



## ***VisualuxLED***

USER MANUAL  
LED LIGHT SOURCE MODEL GMF-LS04

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# SYMBOLS

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Read the related documentation



Serial Number



Warning



Alternate current



Protect from water



This side up



Environment transport conditions



Pressure Limits



Humidity Limits



CE Mark



Manufacturer Information (Name, Address)



Type BF



Do not discard with the household waste



Protective Earth (Ground)



Equipotential bonding



Date of Manufacture (MM/AAAA)



Product code



Fragile



Fuse

# WARNINGS

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It is important to read this manual thoroughly before using the VISUALUX LED P/N GMF-LS04.

Gulf Fiberoptics shall not be liable for the damage that may occur if the equipment is not used according to its intended use, as well as these instructions and criteria mentioned herein below:

- This device must be used only by personnel who have read this manual.
- Do not install the equipment near heating sources such as stoves.
- Install the equipment on a firm and horizontal surface, in a well-ventilated area.
- Avoid blocking the ventilation grids. The vents require adequate air circulation with a minimum cleared area of 30cm.
- Avoid exposing the equipment and fittings directly to sunlight, dust, humidity, vibrations or excessive impacts.
- Do not use around inflammable anesthetic mixed with air, oxygen, or nitrous oxide.
- Do not use volatile substances (benzene, thinner or solvents in general) to clean the equipment since it may cause damage. It is recommended to use a soft wet cloth soaked in neutral soap or any specific product to clean electronic equipment cases. It does not require sterilization
- Do not introduce objects in the holes or rest any containers with liquid on the equipment.
- Prevent the power supply cable from being walked/rolled over or placed under any piece of furniture.
- Do not use the equipment when there are electrical storms.
- Always unplug the equipment when it is not being used.
- The VISUALUX LED is grounded through a conductor of the power supply cable. This essential grounding is provided for safe operation of the equipment. If the power supply cable needs to be replaced it must be replaced with a similarly rated IEC 60245-1 or IEC 60227-1 cable no longer than the original.
- Do not connect the light source to devices that do not comply with IEC 60601-1 and IEC 60601-2-18.
- In case of interference with other electro medical or electrical equipment, increase the distance between the VISUALUX LED and the other device to minimize these effects.
- Do not open the equipment. Maintenance and repairs shall be made by Gulf Fiberoptics. Gulf Fiberoptics shall not be liable for the consequences of maintenance or repairs made by unauthorized personnel.
- This manual of instructions shall be kept together with the equipment for future consultations. Should the equipment be sold or donated, the manual shall go with it.

If as a consequence of:

- Incorrect use of the equipment
- Underutilization of this manual
- Poor care and maintenance of the equipment or
- Repair and manipulation by unauthorized personnel

...any material or personal damage caused to third parties, Gulf Fiberoptics and the authorized distributor of the equipment, shall not assume any responsibility for such damages.



The device should never be discarded with household waste. Please check local regulations for electronic components disposal or recycling. It is the user's responsibility to deliver the system to the proper location for disposal or recycle of electrical and electronic devices or contact the manufacturer or authorized representative to proceed on the elimination of the system in a safe and ecological way.

# INTRODUCTION

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The VISUALUX LED light source is intended for use in office-based medical applications, such as ENT and clinical areas.

Its LED (Light Emitting Diode) lighting module produces cold, deep, and white light. Its enhancement of brightness and colors makes it suitable for use in many types of procedures.

The purpose of this manual is to explain the function and operation of the light source.

Before turning the equipment on for the first time, please read the entire manual and pay special attention to all the safety measures to prevent any damage that may occur either to the user or the patient.



This symbol shall be used in this manual to indicate information that includes warnings or important precautions.

Please, read the manual thoroughly before operating the equipment.

Should you have any doubt regarding the contents of the manual herein or the equipment operation and safety, please contact your local distributor or Gulf Fiberoptics.

## Responsible Firm:



Gulf Fiberoptics, Inc.  
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Oldsmar, Florida 34677 U.S.A.  
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Web: [www.gulffiberoptics.com](http://www.gulffiberoptics.com)  
E-Mail: [sales@gulffiberoptics.com](mailto:sales@gulffiberoptics.com)

EU Authorized Representative:  
European Device Solutions, Ltd.  
17 Springwell Drive  
Sheffield, Yorkshire S20 1XA  
England

European Device Solutions, Ltd.  
15 Coanwood Dr, Whitley Bay  
Tyne & Wear, NE25 9GB,  
United Kingdom



Gulf Fiberoptics VISUALUX LED light source is CE approved, complying with European Council Directive 93/42/CEE related to medical equipment. The MDD equipment classification is I.

## COMPONENTS

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The VISUALUX LED GMF-LS04 light source includes the following components. It is recommended to identify and check their existence before proceeding with the installation.

