

AL1940WP

19 × 40 W LED Bee Eye Moving Head Waterproof

RGBW ZOOM + PIXEL EFFECTS - USER MANUAL

Professional IP65 LED Bee Eye moving-head fixture



READ BEFORE USE Keep this manual with the fixture. Installation, operation and service must be performed by qualified personnel.

English Edition - August 2026 - Specifications subject to change without notice

About this manual

This manual describes the safe installation, power and data connection, display operation, DMX personalities, optical functions and routine maintenance of the AL1940WP. Read the complete manual before commissioning the fixture.

MODEL CHECK Confirm that the model label reads AL1940WP and that the local mains supply matches the rating on the fixture before applying power.

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Document conventions

Convention	Meaning
DANGER	Immediate electrical, fire or falling-object hazard.
CAUTION	Risk of fixture damage or unsafe operation.
NOTE	Programming, connection or maintenance guidance.
DMX value	An 8-bit control value from 0 to 255 unless stated otherwise.

Qualified personnel

Rigging, electrical connection and service must be carried out by personnel familiar with local electrical, structural and entertainment-technology requirements. The operator remains responsible for safe installation and use.

1. Safety instructions

DANGER Disconnect mains power before opening covers, cleaning, installing accessories or performing service. The fixture contains no user-serviceable internal parts.

Electrical safety

- Connect only to a protective-earth AC supply within 100-240 V, 50/60 Hz.
- Do not use a damaged power cable, connector, gland or seal. Replace damaged parts before operation.
- Handle the mains cable by the connector body. Never disconnect by pulling on the cable.
- Do not connect or disconnect wet connectors. Close and secure every unused connector cap before exposure to water.
- Allow the fixture to reach ambient temperature before power-up after transport or a rapid temperature change.

Rigging and mechanical safety

- Verify that the supporting structure and all clamps are rated for the complete installed load and applicable safety factor.
- Use both omega brackets as supplied and fit an independently rated secondary safety cable to the designated safety attachment point.
- Do not stand below the fixture during installation, removal or service. Keep unauthorized personnel away from the work area.
- Maintain at least 0.5 m between the light output and combustible materials. Keep ventilation paths unobstructed.

IP65 operating precautions

The enclosure is designed for IP65 operation when all covers, seals, cable glands and connector caps are correctly installed and undamaged. IP65 does not permit immersion or high-pressure washing. Inspect sealing surfaces before each outdoor use and dry the fixture before opening any connector or service cover.

CAUTION Do not aim the light toward people at close range. Avoid direct viewing of operating LEDs and allow the housing to cool before handling.

2. Product overview and specifications

AL1940WP combines nineteen individually controllable RGBW sources with motorized zoom, continuous front-lens rotation, shape programming and an auxiliary LED halo ring. The fixture supports wash, beam and animated pixel-effect programming in one weather-protected housing.

Technical specifications

System	Specification
LED source	19 × 40 W RGBW four-in-one LEDs; individual pixel control
Optical system	7°-42° motorized zoom; PMMA lens system with glass light guide
Effects	Wash, beam, graphic shapes, continuous front-lens rotation and LED halo-ring effects
Dimming	Four selectable dimming curves; smooth or fast response
Strobe	1-25 Hz with pulse and random effects
Control	DMX512, RDM, stand-alone and master/slave
DMX personalities	21CH, 35CH, 78CH, 92CH, 97CH and 43CH
Power input	AC 100-240 V, 50/60 Hz
Power consumption	850 W
Protection	IP65 enclosure when correctly assembled and sealed
Display	1.77-inch OLED with display reversal and screen lock
Net weight	22 kg

Supplied accessories

Inspect the package before installation. The standard packing list contains one power-input cable, one 3-pin DMX cable, two omega brackets, one safety cable and one English user manual. Optional flight cases, clamps and 5-pin DMX configurations are supplied only when ordered.

Cooling and positioning

The temperature-managed cooling system uses speed-controlled fans and over-temperature protection. Keep air inlets and outlets clear. Magnetic position sensing supports repeatable pan and tilt positioning after reset.

3. Installation and operation

Rigging sequence

- Place the fixture on a stable surface or attach rated clamps to the supplied omega brackets.
- Lock both omega brackets into the base and verify that each fastener is fully engaged.
- Attach a rated secondary safety cable to the designated fixture safety point and the supporting structure.
- Set the fixture orientation so that the head can move freely through its programmed range.
- Complete all mechanical checks before connecting power or DMX data.

Power and DMX/RDM connection

Connect the controller output to DMX IN and link DMX OUT to the next fixture. Use shielded 120 ohm data cable and fit a 120 ohm terminator between pins 2 and 3 at the final fixture for long or electrically noisy runs. Do not use microphone cable for permanent DMX installations.

