

Oabduz UV Laser

Oabduz 10W UV Laser Marking Machine User Manual

Model: UV Laser (10W UV)

1. INTRODUCTION

This manual provides essential information for the safe and efficient operation of your Oabduz 10W UV Laser Marking Machine. Please read this manual thoroughly before installation, operation, or maintenance to ensure proper usage and to prevent damage to the equipment or personal injury. This machine is designed for precise marking and engraving on a variety of materials using a 10W UV laser.

2. SAFETY INFORMATION

The Oabduz 10W UV Laser Marking Machine is a Class II laser product with an output power of 0.874mW. Adherence to safety guidelines is paramount to prevent injury. This device complies with FDA Accession Number: 2411184-000 and IEC 60825-1 Laser Safety Standard Test Report: IN-GZ-5805-TF240132-S.

General Safety Precautions:

- **Always wear appropriate laser safety goggles (OD7+)** when operating the machine to protect your eyes from direct or reflected laser radiation.
- Ensure the work area is clear of flammable materials.
- Do not operate the machine if any covers are removed or safety interlocks are bypassed.
- Keep children and unauthorized personnel away from the operating machine.
- Ensure proper ventilation to dissipate any fumes generated during marking.
- Disconnect power before performing any maintenance or cleaning.

3. PRODUCT FEATURES

Key Specifications:

- **Laser Source Power:** 10W
- **Marking Area (Lens):** 7.87" x 7.87" (200x200mm)

- **Laser Wavelength:** 355nm (UV)
- **Galvo Head:** SINO-GALVO
- **Cooling System:** Integrated water cooling system for efficient heat dissipation.
- **Software Compatibility:** EzCad lite (compatible with 32 and 64-bit Windows 7, 8, and 10 editions), LightBurn compatible.

Advanced Components:

The machine features a high-quality galvanometer and a premium scanning lens for precise and stable operation.

F-theta Scanning Lens

For 3 55nm Wavelength Laser

- Easily install into most uv laser marking machine
- 100-420mm Effective focus length
- Precision beam positioning

| Focal Length | Filed | Beam Dia. | Working Distance | Angle | M1/M2 | Thread |
|--------------|------------|-----------|------------------|-------|-------|--------|
| 100mm | 70 *70mm | 10mm | 135mm | 15° | 12.56 | M85 |
| 130mm | 90 *90mm | 8.5mm | 165mm | 15° | 10.17 | M85 |
| 160mm | 110 *110mm | 10mm | 21 8mm | 15° | 12.56 | M85 |
| 210mm | 150 *150mm | 10mm | 255mm | 15° | 12.56 | M85 |
| 250mm | 155 *155mm | 10mm | 260mm | 15° | 12.56 | M85 |
| 254mm | 175 *175mm | 10mm | 305mm | 15° | 12.56 | M85 |
| 290mm | 200 *200mm | 10mm | 350mm | 15° | 12.56 | M85 |
| 330mm | 220 *220mm | 10mm | 400mm | 15° | 12.56 | M85 |
| 420mm | 300 *300mm | 10mm | 520mm | 15° | 12.56 | M85 |




Image: High Quality Galvanometer and Scanning Lens. This image illustrates the RC1001 galvanometer head, highlighting its high precision, long life, fast speed, and stable operation. It shows marking and positioning speeds of 4000mm/s. The premium scanning lens offers a 7.9"x7.9" (200mmx200mm) range with less than 1% distortion. The image also depicts 'Preview box mode' and 'Outline mode' for job setup.

Endless possibilities



Image: Product Details. This image details key components: 1. **Lifting shaft** made of high-quality materials for high precision, clear positioning accuracy, and firm positioning. 2. **Working platform** with positioning holes for fast, arbitrary adjustment and multi-station printing, improving work efficiency. 3. **Ruler** with high-performance scales for accurate marking and positioning. 4. **Field Lens**, which is light-sensitive, provides light uniformity, is compact in size, and offers a friendly interface for harsh environments.