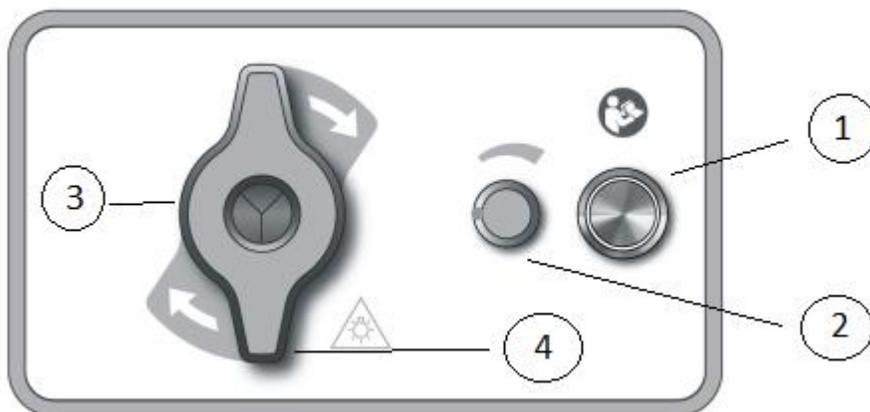
- Main Unit
- Power Supply Cable
- User Manual

## DESCRIPTION

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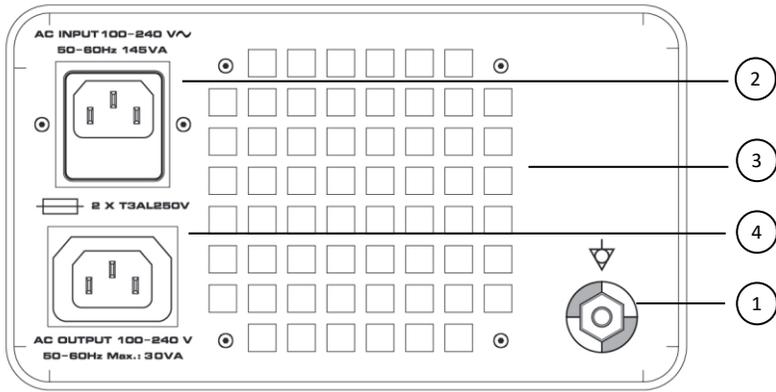
### FRONT PANEL

MODEL GMF-LS04



- 1 On/Off button
- 2 Light Intensity Control (Dimmer)
- 3 Universal fiber optic cable connector
- 4 Port opening handle

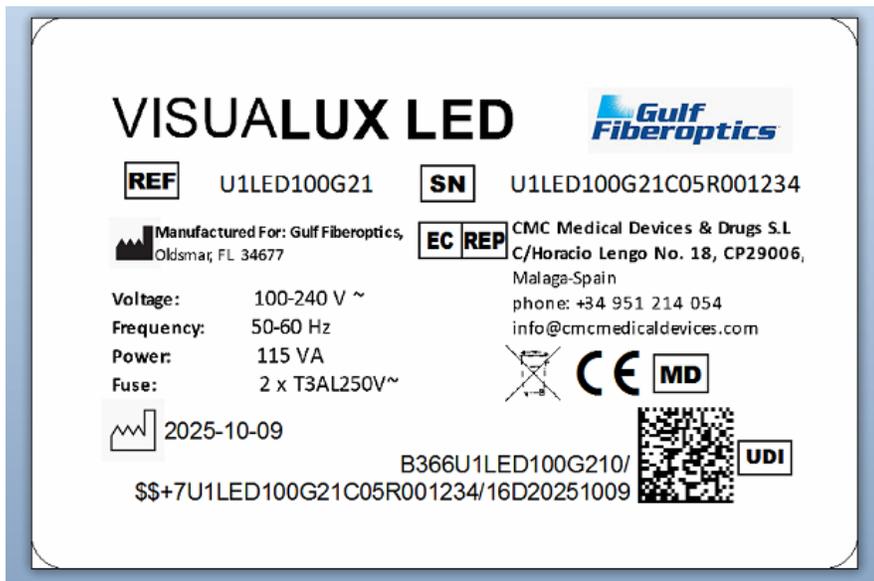
### REAR PANEL



1. Earth connection
2. Power supply cable connector with fuse holder
3. Ventilation Grid
4. Auxiliary power output connector

## LABELS

The following label is located either on the rear or the bottom of the VISUALUX LED light source. It contains technical data, as well as the serial number of the device. Please refer to this label when ordering replacement parts or requesting service.



## INSTALLATION

Experienced or expert personnel are not required to install the VISUALUX LED.

Once the installation is complete, please continue with the procedures detailed in the Inspection and Operation section.



Thoroughly follow the instructions included in this section.

