

AL1650WX

16 x 50 W LED Wash Moving Head IP65

RGBL PIXELS - RGB HALO - 4° TO 60° ZOOM - USER MANUAL

Outdoor wash and effect fixture with independent pixel control



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

English Edition - Specifications subject to change without notice

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MODEL IDENTIFICATION This edition is organized for model AL1650WX, 16 x 50 W LED Wash Moving Head IP65. Confirm the model, voltage rating and firmware shown on the actual fixture before installation or programming.

This edition uses the user-supplied AL1650WX model designation consistently throughout the manual.

1 Safety Information

DANGER Disconnect AC power and wait at least 15 minutes for the fixture to cool before opening, cleaning, inspection or service. Do not open the unit within five minutes after switching it off.

- Use the fixture only with the voltage and frequency marked on its product label. Connect the yellow/green protective conductor to earth.
- Keep at least 0.5 m clearance from adjacent surfaces and combustible materials. Do not block ventilation openings.
- Maximum ambient temperature is 40°C. The housing can reach approximately 85°C during operation; do not touch it with bare hands.
- Inspect the housing, lenses and filters before use. Replace any visibly damaged optical or structural component.
- Do not look directly into the output at close range. The LEDs can produce intense visible light.
- Carry the fixture by its base, never by the moving head. Protect it from severe impact and vibration.
- Installation and repair must be performed by qualified personnel. There are no user-serviceable parts inside.
- The support structure must hold at least 10 times the fixture weight. Use a secondary safety cable rated for at least 12 times the fixture weight.

IP65 USE IP65 protection depends on correctly fitted seals, closed connector caps and approved mating connectors. Do not immerse the fixture, open it while wet, or connect/disconnect power or data where water can enter the connector interface.

SERIOUS FAULT Stop using the fixture immediately if a serious operating problem occurs. Disconnect power and contact an authorized service center.

2 Product Overview

The AL1650WX is an outdoor LED wash moving head with sixteen 50 W RGBL main emitters and a 204-pixel RGB halo system. Motorized zoom, individual pixel control and built-in main/halo effects support architectural, touring and live-event applications.

2.1 Technical Specifications

Parameter	Specification
Input voltage	AC 100-240 V, 50/60 Hz
Power consumption	900 W
Main light source	16 x 50 W RGBL 4-in-1 LEDs
Halo light source	204 x 0.3 W RGB 3-in-1 LEDs
Source lifetime	20,000 hours (source specification)
Color system	RGBL mixing, rainbow effects, 2700-8000 K color-temperature range
Zoom	4°-60°, motorized linear zoom
Dimmer	0-100% linear dimming
Strobe	1-30 flashes per second plus random strobe
Pan / tilt	540° / 270°
DMX personalities	24CH Basic / 44CH Standard / 48CH Extend / 113CH Extend 2
Control	DMX512 / Auto / Master-Slave; RDM and Art-Net
Network protocol	Source lists 'Scan'; likely sACN - verify installed firmware
Display	OLED touch display
Ingress protection	IP65
DMX / power	Seetronic waterproof 3-pin XLR in/out; waterproof power in/out
Network	Seetronic waterproof Art-Net in/out
Housing	Die-cast aluminum
Fixture size	392 x 283 x 511 mm
Packing size	470 x 320 x 620 mm
Net / gross weight	21 kg / 23.7 kg

PROTOCOL VERIFICATION The source specification prints 'Scan' beside DMX512, RDM and Art-Net. This is likely a transcription of sACN, but the exact network protocol must be confirmed on the installed firmware before commissioning.

2.2 Main Functions

- Sixteen individually controllable RGBL main emitters with coarse/fine color channels in the compact personalities.
- Individually controllable RGB halo pixels for flowing color and chase effects.
- Main-light effects with direction, speed, fade, length, foreground/background color and strobe controls.
- Halo effects with dimmer, fine dimmer, effect selection, direction/speed and background color.
- RDM bidirectional communication and Art-Net network control.
- Temperature-controlled cooling and overheating protection.

