

Suncycle GmbH

SERVICE OVERVIEW



01 Suncycle

Suncycle offers specialized test and repair services for the solar industry. With more than 3 million repaired modules owns Suncycle an unique experience in customer service and maintenance. From the inspection of single modules to the handling of the complete after-sales-process, Suncycle is your best choice.

The PV test center in central Germany is equipped with the newest instruments and our service teams are available Europe-wide. Suncycle Solar Services features important commercial applications that guarantee the successful “repowering” of modules.

Suncycle offers bankable O&M packages which secure highest financial returns for investors. Our engineering department delivers the full range of technical due diligence in complex system environments. Complete After-Sales-Management from hotline to 3rd level support is offered in major languages. Suncycle ticket system ensures maximum transparency and seamless process documentation. Professional delivery together with fast response times give our customers the highest service standard in the industry.

Our customers are premium manufacturers and EPCs, as well as distributors, insurances and local installation companies.

How may we help you?

We are available 24/7 at: service@suncycle.eu

Our modern production facility is built upon 260.000 sq. ft. of factory space.



02 Test Procedures

The following test procedures are offered in the PV Test Center. For every order received, individual parameters are created in the system workflow. Separated by serial number, each module is processed through the selected test station and a detailed report is created.

VISUAL CONTROL

Modules are first unpacked and scanned. The easy-to-identify failures are detected through cleaning and visual control then documented by camera image.

Examples include: loose junction boxes, defect cables, frame deformation, cell inclusion and breakage, de-lamination, visual hotspots and backside scratches.

ISOLATION-TEST BASED ON IEC 61215

The modules are placed in a water bath where a 1,000-volt direct current is applied. Only modules that maintain resistance for two minutes pass the isolation test. These test criteria match all IEC requirements.

INFRARED-TEST

During the infrared test, the modules are powered backwards. This procedure identifies weak spots in the cell area, connectors and junction box. So-called 'hot spots' are visible in the camera as red areas that reflect a higher temperature than their surroundings.

FLASH-TEST (FLASH BASED ON IEC 60904)

Measuring the current performance (Wp) is standard procedure for every module handled in the PV Test Center.

Modules are flashed with a calibrated flasher, measuring electrical outcome and wattage under standard conditions (STC).

SPECIFICATIONS BASED ON IEC 60904 REPEATING TOLERANCE +/- 0,8 %

- Off-load voltage U_{OC}
- Short circuit current I_{SC}
- Voltage at the best operation point U_{MPP}
- Electricity in the operation point with maximum wattage I_{MPP}
- Maximum reachable wattage P_{MPP}
- Fill factor

ELECTROLUMINESCENCE-TEST

Damage in the cell is visually exposed through the electroluminescence test.

Modules are photographed by three NIR-CCD cameras with such high definition that they detect even the tiniest cracks. The test documentation includes photos of the whole module, as well as each damaged cell.

EL-tests can also be used to serve as sample testing for new modules before their assembly. Precautionary testing is much less expensive than post-application exchange.



03 REPAIR PROCESS

A number of certified repair processes are available for the refurbishment of a module. In the case of larger quantities a suitable repair process will be individually coordinated with the manufacturer's quality department.

COATING (SEALING)

Failures on the backside of a module can be caused by scratches or dotting of the back sheet or a loose junction box. In all cases, the solution is to apply a thin film of special coating material. The success of the performed repair is double-checked through a subsequent isolation test.

CHANGE OF DIODE

The diodes can lose their function through electrical surge (lightening). Replacement is performed according to manufacturer specifications. The successful repair is documented with a final test.

JUNCTION BOX, CABLE / CONNECTOR AND FRAME

Damages to junction box, cable / connector or frame can often be repaired. Our semiautomatic framing table fits several different formats and manufacturer requirements.

04 PRICING

Test and repair work is invoiced per work step (station). Pricing is specific to labor and raw materials for each repair. We offer rebates depending on the quantity of units serviced. Prices are calculated to be significantly below comparable costs for a new module.

Suncycle is an industrial service provider with comparative advantage to other providers in flexibility, pricing and volume served.





05 Engineering

Suncycle service teams are located throughout Europe to perform defect and performance analysis and are equipped with all necessary testing gear to provide comprehensive reports and calculate options for any repair strategy.

Suncycle Engineering performs yield assessment and damage expertise after storm, hail or fire incidents. Work encompasses assessment of scope of damage and necessary repair works.

