

Melan -100

Features, Specification, and Operation Instructions



GENERAL INFORMATION AND CAUTION

The Melan-100 light source has been engineered with safety as a priority. However, the user is cautioned to observe the following:

- 1 Read and follow all instructions in this manual.
- 2 Never look directly at the lamp when it's on; your eyesight may be compromised. High power LED's are used as light sources.
- 3 Do not use this unit near water or in an area with excessive moisture.
- 4 Do not place flammable materials near the unit.
- 5 Do not defeat the safety purpose of the 3-prong grounded plug or interlock switch. Use only the approved power cord supplied with the unit. Route cord so that it will not be pinched, severed or walked upon.
- 6 Do not defeat the purpose of the fuse. Replace only with the fuse type described in the manual and as marked on the unit.
- 7 Keep all safety and operating instructions for future reference.
- 8 If you wish to clean the unit, disconnect the power and use only standard detergent type cleaners; do not use solvents or petroleum distillates. Never "spill" liquid on the unit. Do not service the unit beyond what is described in this manual. Attempting repair without prior written approval of BioMed Vision Technologies (BMVT) will void the warranty. For a Return Material Authorization, contact the BioMed Vision Service department at support@biomed-vision.com or www.biomed-vision.com

Product Description

Operation

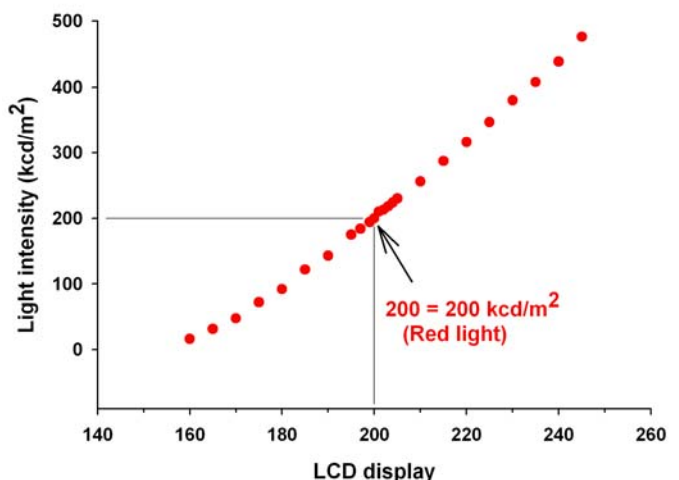
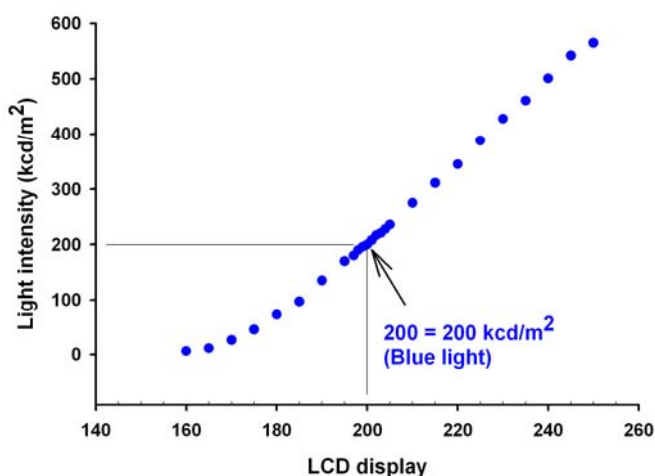
The Melan -100 light source was designed to accept line voltage in the range 90 to 265 V AC.

- 1 Make sure the power switch is in the "off" position.
- 2 Plug the power cord into a power source.
- 3 Turn the light source power switch to the "ON" position.
- 4 Turn the blue/red switch to the "ON" position
- 5 Adjust the light intensity to the desired value by turning the intensity control knob to the right.
- 6 The values for light intensity are shown on the digital display.
- 7 Red and blue light can be used at the same time, or separate.
- 8 To turn the unit off, press the power switch to the "OFF" position. The light intensity adjustment knobs can be left in the desired position. In this case next time when the instrument is turn on the previous settings will not be lost.

