



# ISOLUX

## *OPERATION MANUAL*

**IsoLED II (09/02/2020)**

**PORTABLE LED HEADLIGHT**



### **1.0 Purpose and Features**

#### **1.1 Purpose**

The headlight is used for examination, diagnostics and surgical operations for multifarious uses including microsurgery.

## 1.2 Features

- 50,000 hours of LED life provides for a maintenance free device with an end life of approximately 20 years.
- The unit has infinite mobility, not confined by access to power sockets, and its charge will last more than 4 hours at full intensity.
- Its light beam is extremely homogeneous and free of imperfections.
- Its high CRI rating of 95 is very desirable in color-critical applications such as neonatal care, medicine and surgery, as it shows the true colors of tissues and skin, thereby reducing the time to diagnosis and surgery.
- The light-weight battery packs have a retention clip to be used on the user's belt or pocket.
- The wall mounted Battery Charger comes with a Charge Monitor that alerts the operator when the Battery is fully charged.

## 2.0 Description

### The IsoLED II system consists of:

- Re-chargeable control unit with belt clip
- LED Illuminator with variable spot control
- Choice of dual adjust ratchet or soft headband
- Battery Charger
- Additional battery control units available

### IsoLED Control Unit

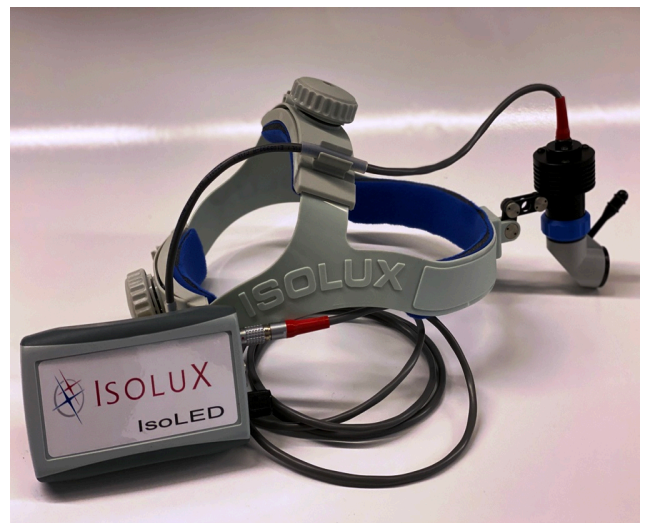
- Weighs only 190 grams
- On/Off Intensity Control Knob (3-100% adjustability)
- On indicator
- Re-Charge Plug-in Connector
- Belt clip
- Additional units can be purchased separately

### IsoLED Illuminator

- Variable spot, 10-100mm diameter at 400mm/16" or 20-230mm diameter at 1m/39"
- Flexible linkage for infinite positional control
- Removable/sterilizable positioning joystick
- Attached to dual adjustable ratchet headband or soft Velcro headband

### Battery Charger

- Universal AC input, 100 to 240 VAC
- Indicator light, goes from red to green when fully charged



### 3.0 SPECIFICATIONS

Illumination	> 20,000 lux @ 30 cm
LED Life	>50,000 hours
Color Temperature	4,500 °K
Color Rendition Index (CRI)	95 Typical
Light Degradation	None
Spot Size	10mm to 100mm at 400mm/16" working distance
Intensity Range	20% to 100%
Operating Time	> 4.5 hours typical at maximum intensity
Normal Recharge Time	< 3.6 hours
Quick Recharge Time	2 hours, for 3 hours of maximum intensity
Headband	Dual ratchet or soft velcro
Weight (headlight)	290 grams (LED, headband, cable and optics)
Weight (battery)	190 grams
Size (control unit/battery pack)	4.25" x 2.7" x 1.1"

