

Axceleron™ by AQUARIi

Installation and Operations Manual

Electronic copies available at www.aquariitech.com/downloads/axceleronmanual

Axceleron™

Installation and Operations Manual

AXCELERON™ FIXTURE INSTALLATION 1

- Introduction 1
- Customer Service 1
- Safety Precautions..... 1
- Inspection..... 1
- Storage 1
- Operating Conditions 1
- LED Lighting Product Limited Warranty 2
- Electrical (Power and Data Cable Interface) 2
- Quick Start 3
- Warnings 3
- Preparation for Installation..... 4
- Mounting Conditions..... 4
- Installation 4
- Care and Maintenance..... 5
- Schedule "A" **Error! Bookmark not defined.**
- Aquarii's Product Return Policy..... **Error! Bookmark not defined.**

AXCELERON™ OPERATIONS MANUAL 6

- Unpacking the Axceleron™ 7
- Housing Removal (Pendant and Yoke) 7
- Power Connections 7
- Mounting Techniques 7
- Communication 8



AXCELERON™ FIXTURE INSTALLATION

INTRODUCTION

This manual contains information regarding the safe installation, operation, maintenance, and troubleshooting of the Aquarii Axceleron™ LED Luminaire. The Axceleron has been designed for general indoor and other use lighting applications. The fixture is UL listed under standards 1598 and CSA certified under standards CSA C22.2 No. 250.

CUSTOMER SERVICE

If you have any questions regarding the installation, operation, maintenance and/or troubleshooting of your new Axceleron, please contact an Aquarii Customer Service Representative at (315) 672-8807 Monday – Friday, 8:00am to 5:00pm Eastern Standard Time. You may also contact us at service@aquariitech.com or write to us at:

AQUARII, INC.
ATTN: Customer Service Department
17 Genesee Street
Camillus, New York, U.S.A. 13031

SAFETY PRECAUTIONS

Please read and understand this manual before attempting to install or operate the Axceleron.

INSPECTION

Upon receiving your Axceleron, inspect the unit for any signs of damage. Should any damage be noted, immediately contact Aquarii's Customer Service Representative to report the damage and file the appropriate claim. The damaged unit must be appropriately packaged and shipped back to Aquarii within 24 hours of filing the claim. Refer to the *Customer Service* section for the appropriate contact information.

STORAGE

Axceleron LED fixtures must be stored in a clean and dry location and should be kept within the original shipping containers. They shall be protected from dirt, water and sunlight and shall be positioned to allow for adequate air circulation in a controlled environment to prevent condensation.

Storage Temperature: 32°F to 125°F (0°C to +50°C)

OPERATING CONDITIONS

Operating Temperature: 32°F to 105°F (0°C to +40°C)

Humidity: 5% to 95% (non-condensing)

The Axceleron is designed for use in typical indoor environments such as theaters, auditoriums, places of assembly, etc.

It is not designed for use in environments that have:

- + Damp or wet conditions
- + Corrosive atmospheres
- + Oil and/or chemical vapors
- + Excessive dust or explosive gases (such as grain silos)
- + Excessive heat or exposure to areas with high temperatures
- + Exposure to surges in electrical power. NOTE: the Axceleron warranty is void if the unit is exposed to excessive fluctuations (surges) in power, voltage or cycles. Main power for Axceleron fixtures should be filtered through a power conditioner to ensure that no surges are passed through to the Axceleron.



LED LIGHTING PRODUCT LIMITED WARRANTY

This limited warranty is provided by Aquarii, Inc. indicated as Seller on the invoice provided to the original purchaser of the LED lighting Product. Seller warrants that the Product will be free of defects in material and workmanship which cause the Product to fail to operate in accordance with the performance specifications set forth in the documentation published for or provided with the Product (the "Specifications"). The determination of whether the Product is defective shall be made by Seller in its sole discretion with consideration given to the overall performance of the Product. **A Product shall not be considered defective solely as a result of the failure of individual LED components to emit light if the number of inoperable components is less than 10% of the total number of LED components in the Product.**

If any Product covered by this warranty is returned by Purchaser within the Warranty Period referred to below in accordance with Seller's Product Return Policy (noted in Schedule "A"), and Seller determines to its satisfaction that such Product failed to satisfy this warranty, Seller will, at its option, repair or replace the Product or the defective part, or reimburse Purchaser for the purchase price, subject to the limited warranty terms and conditions set forth in attached Schedule "A". For the purpose of clarity, "repair or replacement of the Product or the defective part thereof" does not include any removal or reinstallation costs or expense, including without limitation labor costs or expenses. If Seller chooses to replace the Product and is not able to do so because it has been discontinued or is not available, Seller may replace it with a comparable product.

