

PRODUCT AND PERFORMANCE WARRANTY

● APPLICABLE TO PANELS MANUFACTURED BY AREPL

1. WARRANTED PRODUCTS

AREPL PV panels are supplied with limited product and linear performance warranty. Module model numbers covered under this warranty are mentioned in the table below:

DHOOP PP 36	Blue Opal Series DHF-72H	Blue Sapphire Series DHF-60 HG
DHOOP PP 48	Blue Sapphire Series DHF-72HG	Blue Opal Series DHF-54H
DHOOP PP 60	Blue Opal Series DHF-66H	Blue Sapphire Series DHF-54HG
DHOOP PP 72	Blue Sapphire Series DHF-66HG	Blue Opal Series DHF-48H
DHOOP PM 72	Blue Opal Series DHF-60H	Blue Sapphire Series DHF-48HG

2. LIMITED PRODUCT WARRANTY

- ▶ AREPL PV modules made with 60, 72, or 144 cells shall have 12 years product warranty against any manufacturing defect, starting from warranty start date (refer "validity section XIII"). If any modules fail to perform as per product specifications owing to any manufacturing defect and is eligible and fulfilling the warrantee terms than AREPL will at its sole discretion upon due compliance of the warrantee claim procedure by customer and upon verification of such claims by AREPL, it shall either:
 - a. Repair the module or replace it; or,
 - b. As compensation, will refund the depreciated price of the solar module paid by the customer.
- ▶ The replacement referred herein in this warrantee shall be as per the depreciated power of the solar panel. Any type of deterioration in appearance of the product (including any aesthetic defects, strain, rust, spot, scratches, mechanical wear, snail) or any other changes in the product occurring after delivery to the customer or the physical damage do not constitute defects under this limited warranty. These types of changes in solar module do not lead to any deterioration in the operational capabilities of the modules.

- ▶ In case of glass breakage, claim shall only be enforceable to extent that there was no external cause (natural or manmade) for the breakage. The foregoing remedies shall be AREPL's sole and exclusive obligation, and the customer's sole and exclusive remedy, for any module's failure to conform to the Limited Warranty in this Section II, and any repair or replacement shall not extend the warranty period set forth herein. Section II of warranty section does not warrant specific power output, it is exclusively covered in section III of the linear power warranty.

3. LINEAR POWER / PERFORMANCE WARRANTY

- ▶ From the start of defined warranty date, the first year power performance of Poly crystalline PV module is 97.5%, after that from year two (2) till year twenty five (25), the degradation is 0.68 % per year decrease from the nominal power output of the solar module and in the ending of 25th year with the 81.18% of the nominal power tested under STC of 25 °C, 1.5 AM, 1000 W/m² as mentioned in the PV Module product datasheet. Solar module performance warranty table is attached in "Section XV" of this document.
- ▶ The first year Power performance of mono crystalline PV module is 97.00% after that from year two (2) till year twenty five (25) the maximum degradation is 0.68% per year from the nominal power output of the solar module, in 25th year ending with the 80.68% nominal power tested under STC of 25 °C, 1.5 AM, 1000 W/m² as mentioned in the PV Module product datasheet.
- ▶ The first year Power performance of Bifacial PV module (front side only) is 99.2%, after that from year two (2) till year thirty (30) the degradation is 0.40% per year maximum from the nominal power output of the solar module, in 30th year ending with the 87.6% nominal power tested under STC of 25 °C, 1.5 AM, 1000 W/m² as mentioned in AREPL does not give warranty on the power generated from rear side the PV Module product datasheet.
- ▶ The degradation Rate is $DR = 1.00 - [(PO_{act}) / (PO_n)]$; PO act Actual Power at STC Conditions as mentioned in section IV. PO_n = Nominal Power.

4. LIMITED REMEDY

- ▶ Solar module performance warranty table is attached in "Section XIV" of this document for all Poly Crystalline (DHOOP Series), Mono Crystalline (DHOOP Series), Bifacial (BLUE SAPPHIRE Series), Monofacial (BLUE OPAL Series) PV Modules.
- ▶ Above and after the warranty start date as mentioned in section XIII of this document, AREPL further warrants if within the defined period in Section III. above any Solar Module power output goes less than the nominal power performance as printed on the original product label and the output power warranted in Section XIV Warranted Power (WP) and if such reduction in output power noticed below the WP due to any manufacturing defect in materials or workmanship under normal application, use and service conditions, AREPL will remedy such decrease in power, at it's discretion by

a) Repairing the defective module or replacing the module, or,

b) Post taking corrective actions to overcome the reduction in output power, AREPL can provide additional module to the customer so that degraded power is compensated by additional modules. In such case it shall be within the scope of the customer to mount additional PV module at his own cost and expenses.

