

Quazar DM 5000

Instruction Material for Quazar DM 5000
Precision O.E.M. Laser Diode Module and Driver Unit

Quazar

Diode Module and Driver

Replacement Parts

Laser Supplies

Laser Eyewear

Eyewear # D-213-4600 Each \$199.99

Laser Module Replacement 1000 mW

1 Watt Laser Module # D-213-6700 Each \$599.99

Carbon Dye 50ml Bottle

Carbon Dye # P-213-2500 Each \$29.99

Prices are subject to change without notification. To order on-line, go to <http://www.centre-biotechnique-avance.com>
For technical assistance beyond what this manual provides, please e-mail admin@centre-biotechnique-avance.com
Please allow 24 hours for processing.

Quick Setup Guide

Read this guidebook first to set up your
equipment for use.



Keep this manual in a convenient place for quick and easy
reference at all times.

The product names in this guidebook are trademarks or registered trade marks of each specific manufacturer. In the interest of providing superior equipment, Quazar Industries reserves the right to modify or amend equipment specifications without notice or obligation.

Important Information

- Read all safety and operating instructions before connecting or using this equipment.
- To protect against electrical shock, do not use this equipment near water. Do not immerse unit, plug transformer while standing in water, or spray with any liquids. As with many electrical appliances, this unit carries a live charge even while unplugged. Do not dismantle this unit (there are hazardous voltages inside).
- Do not place this unit near an open flame or cooking/heating devices (e.g., stoves, heat registers, radiators, etc.).
- If an extension cord is used, it should be appropriately rated for voltage, power, and frequency as indicated on the back of the unit.
- The power cord should be routed so that it is not likely to be walked upon or pinched (especially near the wall outlet, extension receptacle, or where the cord exits the unit).
- To avoid serious damage to the power system and microelectronics, the transformer should be unplugged from the wall outlet when the unit will be unused for long periods of time.

Trouble Shooting

Should you encounter technical problems with your Quazar DM 5000 Photo Epilator, refer to the following guide for potential problems and their solutions.

—Unit is plugged into the wall, all accessories are correctly inserted into the unit but no laser output is being registered.

- ++**Check all connections. Plug and unplug each one being sure all contacts are sound.**
- ++**Check all cords. Due to continual bending and fatigue, wires may fray or break resulting in full loss of power.**
- ++**Check Fuse:** The Quazar Epilator unit has a fast-acting fuse mounted on the top panel of your unit to protect the delicate laser diode from voltage spikes, on-line power surges and electrostatic discharge (ESD damage). Replace with 400-500 micro amp (ua) fast acting fuse only. Failure to comply with these specifications may result in serious damage to your laser and will void all warranties.

—Unit hums or makes noises.

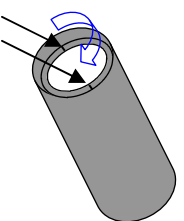
- ++**Unit needs servicing.**
- Laser output is weak.**
- ++**Unit needs servicing.**

—No output from the laser is registered after all trouble-shooting suggestions listed above have been checked.

- ++**Unit needs servicing.**

—Laser beam is not focused to a usable point (output is a weak line or oval).

++**Your optics need to be adjusted. Normally, the lens is pre-set by the manufacturer to focus at roughly 2-3 inches from the aperture. If the user has altered this setting (turned the optical spanner adjustment) without correct instructions the beam may be unusable until corrected. Turn the lens adjuster with a straight-slot screw driver (see notches at right) to reset beam focus. Turning clockwise will bring the focus out (making the point farther away). Turning counterclockwise will bring the point closer.**



Equipment Warranty

We warrant to the original purchaser the equipment manufactured by us to be free from defects in material and workmanship under normal use and service. Our obligation under this warranty shall be limited to the repair or exchange of any part or parts which may prove defective under normal use and service within 12 calendar months from the date of shipment and which our examination shall disclose to our satisfaction to be thus defective. When necessary, purchaser shall apply for a Return Materials Authorization and instructions on proper return procedures from their original sales associate. The laser diode (head) requires special operating precautions which, if defied, may void warranty.

