



Warranty conditions for photovoltaic modules

Entitled party: End customer

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Scope of application

SHARP Electronics GmbH, Nagelsweg 33-35, 20097 Hamburg (hereinafter referred to as "SHARP") places the highest demands on product quality. The SHARP photovoltaic modules listed in Table 1, hereinafter referred to as "module(s)", have been carefully manufactured and subjected to a final inspection. SHARP therefore grants a **product guarantee (Section A)** and a **performance guarantee (Section B)** for the modules. The product warranty relates exclusively to the material and workmanship of the modules, while losses in module performance due to the ageing process of the solar cells (so-called degradation) are covered by the performance warranty. **Section C: Guarantee conditions** sets out the conditions that apply to both guarantees. The following table provides an overview of the scope of the product and performance guarantees over time. The content and scope of the product and performance guarantees are regulated in detail in sections A, B and C.

SHARP module series	Country group	type of installation	Product guarantee A			Performance guarantee B	
			25 years	15 years	12 years	B1 30 years	B2 25 years
NBJDxxx xxx: 540 - 595							
NBJExxx xxx: 665 - 680							
NBJGxxxB xxx: 430 - 460	EU+	Rooftop	X			X	
		Not on roof		X		X	
NBJGxxxR xxx: 430 - 460	Global				X		X
NUJCxxx xxx: 420 - 440							
NUJCxxxB xxx: 420-435							

Table 1: Overview of the applicable guarantees

Legend: Definition of "on roof" and "not on roof": Section C, No. 1.3 "EU+": Section C, No. 1.2

xxx: The module designation contains the power value within the limits specified in Table 1.

Section A: Product warranty

SHARP warrants to the claimant (hereinafter also referred to as the "Warranty Holder") in accordance with the warranty conditions in Section C that the modules delivered to the claimant are free from defects in material or workmanship that significantly impair their function (hereinafter referred to as "Defect") within the warranty period.

The guarantee period is:

- 25 years if the modules with the suffix "B" or "R" in the type designation (e.g. NUJC430B) are affected in EU+ countries or if the module is installed on a roof.
- 15 years if the module was not installed on a roof in EU+ countries.
- 12 years, in Global countries regardless of module and installation type.

The calculation of the aforementioned guarantee period is based on the regulation in Section C, Clause 1.5.

Normal signs of wear and tear of the module as well as colour changes or other changes in the module appearance (e.g. stains, abrasion, scratches, corrosion, mould, etc.) are not defects within the meaning of this product guarantee, as long as the module can be operated safely and the guarantee values specified within the scope of the performance guarantee (Section B) are not undercut. If the guarantee values specified in Section B are not met, the guarantee is based on the provisions of the performance guarantee in Section B.

The product guarantee covers all components (glass, cells, foils, frames, electrical components, junction boxes, plugs and cables) belonging to and supplied with the module at the time of delivery.

Section B: Performance guarantee

Subject to the conditions of Section C, SHARP also provides the Warranty Holder with an independent, voluntary warranty for the performance of the solar cells installed in the modules. SHARP guarantees for the respective warranty period, calculated from the date of delivery (warranty period), that as a result of the ageing process of the solar cells (degradation) the respective percentages listed will not fall below the specified minimum output power of the module. The guarantee period and the guaranteed percentages can be found in the section B1 or B2 applicable to the module.

Determination of the minimum output power and the guaranteed percentage:

100% of the minimum output power is calculated from the maximum power (Pmax) specified on the rating plate minus the tolerance also specified there. The actual output of the module is determined and checked under standard test conditions as follows: Cell temperature 25 degrees Celsius; radiant power 1000 W/m² with AM-1.5 spectrum, on a system calibrated by SHARP (according to DIN EN IEC 60904).

Limitation of the performance guarantee:

The performance guarantee only covers reductions in performance caused by wear and tear or ageing of the solar cells themselves. Reductions in performance resulting from defects or ageing processes of other components of the modules supplied are excluded from the performance guarantee, as are reductions in performance due to external influences such as soiling and yellowing of the glass surfaces, shading effects, plant growth, natural or artificial coatings.

B1: 30-year performance guarantee

SHARP guarantees a warranty period of 30 years for modules (see table 1). The calculation of the aforementioned warranty period is based on the regulation in Section C, Clause 1.5.

In the first year of the guarantee, 99% of the minimum output power of the module is guaranteed. From the second year of the guarantee and for each year thereafter, the guaranteed power is reduced by 0.4% of the initial minimum output power. In the 30th year, 87.5% of the initial minimum output power is still guaranteed. This guarantee ends automatically at the end of the 30th guarantee year.