3 Setup and Data Connections

3.1 Rigging

1. Inspect the fixture, bracket, fasteners, safety cable and support structure before installation.
2. Attach the fixture through the bracket screw holes using correctly rated hardware and clamps.
3. Secure the fixture to a structure rated for at least 10 times its weight.
4. Attach an independent safety cable rated for at least 12 times the fixture weight to the designated safety point.
5. Keep the fixture out of reach, confirm adequate movement clearance and recheck every fastener before applying power.

3.2 DMX512 Connection

Use shielded, twisted-pair cable intended for RS-485/DMX512. Connect the controller to DMX IN, then link DMX OUT to the next fixture. Keep data cabling separated from high-voltage cables where practical.

3-pin XLR	Signal
Pin 1	Ground / shield
Pin 2	Data -
Pin 3	Data +

TERMINATION For long or electrically noisy DMX lines, connect a 120 ohm terminator between pins 2 and 3 at the DMX OUT of the final fixture.

3.3 RDM and Art-Net

RDM provides bidirectional communication over a compatible DMX line. Art-Net settings are available from the System Settings menu. Configure network addressing and universe parameters to match the controller and local network plan; the source manual does not define factory network values.

WATERPROOF CONNECTIONS Use only compatible sealed connectors and close every unused cap. Inspect seals and mating surfaces before outdoor use.

4 Control Panel and Menu

Use MENU to select a programming function, UP/DOWN to change an option or value, and ENTER to confirm. MENU exits without saving. The display can rotate automatically according to fixture orientation.

Menu	Options	Operation
Address	001-512	Set the DMX start address.
Operation Mode	DMX / Voice / Auto 1 / Auto 2	Select console, sound-active or automatic operation.
Channel Mode	24CH / 44CH / 48CH / 113CH	Select Basic, Standard, Extend or Extend 2.
Art-Net Set	Network submenu	Configure supported Art-Net parameters.
Pan / Tilt Reverse	On / Off	Reverse movement direction.
Hall / Optocoupler Correction	On / Off	Enable movement sensor correction.
Signal Hold	On / Off	Retain or release the last state after signal loss.
Screen Saver	On / Off	Control automatic display blanking.
Screen Rotation	On / Off / Auto	Set normal, inverted or automatic orientation.
Synchronous Update	On / Off	Enable synchronized output updates.
Language	/ EN	Choose the menu language.
Dimming Speed	Standard / Fast	Select dimmer response.
Dimming Curve	Curve 1 / 2 / 3 / 4	Select the dimming curve.
Dimming Frequency	6K / 4K / 1K / 25K / 20K / 15K / 10K	Select the source-listed PWM frequency label.
Screen Lock	On / Off	Enable or disable panel locking.
Factory Reset	Confirm	Restore factory data.

4.1 Manual Control and Calibration

Manual Control displays the channels for the selected personality. Press ENTER to edit, use UP/DOWN to set 0-255, then press ENTER to save. MENU exits without saving.

Calibration item	Range / purpose
Pan / Tilt / Focus home	0-255 starting-position compensation; 127 = no adjustment
Pan / Tilt / Focus travel	0-255 movement-range calibration; reference 127
Motor dynamics	0-255 pan, tilt and effect-motor strength; reference 127
Other calibration	Microphone sensitivity and password modification

CALIBRATION Record every original value before adjustment. Incorrect home, travel or motor-strength settings can cause abnormal movement or mechanical stress.

4.2 Reset and System Information

Item	Action
Effect Motor Reset	Reset effect motors except pan and tilt.
Scan Motor Reset	Reset pan and tilt.
All Motor Reset	Perform a complete fixture reset.
Reset Information	View a detailed error when the red ERR indicator is on.
DMX Monitoring	View received channel values numerically.
Sensor Information	Monitor Hall and optocoupler status.
Hardware / Software	View hardware and firmware versions.

