

# 2024

# AESOLAR

# LIMITED WARRANTY

- PHOTOVOLTAIC
- MODULE
- PRODUCTS

AESOLAR  
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# LIMITED WARRANTY STATEMENT PHOTOVOLTAIC MODULE PRODUCTS



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## 1. Warranty Start Date and Validity

### 1.1. Warranty Start Date

Warranty starts when the modules arrive at the initial buyer or within 6 months of the modules leaving the factory for shipment, whichever date is earlier.

### 1.2. Validity

This warranty covers all orders made between the date of this publication and the release of a newer document version, which means that these warranty terms are not valid for the modules sold prior to the date of this publication.

## 2. Module Products

This Global Limited Warranty shall only apply to the following Products:

### 2.1. P-type Mono PERC single-glass module products

AExxxME-120, AExxxME-132, AExxxMD-144, AExxxMD-132, AExxxMD-120, AExxxMD-108, AExxxMD-132E, AExxxMD-108E, AExxxMC-120, AExxxMC-144, AExxxMD-144BS.

### 2.2. P-type Mono PERC double-glass module products

AExxxME-120BD, AExxxME-132BD, AExxxMD-144BD, AExxxMD-132BD, AExxxMD-120BD, AExxxMD-108BD, AExxxMC-144BD, AExxxMC-120BD.

### 2.3. N-type Mono HJT double-glass module products

AExxxTME-132BDS.

### 2.4. N-Type Mono TOPCon module products

AExxxCMD-108BDS, AExxxCMD-120BDS, AExxxCMD-144BDS, AExxxCMD-108BDE, AExxxCMD-108, AExxxCMD-120, AExxxCMD-144, AExxxCMD-108E, AExxxCME-132BDS, AExxxCME-132, AExxxCMER-96BDE, AExxxCMER-96BDS, AExxxCMER-132BDS, AExxxCMER-108BDE, AExxxCMER-108BDS, AExxxCMER-96BDE-I, AExxxCMER-96BDS-I, AExxxCMER-120BDS-I, AExxxCMD-L144BD, AExxxCMD-72BD, AExxxCMD-96BD.

### 2.5. N-Type Mono Back Contact module products

AExxxICMD-108BDE, AExxxICME-132BDS.

## 3. Limited Product Warranty - Repair, Replacement, or Refund Remedy

### 3.1. Warranted Products

Subject to the terms and conditions of this Limited Product Warranty, AESOLAR provides to the Buyer a Repair, Replacement, or Refund service with a term of 15 years for the modules contained in 2.2, 2.3, 2.4 and 2.5, and 12 years for the modules in 2.1, starting from the Warranty Start Date.

Module AExxxCMD-108BDE, AExxxCMD-108BDS, AExxxCMER-96BDS and AExxxCMER-96BDE are covered by a 25 years product warranty and 30 years of performance warranty when installed on a rooftop in Europe.

## 3.2. Warranty Terms

- 3.2.1. AESOLAR warrants to the original buyer (the "Buyer") that the modules shall be free from defects in materials and workmanship that influence module functionality under normal application, installation, use, and service conditions as specified in AESOLAR's installation manual.
- 3.2.2. AESOLAR guarantees that the modules will maintain mechanical integrity and stability in accordance with approved operation methods described in the company's installation manual. The glass of a module will maintain its integrity provided there are no indications of localized impacts or external forces. Additionally, the module's cable and connector plug will remain safe and operational provided the modules are professionally installed. Any damages caused by abrasion, improper installation, or animals are exempt from this warranty.
- 3.2.3. Claims under the warranty can only be accepted if the Buyer can provide proof that the malfunctioning or nonconformity of a module results exclusively from defects in materials and/or workmanship under normal application, installation, use, and service conditions specified in AESOLAR's installation manual. Any color change on the module or any other changes in module appearance does not represent defects, insofar as the change in appearance does not cause degradation of the functionality of the module. The module(s) can only be considered defective if directly confirmed by AESOLAR or an evaluation from a third-party testing institute, which must be priorly agreed upon by AESOLAR and the Buyer. If the product fails to conform to this warranty, AESOLAR will, at its option, either repair or replace the product, or provide an appropriate residual market value of the product(s) as compensation.