- ▶ For determining the output power of the solar module, measurements must be based on the STC (Standard Test Conditions) of 1000W/m² irradiance with cell temperature of 25 °C and Air mass of 1.5AM light spectrum and the measurement shall be in accordance to the IEC 60904 standard and shall account for measurement system based on the EN 50380 standard.
- ▶ The forgoing remedies shall be AREPL's sole and only obligation and the customer's remedy, for any module failure to confirm to the warranty in Section III and repair or replacement shall not extend the Warranty period set forth herein.

5. EXCLUSIONS AND LIMITATIONS

- ① In addition to any other exclusion, limitations or conditions set forth in this Limited Warranty, the following exclusions and limitations, inclusive but not limited to, apply hereto:
 - ▶ All warranty claims must be received within the applicable warranty period for this warranty to be effective.
 - ▶ This Limited Warranty does not apply to any module which, in AREPL's sole judgment, has been subjected to:
 - a. Misuse, neglect or accident, tampering, abuse, misuse;
 - b. Improper handling, transportation or storage;
 - c. Improper installation or application, alteration;
 - d. Non-compliance with instructions in the installation manual.
 - e. Any type of repair or modifications by someone other than authorized service technicians of AREPL;
 - f. Installation of solar module in direct contact with the salt water, that is offshore (e.g. platforms) and marine (e.g. boats, piers) applications, or contamination resulting from exceptional exposure to salt water or other chemicals.
 - g. Fire, Power failure, surges, installation failure, lightning, floods, natural disaster, vandalism, accidental breakage, load of heavy snow, damage or any other cause which are outside control of AREPL;
 - h. Willful misconduct or negligence or other improper acts or omissions of the customer, its employees or agents, or other third parties.

- ② It is responsibility of customer (and / or its forwarding company) to inspect and accept the solar modules supplied by AREPL. Any claim linked or related to damages in the packaging, like impact on pallets AREPL will only accept if this occurs during delivery at site itself and if transportation under AREPL scope.
- ③ In all other cases, damages should be claimed from the forwarding company or insurance company. The customer has to lodge such complaints within 48 hours of module received at site.
- ④ If any solar module serial number has been altered, removed or made illegible, in that case warranty claim will be not be approved by AREPL.
- ⑤ All modules will be sold only as per data sheet and any criteria outside data sheet will not be covered under limited product or linear power warranty Purchase order should be produced with packaging list mentioning the serial number to claim the warranty.
- ⑥ For warranty to be honored to customer, this serial number of solar module should remain intact and untampered.

6. LIMITATION OF WARRANTY SCOPE

- ▶ Disclaimer This limited warranty is expressly the exclusive warrantee and supersedes any other representation oral or in writing, direct and indirect warranties including but not limited to warranties of merchantability, title, noninfringement and fitness for particular purpose, use or application, and all other obligations or liabilities on the part of AREPL, unless such other obligations or liabilities are expressly agreed to in writing, and signed and approved by AREPL.
- ▶ Limitation of Liability The physical damage of whatsoever nature to the modules shall not be covered under this warrantee. AREPL shall have no responsibility or liability at all for damage or injury to person or property for any other type of loss or injury, results from any cause whatsoever arising out of related to any module including any type of defect in solar module, including without laminations, during using or installation of Solar module. To the maximum extent permitted by applicable law, under no circumstances shall AREPL be liable for incidental, consequential or special damages, howsoever caused, even if AREPL has been advised of or reasonably could have foreseen such damages. Loss of use, loss of profits, loss of production and loss of revenues are hereby specifically, and without limitation, excluded to the maximum extent permitted by applicable law. Notwithstanding anything contained elsewhere in this document, AREPL's aggregate liability, if any, for damages or otherwise shall not exceed the amount paid by the customer for the module that gave rise to the warranty claim.

7. WARRANTY CLAIM SUBMISSION AND VERIFICATION

① Report of a warranty case

The report shall include the following information along with duly filled warrantee claim form:

- a Name and address of the First CUSTOMER, INSTALLER, SELLER. A copy of the invoice and purchase order both are mandatory with reference to the claimed module serial numbers / module type or purchase agreement and installation agreement.
 - b A copy of the installation test report following minimum requirements of IEC 62446 / IEC 60364-6.
 - c A copy of the periodical maintenance reports as recommended or required by regional regulations or legal requirements and acceptance protocol of handover after the installation was finished and the system connected to the grid with all relevant measured system data.
 - d A copy of the MODULE TYPE and Serial number(s), Quantity of the respective PV-module(s). A copy of the Address of the place of installation of the respective PV-module, in as far as this address differs from the address of CUSTOMER.
 - e A short but clear description of the problem at hand and what is claimed, as well as a short description of the tests which may have already been performed and with which tools, as well as their results.
 - f In particular, regarding a material defect: High quality pictures of the defective PV-module which show the defect including pictures of the system and surrounding environment.
 - g In the case of a low power output: information regarding the PV-generator, the inverter, the circuitry / layout (please see the installation documentation for this which you should have received from your INSTALLER) as well as the pictures of shadowing situation at the location.
 - h . The requested warranty performance and reason of claim, etc.
- 2 The report of a warranty case is to be addressed to one of the Contact-Addresses of AREPL, listed as mentioned in section XV of this document.
 - 3 Deadline for claim submission: A warranty case is to be reported within 1 weeks after becoming aware of the circumstances which constitute a warranty case. The timely receipt of the report by AREPL shall be decisive. The deadline shall met if the report is received by AREPL via fax or email in advance.