1. Unpack the equipment carefully.
2. Place the VISUALUX LED on a solid, flat surface.
3. If the building utilizes equipotential grounding, connect the light source to ground through the equipotential ground terminal located on the rear panel of the unit.
4. Connect the power supply cable to the outlet on the back of the unit. Then, connect the power supply cable to the wall outlet.



Once the VISUALUX LED is turned on, ensure the cooling fan is functioning.

If the cooling fan is not operating, turn the equipment off immediately to avoid failures in the LED system as a result of high temperature.

The VISUALUX LED shall only be used in places with electrical installations that meet the local regulations in effect.

It shall always be connected to the grounding of the medical room or endoscopy tower through a ground cable.

The VISUALUX LED shall be connected to the voltage line through the power supply cable provided.

The power supply shall only be provided with a protected plug and the adequate ground connection.

To avoid the risk of vision damage, do not look directly into the light source connector port while the unit is running.

## INSPECTION AND OPERATION

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### INSPECTION

Once installation is complete and before the unit is powered on, please perform the following check list:

- Verify that the electrical network has its grounding connection in perfect conditions and that it makes perfect contact with the equipment.
- Check that the fuse holder has a fuse installed and that it is the correct one (T3AL250V).
- Check that the ventilation grid is completely free, without obstruction.
- Ensure an adequate air flow area around the unit.
- Verify that there are no gas or liquid sources near the equipment that may damage it.



All connections shall be made before turning the equipment on.

The VISUALUX LED shall only be used in places with electrical installations that meet all local regulations in effect.

If a problem is detected prior to powering on the unit, please contact the technical service department of your local authorized distributor.

## OPERATION

This section thoroughly describes the equipment start-up and functioning verification procedure. It is recommended to perform this procedure after installing the equipment and during maintenance inspections.



The equipment shall only be operated by qualified personnel.

1. Connect the power supply cable to the equipment and the electrical network.
2. Rotate the universal optical fiber adapter handles clockwise to open the turret to receive the fiber optic cable.
3. Insert the end of the fiber optic cable into the universal adapter hole until it stops.
4. Slowly release the handles. They will return to their initial position, pressing firmly against the fiber optic cable connector.
5. Turn the VISUALUX LED on by pressing the on/off button on the front panel.
6. Ensure the cooling fan is operating. If it is not, turn the unit off, unplug the unit, and report the problem to Gulf Fiberoptics or its authorized distributor.
7. Turn the LED system on by turning the light intensity control (dimmer) clockwise.
8. Use this control to regulate the light intensity only after the fiber optic cable is connected to the instrument.



The VISUALUX LED light source has an over-temperature protection. The LED module will turn off if it experiences high internal temperatures.

When not in use, turn the VISUALUX LED off to maximize the LED system lifetime and conserve energy.

## MAINTENANCE

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Before performing any maintenance or cleaning on the VISUALUX LED light source, disconnect the power supply cable from the wall outlet.

To maintain optimum operation of the VISUALUX LED, it is recommended the following procedures are performed:

- Periodic cleaning of all exterior components, including the ventilation grid.
- Inspection of electrical connections.
- Annual technical inspection of the equipment.

To perform any required service, contact Gulf Fiberoptics or your local authorized distributor.

All technical service work, repair or modification should be noted on the Maintenance Card of this manual indicating: work performed, date, name and signature of the person in charge.

## CLEANING

Before cleaning the VISUALUX LED, disconnect the power supply cable from the electrical network.

### External Surfaces

Clean the external surface of the equipment using a piece of cotton or cloth moistened with mild detergent or soap. Use only adequate products for the external cleaning of electrical equipment, prepared in accordance with the manufacturer's indications.



Perform the cleaning with special care, avoiding water or humidity access to the equipment.

Do not use flammable products, especially alcohol when the VISUALUX LED is hot.

Do not turn the light source on until one hour (1) has passed from the cleaning, to eliminate the chance for damage.

It is recommended to clean the exterior surface of the device every 15 days.

Do not autoclave, sterilize or immerse any part or component of the VISUALUX LED light source.

## ELECTRICAL CONNECTIONS

Constantly check the condition of all components and their aging process.

Verify there are no:

- Faulty, broken or cut cables.
- Faulty connection between the cable and the plug.
- Oxide corrosion in connection pins.
- Disconnected equipotential ground connection (in places with equipotential ground).

## FUSE REPLACEMENT

- 1 Disconnect the power supply cable from the electrical network and the equipment.

- 2 Under the power supply cable connector there is a small rectangular plastic holder where the fuses are located. Using a screw driver and with slight pressure remove the lid to replace the damaged fuse.
- 3 Remove the fuse and replace it with a new fuse (T3AL250V) located inside the same plastic holder. Obtain a spare fuse to minimize potential out of service time.
- 4 Place the fuse lid back pushing it until a “click” is heard.
- 5 Connect the power supply cable.



