following module types that a period of **15 years** since the Warranty Start Date, regardless of any change in ownership or transfer of the warranty to a different party.

54 HPBC cells	60&66 HPBC cells	72 HPBC cells
LR7-54HVH-xxxM Explorer	/	LR7-72HVH-xxxM Explorer
/	/	LR7-72HVH-xxxM Scientist
/	/	LR7-72HVHF-xxxM Guardian (Anti-Dust)
/	/	LR7-72HVD-xxxM Explorer
/	/	LR7-72HVD-xxxM Scientist

- B. Modules are only applicable to the following module types that a period of 25 years since the Warranty Start Date, regardless of any change in ownership or transfer of the warranty to a different party.

54 HPBC cells	60&66 HPBC cells	72 HPBC cells
LR7-54HVH-xxxM Scientist	/	/
/	/	/

1.2 Limited Performance Warranty

The Supplier warrants for a period of **30-year** performance warranty (“Performance Warranty Period”) from the Warranty Start Date with details as below: during the first year of the Performance Warranty Period, the actual power output (performance) of the modules will reach at least **99%** of the nominal power output; and from the second year, the actual power output will decline annually by no more than **0.35%** for a period of **29 years**; by the end of the **30th** year, an actual output of at least **88.9%** of the nominal power output is guaranteed. For the avoidance of doubt, this limited performance warranty only applies to the actual power output of the front-side of the modules.

$$\text{Actual Power Output (Year=1)} \geq \text{Nominal Power} * (1 - 1\%)$$

$$\text{Actual Power Output(Year=N, } 2 \leq N \leq 30) \geq \text{Nominal Power} * (1 - (1\% + 0.35\% * (N-1)))$$

Modules are only applicable to the following module types that a period of **30 years** since the Warranty Start Date, regardless of any change in ownership or transfer of the warranty to a different party.

54 HPBC cells	60&66 HPBC cells	72 HPBC cells
LR7-54HVH-xxxM Explorer	/	LR7-72HVH-xxxM Explorer
LR7-54HVH-xxxM Scientist	/	LR7-72HVH-xxxM Scientist
/	/	LR7-72HVHF-xxxM Guardian (Anti-Dust)
/	/	LR7-72HVD-xxxM Explorer
/	/	LR7-72HVD-xxxM Scientist

The actual power output is to be measured under standard testing condition (“STC” or “Standard Test Conditions”) in an independent testing lab accepted by the Supplier or previously designated by the Supplier, and when measuring the actual power output, measurement equipment tolerance is to be taken into consideration, as per IEC60904.

Standard Test Conditions are: Air mass 1.5, wind speed 0m/s, irradiance 1000W/m², cell temperature 25°C

2 Warranty Claim Procedure

In any case, any and all warranty claims shall be submitted to the Supplier or its authorized distributor in writing or by mail within the corresponding warranty period. The customer shall provide necessary evidence documents for its claim. If the customer believes that the Solar Module does not meet the requirements of the “Limited Warranty”, the customer should notify the sales team or global technical service department of the Supplier in writing or submit the notice via email through "Contact LONGi" button on the Supplier's global official website page (the website

is www.longi.com) within 30 days after the claim is identified. The notice should include the following information: (a) the claimant; (b) a detailed description of the claim; (c) supporting materials, including photos or data; (d) serial number of affected module; (e) evidence for purchase of the affected module; (f) model of the affected module; (g) project location; (h) other supplementary information required by the Supplier.

In the event the customer fails to notify the Supplier and provide the relevant information of (a)-(h) as described above within the time required by the Supplier, the Supplier is entitled to refuse to process the relevant claim demand without any liability until the customer has provided the relevant information as required by the Supplier.

The Supplier will review and evaluate alleged claims after receipt of the claim and full information as stipulated herein. If the Supplier at its sole discretion considers it necessary, the Supplier can request the module be shipped back to the Supplier's factory for testing, in which case, the Supplier will provide the customer with a Return Merchandise Authorization ("RMA"). In the absence of such RMA, any returned module will not be accepted by the Supplier. In the event the customer returns the Solar Modules without written agreement of the Supplier, the risks (including but not limited to damage and loss of the Solar Modules) and expenses related to the Solar Modules shall be borne by the customer. Subject to the approval of the Supplier's technical service department, the necessary and documented shipping costs related to the Limited Product Warranty or the Limited Performance Warranty will be compensated by the Supplier to the customer.

