

Solar lighting solutions

UL 8801, Standard for Photovoltaic (PV) Luminaire Systems



In response to advances in technology and the growing interest in solar solutions, Luminaire Systems has brought PV lighting into focus. From residential applications to commercial and public areas and to remote rural areas where the need for lighting must be independent of infrastructure, reliable and practical PV lighting systems serve a critical need.

PV lighting has applications in multiple segments related to the lighting industry, including:

- Lighting manufacturers that design, brand or bring to market PV lighting systems, low-voltage luminaires and components (with or without integral batteries).
- Commercial component controls manufacturers, who sell to lighting manufacturers.
- Infrastructure component controls manufacturers who sell to lighting and controls brands for roadway, pedestrian right of way, and building area lighting applications.

UL 8801 defines the safety considerations and criteria for evaluating systems that include PV modules for gathering energy, batteries for storing that energy, LED luminaires to illuminate an area, and controls to manage the interaction between the module, battery, and luminaire. While separate certifications for each component can help abbreviate the system-level evaluation, UL 8801 also provides a path to certification that is not entirely reliant on the use of pre-certified components. This can help with vendor choices, save money, and bring products to market faster.

There are established and evolving safety standards for PV modules, batteries, luminaires and controls. As a system standard focused on specific outdoor applications, UL 8801 leverages the overlapping safeguards from the component standards to provide an optimal evaluation program to address the relevant safety concerns. This streamlining is intended to remove some of the near term supply chain and financial barriers that can otherwise frustrate new technology deployment. A bi-national (U.S. and Canadian) technical panel has been formed to oversee the maintenance of UL 8801, ensuring that the requirements continue to reflect the consensus view of system producers, regulators, distributors, installers, and safety professionals.

Our experienced engineers have the expertise to evaluate your simple or complex systems and help you with the safe and effective deployment of these technologies.





Why UL?

Rapidly evolving thinking around photovoltaic lighting and systems with sustainable solutions, energy efficiency and product safety—along with exciting technological advances—is driving the evolution of the lighting industry, providing greater opportunities and presenting growing challenges.

Our global network of laboratories allows us to offer full service for PV lighting uniquely and with both global reaches with local and regional support. We understand the distinct needs for PV lighting in different regions and the markets they want to penetrate, so as you prepare to go to market with your PV lighting products, partner with UL — we provide a variety of solutions to meet your lighting needs, including:

- Safety testing to UL 8801, IEC, EN and regional/national standards
- Energy efficiency
- Performance
- Global market access
- Connected lighting services

Visit us at [UL.com/pvlighting](https://www.ul.com/pvlighting) for more information, or contact us today for a quote to learn more about how UL can help your PV lighting plans.

In the Americas: LightingInfo@UL.com
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In Japan: CustomerService.JP@UL.com
In South Korea: Sales.KR@UL.com
In MEA: UL.MEA@UL.com
In South Asia: Sales.IN@UL.com



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