To avoid shock, injury, or damage to the VISUALUX LED, use ONLY fuses with the same specified ratings (T3AL250V)



## TECHNICAL SPECIFICATIONS

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POWER SUPPLY VOLTAGE	100 - 240 V
N° OF PHASES	1 (single-phase)
FREQUENCY	50 - 60 Hz
CLASS	I
APPLIED PART	BF TYPE
PROTECTION LEVEL AGAINST	
WATER ENTRANCE	IPX0
POWER CONSUMPTION	110W
FUSE	2x T3AL250V
COLOR TEMPERATURE	6000°K Approximate
LED SYSTEM SERVICE LIFE	50,000 Hours Approximate
REFRIGERATION	Forced air
OVER TEMPERATURE PROTECTION	Automatic LED system power-off
DIMMER	Electronic
SERVICE CONDITIONS	50 – 104 °F (10 - 40 °C)
	35 - 75 % relative humidity

	700 - 1060 hPa
STORAGE AND TRANSPORTATION	-22- 113 °F (-30 - 45 °C)
CONDITIONS	10 - 95 % relative humidity
	500 - 1060 HPa

## TROUBLESHOOTING

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The following table indicates the most common problems and their quick solutions. Please consult this table for any difficulty you may encounter.

PROBLEM	PROBABLE CAUSE	ACTION
<b>The equipment does not turn on</b>	It is not connected to an active electrical source	Connect the power supply cable to the electrical source
	The power supply cable is broken or cut	Replace the power supply cable
	The plug is in bad condition	Change the plug
	Fuse broken	Replace the fuse
<b>The green pilot light from the on/off switch turns on but the LED system does not</b>	Exhausted LED system	Contact your distributor
	Over-temperature LED system protection activated	Clean and clear the lateral ventilation grids. Check if the fan is running. Turn the equipment off immediately, unplug, and contact your distributor
	Internal fuse burnt or defective board	Contact your distributor
<b>Light intensity is not correct</b>	Dimmer in minimum intensity	Turn the dimmer clockwise to increase the light intensity
	Defective LED system	Contact your distributor
<b>Overheating – the equipment works for a period of time then turns off.</b>	Ventilation grids are obstructed	Clear the ventilation grids
	Fan is not working	Turn the equipment off immediately and contact your distributor
<b>Light is on but it blinks</b>	Defective intensity control board	Contact your distributor
	Defective intensity control potentiometer	Contact your distributor

If the problem cannot be solved, please contact your local authorized distributor to request technical service.

MAINTENANCE CARD

Work Performed	Responsible Person	Date	Signature

This card shall only be completed by the authorized person from the company responsible for the maintenance, repair and modification of the device.

Frequent and timely updates to this service table are recommended.

## TECHNICAL SERVICE

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VISUALUX LED light sources shall be exclusively repaired and/or maintained in authorized Gulf Fiberoptics technical facilities. Gulf Fiberoptics recommends using the following procedures to speed up the repair service and replacement of the guaranteed products.

- 1 Contact the technical service department of your local distributor or Gulf Fiberoptics
- 2 Provide a detailed description of the problem.
- 3 If the problem cannot be solved by troubleshooting, the product must be shipped to your local authorized distributor for service.

The following product information shall be attached:

- Owner's name.
- Owner's address.
- Contact name and phone number.
- Product serial number.
- Description of the problem.

The VISUALUX LED shall be sent in its original packaging so that it is not damaged during transportation. Gulf Fiberoptics shall not be liable for damages that may occur during transportation, caused by deficient packaging.

## WARRANTY

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Gulf Fiberoptics states that the VISUALUX LED has complied with the required Quality Control verification and has no manufacturing defects. This guarantees the appropriate functioning under adequate use in agreement with the indications of this manual. The warranty period is for one (1) year as from the date of purchase invoice.

Gulf Fiberoptics shall not be liable for any damage caused to/by the VISUALUX LED due to incorrect use, negligence, cleaning or incorrect storage. Any repairs made by personnel not authorized by Gulf Fiberoptics will void this warranty. The described warranty is exclusively valid for the original buyer.

The following parts are excluded from the warranty:

- Damages resulting from connections to inadequate power supplies.

If the VISUALUX LED requires service outside of the warranty period, all shipment from and to Gulf Fiberoptics or its authorized technical service facilities is the sole responsibility of the client.

## RIGHTS

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All the rights arising from the manual herein, especially its reproduction, publishing and translation, are reserved. No part of this manual shall be reproduced by any means (photocopy, microfilm or other methods) without the previous written authorization by Gulf Fiberoptics. No part of this manual shall be reproduced, multiplied or published through electronic data processing.

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## NOTES

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