

# LED Fiber-optic Lightsource



## Operator & Owner's Manual Model #APFL-LED-50

**api**  
anthony products, inc.

## **TABLE OF CONTENTS**

- 1. INTRODUCTION**
  - 1.1 INDICATIONS FOR USE**
- 2. WARNINGS**
- 3. SPECIFICATIONS**
- 4. OPERATING ELEMENTS, SYMBOLS AND FUNCTIONS**
  - 4.1 FRONT PANEL**
  - 4.2 REAR PANEL**
  - 4.3 BOTTOM PANEL**
- 5. INSTALLATION**
  - 5.1 SETTING UP LIGHT SOURCE**
  - 5.2 CONNECTING LIGHT CABLE**
- 6. OPERATION**
  - 6.1 POWERING UP LIGHT SOURCE**
  - 6.2 LIGHT BRIGHTNESS CONTROL**
- 7. CLEANING**
- 8. DISINFECTION**
  - 8.1 DISINFECTING UNIT**
- 9. SERVICING & REPAIR**
  - 9.1 FUSE REPLACEMENT**
- 10. END OF PRODUCT LIFE**
- 11. TROUBLESHOOTING**

## 1. INTRODUCTION

### **Congratulations on the purchase of your new APFL-LED-50 LED Light Source!**

This user-friendly LED lightsource is a high efficiency light source which utilizes state-of-the-art superior illumination technology. It offers a variety of features such as:

- 6500° K daylight brightness for perfect color definition
- Quiet operation
- Long lamp life, 50,000 hrs.
- Compact and light weight
- Turret which adapts to various types of light guides
- Pulse-width Modulation (PWM) Electrical Dimming

In short, you have chosen the best and we would like to make sure you receive optimal results with your new LED Light Source by using it correctly.

This Operator Manual will help you to install the device and optimally integrate it with other components of your system. It will also instruct you on how to operate the LED Light Source and how to keep it clean. It will give you maintenance and service guidelines as well as recommendations for best performance results.

**1.1 INDICATIONS FOR USE:** The LED Light Source is used to to illuminatre the site of surgery during minimally invasive surgical procedures in arthroscopy (orthopedic surgery), laparoscopy (general and gynecological surgery) and in Endoscopy (general, gastroenterological and ENT surgery). The light is transmitted from the light source through a fiber optic cable and scope.

## 2. WARNINGS



To prevent fire or electric shock, do not open or expose the light source unit to rain or moisture. Refer all servicing to qualified personnel only.

To prevent any potential electro-magnetic interference, do not use any kind of cellular phone near the light source.



### **Caution**

Light source can cause permanent eye damage if viewed directly with unprotected eye. To reduce the chance of eye damage, **always** set the intensity control to the minimum level and plug the fiberoptic cable into the unit before turning **on** the power.

## 2. WARNINGS



To prevent fire or electric shock, do not open or expose the LED light source unit to rain or moisture. Refer all servicing to qualified personnel only.

Not suitable for use in presence of flammable anesthetic mixture with air or with oxygen or nitrate oxide.

To prevent any potential electro-magnetic interference, do not use any kind of cellular phone near the light source.

This product should be used only with type BF endoscopic instruments which have been certified according to IEC 601-1 for medical equipment and IEC 601-2-18 for endoscopic equipment.



This symbol indicates type BF equipment.



### Caution

This product is not provided as sterile.



### Caution

All devices connecting to the LED Light Source must be classified as medical equipment. When additional information processing equipment is connected to the LED Light Source, the operator must determine that all equipment complies with the appropriate end-product standards (such as IEC 60950 or IEC 60065 and the Standard for Medical System, IEC 60601-1-1).



### Caution

The LED Light source can cause permanent eye damage if viewed directly with unprotected eye. To reduce the chance of eye damage, set the intensity control **always** to the minimum level and plug the fiber optic cable into the unit before turning **on** the power.

## EQUIPMENT CONNECTION



### Caution

The fiber optic cable must be a **NON-CONDUCTIVE CABLE**. It should not have conductive shielding or any other conductive connection between the patient and equipment. Such connection will impair safety of the equipment. It must be rinsed free of soaking/disinfectant solution and dried before plugging into the LED light source receptacle. Ensure the optical surface is clean before engaging into the light source.

