

Technical Report on the Energy Performance of the VIVA SMART Bench

Introduction

VIVA SMART was developed with the primary goal of creating a system with very low consumption and maximum energy output for external devices. In this context, the technical decision was to design a CHARGE/DISCHARGE/STORAGE system rather than a mere STORAGE system, as is the case with typical residential or industrial photovoltaic systems.

System Features

The VIVA SMART system implements a sophisticated BOARD that manages its energy consumption. The system automatically decides which components need to be activated. A typical example is the disconnection of wireless charging when there is not enough energy in the system, or the dimming of LEDs based on the system's energy status.

Operation and Usage Scenarios

Daytime Operation

Assuming the system has a fully charged battery (approximately 6 hours of solar irradiation), it can recharge up to 12 mid-to-high-range mobile devices (e.g., iPhone 13 or Samsung S22). If exposed to full solar irradiation, the system has no limit on device recharging, as the current from the solar panel will be directly utilized. Under partial irradiation, the system can recharge up to an additional 6 devices.

Nighttime Operation

In the absence of solar irradiation, the system operates similarly, with a fully charged battery decreasing functionality based on usage. The first step down occurs at 30% battery (basic control functions still active), and complete shutdown happens at 10%.

Post-Full Discharge Irradiation

Designed as a CHARGE/DISCHARGE/STORAGE cycle, the system does not require many hours of irradiation to restart. Just a few hours (approximately 2) are sufficient for the system to resume functionality, unlike storage systems that take days to restart. VIVA SMART effectively provides service almost immediately by using irradiation linearly for system reactivation.

Eurocomitalia s.r.l.

Import/Export, illuminazione, arredo urbano, parchi gioco

Via Sicilia snc - 04010 Sezze Scalo (LT) - Italia - Tel. +39 0773.800033 - Fax +39 0773.1871096

IBAN IT 97 Y 03069 14700 100000003061 - www.eurocomitalia.it - info@eurocomitalia.it - eurocomitalia@legalmail.it



P.IVA /C.F. 0171651059
R.E.A. LT 105571
SDI M5UXCR1

Prolonged Absence of Irradiation

In prolonged irradiation absence, the system uniquely restarts and becomes fully functional with a minimum of 2 hours of irradiation. Unlike traditional systems that need several hours to restart, resulting in non-operational periods, VIVA SMART immediately resumes service, providing continuous functionality.

Conclusion

The VIVA SMART system is designed to offer uninterrupted service as long as there is partial irradiation, including days with low irradiation levels.

Eurocomitalia s.r.l.

Import/Export, illuminazione, arredo urbano, parchi gioco

Via Sicilia snc - 04010 Sezze Scalo (LT) - Italia - Tel. +39 0773.800033 - Fax +39 0773.1871096

IBAN IT 97 Y 03069 14700 100000003061 - www.eurocomitalia.it - info@eurocomitalia.it - eurocomitalia@legalmail.it