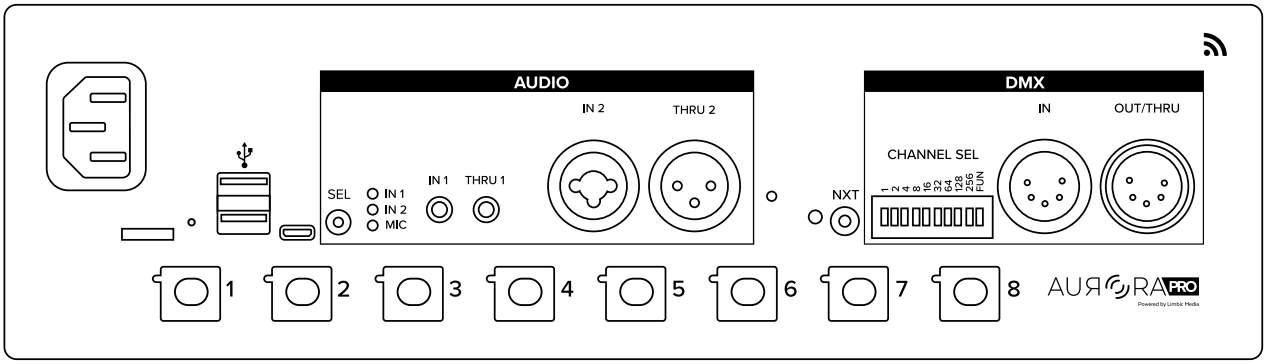
AURORA PRO

Powered by Limbic Media



USER MANUAL

AUR-R2-P8D-00-US
AUR-R2-P8D-00-EU

TABLE OF CONTENTS

INTRODUCTION

Aurora Pro is a standalone, plug-and-play sound reactive lighting controller. Aurora analyzes audio in real-time to generate dynamic lighting designs.

Innovate in your industry. Public spaces are seeking new ways to connect people in an increasingly digital world. Choose sophisticated interactive lighting that engages audiences and positions you as an innovator.

Connect people. Spark deeper connections with a “heads-up” social platform. Encourage audiences to create lasting memories with their voices, motions, and social media interactions. Increase visitor turnout and keep audiences coming back for more.

Avoid unnecessary costs and steep learning curves. Nobody should have to hire programming experts to create memorable experiences. Aurora creates interactive lighting out-of-the-box. Easily customize lighting effects using the Aurora Mobile App. Reconfigure the platform to reinvent displays year after year.

The Aurora Pro Manual is designed for non-technical users installing interactive lighting for the first time, as well as experienced technicians integrating Aurora Pro with protocols like DMX, KiNET or Art-Net.

GUIDE OVERVIEW

The Aurora Pro Manual describes:

- How to navigate the Aurora Pro connector interface
- Basic installation preparations
- How to set up typical Aurora Pro lighting configurations
- How to connect to and configure the Aurora Mobile App
- How to upgrade Aurora Pro firmware and software
- Aurora Pro specifications, best practices, and troubleshooting

Pro-Tip:

Reading the **Aurora Quick Start Guide** is highly recommended before reading this manual.

Questions?

Additional support for Aurora Pro is available at **support.limbicmedia.ca** or contact **support@limbicmedia.ca**

View other documents at **support.limbicmedia.ca/guidesmanuals/**

ABOUT AURORA PRO

Features

- Standalone, portable lighting controller
- Uses patented, sound-responsive algorithms
- Creates 2D- and 3D-mapped patterns
- Offers easy pattern and palette customization from the free Aurora Mobile App or DMX IN
- Includes multiple audio inputs and thrus for consumer-level and professional audio equipment
- Supports up to 4000 LED pixels with built-in RGB connectors or up to 25,000 LED pixels using network protocols like DDP, Art-Net and KiNET

LED Fixture Types Supported

Aurora Pro directly controls RGB and RGB LEDs with 8 built-in RGB connectors. Installers can take advantage of our extensive catalog of LED fixtures and accessories to scale up installations. Refer to the **Aurora Product Guide** for a detailed list.

Aurora Pro supports other lighting equipment using industry standard protocols, such as DDP, DMX512, Art-Net[1], sACN[1], or KiNET[1] LED fixtures. These can be used alone or in conjunction with LED fixtures.

Maximum Lights Supported

Control up to 600 LED pixels using built-in RGB connectors and Aurora Pro's internal power supply.

Control up to 4000 LED pixels using built-in RGB connectors and Power Top-Ups.

Control up to 25,000 LED pixels with network protocols like KiNET or DDP in conjunction with Network Distribution Boxes (NDBs).

Control 25,000+ LED pixels using custom hardware solutions.

Refer to the **Aurora Pro Power Best Practices Appendix** to troubleshoot pixel constraints.

Standard Lighting Protocols Supported

DMX IN

DMX OUT[1]

Art-Net[1]

DDP

KiNET[1]

sACN[1]

WS2811

[1] Contact Limbic Media for details.

AURORA PRO CONNECTOR INTERFACE

The Aurora Pro connector interface is complete with multiple audio inputs/outputs, built-in RGB connectors and buttons. Some of Aurora Pro's functionality can be accessed directly from the connector interface.

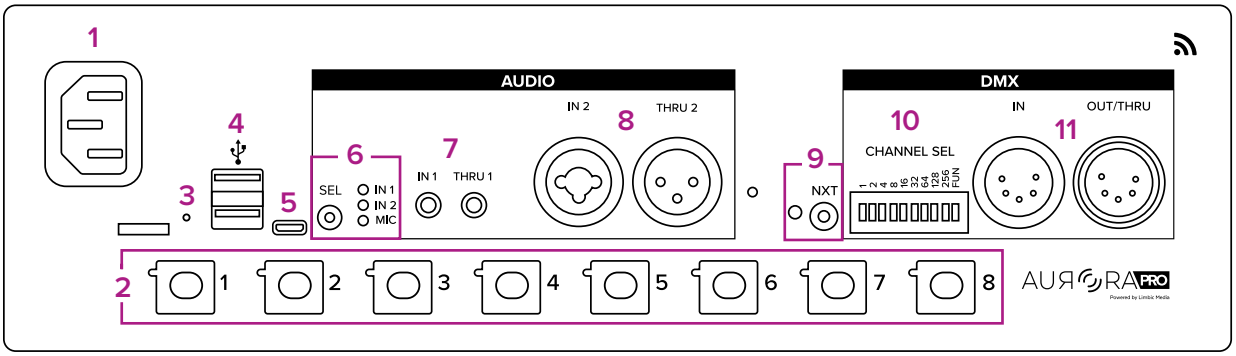


Fig. 1: Aurora Pro Connector Interface

1. Power connector
2. Built-in RGB connectors
3. Reset button
4. USB A connectors
5. USB micro B connectors
6. Audio select button (SEL) and status LEDs
7. ⅛" IN/THRU[2] audio jack (IN 1 THRU[2] 1)
8. ¼" TRS/XLR combo jack IN/THRU[2] (IN 2 THRU[2] 2)
9. Next mode/pattern (NXT) and status LED
10. Channel select dip switch (CHANNEL SEL)
11. DMX IN OUT/THRU[2] (IN OUT/THRU)

1. Power connector

The power connector is located at the top left of the front panel. This connects Aurora Pro to AC power via an IEC power cable.

2. Built-in RGB connectors

Aurora Pro comes with 8 built-in RGB LED connectors numbered ports 1-8. Refer to the **Aurora Product Guide** for a catalog of available LED fixtures and accessories.

3. Reset button

The reset button restores Aurora Pro to its default system settings. A paper clip or pin is required to press the button.

4. USB A connectors

Two USB A connectors connect a USB audio interface, USB-to-Ethernet adapter, or USB data stick to Aurora Pro.

5. USB micro B connectors

The USB micro B connector is used to update Aurora Pro firmware.

[2] THRU is labeled OUT on older models of Aurora

6. Audio select button (SEL) and status LEDs

The audio select button (SEL) cycles through available audio inputs (IN 1, IN 2, MIC).

The audio select status LEDs indicate which input is selected and the current audio input level:

Color	Audio Input Level
Green	-Inf < Input level < -5dB
Yellow	-5 dB < Input level < -0.5 dB
Red	-0.5 dB < Input level < 0 dB
White	System default restore

7. ⅛" IN/THRU audio jack (IN 1 THRU[2] 1)

The ⅛" IN/THRU audio jack (IN 1 THRU 1) connects consumer-level audio sources and speakers to Aurora Pro.

8. ¼" TRS/XLR combo jack IN/THRU (IN 2 THRU[2] 2)

The ¼" TRS/XLR combo jack IN/THRU (IN 2 THRU 2) connects pro-audio equipment such as mixers and external stereo systems to Aurora Pro.

9. Next mode/pattern and status LED

Holding the next mode/pattern button (NXT) down for 5 seconds switches between Live Control Mode and Show Mode.

Pressing the next mode/pattern button (NXT) cycles through lighting patterns in Live Control Mode, and previously set lighting cues in Show Mode.

The next mode/pattern status LED indicates Aurora Pro's mode:

Color	Solid LED	Flashing LED
Green	Show Mode	Show Mode paused[3]
Yellow	DMX mode	N/A
Red	Live Control Mode	Live Control Mode paused[3]
White	System default restore	System update
None	Show Mode/Live Control Mode stopped	N/A

Refer to **Configure the Aurora Mobile App** to learn more about performance modes.

10. Channel select dip switch (CHANNEL SEL)

The DMX IN channel select dip switch (CHANNEL SEL) allows you to set the DMX base channel for DMX control.

11. DMX IN OUT/THRU[3] (IN OUT/THRU)

DMX IN OUT/THRU (IN OUT/THRU) connects DMX controllers, consoles and fixtures to Aurora Pro. Refer to **Set Up DMX and Other Ethernet-Based Protocols** for details.

[3] LED pixels stay ON when the system is paused in Show or Live Control Mode. LED pixels turn OFF when the system is stopped in Show Mode or Live Control Mode.

PREPARE FOR AN INSTALLATION

It is important to properly plan lighting configurations before installing Aurora Pro. Ensure all fixtures are accounted for prior to installing. Installing and testing fixture configurations in an accessible area prior to final installation is highly recommended.

Warning:

Do not hang Aurora Pro by the built-in RGB connectors. Use proper mounting features and strain relief on light runs longer than 25 LED pixels.

Included Components

- Aurora Pro
- (4) Mounting brackets
- (4) Mounting screws
- (1) Power cable
- (8) Dust caps
- (1) **Aurora Quick Start Guide**

Power Aurora Pro ON/OFF

Required Components

- Aurora Pro
- Power cable

Method

1. Connect Aurora Pro's power connector to AC power via the included power cable. Aurora starts automatically once power is applied.
2. Wait 15 seconds for Aurora Pro to power ON.
3. Remove the power cable to power Aurora Pro OFF.

Connect LED Pixels to Built-In RGB connectors

Caution:

Do not connect LED pixels while Aurora Pro is connected to power.

8 Built-in RGB connectors are located at the bottom of the front panel. Each built-in LED connector supports a maximum of 75 LED pixels with Aurora Pro's internal power supply, for a total of 600 pixels across all 8 built-in RGB connectors.