This warranty shall become effective only upon satisfaction of the conditions set forth on Schedule "A". The warranty shall be in effect for a period (the "Warranty Period") of 5 years from the Product ship date.

This warranty only applies when the product has been properly handled, stored, transported, wired, installed and operated within the electrical values, operating range and environmental conditions provided in the Specifications. Seller will not be responsible under this warranty for any failure of the Product that results from external causes such as: acts of nature; physical damage; exposure to adverse or hazardous chemical or other substances; use of reactive cleaning agents and/or harsh chemicals to clean the Product; environmental conditions; vandalism; fire; power failure, improper power supply, power surges or dips and/or excessive switching; induced vibration; animal or insect activity; fault or negligence of purchaser, any end user of the Product and/or any third party not an authorized representative of Seller; improper or unauthorized use, installation, handling, storage, alteration, maintenance or service, including failure to abide by any product classifications or certifications, or failure to comply with any applicable standards, codes, recommendations, product specification sheets or instructions of Seller; use of the Product with products, processes or materials supplied by any end user or third party; or any other occurrences beyond Seller's reasonable control.

This warranty shall become void in the event (a) any repairs, modifications, or alterations not specifically authorized by Seller are made to the Product by any person, (b) the Product has been serviced by personnel not authorized by Seller, (c) the Product is not used for the purpose for which it is designed, (d) the Product is exposed to operating conditions or environments other than those mentioned in the Specifications, product brochures, or user manuals, or (e) the serial numbers on the Products have been altered, defaced or rendered illegible.

The provisions of this warranty are exclusive and are given and accepted in lieu of any and all other warranties, whether expressed or implied, including without limitation any warranty against infringement and any implied warranties of merchantability or fitness for particular purpose, all of which are expressly disclaimed. No person, agent, distributor, dealer or company is authorized to change, modify or extend the terms of this warranty in any matter whatsoever. Under no circumstances shall Seller's aggregate liability arising out of or in connection with a defective Product, in contract, tort or otherwise, exceed the purchase price of the Product to which such liability relates. In no event shall Seller be liable for special, incidental, consequential, indirect or compensatory damages, including, without limitation, damages resulting from loss of use, profits, business or goodwill.

Seller reserves the right to modify this warranty from time to time and any modifications shall be effective for all orders placed on or after the effective date of such revised warranty.

This warranty may not be transferred or assigned by the original end user and product must be purchased directly from Seller or an authorized distributor or representative of Seller.

ELECTRICAL (POWER AND DATA CABLE INTERFACE)

Main Power and Low Voltage Data cables must maintain proper separations or maintain proper electrical insulation. Wiring should be installed in accordance with local authority having jurisdiction and/or NEC requirements.

Depending on mounting option selected and conditions of facility for fixture installation, contractor shall contact

Aquarii representative for assistance with recommended installation procedures of both power and data cables.

QUICK START

Prior to using the Axceleron, the installer must perform the following:

1. Before exposing the unit, please remove any shipping or storage debris from the exterior of the packaging.
2. Once the Axceleron packaging is open please verify that all parts are included and that nothing has been damaged or modified during shipping or storage.

Please see Axceleron™ Operations Manual for more detailed information.

WARNINGS

Before beginning the installation:



1. **Disconnect the power supply leading to the Axceleron at the circuit breaker.**
2. **If applicable, perform proper “lock-out/tag-out” procedures.**

All electrical connections must be installed in conformance with the National Electrical Code (NEC) and local codes, as applicable. Contact the local codes office for applicable codes, permits and/or inspections that may be required.

