

# Hi-MO 5m

(G2)

## LR5-66HPH 495~515M

- Based on M10 wafer, best choice for ultra-large power plants
- Advanced module technology delivers superior module efficiency
  - M10 Gallium-doped Wafer
  - Integrated Segmented Ribbons
  - 9-busbar Half-cut Cell
- Excellent outdoor power generation performance
- High module quality ensures long-term reliability



12-year Warranty for Materials and Processing



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**



**21.7%**  
MAX MODULE  
EFFICIENCY

**0~3%**  
POWER  
TOLERANCE

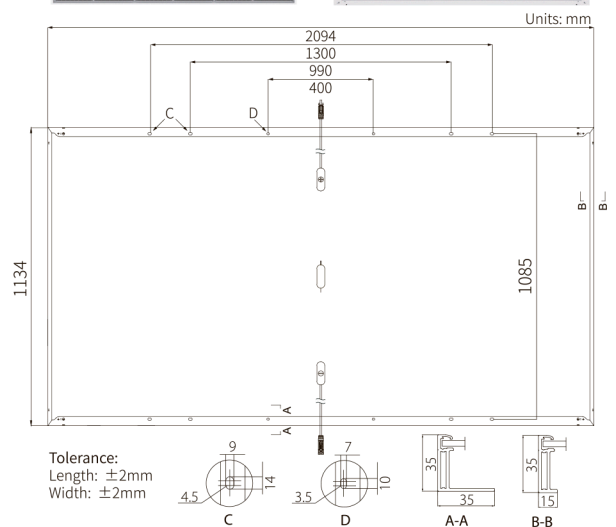
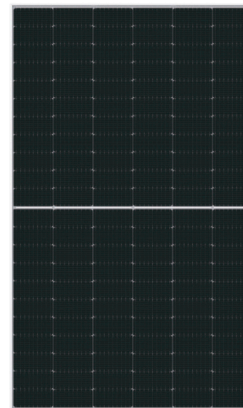
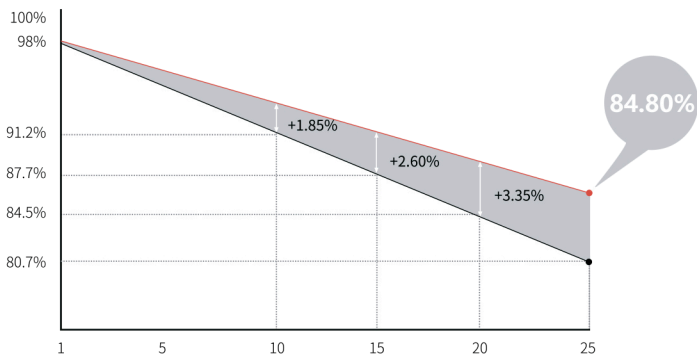
**<2%**  
FIRST YEAR  
POWER DEGRADATION

**0.55%**  
YEAR 2-25  
POWER DEGRADATION

**HALF-CELL**  
Lower operating temperature

## Additional Value

### 25-Year Power Warranty



## Mechanical Parameters

Cell Orientation	132 (6×22)
Junction Box	IP68, three diodes
Output Cable	4mm <sup>2</sup> , +400, -200mm/±1400mm length can be customized
Glass	Single glass, 3.2mm coated tempered glass
Frame	Anodized aluminum alloy frame
Weight	26.0kg
Dimension	2094×1134×35mm
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:  $\pm 3\%$

Module Type	LR5-66HPH-495M		LR5-66HPH-500M		LR5-66HPH-505M		LR5-66HPH-510M		LR5-66HPH-515M	
	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Maximum Power (Pmax/W)	495	370.0	500	373.7	505	377.5	510	381.2	515	384.9
Open Circuit Voltage (Voc/V)	45.40	42.69	45.55	42.83	45.70	42.97	45.85	43.11	46.00	43.25
Short Circuit Current (Isc/A)	13.82	11.17	13.90	11.24	13.97	11.30	14.05	11.36	14.13	11.42
Voltage at Maximum Power (Vmp/V)	38.23	35.51	38.38	35.65	38.53	35.79	38.68	35.93	38.83	36.07
Current at Maximum Power (Imp/A)	12.95	10.42	13.03	10.48	13.11	10.55	13.19	10.61	13.27	10.67
Module Efficiency(%)	20.8		21.1		21.3		21.5		21.7	