Each built-in LED connector supports up to 500 LED pixels with additional Power Top-Ups, for a total of 4000 LED pixels across all 8 built-in RGB connectors. Refer to **Configure Aurora Pro** for details on how to set up Aurora Pro with additional components, such as Power Top-Ups.

Pro-Tip:

Any combination of built-in RGB connectors can be used, but patterns work optimally when connected sequentially from 1➔8.

Required Components

- Aurora Pro
- Leader cables (optional)[4]
- LED pixel strand(s)

Method

1. Power Aurora Pro OFF.
2. Unscrew the dust caps on each built-in LED connector.
3. If using leader cables, connect the male end of each LED pixel strand to the female end of each leader cable. (Fig. 2)

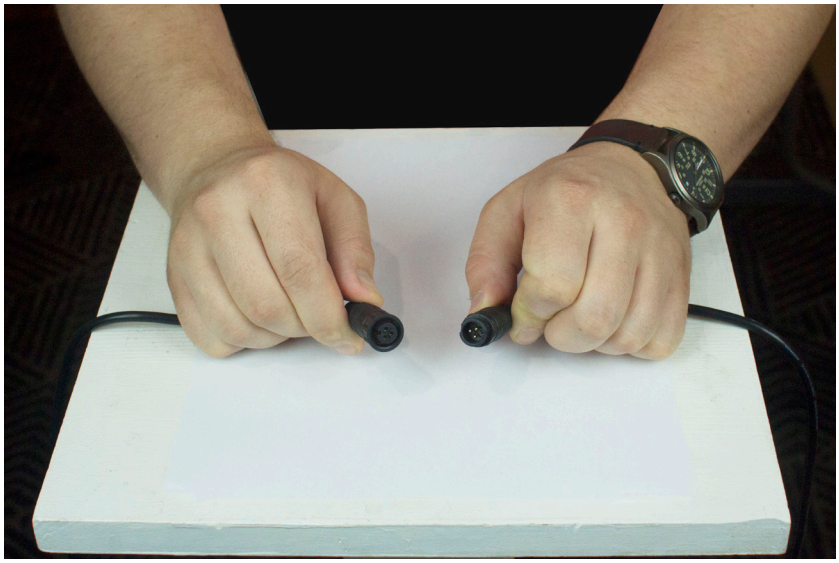


Fig. 2: Male and female ends of RGB connectors

[4] Leader cables 15' or greater require Power Top-Ups and Smart Extender/Receiver adapters. Refer to the **Aurora Product Guide** for details on Power Top-Ups and Smart Extender/Receiver adapters.

4. Connect the male end of each LED pixel strand or leader cable to each built-in LED connector. Ensure the O-ring on the male connector is present to retain the waterproof seal.

5. Hand-tighten the locking mechanisms. RGB fixtures requires a half-turn to tighten. (Fig. 3)

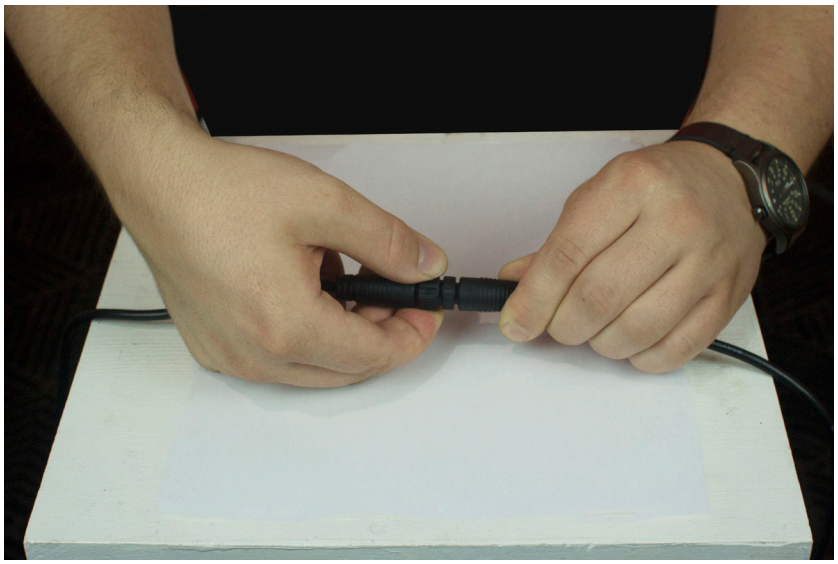


Fig. 3: Turning RGB connector locking mechanism

Caution:

To reduce the risk of shock and water corrosion, connect dust caps to unused inputs and unused LED pixel strand ends.

CONFIGURE AURORA PRO

Aurora Pro can be installed in a variety of configurations depending on the number of LED pixels required. The following configurations are common Aurora Pro setups with and without additional components such as Network Distribution Boxes (NDBs) and Power Top-Ups.

Set Up Aurora Pro Using Built-In RGB connectors (without Power Top-Ups)

Aurora Pro supports installations with up to 600 LED pixels without Power Top-Ups. Each Aurora Pro built-in LED connector supports a maximum of 75 LED pixels without Power Top-Ups.

Aurora Pro supports up to 4000 LED pixels with Power Top-Ups. Refer to **Set Up Aurora Pro Using Built-In RGB connectors (with Power Top-Ups)** for details.

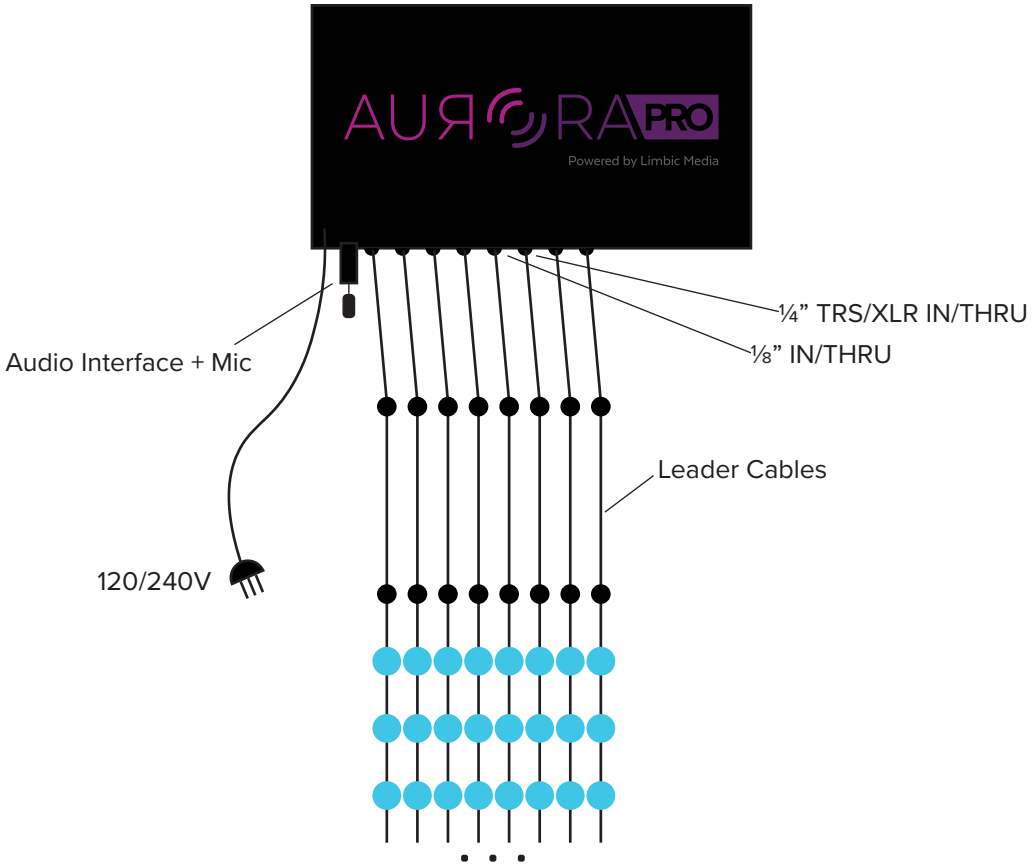


Fig. 4: Aurora Pro setup using built-in RGB connectors without Power Top-Ups

Required Components

- Aurora Pro
- Leader cables (optional)[5]
- LED pixels
- Audio input (if sound reactivity is required)
- Aurora Pro outdoor enclosure (optional)

[5] Leader cables longer than 15' require Power Top-Ups and Smart Extender/Receiver adapters. Refer to the **Aurora Product Guide** for details on Power Top-Ups and Smart Extender/Receiver adapters.

Method

1. Power Aurora Pro OFF. Aurora Pro must be contained in an outdoor enclosure for outdoor installations. Refer to the **Aurora Product Guide** for outdoor accessories.
2. Connect leader cables to each built-in LED connector.
3. Connect LED pixel strands to each leader cable (or to each built-in LED connector if leader cables are not in use).
4. Power Aurora Pro ON.
5. Connect Aurora Pro to the Aurora Mobile App. Refer to **Connect to Aurora Pro in AP Mode** for details.
6. Set the number of LED pixels per port using the Aurora Mobile App. Refer to **Configure the Aurora Mobile App** for details.
7. Connect an audio input to Aurora Pro and calibrate audio using the Aurora Mobile App Audio Settings. Refer to **Connect and Calibrate Audio Inputs** for details.
8. Refer to **Configure the Aurora Mobile App** to begin customizing your light show.

Set Up Aurora Pro Using Built-In RGB connectors (with Power Top-Ups)

Aurora Pro supports installations with up to 4000 LED pixels with Power Top-Ups. Each Aurora Pro built-in LED connector supports a maximum of 500 LED pixels with Power Top-Ups.

Power Top-Ups extend the LED pixels per port limit beyond 75. Each Power Top-Up supports an additional 100 LED pixels (or 80 LED pixels of Triklit-style fixtures). This allows a single port to support 4-5 Power Top-Ups, depending on the LED fixture style used.