Confirm that the supply voltage matches the Axceleron's requirements before completing any connections to the supply voltage. **The Axceleron requires non-dimmed mains power within the range of 100-264Vac 50/60Hz.**

Note that the Axceleron has multiple mounting options: yoke, c-clamp, pendant, and recessed methods. Please confirm that the Axceleron ordered is correct for the desired mounting.



Altering the Axceleron in any manner is prohibited and will void any and all warranties. DO NOT CONNECT Axceleron to DC voltages or AC voltages/cycles not approved for its operation. Doing so will damage the Axceleron and void all warranties.

DO NOT CONNECT Axceleron to an electrical system that does not provide a means for equipment grounding, including, but not limited, to two-wire systems that are not grounded. FAILURE TO ADHERE TO THIS WARNING COULD PERMANENTLY DAMAGE THE UNIT AND/OR CAUSE ELECTRICAL CURRENT TO FLOW THROUGH ANY METAL PARTS OF THE UNIT, WHICH COULD CAUSE SERIOUS INJURY OR DEATH TO ANYONE COMING INTO CONTACT WITH THE LUMINAIRE.

Product must be protected from power surges via conditioned main power supplies in order for all warranties to be valid.

ALWAYS mount Axceleron according to Aquarii mounting instructions.

DO NOT suspend the Axceleron by the supply wires or from junction boxes that cannot safely support a rated load of 150 pounds (68 kg). If safety cables have been supplied they must be attached to hard points within the house structure that are suitable of suspension of the complete weight of the Axceleron unit (12 pounds (11.4kg), with 6:1 safety factor (72 pounds (68 kg)). Failure to properly install the fixture, attach the safety cable or modifying the cable will reduce its strength, violate the warranty and create a serious hazard.

WARNING: THE AXCELERON MUST NOT BE SUPPORTED BY WIRE CONNECTORS. ATTEMPTING TO SUSPEND IT BY THE FACILITY WIRES AND/OR WIRE CONNECTORS WILL RESULT IN FALLING, WITH THE POSSIBILITY OF PERSONAL INJURY OR DEATH AND THE DANGER OF ELECTRICAL SHOCK OR FIRE.

WARNING: IF THE AXCELERON IS SUPPLIED WITH A SAFETY CABLE. FAILURE TO ATTACH THE SAFETY CABLE TO A TIE-OFF CAPABLE OF SUPPORTING THE WEIGHT OF THE UNIT CAN RESULT IN FALLING, WITH THE POSSIBILITY OF PERSONAL INJURY OR DEATH. THE SAFETY CABLE SHALL NOT BE SHORTENED NOR ATTACHED WITH FASTENERS (SUCH AS "DOG CLIPS") THAT ARE NOT RATED FOR USE IN SECURING LOADS ABOVE PEOPLE.

Installer shall be careful to not damage or cut any of the AXCELERON wiring system(s) throughout

the installation process. Wire **SHALL NOT** contact any surface having a sharp edge. Damage to the wires may possibly cause personal injury or death from electrical shock.

Installer shall wear the appropriate personal protective equipment during the installation process as Axceleron produces high intensity light output. Prolonged and/or direct viewing of the output of the Axceleron at a close range when operating can cause severe eye damage. **USE APPROPRIATE EYE PROTECTION.**

PREPARATION FOR INSTALLATION

Before beginning assembly and installation of the Axceleron verify that all parts are present. Should any part be missing or damaged, the installer shall immediately contact an Aquarii Customer Service representative. Do not proceed with installing a damaged unit.



CAUTION: Hazardous voltage and current are associated with the usage of LED Lighting; Aquarii recommends that a qualified electrician install and maintain these units.

Before beginning this installation, disconnect the power supply for the Axceleron at the circuit breaker. If applicable, perform proper "lock-out/tag-out" procedures.



Warning: Units with Analog (0-10V) or DMX/RDM control options may retain a charge for up to 10 seconds after power has been disconnected from unit.

MOUNTING CONDITIONS

Verify that the Axceleron delivered matches the specific mounting condition. If the Axceleron does not match the specified mounting condition, **DO NOT ATTEMPT TO** modify the unit. Upon discovery of improper mounting hardware for the specific installation, immediately notify an Aquarii Customer Service Representative.

