

**Guarantee terms for photovoltaic modules
Sharp ND-AC, ND-AF, NU-AC, NU-AF, NU-JB, NU-JC and NU-JD**

- Claimant: End customer -

SHARP Electronics GmbH, Nagelsweg 33-35, 20097 Hamburg (hereinafter referred to as “SHARP” or “guarantor”) places only the very highest demands on product quality. The SHARP photovoltaic modules ND-AC, ND-AF, NU-AC, NU-AF, NU-JB, NU-JC and NU-JD, henceforth referred to as “module(s)”, were carefully manufactured and subjected to final testing. SHARP therefore grants a **product guarantee (section A)** and a **power output guarantee (section B) for the modules**. The product guarantee relates exclusively to the material and the workmanship of the modules, while power losses of the modules, due to the aging process of the solar cells (so-called degradation), shall be the subject of the power output guarantee. **Paragraph C: Guarantee terms and conditions** contains the terms and conditions for both guarantees.

Section A: 15-year product guarantee

Under the preconditions of Section C, SHARP guarantees the claimant as defined in Section C Number 1.1 (hereinafter also referred to as the “Guarantee Claimant”) that the modules delivered to him / her within a period of 15 years from delivery (guarantee period) are free from defects in material or workmanship that would significantly impair their function (hereinafter referred to as “defect”).

No defect in the sense of this guarantee shall be considered common wear and tear of the module as well as color changes, or other changes in the module appearance (e.g. stains, abrasion, scratch, corrosion, moulds etc.), as long as the module can be operated safely and within the scope of the power output guarantee (Section B).

The product guarantee covers all components included in the delivery of the module (glass, cells, foils, frames, electrical components, junction boxes, plugs and leads).

Section B: 25-years power output guarantee

Under the preconditions of Section C, SHARP also provides the guarantee holder with an independent, voluntary guarantee for the power output of the solar cells installed in the module. For a period of 25 years from the date of delivery (guarantee period), SHARP guarantees that, as a result of the aging process of the solar cells (degradation), the following percentages of the declared minimum output power of the module shall not be undercut:

In the first year of the guarantee, 97,5% of the minimum output of the module is guaranteed. From the second guarantee year and for each additional year, the guaranteed power output is reduced by 0.7% of the initial minimum output. In the 25th year, 80,7% of the initial minimum output is still guaranteed. This guarantee ends automatically at the end of the 25th guarantee year.

A detailed list of the annual guaranteed values is shown in the following table:

Year	guaranteed percentage of minimum output power	Year	guaranteed percentage of minimum output power
1	97,5%	14	88,4%
2	96,8%	15	87,7%
3	96,1%	16	87,0%
4	95,4%	17	86,3%
5	94,7%	18	85,6%
6	94,0%	19	84,9%
7	93,3%	20	84,2%
8	92,6%	21	83,5%
9	91,9%	22	82,8%
10	91,2%	23	82,1%
11	90,5%	24	81,4%
12	89,8%	25	80,7%
13	89,1%		

Determination of the minimum power output and the guaranteed percentage:

100% of the minimum power output is calculated from the maximum power (Pmax) stated on the nameplate minus the tolerance also specified there.

The actual power output of the module is determined and verified under standard test conditions as follows:

Cell temperature 25 degrees Celsius; Irradiation 1,000 W/m² with AM-1.5 spectrum, on a system calibrated by SHARP (according to DIN EN IEC 60904).

Limitation of the power output guarantee:

Excluded from the power output guarantee are power reductions, which occur due to the wear or the aging of the solar cells themselves. Reductions of power output resulting from defects or aging processes of other components of the delivered modules are excluded from the power output guarantee as well as reduced power output due to external influences such as soiling and yellowing of the glass surfaces, shading effects, plant growth, natural or artificial coatings.

Section C: Guarantee conditions

1. General requirements

1.1 Claimant (guarantee holder):

The guarantees (product and power output guarantee) are declared to the end customer only. The guarantee statements do not apply to middlemen or installation companies or second purchasers of the modules. End users are all purchasers of modules, who have purchased them for their own use (and not for resale purposes) or who have purchased a building on which the modules were first installed. The module must be part of the photovoltaic system in which it was operated for the first time.

1.2 Spatial scope:

The guarantees apply only to modules first placed on the market by SHARP in the European Union or in the countries of Albania, Bosnia and Herzegovina, Iceland, Israel, Liechtenstein, Northern Macedonia, Montenegro, Norway, Serbia, Switzerland, Turkey, Ukraine and the United Kingdom and which have been installed in one of these countries.

1.3 Relationship to statutory warranty claims:

The guarantees are independent of statutory warranty claims which the claimant is entitled to against its seller, as well as regardless of non-contractual claims. They represent an independent, voluntary and gratuitous benefit of the guarantor to the claimant, which does not affect the quality agreements between the seller and the buyer.

1.4 Guarantee period:

Guarantee claims can only be asserted within the applicable guarantee period of 15 or 25 years, which begins with delivery to the claimant. An extension of the guarantee period, for whatever legal reason, is excluded.