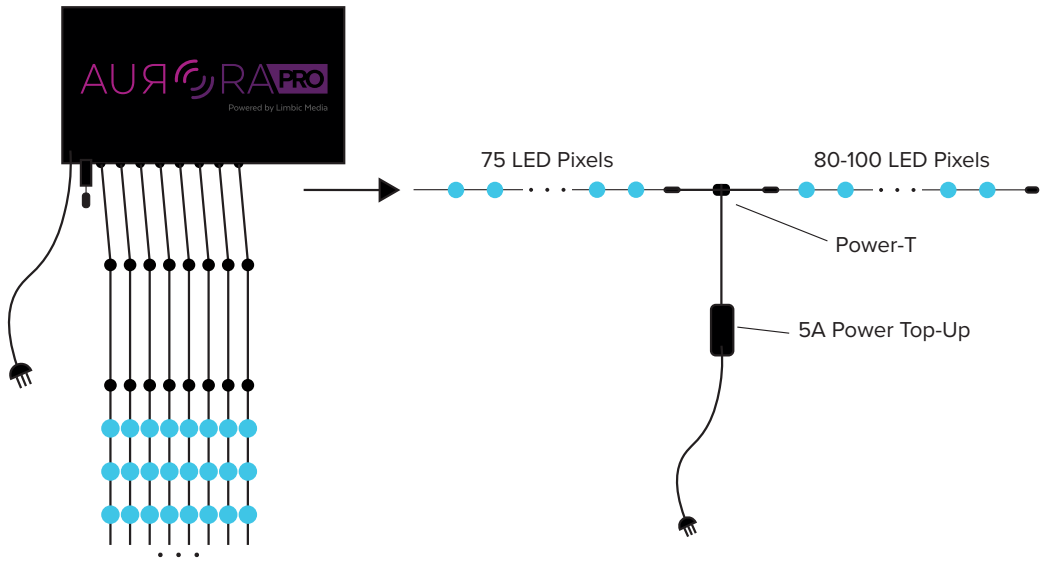


Fig. 5: Aurora Pro set up with built-in RGB connectors and Power Top-Ups

Required Components

- Aurora Pro
- Leader cables (optional)[6]
- LED pixels
- Audio input
- 5 A Power Top-Up(s)
- Power-T(s)
- Aurora Pro outdoor enclosure (optional)

Method

1. Power Aurora Pro OFF. Aurora Pro must be contained in an outdoor enclosure for outdoor installations. Refer to the **Aurora Product Guide** for outdoor accessories.
2. Connect Power-T(s) to each 5 A Power Top-Up.
3. Connect leader cables to each built-in LED connector.
4. Connect LED pixel strands to each leader cable (or to each built-in LED connector if leader cables are not in use).
5. Connect the Power-T/5 A Power Top-Up(s) to the end of each LED pixel strand.
6. Connect additional Power-T/5 A Power Top-Ups and LED pixel strands, not exceeding 80-100 LED pixels per Power Top-Up or 500 LED pixels per port.
7. Power Aurora Pro ON.
8. Connect Aurora Pro to the Aurora Mobile App. Refer to **Connect to Aurora Pro in AP Mode** for details.
9. Set the number of LED pixels per port, including LED pixels added with Power Top-Ups, using the Aurora Mobile App. Refer to **Configure the Aurora Mobile App** for details.
10. Connect an audio input to Aurora Pro and calibrate audio using the Aurora Mobile App Audio Settings. Refer to **Connect and Calibrate Audio Inputs** for details.
11. Refer to **Configure the Aurora Mobile App** to begin customizing your light show.

Configure a Network Distribution Box (NDB)

Network Distribution Boxes (NDBs) increase the number of LED pixels supported by Aurora Pro. Installations using NDBs must be configured with NDB software.

If you are using multiple NDBs, refer to **Configure Multiple NDBs**. If you are using a single NDB, skip to **Set Number of LED Pixels Per Port**.

[6] Leader cables longer than 15' require Power Top-Ups and Smart Extender/Receiver adapters. Refer to the **Aurora Product Guide** for details on Power Top-Ups and Smart Extender/Receiver adapters.

Pro-Tip:

Users must know how to change the network settings on their computer's operating system before configuring NDBs. Refer to **this tutorial http://bit.ly/2Qx0Vai** for configuring Windows network settings.

Computers (particularly newer Mac laptops) without an Ethernet port require an Ethernet-to-USB adapter (provided by Limbic Media) and a **driver** download.

Contacting Limbic Media for support is recommended if a driver download is necessary.

Configure Multiple NDBs

NDBs communicate with Aurora Pro via IP address. NDBs have a default IP address of 10.0.0.100. If you are using multiple NDBs, each NDB must be configured with a unique IP address.

Required Components

- PC or Mac computer
- Network Distribution Boxes (NDBs)
- Cat 5/6 network cable

Method

1. Connect one of the NDBs to your computer via Cat 5/6 network cable and power the NDB ON.
2. Set your computer's IP address to match the NDB, except for the last number. Unless NDBs have been previously reconfigured, their default IP address should be 10.0.0.100—so setting your computer's IP address to 10.0.0.2, for example, should work. Set the netmask to 255.255.255.0, and the gateway (if present) to 10.0.0.1 (Fig. 6)

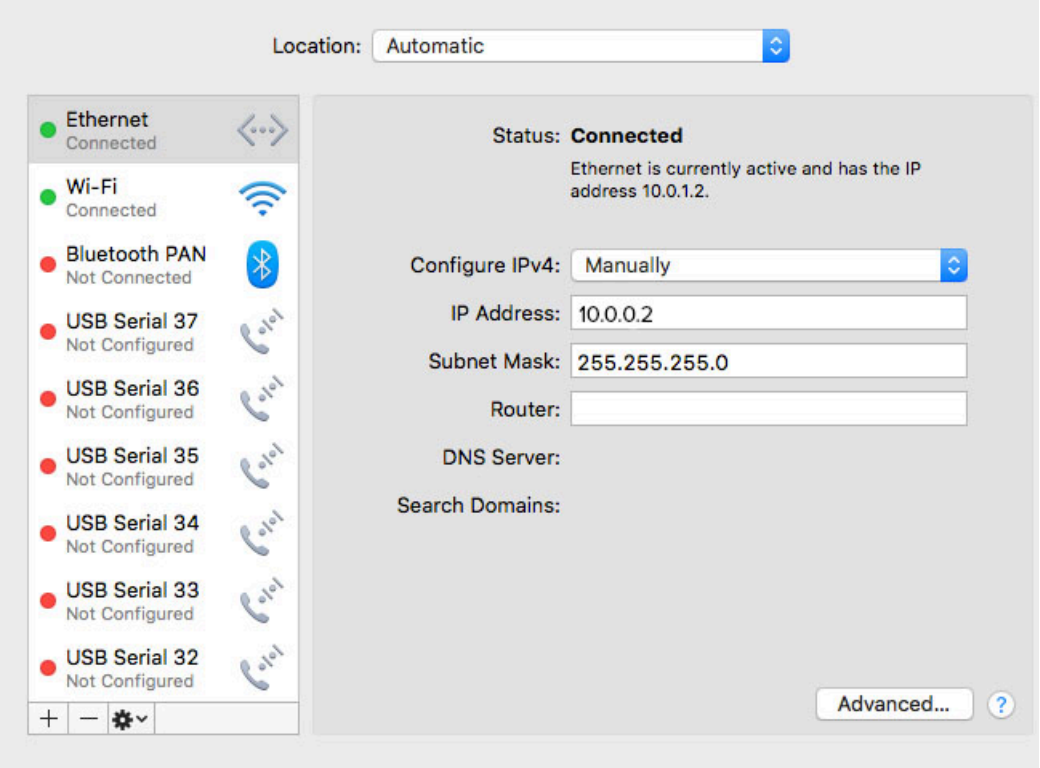


Fig. 6: Adjusting network settings on a Mac laptop. Other network settings screens may differ.

3. Open a web browser and connect to the default NDB IP address http://10.0.0.100 to open the NDB configuration page. If the NDB was previously reconfigured to a different IP address, connect to that IP address instead. NDBs must be powered ON for the NDB configuration page to appear.

> **Pro-Tip:**
>
> If the NDB IP address has been changed, but you have no record of what the new IP address is, refer to **Reset an NDB** to restore the default IP address.

4. Enter a new, unique NDB IP address. Using the sequence 10.0.0.101, 10.0.0.102, 10.0.0.103, etc. is recommended for each NDB, but anything from 10.0.0.0 - 10.0.0.254 works. Keep the netmask set to 255.255.255.0, and the gateway to 10.0.0.1 (Fig.7)

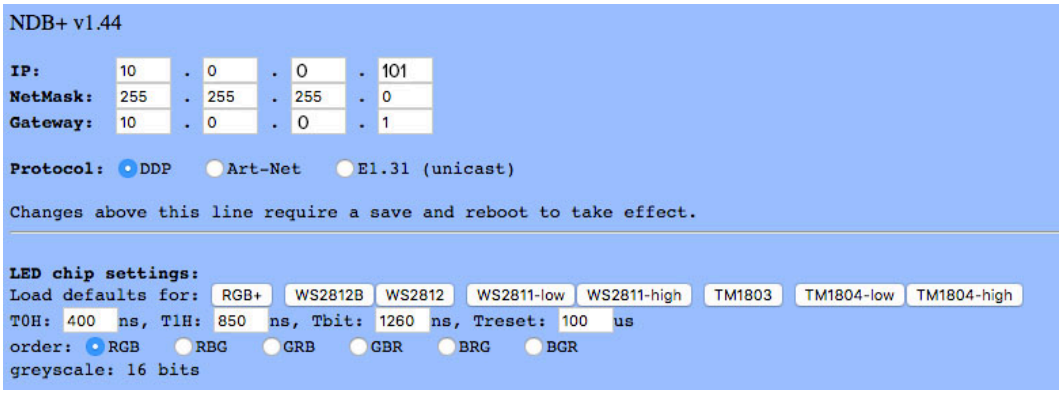


Fig. 7: NDB configuration page

5. Select DDP as the protocol, and under LED chip settings, load defaults for RGB+. To use any of the other protocols listed, please **contact Limbic Media for support.**
6. Refer to steps 5-9 under **Set the Number of LED Pixels Per NDB Port** below.
7. Select SAVE to make the NDB configuration changes permanent.
8. Write the NDB's new IP address on a piece of tape and attach it to the NDB case. This is the easiest way to reference each NDB's IP address.
9. Press the reset button on the outside of the NDB (do not hold) with a pin to reboot and apply the changes.
10. Repeat this process to change the IP address for each NDB.

Set the Number of LED Pixels Per NDB Port

Setting LED pixels per port with NDBs must be configured with NDB software, not the Aurora Mobile App. With multiple NDBs, users can set LED pixels per port during IP address configuration.

