



## Warnings

### Battery

- Inspect batteries prior to use.
- If the battery is dropped or receives a mechanical impact, ensure that the casing is not damaged.
- Do not use damaged batteries.
- The electrolyte contained within the lithium cells can cause irritation to the respiratory tract, eyes and skin. In addition, cell venting could result in air contaminants, including corrosive or flammable vapors. All precautions should be taken to limit exposure to the electrolyte vapor.

### Light

- Turn the light off when not in use. The lamp housing can get hot.
- Do not use the LED lamp if ambient temperatures exceed 35°C (95°F).
- When light is in use, always keep the front of the light at least 6 inches from skin and any surface being illuminated.
- Do not shine light into patient's eyes.
- Do not shine light onto combustible material.
- Do not allow contact of the lamp to the patient.
- Use a curing filter when working with any light-curable resins.

### Charging

- When charging the battery, inspect the charging lights to ensure that charging is active.
- Do not simultaneously touch the charging unit (when plugged in) and the patient.
- Use only PeriOptix charging station to charge the batteries. Li-ion batteries can be dangerous and even explode if improperly charged. Batteries are designed to be charged only by the supplied charging station.
- Do not position the battery charger so it is difficult to disconnect the power adapter from the wall.

### General

- Check all components for burrs, nicks, and sharp edges prior to use.
- If unit is jarred or dropped, re-inspect prior to use.
- Do not use the PeriOptix system or charge the battery in an oxygen-rich environment.
- Do not store liquids above the charger, power pack or any other PeriOptix component or accessory.
- If a spill occurs into the charger, battery, LED lamp or power pack, discontinue use. Using the charger after liquid is spilled into the unit could result in electrical shock.
- Clean only as directed.
- Portable RF communications equipment (including peripherals such as antenna cables and external antennas) should be used no closer than 30 cm (12 inches) to any part of the PeriOptix system, including cables specified by the manufacturer. Otherwise, degradation of the performance of this equipment could result.
- Use of accessories, transducers and cables other than those specified or provided by the manufacturer of this equipment could result in increased electromagnetic emissions or decreased electromagnetic immunity of this equipment and result in improper operation.
- Use of this equipment adjacent to or stacked with other equipment should be avoided because it could result in improper operation. If such use is necessary, this equipment and the other equipment should be observed to verify that they are operating normally.
- Removing the power adapter from the wall outlet is the means of isolating the Solaris®/Miniheadlight from the supply means.
- Compliance with radiated emissions and immunity Standards: Complies with RF Emissions test per CISPR 11 Group 1 Class B; and Immunity test per IEC 60601 test level for ESD, EFT, Surge, Power Frequency, Voltage, Conducted RF and Radiated RF.

## Warranty

PeriOptix, Inc. warrants its products to be free of original defects in material and workmanship and to perform in accordance with specifications for the following items:

### Limited Lifetime Warranty

All working parts of the Loupe hinge mechanism.

### One-Year Limited Warranty

All components of Solaris and Mini headlight system.


### Warranty Exclusions:

- Breakage or failure due to tampering, misuse, neglect, accidents, modification or shipping.
- If the instrument is not used in accordance with manufacturer's recommendations or instructions.
- If repaired or serviced by other than PeriOptix or a PeriOptix authorized representative

Prompt inspection and reporting of missing or damaged product should be reported to shipping carrier and PeriOptix within 3 days of receipt of product.

If PeriOptix® products or any component thereof is found to be defective or at variance with the instrument or component(s) it will be replaced at no cost to the purchaser. This warranty only applies to products purchased new from PeriOptix or its authorized distributors or representatives.

For any questions or problems, please contact your local distributor or call DenMat Customer Care at 800-433-6628 between the hours of 8am to 5pm (Pacific Time) Monday-Friday. Outside the U.S., please call 1-805-347-7990 or visit [denmat.com](http://denmat.com)

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# Headlight Systems Directions for Use

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Instructions for MicroLine™ Mini and  
Solaris® portable headlight systems



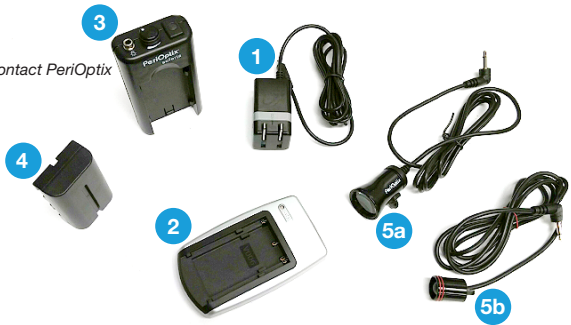
## Device Description and Intended Use

The PeriOptix headlight is a fully portable lighting system worn by the operator and is intended to illuminate the working area. It can be worn on a headband or attached to all types of magnification loupes. It is powered by a small, lightweight battery pack that is clipped to the operator's waist. The rechargeable lithium-ion battery provides 5 to 8 hours of bright, focused light between charges.

### What's Included:

Inspect contents. If any item is missing, contact PeriOptix customer support.