### 3. SPECIFICATIONS

Item	Specification
Light Source type	LED (Light Emitting Diode)
Power	50 Watt
Color temperature	6500° K
Led life	50,000 hours (typical)
Light guide adapter	Turret type to fit your choice of four: Storz, ACMI, Wolf, Olympus
Brightness control	PWM (Pulse-width Modulation) – 0-100% Dimming
Input voltage	100-240V AC, 50/60 Hz
Rated Power	52 watt
Regulatory Approvals	UL60601-1,CAN/CSA C22.2 No.601.1 (SUP1+AM2), 60601-1-2 and CE marked
Equipment Class	Class I, BF-type
Mode of Operation	Continuous operation
Water Resistant	Not Protected Equipment, IPX0
Operating Environment Temperature Relative Humidity Air Pressure	+0° to +40° C (32° to 104° F) 0 to 85%rh, non condensing 700 to 1060 hPa
Storage Environment Temperature Relative Humidity Air Pressure	-20° to +60° C (-4° to 140° F) 30 to 95%rh, non condensing 700 to 1060 hPa
Dimensions	4.65" W x 3.32" H x 7.25" D
Weight	2.5 lbs./1.14 kg

## 4. OPERATING ELEMENTS, SYMBOLS AND FUNCTIONS

### 4.1 FRONT PANEL



Figure 1. LED Light Source Front Panel

No.	Name	Function
1	Power switch	Turns the light source on and off. Fan will operate
2	Light guide adapter	Turret type to fit your choice of four: Storz, ACMi, Wolf, Olympus
3	Intensity Control	Electronically controls the light output

## 4.2 REAR PANEL

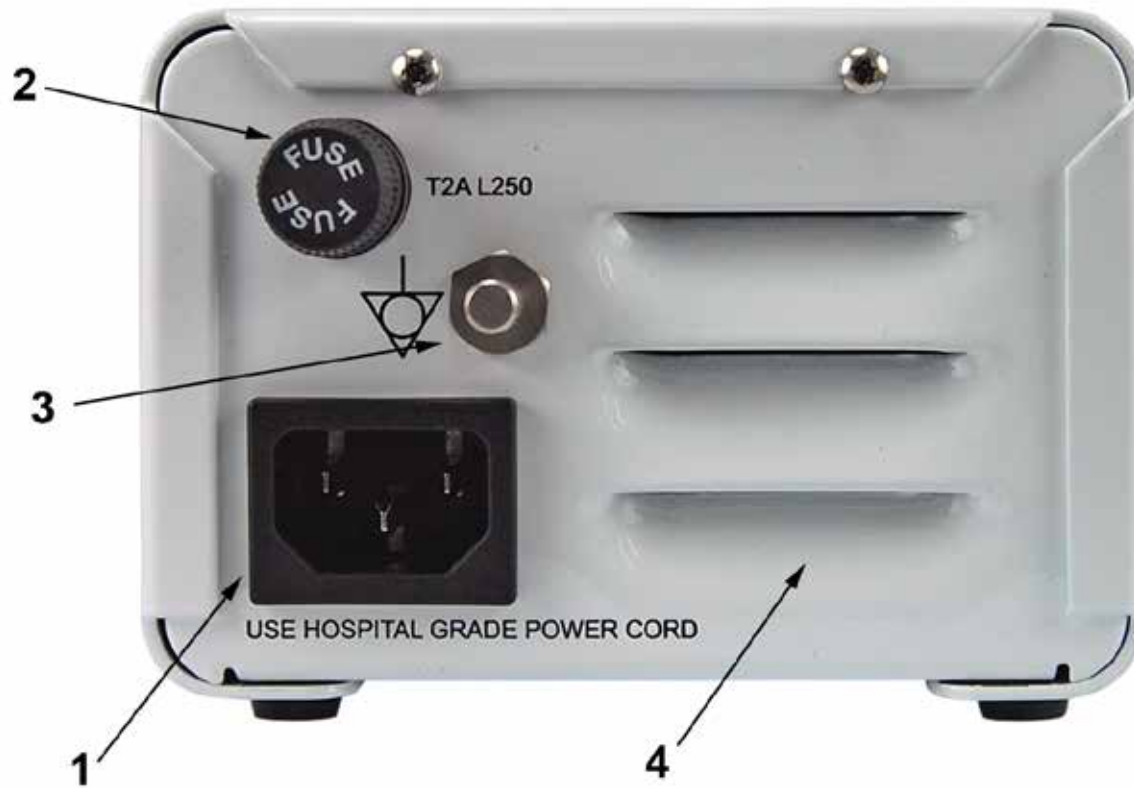


Figure 2. LED Light Source Rear Panel

No.	Name	Function
1	AC main inlet	Accepts AC Power cord
2	Fuse	2A, 250V (1/4" x 1 1/4") time delay
3	Grounding Connector	For potential equalization
4	Venting grids	Allows adequate ventilation and cooling of the light source

### 4.3 BOTTOM PANEL



Figure 3. LED Light Source Product Label



## 5. INSTALLATION

### 5.1 SETTING UP THE LED LIGHT SOURCE

Place the LED light source on a stable surface (cart, counter, stand, etc.).

**NOTE**

*Avoid places where the light source may be splashed with liquid.*

*Absolutely DO NOT use in any environment with explosive or flammable gases.*

*DO NOT block the venting grids of the LED light source.*

Make sure the power switch is in OFF position.