Required Components

- PC or Mac computer
- Cat 5/6 network cable
- Network Distribution Box (NDBs)

Method

1. Connect an NDB to your computer via Cat 5/6 network cable and power the NDB ON.
2. Set your computer's IP address to match the NDB, except for the last number. Unless NDBs have been previously reconfigured, their default IP address should be 10.0.0.100—so setting your computer's IP address to 10.0.0.2, for example, should work. Set the netmask to 255.255.255.0, and the gateway (if present) to 10.0.0.1 (Fig. 8)

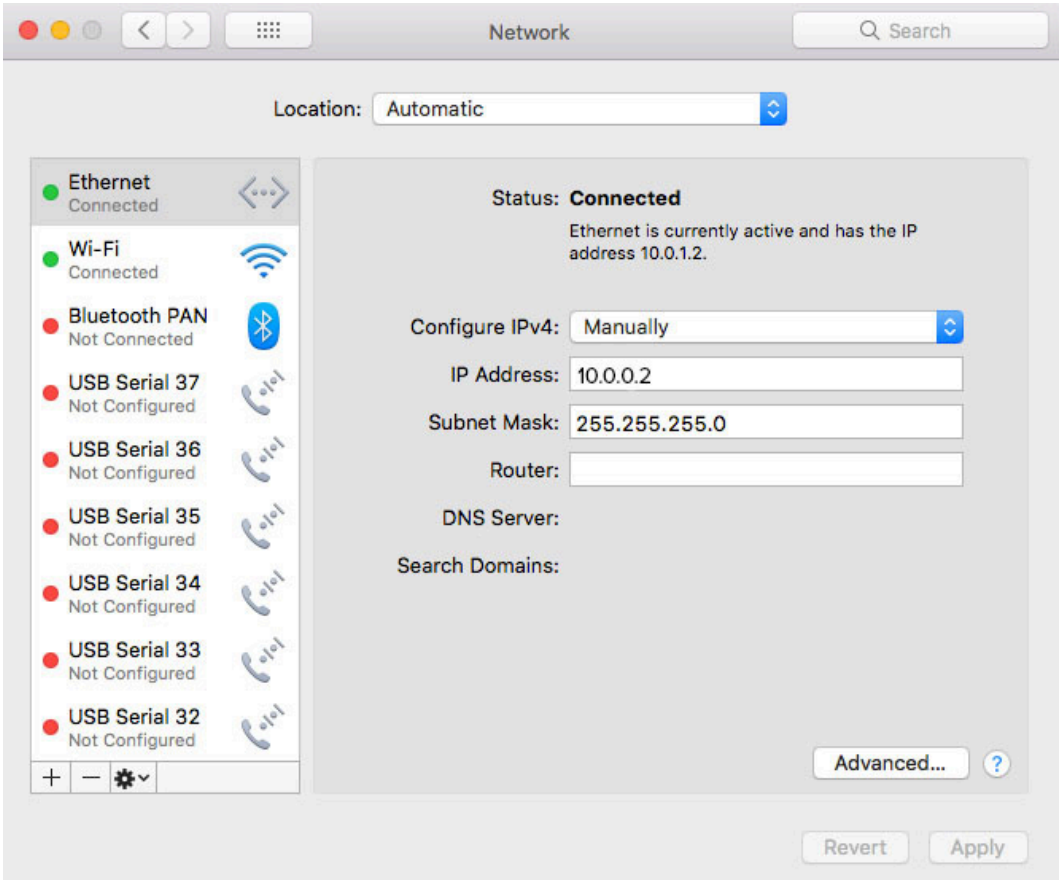


Fig. 8: Adjusting network settings on a Mac laptop. Other network settings screens may differ.

3. Open a web browser and connect to the default NDB IP address http://10.0.0.100 to open the NDB configuration page. If the NDB was previously reconfigured to a different IP address, connect to that IP address instead. NDBs must be powered ON for the NDB configuration page to appear.
4. Keep the netmask set to 255.255.255.0, and the gateway to 10.0.0.1 (Fig. 9)

Pro-Tip:

If the NDB IP address has been changed, but you have no record of what the new IP address is, refer to **Reset an NDB** to restore the default IP address

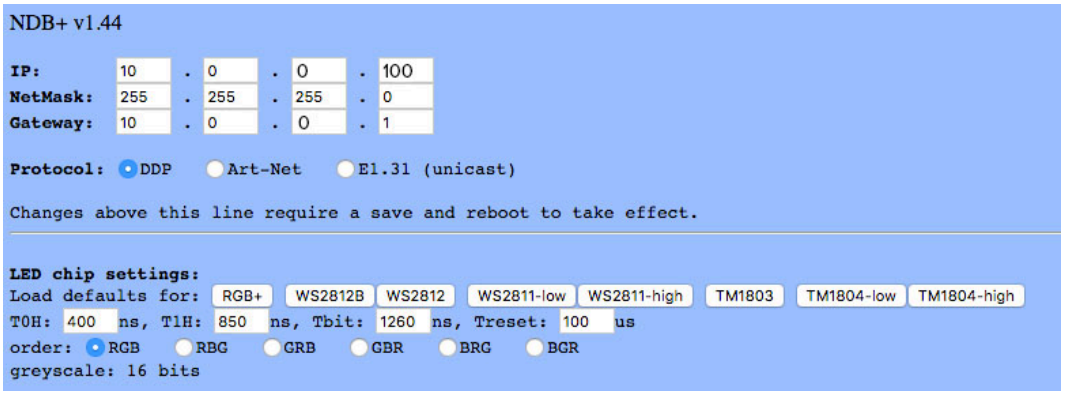


Fig. 9: NDB configuration page

5. Select DDP as the protocol, and under LED chip settings, load defaults for RGB. To use any of the other protocols listed, please **contact Limbic Media** for support.
6. Select the number of NDB ports used under Outputs. For example, a 16-port NDB can be used in 16-port mode or 8-port mode. In 16-port mode, an NDB supports 230 LED pixels maximum per port. In 8-port mode, it supports up to 460 LED pixels maximum per port (Fig. 10)

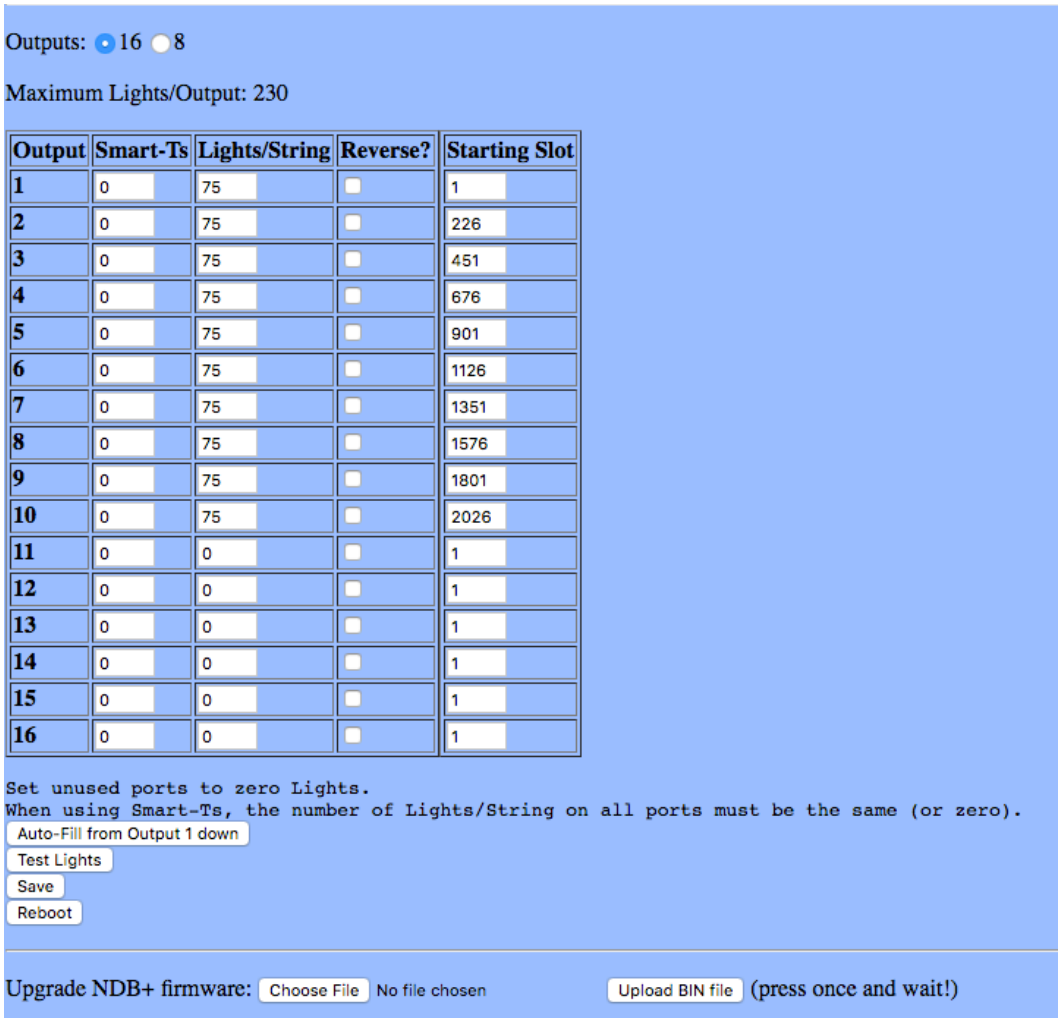


Fig. 10: NDB configuration page: set LED pixels per port

7. Set the number of LED pixels for each NDB port. If you are using the same number of LED pixels across all ports, select Auto-Fill from Output 1 down. Set the same number of LED pixels across all ports if using Smart-T's, regardless of how many Smart-T's are used on each port.
8. Set the number of LED pixels in any unused NDB ports to 0.
9. Set the Starting Slot of each port. To find any port's Starting Slot, multiply the previous port's Lights/String number by 3 and add that port's Starting Slot number. For example, If a port has 75 LED pixels with a Starting Slot at 226, the next port's Starting Slot will be **451** (75 x 3 + 226 = 451).
10. Select the REVERSE function on any ports to reverse their LED pixel order.
11. Select SAVE to make the NDB configuration changes permanent.
12. Turn the NDB OFF/ON.

Reset an NDB

Reset an NDB after making changes on the NDB configuration page, or to restore its default settings.

Required Components

- Network Distribution Box (NDB)
- Pin/paperclip

Method

1. Power the NDB ON.
2. Press the reset button on the outside of the NDB (do not hold) with a pin to reboot the NDB after making any configuration changes.
3. Press the reset button for 1-5 seconds to reset the NDB's IP address, netmask, and gateway back to the factory default. Other lighting configuration data, such as LED pixels per port, remains the same.
4. Press the reset button for more than 5 seconds to reset all configuration data back to the factory default.

Set Up Aurora Pro with a Single Network Distribution Box (NDB)

A Network Distribution Box (NDB) increases the number of LED pixels supported by Aurora Pro and localizes the system's power to each NDB. A single NDB supports 1000 LED pixels maximum. Each NDB port supports 100 LED pixels (or 80 LED pixels of Triklit-style fixtures).

Power Top-Ups are required to extend the LED pixels per port limit beyond 80-100. Refer to **Set up Aurora Pro with Network Distribution Boxes (NDBs) and Power Top-Ups** below for details.

