

ASLED80 & ASLED192 Fixture Manual

Product, Installation, Startup, Operation, Maintenance & Troubleshooting

Revision 1.0 | August 2026

Table of Contents

- 1. Purpose and Scope
- 2. Product Overview
- 3. Model Identification
- 4. Safety
- 5. System Architecture
- 6. Product Specifications
- 7. Unpacking and Inspection
- 8. Mechanical Installation
- 9. Electrical Installation
- 10. Startup Guide - First Light
- 11. Operating the Fixtures
- 12. Research and Repeatability
- 13. Maintenance and Cleaning
- 14. Storage and Transport
- 15. Service and Support
- Appendix A. Commissioning Checklist

1. Purpose and Scope

This manual covers the Agile Spectrum ASLED80 (GEN1) and ASLED192 (GEN2) lighting fixtures: identification, safe handling, mounting, power connection, first-light startup, normal operating concepts and maintenance. Control software functions are intentionally summarized here and documented in detail in the separate [Agile Spectrum Control Software Manual](#).

2. Product Overview

Agile Spectrum is a programmable spectral LED lighting platform intended for photobiology research and controlled-environment agriculture. The platform provides eight independently controlled spectral channels so researchers can create custom light recipes rather than being limited to a fixed spectrum.

There are two fixture families: ASLED80 (GEN1), with 10 LEDs per channel, and ASLED192 (GEN2), with 24 LEDs per channel. Both are eight-channel platforms with independent control.

Model	Generation	Independent channels	LEDs per channel	Typical use
ASLED80	GEN1	8	10	Programmable research fixture; lower-output/compact platform
ASLED192	GEN2	8	24	Higher-output platform for larger experimental areas

3. Model Identification

- Record the model and serial number before installation.
- Record the manufacturer-configured channel/wavelength map for the exact unit.
- Record the external power-supply model/part number and input requirement.
- Use the fixture label and supplied documentation as the authoritative source for unit-specific electrical details.

4. Safety

4.1 Electrical safety

- Use only the power supply and cabling specified or supplied for the fixture. Do not substitute another supply based only on apparent voltage or connector compatibility.
- Disconnect mains power before opening, servicing, rewiring, or inspecting internal electrical connections.
- Do not operate a fixture with damaged mains wiring, exposed conductors, damaged connectors, or a damaged enclosure.
- Keep power connections dry. IP66 protection does not permit immersion or uncontrolled exposure of energized electrical connections to water.

4.2 Optical and thermal safety

- Do not stare directly into active LEDs at close range.
- Treat the aluminum heat sink and adjacent components as potentially hot during operation.
- Do not obstruct the heat-sink surface or prevent free air movement around it.
- The platform is passively cooled; sufficient chamber air circulation is important.

4.3 Mechanical and overhead safety

- Use suspension hardware rated for the fixture and the installation environment.
- Attach the fixture only to intended/approved structural points.
- Use secondary retention when required by site policy or applicable safety rules.
- Route cables so they cannot become snag hazards or contact sharp/hot/moving objects.

5. System Architecture

Agile Spectrum separates the LED fixture from the external power and control layers. Current product information describes remote network control, independent channel drive, external/decoupled power supplies, and passive thermal management. The control software page also describes system-health telemetry including voltage/current levels and temperature for supported systems.

Subsystem	Function
LED fixture	Produces the configured spectral output through 8 independently controlled channels. Includes network connection hardware.
External power supply	Provides the fixture power and allows for external placement.
Control software	Sets channel intensities, groups, schedules, DC/PWM behavior and Inspection Mode.

6. Product Specifications

Feature	ASLED80 (GEN1)	ASLED192 (GEN2)
Independent channels	8	8
LED count per channel	10	24
Mass	10.0 lbs	13.2 lbs
Channel configuration	Customizable at manufacture	Customizable at manufacture
Drive modes	DC and PWM	DC and PWM
PWM frequency	1 Hz to well over 2 kHz (current site description)	1 Hz to well over 2 kHz (current site description)
Thermal management	Passive heat sink	Passive heat sink
Power architecture	External/decoupled supply	External/decoupled supply
Enclosure rating	IP66	IP66
Network control	Supported	Supported

7. Unpacking and Inspection

- Inspect the shipping carton for impact, crush, water, or puncture damage before opening.
- Verify the fixture, external power supply, power cord(s), control/network accessories, mounting hardware, and documentation against the packing list.
- Inspect the housing, heat sink, LED/optical surfaces, connectors, and cables for physical damage.
- Record model and serial number and photograph any shipping damage.
- Do not energize a fixture that appears damaged; contact Agile Spectrum for assistance.

8. Mechanical Installation

The fixtures are low-profile and passively cooled. The fixtures can be mounted in racks with included brackets, or they can be suspended from a lanyard along with the brackets. Test information listed on Agilespectrum.com is based on a 24-inch mounting height. Mounting height is determined by the customer and their needs or experimental specifications.

