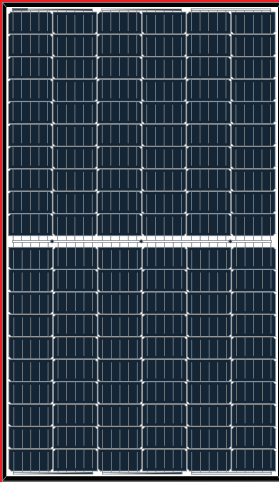
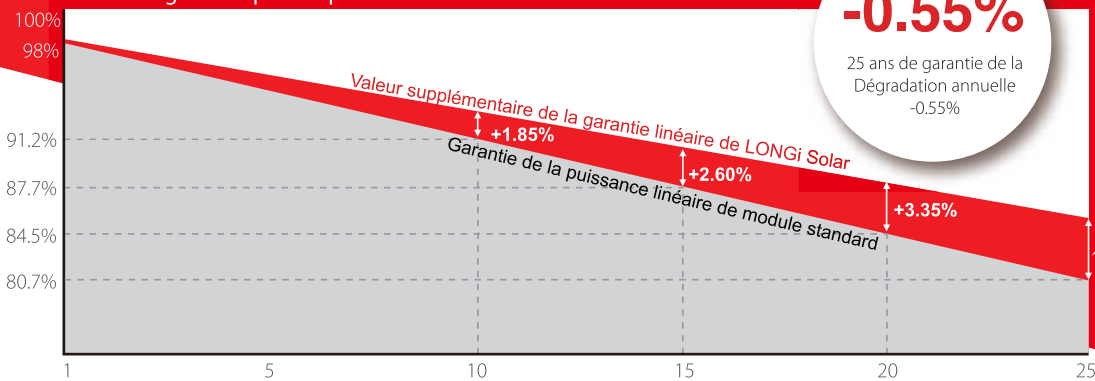


# LR6-60HPH 300~320M



**Haute efficacité**  
**Bas LID Mono PERC avec**  
**Technologie de demi-coupe**

10 ans de garantie pour les Matériels;  
25 ans de garantie pour la puissance



**-0.55%**

25 ans de garantie de la  
Dégradation annuelle  
-0.55%

**+4.10%**

## Certifications du système et du produit complètes

IEC 61215, IEC61730

ISO 9001:2008: Système de contrôle de qualité d'ISO

ISO 14001: 2004: Système de gestion d'environnement d'ISO

TS62941: Directive pour qualification de conception de module et approbation des modèles

OHSAS 18001: 2007 Santé et sécurité professionnelles



\* Spécifications soumises aux changements et essais techniques.  
LONGi Solar réserve le droit d'interprétation.

**Tolérance de puissance positive** (0~+5W) assurée

**Haute efficacité de conversion de module** (jusqu'à 19.3%)

**Dégradation de puissance plus lente** grâce à la technologie de Bas LID Mono PERC : <2% pour la première année, 0.55% pour 2-25 ans

**Résistance de PID solide** assurée par l'optimisation du processus de cellule solaire et la sélection prudente de la BOM liste

**Perte résistive réduite** avec courant de fonctionnement plus bas

**Plus haut rendement énergétique** avec température de fonctionnement plus bas

**Risque de point chaud réduit** avec conception électrique améliorée et courant de fonctionnement plus bas

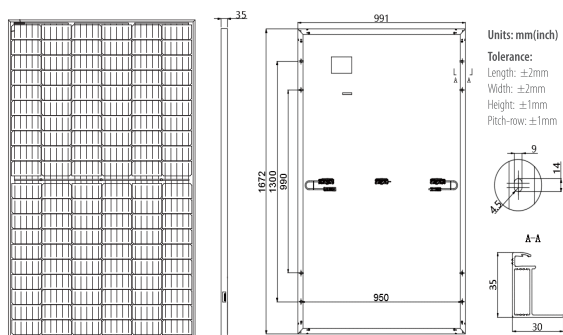
# LONGi Solar

Appartement 201, Bâtiment 8, Place de Sandhill, Voie 2290, Rue de Zuchongzhi, District de Pudong, Shanghai, 201203  
Tel: + 86-21-61047332 Fax: +86-21-61047377 E-mail: module@longi-silicon.com  
Facebook: www.facebook.com/LONGi Solar