## Operating Parameters

Operational Temperature	-40°C ~ +85°C
Power Output Tolerance	0~3%
Voc and Isc Tolerance	$\pm 3\%$
Maximum System Voltage	DC1500V (IEC/UL)
Maximum Series Fuse Rating	25A
Nominal Operating Cell Temperature	45 $\pm$ 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 Isc	+0.050%/°C
Temperature Coefficient of Voc	-0.265%/°C
Temperature Coefficient of Pmax	-0.340%/°C

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826, Pudong Shanghai, China

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Web: www.longi.com

Specifications included in this datasheet are subject to change without notice. LONGi reserves the right of final interpretation. (20230115V17) G2



# Certificate of Compliance

**Certificate:** 80021505

**Master Contract:** 266494

**Project:** 80166880

**Date Issued:** 2023-04-25

**Issued To:** Longi Green Energy Technology Co., Ltd.  
No. 388, Middle Hangtian Road,  
Chang'an District  
Chang'an District, Xi'an., Shaanxi, 710100  
China

**Attention:** Fei Zhuang

*The products listed below are eligible to bear the CSA Mark shown with adjacent indicators 'C' and 'US' for Canada and US or with adjacent indicator 'US' for US only or without either indicator for Canada only.*



**Issued by:** Tom Yang  
Tom Yang

## **PRODUCTS**

CLASS - C531110 - POWER SUPPLIES Photovoltaic Modules and Panels

CLASS - C531190 - POWER SUPPLIES Photovoltaic Modules and Panels - Certified to US Standards

Bifacial dual glass photovoltaic modules with maximum system voltage of 1500 V dc, Safety Class II PV modules.