3-pin XLR	Function
Pin 1	Shield / signal common
Pin 2	Data -
Pin 3	Data +

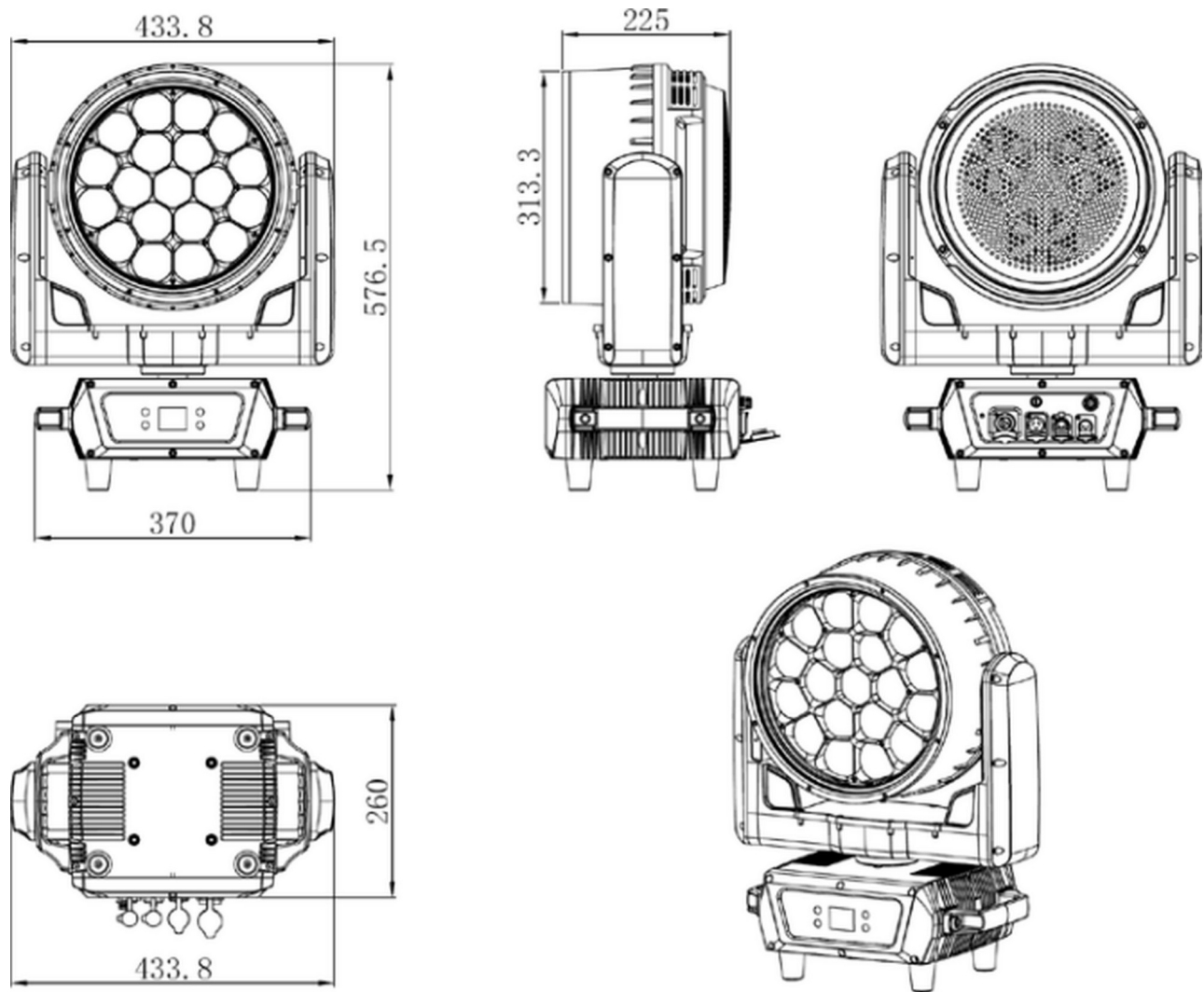
Display and menu

Hold MENU for approximately three seconds to unlock the display. Use the navigation keys to choose a setting and ENTER to confirm. The factory screen-lock password is 1111.

Menu group	Available setting	Purpose
Address	001-512	Set the DMX start address
Run mode	21 / 35 / 78 / 92 / 97 / 43CH	Select the required DMX personality
Run mode	Auto Test / Manual Test / Auto / Channel Test	Fixture test and stand-alone operation
Setting	Pan reverse / Tilt reverse / Screen reverse	Invert movement or display direction
Setting	Pan 540 / 360 / 180; Tilt 250 / 180 / 90	Limit the programmed travel range
Setting	Linear / S-curve / Square / Inverse Square	Select the dimming response
Reset	Pan/Tilt / Zoom / All	Reset selected systems
System info	Version / mode / address / temperature / hours	Read operating information

4. Mechanical dimensions

All dimensions shown below are in millimetres. Use the drawing for installation planning and allow additional clearance for movement, connectors, cabling and ventilation.



