

Lighting Africa LED Testing Program

Nearly 600 million people in Africa lack access to modern energy. Lighting Africa, a joint International Finance Corporation and World Bank program, is helping develop commercial, off-grid lighting markets in Sub-Saharan Africa as part of the World Bank Group's wider efforts to improve access to energy.

The LRC was awarded a World Bank Group contract to perform laboratory testing of LED-based, off-grid lighting products developed by manufacturers for distribution through the Lighting Africa program. Testing is conducted according to the Lighting Africa Quality Test Method (LA-QTM), a comprehensive set of test methods created by Lighting Africa to verify product performance and assess product quality of off-grid lighting products.

For this project, the LRC developed customized testing set-ups to conduct product evaluations and provide performance results, as well as provide feedback on the test method and test development process.

LRC testing includes:

- Solar panel (I-V, Pmpp)
- Battery (capacity)
- Light source:
 - Spatial and angular illuminance distribution
 - Luminous flux
 - Lumen maintenance
- System:
 - System charging time
 - System discharging time
 - Durability test (switch, connector and mechanical)
 - Charge controller



LRC researchers tested PV panels under the standard testing condition of one sun level, 1000 w/m², and verified that the results met the manufacturers' claims.

The LRC is performing these evaluations on 30 types of products, 12 samples of each for a total of 360 test samples.

Sponsor

The World Bank Group (Contract #7157575)

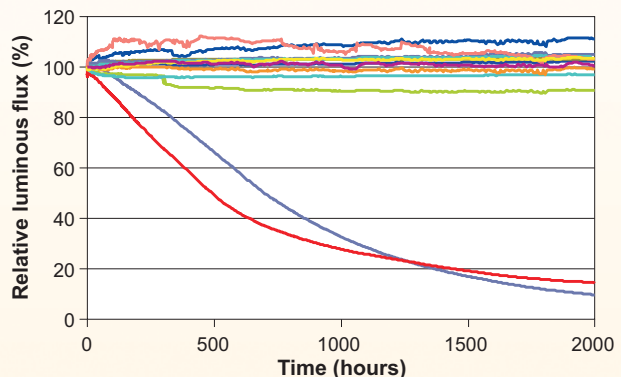


View LRC Project Sheets at
www.lrc.rpi.edu/resources/newsroom/projectsheets.asp

Lighting Research Center, Rensselaer Polytechnic Institute • 21 Union Street • Troy, NY 12180 • (518) 687-7100 • www.lrc.rpi.edu



Samples of off-grid LED lighting products being tested at the LRC for the Lighting Africa program.



Lumen maintenance of 13 off-grid LED lighting products over a 2000-hour testing period (average of 6 samples for each product).

The results of the LRC's tests will be used by the World Bank to provide feedback to manufacturers and institutional buyers for the region, and they may also help form the basis of a lighting quality seal recognizable by consumers as part of the overall Lighting Africa quality assurance strategy. This strategy supports market development, provides technical advisory services to quality oriented companies, and protects the interests of low-income consumers.

To learn more about Lighting Africa, visit www.lightingafrica.org.

Lighting
Research Center