The pupil light reflex evaluation using Melan 100 unit

1. Turn on the switch for **RED LIGHT** and increase light intensity using the knob until value of **200** (value of **200** is equal to the illumination intensity of **200 kcd/m²**) is observed on the digital display.
2. Turn off the light in examination room and wait for 30 seconds.
3. Illuminate the right eye with the red light probe from a distance of one inch for 10 seconds and observe the change in the pupil diameter. Remove the light source away from the eye after 10 seconds. If complete pupil constriction is achieved in less than 10 seconds, light source can be turned off as soon as complete pupil constriction is observed (observed pupil diameter less than 4 mm).
4. Wait for 30 seconds so dark adaptation is achieved again, than illuminate the left eye with the red light probe for 10 seconds and observe change in the pupil diameter.
5. Turn off the red light switch and turn on the **BLUE LIGHT** switch. Increase the blue light intensity until value of **200** (value of **200** is equal to the illumination intensity of **200 kcd/m²**) is observed on the digital display.
6. Illuminate the right eye with the blue light probe from a distance of one inch for 10 seconds and observe the change in the pupil diameter. Remove the light source away from the eye after 10 seconds. If complete pupil constriction is achieved in less than 10 seconds, light source can be turned off as soon as complete pupil constriction is observed (observed pupil diameter less than 4 mm).
7. Wait for 30 seconds so dark adaptation is achieved again, than illuminate the left eye with the blue light probe for 10 seconds and observe change in the pupil diameter.
8. After all responses are observed and recorded, use obtained results in combination with other parameters obtained during clinical examination to establish diagnosis. Pupil light reflex responses in absence of other diagnostic results obtained during eye examination can not be used to establish the final diagnosis.

Melan -100 light source (red or blue) should not be used with light intensities higher than 200 kcd/ m². When using Melan -100 at 200 kcd/ m² light intensities, continuous illumination should be limited to 10 seconds to avoid any possible light induced damage.



IMPORTANT:

Please observe that the light intensity corresponds to the value indicated on display only for the values very close to 200 (+/- 5). For other light intensities please see the above curves.

Every LED's has some variations in the factory specified parameters and because of this each instrument is calibrated individually to have precise light output around the recommended value (200).

Phototoxicity statement

“Because prolonged intense light exposure can damage the retina, the use of Melan-100 device for ocular examination should not be unnecessarily prolonged, and the brightness setting should not exceed recommended values which are needed to provide clear visualization of the pupil light reflex responses structures. The retinal exposure dose for a photochemical hazard is a product of the radiance and the exposure time. If the value of radiance were reduced in half, twice the time would be needed to reach the maximum exposure limit. While no acute optical radiation hazards have been identified for Melan-100, it is recommended that the intensity and duration of light directed into the patient’s eye be limited to the minimum level which is necessary for diagnosis. Pediatric patients, aphakes and patients with diseased eyes will be at greater risk. The risk may also be increased if the patient being examined has had any exposure with the same instrument or any other ophthalmic instrument using a visible light source during the previous 24 hours. This will apply particularly if the eye has been exposed to retinal photography.”

Lamp Life

Compared to conventional light sources, LEDs have a very long mean time between failure, over 100,000 hours. This value indicates that very few of these solid state lighting devices will catastrophically fail and emit no light. After 50,000 hours of operation the expected failure rate is <5%.

Lamp Intensity

Over time, LED light output does degrade based on environment and drive condition. The expected average decline in flux is 30-35% after more than 100,000 hours, provided the system is operated within specified conditions.

However, because of the Melan -100 design characteristics we estimate to have an average flux decline of no more than 15% at 50,000 hours of operations. Also for the first 2-3,000 hours we estimate the flux decline will be around 1-5%. After more than 3,000 hours of operation we recommend to have the instrument recalibrated or new light heads installed. Visit our web site www.biomed-vision.com for more actual information on recalibration or replacement parts.

Fuse Replacement

Under normal use, the fuse should not require replacement. The purpose of the fuse is to protect the electronics from failure due to inrush current. Should it become necessary to change the fuse, replace with the same type (2,5 amp/fast blow) to insure long life and performance.