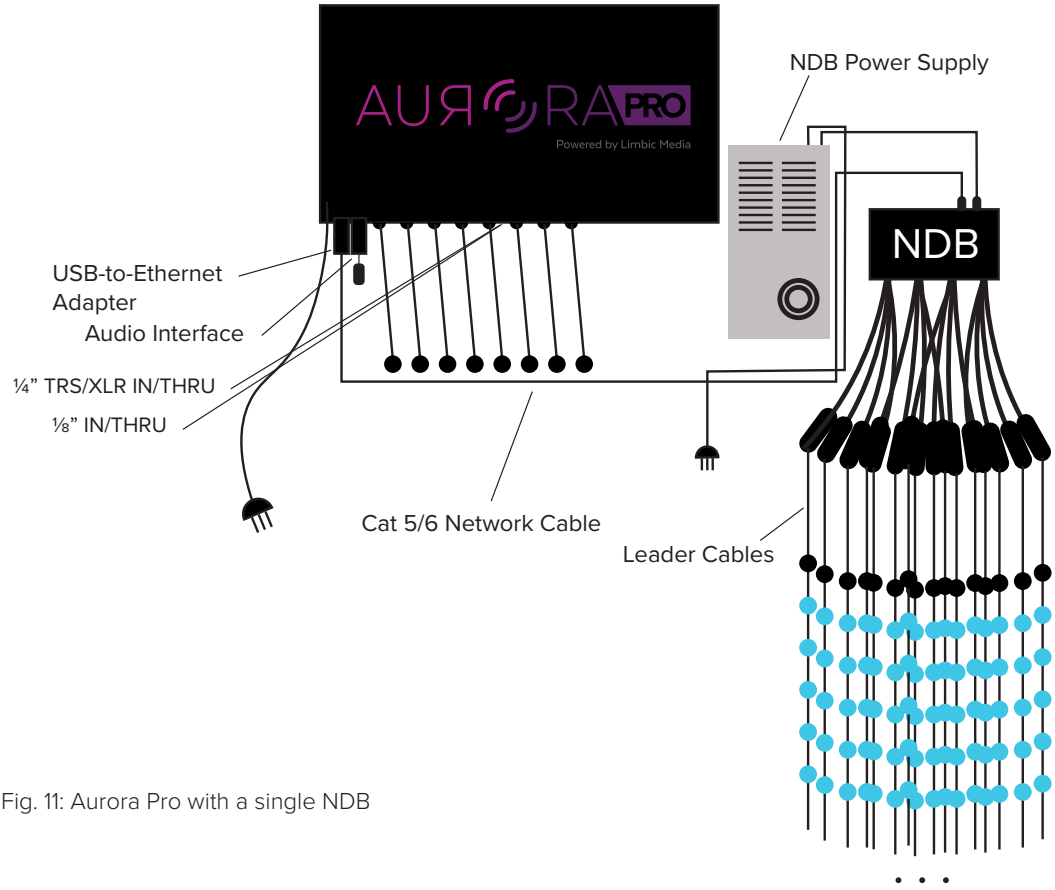


Fig. 11: Aurora Pro with a single NDB

Required Components

- Aurora Pro
- Leader cables (optional)[7]
- LED pixels
- Audio input (if sound reactivity is required)
- USB-to-Ethernet adapter
- Cat 5/6 network cable
- Network Distribution Box (NDB)
- Indoor- or outdoor-rated NDB power supply (12.5/16/22/40 A)
- Aurora Pro outdoor enclosure (optional)
- NDB outdoor enclosure (optional)

Method

1. Power Aurora Pro OFF. Aurora Pro and NDBs must be contained in outdoor enclosures for outdoor installations. Refer to the **Aurora Product Guide** for outdoor accessories.
2. Connect an NDB to an NDB power supply.
3. Configure the NDB. See **Configure a Network Distribution Box (NDB)** above for details.
4. Connect a USB-to-Ethernet adapter to one of Aurora Pro's USB A ports.

[7] Leader cables longer than 15' require Power Top-Ups and Smart Extender/Receiver adapters. Refer to the **Aurora Product Guide** for details on Power Top-Ups and Smart Extender/Receiver adapters.

5. Connect the USB-to-Ethernet adapter to the NDB via Cat 5/6 network cable.
6. Connect leader cables to each NDB port.
7. Connect LED pixel strands to each leader cable (or to each NDB port if leader cables are not in use).
8. Power Aurora Pro and the NDB power supply ON. NDBs must be powered ON either before or at the same time as Aurora Pro to load configuration data properly. NDBs cannot be powered ON after Aurora Pro.
9. Connect an audio input to Aurora Pro and calibrate audio using the Aurora Mobile App Audio Settings. Refer to **Connect and Calibrate Audio Inputs** for details.
10. Refer to **Configure the Aurora Mobile App** to begin customizing your light show.

Set up Aurora Pro with Multiple Network Distribution Boxes (NDBs)

Using multiple Network Distribution Boxes (NDBs) increases the number of LED pixels supported by Aurora Pro up to 25,000 LED pixels. A single NDB supports 1000 LED pixels maximum. Each NDB port supports 100 LED pixels (or 80 LED pixels of Triklit-style fixtures). To achieve 25,000 LED pixels, for example, 25 NDBs are required.

Power Top-Ups are required to extend the LED pixels per port limit beyond 80-100. Refer to **Set up Aurora Pro with Network Distribution Boxes (NDBs) and Power Top-Ups** for details.

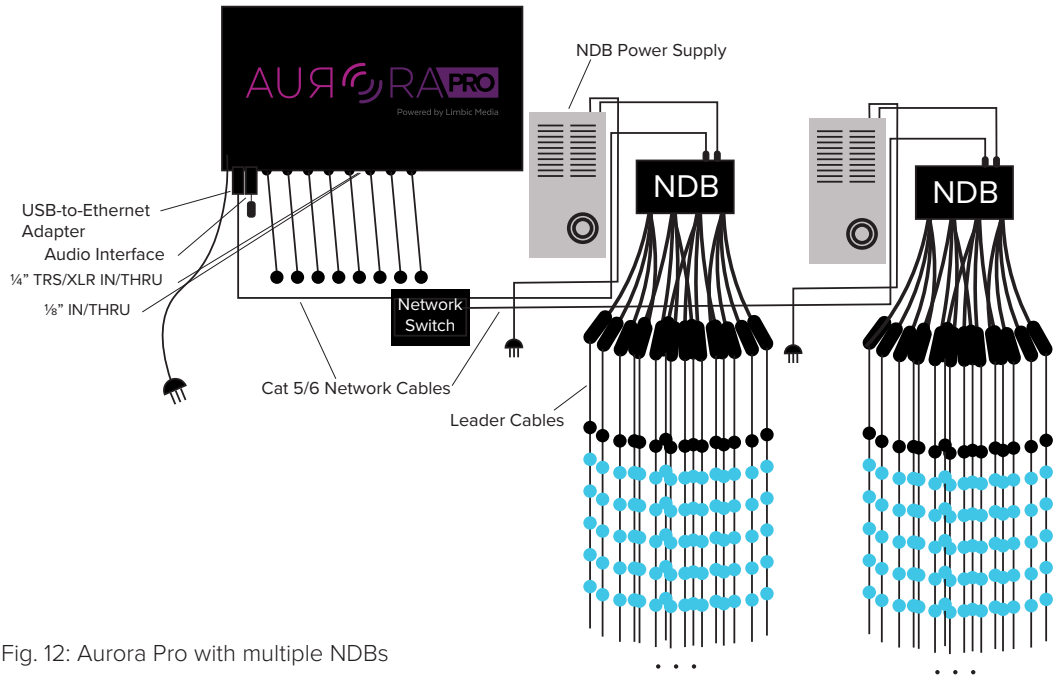


Fig. 12: Aurora Pro with multiple NDBs

Required Components

- Aurora Pro
- Leader cables (optional)[8]
- LED pixels
- Audio input
- USB-to-Ethernet adapter
- Network switch (1 port per NDB)
- Cat 5/6 network cables (1 for the network switch and 1 per NDB)
- Network Distribution Boxes (NDBs)
- Indoor- or outdoor-rated NDB power supplies (12.5/16/22/40 A)
- Aurora Pro/network switch outdoor enclosure (optional)
- NDB outdoor enclosures (optional)

> **Pro-Tip:**
>
> Aurora Pro outdoor enclosures can also house a network switch. An NDB outdoor enclosure can house a network switch in installations where Aurora Pro is installed away from NDBs.

Method

1. Power Aurora Pro OFF. Aurora Pro and NDBs must be contained in outdoor enclosures for outdoor installations. Refer to the **Aurora Product Guide** for outdoor accessories.
2. Connect each NDB to an NDB power supply.
3. Configure the NDBs. See **Configure a Network Distribution Box (NDB)** above for details.
4. Connect a USB-to-Ethernet adapter to one of Aurora Pro's USB A ports.
5. Connect the USB-to-Ethernet adapter to a network switch via Cat 5/6 network cable.
6. Connect the network switch to each NDB via Cat 5/6 network cables.
7. Connect leader cables to each NDB port.
8. Connect LED pixel strands to each leader cable (or to each NDB port if leader cables are not in use).
9. Power Aurora Pro and any NDB power supply ON. NDBs must be powered ON either before or at the same time as Aurora Pro to load configuration data properly. NDBs cannot be powered ON after Aurora Pro.
10. Connect an audio input to Aurora Pro and calibrate audio using the Aurora Mobile App Audio Settings. Refer to **Connect and Calibrate Audio Inputs** for details.
11. Refer to **Configure the Aurora Mobile App** to begin customizing your light show.

[8] Leader cables longer than 15' require Power Top-Ups and Smart Extender/Receiver adapters. Refer to the **Aurora Product Guide** for details on Power Top-Ups and Smart Extender/Receiver adapters.

Set up Aurora Pro with Network Distribution Boxes (NDBs) and Power Top-Ups

5 A Power Top-Ups and Power-T's are required to extend the LED pixels per port limit on Network Distribution Boxes (NDBs) beyond 80-100.

NDBs can be programmed in 8- or 16-port modes, supporting 460 and 230 LED pixels per port respectively. A single NDB supports 1000 LED pixels maximum, even with Power Top-Ups.

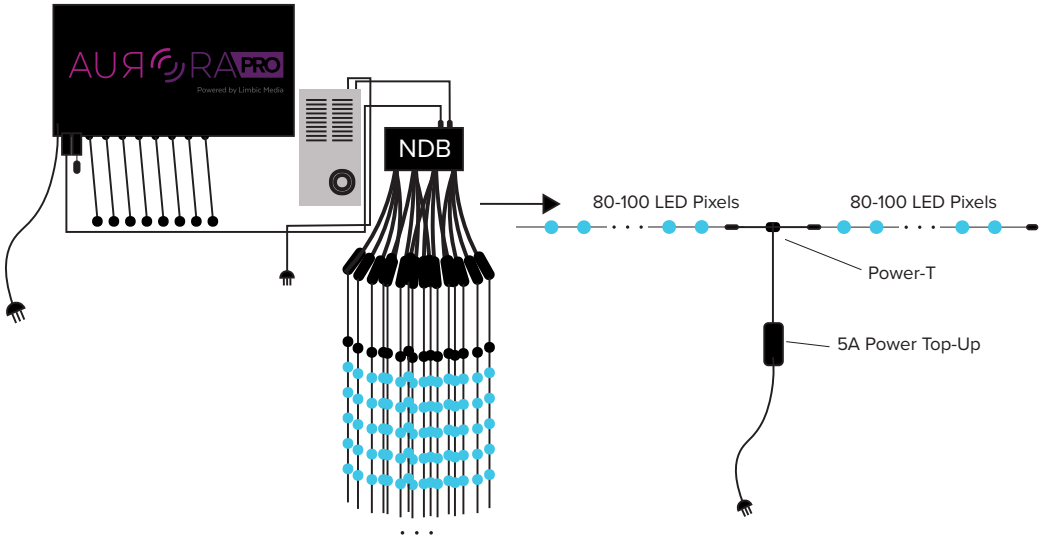


Fig. 13: Aurora Pro with NDB(s) and Power Top-Ups

Required Components

- Aurora Pro with NDB(s)
- LED pixels
- Power-T(s)
- 5 A Power Top-Up(s)

Method

1. Install Aurora Pro with an NDB(s), using the above instructions. Aurora Pro and NDBs must be contained in an outdoor enclosure for outdoor installations. Refer to the **Aurora Product Guide** for outdoor accessories.
2. Configure the NDBs. See **Configure a Network Distribution Box (NDB)** above for details.
3. Power Aurora Pro and any power supply OFF. Connect the Power-T(s) to each 5 A Power Top-Up.
4. Connect the Power-T/5 A Power Top-Up(s) to the end of each LED pixel strand installed in step 1.
5. Connect additional Power-T/5 A Power Top-Ups and LED pixel strands, not exceeding 80-100 LED pixels per Power Top-Up or the LED pixel limit per port specified during NDB configuration.
6. Power Aurora Pro and any NDB power supply ON. NDBs must be powered ON either before or at the same time as Aurora Pro to load configuration data properly. NDBs cannot be powered ON after Aurora Pro.
7. Connect an audio input to Aurora Pro and calibrate audio using the Aurora Mobile App Audio Settings. Refer to **Connect and Calibrate Audio Inputs** for details.
8. Refer to **Configure the Aurora Mobile App** to begin customizing your light show.