INSTALLATION

These are general installation instructions for the Axceleron – see also Section 2 of this manual. These steps will vary depending on the mounting options chosen for each unit. Please refer to the individual mounting instructions for detailed mounting instructions:

1. Carefully remove from shipping container and inspect for damage.
2. Separate the housing from the Axceleron unit by removing the (2) tapered screws located on the side the housing. Retain the screws, which are required to reinstall the housing.
3. Install mounting option as per instructions provided with mounting kit.
4. Rough-in facility power and data wires based on the mounting option that is being used.
5. Secure the power and any data connections as noted in mounting instructions.



6. If required based on the mounting option, secure the safety harness to the Axceleron. FAILURE TO ATTACH THE SAFETY CABLE TO A TIE-OFF CAPABLE OF SUPPORTING THE WEIGHT OF THE FIXTURE CAN RESULT IN FALLING, WITH THE POSSIBILITY OF PERSONAL INJURY OR DEATH. THE SAFETY CABLE SHALL NOT BE SHORTENED NOR ATTACHED WITH FASTENERS (SUCH AS "DOG CLIPS") THAT ARE NOT RATED FOR USE IN SECURING LOADS.

7. Slide the housing over the Axceleron unit. Align the 2 mounting holes on the housing with the nut on the mounting bracket. Secure the housing to the unit with the (2) tapered screws. Ensure that when reinstalling housing that no wire is pinched or binding on housing and brackets.
8. Turn on power and test Axceleron for proper operation.

Overview

The Axceleron 2-Channel LED controller provides 150 Watts maximum output, full range dimming, step-less dimming curves emulating the dimming curve of an incandescent source, and RDM capability to change fixture settings. Step-less dimming is produced with Analog (0-10V) or 8-bit DMX512.

Specifications

- + 75W, 100W, 125W and 150W output.
- + Controls: Analog (0-10V), DMX/RDM

- + Programmable through RDM

CARE AND MAINTENANCE



The fixture must be disconnected from the power supply before any internal maintenance is performed. Failure to do so may result in damage to the fixture and/or injury to the Aquarii authorized technician.

To maximize the appearance and performance of the Axceleron, periodically remove dust and debris from the surface and lower light diffuser. If excessive dust is present; disconnect power to the unit, remove the exterior housing, and safely vacuum interior components with a fine bristle covered nozzle. Re-secure housing and reconnect power to the unit.

SCHEDULE "A"

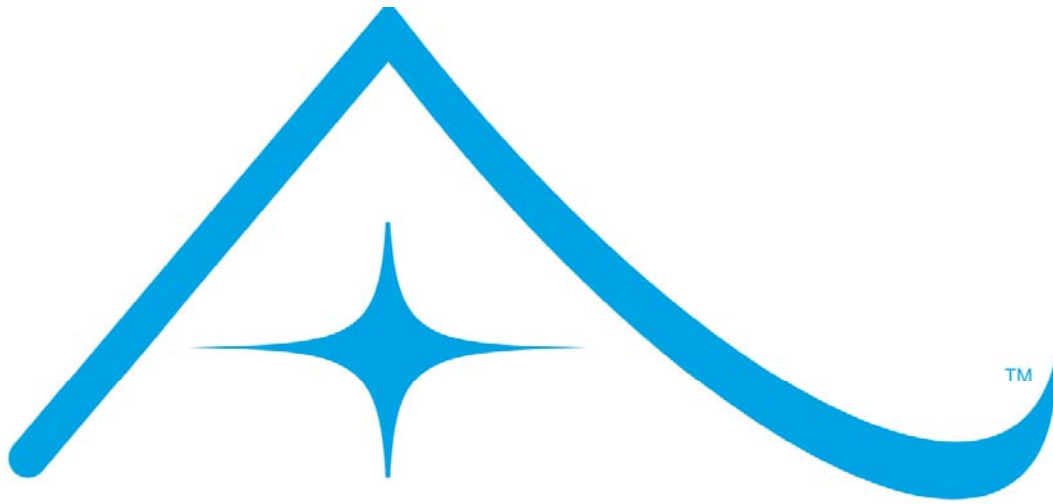
The following conditions must be met in order for Aquarii's warranty to become effective:

1. All invoices related to the Product under warranty must be paid in full.
2. Purchaser must notify Seller in writing within 30 days of discovering a defect in the Product.
3. Product must be protected from significant electrical surge and must be in a location where ambient temperatures do not exceed 40°C.