1. Select a structurally adequate support point or mounting frame.
2. Attach rated suspension hardware to the fixture intended mounting points.
3. Install secondary retention where required.
4. Level and center the fixture over the experimental area.
5. Maintain free air movement around the heat sink.
6. Route and strain-relieve cables so connector weight is not carried by the electrical interface.
7. Verify the fixture is mechanically secure before connecting power.

For chamber installations, Agile Spectrum recommends the design approach of keeping the external power supply outside the chamber where practical to reduce chamber thermal load.

9. Electrical Installation

1. Turn AC mains power OFF.
2. Place the fixture in its final position and confirm all cables are supported.

3. Connect the fixture to the supplied/approved external DC power supply.
4. Energize the external power supply/system according to the supplied configuration.
5. Wait for the control software to discover or connect to the light.
6. Confirm the correct light/device identity before enabling a high-intensity recipe.

10. Startup Guide - First Light

1. Refer to the [Agile Spectrum control software manual](#) for complete guidance through use of the application.
2. Complete the mechanical and electrical checks above.
3. Launch the Agile Spectrum control software.
4. Open the Lights view and identify the intended Light ID/device.
5. Confirm the Light ID against your commissioning record or physical label.
6. Select the light before changing intensities.
7. Use a low-intensity test rather than immediately commanding full output.
8. Enable one channel at a time and confirm the physical light response.
9. Confirm that the responding channel matches the expected configured channel.
10. Observe available telemetry for current/voltage/temperature anomalies.
11. Test the second light, if present, independently before using group controls.
12. Save a baseline recipe/configuration once the fixture passes the basic checks.

STOP CONDITION: If the wrong physical channel responds, an electrical condition is unexpected, the fixture heats abnormally, or behavior is unpredictable, stop and contact support.

11. Operating the Fixtures

The fixture itself does not define a single fixed spectrum. Each channel is independently controlled, and channel populations may be customized at manufacture. The channel map for the actual unit must therefore be recorded and used for every experiment.

- Use the software to select the fixture and set channel output.
- Make changes gradually during setup and commissioning.
- For research, record all eight channel settings plus operating mode and environmental conditions.

12. Research and Repeatability

Agile Spectrum identifies plant biology, photosynthesis/electron transport, plant phenotyping, plastid transformation, greenhouse research, controlled-environment agriculture, and biomass accumulation as target applications.

- Record fixture model and serial number.

- Record channel-to-wavelength configuration.
- Record mounting height, orientation, and illuminated footprint.
- Record recipe/schedule name and revision.
- Record all eight channel settings.
- Record DC/PWM mode and PWM parameters.
- Record photoperiod and transitions.
- Record group membership.
- Record chamber temperature, humidity, and airflow where relevant.
- Record measurement instrument and calibration information.
- Record Inspection Mode events and power interruptions.

13. Maintenance and Cleaning

13.1 Routine inspection

- Inspect cables and connectors before experiments.
- Inspect the heat sink for dust or residue that could reduce cooling.
- Inspect suspension hardware and attachment points.
- Review software telemetry for abnormal electrical/thermal trends where available.
- Record maintenance dates in the laboratory asset record.

13.2 Cleaning

1. De-energize the system and allow hot components to cool.
2. Remove loose dust with a soft, non-abrasive method.
3. Do not flood the fixture with cleaning liquid.
4. Do not spray directly into connectors or electrical interfaces.
5. Use cleaning agents approved by the facility and compatible with the fixture materials such as 99% isopropyl alcohol.
6. Allow all surfaces and connectors to dry completely before re-energizing.

13.3 Maintenance restrictions

Do not open or modify the fixture or its LED/channel configuration unless authorized and technically qualified. Unauthorized changes can affect safety, spectral calibration, thermal behavior, warranty status, and supportability.

14. Storage and Transport

1. Power down and disconnect mains power.
2. Allow the fixture to cool completely.
3. Protect connectors and cable assemblies from impact.
4. Store in a clean, dry environment suitable for electronic equipment.
5. After transport, repeat the unpacking/inspection procedure before operation.

15. Service and Support

Please call (609) 275-6500, or submit any inquires on the Agilespectrum.com contact form. For support, provide model, serial number, affected channel(s), exact symptoms, operating mode, and available telemetry/error information.

Appendix A. Commissioning Checklist

- ☐ Verify model and serial number
- ☐ Record channel/wavelength map
- ☐ Verify power-supply part number and input requirement
- ☐ Inspect fixture, heat sink, cables, connectors and suspension
- ☐ Confirm airflow around passive heat sink
- ☐ Confirm external power-supply placement
- ☐ Connect control/network path
- ☐ Power system and discover correct Light ID
- ☐ Test channels 1-8 individually at low intensity
- ☐ Verify telemetry where available
- ☐ Test DC mode
- ☐ Test PWM mode if required
- ☐ Create/save a baseline recipe
- ☐ Verify group membership if used
- ☐ Verify scheduled operation
- ☐ Record commissioning date and operator
- ☐ Photograph final installation and software configuration