

PROFESSIONAL LED EFFECT FIXTURE

AL120T

120W Tornado Moving Head

SINGLE-HEAD TORNADO EFFECT LIGHT

USER MANUAL

English Edition | Translated from the supplied Chinese manual



120 W RGBL main LED • 24-zone RGB halo • Zoom, beam and wash effects

Ingress Protection	Rated Power	Input	DMX Modes
IP20	142 W	DC 36 V	22 / 24 / 94 CH

IMPORTANT Read this manual completely before installing, powering, operating, or servicing the fixture. Retain it for future reference.

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TRANSLATION NOTE This English edition reorganizes the supplied Chinese source for clarity while preserving its specifications, menu defaults, DMX values, and safety instructions.

1 Safety, Maintenance & Product Information

1.1 Statement

Thank you for choosing this product. It left the factory in good condition and with complete packaging. Read this manual fully before use. It contains important installation and operating information; follow all instructions and retain the manual for future reference.

Technical changes may be made without prior notice.

1.2 Maintenance & Safety

- This fixture is intended for professional use only.
- If the external flexible cable is damaged, replace it only with the dedicated cable supplied by the manufacturer or its service agent.
- The light source may be replaced only by the manufacturer, its service agent, or similarly qualified personnel.
- Connect the product to a protected circuit fitted with a circuit breaker or fuse and ensure proper protective grounding to reduce the risk of electric shock or fire.
- Disconnect power completely at the breaker or plug when the fixture is not in use.
- The enclosure may become hot during operation. Install the fixture in a well-ventilated location.
- After moving the product between extreme temperatures, allow it to acclimatize before applying power so internal condensation cannot cause a malfunction.
- Strobe lighting may trigger epileptic seizures. Comply with all local regulations and warning requirements for strobe use.

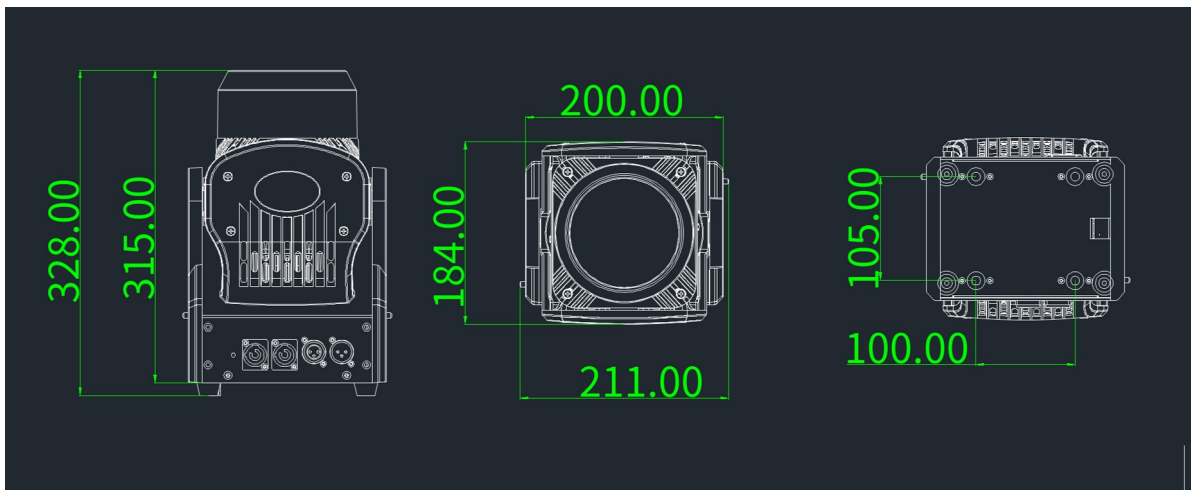
1.3 Product Precautions

- Disconnect power before cleaning the product or replacing a fuse.
- When ports are not in use, reinstall and secure the protective covers for power, data, USB, and other connections so the specified IP protection is maintained.

- Use a rated safety cable for overhead installation.
- Connect the product only to a grounded and protected circuit.
- Do not look directly into the light source while the product is operating.
- Keep flammable materials at least 20 cm from the product during operation and while power is connected.
- Do not operate the product if the enclosure, lens, or cable is damaged.
- Carry the product only by its handle or rigging/mounting bracket.
- Stop using the product immediately if a serious operating problem occurs.