CONNECT & CONFIGURE THE AURORA MOBILE APP

Download or Update the Aurora Mobile App

The Aurora Mobile App is available on the **Google Play Store** (Android) and **iTunes App Store** (iOS).

Required Components

- Smart mobile device (iPhone, iPad, or Android device)

Method

1. Search for the Aurora Mobile App on the Google Play Store or iTunes App Store.
2. Look for the Aurora Mobile App symbol and install.

Fig. 14: Aurora Mobile App store

Connect to Aurora Pro in AP Mode

In AP Mode, Aurora Pro acts like a Wi-Fi hotspot. Devices connect to Aurora Pro over its own one-to-one Wi-Fi network. Connecting to Aurora Pro in AP Mode disconnects a mobile device from its current network.

> **Pro-Tip:**
>
> Refer to the **Troubleshooting Appendix** to address common AP Mode connection issues.

Required Components

- Smart device with the Aurora Mobile App installed
- Aurora Pro

Method

1. Open the Aurora Mobile App.
2. Select WIFI SETTINGS or navigate to your device's Wi-Fi settings.
3. Connect to the Aurora-based Wi-Fi network.
4. Return to the Aurora Mobile App.
5. Select CONNECT TO AURORA-XXXXXX. (Fig. 15)
6. Enter the default password "aurora."

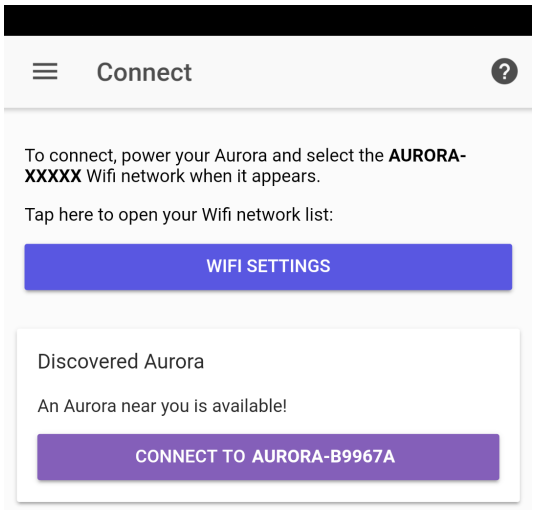


Fig. 15: Aurora Mobile App connection screen

Warning:

Changing the default password is highly recommended. Refer to **Adjust Device Settings** below for help changing the Aurora password.

Connect to Aurora Pro in Station Mode[9]

In Station Mode, Aurora Pro connects to an existing Wi-Fi network (e.g. your home router). Aurora Pro connects to the Aurora Mobile App once your phone is connected to the same existing network.

Configure the Aurora Mobile App

Once Aurora Pro is connected to the Aurora Mobile App, configure Aurora by navigating through Device Control. There are four tabs in Device Control:

- Live Control
- Show
- Device Settings
- Device Information

Adjust Device Settings

Set LED Pixels Per Port

Aurora Pro optimizes light shows to match the number of LED pixels connected to each built-in LED connector. Set the number of LED pixels per port to optimize lighting performance.

Pro-Tip:

Setting LED pixels per port with NDBs must be configured through an NDB web browser interface. Refer to the **Configure a Network Distribution Box** for details.

Method

1. Download and install the Aurora Mobile App and connect to Aurora Pro.
2. Navigate to Ports in the Device Settings tab.
3. Set the number of LED pixels per port. (Fig. 16)
4. Select ⚙ to set the same number of LED pixels across all ports. (Fig. 17)

[9] Contact Limbic Media for details.

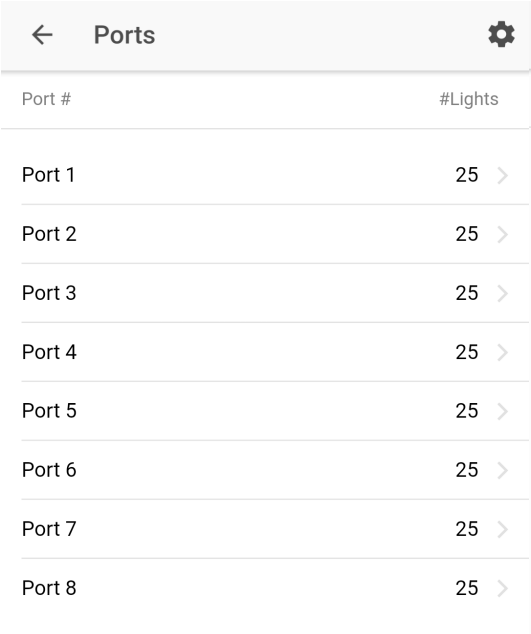


Fig. 16: Adjust number of LED pixels per port

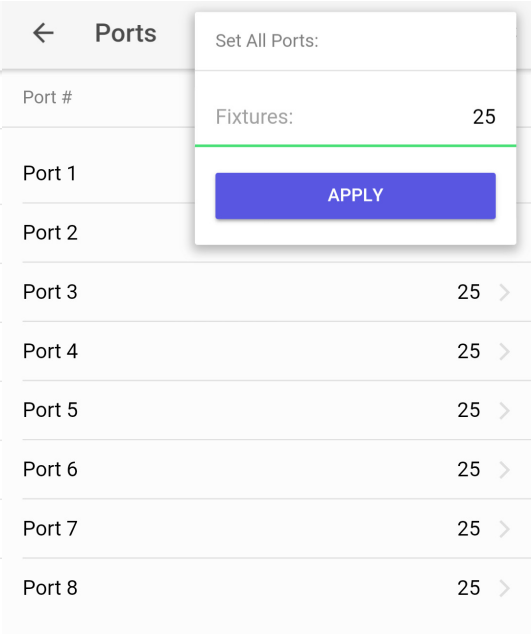


Fig. 17: Apply LED pixels per port globally

Adjust Audio Input Settings

Switch between audio inputs and adjust gain settings from the Aurora Mobile App.

Method

1. Download and install the Aurora Mobile App and connect to Aurora Pro.
2. Connect an audio input source to your Aurora Pro installation. **Refer to Connect and Calibrate Audio Inputs** for details.
3. Navigate to Audio Control in the Device Settings tab.
4. Select the audio input source connected to Aurora Pro's connector interface.
5. Enable Auto-Gain or adjust Gain Boost manually, depending on the installation type. **Refer to Calibrate Auto and Manual Gain** for details.

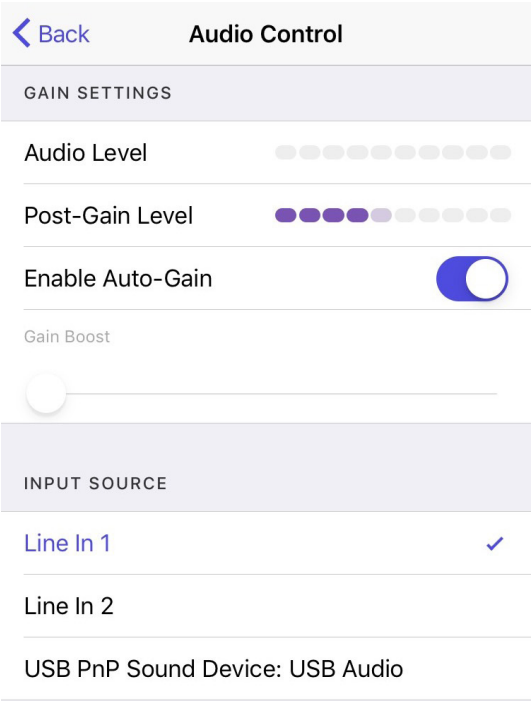


Fig. 18: Audio Control screen

Pro-Tip:

You can also cycle through audio inputs on Aurora Pro's connector interface by pressing the audio select button (SEL). Switching between audio inputs from the Aurora Mobile App is ideal if Aurora Pro is out of reach.

Change Aurora Pro's Password

Change Aurora Pro's password in the Security tab. Changing the Aurora Pro password from the default "aurora" is strongly recommended. (Fig. 19)

Review Device Information

Device Information displays information about the Aurora Mobile App and the Aurora Pro software build. Refer to **Device Information** to troubleshoot and determine if they are both up-to-date. (Fig.20)

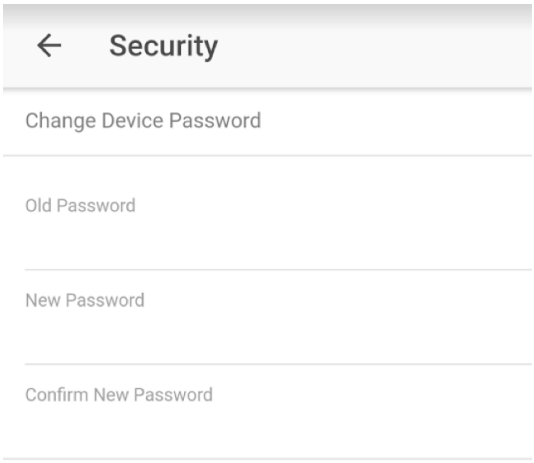


Fig. 19: Security screen

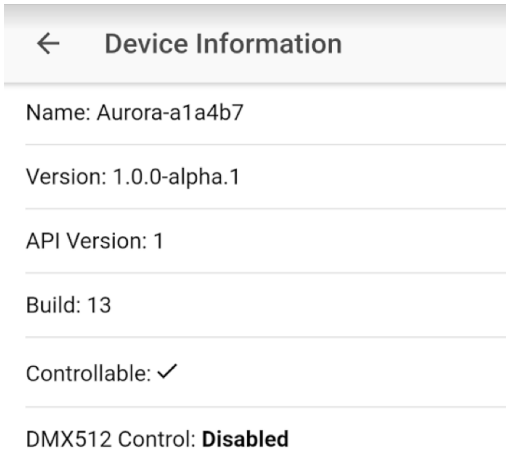


Fig. 20: Device Information screen

Access Help

Access the Help menu to find support contact info, report issues, and to get Aurora Mobile App info.