Connect AC power cord to the power inlet located on the rear panel of the light source.

**CAUTION**

*Use only cords provided with the light source.*

Plug the AC power cord into a wall outlet using the three-prong plug supplied with the unit.

**CAUTION**

*To prevent electric shock, connect power cords of peripheral equipment through medical isolation transformers.*

**NOTE**

*When using medical isolation transformer, be sure to check the transformer power ratings.*

*Make sure that the power cord is connected to the main power with three-prong plug (USA use UL2601-1 rated isolation transformers and/or power strips only).*

**CAUTION**

*When used in clinical or residential areas near radio or TV units, this equipment may be subjected to radio interference. To avoid adverse electromagnetic effects, DO NOT operate this equipment near RF energy equipment.*

### 5.2 CONNECTING THE FIBER OPTIC CABLE

Turn intensity control to the minimum setting. Connect the light cable to the instrument and then plug the light cable endfitting into the port on the front panel.

## 6. OPERATION

### 6.1 POWERING UP THE LED LIGHT SOURCE

To operate the LED light source: Turn on the power switch. The indicator on power switch will light.

### 6.2 LIGHT BRIGHTNESS DISPLAY AND CONTROL

The light brightness adjustment enables the user to obtain a brighter or darker illumination of the object of observation.

Adjust the light intensity by turning the intensity control knob.

## 7. CLEANING

**NOTE** *Always disconnect the power cord before cleaning the system.*

The unit can be cleaned with any cleaning agent, which is used for external cleaning of electric equipment, according to instructions given by the manufacturer of the cleaning solution.

Do not allow excessive moisture or liquids to come in direct contact with the unit.

Do not use cleaning agents that are not permitted for use with plastics, i.e., ammonia, acetone, salty acids (HCl), etc.

Do not allow cleaning agents or liquids to enter the unit outlets.

## 8. DISINFECTION

### 8.1 DISINFECTING THE UNIT

**NOTE** *Always disconnect the power cord before cleaning the system.*

Use any disinfectant agents which are commonly applied while disinfecting surfaces of electric medical equipment. Such disinfectant agents are usually in the form of sprays or damp cloths.

Follow the instructions given by the manufacturer of the disinfectant solution.

## 9. SERVICING AND REPAIR

Defective items of equipment are to be serviced and repaired exclusively by persons authorized by the manufacturer. All repair work shall employ original manufacturer's parts only.

### 9.1 FUSE REPLACEMENT

**CAUTION** *Always disconnect power cord and turn main switch off before fuse replacement.*

Turn light source off and unplug power cord. On back of unit remove fuse by turning fuse cover and pulling out fuse. Replace fuse with 2 AMP (1/4" x 1 1/4") time delay 250V rated fuse. Insert back into fuse housing.

Re-connect the power cord and turn the LED light source on according to section 6.1.

### 9.2 LIMITED WARRANTY

Your LED light source carries a 1-year warranty from the date of shipment on workmanship and all defects of material. Should your product prove to have such defects within one year of the shipment, Anthony Products, Inc. will repair or replace the product or component part without charge. Should your LED light source product(s) need servicing under this warranty, please contact API for return authorization documentation. You should carefully pack unit in a sturdy carton and ship it to Anthony Products. Please include a note describing the defects, your name, telephone number and a return address. Warranty does not cover equipment subject to misuse, accidental damage, normal wear and tear or if transferred to a new owner without authorization from Anthony Products. This warranty gives you specific legal rights and you may also have other rights that vary from state to state.

**POST WARRANTY REPAIRS:** You may return your product(s) for repair, shipping prepaid to the factory. Your product will be inspected and an estimate of repair charges will be submitted to you for approval. Payment must be received before repairs are completed.

- In the US: **800-428-1610**
- FAX number: **317-543-3289**

## 10. END OF PRODUCT LIFE

In accordance with the European Waste from Electrical and Electronic Equipment (WEEE) directive, we encourage our customers to recycle this product whenever possible. Disposal of this unit must be performed in accordance with the applicable local environmental regulations.

In the US a list of recyclers in your area can be found at: <http://www.eiae.org/>.

Please contact customer service to issue a return authorization to return product to manufacturer at the end of product life.



## 11. TROUBLESHOOTING

<u>Problem</u>	<u>Solution</u>
The power indicator (refer to 4.1) is not lit.	A. Check that the AC power cord is properly connected. B. Check the unit fuses. If necessary, replace.
The power indicator is lit, but lamp will not ignite.	Turn intensity control knob clockwise to increase light output intensity

## 12. AUTHORIZED REPRESENTATIVE

Anthony Products, Inc.  
7740 Records Street  
Indianapolis, IN 46226  
(317) 545-6196  
800-428-1610  
Fax (317) 543-3289  
[www.anthonypproducts.com](http://www.anthonypproducts.com)