AQUARII'S PRODUCT RETURN POLICY

1. Before returning any product to Aquarii, please call customer service to receive an RMA number for your return. Product returned without an RMA will delay, or may void, any return credit.
2. Clearly note RMA number next to the address label on the shipping container and packing slip.
3. Please return all products "freight prepaid" unless instructed otherwise by customer service.
4. Please ship all Returns to the following address:

AQUARII, INC.
c/o Product Returns
3195 Vickery Road
North Syracuse, New York, U.S.A. 13212



Axceleron™ by AQUARIi

AXCELERON™ OPERATIONS MANUAL

Electronic copies available at www.aquariitech.com/downloads/axceleronmanual

Note: the Axceleron™ is a high performance LED fixture and is designed and built to be extremely reliable in proper use. However, it is a precision instrument and must be treated as such. Rough handling, dropping the unit, etc. can result in damage to the LED array or the electronic components that drive it. Such treatment voids the warranty and will result in poor performance, reductions in longevity of the unit or complete failure. The following pages illustrate the handling and installation techniques designed to ensure long life and safe operation of your Axceleron™ units.

Please handle with care!

UNPACKING THE AXCELERON™

1. Check box for damage – if damaged, wet, or crushed contact Aquarii.
2. Remove top foam packaging.
3. Use two hands on the top bracket and lift the Axceleron from the container.

If provided, confirm that the pre-assembled electrical cord (or whip) did not slide down the inside of the unit. Use care in extending cord (or whip), accordingly.

HOUSING REMOVAL (PENDANT AND YOKE)

Gently place the Axceleron on its side on a clean and dust-free surface free of items that might scratch the housing. Remove the two housing screws and set aside for re-installation.

(Note - The 2nd screw is opposite the one shown.) When both screws are removed, you can pull the Axceleron engine from the housing. Once removed, gently place the Axceleron face (LED array) down on the clean surface to prepare it for installation.

Visually inspect unit for loose connections or damage to heat sink fins, cables, LED array, etc. The heart of the Axceleron is the LED engine.

Inspect for any damage to the LED array including the lenses (not applicable to 110⁰ units), the circuit board and the connections to the DC power and control cables. Contact Aquarii immediately if any of the components of the LED array have been damaged in shipping. Do not install Axcelerons with damaged LED arrays.

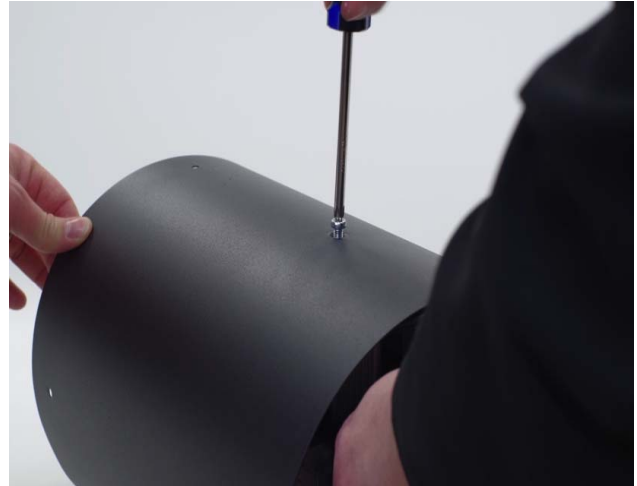


Figure 1 – Housing Removal

POWER CONNECTIONS

Mains feed terminations are as follows:

- AC Live - Black
- AC Neutral - White
- Ground - Green

If optional whip was ordered, these terminations were completed by Aquarii. Otherwise, field terminations are to be completed in the field by the installer.