5 DMX Channel Reference

Select the matching personality on the fixture and controller. Channels 1-18 are common to all modes. Basic/Standard and Extend/Extend 2 use different Channel 19 crossfade ranges; use the table for the selected mode.

Mode	Channel map
24CH Basic	1-18 common + Basic core 19-24
44CH Standard	1-18 common + Basic core 19-24 + Standard extension 25-44
48CH Extend	1-18 common + Extend core 19-24 + Extend extension 25-48
113CH Extend 2	48CH map + main-light pixel/ring control 49-113

SOURCE NORMALIZATION The source 113CH table omits Channel 66 and then shifts the Ring 5-7 labels by one. This edition reconstructs Channels 66-105 from the continuous four-channel RGBW pattern and the source's correctly numbered Ring 15-16 ending. Verify this correction on the installed firmware before programming.

5.1 Common Channels 1-18 - All Modes

Channel	Function	DMX Value	Description
1	Pan	0-255	Pan movement
2	Pan Fine	0-255	16-bit pan fine adjustment
3	Tilt	0-255	Tilt movement
4	Tilt Fine	0-255	16-bit tilt fine adjustment
5	Pan/Tilt Speed	0-255	Fast to slow
6	Background Red	0-255	Coarse red, 0-100%
7	Background Red Fine	0-255	Fine red adjustment
8	Background Green	0-255	Coarse green, 0-100%
9	Background Green Fine	0-255	Fine green adjustment
10	Background Blue	0-255	Coarse blue, 0-100%
11	Background Blue Fine	0-255	Fine blue adjustment
12	Background White	0-255	Coarse white/lime channel as labeled by source DMX profile
13	Background White Fine	0-255	Fine white/lime adjustment
14	Strobe	0-255	0-31 blackout; 32-63 open; 64-95 strobe slow to fast; 96-127 open; 128-159 pulse slow to fast; 160-191 open; 192-223 random strobe; 224-255 open
15	Master Dimmer	0-255	Linear dimming, 0-100%
16	Dimmer Fine	0-255	Fine dimmer adjustment
17	CTO	0-255	0-42 no function; 43-84 7500 K; 85-126 6500 K; 127-168 5500 K; 169-210 4500 K; 211-255 3500 K
18	Color Presets	0-255	Color preset selection

5.2 Basic / Standard Core - Channels 19-24

Channel	Function	DMX Value	Description
19	Preset / RGBW Crossfade	0-255	0 RGBW values; 1-254 blend RGBW and preset channels; 255 preset colors
20	Preset Crossfade Time	0-255	0-4 no function; 5-255 two-color crossfade from 100 ms to 5 s
21	Zoom	0-255	Motorized zoom

Channel	Function	DMX Value	Description
22	Zoom Fine	0-255	Fine zoom adjustment
23	Reserved	0-255	Reserved
24	Reset / Internal Function	0-255	0-4 none; 5-9 display off; 10-14 display on; 15-19 reverse off; 20-24 reverse on; 45-49 linear curve; 50-54 square curve; 55-57 1K; 58-60 2.5K; 61-63 6K; 64-69 10K; 80-84 all reset; 85-87 pan/tilt reset; 88-90 effect/zoom reset. Other values undocumented.

5.3 Extend / Extend 2 Core - Channels 19-24

Channel	Function	DMX Value	Description
19	Preset / RGBW Crossfade	0-255	0-125 RGBW values; 126-130 blend RGBW and presets; 131-255 preset colors
20	Preset Crossfade Time	0-255	0-4 no function; 5-255 two-color crossfade from 100 ms to 5 s
21	Zoom	0-255	Motorized zoom
22	Zoom Fine	0-255	Fine zoom adjustment
23	Reserved	0-255	Reserved
24	Reset / Internal Function	0-255	0-4 none; 5-9 display off; 10-14 display on; 15-19 reverse off; 20-24 reverse on; 45-49 linear curve; 50-54 square curve; 55-57 1K; 58-60 2.5K; 61-63 6K; 64-69 10K; 80-84 all reset; 85-87 pan/tilt reset; 88-90 effect/zoom reset. Other values undocumented.