LR6-72BP-xxxM, xxx=350 to 380, in steps of 5W,

LR6-72PD-xxxM, xxx= 345 to 370, in steps of 5W,

LR6-72DG-xxxM, xxx= 330 to 360, in steps of 5W,

LR6-72HBD-xxxM, xxx= 360 to 395, in steps of 5W,

LR6-72HIBD-xxxM, xxx= 360 to 385, in steps of 5W,

LR6-72OPD-xxxM, xxx= 380 to 405, in steps of 5W,

LR6-72HPD-xxxM, xxx= 360 to 385, in steps of 5W,  
LR6-72MBD-xxxM, xxx= 360 to 380, in steps of 5W,  
LR6-72MPD-xxxM, xxx= 360 to 380, in steps of 5W,  
LR4-72HBD-xxxM, xxx= 415 to 455), in steps of 5W,  
LR4-72HIBD-xxxM, xxx= 420 to 450, in steps of 5W,  
LR6-60BP-xxxM, xxx=290 to 315, in steps of 5W,  
LR6-60PD-xxxM, xxx=285 to 305, in steps of 5W,  
LR6-60DG-xxxM, xxx=275 to 300, in steps of 5W,  
LR6-60HBD-xxxM, xxx= 300 to 320, in steps of 5W,  
LR6-60HIBD-xxxM, xxx= 300 to 320, in steps of 5W,  
LR6-60OPD-xxxM, xxx= 315 to 335, in steps of 5W,  
LR6-60HPD-xxxM, xxx= 300 to 320, in steps of 5W,  
LR6-60MBD-xxxM, xxx= 300 to 320, in steps of 5W,  
LR6-60MPD-xxxM, xxx= 300 to 320, in steps of 5W,  
LR4-60HBD-xxxM, xxx= 345 to 380, in steps of 5W,  
LR4-60HIBD-xxxM, xxx= 350 to 380, in steps of 5W,  
LR6-78HBD-xxxM, xxx= 390 to 420, in steps of 5W,  
LR6-78OPD-xxxM, xxx= 410 to 435, in steps of 5W,  
LR5-72HBD-xxxM, xxx= 520 to 565, in steps of 5W,  
LR5-66HBD-xxxM, xxx= 475 to 515, in steps of 5W,  
LR4-78ZBD-xxxM, xxx= 465 to 485, in steps of 5W,  
LR5-72HIBD-xxxM, xxx= 520 to 565, in steps of 5W,  
LR5-66HIBD-xxxM, xxx= 475 to 515, in steps of 5W,  
LR4-78HBD-xxxM, xxx= 470 to 500, in steps of 5W,  
LR5-78HBD-xxxM, xxx= 570 to 590, in steps of 5W,  
LR5-78ZBD-xxxM, xxx= 560 to 580, in steps of 5W,  
LR5-72HTD-xxxM, xxx= 550 to 600, in steps of 5W,  
LR5-60HBD-xxxM, xxx= 435 to 470, in steps of 5W,  
LR5-60HIBD-xxxM, xxx= 435 to 470, in steps of 5W,  
LR5-54HBD-xxxM, xxx= 390 to 425, in steps of 5W,  
LR5-54HIBD-xxxM, xxx= 390 to 425, in steps of 5W,  
LR5-54HABB-xxxM, xxx= 395 to 415, in steps of 5W,  
LR5-54HIBB-xxxM, xxx= 395 to 415, in steps of 5W,  
LR5-54HABD-xxxM, xxx= 395 to 420, in steps of 5W,  
**LR5-72HGD-xxxM, xxx = 560 to 590, in steps of 5W.**

Note:

1. All electrical data are shown as relative to standard test conditions (STC) (1 000 W/m<sup>2</sup>, (25 ± 2) °C, AM 1,5 according to IEC 60904-3).
2. Manufacturer's stated tolerance is ±3% for Voc and Pm, and Isc.
3. Rated electrical characteristics are only reflected the front side performance, regardless of the back side.
4. All modules model with suffix 'BP' after '72' or '60', are Bifacial PERC modules
5. All modules model with suffix 'PD' after '72' or '60', are modules with PERC Dual Glass.
6. All modules model with suffix 'DG' after '72' or '60', are modules with Dual Glass.

7. All modules model with suffix ‘HBD’ after ‘72’ or ‘60’ or ‘78’, are modules with Multi-Busbar Bifacial Dual Glass.
8. All modules model with suffix ‘OPD’ after ‘72’ or ‘60’ or ‘78’, are modules with Overlap Bifacial PERC Dual Glass.
9. All modules model with suffix ‘HPD’ after ‘72’ or ‘60’, are modules with Half Cell PERC Dual Glass.
10. All modules model with suffix ‘MBD’ after ‘72’ or ‘60’, are modules with Multi-Busbar Bifacial Dual Glass.
11. All modules model with suffix ‘MPD’ after ‘72’ or ‘60’, are modules with Multi-Busbar PERC Dual Glass.
12. All modules model with suffix ‘HIBD’ after ‘72’ or ‘60’, are modules with Half Improved Bifacial Cell Dual Glass.
13. All modules model with suffix ‘ZBD’ after ‘72’ or ‘60’, are modules with Zero Clearance Bifacial Dual Glass.
14. LR6 is for models with 156mm cells, LR4 is for models with 166mm cells, and LR5 is for models with 182mm.
15. All modules model with suffix ‘HABB’ after ‘54’, are modules with Half Cell Advanced Bifacial Black Dual Glass.
16. All modules model with suffix ‘HIBB’ after ‘54’, are modules with Half Improved Bifacial Cell Black Dual Glass.
17. All modules model with suffix ‘HABD’ after ‘54’, are modules with Half Cell Advanced Bifacial Dual Glass.
- 18. All modules model with suffix ‘HGD’ after ‘72’, are modules with Half Cell G Technology Bifacial Dual Glass.**
19. LR6 is for models The operating ambient temperature of these devices may exceed 40°C at full load for all wire sizes if it is determined suitable in the field use application.
20. For details related to rating, size, configuration, etc. reference should be made to CSA Certification Record or the descriptive report.

