

IALA GUIDELINE G1064



The IALA G1064 Guideline provides an overview and guidance for use of Solar Led Lanterns, best defined as “Integrated Power System lanterns” (IPSL).

An Integrated Power System Lantern (IPSL) by definition is a LED marine lantern that should include all the following elements:

- **An autonomous power system that includes** a photovoltaic power source (usually integrated solar panels), power storage (usually VRLA batteries) and charge regulation.
- **An optical luminous system** that includes a LED light source and a lens system that focuses or disperses the light beam to obtain the desired characteristics.
- **A flasher** (control unit) that includes rhythmic character coding, Day / night switching capability and ability to accept external programming commands.
- **The possibility to isolate the power of the light**, to facilitate shipping and storage.
- **Options of the inclusion of GPS location and synchronization systems**, and communication and remote monitoring modules.

All the above should be housed on a single unit.



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Solar LED lanterns have some very advantageous characteristics for some situations:

- They can be really small and include all necessary elements for a lighted beacon operational capabilities.
- They are very durable, reliable and cost effective.
- **Led technology**, with his high efficiency and low consumption complement solar panels and VRLA batteries to facilitate a compact and small lantern with high performance.

In order to operate efficiently, these lanterns must be designed for a wide range of solar conditions (i.e. sunlight available to charge the lantern) while maintaining a specified optical output over the expected operating lifetime. These lanterns must match the application to ensure reliable operation.

The IALA establishes some basic criteria to decide if a Solar Led Lantern should be used in a given application. These lanterns are designed with some objectives in mind, and are most suitable for some determined uses.

The nominal range recommended by IALA is up to 5 nautical miles, lanterns that required higher ranges should be considered with an external autonomous solar system.

They should be used always in areas with good solar isolation, alternative solutions should be considered in areas that do not comply with this requisite. They are also a good solution for AtoN that have only a seasonal operational period.

Due to compact and lightweight design, they are especially suitable for areas with high risk or vandalism or theft. For the same reasons, they always should be considered for small buoys with limited weight carrying availability. In Emergency Wreck Marking Buoys this eases and facilitates the fast deployment of the temporal AtoN.

As a rule, Solar LED Lanterns should not be used in locations that suffer from icing or areas with poor isolation and shadowing effect caused by mountains.

More so, its use should be avoided in Aids to Navigation where nominal ranges greater than 5 NM or high duty cycle rhythmic characters are required.