### 4.0 OPERATING INSTRUCTIONS

#### 4.1 Charging the Battery

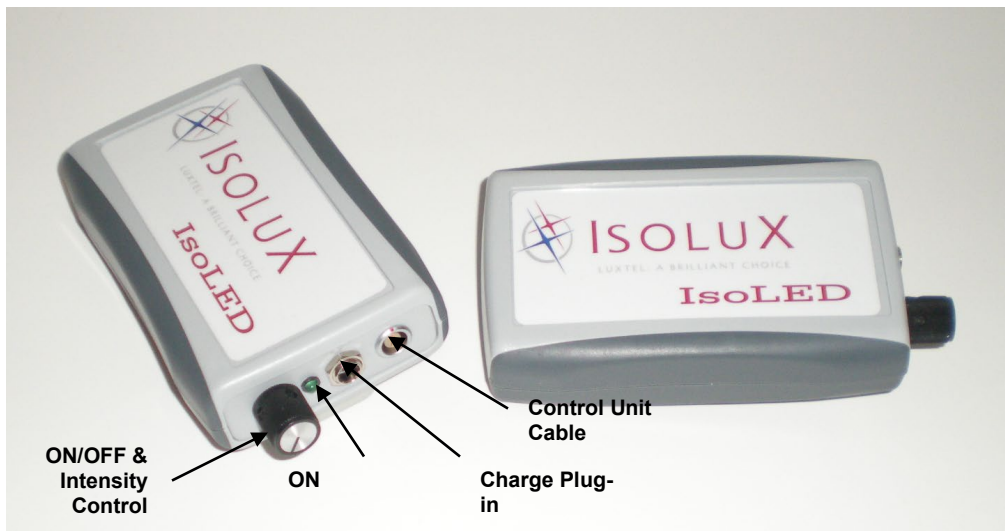
1. Plug the charger male connector into the receptacle on the Control Unit.
2. Plug the AC connection into a 100-240 VAC source.
3. The charger indicator light will illuminate red while charging and turn green when charging is complete (approximately 3.6 hours).
4. An 85% partial charge may be performed in 2 hours.
5. Disconnect the charger from the AC source and unplug the charger from the control unit.

#### 4.2 Illuminator and Headband Operation

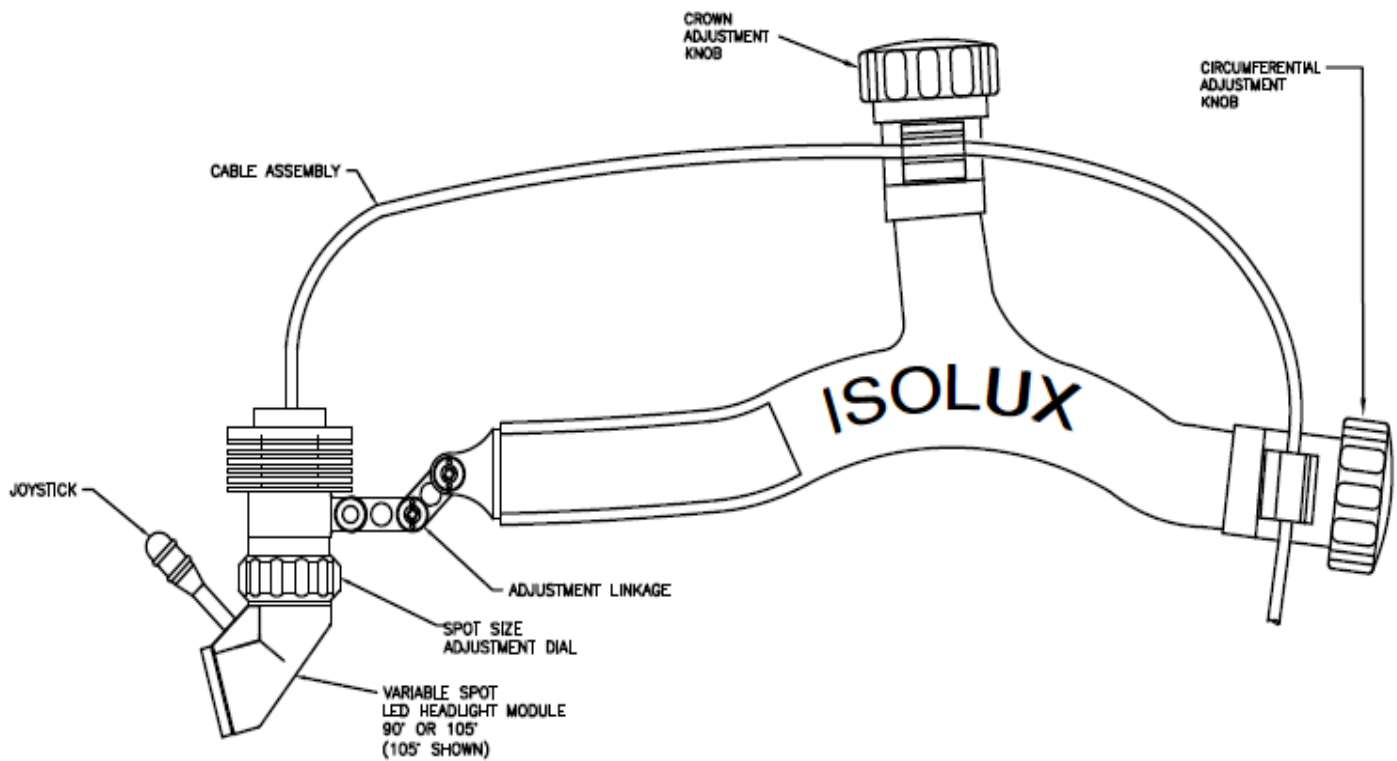
1. The illuminator unit comes with an integral pendant cable assembly.
2. The cable should be routed and snapped into place through a set of two cable clips. For dual ratchet headsets one is located on the top on the crown and one on the rear of the headband. The user has the choice of using the set on the left or the right.
3. For softband/velcro headsets, the cable should be routed through two clips along the circumference.
4. The illumination spot size may be adjusted by turning the grooved dial on the headlight.
5. The linkage assembly on the headband allows for personal positioning control. The joystick is used to further adjust the position of the light beam.