5.4 Standard 44CH Extension - Channels 25-44

Channel	Function	DMX Value	Description
25	Main Light Effect	0-255	0-9 none; 10-109 effects 1-20 in 5-value steps; 110-255 reserved
26	Main Effect Speed	0-255	0-125 forward fast to slow; 126-130 stop; 131-255 reverse slow to fast
27	Main Effect Fade	0-255	Fade amount, 0-100%
28	Main Effect Length	0-255	Effect length
29	Main Effect Red	0-255	Foreground red, 0-100%
30	Main Effect Green	0-255	Foreground green, 0-100%
31	Main Effect Blue	0-255	Foreground blue, 0-100%
32	Main Effect White	0-255	Foreground white/lime, 0-100%
33	Main Effect Dimmer	0-255	Foreground master dimmer, 0-100%
34	Main Background Dimmer	0-255	Background master dimmer, 0-100%
35	Main Effect Strobe	0-255	0-31 blackout; 32-63 open; 64-95 strobe slow to fast; 96-127 open; 128-159 pulse slow to fast; 160-191 open; 192-223 random; 224-255 open
36	Main Light Control	0-255	Crossfade between RGBW settings and individual-color channels
37	Ring 1 Red	0-255	Ring 1 red dimmer
38	Ring 1 Green	0-255	Ring 1 green dimmer
39	Ring 1 Blue	0-255	Ring 1 blue dimmer
40	Ring 1 White	0-255	Ring 1 white/lime dimmer
41	Ring 2 Red	0-255	Ring 2 red dimmer
42	Ring 2 Green	0-255	Ring 2 green dimmer
43	Ring 2 Blue	0-255	Ring 2 blue dimmer
44	Ring 2 White	0-255	Ring 2 white/lime dimmer

5.5 Extend 48CH / Extend 2 Core - Channels 25-48

Channel	Function	DMX Value	Description
25	Main Light Effect	0-255	0-9 none; 10-109 effects 1-20 in 5-value steps; 110-255 reserved
26	Main Effect Speed	0-255	0-125 forward fast to slow; 126-130 stop; 131-255 reverse slow to fast

Channel	Function	DMX Value	Description
27	Main Effect Fade	0-255	Fade amount, 0-100%
28	Main Effect Length	0-255	Effect length
29	Main Effect Red	0-255	Foreground red, 0-100%
30	Main Effect Green	0-255	Foreground green, 0-100%
31	Main Effect Blue	0-255	Foreground blue, 0-100%
32	Main Effect White	0-255	Foreground white/lime, 0-100%
33	Main Effect Dimmer	0-255	Foreground master dimmer, 0-100%
34	Main Background Dimmer	0-255	Background master dimmer, 0-100%
35	Main Effect Strobe	0-255	0-31 blackout; 32-63 open; 64-95 strobe slow to fast; 96-127 open; 128-159 pulse slow to fast; 160-191 open; 192-223 random; 224-255 open
36	Halo Control	0-255	Source lists no function
37	Halo Dimmer	0-255	Halo master dimmer
38	Halo Dimmer Fine	0-255	Halo fine dimmer
39	Halo Effect Red	0-255	Halo effect red
40	Halo Effect Green	0-255	Halo effect green
41	Halo Effect Blue	0-255	Halo effect blue
42	Halo Effect	0-255	0-9 none; 10-205 effects 1-97, two values each; 206-255 effect 98
43	Halo Effect Speed	0-255	0-130 forward fast to slow; 131-255 reverse slow to fast
44	Reserved	0-255	No function
45	Halo Background Dimmer	0-255	Halo effect background dimmer
46	Halo Background Red	0-255	Halo background red
47	Halo Background Green	0-255	Halo background green
48	Halo Background Blue	0-255	Halo background blue