Warranty Extension Certification:

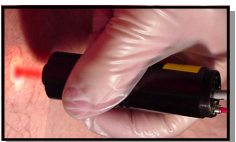
Customer Number _____ Authorization Number _____
Warranty Extension () years Warranty Type: A B C D

The Treatment Procedure

Shine the red dot on the highlighted hair follicle. Adjust the distance of the laser head from the tissue to create a pin-point of focus. The optimal beam diameter for maximum intensity is roughly 1 mm.

The follicle will begin to flash as the photon energy reacts with the carbon dye. It is also normal to see some gaseous emissions (vapor and smoke). Continue to hold the laser in place until all visible reactivity ceases. This may take up to 15 seconds. Move on to the next follicle and repeat.

Some patients may find the laser treatment uncomfortable. In these cases the use of a topical anesthetic such as lidocaine (a synthetic amide, C14H22N2O, used chiefly in the form of its hydrochloride as a local anesthetic and antiarrhythmic agent) will reduce discomfort. A mild cryogenic (nitrogen-based) topical spray will also minimize any pain.



Treatment Around or Near the Eyes: Great care must be exercised when working near the eyes. The laser emission is powerful enough to actually penetrate the eyelid and permanently damage the eye. Having the patient close their eyes is not satisfactory protection. The use of a dark-colored damp wash cloth which is folded over four times will deflect the harmful radiation; however, only laser-protective eyewear is recommended.

Treatment Around or Near Mucus Membranes: Laser radiation will severely damage the tissues inside the nose and ear canal. Treatment should be avoided in these areas altogether.

Treatment Around or Near the Genitals: Laser hair removal is safe for application to the pubic regions including the reproductive organs or both sexes. Care must be taken into consideration in these areas due to the increased level of neural sensitivity. The patient may find the process uncomfortable without a topical.

Treatment Around or Near the Areola (nipple): Laser hair removal is safe and effective on hair growth which occurs from the areola of both sexes. Again, care must be taken into consideration in these areas due to the increased level of neural sensitivity.

Post-Treatment: The skin surrounding the treatment area may experience short-term erythema (reddening) which will subside within 12 hours. Should the treatment area show signs of excess scabbing you may wish to reduce the overall treatment time or intensity. The application of a post-treatment cooling and healing gel (such as Aloe) is encouraged to speed healing and reduce sensitivity. Instruct the patient to refrain from applying cosmetics or sunbathing for at least 24 hours.

Treatment Efficacy

Permanent hair removal is a gradual process which takes 90 days or more for complete destruction of the follicle tissues. Each hair must go through its entire growth cycle for it to be effectively treated. Only during the **early anagen** phase is it vulnerable to destruction. The following **chart** will give you an accurate example of what the reduction in growth activity should look like from 30, 60, and 90 days of treatments.



Pointers: Human skin has roughly 1,000 follicles per square inch. Only a small percentage of them are active (anagen) at any given time. For effective treatment, the hair needs to be treated during the anagen phase. It normally takes about 90 days for each follicle to go through the full growth cycle. Should you see hair growth activity in an area which has been completely cleared, it is most likely from a follicle which was dormant at the time of the original treatment. Simply apply treatment to these hairs as they appear. All hair growth activity will normally terminate within 3 months.



Patient #	Hair counts		6 week clearance percent
	pre	post	
1 Females, 3 males	274	9	97%
2	327	19	94%
3	187	2	99%

Laser 'Electrolysis'

The first laser hair removal treatment was administered, quite by accident, by a technician in the late 1970's. He was repairing a high output 692 nm YAG laser when he unwittingly left his arm in the beam's path for a few seconds. Although his skin was completely unharmed, all the hair in the area had completely burned off. In the years to follow, the area of his arm which was exposed to the laser remained completely **bold**.



What actually occurred was a "heat exchange" reaction with the pigment (called melanin) deep inside the follicle tissue. Photon energy from the laser had penetrated into the translucent dermis virtually unobstructed. When it reached the pigment naturally contained in the follicle, radiation quickly heated those cells (*melanocytes*) to well over 100 degrees Celsius. Human tissue cannot survive at this temperature, henceforth, the complete destruction of the follicle was virtually instantaneous. The scientific term for this process is called **thermolysis**.