#### 4.3 Control Unit / Battery Pack Operation

1. Assure the pendant Cable Assembly is plugged into the Control Unit/Battery pack receptacle. There are red orientation dots that must be aligned.
2. Clip the control unit where desired or place in a pocket.
3. Turn the ON/OFF and intensity control knob clockwise to turn unit On (switch will close). This knob also controls the intensity.
4. To turn unit Off, turn control knob counter-clockwise until switch opens.
5. When battery has discharged to a level too low to maintain operation, the Illuminator will dim or flicker and the green LED on the control panel will turn off.
6. The unit's operational time could be extended from 4½ hours at full intensity to greater than 9 hours by using the illuminator at half intensity.



**Figure 1 - Control Unit / Battery Pack**  
 Additional units can be purchased separately.



**Figure 2 – Headlight Assembly with Illuminator**

## 5.0 CARE & MAINTENANCE

### DO NOT AUTOCLAVE !

#### 5.1 Headlight, Headgear and Cable

Exterior surfaces of headlight, headgear and cable can be wiped clean with any of these solutions:

- Banicide
- Cidex, Cidex Plus, Cidex 7
- Metracide
- 10% Wescodyne
- 10% bleach
- 70% isopropyl alcohol
- Wavecide-01
- Mild soap

Headbands and headlight modules can not be immersed into disinfecting liquids or sterilizers. Keep ends of cable clean by wiping with a damp cloth. Allow to dry before use.

Clean the optics only with lens tissue available at any camera store. Follow the instructions on the package. To insure long life for the headgear, cable and power source, store them in a cool dry environment.

#### 5.2 Joystick

Joystick can be sterilized after unscrewing from headlight.

**DO NOT AUTOCLAVE ANY OTHER PARTS OF THE HEADLIGHT SYSTEM !**

## 6.0 WARNINGS AND CAUTIONS

### 6.1 Warnings

Users of this headlight should be trained in the appropriate surgical procedures. They should read and understand the owner's manuals for this Headlight and all equipment used in conjunction with it.

### 6.2 Cautions



**Do not look directly into headlight when illuminated. Eye injury may result.**



**Do not use at distances closer than 10in(25cm) for extended periods. Erythema may result.**



**Service must be performed only by IsoluX authorized repair personnel**

## 7.0 The ISOLUX ADVANTAGE: A word about Color Rendition Index (CRI),

**The color rendering index (CRI), with a scale from 0 to 100 %, is a quantitative measure of the ability of a light source to reveal the colors of various objects faithfully in comparison with an ideal or natural light source like the light from the sun. Light sources with a high CRI are desirable in color-critical applications such as neonatal care, medicine and surgery, as it shows the true colors of tissues and skin, thereby reducing the time to diagnosis and surgery.**

**The IsoLED unit has a high CRI of 95, which brings it close to the optimum value of 100, and is one of the few units in the global market with this specification.**

## 8.0 WARRANTY AND SERVICE

### 8.1 Headlight

The IsoLux IsoLED Headlight System is guaranteed against all defects in materials and workmanship. All surgical Headlight Optical Modules and Connecting XYZ Mechanisms are warranted for the lifetime of the purchaser.

This warranty covers the replacement of the parts only and does not include any on-site labor costs. This warranty is void if service is performed by persons other than authorized IsoLux llc distributors or representatives or if equipment is interconnected with components not manufactured by IsoLux llc and/or have been approved by IsoLux llc for compatibility.

### 8.2 LEDs

IsoLux llc warrants the LED's a full five (5) years, by normal use only. Isolux reserves the right to void this warranty if any non authorized power source is used in conjunction with the head set or if liquids are allowed to ingress the optical head or control unit.

## 9.0 ORDERING PARTS AND COMPONENTS

The IsoLux llc IsoLED Headlight is designed for use with the IsoLux llc power source only.

### 9.1 List of Spare Components

Item	Qty.	Description	Part No.
1	1	Battery pack	IL-2295
2	1	Headlight Illuminator	IL-2389
3	1	Sweatbands (pack of 5 sets)	FO-0881
4	1	Battery Charger	IL-2187B
5	1	Joystick (pack of 2)	FO-0911
6	1	Replacement Head Gear	FO-2072