The residual market value is calculated as follows:

Residual market value = Current Market Price x (Product warranty time - Module Age) / Product warranty time

## 4. Limited Peak Power Warranty - Limited Remedy

### 4.1. Warranted Products

Subject to the terms and conditions of this Limited Warranty, AESOLAR provides to the Original Buyer a Limited Peak Power Warranty with a term of 25 years for the modules contained in 2.1, and 30 years for the modules contained in 2.2, 2.3, 2.4 and 2.5, starting from the Warranty Start Date:

### 4.2. Warranty Terms

- 4.2.1. To avoid misinterpretation, the terms used in the Limited Peak Power Warranty will be explained below:
  - a) Standard Test Conditions (STC): defined as irradiation of 1000W/m<sup>2</sup>, AM1.5 light spectrum, and a cell temperature of 25°C in accordance with IEC61215.
  - b) Nominal power output: the original power output measured by AESOLAR under Standard Test Conditions, which is indicated on the nameplate.
  - c) Actual power output: the power output during the warranty period under Standard Test Conditions, corrected for any measurement error.

d) Degradation rate: the percentage power loss of the module at the time of measurement in relation to the nominal power. The degradation rate is calculated using the following formula:

$$\text{Degradation Rate} = \frac{\text{Nominal Power Output} - \text{Actual Power Output}}{\text{Nominal Power Output}} \times 100\%$$

4.2.2. For the P-Type monocrystalline PERC single-glass module products mentioned in 2.1, AESOLAR guarantees the first-year power degradation is no more than 2.5% of its nominal power output. From year 2 to year 30, the actual annual power decline will be no more than 0.55%. By the end of year 30, the actual power output will be no less than 81.55% of the nominal power output.

4.2.3. For P-type monocrystalline PERC double-glass module products mentioned in 2.2, AESOLAR guarantees the first-year power degradation is no more than 2.5% of its nominal power output. From year 2 to year 30, the actual annual power decline will be no more than 0.45%. By the end of year 30, the actual power output will be no less than 84.45% of the nominal power output.

4.2.4. For N-type monocrystalline heterojunction double-glass module products mentioned in 2.3, AESOLAR guarantees the first-year power degradation is no more than 1% of its nominal power output. From year 2 to year 30, the actual annual power decline will be no more than 0.3%. By the end of year 30, the actual power output will be no less than 90.3% of the nominal power output.

4.2.5. For the N-type monocrystalline TOPCon technology module products mentioned in 2.4, AESOLAR guarantees the first-year power degradation is no more than 1% of its nominal power output. From year 2 to year 30, the actual annual power decline will be no more than 0.4%. By the end of year 30, the actual power output will be no less than 87.4% of the nominal power output.

4.2.6. For the N-type monocrystalline Back Contact double-glass module products mentioned in 2.5, AESOLAR guarantees the first-year power degradation is no more than 1% of its nominal power output. From year 2 to year 30, the actual annual power decline will be no more than 0.35%. By the end of year 30, the actual power output will be no less than 88.8% of the nominal power output.

4.2.7. The actual power output of the module shall be determined for verification using Standard Testing Conditions only. The actual power output measurement is either carried out by an AESOLAR facility or by an independent third-party testing institute recognized by AESOLAR and the Buyer. The third-party institute should have an accredited laboratory and possess at least an AAA+ sun simulator. Testing equipment tolerances will be applied to all actual power output measurements. The power tolerance for sun simulators in accredited laboratories is in a range of  $\pm 3\%$ . The Limited Peak Power Warranty for all bifacial modules shall only apply to their front-side power output.

In the event it is determined that there is a negative deviation of actual performance from the warranted values, AESOLAR will, at its option, compensate for such loss in power by either providing to the Buyer additional modules to make up the wattage loss or by repairing or replacing the defective modules or providing a financial reimbursement of the power gap as compensation. The compensation excludes other services which are not solely relevant to the defective modules, such as installation and transportation costs.

The reimbursement of the output power gap is calculated as follows:

Reimbursement of the output power gap = current Wp market price \* (guaranteed power output – actual power output)

## 5. Exclusions and Limitations

Warranty claims must in any event be filed within the applicable warranty period. Claims for compensation, such as the calculation of residual market value, apply at the earliest from the time of the complaint.

The Limited Product Warranty provided shall not apply to the following events:

