AYRA

ERO 540

RGB LED movinghead

User manual

Safety precautions

WARNING: This unit may cause serious injury to the eyes when used incorrectly. It is therefore strongly advised to read this user manual carefully, to get familiance yourself with the functions of this 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 from a short distance. This may cause serious injury the eyes. Ayra is not responsible for any injuries caused by incorrect use of this device.

Installation requirements:
- Always check the power supply to which you want to connect the device. 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. Only use the included mounting bracket if you want to position the unit against a ceiling or truss system.
- When installed in a hanging position above your audience, this unit **MUST** be secured by using a safety cable, capable of holding 10x the weight of this device.
- The unit is designed to be installed with a halfcoupler or G-clamp, by using the included mounting bracket. Direct installation with proper bolts is also possible.
- Make sure there are no flammable objects in the direct environment of the device.
- Do not block the beam-exit and fan.
- Keep a minimum distance of 0.25 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.
- Always use the included power supply. Contact your local dealer for a replacement unit if necessary.

Maintenance and protection
- Keep the unit away from dusty environments, as this may have negative effects on the fan-cooling system and optics. Clean the optics and fan 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 when any moist on the fixture has evaporated completely.
- Do not switch the power on and off frequently, as this may cause serious damage to the unit.
- Avoid heavy shocks and collision during transport and use, as this may cause damage to the LED light source, 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 540 movinghead
1x power cable
1x installing bracket
1x small bag with mounting hardware

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.
- If the unit is not going to 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 light, do not look directly into the lens. When the fixture suddenly produces a beam, it may cause injury to your eyes.

Device overview

1. Beam output
2. Control panel with display and menu-functions
3. Adjustable manual focus
4. Fan
5. IEC power inlet
6. DMX input
7. DMX output

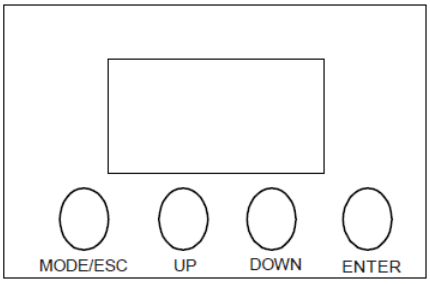
This unit is equipped with an adjustable focus, which makes it possible to sharpen the beam when used at a small or large distance.

Setting up the unit

To activate the unit, connect the included power supply to the unit and a suitable 230V, 50 Hz power outlet. The unit will activate directly after it is plugged in to a wall outlet or other power source.

Give the movinghead time to calibrate the stepping motors, which are used to determine the position of the head. You may hear and see some shaking, which is normal. The stepping motors use an end point to determine the beginning and end of their movement. The displays shows a scrolling “SETUP U2” status. After calibration, the movinghead will start the previously used mode, but by default it is set to DMX mode.

The status of the movinghead is shown on the display (which automatically shuts off after a few seconds of inactivity). The shown values determine the current status and can be changed by pressing the buttons on the control panel. The four buttons each have their own function, for easy navigation.



Press the ‘MODE/ESC’ button to switch modes, so you can easily select the built-in automatic, music controlled or DMX mode.

DMX mode

After calibration the display shows ‘ D001’, which indicates that the unit is currently on DMX-mode, with DMX-channel 1 as the starting address. A small LED next to the last digit states wheter the unit is receiving DMX.

Changing the DMX starting address is done by pressing the ‘up’ and ‘down’ buttons on the control panel. You can select a value between 1 and 512.

The ERO 540 has two DMX modes, one for basic control (5 channels), the other for extended control (13 channels).

DMX Charts

5-channel DMX mode:

Channel 1: Horizontal movement (pan), 0-540 degrees, variable value selectable
Channel 2: Vertical movement (tilt), 0-270 degrees, variable value selectable
Channel 3: Dimmer/strobe:

Start value	End value	Function
0	7	Closed
8	134	Variable dimmer intensity from 100% to 0%
135	239	Strobe-effect with increasing speed
239	255	Open

Channel 4: Color macros:

Start value	End value	Function
0	7	No function
8	21	White
22	35	Red
36	49	Green
50	63	Blue

64	77	Cyan
78	91	Magenta
92	105	Yellow
106	119	Purple
120	133	Orange
134	147	Chartreuse (green/yellow)
148	161	Pink
162	175	Brown
176	189	Gold
190	203	Crimson
204	217	Violet
218	231	Grape
232	255	Color Change Macro 1

