



Warranty for TITAN Crystalline PV Modules effective from 1 April 2011

1. Warranty Scope and Specifications

1.1 Warranty Scope: Titan Standard PV Solar products covered under this Warranty are as follows:

1.1.1 Poly crystalline PV Module types

M6 Family Series (305Wp to 150Wp): M6-72, M6-60, M6-54 & M6- 36

1.1.2 Mono crystalline PV Module types

S6 Family Series (250Wp to 150Wp): S6-60, S6-54 & S6-36

S5 Family Series (250Wp to 95Wp): S5-96, S5-72, S5-60, S5-54 & S5-36

1.2 Solar Panel specifications: This shall be in accordance with Titan's relevant Specifications as mentioned in the data sheets of the product at the time of product delivery.

Pmp: "Peak Power at STC" is the power in Watt peak that a PV module generates at its Maximum Power Point at "STC" defined as:

- (a) Light spectrum of AM 1.5,
- (b) An irradiation of 1.000 W per m² at right angle incidence
- (c) A cell temperature of 25°C.

The measurements are carried out in accordance with IEC 61215:2005 as tested at the cable connectors as per calibration and testing standards of Titan valid on the date of manufacture of the PV-Modules.

2. Limited Product Warranty – Ten Year Repair / Replacement Remedy

Titan Energy Systems Limited (Titan) warrants its Photovoltaic Modules (MODULES), including factory assembled DC connectors and cables to be free from defects in materials and workmanship that materially impede their functioning under normal application, installation, use and service conditions as mentioned in the Installation & Maintenance Manual. Any deterioration in the appearance of the Module including scratches, strains, rust, mold including optical deterioration of any type which might occur after delivery to buyer will not qualify as defect of the Module if the extent of such deterioration doesn't materially impair the functioning of the Module. Titan certifies that every module is dispatched only if it meets Titan's "Acceptance Criteria".

If MODULES do not perform as stated by Titan at the time of sale or up to the period ending one hundred and twenty (120) months from date of sale as shown in the invoice to BUYER, Titan shall at its discretion, either repair or replace such Solar Module. The repair or replacement remedy shall be the sole and exclusive remedy provided under the "Limited Product Warranty" and shall not extend beyond the 120 (120) months period set forth herein. This "Limited Product Warranty" does not warrant a specific power output,

which shall be exclusively covered under Clause 3 hereinafter ("Limited Peak Power Warranty").

3. Limited Peak Power Warranty –

3.1 Limited Remedy for 12 years

The Pmp of the Module given in the Test Report is as measured by the flash tester of Titan with a measurement uncertainty of $\pm 2\%$.

If, within a period of twelve (12) years from the date shown in the invoice to the BUYER any MODULE exhibits a power output less than 90% of the "Peak Power at STC" despite following the procedures given in Titan IOMM (Installation, Operations and Maintenance Manual), such loss in power if determined by Titan to be due to defects in material or workmanship, Titan will replace such loss in power by either providing additional MODULES to the Customer to make up for such loss in power, or by repairing or replacing the defective MODULE(s) at the sole discretion of Titan. In the event of such replacement or providing additional modules Titan reserves the right to offer any type of module with difference in size, form, colour, parts of the module or output if the type of the reclaimed module or parts of module is no longer produced at the time of complaint or claim.

3.2 Extended Limited Remedy for 28 years

The Pmp of the Module given in the Test Report is as measured by the flash tester of Titan with a measurement uncertainty of $\pm 2\%$.

Apart from the standard Limited Remedy of guaranteed 80% of the "Peak Power at STC" within a period of twenty five (25) years from the date shown in the invoice to the buyer TITAN offers this Extended Limited Warranty for 28 years due to the strong confidence on the reliability of its PV modules.

If, within a period of twenty eight (28) years from the date shown in the invoice to the BUYER any MODULE exhibits a power output less than 75% of the "Peak Power at STC" despite following the procedures given in Titan IOMM (Installation, Operations and Maintenance Manual) as on the date of invoice provided that such loss in power is determined by Titan to be due to defects in material or workmanship, Titan will replace such loss in power by either providing additional MODULES to the Customer to make up for such loss in power or by repairing or replacing the defective MODULE(s), at the sole discretion of Titan. The remedies set forth in this clause shall be the sole and exclusive remedies provided under the "Limited Peak Power Warranty". In the event of such replacement or providing additional modules Titan reserves the right to offer any type of module with difference in size, form, color, parts of the module or output if the type of the reclaimed module or parts of module is no longer produced at the time of complaint or claim.

NOTE: The Pmp measurement referred in 3.1 and 3.2 above is apart from the measurement uncertainty assessed to exist in the International Module Inter (Lab) - Comparison studies known as of date.