5.6 Extend 2 113CH Pixel Extension - Channels 49-113

Channel	Function	DMX Value	Description
49	Main Light Control	0-255	Crossfade between RGBW settings and individual-color channels
50	Main Ring 1 Red	0-255	Main-light ring/pixel 1 red dimmer
51	Main Ring 1 Green	0-255	Main-light ring/pixel 1 green dimmer
52	Main Ring 1 Blue	0-255	Main-light ring/pixel 1 blue dimmer
53	Main Ring 1 White	0-255	Main-light ring/pixel 1 white dimmer
54	Main Ring 2 Red	0-255	Main-light ring/pixel 2 red dimmer
55	Main Ring 2 Green	0-255	Main-light ring/pixel 2 green dimmer
56	Main Ring 2 Blue	0-255	Main-light ring/pixel 2 blue dimmer
57	Main Ring 2 White	0-255	Main-light ring/pixel 2 white dimmer
58	Main Ring 3 Red	0-255	Main-light ring/pixel 3 red dimmer
59	Main Ring 3 Green	0-255	Main-light ring/pixel 3 green dimmer
60	Main Ring 3 Blue	0-255	Main-light ring/pixel 3 blue dimmer
61	Main Ring 3 White	0-255	Main-light ring/pixel 3 white dimmer
62	Main Ring 4 Red	0-255	Main-light ring/pixel 4 red dimmer
63	Main Ring 4 Green	0-255	Main-light ring/pixel 4 green dimmer
64	Main Ring 4 Blue	0-255	Main-light ring/pixel 4 blue dimmer
65	Main Ring 4 White	0-255	Main-light ring/pixel 4 white dimmer
66	Main Ring 5 Red	0-255	Main-light ring/pixel 5 red dimmer
67	Main Ring 5 Green	0-255	Main-light ring/pixel 5 green dimmer
68	Main Ring 5 Blue	0-255	Main-light ring/pixel 5 blue dimmer
69	Main Ring 5 White	0-255	Main-light ring/pixel 5 white dimmer
70	Main Ring 6 Red	0-255	Main-light ring/pixel 6 red dimmer