Channel 5: Gobo, gobo shake

Start value	End value	Function
0	7	Open
8	15	Gobo 1
16	23	Gobo 2
24	31	Gobo 3
32	39	Gobo 4
40	47	Gobo 5
48	55	Gobo 6
56	63	Gobo 7
64	71	Gobo 8
72	79	Gobo 9
80	94	Gobo 1 with increasing gobo shake speed
95	109	Gobo 2 with increasing gobo shake speed
110	124	Gobo 3 with increasing gobo shake speed
125	139	Gobo 4 with increasing gobo shake speed
140	154	Gobo 5 with increasing gobo shake speed
155	169	Gobo 6 with increasing gobo shake speed
170	184	Gobo 7 with increasing gobo shake speed
185	199	Gobo 8 with increasing gobo shake speed
200	214	Gobo 9 with increasing gobo shake speed
215	235	Forwards rainbow effect with increasing speed
236	255	Backwards rainbow effect with increasing speed

13-channel DMX mode:

Channel 1: Horizontal movement (pan), 0-540 degrees, variable value selectable
Channel 2: Horizontal movement (pan), with 16-bit resolution
Channel 3: Vertical movement (tilt), 0-270 degrees, variable value selectable
Channel 4: Vertical movement (tilt), with 16-bit resolution
Channel 5: Pan/tilt speed: Decreasing movement speed, applies to both pan and tilt
Channel 6: Dimmer/Strobe:

Start value	End value	Function
0	7	Closed
8	134	Variable dimmer intensity from 100% to 0%
135	239	Strobe-effect with increasing speed
239	255	Open

Channel 7: Intensity Red 0-100%
Channel 8: Intensity Green 0-100%
Channel 9: Intensity Blue: 0-100%
Channel 10: Color macros:

Start value	End value	Function
0	7	No function
8	21	White
22	35	Red
36	49	Green
50	63	Blue
64	77	Cyan
78	91	Magenta
92	105	Yellow
106	119	Purple
120	133	Orange
134	147	Chartreuse (green/yellow)
148	161	Pink
162	175	Brown
176	189	Gold
190	203	Crimson
204	217	Violet
218	231	Grape
232	255	Color Change Macro 1

Channel 11: RGB speed: Decreasing RGB speed, applies to channels 7, 8 and 9
Channel 12: Motion Macro

Start value	End value	Function
0	7	No function
8	22	Motion macro 1
23	37	Motion macro 2
38	52	Motion macro 3
53	67	Motion macro 4
68	82	Motion macro 5
83	97	Motion macro 6
98	112	Motion macro 7
113	127	Motion macro 8
128	142	Sound-controlled Motion macro 1
143	157	Sound-controlled Motion macro 2
158	172	Sound-controlled Motion macro 3
173	187	Sound-controlled Motion macro 4
188	202	Sound-controlled Motion macro 5
203	217	Sound-controlled Motion macro 6
218	232	Sound-controlled Motion macro 7
233	255	Sound-controlled Motion macro 8

Channel 13: Gobo, gobo shake:

Start value	End value	Function
0	7	Open
8	15	Gobo 1
16	23	Gobo 2
24	31	Gobo 3
32	39	Gobo 4
40	47	Gobo 5
48	55	Gobo 6
56	63	Gobo 7
64	71	Gobo 8
72	79	Gobo 9
80	94	Gobo 1 with increasing gobo shake speed
95	109	Gobo 2 with increasing gobo shake speed
110	124	Gobo 3 with increasing gobo shake speed

125	139	Gobo 4 with increasing gobo shake speed
140	154	Gobo 5 with increasing gobo shake speed
155	169	Gobo 6 with increasing gobo shake speed
170	184	Gobo 7 with increasing gobo shake speed
185	199	Gobo 8 with increasing gobo shake speed
200	214	Gobo 9 with increasing gobo shake speed
215	235	Forwards rainbow effect with increasing speed
236	255	Backwards rainbow effect with increasing speed

Automatic mode:
Select the automatic mode (fast or slow) when you wish to let the movinghead perform its own light show. The slow mode provides slow movement and gobo/color change, while the fast mode is more suitable for party-applications.