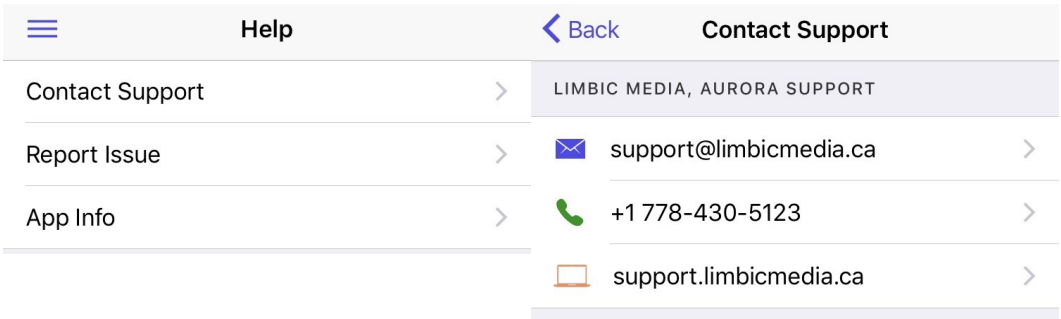


Fig. 21: Help and Contact Support screens

Adjust Live Control Mode

Live Control Mode gives users real-time control over lighting design features such as palette, pattern, brightness, and audio reactivity.

> **Pro-Tip:**
>
> Lighting parameters provide unique characteristics for each pattern. Experiment with patterns to optimize lighting effects.

Method

1. Download and install the Aurora Mobile App and connect to Aurora Pro.
2. Connect to Aurora (see **Connect to Aurora Pro in AP Mode** above) and select Live Control in the main menu
3. Select Pattern, Palette, and Transition Type from the drop-down menus to change.
4. Adjust lighting parameters on each slider. Refer to the **Aurora Pro Patterns and Lighting Parameter Effects Appendix** for detailed lighting parameter functions.
5. Select ▶ to preview selections.
6. Select ⚙ to perform the following actions in Global Settings and Show Settings:
   - **Audio Reactivity (Global)**—Turn ON/OFF. Aurora Pro generates random patterns without audio input.
   - **Brightness (Global)**—Adjust overall LED pixel brightness.

Adjust Show Mode

Show Mode gives users control over multiple cues in a sequence to create a light show. Each cue has its own pattern, palette, lighting parameters, play length, and transition timing. Selecting ▶ for a cue in a show immediately switches Aurora Pro to Show Mode.

Method

1. Download and install the Aurora Mobile App and connect to Aurora Pro.
2. Connect to Aurora (see **Connect to Aurora Pro in AP Mode** above) and select Show Control in the main menu
3. In Show, select ⊕ to create a new cue. (Fig.22)
4. Adjust parameters and select Save to create a new cue. (Fig.23)
5. The cue name and duration appears in the Show menu. Select ▶ to play selected cues. (Fig. 24)
6. Select ⊕ to add additional cues to the show.
7. Select and drag cues to rearrange them.
8. Select ▶ on the bottom banner to play cues in sequence.

9. Select ⚙ to perform the following actions in Global Settings and Show Settings:
    - **Audio Reactivity (Global)**—Turn ON/OFF. Aurora Pro generates random patterns without audio input.
    - **Brightness (Global)**—Adjust overall LED pixel brightness.
    - **Advance Cue on Silence (Show Mode only)**—Silence triggers the following cue in Show Mode. This feature is only available in Aurora App V1.5 or higher. (Fig. 25)

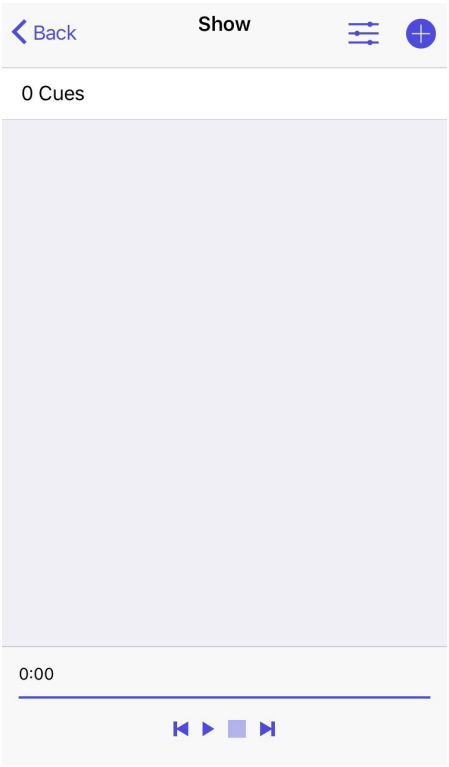


Fig. 22: Show Screen

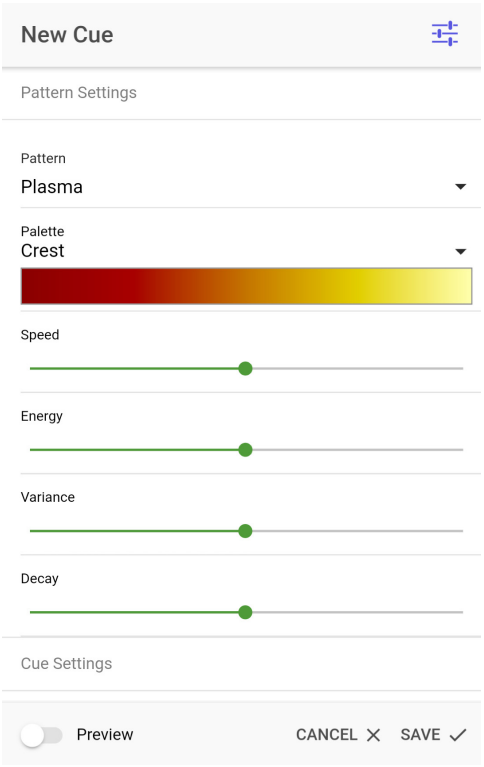


Fig. 23: New Cue screen

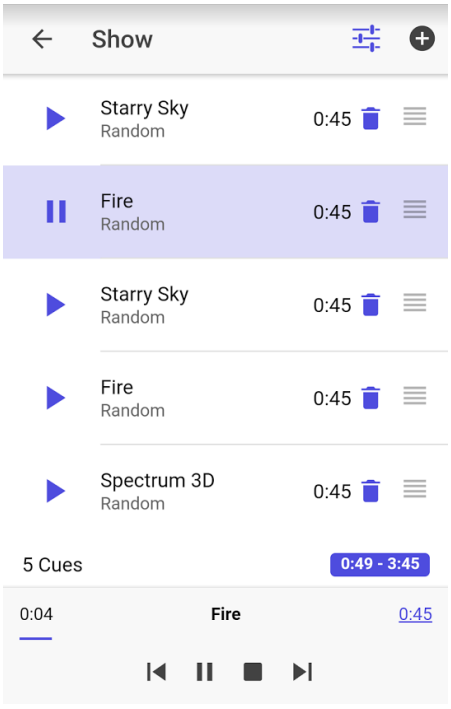


Fig. 24: Show screen with a cue sequence

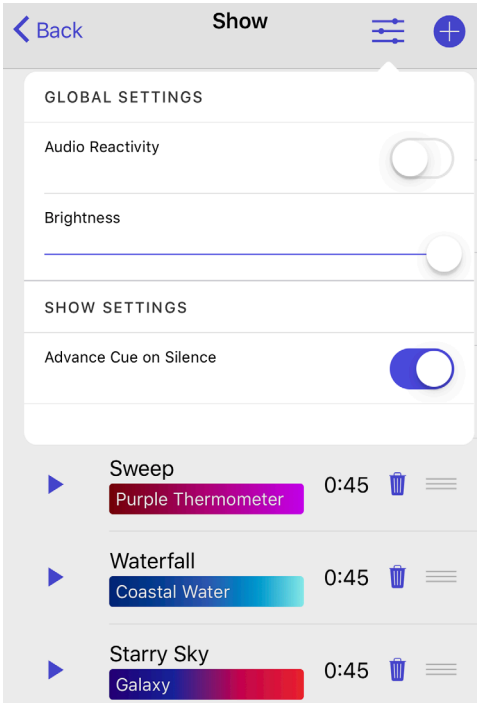


Fig. 25: Advance Cue On Silence enabled for Show Mode

Pro-Tip:

Individual shows cannot be saved separately. Existing cues must be deleted to create a new show.

Pro-Tip:

Press the next mode/pattern button (NXT) on Aurora Pro's connector interface to cycle through patterns in Live Control Mode and Show Mode. Press and hold the next mode/pattern button (NXT) for 5 seconds to switch Aurora Pro between Live Control Mode or to move to the next cue in Show Mode.

CONNECT AND CALIBRATE AUDIO INPUTS

Connect Audio Inputs

Aurora Pro creates light shows in real-time from incoming audio. There are multiple ways to send audio input to Aurora Pro.

Connect Consumer-Level Speakers and Audio Devices

The ⅛" IN/THRU (IN 1 THRU[10] 1) connects consumer-level speakers and audio devices to Aurora Pro.

Pro-Tip:

Only the left channel of a stereo ⅛" audio cable is sent to Aurora's audio analysis system.

Fig. 26: Aurora Pro with ⅛" IN/THRU (IN 1 THRU 1) audio connected

[10] THRU is labeled OUT on older models of Aurora

Required Components

- Aurora Pro
- ⅛” Mono or stereo audio cables (2)
- Smart mobile device
- Speakers with ⅛” audio input jack

Method

1. Download and install the Aurora Mobile App and connect to Aurora Pro.
2. Connect an audio input source to your Aurora Pro installation. Refer to **Connect and Calibrate Audio Inputs** for details.
3. Press the audio select button (SEL) until the IN 1 status LED is selected. You can also select IN 1 as the audio input source in the Aurora Mobile App. Refer to **Configure the Aurora Mobile App** for details.
4. Connect the audio device via ⅛” stereo or mono cable to the ⅛” IN audio jack (IN 1).
5. Connect speakers via ⅛” stereo or mono cable to ⅛” THRU audio jack (THRU 1).

Connect Pro Audio Equipment

The ¼” TRS/XLR combo jack IN/THRU connects pro-audio equipment like mixers and external stereo systems to Aurora Pro.

Fig. 27: Aurora TRS Mono IN/THRU

Required Components

- Aurora Pro
- Pro-audio input and output with ¼” mono or stereo TRS/XLR cables
- Smart mobile device

Fig. 28: XLR Mono IN/THRU

Method

1. Download and install the Aurora Mobile App and connect to Aurora Pro.
2. Connect the pro-audio input to IN 2.
3. Connect the pro-audio output to THRU 2.
4. Connect an audio input source to your Aurora Pro installation. Refer to **Connect and Calibrate Audio Inputs** for details.
5. Press the audio select button (SEL) until the IN 2 status LED is selected. You can also select IN 2 as the audio input source in the Aurora Mobile App. Refer to **Configure the Aurora Mobile App** for details.

Connect a Microphone

Aurora Pro has 2 USB A ports to connect a USB audio interface with a ⅛" microphone.

