ERO Laser

Movinghead with fat beam laser diode

User manual

Safety precautions

WARNING: This unit may cause serious injury to eyesight when used incorrect. It therefore is strongly advised to read this user manual carefully, to get familiar with the functions of this laser device.

WARNING: This unit must be operated by, or under the supervision of an adult. This device is not suitable for children.

WARNING: Do not look directly into the beam coming out of the lens, from short distance or when a solid beam is projected. This may cause serious injury to eyesight. Ayra is not responsible for any injuries caused by incorrect use of this device.

WARNING: Do not project the beam of this unit on to reflective surfaces, as the shattering beam may cause injury to eyesight.

Installation requirements:

- Always check the voltage settings on the unit and the power supply you want to connect the device to. If the voltage requirements do not meet, do not connect the device as this may cause serious damage.
- This device must be installed by a professional technician, in a standing or hanging position. Always pay attention to the positioning of the unit, as the beams may project directly into your audience.
- It is strongly advised to **NOT** project the beams directly into your audience.Ayra strongly recommends a minimum distance of 1.5 meters in height between the lowest projected laser beam and your audience, for optimal safety. If there is no other option, keep a minimum distance of 5 meters from the beam exit to the first beam that hits your audience.
- When installed in a standing position, a safety cable is recommended to secure the unit.
- When installed in a hanging position, this unit **MUST** be secured by using a safety cable, capable of holding 10x the weight of this device.
- When installed in a hanging position, this unit must be mounted to a proper surface, e.g. a truss system. When using a truss system, Ayra

recommends the use of a proper hook or halfcoupler.
- Make sure there are no flammable objects in the direct environment of the device (such as decorative objects). Keep a minimum distance of 1.5 meter.
- Do not block the beam-exit and fan
- Keep a minimum distance of 0.5 meter from any walls to provide sufficient cooling
- Make sure the beam-exit and fan are not blocked by any objects in the near environment
- This unit must be connected to a grounded power supply that meets the voltage requirements of the device.

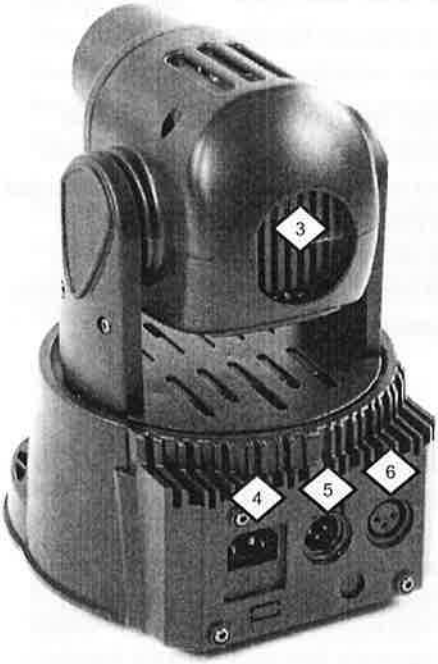
Maintenance and protection
- Keep the unit away from dusty environments, as this may have negative effect on the fan-cooling system and laser optics. Ayra recommends using a flightcase for storage of this device. Clean the optics and fan of the laser with a small, soft brush and vacuum cleaner when needed. Clean the housing of the unit with a damp cloth.
WARNING: Always disconnect the unit from the power supply when cleaning the unit. Reconnect the unit only if any moist on the fixture disappeared completely.
- This laser device is a lighting effect, designed to support visual entertainment while playing music. Continuous use is not recommended. Do not use the device longer than 3 hours subsequently, so the unit can cool down. This will provide a longer lifespan for the diodes. Apply a cooling-down time of 25 minutes before re-activating the laser.
- Do not switch the power on and off too often, as this may cause serious damage to the unit.
- Avoid heavy shocks and collision during transport and use, as this might cause damage to the laser diodes, electronic circuit, optics and housing.
- Keep the device away from moisture, rain, water or any liquids as this may cause a short circuit and/or electric shocks. If any liquid enters the unit, power supply or housing of the unit, disconnect the unit immediately and do not reconnect the power supply. Contact your local dealer or technician to inspect the unit for any damage.

Box contents

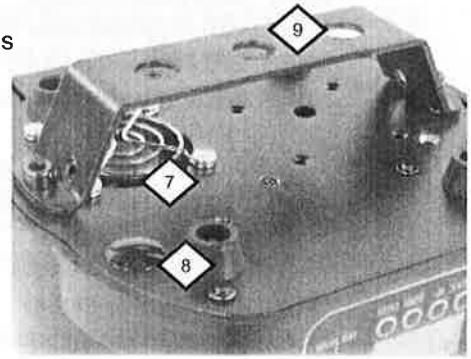
Box contents
1x ERO Lasermovinghead
1x user manual
1x IEC to Schuko power cable
1x mounting bracket with hardware
1x safety eye

Unit and accessory inspection
- Always use the supplied power cable to connect the unit to a power supply. If the cable appears broken or has visible damage, do not use it. The supplied cable can be replaced with a regular IEC to Schuko cable, with a minimum cable diameter of 0.75m².
- If the unit will not be used for a longer period of time, disconnect it from the power supply and store it in a dust-free environment.
- Always check the unit for possible damage before use. If you suspect that something is wrong with the unit, do not connect it to a power source! When you suspect that your unit is broken or damaged, contact your local dealer or a certified technician to inspect the unit.
- When your device does not generate any laser beams, do not look directly into the lens. When the laser suddenly produces a beam, it may cause severe eye damage, possibly resulting in permanent visual loss.