Press the 'MODE/ESC' button until the display shows 'MASL', to activate the slow automatic mode. Press 'ENTER' to confirm, the display shows 'SLOV'. Stop at the 'MAFA' mode to activate the fast automatic mode. When confirmed with 'ENTER', the display shows 'FAST'.

Music controlled mode:
Select this mode if you wish to have a music-synchronized light show. The unit has a built-in microphone, which is used to 'listen' to the beat of the music. With every beat, a certain action is taken. This may be movement, color change, gobo change or the activation of the strobe mode.

Press the 'MODE/ESC' button until the display shows 'MStS', to activate the sound active mode. Press 'ENTER' to confirm, the display shows 'Srun'. When no music is detected, the unit will perform its own slow lightshow until it detects music again.

Master/slave mode
It is possible to interconnect several ERO 540 fixtures to perform a synchronized lightshow, based on automatic or music controlled actions. Connect the units with standard 3P XLR to XLR cables. The first unit will be the master unit, sending its signal out to all slaves, which will follow its actions in a synchronized way.

1. Setting the master unit:
Select 'MAFA' or 'MASL' (sound active) or the 'MStS' (automatic) mode on the first unit
When selecting 'MAFA', the display will show 'FAST' after confirmation (press Enter to confirm).
When selecting 'MASL', the display will show 'SLOV' after confirmation (press Enter to confirm).
When selecting 'MStS' , the display will show 'Srun' after confirmation (press Enter to confirm).

2. Setting the slave units:
The slave fixtures have to be set in slave-mode to mimic the actions of the master fixture. Select the 'SLAV' mode on each slave-fixture, 'Son' will be shown on the display after confirmation. When this mode is active on the slave fixtures, the master/slave setup is complete.

Special functions:

This movinghead has several built-in functions, which make programming and setting up your lightshow much easier. For example, increasing or decreasing the movement range, inverting the pan and tilt values and reversing the information on the display.
The features are described below.

PAN reverse:
- Press the MODE/ESC button until the display shows Pan or RPan.
- Use the UP/DOWN buttons to set the desired value. Pan is the default pan setting, RPan is the inverted pan setting.
- Press Enter to confirm.

TILT reverse:
- Press the MODE/ESC button until the display shows Til or RTil.
- Use the UP/DOWN buttons to set the desired value. Til is the default tilt setting, RTil is the inverted tilt setting.
- Press Enter to confirm.

Reverse display:
- Press the MODE/ESC button until the display shows Dis or RDis
- Use the UP/DOWN buttons to set the desired value. Dis is the default display setting, RDis is the inverted display setting.
- Press Enter to confirm.

Set DMX channel mode:
- Press the MODE/ESC button until the display shows 13CH or 5CH.
- Use the UP/DOWN buttons to set the desired value. 13CH is the 13-channel advanced DMX mode, 5CH is the 5-channel basic DMX mode.
- Press Enter to confirm.

Set PAN angle (sound/auto mode)
- Press the MODE/ESC button until the display shows PA54, PA36 or PA18.
- Use the UP/DOWN buttons to set the desired value. PA54 is the 540 degrees value, PA36 is the 360 degrees value, PA18 is the 180 degrees value.
- Press Enter to confirm.

Set TILT angle (sound/auto mode)
- Press the MODE/ESC button until the display shows Ti27, Ti18 or Ti9.
- Use the UP/DOWN buttons to set the desired value. Ti27 is the 270 degrees value, Ti18 is the 180 degrees value, Ti90 is the 90 degrees value.
- Press Enter to confirm.

Reset function:
- Press the MODE/ESC button until the display shows rEST.
- Press Enter to confirm. The unit will reset itself.

Restore factory settings:
- Press the MODE/ESC button until the display shows LoAd.
- Press Enter to confirm. The unit will reset to factory settings.

Installation and maintenance

Mounting the bracket
On the bottom of the movinghead, there are two holes to mount the included bracket, using the included bolts. It is possible to mount a G-clamp or halfcoupler to this bracket. It is also possible to mount the bracket on a ceiling, wall, bar, floor, desk or any flat surface. Use proper equipment to install this fixture, as a dropping fixture may cause severe injury! Ayra is not responsible for any damage or injuries caused by improper installation.

Cleaning
Make sure to clean the exterior of the unit frequently, as the build-up of dust and dirt may have negative effects on the cooling and optics of the fixture.

