

General Installation Manual for Laser Lights

Preface

This manual covers the standardized installation, wiring, commissioning and routine maintenance of conventional equipment including indoor and outdoor stage laser lights and cultural tourism landmark laser lights. It strictly complies with IEC 60825 laser product safety standard, CE, RoHS and FDA industry specifications, aiming to standardize operating procedures, avoid safety hazards and ensure stable operation of equipment.

Applicable Scenarios: Stage performances, outdoor lighting, cultural tourism nightscape lighting projects

Warm Reminder: Installers, commissioning technicians and maintenance personnel must receive professional training and be familiar with laser safety regulations. Unauthorized operation by untrained personnel is strictly prohibited.

1、 Safety Precautions (Must Read)

1.1 Laser Safety Specifications

- This device is a Class 4 laser product. The laser beam carries high energy. It is strictly forbidden to stare directly at the light source, irradiate human eyes or skin, or sweep the beam across crowded areas, passages and entrances/exits.
- For outdoor laser light installation, the vertical height from the ground shall not be less than 3 meters, and the horizontal safety distance of the beam hazard zone shall be at least 2.5 meters to prevent people from entering the exposure range.
- Do not disassemble the lamp body or block heat dissipation vents while the unit is running. It is prohibited to plug or unplug signal cables and power cables with power connected.

1.2 Environmental Safety Requirements

- Indoor Installation: Keep well ventilated and dry. Keep away from flammables, heat sources and damp puddles; prevent dust buildup.
- Outdoor Installation: Use waterproof models only. Take rainproof, lightning-proof, rust-proof and anti-static measures. Avoid windy and lightning-prone areas.
- Operating Temperature: $-20^{\circ}\text{C} \sim +45^{\circ}\text{C}$. Do not power on beyond this range.

1.3 Electrical Safety Specifications

- Rated voltage: AC 100V-240V, 50/60Hz. Use an independent power supply with reliable grounding; do not share circuits with high-power equipment.

- Cut off the main power before wiring. Live wiring is forbidden. Power cables shall match the equipment power rating to avoid overload and short circuit.
- Use waterproof cables for outdoor wiring. Seal all cable joints against water to prevent electric leakage risks.

2、Package Inspection

Check all accessories one by one after unpacking, confirm the unit is intact with complete fittings. Contact the supplier immediately if any parts are missing or damaged.

Standard Accessories

- Laser Light Main Unit ×1
- 1.5m Power Cable & DMX Signal Cable
- Product Manual & Qualification Certificate

3、Equipment Installation Steps

3.1 Installation Position Selection

- Select a solid and flat mounting base (wall, truss, rooftop platform). The base shall bear at least 10 times the weight of the unit to prevent loosening or collapse.
- Adjust the mounting angle to keep laser beams away from crowds, surveillance cameras, transparent glass and precision instruments, with no blockages or direct exposure risks.
- Reserve space for heat dissipation and maintenance. Keep the surrounding area clear for later commissioning and servicing.

样式① 定做2米高铝合金架	样式② 松软土地倒灌加定制铝合金柱	样式③ 上墙固定架安装范本	样式④ 松软土地倒灌加定做三脚架
			

3.2 Installation Points

Key Installation Points:

- Use stage clamps with matched load capacity (rated load ≥ 10 times unit weight). Deformed or cracked clamps are forbidden.
- Fully lock the clamp onto truss tube and tighten side screws to eliminate sliding gaps.
- Assemble the unit with omega bracket and fasten hand knobs tightly to prevent rotation.
- Install safety steel wire as secondary protection, fix both ends to fixture and truss separately.
- Distribute clamps evenly for multiple hanging units. Reserve space for heat dissipation and wiring to avoid extrusion.
- Shake the fixture for re-inspection after installation; power on only if no sliding or loosening exists.



3.4 Protection Treatment (Outdoor Essential)

- After equipment installation, seal screw joints, housing gaps and cable connectors with waterproof glue.
- Spray anti-rust coating on metal brackets and screws, and complete anti-static grounding to prevent outdoor corrosion and static interference.

4、Wiring Connection

4.1 Power Cable Connection

- Confirm the mains voltage matches the equipment rated voltage. Cut off the main power before connecting the power cable, distinguish live wire, neutral wire and ground wire. Wrong connection and loose contact are strictly prohibited.
- The ground wire shall be grounded reliably to prevent static electricity, electric leakage and lightning strikes.
- Arrange cables neatly and fix them along walls or trusses. Avoid pulling, treading and sharp bending to prevent tripping hazards.

4.2 Signal Connection (DMX Control)

- Use standard DMX512 signal cables. When connecting multiple units in series, wire in the order:

Controller → Unit 1 → Unit 2 → Terminator.

- Fully insert and lock signal connectors. Fit waterproof adapters for outdoor use to prevent signal interference and disconnection.
- Run signal cables separately from power cables with a minimum 20cm gap to avoid light flicker and malfunction caused by power interference.