Remarque : En raison de l'innovation technique sans cesse, la R&D et amélioration, ainsi que les données techniques citées au-dessus pourront faire l'objet de la modification correspondante. LONGi Solar a le droit de procéder à la modification à tout moment sans autre avis ; La partie requérante peut demander la dernière fiche technique pour les raisons telles que le besoin de contrat, et la joindre comme une partie composante et contraignante du dossier légal dûment signé par les deux parties.

# LR6-60HPH 300~320M

## Conception (mm)



## Paramètres mécaniques

**Nombre de cellule:** 120 (6x20)  
**Boîtier de jonction:** IP67, trois diodes  
**Câble de sortie:** 4mm<sup>2</sup>, 300mm de long  
**Connecteur:** Staubli Multicontact MC4 (EVO2)  
**Verre:** 2.8mm verre trempé revêtu  
**Poids:** 16.8kg  
**Dimension:** 1672x991x35mm  
**Emballage:** 30pièces par palette  
 180pièces par 20'GP  
 780pièces par 40'HC

## Paramètres de fonctionnement

**Température de fonctionnement:** -40 C ~ +85 C  
**Tolérance Positive:** 0 ~ +5 W  
**Tolérance de Voc et Isc:** ±3%  
**Voltage maximal du système:** DC1500V (IEC)  
**Valeur maximale du fusible de la série:** 20A  
**Température nominale de cellule de fonctionnement:** 45±2 C  
**Classe d' sécurité:** Class II

## Caractéristiques électriques

Incertitude d'essai pour Pmax : ±3%

Numéro de modèle	LR6-60HPH-300M		LR6-60HPH-305M		LR6-60HPH-310M		LR6-60HPH-315M		LR6-60HPH-320M	
	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Condition d'essai										
Puissance maximale (Pmax/W)	300	222.2	305	225.9	310	229.6	315	233.4	320	237.1
Tension de circuit ouvert (Voc/V)	39.8	37.1	40.1	37.4	40.3	37.7	40.6	37.9	40.9	38.2
Courant de court-circuit (Isc/A)	9.70	7.82	9.78	7.88	9.86	7.94	9.94	8.01	10.02	8.08
Tension à la puissance maximale (Vmp/V)	32.9	30.4	33.1	30.6	33.3	30.8	33.7	31.1	33.9	31.3
Courant à la puissance maximale (Imp/A)	9.13	7.32	9.21	7.38	9.30	7.46	9.36	7.50	9.43	7.56
Efficacité de module (%)	18.1		18.4		18.7		19.0		19.3	

STC (Conditions d'essai standards) : Irradiance 1000W/m<sup>2</sup>, température de cellule 25 C, spectre à AM1.5

NOCT (Température nominale de cellule de fonctionnement) : Irradiance 800W/m<sup>2</sup>, température ambiante 20 C, spectre à AM1.5, vent à 1m/s

## Temperature Ratings (STC)

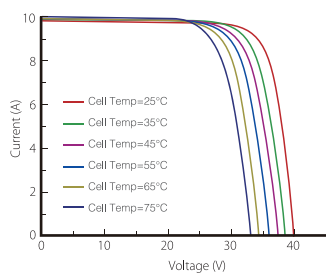
Coefficient de température d'Isc	+0.057%/ C
Coefficient de température de Voc	-0.286%/ C
Coefficient de température de Pmax	-0.370%/ C

## Mechanical Loading

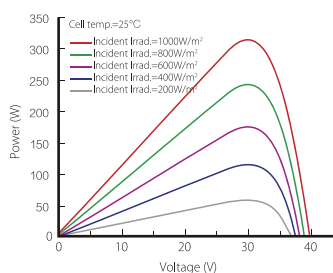
Charge statique maximale de la face avant	5400Pa
Charge statique maximale de la face arrière	2400Pa
Essai de grêlon	Grêlon de 25mm à la vitesse de 23m/s