Material Compatibility:

The UV laser is suitable for marking on a wide range of materials, including:

- **Metals:** Gold, Silver, Stainless Steel, Brass, Aluminum, Steel, Iron.
- **Plastics:** ABS, PES, PVC, engineering plastics, plated plastics, sprayed materials.
- **Other Materials:** Wood, Jewelry, Rubber, Epoxy resins, some ceramics, glass products.

Optical UV laser marking machine

Optical UV laser marking machine has the advantages of high optical conversion efficiency,galvanometer head, small volume, good output beam and high reliability



High efficiency



Watercooling



Small volume



Image: Applied Materials Field. This image displays various materials and items that can be marked by the UV laser, such as circuit boards, bearings, cutting tools, nameplate labels, tires, glasses, USB flash drives, ceramics, purple clay, and black plastic.

Software Compatibility:

The laser marking machine is compatible with industry-standard software for design and control.

Optical UV laser marking machine

Optical UV laser marking machine has the advantages of high optical conversion efficiency,galvanometer head, small volume, good output beam and high reliability



High efficiency



Watercooling



Small volume



Image: Widely Compatible. This image shows the laser machine's compatibility with Windows 7, LightBurn, Windows 10, and Windows 11, indicating that the EzCad-based device works with LightBurn for easy creation of patterns and images.

4. SETUP GUIDE

Unpacking:

The Oabduz 10W UV Laser Marking Machine is shipped in two separate packages. Carefully unpack all components and verify against the packing list.

Component Identification:

Familiarize yourself with all included items:



Image: Packing List. This image displays the standard components included: UV laser machine, UV Laser Water Chiller, position strip, OD7+ Goggles, Foot Switch, Power cable, U disk (with software & manual), Wrench, and USB Data line. An optional 80D Rotary Axis and Fume Extractor are also shown.

Physical Installation:

1. Place the laser marking machine and the water chiller on a stable, level surface.
2. Connect the water cooling lines between the laser machine and the chiller as per the chiller's instructions.
3. Connect the power cable to the laser machine and the chiller, then plug them into a grounded power outlet.
4. Connect the foot switch to the designated port on the laser machine.
5. Connect the laser machine to your computer using the provided USB data cable.

Optical UV laser marking machine

Optical UV laser marking machine has the advantages of high optical conversion efficiency, galvanometer head, small volume, good output beam and high reliability



High efficiency



Watercooling



Small volume



Image: Product Size. This image shows the assembled UV laser marking machine and its industrial chiller, along with their approximate dimensions in centimeters. The laser machine measures approximately 61cm (height) x 62cm (width) x 35cm (depth), and the chiller measures approximately 47cm (height) x 56cm (width) x 28.5cm (depth).

Software Installation:

Insert the provided U disk into your computer. Follow the instructions to install the EzCad lite software. If using LightBurn, ensure it is properly configured to communicate with the laser machine.

5. OPERATION GUIDE

Basic Operation Workflow:

1. Power on the water chiller, then the laser marking machine.
2. Launch the EzCad lite software on your computer.
3. Design or import your marking pattern.
4. Place the material to be marked on the working platform.
5. Use the software's preview function to verify the marking position.
6. Initiate the marking process via software or foot switch.
7. Monitor the marking process and ensure safety goggles are worn.

Marking Modes:

The software typically offers different modes to assist with job setup:

- **Preview Box Mode:** Projects a rectangular outline of the marking area onto the material, allowing for precise positioning.
- **Outline Mode:** Projects the actual outline of your design, useful for complex shapes.

F-theta Scanning Lens Configuration:

The F-theta scanning lens is crucial for achieving precise beam positioning. The following table provides parameters for various focal lengths:



Image: F-theta Scanning Lens. This image presents a table detailing F-theta scanning lens parameters for a 355nm wavelength laser. It includes Focal Length, Field, Beam Diameter, Working Distance, Angle, M1/M2, and Thread specifications, with an effective focus length range of 100-420mm.