A detailed list of the annual guarantee values is shown in Table 2 below:

Year	Guaranteed percentage of the minimum output power	Year	Guaranteed percentage of the minimum output power
1	99,00%	16	93,00%
2	98,60%	17	92,60%
3	98,20%	18	92,20%
4	97,80%	19	91,80%
5	97,40%	20	91,40%
6	97,00%	21	91,00%
7	96,60%	22	90,60%
8	96,20%	23	90,20%
9	95,80%	24	89,80%
10	95,40%	25	89,40%
11	95,00%	26	89,00%
12	94,60%	27	88,60%
13	94,20%	28	88,20%
14	93,80%	29	87,80%
15	93,40%	30	87,50%

Table 2: Performance guarantee 30 years

B2: 25-year performance guarantee

SHARP guarantees a warranty period of 25 years for modules (see table 1). The calculation of the aforementioned warranty period is based on the regulation in Section C, Clause 1.5.

In the first year of the guarantee, 99% of the minimum output power of the module is guaranteed. From the second year of the guarantee and for each year thereafter, the guaranteed power is reduced by 0.4% of the initial minimum output power. In the 25th year, 89.4% of the initial minimum output power is still guaranteed. This guarantee ends automatically at the end of the 25th guarantee year.

A detailed list of the annual guarantee values is shown in Table 3 below:

Year	Guaranteed percentage of the minimum output power	Year	Guaranteed percentage of the minimum output power
1	99,00%	14	93,80%
2	98,60%	15	93,40%
3	98,20%	16	93,00%
4	97,80%	17	92,60%
5	97,40%	18	92,20%
6	97,00%	19	91,80%
7	96,60%	20	91,40%
8	96,20%	21	91,00%
9	95,80%	22	90,60%
10	95,40%	23	90,20%
11	95,00%	24	89,80%
12	94,60%	25	89,40%
13	94,20%		

Table 3: Performance guarantee 25 years

Determination of the minimum output power and the guaranteed percentage:

100% of the minimum output power is calculated from the maximum power (Pmax) specified on the rating plate minus the tolerance also specified there. The actual output of the module is determined and checked under standard test conditions as follows: Cell temperature 25 degrees Celsius; radiant power 1000 W/m² with AM-1.5 spectrum, on a system calibrated by SHARP (according to DIN EN IEC 60904).

Limitation of the performance guarantee:

The performance guarantee only covers reductions in performance caused by wear and tear or ageing of the solar cells themselves. Reductions in performance resulting from defects or ageing processes of other components of the modules supplied are excluded from the performance guarantee, as are reductions in performance 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 Beneficiary (holder of the guarantee):

The guarantees (product and performance guarantee) are declared exclusively to the end customer. The warranty declarations do not apply to intermediaries or installation companies or secondary purchasers of the modules. End customers are all those purchasers of modules who have purchased them for their own use (and not for resale purposes) or who have purchased a property on which the modules were first installed. The module must be part of the photovoltaic system in which it was first operated.

1.2 Spatial scope of application

The warranty conditions apply worldwide. For modules that were first placed on the market in the EU+ area and that were first installed in this area, these guarantee conditions contain partially deviating regulations. According to these warranty conditions, the EU+ area includes the European Union and the countries of Albania, Bosnia and Herzegovina, Iceland, Israel, Liechtenstein, North Macedonia, Montenegro, Norway, Serbia, Switzerland, Turkey, Ukraine and the United Kingdom.

1.3 Type of installation

Modules are only considered to be "mounted on a roof" if they are fully attached to a roof surface that is suitable for draining rain and is non-combustible. Other types of mounting are considered "not mounted on a roof".

1.4 Relationship to statutory warranty claims:

The guarantees exist independently of statutory warranty claims to which the claimant is entitled against the seller and independently of non-contractual claims. They represent an independent, voluntary and gratuitous service provided by SHARP to the claimant, which has no influence on the quality agreements between the seller and the buyer.

1.5 Calculation of the warranty period:

Warranty claims can only be asserted within the applicable warranty period in accordance with sections A and B, which begins with delivery to the claimant. An extension of the warranty period, for whatever legal reason, is excluded.