MOUNTING TECHNIQUES

The Axceleron has numerous mounting options: C-Clamp, Yoke, Pendant, Cable, Sloped, and Recessed. Each mount has been designed to provide a secure, dependable and easy-to-install method for suspending the Axceleron.

Where appropriate, the mounts have been shipped with safety cables. If safety cables have been supplied, it is the installer's responsibility to attach safety cable to hard points within house structure that are suitable for suspending the load of an Axceleron. Failure to do so or modification of the safety in a manner that reduces / eliminates its load capacity, violates the warranty and creates a serious hazard. If you have questions about the safe hanging of any Axceleron unit, contact Aquarii before installation.

Example of pendant mount:

1. Secure the top bracket to the j-box or structure at the top of the pendant as noted in the mounting kit instruction sheet. Note: recessed and yoke mountings will not require this step.
2. Install the Axceleron on to the bottom of the pendant stem and install power and data cabling as applicable.

3. Secure the power and any data connections as noted in mounting instructions (within the Technical and Installation Manual). DMX connections are via direct connection to the screw terminal, insulation displacement connector (IDC), RJ45, or 5-pin XLR connectors (mounted on the top cover).
4. If required based on the mounting option, secure the safety harness to the Luminaire. **FAILURE TO ATTACH THE SAFETY CABLE TO A TIE-OFF CAPABLE OF SUPPORTING THE WEIGHT OF THE CAN RESULT IN FALLING, WITH THE POSSIBILITY OF PERSONAL INJURY OR DEATH. THE SAFETY CABLE SHALL NOT BE SHORTENED NOR ATTACHED WITH FASTENERS (SUCH AS "DOG CLIPS") THAT ARE NOT RATED FOR USE IN SECURING LOADS.**
5. Slide the housing over the Axceleron unit. Secure the housing to the unit with the (2) tapered screws. Ensure that when reinstalling housing that no wire is pinched or binding on housing and brackets.
6. Turn on power and test Axceleron for proper operations.



COMMUNICATION

The fixture is compliant with ANSI E1.11 – 2008 (R2013) USITT DMX512-A, ANSI E1.20 – 2010 RDM over DMX512 Networks, ANSI E1.37-1 – 2012 Additional RDM Message Sets, and ANSI E1.3 – 2001 (R2011) 0 to 10v Analog Controls. All configuration settings are made via RDM commands, serial TTL commands, and the Aquarii tablet programmer. The configurable settings are as follows:

- DMX Address **1** – 512
- DMX Loss Mode **Full On**, Hold, DMX value (0-256)
- Dimming Curve **Incandescent**, Linear, S-Curve, Exponential

Values in **bold** are factory defaults.

In addition to DMX/RDM settings, on-board fixture monitoring (temperature, power cycles, hours of operation, etc.) is continuously recorded.



DMX over CAT5e/6

Wire Color	Function	IEC 60603-7 8-position Modular Connector (RJ45) Pin Number	XLN Pin Number
Brown	Pair 2 - Signal common/ground/shield (0 V)	8	1
White / Brown	Pair 1 - Signal common/ground/shield (0 V)	7	1
Orange	Pair 1 - Data negative (D -)	2	2
White / Orange	Pair 1 - Data positive (D +)	1	3
Green	Pair 2 - Data negative (D -)	6	4
White / Green	Pair 2 - Data positive (D +)	3	5
Blue	Unassigned	4	
White / Blue	Unassigned	5	

NOTES

1. Pin numbering and colors in accordance with ANSI/TIA/EIA-568 scheme T568B.
2. Pin 8 should be wired as signal common even if pins 3 and 6 are NOT wired so that both conductors 7 and 8 are at equal potential.

WARNING

Accidental connection to non-DMX512 equipment likely to be encountered (e.g., an Ethernet Hub at a patch bay) may result in damage to equipment. Pins 4 and 5 may carry voltages outside the EIA-485 range in telecom applications (e.g., telephone ringing). Pins 4 and 7 may carry voltages outside the EIA-485 range in other applications (e.g., some manufacturers whose distributed DMX512 buffering products require low voltage DC power may use these wires for this purpose). Because of these various uses, misplugging unlike systems could cause serious damage.