The exterior (plastic parts) of the unit can be cleaned with a damp cloth. The optics of the fixture can be cleaned with a clean cloth or paper towel, with the addition of a non-aggressive glass cleaning solution.

Clean the fan outlet and the cooling vents with a small brush, while using vacuum cleaner suction to remove any loose dust and/or dirt.

Clean the exterior of this fixture once a month. When using this fixture intensively, the frequency of maintenance needs to be increased.

Transport
When using this fixture in mobile setups, provide sufficient protection during transport. Use the original packaging of this unit, or use a professional flightcase with proper foam inlay. This way the electronics, optics and housing are protected against severe shocks, exterior damage and failing electronics.

Make sure the moving parts of the movinghead (pan and tilt motors) are secured during transport. Shocks and fierce movement of the pan and tilt stepping motors may cause permanent damage.

After use, let the unit cool down for at least 10 minutes. When using DMX, use the ‘black out’ option on your DMX controller. This way the unit is positioned in a static stand-by mode and the internal fan is able to cool down the internal electronics, which decreases the chance of damage during transport.

Replacing the internal fuse
First check whether a failing power supply may be the cause of malfunction. When you suspect that the internal fuse is broken, the fuse can be replaced by removing the fuse cover, located directly below the power inlet.
WARNING: Before changing the fuse, always disconnect the fixture from your wall outlet or any other power supply to prevent electric shocks.
Always replace a broken fuse with a fuse that has the same type and rating. After the fuse has been replaced, always close the fuse-cover. Reconnect the fixture to your power supply and check whether the problem is solved. When this does not solve your problem, contact your local dealer for help.
IMPORTANT: A spare fuse is located inside a special compartiment of the fuse holder.

Spare parts
This unit has no user serviceable parts inside. When any damage to internal components occurs, contact your local dealer or a specialized technician in order to repair the fixture.

Focus
Below the beam output lens, there is a manually adjustable focus system. This way you can optimize

the output of the fixture, providing sharp beams and gobo projections on both short and long distances.
Warning: To prevent damage to the stepping motors, only change the focus when the unit is turned off, or when it is in a static position (by using DMX). Adjusting the focus while the head is moving, may cause damage to the stepping motors.

Checkup
To prevent dangerous situations, make sure your fixture is in optimal condition before using it. Check your fixture frequently by using the following checklist:
- All screws must be mounted tightly.
- Check all screws and metal parts for corrosion. No visible corrosion may be present.
- The exterior of your fixture must be in optimal condition. Check your fixture for dents, cracks or missing parts.
- Your installation spot must be in optimal condition. Check your installation spot for corrosion, cracks, dents and strength.
- Electrical components (connectors and cables) must be in optimal condition. Any form of damage (cuts, exposed wire cores or any other visual deformities should not be present.

If any visual or mechanical damage is detected, contact your local dealer or a specialized technician. Do not use a damage or failing fixture.

Connectors and wiring schematics:

DMX-connections:

DMX-output
XLR mounting-socket:

DMX-input
XLR mounting-plug:

Electrical wiring:

Cable	Pin	International
Brown	Live	L
Blue	Neutral	N
Yellow/Green	Earth	⏚

Technical specifications

- Compact movinghead using a RGB LED light source
- Light source: 14 Watt RGB LED chip
- Lifespan LED module: +/- 50.000 h
- Pan range: 540 degrees max.
- Tilt range: 270 degrees max**.**
- Modes: stand-alone, music controlled, master/slave, DMX
- Built-in stand-alone programs
- Built-in music controlled programs
- DMX-control with 5 or 13 DMX-channels
- Gobowheel: 9 gobo's + open
- Gobo shake effect
- RGB color mix and several color macros
- Movement macros (via DMX)
- Variable electronic strobe function (slow-fast)
- Electronic dimmer: 0-100%
- Beam angle: 13 degrees
- Maximum ambient temperature: 45 degrees Celsius
- Maximum housing temperature: 55 degrees Celsius
- Minimum distance from flammable surfaces: 0.5
- Power consumption: 60W max.
- Fuse: 1A 250V 20mm glass fast blow
- Power supply: 110-240V AC, 50/60Hz
- Measurements: 175 x 175 x 250 mm (without bracket)
- Weight: 5 kg

Connectors:
- DMX: 3p XLR male and female
- Power: IEC power connector

Included accessories:
- Power cable with Shucko & IEC connectors
- Mounting bracket with allen bolts