

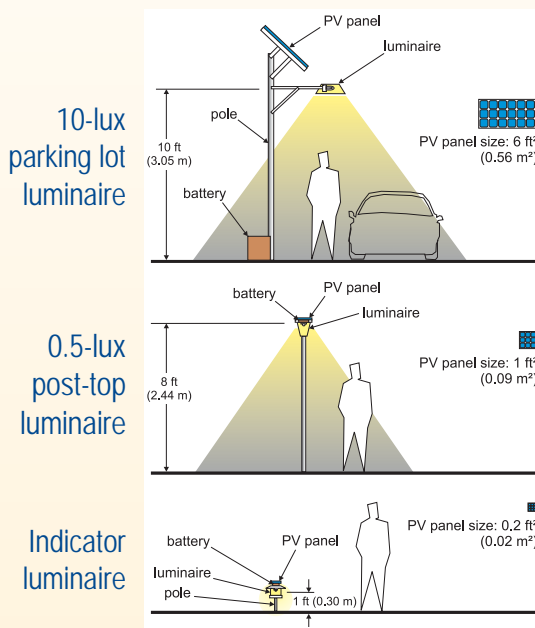
# Lighting Answers: Photovoltaic Lighting

**H**arnessing the sun's power through the use of photovoltaic collection systems can create a sustainable form of clean energy and reduce demand for utility-generated electric power. PV systems can also provide power to remote areas.

**Lighting Answers: Photovoltaic Lighting**, produced by the National Lighting Product Information Program (NLPPI), includes information and a process for selecting and specifying a PV lighting system for some outdoor lighting applications. This Lighting Answers also discusses issues to consider when deciding between PV power and utility grid power for lighting, appropriate expectations for illumination levels from PV lighting, and the technological possibilities, related costs, and maintenance and integration issues associated with PV lighting.



## Three types of PV lighting systems:



The report provides answers to questions about PV lighting systems such as:

- What is photovoltaic lighting?
- What are common beliefs about PV lighting systems?
- How do PV cells, PV panels, and PV lighting systems work?
- What kinds of batteries are used in these systems?
- What light sources and electric components are used?
- What should be considered when choosing PV lighting?
- How does PV lighting's cost compare to other lighting?
- What applications are most suitable for PV lighting?
- How does solar radiation vary by location?
- Does PV panel tilt angle/orientation affect performance?
- How is system efficacy calculated for various light sources?
- What application issues are related to PV lighting systems?
- What are the environmental and safety benefits/concerns?
- What information is provided in manufacturers' literature?
- What information is needed to specify PV lighting systems?
- How is the size of PV panels determined?

The report also presents a case study of the life cycle cost analysis to compare the cost effectiveness of PV-powered lighting systems with grid-powered lighting systems.

Lighting Answers reports are available at no cost at [www.lrc.rpi.edu/programs/NLPPI/publications.asp](http://www.lrc.rpi.edu/programs/NLPPI/publications.asp)

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