1.4 Product Specifications

Parameter	Specification
Input voltage	DC 36 V
Rated power	142 W
Light sources	1 × 120 W RGBL (red, green, blue, lime) 1212 LED; 24 × RGB 5050 auxiliary LEDs
Control modes	DMX512, standalone/auto, master/slave, sound-active, RDM
DMX modes	22 CH / 24 CH / 94 CH
Dimming	32-bit, 0–100% linear dimming
Effects	Single moving head, wash, beam
Operating temperature	–30 °C to 50 °C
Strobe frequency	1–30 Hz
Housing	Black metal
Connections	DMX512 input/output; power input/output
Ingress protection	IP20 — indoor use only
Fixture dimensions	200 × 184 × 328 mm
Fixture weight	5.1 kg



Source dimension drawing; all dimensions are in millimetres.

2 Display Panel & Menu Operation

2.1 Control Panel



Control panel. The source image shows the Chinese user interface; key functions are translated below.

Control	Function
MENU	Open the main menu or return to the previous menu.
UP	Move upward through menu items or increase a parameter value.
DOWN	Move downward through menu items or decrease a parameter value.
ENTER	Select a menu function; confirm and save a modified parameter.

2.2 Menu Operation

After power-on and the automatic reset, press MENU to open the main menu. The main menu exits after 30 seconds without input. Use UP/DOWN to select an item, press ENTER to edit it, then press ENTER again to save. Saved values are retained after power loss.

Menu	Option	Setting / Default
System Settings	DMX Address	001–512; default 001.
System Settings	Encoder	On / Off; default On.
System Settings	Pan Invert	On / Off; default Off.
System Settings	Tilt Invert	On / Off; default Off.
System Settings	Zoom Invert	On / Off; default Off.
System Settings	No Signal	Blackout / Hold; default Blackout.
System Settings	Reset	Yes / No; default No.

Menu	Option	Setting / Default
System Settings	Factory Reset	Yes / No; default No.
System Settings	Advanced Settings	Open the advanced-settings submenu.
Operating Mode	Run Mode	DMX / Sound-active / Auto; default DMX.
Operating Mode	Channel Mode	22 CH / 24 CH / 94 CH; default 24 CH.

2.3 Manual Control

Item	Range	Default
Pan	000–255	000
Pan Fine	000–255	000
Tilt	000–255	000
Tilt Fine	000–255	000
Zoom	000–255	000
Pan/Tilt Speed	000–255	000
Dimmer	000–255	000
Dimmer Fine	000–255	000
Main Strobe	000–255	000
Color Temperature	000–255	000
Color Macro	000–255	000
Red	000–255	000
Green	000–255	000
Blue	000–255	000
Lime	000–255	000
Halo Strobe	000–255	000
Halo Red	000–255	000
Halo Green	000–255	000
Halo Blue	000–255	000
Halo Mode	000–255	000
Halo Mode Speed	000–255	000
Halo Background Color	000–255	000
Halo Background Dimmer	000–255	000
Function	000–255	000

2.4 Display & Information

Menu	Option	Setting / Function
Display Settings	Language	Chinese / English; default Chinese.
Display Settings	Display Reverse	Off / On; default Off.
Display Settings	Screen Saver	Off / On; default On.
Display Settings	Software Version	Program identification code D1TF; read-only.
Information	Sensors	View Hall-sensor and temperature-communication status.
Information	Error Information	View stored error information.
Information	Channel Information	View live DMX channel data.
Information	Time Information	View power-on time and total fixture operating time.

2.5 Factory Settings

ACCESS When prompted for the factory-settings password, change the value to 138 and press ENTER.

Item	Range / Options	Default
Pan Calibration	000–255	128
Tilt Calibration	000–255	128
Focus/Zoom Axis Calibration	000–255	128
Pan Travel	000–255	128
Tilt Travel	000–255	128
Focus/Zoom Travel	000–255	128
Red	032–255	252
Green	032–255	252
Blue	032–255	252
Lime	032–255	252
Current	032–255	240
Temperature	040–070	065
Temperature / Fan	Auto / Standard / Quiet	Auto
LED Selection	LEDA / LEDB / LEDC / LEDD	LEDA
LED PWM Frequency	900, 1000, 1100, 1200, 1300, 1400, 1500, 2500, 4000, 5000, 6000, 10 000, 15 000, 20 000, 25 000 Hz	4000 Hz
Dimmer Curve	Linear / Square / Inverse Square / S-Curve	Linear
Dimmer Mode	Fast / Smooth	Fast
Logo	000 / 001	000
Clear Time	Yes / No	No

3 Master/Slave Control

Connect two or more identical fixtures with a 3-pin DMX cable. Set each fixture to any address from 001–512. Configure one fixture as the master and all others as slaves. The slave displays should remain steady. When gradient, pulse, jump, sound-active, or auto effects are selected on the master, all slave fixtures run the same effect in synchronization.

