Research, Development and Dissemination

- Characterization and analysis of different types of batteries
- Analysis of different types of luminaire for Solar Lighting Systems
- Research on performance enhancement of Solar Lighting Systems
- Development of efficient, new generation, and modular PCB designs for Solar Lighting applications
- Outdoor testing and comparative assessment on performance of various SPV technologies
- Development, testing, and analysis of tracking systems for optimal utilization of SPV arrays for integration into stand-alone SPV-based systems

Services Provided

- Long-term performance evaluation of different Solar Lighting Systems
- Consultancy for setting up of laboratory for testing of Solar Lighting Systems
- Design and development of customized Solar Lighting Systems based on field and market assessment
- Performance qualification test for Solar Lighting Systems as per IEC/LGQTM test methods
- Product acceptance tests at field level
- Training programmes and Industry exposure visits for technician, trainer and academia
- Academic training for undergraduates and post-graduate level degree projects

SOLAR LIGHTING LABORATORY
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SOLAR LIGHTING LABORATORY

Committed to find cost effective, state-of-the-art and reliable Solar Lighting solutions through continuous development, evaluation and customization

teri

teri university

Mission

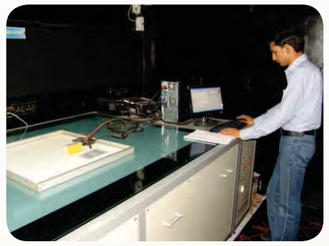
- Established as an independent testing and evaluation centre for Solar Lighting as well as other general purpose lighting systems
- Assess new emerging technologies, driving research and development in the Solar Lighting sector
- Act as knowledge expert to various lighting programmes
- Develop qualified and field proven professionals through specialized training and knowledge transfer

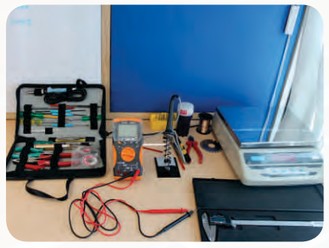
Highlights

- Supported by the Ministry of New and Renewable Energy (MNRE) for testing and long-term performance assessment of Solar Lighting Systems
- Affiliated to IFC's Global lighting programme, for testing and quality assurance of off-grid lighting products
- National Accreditation Board for Testing and Calibration Laboratories (NABL) accreditation for testing Solar Lighting Systems is under process
- Tested more than 108 models of solar lighting systems including Solar Lanterns, Solar Home Lighting Systems, Solar Task Lights, and Multi-purpose Solar Lights
- Collaboration with more than 10 industry partners and research organizations for developing cost effective Solar Lighting Systems, as of reference design
- Conducted number of training programmes in India, Africa and South-East Asia

Infrastructural Facilities

- Integrating Sphere
- Sun Simulator
- Environmental Chamber
- Data Acquisition System based test-bed for Solar Lighting Systems
- Data Acquisition System based test-bed for Solar Modules and Charging Stations
- Battery Analyser
- Rotary table with light meter for illuminance tests
- Light meter with Data-logger
- Hand-held equipment for battery state of charge measurement
- Pyranometer
- Power Quality Analyser
- Dark Rooms
- Current clamp meter for DC and AC current measurement
- DC Power Supply
- Oscilloscope
- Vibration Tester
- Digital Multi-meter
- Micro-controller kit and related software





Tests Conducted

Visual Screening	Overall Workmanship Internal & External Screening
Lighting Services	Light Distribution Characteristics Variation of illuminance at Distance Light Output Test (Luminous Flux)
Solar Module Characterization	I-V Characteristics Test
Usability	Full Battery Runtime Grid Charge Test Solar Charge Test Electro-mechanical Charge Test Circuit Protection Test
Mechanical Durability	Drop Test Switches and Connectors Gooseneck Test Strain Relief Test
Long-term Performance	Long-term Lumen Maintenance Test Long-term PV Module Performance Test Long-term Battery Performance Test
Battery Characterization	Battery Capacity Test Battery Efficiency Test Battery Analysis under different Climatic conditions

Long-term Illuminance Test Setup

Outdoor Solar Module Test Setup

Battery Test Setup