## Courbe I-V

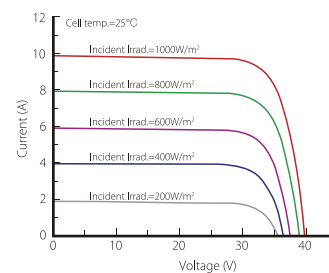
Courbe courant-tension (LR6-60HPH-310M)



Courbe puissance-tension (LR6-60HPH-310M)



Courbe courant-tension (LR6-60HPH-310M)



**LONGI Solar**

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Product Service

# CERTIFICATE

No. Z2 099333 0045 Rev. 03

## Model(s):

LR6-72HV-xxxM, (xxx=335-360, in step of 5)  
 LR6-60HV-xxxM, (xxx=280-300, in step of 5)  
 LR6-72PH-xxxM, (xxx=340-380, in step of 5)  
 LR6-60PH-xxxM, (xxx=285-315, in step of 5)  
 LR6-72HPH-xxxM, (xxx=365-395, in step of 5)  
 LR6-60HPH-xxxM, (xxx=300-325, in step of 5)  
 LR6-72OPH-xxxM, (xxx=385-400, in step of 5)  
 LR6-60OPH-xxxM, (xxx=335-350, in step of 5)  
 LR6-72HPH-xxxMC, (xxx=375-390, in step of 5)  
 LR6-60HPH-xxxMC, (xxx=305-325, in step of 5)  
 LR4-72HPH-xxxM, (xxx=420-440, in step of 5)  
 LR4-60HPH-xxxM, (xxx=350-370, in step of 5)  
 xxx is standing for rated output power at STC.

## Parameters:

Fire Safety Class:	Class C according to UL790.
Safety Class:	Class II
Max. System Voltage:	1500V DC
Test Laboratory:	Yangzhou Opto-Electrical Products Testing Institute. No.10 West Kaifa Road, Yangzhou, 225009 Jiangsu, P.R.China.
Construction:	Framed, with Junction box, cable and connector.

## Tested according to:

IEC 61215-1(ed.1)  
 IEC 61215-1-1(ed.1)  
 IEC 61215-2(ed.1)  
 IEC 61730-1(ed.2)  
 IEC 61730-2(ed.2)  
 EN 61215-1:2016  
 EN 61215-1-1:2016  
 EN 61215-2:2017  
 EN IEC 61730-1:2018  
 EN IEC 61730-1:2018/AC:2018-06  
 EN IEC 61730-2:2018  
 EN IEC 61730-2:2018/AC:2018-06

## Production Facility(ies):

099605, 099626, 099606, 090968, 001192, 002875, 096558, 102892, 097323, 103410, 103841

TÜV SÜD TÜV SÜD TÜV SÜD TÜV SÜD TÜV SÜD TÜV SÜD TÜV SÜD TÜV SÜD TÜV SÜD TÜV SÜD TÜV SÜD TÜV SÜD TÜV SÜD TÜV SÜD TÜV SÜD  
 ZERTIFIKAT ◆ CERTIFICATE ◆ 認證證書 ◆ CERTIFICADO ◆ CERTIFIKAT ◆ CERTIFICADO ◆ CERTIFICAT

# Limited Warranty for Solar Modules

(Single Glass Series)

V08\_20190901

This Limited Warranty is suitable for the following LONGI Modules model	
LR6-60PE-xxxM	LR6-72PE-xxxM
LR6-60PH-xxxM	LR6-72PH-xxxM
LR6-60PB-xxxM	LR6-72PB-xxxM
LR6-60HP-xxxM	LR6-72HP-xxxM
LR6-60HPH-xxxM	LR6-72HPH-xxxM
LR6-60HPB-xxxM	LR6-72HPB-xxxM
LR6-66HP-xxxM	LR6-78HP-xxxM
LR6-66HPH-xxxM	LR6-78HPH-xxxM
LR6-66HPB-xxxM	LR6-78HPB-xxxM
<i>LR6-60HIH-xxxM</i>	<i>LR6-72HIH-xxxM</i>
<i>LR6-60HIB-xxxM</i>	
<i>LR4-60HPH-xxxM</i>	<i>LR4-72HPH-xxxM</i>
<i>LR4-60HIH-xxxM</i>	<i>LR4-72HIH-xxxM</i>
<i>LR4-60HPB-xxxM</i>	<i>LR4-60HIB-xxxM</i>

