

IALA GUIDELINE G1064



The marine environment is very harsh on AtoN equipment, hard meteorological conditions, marine traffic and other factors like salinity and corrosion inflict wear and damage on the equipment if the design is not resistant to this kind of environment. In some cases, even impacts by passing ships and full sinking are a possibility. For this reasons, solar LED lanterns must be of a strong construction and highly resistant. One of the better options to achieve this

kind of characteristics is using a chassis of UV stabilized polycarbonate or similar synthetic material. Additionally, this kind of construction has the advantage of lower manufacturing cost over machined, cast, or extruded metal.

Solar LED Lanterns need to be sealed and resistant to water ingress according to standards such as IP67.

The possibility of battery replacement should be also considered when designing a Solar LED Lantern.

If the battery type used can generate flammable hydrogen gas while charging, the possibility of a build-up of hydrogen gas must be considered when exchanging the old battery for a new one. Batteries that do not have this kind of risk must be considered if possible, in other cases, venting measures (pressure and venting valves) should be applied.

While solar LED lanterns are designed as integrated units with a goal to be maintenance-free, certain maintenance procedures as regular cleaning and battery replacement may be necessary. Battery life depends primarily on ambient temperature and the type of battery. As a result, battery life can range from 2 to 8 years.



The system should be protected against reverse polarity if accidental battery voltage reversal does occur.

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The plastic or polycarbonate construction of the lenses, body and other parts should not require special cleaning materials and be chemically inert as much as possible.

Periodic cleaning of the solar panels and lens will ensure maximum power collection and light output.

The following IALA Guidelines should be considered when designing:

- Power systems for Aids to Navigation 1067-0
- Total electrical loads for Aids to Navigation 1067-1
- Power sources 1067-2
- Energy storage for Aids to Navigation 1067-3
- 1043 on Light sources used in Visual Aids to Navigation.