

## IALA GUIDELINE G1064



Every manufacturer of Solar LED lanterns publishes specification sheets that will include some of the following parameters:

### Light Intensity

Light intensity, or more accurately luminous intensity, is the quantity of visible light that is emitted in unit time per unit solid angle. Usually expressed in candelas (cd), this unit must be measured and published according to IALA Recommendation E200-3 on Marine Signal Lights Part 3 - Measurement.

### Range

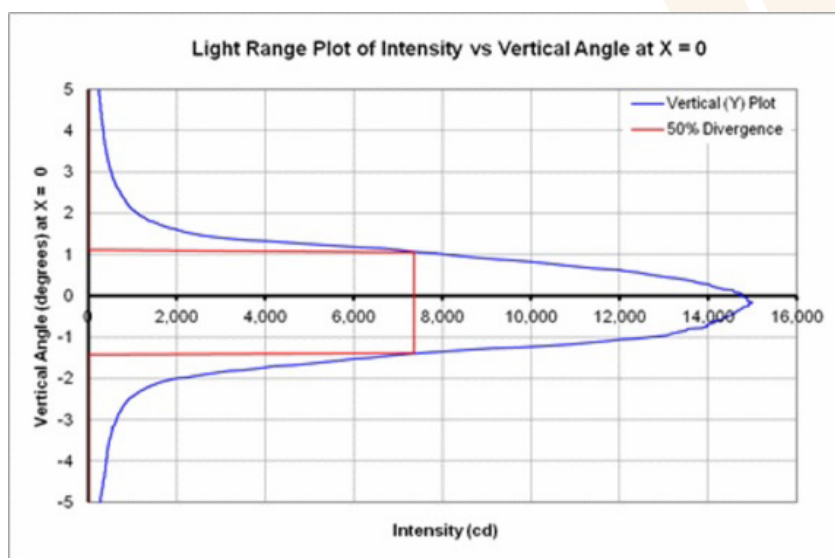
The light or luminous range is the maximum distance at which a light can be seen, as determined by the luminous intensity of the light, the atmospheric transmission factor, and the threshold of illuminance on the eye of the observer. This parameter is usually expressed in Nautical Miles as the nominal range. The nominal range of a light used as an aid to marine navigation is its luminous range in a homogeneous atmosphere in which the atmospheric transmission factor is  $T=0,74$ . Luminous range should be calculated and published according to IALA Recommendation E200-2 on Marine Signal Lights Part 3 – Calculation, Definition, and Notation of Luminous Range.



Ejemplo de una linterna LED solar de corto alcance

### Vertical beam divergence

Vertical beam divergence is the angle of the light beam between points where the intensity has fallen to a fraction of the maximum intensity within the beam. The vertical divergence is typically specified between the first points where the intensity falls to 50% of the maximum. should be measured and published according to IALA Recommendation E200-3 on Marine Signal Lights Part 3 - Measurement.



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### Horizontal output

Usually '360 degrees or omnidirectional', this is simply the azimuthal range over which horizontal output is measured while rotating the lantern.

### Autonomy

As detailed in IALA guideline 1067-0 Annex1. In this parameter is very important to establish clearly, what will be the autonomy taking into account the real conditions (power consumption, rhythm, color, solar isolation...) of the deployment site. This calculation can be done by the manufacturer, and revised by a capable AtoN manager. It can be expressed in hours or days.

### Latitude range

Expressed as an interval in degrees of latitude this is a rule-of-thumb range in which the solar LED lantern can be expected to operate normally. Is not a very common parameter due to its lack of precision, local insolation (sunlight) data is required to conclusively determine whether a lantern will have continuous normal operation.

### Temperature range

Expressed as a temperature range in Celsius and/or Fahrenheit within which the lantern is capable of operating normally or possibly at minimal function. Solar panel, battery, LED and electronic performance all degrade to varying degrees with extreme low and high temperatures.

### On / Off level

Expressed usually in lux, this parameter is the ambient light levels at which the lantern will switch between night (on) and day (off) mode. It can be measured with dedicated sensors or estimated through the solar panels voltages in the simpler designs. This parameter should be in accordance with IALA Guideline 1038.

### Light source

A brief description of the number, type and possibly the arrangement of LEDs and optical lens providing the optical output of the lantern.

### Chromaticity

Colour is usually expressed as being within certain general or preferred regions in the IALA recommendations E200-1.

### Rhythmic characters

Is the number of rhythmic characters the lantern can be programmed for. Some manufacturers offer user-configurable characters.

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### Power Management

Provides information on the electronic control module and its methods/technology for managing the lantern's power balance (to maintain energy in = energy out). Care must be taken to ensure that the power management system does not adversely affect the desired light output intensity in operational conditions.



### ADDITIONAL IMPORTANT SPECIFICATIONS

- **Solar Panels** - type, number, arrangement, wattage, UV protection
- **Battery** – type, number, amp-hours capacity, brand
- **Lens Material** - UV protection
- **Battery venting** - number, locations, type of seal (e.g. gortex)
- **Sealing** - type of seals, waterproof standards (e.g. IP67, Nema 6)
- **Weight** - kilograms and pounds
- **Construction** - materials and grade
- **Mounting** - number and bolt patterns
- **Lifetimes** - serviceable lifetimes in years;
- **Environmental** - compliance with environmental protections standards. Weight.
- **Dimensions**
- **Vibration and Shock**
- **EMC/ESD** - electromagnetic interference from sources such as VHF/UHF transmitters
- **Resistance to icing, wind, salt spray**
- **Method of programming** by the user
- **User replaceable parts** and limitations
- **Method of switching off** the light when not in use.