IMPORTANT Use only one master in each fixture group. Multiple masters will cause unsynchronized flashing. Master/slave control operates only when the DMX512 console is disconnected or switched off.

4 DMX512 Control

4.1 DMX Address

Set the address of every fixture, then connect the fixtures to the DMX512 console using 3-pin DMX cables. When the address display stops flashing, the fixture is receiving a DMX signal. Use the channel charts below to control each function.

OUTPUT NOTE To produce light output, set the applicable strobe channel to its full-open value.

4.2 22 CH Mode

Channel	DMX Value	Function
1	000–255	Pan
2	000–255	Pan Fine
3	000–255	Tilt
4	000–255	Tilt Fine
5	000–255	Zoom
6	000–255	Main Light Red
7	000–255	Main Light Green
8	000–255	Main Light Blue
9	000–255	Main Light Lime
10	000–255	Main Light Color Temperature
11	000–255	Main Light Color Macro
12	000–255	Halo Red
13	000–255	Halo Green
14	000–255	Halo Blue
15	000–255	Halo Mode
16	000–255	Halo Mode Speed
17	000–255	Master Dimmer
18	000–255	Master Dimmer Fine
19	000–255	Main Light Strobe
20	000–255	Halo Strobe
21	000–255	Pan/Tilt Speed
22	000–255	Function

4.3 24 CH Mode

Channel	DMX Value	Function
1	000–255	Pan
2	000–255	Pan Fine
3	000–255	Tilt
4	000–255	Tilt Fine
5	000–255	Zoom
6	000–255	Pan/Tilt Speed
7	000–255	Master Dimmer
8	000–255	Master Dimmer Fine
9	000–255	Main Light Strobe
10	000–255	Main Light Color Temperature
11	000–255	Main Light Color Macro
12	000–255	Main Light Red
13	000–255	Main Light Green
14	000–255	Main Light Blue
15	000–255	Main Light Lime
16	000–255	Halo Strobe
17	000–255	Halo Red
18	000–255	Halo Green
19	000–255	Halo Blue
20	000–255	Halo Mode
21	000–255	Halo Mode Speed
22	000–255	Halo Background Color
23	000–255	Halo Background Dimmer
24	000–255	Function

4.4 94 CH Mode

EXPANDED SEQUENCE The source chart shows channels 22–24 for halo zone 1 and channels 91–93 for zone 24 with an arrow between them. The repeating RGB sequence for zones 2–23 is expanded below for easier programming.

Channel	DMX Value	Function
1	000–255	Pan
2	000–255	Pan Fine
3	000–255	Tilt
4	000–255	Tilt Fine
5	000–255	Zoom
6	000–255	Pan/Tilt Speed
7	000–255	Main Light Dimmer
8	000–255	Main Light Dimmer Fine
9	000–255	Main Light Strobe
10	000–255	Main Light Color Temperature
11	000–255	Main Light Color Macro
12	000–255	Main Light Red
13	000–255	Main Light Green
14	000–255	Main Light Blue
15	000–255	Main Light Lime
16	000–255	Halo Dimmer
17	000–255	Halo Strobe
18	000–255	Halo Mode
19	000–255	Halo Mode Speed
20	000–255	Halo Background Color
21	000–255	Halo Background Dimmer

Channel	DMX Value	Function
22	000–255	Halo Red 1
23	000–255	Halo Green 1
24	000–255	Halo Blue 1
25	000–255	Halo Red 2
26	000–255	Halo Green 2
27	000–255	Halo Blue 2
28	000–255	Halo Red 3
29	000–255	Halo Green 3
30	000–255	Halo Blue 3
31	000–255	Halo Red 4
32	000–255	Halo Green 4
33	000–255	Halo Blue 4
34	000–255	Halo Red 5
35	000–255	Halo Green 5
36	000–255	Halo Blue 5
37	000–255	Halo Red 6
38	000–255	Halo Green 6
39	000–255	Halo Blue 6
40	000–255	Halo Red 7
41	000–255	Halo Green 7
42	000–255	Halo Blue 7
43	000–255	Halo Red 8
44	000–255	Halo Green 8
45	000–255	Halo Blue 8
46	000–255	Halo Red 9
47	000–255	Halo Green 9
48	000–255	Halo Blue 9