The fuses are located internally. Melan -100 uses two fuses, both live & neutral feeds are fused.

Product Specifications

Improvements may result in specification or feature changes without notice.

Physical dimensions

Overall Height: 3" (75 mm) Overall Width: 6" (150mm) Overall Depth: 7.5" (190 mm)

Power Supply Specifications

Rated Consumption	3 Watts
Output Voltage	0-12 Volts
Input Voltage	88-264 VAC 50/60Hz
Leakage current	<0.3mA @ 240V
Insulation voltage	4,000 VAC
Line Regulation	+/- 1.0%
Load regulation	+/- 1.0%
Fuse type	2,5 Amp fast blow
Temperature Range: Operating Storage	0° to 45° C -25° to 85°C
Relative humidity, Non Condensing	20% -to 90%

Support

E-mail Customer support@biomed-vision.com for immediate assistance from our Sales Associates or Sales Representatives.

Be sure to have your part number and serial number available, as well as a complete description of the problem or situation for the quickest, most accurate assistance.

Service/RMA Policy

Service required for any reason must be performed by BMVT or an authorized service representative. All service outside warranty will be performed with purchaser's approval, and charged according to normal service charges in effect at the time.

To return any item, whether for warranty repair or chargeable servicing, an RMA number (Return Material Authorization) must be obtained from BMVT. This number must be clearly visible on the shipping label. All shipping must be prepaid.

If the light source was used in a biohazard environment, you may also be asked to supply a certification stipulating the conditions of service, including a list of materials the light source may have been exposed to.

BMVT guarantees all warranty repairs will be completed within two weeks of receipt. All units will ship prepaid using our shipping method of choice. Alternate shipping methods will be shipped freight collect.

Warranty

BMVT warrants its light sources to be free from defects in material and workmanship for a period of two years from date of shipment unless stated otherwise in a specific separate published warranty.

If any "Melan -100" product is found to have defects in material or workmanship the purchaser should notify BMVT promptly, and request an RMA number. After an RMA number is assigned, purchaser may return defective products prepaid to BMVT.

BMVT, at its sole discretion, will repair or replace products found to be defective, and return said products, prepaid. BMVT's correction of any defects, by the grant of credit, repair, or replacement, shall constitute fulfillment of all obligations and liability to the purchaser hereunder.

BMVT is not responsible for damage to product caused by abuse or neglect, unauthorized installation, maintenance, use, repair, or adjustment. Any of the aforementioned actions shall make this warranty null and void and shall relieve BMVT from any further responsibility hereunder.

BMVT shall not be liable for any incidental, special, or consequential damages in any claim action, suit or proceeding arising under this warranty or any other part of the agreement of sale between BMVT and the purchaser, nor shall there be any liability hereunder for labor claims, loss of profits or good will, repairs or other expenses incidental to replacement.

The foregoing warranty is in lieu of all other representations and warranties expressed or implied, written or oral, including warranties of merchantability or fitness of the goods for a particular purpose, unless exception is offered in writing by an officer of BMVT, or separate published warranty is cited for specific product groups.

Warranty is void if: -We determine the product has been subjected to neglect or misuse or has been installed following procedures not in accordance with our instruction manual. -Unauthorized repairs or modifications have occurred. -The warranty seal has been broken or the serial number label has been altered.

Our obligation is limited to repair or replacement, FOB Ames, Iowa. We will not be held responsible for consequential damages, transportation, installation, adjustment or other expenses arising in connection with our products or parts.

This warranty is in lieu of all other statements or guaranties, written or implied by BMVT or our authorized representatives.

Liability

Any warranty implied under State Law shall be limited to one year from original delivery to original purchaser. Specifically excluded from BMVT liability is damage resulting from acts of any deity, malicious mischief, vandalism, riots, wars, improper installation or neglect in the operation or maintenance of the unit or misunderstanding of the properties of the unit. Under no circumstances shall BMVT be obligated for consequential or other damages of any kind or description, losses or expenses in connection with or by reason of the use of, or inability to use this unit for any reason. The stated warranty provides the purchaser with specific legal rights, and there may be additional rights which vary from State to State. Some states, for example, do not allow exclusion of consequential damage.