Laser light with the wavelength of 600 to 900 nm (nanometer) passes through human tissue with very little loss of intensity. The Quazar DMD500 Epilator produces a precise wavelength of 808 nm, which is proven to provide the greatest tissue penetration while limiting the loss of energy to natural pigments found in the skin.

Quazar also utilizes a constant-wave output laser (CW), which makes it one of the most effective and sophisticated systems in the world. Other systems operate strictly on a 'pulsed-type' output. The problem with pulsed lasers is that follicle tissues are only heated for a very small increment of time (usually less than 1/1,000,000 of a second). Recent clinical studies show that it takes a full **two seconds** or more for complete carbonization, desiccation and coagulation at 100 degrees Celsius. With Quazar, the beam may be held in position until full destruction is achieved. By carefully regulating the output at 808 nm, the laser will not harm the skin, even after several minutes of constant exposure.

The best candidate for laser hair removal has fair skin with dark terminal hairs. Skin typing for exposure to ultraviolet light can be categorized by the Fitzpatrick classification, developed by Dr. Thomas Fitzpatrick of Harvard Medical School.

Skin Type I: Never tans, always burns (extremely fair skin, blonde hair, blue/green eyes)

Skin Type II: Occasionally tans, usually burns (fair skin, sandy to brown hair, green/brown eyes)

Skin Type III: Often tans, sometimes burns (medium skin, brown hair, brown eyes)

Skin Type IV: Always tan, never burns (olive skin, brown/black hair, dark brown/black eyes)

Skin Type V: Never burns (dark brown skin, black hair, black eyes)

Skin Type VI: (black skin, black hair, black eyes)

Types I through 4 are outstanding candidates. Type 5 will have excellent results as well but care must be taken to assure that the laser will not burn the skin. This is achieved by using a cryogenic spray or air-flow accessory. Type 6 should not undergo laser hair removal unless used in conjunction with skin bleaching due to the high risk of burning and hypo/hyper pigmentation issues.

- References**
1. Bjerring P, Garners M, Egekvist H, Christiansen K, Trullius A. Hair reduction using a new intense pulsed light irradiator and a normal mode ruby laser. *J Clean Laser Technol* 2000; 4: 33-37.
 2. Anderson RR. Treatment of pseudofolliculitis with a pulsed infrared laser. *Arch Dermatol* 2000; 136:1343-6.
 3. Esmola S, Li C, Newman N. Laser hair removal with alexandrite versus diode laser using four treatment sessions: 1-year results. *Dermatol Surg* 2001; 27: 925-9.
 4. Gargul N, Aslan G, Akce T, Erdogan B. Comparison of alexandrite laser and electrolysis for hair removal. *Dermatol Surg* 2000; 26:37-41.
 5. Benayahu N, Luid A, Galimberti M, Ferretti G. Long-term ablation with long-pulsed neodymium:YAG laser. *Dermatol Surg* 1999; 25:175-8.
 6. Berczi JK, Mihov M. Long-term evaluation of the long-pulsed alexandrite laser for the removal of thin hair at shortened treatment intervals. *Dermatol Surg* 2000; 26:633-7.

Warnings and Advisories

Quazar DMD500 Epilator produces laser radiation which can be harmful to the eyes. Always wear protective eyewear while operating this equipment. Laser radiation has the capability to burn the skin if the technician does not closely observe the patient's reaction to the procedure.

Advisory: Laser electrolysis results in full destruction of the hair follicle and is **irreversible**. Always plan ahead before undertaking detail work such as eyebrow shaping or hairline contouring. Patch test a small area (no larger than 1X1 inch square) before full application. Allow 24 hours to determine the patient's reaction.

This manual provides a tutorial overview of galvanic electrolysis. For more detailed information, please refer to "**Modern Electrolysis, Volume 2, Phototherapy**" by Palamed Press. If you are unsure of the proper use of this device, do not use. The **Quazar DMD5000 Epilator** is intended for use by qualified individuals or professionals only.