1. Power Adapter
2. Battery Charger Unit
3. Power Pack
4. Lithium-ion Battery
5. Lamphead with Loupe Clip, Cable, and Filter (a. Solaris or b. Mini)



### Cleaning Instructions

Proper cleaning and maintenance is imperative as well as protection from rough use and improper storage.

Disinfection with a low-alcohol (<25%) solution such as CaviCide® or CaviWipes® is recommended. If using spray disinfectant, avoid spraying liquid directly on the unit. Instead, spray onto a soft no-scratch cloth, and wipe the product as per disinfectant's directions for use.

Clean all lens surfaces only with optical cleaning cloth provided with the unit.



#### CAUTION

- DO NOT SUBMERGE PRODUCT OR SUBJECT TO SURFACE SATURATION WITH ANY LIQUID OR ULTRASONIC CLEANER. Your product is not waterproof.
- DO NOT USE WITH ANY POWER ADAPTER, CHARGER UNIT, OR BATTERY OTHER THAN PROVIDED BY PERIOPTIX.
- DO NOT CLEAN VIA AUTOCLAVE, CHEMICLAVE, GLUTARALDEHYDE, IODOPHOR, OR ANY OTHER STERILIZATION METHOD.
- NO MODIFICATION OF THIS EQUIPMENT IS ALLOWED
- THIS UNIT CONTAINS A LITHIUM-ION BATTERY. AS A RESULT PLEASE BE SURE TO NOT STORE THE UNIT UNCHARGED FOR AN EXTENDED PERIOD OF TIME AS THIS MAY CAUSE THE BATTERY TO DISCHARGE AND REDUCE THE LIFETIME OF THE UNIT.

Replacement Parts	Solaris	Mini
<b>Battery</b>	LED2-B1	LED2-B1
<b>Power Pack</b>	LED2-BP	LED4-BP
<b>Replacement Cable*</b>	LED3-C	LED4-2-C
<b>Battery Charger</b>	LED2-BC1	LED2-BC1
<b>Power Adapter</b>	LED2-BC-A2	LED2-BC-A2

\* For suitable replacement cables and maximum lengths of cables, contact Den-Mat Holdings directly.

# Operating Instructions

## 1. Charging batteries.

- Plug the power adapter (1) into a power outlet and connect to battery charger unit (2). A single green light will indicate power to the charger.
- Slide the battery from the power pack (3) into the charger unit (2) with connectors facing the pins. Make sure the battery is lying flat on the charger base prior to sliding it forward to engage charger terminals.  
**Note:** Pushing the battery forward without keeping it flat may damage charger pins.
- When the battery is inserted into the charger, the charger status light turns from green to red to indicate that charging has begun.
- Once the battery is fully charged, the light will return to green.

## 2. Mounting the Light on to Loupes.

Attach the lamphead to loupes using the supplied mount and hardware.

### Flip style loupes (PeriOptix®, Surgitel®, Orascope®, etc.)

Slide clip onto front of interpupillary cross bar of loupes, with one circular cut-out on top and one cut-out on the bottom of the cross bar. The clip should securely snap into place.

### Through-The-Lens (TTL) solid bridge mount

Loosen the thumb nut on bridge clamp, opening the two halves wide enough to engage the top and bottom of frame nose bridge. Attach the clamp to the bridge so that the grooves in the jaws grab the top and bottom edges of the bridge and then tighten nut.

### Universal Mount attachment to eyeglass frames

Open the clip and slide down over the top of the nose bridge. The padded arms of the clip should grasp each side of the eyeglass lenses. Tighten thumb screw to secure clip to frame.

## 3. Clip the power pack to your waist band or pocket.

- Attach the lamp cord to the loupe frames with the small elastic strap.
- Use the shirt clip on the lamp cord to position the cord on your shirt or lab coat as desired.
- Remove battery from charger unit and slide into the power pack. The battery should snap into place.

## 4. Turn on lamp using on/off button.

- The intensity control knob will adjust lamp intensity.

## 5. Adjust the direction of the LED beam.

- To adjust the tension of the lamp head position, use the supplied phillips screwdriver to tighten or loosen the two small link screws as needed.

## 6. Precautions.


- Equipment in medical environments, including this product, can produce electromagnetic interference (EMI). These effects are prevented by the use of equipment with EMI characteristics below proven recognized limits for the specified operating environment. In the event of suspected electrical interference with other equipment, cycle the power on the Solaris to remedy the EMI effect.


## Definition of Symbols

 User Must Read Instruction Manual


 European Conformity


 For Indoor Use Only


 Class II Equipment

 Alternating Current

 Direct Current

 Recycle for Lithium-ion  
Li-Ion

 Recycle or Dispose of Properly

 Caution, Consult Documents

## Operating Environment:

- 10° - 30°C (50° - 86°F)
- 95% or less relative humidity
- 70kPa - 106kPa

## Transport/Storage:

- 0° - 40°C (32° - 104°F)
- 95% or less relative humidity
- 70kPa - 106kPa

## Technical Data:

**Headlight System:** Internally powered by 7.2Vdc, 2500 mA/H rechargeable Lithium-ion battery pack

**Solaris (LED2-BP):** 730mA

**Mini (LED4-BP):** 540mA

**Power Supply:** 100 - 240V~, 50 - 60 Hz, 0.5A