Supplier is committed to the following quality performance warranty for solar modules (hereinafter referred to as “modules”). The Product Warranty Term starts as of the delivery date as per INCOTERMS 2010 or 6 months after the modules are shipped out of the production plant, which the earlier date shall be effective (hereinafter short as the “Warranty Effective Date”).

### **1. Limited Product Warranty-Repair or Replacement within 10 years**

Supplier assures that under the conditions for regular application, installation, use and service, the integral module (including attached DC connectors, cables) can meet the demand of regular application, use and installation and have no defect caused by material and process within 120 months as of the Warranty Effective Date. If the modules get out of order or fail to operate due to material or process defects within 120 months as of the Warranty Effective Date, Supplier provides remedy, only repairing and replacing the failed modules after verification and confirmation by an independent testing institution agreed by Supplier and the customer in advance. The remedy of repair or replacement is the exclusive measure within this “Limited Product Warranty”, which does not involve assurance for the module power output. The power output assurance is to be specially elaborated in the Section 2 “Limited Warranty for Peak Power” below.

### **2. Limited Warranty for Peak Power - Limited Compensation**

Supplier provides power output loss assurance within 25 years as of the Warranty Effective Date. Power output loss is calculated by comparing the minimum “module nominal power under standard testing conditions” (short as nominal power) marked on the nameplate with the actual power output under standard testing conditions.

The annual attenuation is less than 2% within the 1<sup>st</sup> year from the Warranty Effective Date and is less than 0.55% from the 2<sup>nd</sup> year to the 25<sup>th</sup> year within the peak power warranty period. The output power can reach 84.8% in the last year of the 25-year peak power warranty period.

Supplier assures that any qualified module sold out can meet the power guarantee value mentioned above within 25 years of power warranty period from the Warranty Effective Date. If any power loss exceeds the guaranteed value verified by Supplier, and Supplier attributes such power loss to its material or process defects, or such power loss is further (required by customers) verified by the third party testing institution (agreed

by both the customer and Supplier), Supplier will make judgment at its discretion and take either remedial measures as (1) provide extra modules to make up for power loss as above; or (2) repair or replace the defected modules and provide the shipment free of charge to the initial delivery location.

The above-mentioned compensations in “Limited Warranty for Peak Power” are the sole and exclusive remedy measures.

Note: If any customer finds that the defective modules need to be returned before the treatment, the freight shall be borne on the customer. If the third party testing institution confirms that it is the responsibility within the scope of Supplier quality warranty, the shipping cost can be compensated as per the freight or related invoice provided by the customer.

### **3. Exceptions and Restrictions**

(a) All quality warranty claims shall be submitted to Supplier or Supplier authorized distributors in written form within but not beyond the warranty period in any cases.

(b) “Limited Product Warranty” and “ Limited Warranty for Peak Power” do not apply to modules in situations below:

- Improper use, misuse, negligence, intentional damage or accidents;
- Fabrication without permission, improper installation or application;
- The customers move the installed module or change the location of the module installed without any prior written consent or authorization by the supplier.
- Fail to follow the repair and recovery instructed by the producer;
- Fail to follow the Supplier maintenance instructions;
- Power failure, power surge, lightning, fire and flood, accidental damage or force majeure.

(c) “Limited Product Warranty” and “Limited Warranty for Peak Power” do not compensate costs as, any costs related to module installation, demounting and re-installation (except for those stated in the last part of Section 5) or custom clearance costs and other costs related to return and replacement of modules.

(d) Claims will be rejected if the module model and serial number labels are falsified, removed or blurred without written authorization by Supplier.