**APPLICABLE REQUIREMENTS**

CSA C22.2 No. 61730-1:19	Photovoltaic (PV) module safety qualification - Part 1: Requirements for construction, 2019-12
CSA C22.2 No. 61730-2:19	Photovoltaic (PV) module safety qualification - Part 2: Requirements for testing, 2019-12
UL 61730-1 2nd Edition	Photovoltaic (PV) Module Safety Qualification – Part 1: Requirements for Construction, October 28, 2022
UL 61730-2 2nd Edition	Photovoltaic (PV) Module Safety Qualification – Part 2: Requirements for Testing, October 28, 2022

**Notes:**

Products certified under Class C531110 have been certified under CSA’s ISO/IEC 17065 accreditation with the Standards Council of Canada (SCC). [www.scc.ca](http://www.scc.ca)





## Supplement to Certificate of Compliance

Certificate: 80021505

Master Contract: 266494

*The products listed, including the latest revision described below, are eligible to be marked in accordance with the referenced Certificate.*

### Product Certification History

Project	Date	Description
80166880	2023-04-25	Update report 80021505 to add new N type solar cell G10N18B for new model series LR5-72HGD-xxxM.
80165189	2023-04-14	Update report 80021505 to add alternative steal frame for LR5 series.
80163912	2023-03-29	Update report 80021505 to add alternative frame design little change with already approved ones, add 30 mm frame B side for several LR5 series models.
80151911	2023-02-17	Update report 80021505 to add alternative method of module series no. by laser coding on the inner side of substrate glass, update fire ratings to type 38 for modules with 1.6 mm thickness substrate & superstrate glass, update applicable standards to UL 61730-1 2nd Edition, UL 61730-2 2nd Edition.
80151908	2022-12-30	Update report 80021505 to add new model series LR5-5HABB-xxxM, LR5-54HIBB-xxxM, LR5-54HABD-xxxM, with specified superstrate and/or substrate glasses by Changzhou Almaden Co., Ltd, add alternative superstrate and substrate manufacturer Hunan Kibing Solar Technology Co., Ltd and Zhuzhou Kibing Group Co.,Ltd, by confirmation letter, little change on cell size for M10B9B and M10D9B, add alternative flux manufacturer TONGFANG TECHNOLOGY VIETNAM CO.,LTD, add 5 installation methods with tests on LR5-54HABD-xxxM.
80128861	2022-11-22	Update report 80021505 to add alternative frame and Jbox adhesives 9661 and 888C, combined with Longi Junction boxes and approved substrates glass, add alternative connectors PV-KST4-EVO2A/xy, PV-KBT4-EVO2A/y for Longi Jboxes. add alternative encapsulation LRPT/LRPT, LRET/LRET, LRET/LRPT, , which are multiple listings with already approved encapsulations.
80131321	2022-09-26	Update report to add 4 installation methods for little change on the frame design verifications. and qualification of TÜV Rheinland (Shanghai) Co., Ltd under APT program.
80131823	2022-09-18	Update report to add alternative adhesives HT-8188, 1581, and CREVO709, combined with Longi Junction boxes and approved substrates glass.