Channel	Function	DMX Value	Description
71	Main Ring 6 Green	0-255	Main-light ring/pixel 6 green dimmer
72	Main Ring 6 Blue	0-255	Main-light ring/pixel 6 blue dimmer
73	Main Ring 6 White	0-255	Main-light ring/pixel 6 white dimmer
74	Main Ring 7 Red	0-255	Main-light ring/pixel 7 red dimmer
75	Main Ring 7 Green	0-255	Main-light ring/pixel 7 green dimmer
76	Main Ring 7 Blue	0-255	Main-light ring/pixel 7 blue dimmer
77	Main Ring 7 White	0-255	Main-light ring/pixel 7 white dimmer
78	Main Ring 8 Red	0-255	Main-light ring/pixel 8 red dimmer
79	Main Ring 8 Green	0-255	Main-light ring/pixel 8 green dimmer
80	Main Ring 8 Blue	0-255	Main-light ring/pixel 8 blue dimmer
81	Main Ring 8 White	0-255	Main-light ring/pixel 8 white dimmer
82	Main Ring 9 Red	0-255	Main-light ring/pixel 9 red dimmer
83	Main Ring 9 Green	0-255	Main-light ring/pixel 9 green dimmer
84	Main Ring 9 Blue	0-255	Main-light ring/pixel 9 blue dimmer
85	Main Ring 9 White	0-255	Main-light ring/pixel 9 white dimmer
86	Main Ring 10 Red	0-255	Main-light ring/pixel 10 red dimmer
87	Main Ring 10 Green	0-255	Main-light ring/pixel 10 green dimmer
88	Main Ring 10 Blue	0-255	Main-light ring/pixel 10 blue dimmer
89	Main Ring 10 White	0-255	Main-light ring/pixel 10 white dimmer
90	Main Ring 11 Red	0-255	Main-light ring/pixel 11 red dimmer
91	Main Ring 11 Green	0-255	Main-light ring/pixel 11 green dimmer
92	Main Ring 11 Blue	0-255	Main-light ring/pixel 11 blue dimmer
93	Main Ring 11 White	0-255	Main-light ring/pixel 11 white dimmer
94	Main Ring 12 Red	0-255	Main-light ring/pixel 12 red dimmer
95	Main Ring 12 Green	0-255	Main-light ring/pixel 12 green dimmer
96	Main Ring 12 Blue	0-255	Main-light ring/pixel 12 blue dimmer
97	Main Ring 12 White	0-255	Main-light ring/pixel 12 white dimmer
98	Main Ring 13 Red	0-255	Main-light ring/pixel 13 red dimmer
99	Main Ring 13 Green	0-255	Main-light ring/pixel 13 green dimmer
100	Main Ring 13 Blue	0-255	Main-light ring/pixel 13 blue dimmer
101	Main Ring 13 White	0-255	Main-light ring/pixel 13 white dimmer
102	Main Ring 14 Red	0-255	Main-light ring/pixel 14 red dimmer
103	Main Ring 14 Green	0-255	Main-light ring/pixel 14 green dimmer
104	Main Ring 14 Blue	0-255	Main-light ring/pixel 14 blue dimmer
105	Main Ring 14 White	0-255	Main-light ring/pixel 14 white dimmer
106	Main Ring 15 Red	0-255	Main-light ring/pixel 15 red dimmer
107	Main Ring 15 Green	0-255	Main-light ring/pixel 15 green dimmer
108	Main Ring 15 Blue	0-255	Main-light ring/pixel 15 blue dimmer
109	Main Ring 15 White	0-255	Main-light ring/pixel 15 white dimmer
110	Main Ring 16 Red	0-255	Main-light ring/pixel 16 red dimmer
111	Main Ring 16 Green	0-255	Main-light ring/pixel 16 green dimmer
112	Main Ring 16 Blue	0-255	Main-light ring/pixel 16 blue dimmer
113	Main Ring 16 White	0-255	Main-light ring/pixel 16 white dimmer

6 Routine Maintenance

ATTENTION Disconnect power, allow the fixture to cool and ensure all connector interfaces are dry before inspection or cleaning.

- Inspect the housing, lenses, seals, bracket, mounting points, safety cable, power cable and waterproof connectors.
- Clean external optical surfaces with a soft cloth and normal glass-cleaning fluid, then dry every part carefully.
- The source recommends cleaning external optics at least every 20 days and internal optics every 30-60 days; adjust the interval for dust, smoke, moisture and operating hours.
- Do not open the sealed housing unless qualified and authorized to restore its IP65 protection correctly.
- Replace visibly damaged lenses, filters, seals or structural parts before returning the fixture to service.

Cleaning frequency depends on the installation environment. Damp, smoky or dirty surroundings can cause faster optical contamination and require more frequent inspection.

7 Troubleshooting and Service

Symptom	Check
No power, light or fan	Check the power connection, supply voltage, main fuse and power indicator.
No DMX response	Confirm DMX mode, address, personality, data polarity, connectors, cables and controller output.
Intermittent DMX	Inspect connector pins and the previous fixture, add termination and separate DMX from high-voltage cabling.
Unexpected channels	Confirm 24CH/44CH/48CH/113CH selection and verify the reconstructed 113CH pixel mapping against firmware.
Movement error	Remove obstructions, run Scan Motor Reset and inspect Hall/optocoupler correction and sensor information.
Network control unavailable	Verify Art-Net settings, cabling, controller universe/network configuration and supported firmware protocol.
Reduced or unstable output	Check temperature, cooling, optical cleanliness, supply quality and recorded error information.

SERVICE There are no user-serviceable parts inside. Refer internal repair, seal replacement and calibration to qualified personnel, and use matching replacement parts.

7.1 Warranty and Support

Damage caused by misuse, ignored warnings, unauthorized repair or incorrect installation may be excluded from warranty coverage. Include the model, serial number, firmware version, active personality and a clear fault description when requesting support.

End of manual