8. CLAIM VERIFICATION

Upon receipt of the claim, where AREPL is satisfied of such claim becoming eligible for warrantee than it shall proceed to honor the claim to the extent eligible.

Where AREPL decides to test the Modules to ascertain the warrantee claim than the customer shall without any demur send the warrantee claimed Modules to the factory premises of the AREPL at its cost for testing purpose.

9. TECHNICAL DISPUTES

If any dispute occurs between AREPL and Customer related to the validity of any claim under the warranty clauses, In this case an ISO 17025 accredited test laboratory which is recognized by AREPL shall be called upon to judge the claim of customer. Any measurement of solar module will be done under STC (Standard Test Condition) and according to the IEC 60904 standards. All the expenses and fees associated in calling agencies like ISO 17025 accredited laboratories for the judgment of claim will be borne by the customer only.

10. GOVERNING LAW AND DISPUTE RESOLUTION

The warrantee policy shall be governed by the laws of Republic of India. Any and all disputes arising out of warrantee policies, its enforcement or interpretation shall be settled by binding arbitration under the Indian Arbitration and conciliation Act 1996 as amended up to date. Arbitration shall be conducted by a sole arbitrator to be appointed in accordance with the provisions of the Said Act and the place of Arbitration shall be Goa only and the language of arbitration shall be English. All the proceedings pre arbitration or post arbitration shall be exclusively subjected to the courts in Goa alone.

11. MISCELLANEOUS

Under whatsoever circumstances the overall liability of AREPL if any under this Warrantee shall not be more than 100% of the total price paid for any individual module. The replaced module shall become the property of AREPL. If AREPL discontinued manufacturing of a particular size module, AREPL will replace with a different size and model within 50 days from the registered date of receipt of the complaint subject to other terms hereof.

12. WARRANTEE TRANSFER

This limited warranty is transferable to any other owner of the module provided the modules installed remains at its original location. Any transfer is subject to all the exclusions, limitations and conditions set forth herein.

13. VALIDITY

This Limited & Linear warranty applies to modules which are manufactured by AREPL with production date of 01 November, 2016 onwards. The warranty start date under this warranty shall start from the date of supply. This limited & linear warranty is valid until the revised version issued by the AREPL. AREPL reserves the right to revise the warranty conditions without giving any prior notification to the customer.

LINEAR POWER / PERFORMANCE WARRANTY AREPL					
Year	Warranted Power Performance values of Multi Crystalline Modules (%)	Warranted Power Performance values of Mono Crystalline Modules (%)	Year	Warranted Power Performance values of Multi Crystalline Modules (%)v	Warranty of Mono Crystalline Modules(%)
1	97.50	97.00	14	88.66	88.16
2	96.82	96.32	15	87.98	87.48
3	96.14	95.64	16	87.30	86.80
4	95.46	94.96	17	86.62	86.12
5	94.78	94.28	18	85.94	85.44
6	94.10	93.60	19	85.26	84.76
7	93.42	92.92	20	84.58	84.08
8	92.74	92.24	21	83.90	83.40
9	92.06	91.56	22	83.22	82.72
10	91.38	90.88	23	82.54	82.04
11	90.70	90.20	24	81.86	81.36
12	90.02	89.52	25	81.18	80.68
13	89.34	88.84			

BIFACIAL WARRANTY			
Year	Warranty of Bifacial Modules (%)	Year	Warranty of Bifacial Modules (%)
1	99.20	16	93.20
2	98.80	17	92.80
3	98.40	18	92.40
4	98.00	19	92.00
5	97.60	20	91.60
6	97.20	21	91.20
7	96.80	22	90.80
8	96.40	23	90.40
9	96.00	24	90.00
10	95.60	25	89.60
11	95.20	26	89.20
12	94.80	27	88.80
13	94.40	28	88.40
14	94.00	29	88.00
15	93.60	30	87.60

CONTACT : **Email:** arepl@agrawalgroupgoa.com

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: www.agrawalrenewableenergy.com

ADDRESS : Agrawal Renewable Energy Pvt Ltd, DHOOP building, next to sai service, Curti, Ponda, Goa 403401 India.