80137011	2022-08-26	Update report 80021505 to include new model series LR5-60HBD-xxxM, LRT-60HIBD-xxxM, LR5-54HBD-xxxM, LR5-54HIBD-xxxM base on approved model series LR5-72HBD-xxxM and LR5-72HIBD-xxxM, enlarge power range for several model series based on the test data in previous projects, add new cell M10B18B, add new cell interconnector $\Phi$ 0.25, and manufacturer sites for flux, base on the manufacturers' declarations.
80121445	2022-08-10	Update report 80021505 to include new model series LR5-72HTD-xxxM with new cell M10P0B.
80125870	2022-05-07	Update report 80021505 to revise the 182 mm cells dimension with little change, enlarge power range to 555W for model series LR5-72HIBD, enlarge power range to 505W for model series LR5-66HBD and LR5-66HIBD, revise the triangle cells connectors description, add the manufacturers name for the strings & cells Interconnector change the manufacturers name from MULTI-CONTACT ESSEN GMBH to Staubli Electrical Connectors AG as acquisition.
80100720	2022-01-14	Update report 80021505 to include reflective string connection 0.3mm x 4mm, 0.3mm x 7mm, include new installation methods and designed loads, 9 in total, include new size with little change for model series LR5-72HBD-xxxM and LR5-66HBD-xxxM, Requalification for CCIC Southern Testing Co., Ltd, under APT program.
80108451	2021-12-31	Update report 80021505 to include alternative superstrate and substrate glass 2.0 mm thickness by Ningxia Jinjin Technology Co., Ltd, include alternative output wiring system PV-LR07A complied with IEC 62790, base on TÜV SÜD Test Report No.: 70.407.21.168.01-01A1, 70.407.21.168.01-01 with additional evaluation requirement by CSA Group.
80105635	2021-12-01	Update report to enlarge power range for model series LR5-72HBD-xxxM to 555W, add alternate superstrate/substrate glass by CHANGZHOU HONGXIE SAFETY GLASS CO.,LTD, multiple listing information for encapsulation LET02/LRPT02 by LONGi, Co-license for Tesla Inc, type JB-TS03, and Co-license for SolarEdge Technologies Ltd, type PV-SE05A, add alternative frame adhesive RS-3316, and potting RS-3200 by ZHENJIANG RAYBOND HEW MATERIAL TECHNOLOGY CO.LTD, new design for approved cells M6B9B, M6D9B, M10B9B, M10D9B, alternative fixing tape 9966 by Shanghai Hyperion Adhesive Material Co., Ltd..
80096054	2021-09-13	Update report 80021505 to include alternate superstrate and substrate glass 2.0mm and 2.5mm thickness by Anhui Shengshi New Energy Materials Technology Co.,Ltd, add alternative encapsulation combination LRPT03/LRPT03 by Longi Green Energy Technology Co., Ltd, supplement encapsulation LRPT01/LRPT01 as included in project 80084260.
80084260	2021-07-05	Update report 80021505 to include model series LR5-78HBD-xxxM, LR5-78ZBD-xxxM, new flux.
80075688	2021-06-17	Update report 80021505 to add: (1) Alternative superstrate 2.0 or 2.5mm coating tempered glass by Henan Ancai Hi-Tech Co., Ltd.; (2) Alternative substrate 2.0 or



2.5mm embossed coating tempered glass or floating coating tempered glass, with white gridding mask by Henan Ancai Hi-Tech Co., Ltd.; (3) Alternative encapsulation combination LRET/LRPT by Longi Green Energy Technology Co., Ltd.