5、 Operation & Commissioning

5.1 Power-on Self-check

- After verifying all cables and fixing points, switch on the power supply. The device will automatically enter self-check mode. Normal indicator lights mean the unit starts up properly.
- Cut off power immediately if self-check fails (no light output, dead indicators, error flashing). Inspect cables and device faults; do not force operation.

5.2 Mode Commissioning

- 1、 **AUTO Mode:** The fixture runs pre-programmed light animations automatically without external controllers, suitable for simple lighting projects.
- 2、 **SOUND Mode:** Lighting effects shift with the rhythm of ambient audio, ideal for stage performances and atmosphere scenes.
- 3、 **DMX Control Mode:** Connect to a lighting controller to customize light colors, gobos, speed and movement paths, perfect for professional stages and large cultural tourism projects.

5.3 Beam Calibration

- Fine-tune the bracket angle and calibrate the projection position of laser beams to ensure even beams without deviation or obstruction.
- Tighten all adjusting screws after commissioning and mark the equipment position to prevent displacement errors later.

6、 Daily Maintenance

Standard maintenance can extend equipment service life and reduce failure rates. Regular inspection and maintenance are recommended.

6.1 Regular Inspection

- 1、 Weekly Inspection: Check whether the fixture fixing screws, safety cables and brackets are loose, and inspect cables for damage or aging.
- 2、 Monthly Inspection: Clean dust and stains on lens surfaces, check ventilation of cooling vents and clear debris around the unit.
- 3、 Quarterly Inspection: Test grounding, waterproof and rust-proof performance; re-fasten and re-

seal outdoor equipment.

6.2 Maintenance Prohibitions

- Do not rinse the fixture directly with water, and do not wipe the lens with alcohol or corrosive solvents.
- Long-term overloaded operation is prohibited.
- Unauthorized disassembly of the fixture or modification of wiring is forbidden. Any improper operation will void the warranty.

7、 Common Fault Troubleshooting

Fault Phenomenon	Troubleshooting Cause	Solution
No power on	Power disconnected, loose wiring, blown fuse	Check power, rewire, replace matching fuse
Low laser brightness	Dusty lens, bad cooling, unstable voltage	Clean lens, clear vents, stabilize voltage
Light strobing & out of control	Signal interference, loose cables, wrong console settings	Refix cables, separate wires, reset console
Normal power but no laser output	Laser protection, mode error, circuit fault	Restart, switch mode; contact support if faulty

8、 Compliance & Warranty Instructions

8.1 Compliance Standards

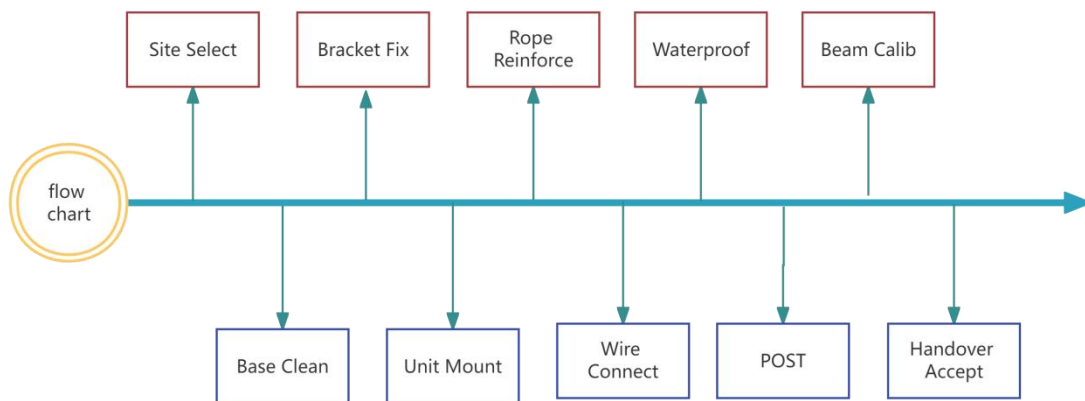
This device complies with IEC 60825 laser safety standard, CE, RoHS and FDA industry specifications, and can be legally applied to stage performances, outdoor events, cultural tourism lighting projects and other applications.

8.2 Warranty Terms

- The complete machine is covered by a 5-year warranty, and the core laser module enjoys a 2-year warranty. Damage caused by human error, improper operation or unauthorized disassembly is not covered by the warranty.
- Installation and operation shall strictly follow the specifications in this manual. The manufacturer shall not be liable for equipment failures or safety accidents resulting from improper operation.

9、Graphic Installation Flow Chart

Standard Installation Diagram:



Precautions:

- 1、Hoisting equipment: Secure with double safety steel wire ropes, fully fasten clips without loose gaps.
2. Outdoor wiring: Waterproof and seal cable connectors, separate strong and weak current wiring with reliable grounding.
3. Beam range: Strictly control projection height and distance, avoid personnel active areas.