4. Exclusions and Limitations

- a. The "Limited Product Warranties" and the "Limited Peak Power Warranties" do not apply to any MODULES which have been subjected to:
 - i) Misuse, abuse, neglect or accident;



- ii) Alteration, improper installation practices (such as moving the modules by carrying with the terminal cables, walking over the modules, inadequate safety features such as blocking diodes/protection fuses to protect against ground loop currents, modules under shade for extended periods etc.,) or absence of industry standard practices etc.,
 - iii) Any non-observance or deviation of Titan's installation procedure as mentioned in Installation, Operation & Maintenance Manual (IOMM).
 - iv) Repair or modifications by someone other than an approved service technician of Titan or without Titan's explicit approval.
 - v) Power failure surges, lightning, flood, fire, natural calamities such as tornados, cyclones, earth quakes etc., accidental breakage or other events outside Titan's control.
 - vi) use on mobile units or shifting the modules to a different location/site/place from the place of first installation.
 - vii) installations or use in desert climate or in mountain regions or the UV irradiation covering the site of installation is more than the applicable global average of UV irradiation of year 2000 AD for tropical areas.
- b. The "Limited Product Warranty" and "Limited Peak Power Warranties" neither cover transportation charges nor any other costs for return of the MODULES, or for reshipment of any repaired or replaced MODULES or any costs associated with installation, removal or reinstallation of the PV-Modules.
- c. Warranty claims will not be honoured if the type and serial number of the MODULES have been altered, removed or made illegible. It is absolutely essential that the customer establishes that the defective modules are supplied by Titan.
- d. The return of any Solar Panel will not be accepted unless prior written authorization had been given by Titan.
- If required Customer has to do certain minimum tests as advised by Titan and passon the results to help Titan identifies the problem for quick remedy of defect.
- e. Warranty claims do not apply for Solar Modules marked Grade 'B' and any other solar panels which are not covered under Warranty scope.
- f. Warranty is not applicable for any action(s) or cause regardless of form arising out of or in any way connected to this Limited Warranty if such action(s) is initiated or brought up by the end user/customer after 6 months from the date when the defect or causes of action first occurred.
- g. The repair or replacement of the MODULES or the supply of additional MODULES does not cause the beginning of new warranty terms, nor shall the original terms of this "Limited Warranty for PV-Modules" be extended. Any replaced MODULES shall become the property of Titan on free lease to the user till the end of their life time. If Titan disowns the ownership of these modules at the end of the original warranty period or do not claim them or leaves them in the possession of the customer as goodwill at its sole discretion then the modules become the property of the customer/lease holder and the recycling or disposal of such modules is the responsibility of the lease holder and not that of Titan.

5. **Limitation of Warranty Scope**

These "Limited Warranties for PV Modules" as set forth herein are expressly in lieu of and exclude all other express or implied warranties, including but not limited to warranties of merchantability and of fitness for particular purpose, use, or application, and all other obligations or liabilities on the part of Titan, unless such other obligations or liabilities are



expressly agreed to in writing signed and approved by Titan. Titan shall have no responsibility or liability whatsoever for any damage or injury to persons or property, or for other loss or injury resulting from any cause whatsoever arising out of or related to the modules, including without limitation to any defect(s) in the module, or from use or installation. Under no circumstances shall Titan be liable for incidental, consequential or special damages, howsoever caused. Loss of use, loss of profits, loss of production, loss of revenues are therefore specifically but without limitation excluded. Titan's aggregate liability, if any, in damages or otherwise, shall not exceed the invoice value as paid by BUYER for the single unit of MODULE.

6. Customer Claim Procedure:

- a. In any event, all warranty claims must be filed within the applicable warranty period with complete details as per Titan's Customer Claim Form.
- b. The claim shall be mailed to the concerned Account Manager/Executive identified for the Customer with Copy marked to marketing@titan-energy.com. The claim can be sent directly to Titan at the address as given below within the applicable warranty period.

Titan Energy Systems Limited
16, Aruna Enclave, Trimulgherry,
Secunderabad, AP, India 500 015

- c. Titan commits to analyze the feedback or Claim and interact with Customer for speedy remedial.

7. Severability

If a part, provision or clause of this "Limited Warranty for PV Modules", or the application thereof to any person or circumstance, is held invalid, void or unenforceable, such holding shall not affect and shall leave all other parts, provisions, clauses or applications of this "Limited Warranty for PV Modules", and to this end such other parts, provisions, clauses or applications of this "Limited Warranty for PV Modules" shall be treated as severable.

8. Disputes

In case of any discrepancy in a warranty-claim, a first-class international test institute such as Fraunhofer ISE in Freiburg, Germany, TÜV Rhineland in Cologne, Germany or ASU Arizona State University shall be involved to evaluate with binding effect whether the Product has a defect. All fees and expenses shall be borne by the losing Party, unless otherwise awarded. The final explanation right shall be borne by Titan.

9. Force Majeure

Titan shall not be responsible or liable in any way to the CUSTOMER or any third party arising from any non-performance or delay in performance of any terms and conditions of sale, including this "Limited Warranty for PV Modules", due to acts of God, war, riots, strikes, and any unforeseen event beyond its control, including without limitations any technological or physical event or condition which is not reasonably known or understood at the time of the sale of the modules or the claim.