Technical approvals – including completeness of documentation, planning and details of execution according to standardized protocols.

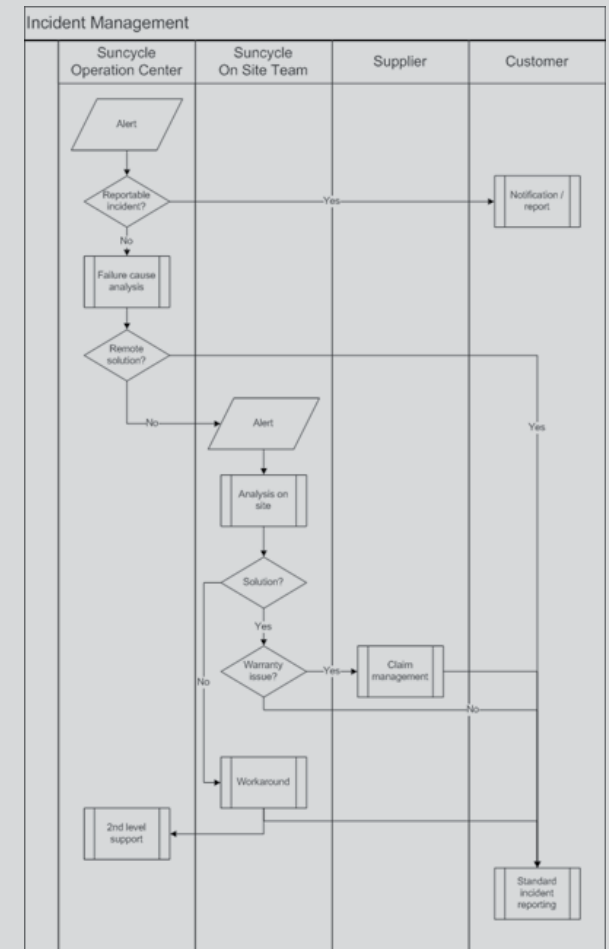
Our Compact Test Unit (CTU) brings lab quality testing directly to the PV-site. Electroluminescence and Flash-tests uncover hidden damages and measure actual power output. The CTU is primarily used in case of assumed damages of installed systems and to perform spot checks of new modules before their installation.

06 Operations & Maintenance

Suncycle is the perfect partner to take responsibility for your O&M needs. Maximize uptime and power generation while preventing unanticipated equipment failures is the goal of our service offering.

Choose the level and scope of service that is right for you. By designating one source to oversee the maintenance requirements for your sites, you save time, save money, and improve operational efficiency.

Comprehensive reporting shows transparent month- and year-statistics, provides target vs. actual yield comparison and all maintenance reports.



07 After Sales Management

Suncycle offers manufacturers the complete outsourcing of their after-sales-management. Beginning with the process design we standardize each step of the claim handling. Individual requirements are considered and matched against the Suncycle market experience.

Our technical hotline in major languages is well trained and can guide customers through the first level of problem solving. Suncycle 2nd and 3rd level support by experts addresses more complex issues and can deep dive to the level of root-cause-analysis if needed.

Suncycle end-to-end ticket system is the backbone of our After Sales Management. Our solution features easy configurable APIs, rights management, complete electronic file, escalation routes and comprehensive reporting cockpit.

Suncycle experience ranges from modules to inverters, optimizers and storage systems.



08 Module Sale

From our projects we have access to modules in “good as new” condition, which have excellent test results and complete performance documentation. Those module stocks – from single pieces up to 1 MW – are an attractive possibility to increase the ROI of your investment.

Especially with refurbished products, trust in quality becomes the main issue. This is why all products are tested and only the best receive our “quality stamp of approval”.



Please register by mail at service@suncycle.eu for our current inventory list of refurbished products.



09 Warehousing and Supply Chain Solutions

Suncycle provides support along the entire transport chain from its adjacent logistic centres.

PV modules have special characteristics that require careful storage and handling. Our staff provides skilled handling in all aspects of receiving, shipping, selection, labeling and packaging.

Suncycle provides core competencies in coordination, commissioning, warehouse and transport management.

Customers use Suncycle as a logistics hub, combining the warehousing with the services of the test center. Sample testing can help identify and eliminate quality issues before the product is shipped and mounted.

Through our complete supply chain solution, our costumers reduce their inventory while at the same time maintaining the best possible transparency down to serial number basis.

10 Contact Information

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