

OMEGALITE I

For orders or questions, please contact:

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Features and Specifications:

- 30 white Nichia LEDs with built-in 20° beams.
- Four power settings at 2.5 mA (1), 5 mA (2), 10 mA (3), and 20 mA (4) per LED.
- Voltage and current regulated circuit for maximum efficiency.
- LEDs are arranged in matched strings for even light output and maximum efficiency.
- Operates on battery voltages ranging from 3 V to 12 V. Custom wiring and reverse polarity protection instructions can be provided for those wishing to use their own battery configurations.
- Different battery options can be discussed – several different setups are currently in use by various people.
- Circuit is protected against polarity reversal.
- Extremely durable machined aluminum headpiece. Machined aluminum and polypropylene plastic battery case. Aluminum parts are anodized. Battery case latches are stainless steel.
- Headpiece and battery case are sealed to be waterproof in all caving situations. (Not intended for use as a dive light).
- Aluminum headpiece is thermally connected to the LED board to eliminate problems related to heat buildup and to ensure maximum operating efficiency of the LEDs.
- Stainless steel blade mount is provided.
- Internal push-button switch eliminates external moving parts.
- 4 C-cell battery case. Foam strips (not provided) can easily adapt case for use with 4 AA batteries
- Nickel-plated-brass battery contacts prevent corrosion.
- Four mounting screws are provided with battery case.
- Heavy-duty rubber power cord is sealed and clamped at both ends in the battery case and headpiece.
- Belt mount or helmet mount cord lengths are available for the battery pack. Other lengths are available by request – armpit harness, for example.

Price:

- Complete lamp: \$350.00 plus shipping and handling and tax for VA residents. This price includes a lamp and battery case with any length of cord for helmet mount or belt mount purposes.

Warranty:

- 3-year warranty against defects in workmanship. Warranty excludes normal wear-and-tear and maintenance, as well as lamp or battery case failure resulting from damage, destruction, or any modification by owner. Any damage due to custom wiring by the customer is not covered under this warranty. All lamps are tested and are shipped in good working condition. Replacement of o-rings, lenses and battery contacts are not included in the warranty, as these are parts that may require regular care, maintenance, and/or cleaning by the owner of the lamp.

Care and maintenance:

- Headpiece Care:
 - Very little care is required for the headpiece. Gently rinse the lens under running water to remove dirt. Periodically check the rubber switch-patch covering the push-button switch to make sure it is not cracking due to dry rot, and that the adhesive remains bonded to both the aluminum and rubber. Avoid storing the lamp in direct sunlight where the rubber patch may deteriorate.
 - If the rubber switch-patch becomes cracked or begins to separate from the lamp, the lamp should be repaired or returned for service as soon as possible.
 - In the event that the lens becomes so scratched and frosted that it becomes a problem (highly unlikely), a replacement lens and o-ring can be installed for a minimal fee, or it can be ordered and replaced by the user.
 - **Do not attempt to loosen or tighten the cord clamp on the headpiece.**
- Battery Case Care:
 - When not in use, store battery case with the lid open. The lamp uses a very small amount of current when in the 'off' position and could drain batteries over an extended period of time. Also, this keeps the sealing o-ring from taking a permanent compressed 'set' over time.
 - If water gets into an open battery case, air-dry as soon as possible.
 - If the sealing o-ring becomes dirty, carefully clean it with a lightly oiled or damp rag. Excessive oil will only collect dirt and dust on the o-ring.
 - When closing the battery case, ensure that the sealing surface and o-ring groove are aligned before clamping the side clamps. Closing both clamps at the same time provides the best control over this.
 - Avoid damage to the sealing surface of the battery case.
 - If the sealing o-ring becomes torn, or hard due to age, a replacement o-ring may be ordered.
 - In the unlikely event that a battery contact comes loose, mating surfaces should be cleaned and it may be re-attached with Super-Glue, or returned for service. This service is not covered by the warranty.
 - **Do not attempt to loosen or tighten the cord clamp on the battery case.**

Battery life and light output:

- Many factors affect both useable battery life and light output. The bottom line is that a set of batteries will last much longer than most cave trips, even when used on setting 2 or 3, and will likely last for many trips. Battery life depends primarily upon what power setting the light is used on.
- The lamp will begin to flicker when the battery voltage drops below what is required for the circuit to function properly at a power setting. When this happens, simply switch the lamp to a lower power setting
- The lamp has been field tested in several different situations where different power settings were used. In two of these situations, use was continuous for periods ranging from 8 hours to 25 hours.
 - In the first situation, a set of 4 C-cell Duracell→ batteries were used for a total of 72 hours during an extended camp before setting 2 began to flicker. For these 72 hours, the lamp was used ~20% on setting 1, ~70% on setting 2, and ~10% setting 3.
 - In the second situation, a set of 4 C-cell Duracell→ batteries were used for a total of 92 hours during an extended camp trip before setting 4 began to flicker. For these 92 hours, the lamp was used ~ 90% on setting 1, ~10% on setting 2, and <1% on settings 3 and 4. On this set of batteries, the lamp was later run on setting 1 for an additional 40 hours in 10 to 12 hour increments. At this point, the light began to flicker on setting 1. To eliminate this flicker, change the light to setting 2, where the lamp will continue to produce approximately 75% of the light that setting 1 does. I have run the lamp at this level for approximately another 60 hours before the light began to dim even more than 50% of setting 1. The light continued to produce low levels of light for an additional 30 hours. While it is not recommended that you cave with these levels of light, the light will not die without warning and can be used as a dim light source in an emergency.
- In practical terms, an LED light, set to what may appear to be a similar light output as a carbide or incandescent light, actually produces a much more useable light. White LEDs provides a much more full-spectrum light that greatly enhances color, texture and depth perception in caves – especially in caves that are a uniform mud color when seen with a carbide or incandescent electric light. The same is true when using the LED light outside during the night.
- For those of you who would like ‘hard numbers’, Nichia rates the LEDs used in this lamp at an average of 6400 mcd each when operated at 20 mA. This means that the lamp has a light output of ~192,000 mcd on setting 4.

Notes:

- Through experience, I have discovered that certain parts of the negative terminal on most, if not all, C-Cell Energizer/Eveready→ batteries have a clear plastic varnish on them. In particular, the raised metal ridge around the center of the negative terminal is coated. Because of this, these batteries will not work in this

light without scraping or sanding off this coating. I have not had this problem with Duracell.

- Because all batteries are not created equally, you should test the brand you intend to use before use. One thing to be careful of is that some off-brand batteries have a recessed negative terminal that will not make contact with the flat battery contact in the case. If you are in an emergency situation, a small piece of aluminum foil can be folded and carefully placed between the negative terminal and the contact.
- If you intend to use any sort of rechargeable batteries, I recommend that you determine what the minimum discharge voltage is for the battery. Because the lamp circuit will correctly function at voltages as low as 2.6 Volts, this means that each cell may be drawn down to as low as 0.65 Volts. When the lamp no longer operates properly on setting 1, the lamp will continue to operate at a lower light output and will reduce the battery voltage to essentially 0 V. Because of the ability of the circuit to operate at such low voltages, it is possible to over-discharge and damage your rechargeable batteries.
- If the battery case is subjected to a sharp blow or hard impact, especially to the top of the lid, this can cause a momentary loss of contact with the batteries. This may cause the switch circuit to reset to the 'off' setting. If this happens, simply push the switch and turn the lamp back to one of the 'on' settings. Whenever the batteries are removed, or the power is interrupted, the lamp will reset to the 'off' setting.