80063327	2021-05-21	Update report 80021505 to add new model series LR4-78HBD-xxxM.
80075686	2021-03-25	Update report 80021505 to include superstrate and substrate glass 2.0mm and 2.5mm thickness by Changli glass Honghu Co., Ltd, add alternate adhesive and potting GUIBAO 888N for junction box PV-LR04A, and PV-LR05A, alternate junction box adhesive GUIBO 4808.
80070016	2021-01-26	Update report 80021505 to include new model series LR5-72HIBD-xxxM and LR5-66HIBD-xxxM, using new cell M10D9B, also enlarge the power range to 545W for model series LR5-72HBD-xxxM, update the naming code to make it clearer, add new connectors for Junction box PV-LR04B, refer to CSA report 70176715.
80057350	2021-01-05	Update report 80021505 to add alternate superstrate/substrate 2.5mm and 2.0mm thickness glass by CAI HONG GROUP NEW ENERGY COMPANY LIMITED, alternate fixing tape DT-9609 by Yantai Darbond Technology Co., Ltd.
80057346	2020-12-25	Update report 80021505 to include alternate cell M6B6B by JIANGSU RUNERGY YUEDA PV TECHNOLOGY CO.,LTD, alternate flux GOLF703-C by YIK SHING TAT INDUSTRIAL CO.,LTD.
80055318	2020-12-14	Update report 800215055 to add new designed model series LR4-78ZBD-xxxM.
80063164	2020-11-27	Update report to include new model series LR5-72HBD-xxxM and LR5-66HBD-xxxM, using halved cut cell M10B9B, output wiring system PV-LR05A.
80062314	2020-11-20	Update report 80021505 to include new superstrate and substrate 2.0mm/2.5mm glass by Shanxi RiShengDa New Energy Group Co.,Ltd, new POE by CHANGZHOU BBETTER FILM TECHNOLOGIES CO., LTD, and encapsulation SV15926/SE-556 by Changzhou Sveck Photovoltaic New Material Co., Ltd.
80055162	2020-10-16	Update report 80021505 to add alternate superstrate/substrate 2.5mm glass by Shaanxi Topray Solar Co., Ltd.
80055161	2020-10-16	Update report 80021505 to add alternate superstrate/substrate 2.5mm glass by Shenzhen New Kibing Technology Co., Ltd. Cell manufactures update as client's declaration.
80055163	2020-09-11	Update report 80021505 to add alternate superstrate 2.0mm by Shenzhen New Kibing Technology Co., Ltd, and alternate encapsulation ISARD2180&ISARD1180 by Crown Advanced material Co., Ltd, revise the power range of model series LR6-72HBD to 390W, supplemented the missing cell M2B6B and Jbox PV-LR03B.





80055164	2020-09-11	Update report 80021505 to add alternate superstrate 2.0mm by Shaanxi Topray Solar Co., Ltd, and alternate encapsulation B601HP&B602 by Changzhou BBETTER FILM TECHNOLOGY CO.,LTD, add fixing tap UV-T.
80052562	2020-08-21	Update report to add alternate cell M6D9B and cell-connectors $\phi 0.32\text{mm}$ , update output wiring system configuration base on the TÜV SÜD Test IEC 62790 Report and manufacturer's statement, and enlarge the power range of model series LR4-72HIBD-xxxM and LR4-60HIBD-xxxM, add alternate lamination designs which have no clearance and creepage changed.
80042753	2020-05-28	Update report to add encapsulation combination F606PS/TF4, and glazed tempered glass.
80040323	2020-04-14	Update report to add Embossed Tempered glass or Floating Tempered Glass, and update information for output wiring system.
80037990	2020-04-02	Update report to add alternate cell M6B6B by Vina Cell Technology Co., Ltd, and flux SF105.
80035967	2020-03-25	Update report to add alternate cells interconnectors, and alternate output wiring compartments PV-LR02A, PV-LR03A, PV-LR04A.
80027423	2020-03-25	Update report to add alternate cells M6B9B and M6E9B, interconnectors, and alternate module sizes for models with 9bb M6 cells.
80034138	2020-02-27	Update report to add models LR4-72HBD-xxxM and LR4-60HBD-xxxM for new bifacial cell type M6B6B manufactured by LONGi.
80023865	2020-02-21	Update report to add alternate cell M2D5B.
80023861	2020-02-19	Update report to add new model series LR6-72HIBD-xxxM, LR6-60HIBD-xxxM, with cell M2D6B, and LR4-60HIBD-xxxM, LR4-72HIBD-xxxM, with cell M6D6B.
80030667	2020-01-10	Update report to add combinations of materials and new model series, as a reference of Test Report No. 704061700509-09 by TÜV SÜD Certification and Testing (China) Co., Ltd and previous CSA projects.
80021505	2019-11-28	Original certification.