



School of Engineering

IEFE Institut für Energiesysteme und Fluid-Engineering

Output measurement of photovoltaics modules in the field: Portable LED flasher

Initial conditions

The total nominal output of all modules in a solar plant determines the amount of power generated annually. If some of the solar panels no longer meet the nominal output limits indicated by the manufacturer, this is considered a loss in value of the solar power plant. Using the portable LED flasher, the affected modules can be found in the field in a cost-effective manner. The nominal output measurement makes it possible to seamlessly document the total output of the solar power plant.

Potentials

Panel manufacturers generally only provide replacements or financial compensation in case of unequivocally proven shortfalls with respect to the nominal output limits. The portable LED flasher can make it possible to deliver cost-effective proof. It is possible to conduct measurements for less than € 10 per solar panel. The reason for this is that this measuring method does not require that the panels are disassembled. This also eliminates potential damages due to disassembly, which would be necessary otherwise.

An additional advantage results from the immediate availability of results regarding the measured nominal output after the flash. Through this measuring technique, only the strand under examination is affected by a short-term, negligible shortage in yield.

The measurements using the portable LED flasher can be supported through additional reference measurements in a small number of panels. This is done in an external certified laboratory. Additionally, the functionality of the photovoltaics panel's bypass diodes can be tested using a procedure developed by IEFE.



Use of the portable LED flasher on a flat roof

Illuminated area	2m x 1.27m
Dimensions	2.21m x 1.50m x 0.10m
Time of illumination	10ms
Required power supply	115/230 VAC, 230W

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