Device overview



1. Beam output
2. Control display with menu buttons
3. Cooling fan
4. IEC power inlet with fuse
5. DMX input (3p XLR)
6. DMX output (3p XLR)
7. Cooling fan
8. Bottom feet
9. Mounting bracket (mounted)



Setting up the device

Setting up the device

- When the power supply is connected, the unit will first calibrate the stepping motors of the unit. It is normal that this may cause any noise. When the calibration is done, the unit is ready to be used (in the selected DMX, automatic or music controlled mode)
- It is possible that the unit may shut off the beam projection when no music or sound is detected. This will avoid the projection of a solid, static beam, which may cause injury to eyesight.

Selecting a working mode

This laser device has three working modes, which are **automatic, music-controlled** and **DMX**. To select the right operating mode for your situation, use the dipswitch panel on the rear of the unit.

The display of the unit shows certain statuses, which are used to set preferences. A short explanation of the codes and values are shown below:

NAFR: Main menu
- NASL: SLOV (Master slow auto mode)
- SLAV: SON (Slave mode)
- NSEC: CRLN (single-laser slow auto mode)
- NSES: SRLN (master sound activation)
- NAFA: FASE (Master fast auto mode)

PAN: Pan (pan movement normal)
RPan (pan movement inverted)
FI: FI (tilt movement normal)
RFI (tilt movement inverted)
DIS: DIS (normal display mode)
RDIS (display mode inverted)
REST: Reset mode
LOFN: Reset to factory settings

Working mode explanation:

Sound active:
The unit uses its internal microphone to sense music (the beat of the music) and will change rotation, color and speed according to the beat of the music. The microphone is situated at the front of the laser device. On the rear of the laser, there is an adjustable microphone sensitivity knob.

Please note that the sound-activated mode will not function properly when the music source is not loud enough or when only high-pitched sounds are played. The laser device will shut off when there is no music detected, due to safety issues.

Auto:
The laser device will activate a pre-defined lasershow on a solid speed setting. The patterns change on a pre-defined speed. It is possible to select a slow mode or fast mode.

Slave mode:
It is possible to link several ERO laserfixtures for a synchronized lasershow, without the use of a DMX controller.
Connect your devices with standard XLR-XLR cables. The first device in the chain needs to be set to a basic function, such as sound-active or one of the auto shows.
Select the slave mode on all other connected device in the chain. You will notice that these devices will mimic the actions of the first device. It is possible to invert the pan or tilt function on slave fixtures, for synchronized shows.

DMX mode:
With an external DMX-controller (or DMX-software) it is possible to control every feature of the laser device. It is possible to adjust the built-in patterns and to add several effects, such as zoom-effects or pattern rotation.

NOTE: When the DMX-signal or master/slave signal is lost (due to a failure in the DMX-connection or any other reason), the laser will shut off

the output due to safety issues. This prevents the projection of static images and/or patterns.

Placement and mounting of the fixture:
For safety reasons, the ITA ERO Laser is equipped with a laser diode of the type 'fat beam'. This means, the diameter of the laser beam is much thicker than a regular laser beam, to spread the intensity of the laser beam on a larger surface. Therefore, the intensity of the laser beam is lower than a regular laser, projecting a static dot on a surface. This prevents injury when the beam is projected into your audience (however, Ayra does not recommend this kind of use).

The used laser diode is a 80mW green fat beam diode. The diameter of the projected beam is 10mm.

The fixture can be placed on a solid surface with the rubber feet. When using the fixture in a hanging position, the included mounting bracket must be used and the safety eye must be mounted. The fixture must be installed by mounting a proper bolt or hook to the bracket. Use a safety cable on the safety eye to make sure the fixture can not fall down. This prevents possible damage and severe injury. The safety cable must be capable of holding at least 10x the weight of the fixture.

The fixture must be positioned in such a way that the distance in height is at least 1.5m from the audience. This prevents solid beam projections in the audience for longer periods of time. Projection into your audience is not recommended, but will not cause any harm when the installation requirements are met.

The ERO Laser fixture can be mounted in almost every position, including horizontal or upside-down. Use proper installation hardware, such as half couplers for truss systems.

DMX operating mode

While in the DMX mode, it is possible to select the working mode of the laser. That way, you can either choose to use your own programmed presets of your DMX controller, or to activate the music activated/automatic working mode of the laser to have a fully-automatic lasershow. Depending on the starting address you selected earlier, the laser responds to the following commands. In this example, we use DMX starting address 1. When you use a different DMX-starting value, for example 29, the unit will respond from channel 29, 30, 31.. and so on.

For more information about DMX, consult the manual of your DMX controller or software.

Channels	DMX value	control content
CH1	0-255	X axis control
CH2	0-255	X axis fine control
CH3	0-255	Y axis control
CH4	0-255	Y axis fine control
CH5	0-255	X, Y axismovement speed
CH6	0-7	Shutterclosed
	8-134	Shutter open
	135-238	Strobefrom slow tofast
	239- 255	Shutter open

Technical specifications

TYPE: ERO Laser

Laser diodes
Type 320RB:
- 80 mW green fat beam laser diode, 10 mm (532 nm)

Tech specs:
- Laser movinghead with 80mW green fat beam laser diode light source
- Projects static fat beam laser beams
- Strobe function
- 540 degrees pan movement
- 180 degrees tilt movement
- high-quality optical system for bright beams
- fan-cooled
- TTL laser modulation
- working temperature: 10 – 35 degrees Celsius
- working modes: auto, sound controlled, DMX
- DMX-channels: 6
- voltage requirements: 110/230V AC, 50/60 Hz
- power consumption: 200W
- size: 185 x 175 x 290 mm
- weight: 3.5 kg