#### **4. Quality Warranty Scope**

Unless Supplier agrees on and signs and recognizes other obligations and liabilities in written form, the warranty clauses in this quality warranty will replace and exclude other explicit or implied assurances including but not limited to the merchantability assurance, or assurance for special purposes or applications, and other obligations and liabilities undertaken by Supplier. Supplier shall not be responsible for human injury or property losses nor for other losses or injuries caused by modules or module-related problems (including but not limited to any module defect or any defect caused by use and installation). Supplier shall not compensate any collateral damages, derived damages or special damages by any cause. Losses such as profit loss, production loss or revenue loss caused by product faults are excluded hereby. If Supplier makes compensation for customers, the accumulated compensation amount shall not exceed the invoicing price for a single module paid by the customer.

#### **5. Quality Warranty Performance**

If any customer proposes legitimate quality warranty requirements in accordance with the “Limited Product Warranty”, they shall send a written notice by registered letter to Supplier at the address below or send email to Supplier email address. The customer shall attach proof of quality warranty herewith, corresponding module serial number and purchasing date and provide the invoice marked with clear purchasing date, price, module model and Supplier seal or signature.

If modules need to be shipped to Supplier for testing, repair or replacement, Supplier shall provide the return merchandise authorization (RMA) to the customer. Supplier will not accept returned modules without RMA. With approval of the customer service department, the reasonable, normal and proved shipping cost (including return cost and re-shipping cost of repaired and replaced modules) of modules related to “Limited Product Warranty” and “Limited Warranty for Peak Power” will be compensated by Supplier to customers.

#### **6. Transferability**

The clauses of this “Quality Warranty” will cover end users and can be transferred to any successive owners if the module’s installation position is unchanged and the



inheritance or transferring relations can be sufficiently proved.

## **7. Severability of Clauses**

Should a part or a clause of the “Quality Warranty” is considered invalid or ineffective or not executable, or this part or clause to some people or some conditions is deemed invalid or ineffective or not executable, this situation shall not affect effectiveness of other parts or clauses of the “Quality Warranty”. In this case, the other parts or clauses in this “Quality Warranty” or the applicability of this “Quality Warranty” are considered independently effective.

## **8. Dispute Resolution**

If any dispute occurs with quality warranty claims, one of the domestic first-class testing institutions such as TÜV SUD, Intertek, UL, CQC and CGC shall be invited for verdict of the final claim. All the cost shall be borne by the losing party unless otherwise stipulated in the verdict. Supplier reserves the right for the final interpretation.

Further dispute resolutions shall be executed by the applicable legal jurisdiction agreed upon in the sales contract signed by both parties.

## **9. Alteration**

The repair, replacement or the provision of extra modules does not mean that the warranty period is renewed and the original warranty period shall not extend. Any replaced modules are possessed by Supplier and shall be treated or disposed of at its own discretion. In case Supplier has stopped producing the same model as the defective modules which the claim is made against, Supplier shall keep the right to provide the modules of other models (different sizes, color, shape or power), either new brand or original brand.

## **10. Force Majeure**

If Supplier fails to perform or postpone performing sales articles or this “Quality Warranty” in the event of fire, flood, storm, typhoon, lightning, natural disaster, change of public policies, terrorism, war, riot, strike, or unavailability of proper and sufficient labor and materials or due to any other reasons or situations out of control of Supplier, Supplier shall not take any responsibilities for customers or any third party. In this case, Supplier shall not take any responsibilities for end users or any third party in any form.

Note: “Peak power” is the maximum power of solar module under the standard testing

conditions (STC). Standard testing conditions refer to as:

- (a) Spectrum amplitude AM1.5
- (b) 1000W/m<sup>2</sup> irradiance
- (c) Irradiance at the correct angle and the cell temperature is 25°C.

Testing is done at the terminal of the junction box according to IEC61215 (equivalent to GB/T 9535). Supplier's calibration and testing standard are effective on the manufacturing date of the solar modules. Supplier's calibration standards are consistent with the approved standards by international institutions. During the period of 'Limited Warranty for Peak Power', measurement uncertainty shall be counted when determining module's output power, according to standard IEC 60904.

Block B, No.8989 Shangji Road, Xi'an Economic and Technological Development Zone, Xi'an, Shaanxi, China.

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