2. Exclusions

2.1 The guarantees apply to normal and proper application, installation, operation and only under normal conditions of use. In particular, the guarantees do not include any impairment or power loss of the modules resulting from the module

- not having been installed properly in accordance with the applicable installation Manual,
- having been transported, installed or operated without observance of the recognized technical rules,
- not having been properly stored before or during installation,
- having been insufficiently ventilated or exposed to temperatures exceeding the maximum permissible temperatures according to the Operation Manual,
- having been used contrary to their intended purpose, e.g. used on mobile units such as vehicles and ships,
- having been modified or interfered without the explicit consent by SHARP (e.g. by applying additional stickers or inscriptions, drilling holes),
- having been connected to non-identical solar modules of other manufacturers or used with components other than the associated components,
- having been exposed to extreme environmental conditions (salty air, salt water, sandstorms, overvoltage, magnetic fields or similar),

- not having been properly cleaned in accordance with the instructions described in the applicable assembly instructions,
- having been exposed to force majeure (e.g. lightning, overvoltage, hail, fire, vandalism and damage caused by snow, frost and ice, natural disasters, rockfall).

A professional replacement of the connectors will not void the guarantee, however. In this case, the guarantees apply to all parts of the module, with the exception of the replaced connectors.

2.2 SHARP will not accept complaints if serial numbers or nameplates are missing or have been tampered with or the modules cannot be clearly identified for other reasons.

2.3 Claims under the guarantees cannot be transferred to third parties.

3. Guaranteed services

3.1 If there is a guarantee claim within the meaning of Section A or B, SHARP will, at its own discretion, remedy the claimant's claim at its own expense either by repairing the affected module or by providing a functioning new module of the same type. In the case of a serial defect or in the event that the originally delivered module type is no longer produced at the time of the guarantee claim, SHARP reserves the right to deliver another type of module (with possibly different characteristics), provided that guaranteed power output at the time of the claim can still be provided. The delivery of a new module will only be carried out step by step against return of the claimed module at the place where it was originally delivered to the guarantee holder. The returned module becomes the property of SHARP.

3.2 If a guarantee holder claims the power output of a module, relying on the power output guarantee provided in Section B of SHARP, he has the right, after consulting SHARP, to commission a DIN EN ISO/IEC 17025 accredited test laboratory to conduct a power output measurement under standard test conditions. Power measurements must be carried out in accordance with the currently valid group of DIN EN IEC 60904 standards. The measurement errors must be logged.

If the power output measurement is below the power output guaranteed by SHARP in accordance with Section B, and the accredited testing laboratory further acknowledges that the degradation of the power output is due to aging of the cell itself and not other circumstances leading to the exclusion of guarantees, and SHARP then recognizes the guarantee claim, or if such is determined by a court to be final, SHARP shall bear the reasonable cost of the power output measurement previously agreed between the guarantee holder and SHARP for the relevant module. If the claim is not justified, all costs incurred shall be borne by the customer.

3.3 There are no further claims from these guarantees.

3.4 For the newly delivered or repaired modules, only the remaining time of the original guarantee period applies.

4. Assertion of guarantee claims

4.1 The guarantee claims must be submitted in writing to SHARP Electronics GmbH, Nagelsweg 33-35, 20097 Hamburg/Germany, or by e-mail to solarservice@sharp.eu at the latest within three months after discovery of the defect or loss of output power, and in any case within the respective guarantee period. Late claims will not be considered. Timely receipt of the notification shall be decisive for compliance with the respective deadline.

4.2 A condition for the assertion of the guarantees is further that the claimant presents the original proof of purchase as well as delivery note.

At the request of SHARP, the Claimant shall also provide further documentation or information necessary to assert a guarantee claim (e.g. installation date, location and address of the installation, detailed description of the error observed, and if necessary, further information that may contribute to the analysis of the defect, photos of the damaged modules, the system wiring diagram, records of the monitoring system, etc.)

4.3 In the case of the assertion of the power output guarantee, the guarantee holder is also obliged to prove the power output loss below the minimum power output guaranteed by SHARP. The power output of the module has to be measured under standard test conditions (25° C cell temperature, irradiance 1,000 W/m² and spectrum SHARP PV Module - Product Guarantee/Power Output Guarantee – Release August 2020

AM 1.5 on a system calibrated by SHARP [according to DIN EN IEC 60904]). The power output is measured at each end of the preassembled connector of the module. The guarantee holder must comply with these standard test conditions for proof of undercutting the minimum power output.

4.4 The guarantee holder is only entitled to return the modules, with the prior written consent of SHARP.

5. Choice of law, jurisdiction, languages, entry into force and validity of the guarantee terms

5.1 With regard to the guarantees and legal disputes concerning these guarantees, the law of the Federal Republic of Germany shall apply, excluding the UN Sales Convention (CISG) and the conflict of laws provisions.

5.2 If the guarantee holder is a merchant, a legal entity under public law or a special fund under public law, the exclusive - also international - place of jurisdiction for all legal disputes concerning the guarantees shall be the registered office of SHARP in Hamburg.

5.3 SHARP shall make these guarantee conditions available in several languages for the convenience of the customer. In case of deviations, the German version shall be legally binding.

5.4 These guarantee conditions shall come into force on August, 1st, 2020. They apply to modules that are purchased by the claimant between this date, and the date of entry into force of the new guarantee terms. The date of proof of purchase of the modules is decisive.



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