- Modules that have been subject to misuse, abuse, neglect, or accidents, except when caused by AESOLAR or its affiliates that sold the modules during storage, transportation, or handling;
- Modules that have been installed, used, and serviced in a manner that fails to strictly comply with the relevant provisions of the AESOLAR module installation manual, product technical specifications, and guidelines;
- Modules that have been installed or serviced by installation personnel or other personnel who do not have the relevant qualifications in violation of the relevant laws and regulations;
- Modules that have been altered, repaired, modified, or used in processes or in combination with other products not supplied by AESOLAR in a manner not consistent with the written instructions of or without the prior written consent of AESOLAR or its affiliates;
- Modules that cannot be deemed authentic by their serial numbers or NFC chips i.e., fake or non-registered products;
- Modules that have been removed and re-installed at any location other than the physical location in which it was originally installed. This is also valid for the repaired, replaced, or supplemented new modules provided by AESOLAR under the Limited Warranty;
- The product type, nameplate, or serial number of the modules has been removed, altered, erased, or rendered illegible;
- The design or layout of the photovoltaic power plant system in which the modules are installed does not conform to the designated module application (certification), does not meet applicable requirements and generally accepted codes of practice for a safe and harmless operation, or is unsuitable in terms of system design, resulting in modules being continuously under shade;
- Modules that are positioned in such a way that the modules are regularly shaded or modules that are mounted in different directions or at different installation angles within a string.
- Color variations and deviations, both between cells within a module and between modules of the same product type, provided these are not caused by a production defect that leads to a reduction in module performance.
- Installations in which modules of different product types or different power classes are used in the same power string, unless it was agreed by AESOLAR before.

- Modules that are installed on mobile units (except photovoltaic tracking systems), such as vehicles, ships, etc., or on offshore facilities;
- Exposure of the modules to an extreme environment or damage caused by drastic changes in such environments, including but not limited to extreme heat, high UV doses, acidic rainfall (including snow), blowing sand, corrosiveness, salty air (e.g., marine environment), contaminated air, soil or groundwater, abnormal levels of oxidation, high wind speeds and snow loads, mold, or any nearby fire, explosion, smoke, or charring;
- Damage caused by force majeure such as natural disasters, including but not limited to lightning, hail, frost, snow, storms, tidal waves, floods, extreme temperatures, earthquakes, typhoons, tornadoes, volcanic eruptions, meteorites, ground motions, earth fissures, landslides, or animal damage;
- Direct or indirect damage caused by third-party vandalism or acts beyond the control of AESOLAR and its affiliates that sold the modules, including but not limited to accidents, riots, war, insurrection, and communal violence;
- Damage caused by an accident at the photovoltaic power plant in which the modules are installed due to any external factor. External factors include but not limited to voltage fluctuations, power peaks, excess current, power failure, poor electrical or mechanical engineering work, untrained personnel, or other faults occurring in the power supply system (whether such failures are caused by any act or omission of the Buyer or not);
- Damage caused by improper handling, installation, maintenance, or cleaning e.g., walking on the modules, leaving devices on top of the modules, or dropping things on the modules.

The limited warranties do not cover any shipping costs for the return to the factory of the PV modules or for reshipment of any repaired or replaced PV modules or costs associated with installation, removal, or reinstallation of the PV modules.

Warranty claims will not be honored if the type or the serial number of the PV modules has been altered, removed, or made illegible. All other statements made by AESOLAR (including without limitation those made in AESOLAR's promotional materials) in respect of the properties, performance characteristics, and other aspects of the modules are for illustration only and are not legally binding to AESOLAR. To the fullest extent permitted by law, AESOLAR excludes all implied representations and warranties with respect to the modules, their properties, and performance characteristics. To the fullest extent permitted by law, AESOLAR also excludes all liabilities to the Buyer and any user of the PV modules produced by AESOLAR for any loss of actual or anticipated profits, revenues, turnover, anticipated savings, business, or goodwill.

In case of glass breakage, the Buyer is required to make a static load calculation on the substructure.

## 6. **Warranty Claims**

### 6.1. Time Limit for Warranty Claims

All claims under the Limited Product Warranty must be submitted in writing to AESOLAR within the Limited Product Warranty Period, while all claims under the Limited Peak Power Warranty must be submitted in writing to AESOLAR within the Limited Peak Power Warranty Period. AESOLAR shall have the right to reject any and all warranty claims submitted outside of the respective warranty period.

## 6.2. Burden of Proof for Warranty Claims

In any circumstance, the burden of proof for any warranty claim made by the Buyer shall rest upon the Buyer. The warranty claim will only be accepted if the Buyer provides sufficient documentary evidence to fully demonstrate that the only cause of the fault or non-conformity in the modules is a breach of the Limited Product Warranty and/or the Limited Peak Power Warranty.

## 6.3. Claim Procedure

The Buyer is required to submit any problems with the modules to AESOLAR within 30 days of identification by contacting the company's after-sales team via the aftersales portal on the AESOLAR website ([ae-solar.com](http://ae-solar.com)). In case of any IT-issues, resulting in malfunctioning of the AESOLAR aftersales portal, a claim submission via email to [aftersales@ae-solar.com](mailto:aftersales@ae-solar.com) is accepted. For claim submission via email please use the submission guidelines provided as an attachment to this document.