2. Warranty exclusions

2.1 The warranties apply to normal and proper application, installation and use and only under normal conditions of use. In particular, the warranties do not cover any impairment or loss of performance of the modules caused by the fact that the modules

- have not been installed correctly in accordance with the applicable installation instructions,
- were transported, installed or operated without observing the recognised rules of technology,
- were not stored properly before or during assembly,
- inadequately ventilated or the maximum permissible temperatures specified in the operating instructions have been exceeded,
- were used contrary to their intended purpose, e.g. on mobile units such as vehicles and ships,
- have been modified or tampered with (e.g. by affixing additional labels or inscriptions, drilling holes) without the express consent of SHARP,
- have been connected to solar modules from other manufacturers that are not identical in construction or components other than the corresponding components have been used,
- were exposed to exceptional environmental influences (salty air, salt water, sandstorms, overvoltage, magnetic fields or similar),

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

However, a professional replacement of the connectors does not lead to any exclusion of warranty. In this case, the warranty continues to apply to all parts of the module - with the exception of the replaced connectors.

2.2 SHARP will not recognise complaints if serial numbers or type plates are missing or have been tampered with or if the modules are not clearly identifiable for other reasons.

2.3 Claims arising from the guarantees cannot be transferred to third parties.

3. **Warranty services**

3.1 In the event of a warranty claim within the meaning of section A or B, SHARP shall, at its own discretion and at its own expense, remedy the claimant's complaint either by repairing the affected module or by supplying a functional new module of the same type. In the event of a serial defect or in the event that the originally delivered module type is no longer produced at the time of the warranty claim, SHARP reserves the right to deliver another module type (with possibly different characteristics) with which the performance guaranteed at the time of the claim can still be provided. The delivery of a new module shall only be made concurrently against the return of the claimed module to the place where it was originally delivered to the warranty holder. The returned module becomes the property of SHARP.

3.2 If a warranty holder complains about the performance provided by the module with reference to the performance guarantee granted by SHARP in Section B, he has the right, after consultation with SHARP, to commission a test laboratory accredited according to DIN EN ISO/IEC 17025 with a performance measurement under standard test conditions. Performance measurements must be carried out in accordance with the currently valid group of standards DIN EN IEC 60904. The measurement error must be recorded.

If the performance measurement results in a value below the performance guaranteed by SHARP according to section B and if the accredited test laboratory further confirms that the reduction in performance is due to ageing of the cell itself and not to other circumstances leading to the exclusion of warranty, and if SHARP then recognises the warranty case or if such a case is legally established by a court, SHARP shall bear the reasonable costs of the performance measurement for the module in question previously agreed between the warranty holder and SHARP. If, however, the complaint is not justified, all costs incurred, including the costs for the performance measurement, shall be borne by the customer.

3.3 There are no further claims arising from these guarantees.

3.4 Only the remaining time of the original warranty period applies to the newly delivered or repaired modules.

4. **Assertion of warranty claims**

4.1 Warranty claims must be made in writing to SHARP Electronics GmbH, Nagelweg 33-35, 20097 Hamburg, Germany, or by e-mail to solarservice@sharp.eu within three months of discovery of the defect or loss of performance and within the respective warranty period. Late claims will not be considered. Timely receipt of the notification is decisive for compliance with the respective deadline.

4.2 A further prerequisite for the assertion of guarantees is that the claimant submits the original proof of purchase and delivery note.

At the request of SHARP, the claimant must also provide further documents or information that are necessary to understand a warranty case (e.g. the date of installation, location and address of the installation, exact description of

the observed fault and, if applicable, further information that can contribute to analysing the fault, photos of the damaged modules, the circuit diagram of the system, recordings from data acquisition, etc.).

4.3 In the event of a claim under the performance guarantee, the warranty holder is also obliged to provide evidence of the loss of performance below the minimum performance guaranteed by SHARP. The module outputs are measured under standard test conditions (25° C cell temperature, irradiation 1,000W/m² and spectrum AM 1.5 on a system calibrated by SHARP [according to DIN EN IEC 60904]). The power is measured at the ends of the pre-assembled connectors of the module. The warranty holder must comply with these standard test conditions in order to prove that the minimum power is not exceeded.

4.4 The Warranty Holder is only authorised to return modules with the prior written consent of SHARP.

5. Choice of law, place of jurisdiction, languages, entry into force and period of validity of the guarantee conditions

5.1 The law of the Federal Republic of Germany shall apply to the warranties and to legal disputes concerning these warranties, excluding the UN Convention on Contracts for the International Sale of Goods (CISG) and the conflict of laws.

5.2 If the Warranty 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 warranties shall be the registered office of SHARP in Hamburg.

5.3 SHARP provides these warranty conditions in several languages for the convenience of customers. In the event of discrepancies, the German version shall be legally binding.

5.4 These warranty conditions come into force on 1 November 2024. They shall apply to modules purchased by the beneficiary between this date and the date on which new warranty conditions come into force. The date of the proof of purchase of the modules is decisive.



Peter Thiele
President