The Supplier is entitled to decide whether to send a representative to investigate the alleged claims on site at its own cost and expenses shall be borne by the Supplier. In the event that the Supplier decides to send a representative to the product installation site for verification, the customer shall fully actively cooperate for such investigation. If the customer refuses the Supplier to enter the site for investigation without a proper and appropriate reason, the Supplier has the right to extend the claim process until necessary evidence is provided; if the customer requires the concerned modules to be sent to an independent third-party testing agency for test (the lab must be approved by both parties), the customer will pay for the reasonable costs incurred by such test in advance. If the test results from the third-party testing agency determines that the existence of a module failure and the cause of such failure lies with the Supplier, then the reasonable and direct and documented costs incurred due to such test can be passed on to the Supplier, i.e shipping freight, transportation insurance, and laboratory testing costs.

3 Remedies for Claims

In the event that the customer claims that the module(s) fails to meet the "Limited Warranty" as described in Sections 1.1 and 1.2 above and the Supplier confirms the cause for such defect lies

on the product material or workmanship; or at the request of the client, a mutually-agreed third-party testing was done and revealed that the cause of such defect lies on the material or workmanship, then the Supplier shall, at its sole discretion, either:

1) Repair the defective solar modules. In such case, the Supplier shall prepare the repair project plan and carry out the repair project for the affected modules; or

2) Replace the defective modules or provide additional module(s) to make up for the output gap between the guaranteed output and the actual power output of the defective module(s) ; or

3) Refund the residual value of the defective modules or refund the value equivalent of the output gap between the guaranteed power output and the actual power output of the defective module(s).

*Residual value = current market price (price-per-watt) * nominal power * left-over service life/ Limited Performance Warranty period*

*Value Equivalent of Output Gap = current market price (price-per-watt) * (guaranteed power output – actual power output)*

SPECIAL NOTE:

1) Unless otherwise agreed by the Parties in written, the repaired module(s) or replacement module(s) will be delivered by the Supplier in accordance with the same Incoterms and destination as the relevant module supply contract. The insurance, freight, customs clearance fees and other reasonable and evidenced direct expenses shall be borne in accordance with the Incoterms in the original module supply contract. In the case that the customer pays for such costs in advance, and expects to contact the Supplier for compensation for such aforesaid costs, the customer shall provide the invoices to evidence that such costs are incurred from related service providers. Costs incurred due to dismantling, repacking, installation or reinstallation the module(s) and other related expenses shall be borne by the customer.

2) Any repair or replacement of the affected module(s) shall not renew or extend the applicable warranty period. The warranty period for replaced or repaired module(s) is the remainder of the warranty for the affected modules. The Supplier is entitled to deliver similar module(s) at its sole discretion in replacement of the affected module(s) if the affected module(s) is no longer available. The nominal power of the module(s) used to replace the concerned module(s) shall at least equal or over the power wattage of the affected module(s).

3) Unless instructed by Supplier or required by law, the customer shall dispose of out-of-use module(s) in accordance with applicable regulations on electronic waste treatment and disposal at its own cost. If the Supplier decides or is required by law to retrieve these defective modules, the ownership of the relevant module(s) belong to the Supplier. In the event the customer returns the Solar Modules to the Supplier without the prior written consent of the Supplier, the risks (including but not limited to damage or loss of the Solar Modules) and expenses related to the Solar Modules

shall be borne by the customer, and the Supplier is entitled to refuse to deal with the related claims and demands without any liability therefrom. Unless with written authorization from the Supplier, any replaced module(s) shall not be resold, reworked or reused in any way.

4) The customer shall cooperate with the Supplier to sign a "Settlement Agreement" so that the remedy plan for any alleged claim can be implemented. The Parties agree that the Supplier is entitled to use this as a precondition for fulfilling the obligations under this "Limited Warranty".

4 Liability Exemptions

The Supplier shall be free of any liability in the event that any defect of the Solar Modules is caused by or in connection to the Force Majeure. The Supplier and the Customer understands and agree that the Supplier shall free of liability in the event any obligations under this "Limited Warranty" is delayed or could not be provided because of the occurrence of the Force Majeure as defined under Clause 9 of this "Limited Warranty".