F-theta Scanning Lens Parameters (for 355nm Wavelength Laser)

| Focal Length | Field | Beam Dia. | Working Distance | Angle | M1/M2 | Thread |
|--------------|-----------|-----------|------------------|-------|-------|--------|
| 100mm | 70*70mm | 10mm | 135mm | 15° | 12.56 | M85 |
| 130mm | 90*90mm | 8.5mm | 165mm | 15° | 10.17 | M85 |
| 160mm | 110*110mm | 10mm | 218mm | 15° | 12.56 | M85 |
| 210mm | 150*150mm | 10mm | 255mm | 15° | 12.56 | M85 |
| 250mm | 155*155mm | 10mm | 260mm | 15° | 12.56 | M85 |
| 254mm | 175*175mm | 10mm | 305mm | 15° | 12.56 | M85 |
| 290mm | 200*200mm | 10mm | 350mm | 15° | 12.56 | M85 |
| 330mm | 220*220mm | 10mm | 400mm | 15° | 12.56 | M85 |
| 420mm | 300*300mm | 10mm | 520mm | 15° | 12.56 | M85 |

Example Applications:

The Oabduz UV Laser Marking Machine is suitable for a wide array of creative and industrial applications, allowing for personalized and detailed engraving projects.

Packing List



Image: Endless Possibilities. This image showcases various items marked with the UV laser, including wooden coasters, metal tumblers, acrylic blocks, jewelry, leather wallets, keychains, and stones, demonstrating the machine's versatility for DIY crafts and personalized items.

6. MAINTENANCE

Regular maintenance ensures the longevity and optimal performance of your laser marking machine.

- **Water Chiller Maintenance:** Regularly check and replenish the water level in the chiller. Use distilled or deionized water to prevent mineral buildup. Clean the chiller's filter and radiator fins periodically to ensure efficient cooling.
- **Lens Cleaning:** Carefully clean the scanning lens and field lens with specialized optical cleaning solutions and lint-free wipes to maintain marking quality. Avoid touching the lens surfaces with bare hands.
- **General Cleaning:** Keep the working platform and machine exterior clean from dust and debris.

7. TROUBLESHOOTING

This section addresses common issues you might encounter. For problems not listed here, please contact customer support.

- **No Laser Output:** Check power connections, ensure the chiller is running, and verify software settings. Confirm safety interlocks are engaged.
- **Poor Marking Quality:** Inspect the lens for cleanliness, verify focus settings, and check laser parameters in the software. Ensure the material is properly positioned and stable.
- **Software Connection Issues:** Ensure the USB cable is securely connected and the correct drivers are installed. Restart both the machine and the computer.
- **Overheating:** Check the water chiller's operation, water level, and ensure adequate airflow around the chiller. Clean any dust from the chiller's vents.

8. TECHNICAL SPECIFICATIONS

| Feature | Specification |
|------------------------|--|
| Laser Source Power | 10W |
| Laser Wavelength | 355nm (UV) |
| Laser Class | Class II (0.874mW Output Power) |
| FDA Accession Number | 2411184-000 |
| IEC Safety Standard | IEC 60825-1 Test Report: IN-GZ-5805-TF240132-S |
| Marking Area (Lens) | 7.87" x 7.87" (200x200mm) |
| Galvo Head | SINO-GALVO |
| Marking Speed | Up to 4000mm/s |
| Positioning Speed | Up to 4000mm/s |
| Cooling System | Water Cooling |
| Software Compatibility | EzCad lite (Windows 7/8/10), LightBurn |
| Product Dimensions | 23.62 x 16.14 x 15.75 inches (Laser Unit) |
| Item Weight | 66 pounds |
| Manufacturer | Oabduz |
| Model Number | UV Laser |

9. WARRANTY AND SUPPORT

For warranty information, technical support, or service inquiries, please refer to the documentation included with your purchase or contact Oabduz customer service directly. Keep your purchase receipt as proof of purchase for warranty claims.