Drawing reference	Dimension
Overall front width	433.8 mm
Overall height	576.5 mm
Base front width	370 mm
Side-view head height	313.3 mm
Head depth	225 mm
Base depth	260 mm
INSTALLATION NOTE The drawing represents the fixture in the illustrated position. It does not define the swept movement envelope. Verify clearance through the complete programmed pan and tilt range.	

5. DMX personality reference

All six personalities share the first 21 control channels. Extended modes add shape, pixel or LED-ring controls. Patch the fixture using the exact personality selected in the display.

Mode	Footprint	Base channels	Extended channel group
Standard	21CH	1-21	No additional channels
Shape	35CH	1-21	22-35: shape layers, color, dimming, speed, fade, offset and strobe
Extended	78CH	1-21	22-78: individual RGB control for LED 1 through LED 19
Extended RGBW	92CH	1-21	22-92: shape functions plus extended individual pixel control
Extended RGBW	97CH	1-21	22-97: individual RGBW control for LED 1 through LED 19
Shape + Ring	43CH	1-21	22-35: shape engine; 36 reserved; 37-43: LED ring controls

Shared channels 1-21

CH	Function	CH	Function
1	Red	2	Red fine
3	Green	4	Green fine
5	Blue	6	Blue fine
7	White	8	White fine
9	Linear CTO	10	Color macro
11	Strobe	12	Dimmer
13	Dimmer fine	14	Pan
15	Pan fine	16	Tilt
17	Tilt fine	18	Function
19	Reset	20	Zoom
21	Front-lens rotation		

PROGRAMMING NOTE Set console fades to zero when using the fixture's internal shape-transition control. Test reset and function ranges before adding them to a live cue stack.

6. Shape and LED ring programming

The shape engine separates the nineteen front pixels into foreground and background layers. A selected shape controls the foreground pixels; the standard RGBW channels continue to define the background color. This permits layered animations without programming each pixel independently.

Shape mode CH	Function	Programming role
22	Shape selection	Select a static or animated shape; values 0-7 disable the shape macro
23	Shape speed	Set animation speed, direction or indexed position according to the selected shape
24	Shape fade	Select snap changes or internal frame-to-frame fading
25-28	Shape RGBW	Set the foreground shape color
29	Shape dimmer	Set foreground brightness
30	Background dimmer	Set the brightness of pixels outside the selected shape
31	Shape transition	Set the internal fade between shape selections
32	Shape offset	Adjust shape density, width, angle or multi-fixture distribution
33	Foreground strobe	Apply strobe to the foreground shape
34	Background strobe	Apply strobe to the background layer
35	Background select	Select background rings or supported mirrored-layer options

43CH LED ring controls

Channel	Function
36	Reserved
37	LED ring dimmer
38	LED ring strobe
39	LED ring red
40	LED ring green
41	LED ring blue
42	LED ring macro
43	LED ring macro speed

OUTPUT CHECK Bring up the main dimmer, the relevant foreground or background dimmer, and the required color channels before evaluating a shape. A layer with zero color or zero dimmer will remain dark.

7. Maintenance and troubleshooting

Inspection and cleaning

- Disconnect power and allow the fixture to cool before inspection or cleaning.
- Check clamps, omega brackets, safety attachment, housing fasteners, seals, connector caps and power/data cables before each use.
- Remove dust from lenses, air paths and fan inlets with a soft, lint-free cloth and suitable non-abrasive methods.
- Do not use solvents, alcohol, high-pressure water or abrasive cleaners on optical surfaces, seals or the housing.
- Have a qualified technician perform internal inspection and electrical servicing at intervals appropriate to the operating environment.

Troubleshooting

Symptom	Checks
No power	Verify mains supply, protective earth, input connector engagement and cable condition.
No DMX response	Confirm start address, personality, pinout, cable type, controller output and end-of-line termination.
Unexpected movement	Check pan/tilt reverse settings, travel-limit settings and perform a pan/tilt reset.
No shape output	Raise the main dimmer, shape dimmer and shape RGBW channels; confirm shape selection and strobe state.
No ring output	Use 43CH mode and raise ring dimmer plus ring RGB channels before selecting a macro.
Over-temperature warning	Stop operation, remove airflow obstructions, clean vents and allow the fixture to cool before inspection.
Water inside enclosure	Disconnect power immediately. Do not reopen or energize the fixture until inspected and dried by qualified service personnel.

Transport and storage

Lock or protect moving parts for transport and use the original packaging or a purpose-built flight case. Store the fixture dry, clean and disconnected from power. Fit connector caps before storage and never pack a wet fixture into a sealed case.

SERVICE For spare parts, service documentation or model-specific support, contact Aolait through almovinghead.com and include the model, serial number and a clear description of the issue.

AOLAIT STAGE LIGHTING

Professional moving-head development, manufacturing and support