The customer has to provide information of any incidents such as hail, storm, earth quake, war, explosion, vandalism, or any other external forces which might lead to module damages in the last 5 years of the time that the claim is submitted. The customer is obliged to provide all information relevant to the evaluation and to answer truthfully. Failure to provide AESOLAR with all information relevant to the verification of the facts may result in a delay in the processing of the complaint until all relevant information has been provided. In addition, misrepresentation or the provision of false information may lead to a complete and permanent loss of the customer's warranty claim.

The Buyer may be asked to send back some of the modules for testing in case AESOLAR deems it necessary. Therefore, in the event that the Buyer sends back the modules without an agreement, all costs will be borne by the Buyer. The freight costs will be paid by AESOLAR only after the confirmation from the company and in case the modules are shipped for factory testing. AESOLAR also reserves the right to send a representative to the installation site to carry out an investigation, in which case the Buyer shall actively cooperate with the relevant investigation. If the Buyer refuses AESOLAR's investigative action without reasonable cause, AESOLAR reserves the right to delay the claim process until the evidence has been confirmed. The Buyer may choose to send the modules to a third-party company for testing, provided that it is a legitimate company and an institute recognized by AESOLAR for inspection, or one which is agreed upon by both parties. The relevant costs are borne by the Buyer unless the third-party testing institute proves that the modules are indeed defective in terms of production and quality in the frame of warranty terms and the age of the modules, in which case the relevant costs of the testing procedure such as shipping, insurance, and testing fees of the testing modules will be passed on to AESOLAR.

## 7. Various

The repair or replacement of the PV modules or the supply of additional PV modules does not initiate the beginning of a new warranty term, nor shall the original terms of this limited warranty be extended. Any replaced PV modules shall become the property of AESOLAR. AESOLAR reserves the right to deliver another type (different in size, color, shape, and /or power) or to pay compensation based on the calculated residual market value in case AESOLAR discontinued producing the PV- module in question at the time of the claim.

Unless instructed by the supplier or required by law, the customer shall dispose of unused modules in accordance with the applicable regulations for the treatment and disposal of electronic waste at his own expense.

**8. Note**

In the event of any inconsistency between different language versions of the warranty terms, the English version shall prevail.

For any PV applications that is not mentioned in the AESOLAR installation manual, a permission and consultation from AESOLAR side is required to keep the warranty valid.

**9. Severability Clause**

If any section or clause of this “limited warranty” itself or its applicability to a specific situation or specific persons is invalid, ineffective, or unenforceable, this shall not affect the validity of other sections or clauses of this warranty. In this case, the applic deemed ability of other sections or clauses remains independent and effective.

## Annex 1: Product Warranty Extension Agreement

<b>Effective Date:</b>	[Insert Date]	
<b>Parties:</b>	<b>Manufacturer:</b>	[Manufacturer's Name]
	<b>Customer:</b>	[Customer's Name]

**Introduction:** This agreement serves to extend the standard warranty period for AESOLAR PV modules from 15 years to [ ] years, effective from the date of the original purchase.

**Extended Warranty Terms:** AESOLAR hereby extends the original warranty period of the following PV modules from 15 years to [ ] years.

**Covered Products:** This extended warranty applies to the following PV module models:

• <b>Model:</b>	[Insert Model Number]	• <b>Order Numbers:</b>	[Insert Orderl Numbers]
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**Coverage Details:** The extended warranty covers defects in materials and workmanship under normal use and service conditions. This extension includes:

- **Performance warranty:** The modules will maintain a specified performance level as per the original warranty policy.
- **Product warranty:** Coverage for material and workmanship defects.

**Conditions for Validity:** To ensure the validity of this extended warranty, the following conditions must be met:

- Proper installation by certified professionals.
- Use of the modules according to the manufacturer's specifications and guidelines.
- Regular maintenance as recommended by [Manufacturer's Name].

**Claims Process:** In the event of a warranty claim during the extended period, customers must follow the procedure outlined below:

1. Contact [Manufacturer's Name] at [Contact Information].
2. Provide proof of purchase and detailed information about the defect.
3. Submit any required forms or documentation.

**Disclaimers and Limitations:** The extended warranty does not cover:

- Damage caused by misuse, abuse, or neglect.
- Damage resulting from natural disasters, including but not limited to lightning, floods, and earthquakes.
- Unauthorized modifications or repairs performed by third parties.
- Cosmetic changes that do not affect performance or functionality.

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**Acceptance:** All conditions for validity, disclaimers, and limitations are subject to the terms outlined in the original warranty policy. By signing below, both parties acknowledge and agree to the terms of this warranty extension agreement.

**Signatures:**

[Authorized Representative Name]

[Title]

[Manufacturer's Name]