Channel	DMX Value	Function
49	000–255	Halo Red 10
50	000–255	Halo Green 10
51	000–255	Halo Blue 10
52	000–255	Halo Red 11
53	000–255	Halo Green 11
54	000–255	Halo Blue 11
55	000–255	Halo Red 12
56	000–255	Halo Green 12
57	000–255	Halo Blue 12
58	000–255	Halo Red 13
59	000–255	Halo Green 13
60	000–255	Halo Blue 13
61	000–255	Halo Red 14
62	000–255	Halo Green 14
63	000–255	Halo Blue 14
64	000–255	Halo Red 15
65	000–255	Halo Green 15
66	000–255	Halo Blue 15
67	000–255	Halo Red 16
68	000–255	Halo Green 16

Channel	DMX Value	Function
69	000–255	Halo Blue 16
70	000–255	Halo Red 17
71	000–255	Halo Green 17
72	000–255	Halo Blue 17
73	000–255	Halo Red 18

Channel	DMX Value	Function
74	000–255	Halo Green 18
75	000–255	Halo Blue 18
76	000–255	Halo Red 19
77	000–255	Halo Green 19
78	000–255	Halo Blue 19
79	000–255	Halo Red 20
80	000–255	Halo Green 20
81	000–255	Halo Blue 20
82	000–255	Halo Red 21
83	000–255	Halo Green 21
84	000–255	Halo Blue 21
85	000–255	Halo Red 22
86	000–255	Halo Green 22
87	000–255	Halo Blue 22
88	000–255	Halo Red 23
89	000–255	Halo Green 23
90	000–255	Halo Blue 23
91	000–255	Halo Red 24
92	000–255	Halo Green 24
93	000–255	Halo Blue 24
94	000–255	Function

4.5 Function Channel Values

Index	DMX Value	Function
1	000–005	No function
2	006–007	No function
3	008–009	No function
4	010–029	No function
5	030–039	Dimmer curve: Linear
6	040–049	Dimmer curve: Square
7	050–059	Dimmer curve: Inverse Square
8	060–069	Dimmer curve: S-Curve
9	070–079	Fan mode: Auto
10	080–089	Fan mode: Standard
11	090–099	Fan mode: Quiet
12	100–109	No function
13	110–119	No function
14	120–122	No function
15	123	PWM frequency: 900 Hz
16	124	PWM frequency: 1000 Hz
17	125	PWM frequency: 1100 Hz
18	126	PWM frequency: 1200 Hz
19	127	PWM frequency: 1300 Hz
20	128	PWM frequency: 1400 Hz
21	129	PWM frequency: 1500 Hz
22	130	PWM frequency: 2500 Hz
23	131	PWM frequency: 4000 Hz
24	132	PWM frequency: 5000 Hz
25	133	PWM frequency: 6000 Hz
26	134	PWM frequency: 10 kHz
27	135	PWM frequency: 15 kHz
28	136	PWM frequency: 20 kHz
29	137	PWM frequency: 25 kHz
30	138–139	No function
31	140–149	Pan/Tilt reset
32	150–159	Head reset
33	160–169	No function
34	170–179	No function
35	180–199	No function
36	200–209	Reset all (MA fixture-library reset value: 80–82)
37	210–219	Dimmer speed: Fast
38	220–229	Dimmer speed: Smooth
39	230–255	No function

5 Troubleshooting

The following remedies cover common faults. Disconnect power before maintenance. Any problem that cannot be resolved must be handled by qualified service personnel.

5.1 Light Source Does Not Illuminate

- Verify that the supplied voltage matches the fixture rating.
- Check the power connection and control switch for poor contact.
- Confirm that the power supply has sufficient capacity.
- Confirm that the DMX512 controller is transmitting the required command.

5.2 Fixture Resets but Does Not Respond to the Console

- Verify the DMX start address and selected operating options.
- Check the control-cable connections and look for an open circuit or excessive cable length.
- Check the controller and any signal amplifier connected in series.
- Reduce cable length, separate high- and low-voltage wiring, and improve cable routing.
- Use a high-quality shielded twisted-pair data cable and add a signal amplifier when required.
- Install a 120 Ω terminator at the final fixture.

5.3 Fixture Does Not Start

- Verify that the power-supply parameters match the fixture.
- Inspect for shipping deformation, vibration damage, moisture, loose parts, or disconnected internal components.
- Check internal wiring and connectors for looseness or disconnection.
- Have qualified personnel inspect electronic components, including the transformer, PCB, and motor-control board, for looseness, short circuits, or burn damage.

5.4 Abnormal Pan or Tilt Movement

- Carry out the checks listed above.
- Inspect the corresponding pan and tilt drive belts for detachment or breakage.
- Inspect the pan/tilt position-feedback Hall sensors for damage.
- Restart the fixture and allow it to reset again.

END OF MANUAL Retain this manual with the fixture. Before operation, verify the product label, local electrical code, rigging requirements, and venue safety procedures.