Save the stipulations under Clause 9, the Supplier and the Customer understand and agree that this "Limited Warranty" does not apply to any one of the following situations:

- Module(s) which have been subject to improper installation, use and maintenance due to failure to comply with the relevant provisions of the Supplier's module installation manual, module technical specification and maintenance manual; or
- Module(s) which have been subject to misuse, abuse, negligence, vandalism or accident; or
- Module(s) which have been subject to power supply failure, power surge, lightning, flood, fire, accidental damage or other events beyond the control of the Supplier; or
- Module(s) which have been installed on mobile equipment (except for photovoltaic tracking systems) such as vehicles, ships, etc., or offshore facilities (except for pre-authorized floating systems or fishery-solar hybrid project); or
- Module(s) which have been subject to system voltage over the rated maximum system voltage or surge; or
- Module(s) which have been installed on unqualified buildings; or
- Module(s) which have been installed near extreme heat or in extreme or volatile environmental conditions, causing the module(s) to corrode, oxidize, or to suffer from chemical materials in the environment; or
- Failure to pay the purchase price to the Supplier or its affiliated company that sells the module(s) to the customer; or
- Module(s) which have been used in a way that infringes on the intellectual property rights of the Supplier or any other third party (including but not limited to patent rights, trademark rights, etc.);

In addition, when the nameplate and serial number of the module(s) are tampered with, removed or unrecognizable without the written authorization of the Supplier, the claim will be rejected.

5 Limitation of Liability

The Supplier assumes no warranties, express or implied, other than the warranties expressly made herein and specifically disclaims all other warranties, including but not limited to, merchantability or fitness for a particular purpose, usage or application, or other obligations and responsibilities assumed by the Supplier, unless the Supplier expressly recognizes other obligations and responsibilities in a duly signed written document. The customer understands and agrees that to the extent permitted by law, Supplier shall not be liable for personal injury or property damage, and shall not be liable for other losses or injuries caused by or related to the module(s) (including but not limited to any module defect, or any defect arising from improper use and installation of the module(s)). The Supplier excludes all liabilities for any collateral, consequential or special damages. Any indirect and/or consequential losses caused by module defect, including but not limited to, loss of profit, loss of power, loss of business opportunity, loss of goodwill, increase of the operating cost or loss of income are clearly excluded here. If the Supplier is liable for compensation to the customer, the total amount of compensation shall not exceed the invoice price of the defective module(s) paid by the customer.

6 Assignment

The customer may transfer the rights and obligations under this "Limited Warranty" to the subsequent project owner by informing the Supplier in writing of this transfer of rights, provided that:

- 1) The module(s) remain at the initial installation site without being moved; and
- 2) The purchase price of the module(s) are fully paid to the Supplier or other payable amounts (such as liquidated damages); and
- 3) This transfer of rights covers all provisions of this "Limited Warranty"; and
- 4) The transferee agrees to be bound by all terms of this "Limited Warranty".

If required by the Supplier, the customer shall, within 15 days upon receipt of the notice from the Supplier, provide reasonable evidence to prove the inheritance of ownership. Otherwise, the Supplier shall have the right to refuse to process the relevant claim and shall not be liable for it.

The rights of this "Limited Warranty" shall only be transferred if above mentioned requirements are fully met, otherwise such transfer shall not be binding upon on the Supplier, and the Supplier has the right to refuse to process the relevant demand for claims without any liability.

7 Severability

If a certain section or clause of this "Limited Warranty" itself or its applicability to certain people or certain situation is deemed invalid, ineffective or unable to be implemented, this does not affect the validity of any other sections or clauses of this warranty. In such case, the applicability of other sections or clauses of this shall be regarded as independent and effective.

8 Applicable Law and Dispute Resolution

Any dispute relating to this "Limited Warranty", including but not limited to, disputes relating to the survival, validity, breach or termination of the "Limited Warranty", shall be resolved in accordance with the governing law and jurisdiction written in the relevant Solar Module supply contract.

In case a consensus regarding the cause of any module defect cannot be reached between the Supplier and the customer, after confirmed by both parties, authoritative testing facilities, such as Fraunhofer, PI, TÜV SUD, TÜV Rheinland, Intertek, UL, CQC, CGC, etc., can be enlisted to participate in the final settlement. All costs shall be borne by the losing party, unless the court decided otherwise. The Supplier reserves the right of final interpretation.

9 Force Majeure

Force Majeure refers to unforeseeable, unavoidable and insurmountable objective conditions in practice, including but not limited to war, riot, strike, epidemic, quarantine, traffic control and other social events; and earthquake, fire, flood, blizzard, hurricane, lightning, and other natural disaster; or due to lack of adequate labor force, shortage of raw materials or inability to produce capacity, technology or output, or delay not attributable to Supplier, government acts, change of laws, and any other unforeseeable events beyond the reasonable control of the Supplier.

Upon occurrence of Force Majeure and its continuing, the Supplier is excused from performing its obligations under this "Limited Warranty" for any product warranty claim, and the Supplier shall be free of any liability to the loss or damages incurred therefrom, but the Supplier shall promptly notify the customer regard to the Force Majeure, and shall negotiate with the Customer in time to take necessary measurements to the extent reasonably practicable to minimize the impact of the Force Majeure.