Required Components

- Aurora Pro
- Microphone with ⅛" output
- USB audio interface

Method

1. Download and install the Aurora Mobile App and connect to Aurora Pro.
2. Connect an audio input source to your Aurora Pro installation. Refer to **Connect and Calibrate Audio Inputs** for details.
3. Press the audio select button (SEL) until the MIC status LED is selected. You can also select MIC as the audio input source in the Aurora Mobile App. Refer to **Configure the Aurora Mobile App** for details.
4. Connect a USB audio interface with a ⅛" microphone to one of the USB A Ports.

Fig. 29: USB Audio interface + ⅛” microphone connected to Aurora Pro

CALIBRATE AUTO AND MANUAL GAIN

Calibrate Auto Gain

Aurora Pro’s audio input level should be between -3 - 0 dB for optimal lighting performance. The audio select status LED color indicates the dB range of a selected audio input. Refer to the **Aurora Pro Connector Interface** for audio select LED (SEL) colors and corresponding audio levels.

Aurora Pro has built-in adaptive gain to normalize quiet incoming audio. This keeps light shows consistently responsive in a variety of volume levels once calibrated.

Required Components

- Aurora Pro
- Audio input

Method

1. Download and install the Aurora Mobile App and connect to Aurora Pro.
2. Connect an audio input source to your Aurora Pro installation. Refer to **Connect and Calibrate Audio Inputs** for details.
3. Press the audio select button (SEL) until the correct audio input status LED is selected. You can also select the audio input source in the Aurora Mobile App. Refer to **Configure the Aurora Mobile App** for details.
4. Navigate to Audio Control in the Device Settings tab and enable Auto-Gain. (Fig. 30)
5. Adjust the audio input level until the loudest sound turns the audio select status LED yellow. This ensures that the audio is using the entire input range.

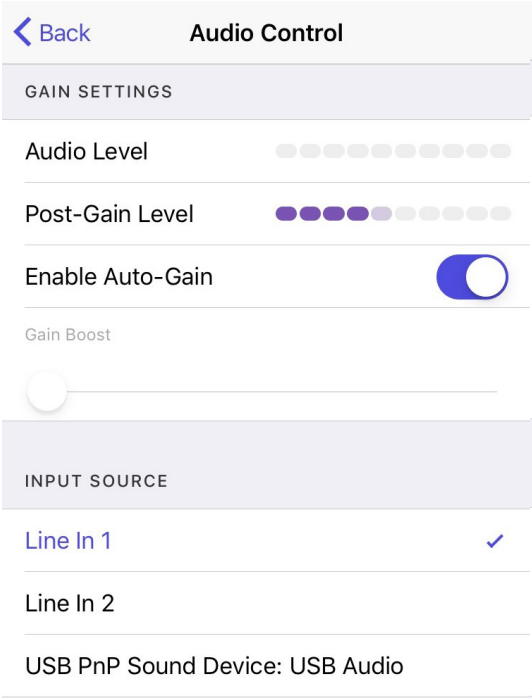


Fig. 30: Gain Settings: Auto Gain Enabled

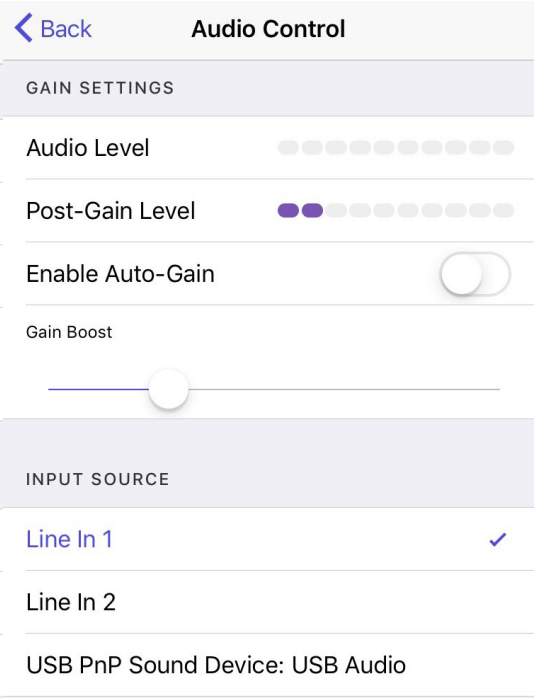


Fig. 31: Gain Settings: Auto-Gain disabled to enable Manual Gain

Pro-Tip:

Auto Gain is recommended when using music as audio input. This ensures that Aurora Pro receives satisfactory music input levels at all times regardless of variation in audio levels.

Manual Gain is recommended for non-musical audio input such as environmental sounds or MIC input.

Calibrate Manual Gain

Manual Gain is recommended for non-musical audio input such as environmental sounds or MIC input. It gives users full control over Aurora Pro's sensitivity to audio input.

Required Components

- Aurora Pro
- Audio input

Method

1. Download and install the Aurora Mobile App and connect to Aurora Pro.
2. Connect an audio input source to your Aurora Pro installation. Refer to **Connect and Calibrate Audio Inputs** for details.
3. Press the audio select button (SEL) until the correct audio input status LED is selected. You can also select the audio input source in the Aurora Mobile App. Refer to **Configure the Aurora Mobile App** for details.
4. Navigate to Audio Control in the Device Settings tab and disable Auto-Gain. (Fig. 31)
5. Adjust the Gain Boost slider until Aurora reacts to the desired level of audio input.

Set Up Non-Audio Reactive Mode

Disable audio reactivity via the Aurora Mobile App or DMX to enable dynamic, evolving patterns without audio input.

Required Components

- Aurora Pro
- Smart mobile device

Method

1. Download and install the Aurora Mobile App and connect to Aurora Pro.
2. Navigate to Live Control in the Aurora App and select to access Global Settings.
3. Disable Audio Reactivity. (Fig. 32)

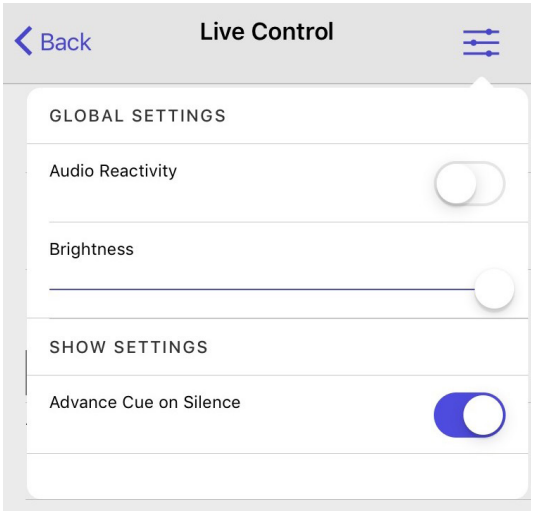


Fig. 32: Audio Reactivity disabled

SET UP DMX & OTHER ETHERNET-BASED PROTOCOLS

Aurora Pro is compatible with DMX and other Ethernet-based protocols, such as Art-Net and KiNET. DMX is an industry standard lighting protocol for stage lighting and effects. This manual assumes previous DMX knowledge to configure Aurora Pro with DMX.

Set Up DMX IN

Aurora Pro's DMX IN function allows Aurora to act as a DMX fixture. Aurora Pro has 9 DMX parameter channels. Refer to the **Aurora DMX Specification Appendix** for details on each channels' parameter controls.

Required Components

- Aurora Pro
- DMX controller or console

Method

1. Connect a DMX controller or console to Aurora Pro's 5-pin DMX IN port. (Fig. 33)
2. Toggle the function switch (FUN) to the UP position on Aurora Pro's channel select dip switch (CHANNEL SEL). This enables DMX mode. (Fig. 34)
3. Set Aurora Pro's base channel using the channel select dip switch (CHANNEL SEL). Both channel 0 and 1 on the DMX dip switch default to base channel 1.

4. The DMX dip switch uses binary (base-2) encoding for setting the channel number. Refer to **a dip switch calculator (http://bit.ly/2RNmWSC)** to help set Aurora Pro's base channel.
5. Use the DMX controller or console to adjust Aurora Pro's library of lighting parameters. Refer to the **Aurora DMX Specification Appendix** for details.

Fig. 33: Connect a DMX controller to Aurora Pro's 5-pin DMX IN port.

Fig. 34: DMX IN enabled

Set Up DMX OUT[11]

DMX OUT enables Aurora Pro to send its RGB lighting data to DMX compatible fixtures. Users can sync a single universe of DMX fixtures in conjunction with connected lights, NDBs or other network protocols like KiNET and Art-Net.

Set Up Ethernet-Based Protocols[11]

Aurora Pro is compatible with common Ethernet-based lighting protocols via a USB-to-Ethernet adapter. The following protocols are available:

- KiNET[11]
- Art-Net[11]
- sACN[11]
- DDP (with NDBs)

[11] For information on setting up DMX fixtures via the mobile app refer to DMX https://support.limbicmedia.ca/guidesmanuals

FACTORY RESET & UPGRADE SOFTWARE

Factory Reset Aurora Pro

Factory resetting Aurora Pro returns it to its default configuration. This is useful if Aurora becomes inoperable.

Required Components

- Aurora Pro
- Pin/paperclip

Method

1. Power Aurora Pro ON.
2. Place a pin or paperclip into the reset button hole and hold for 5 seconds.
3. Ensure Aurora Pro's audio select LEDs flash white. This indicates that Aurora Pro is reverting to its default configuration.
4. Keep Aurora Pro powered ON. Aurora Pro will restart automatically when the factory reset is complete.

Upgrade Aurora Pro Software

Update Aurora Pro's software with an Aurora Package to unlock new patterns, palettes, and other functionality. Check the Aurora Pro version in Device Information before upgrading software. Aurora Pro V1.3 or less requires a firmware update before software updates will work. Visit Aurora Support for a software version changelog.

Required Components

- Aurora Pro
- PC or Mac computer
- USB drive
- Aurora Package file

Method

1. Ensure your **USB drive is formatted Fat32** and plug into your computer.
2. Navigate to Aurora Software Updates.
3. Select Aurora Package to download the update:

Fig. 35: Aurora Package button

4. Put the .aur file on the USB drive.
5. Power Aurora Pro OFF and insert the USB drive in either of its USB A Ports.
6. Power Aurora Pro ON and wait until the audio select LEDs stop cycling white.
7. Wait until Aurora Pro is running normally before removing the USB drive.

Pro-Tip:

Aurora Package updating resets any saved shows in Show Mode.

APPENDICES

Aurora Terminology

Cues

Cues are specific configurations of a pattern, palette, and parameters that can be saved and played in a Show.

LED Pixels

LED pixels refer to the RGB LED fixtures used in Aurora installations.

Mobile App Connection Modes

AP Mode

AP Mode establishes a one-to-one Wi-Fi connection between Aurora Pro and a mobile device.

Station Mode[12]

Station Mode establishes a Wi-Fi connection between Aurora Pro and an existing external Wi-Fi network that a mobile device is connected to.

Palette

Palettes are the color schemes Aurora uses in its Patterns.

Parameter

Parameters control features of each pattern and palette such as speed, energy, variance, and decay. Parameters affect each pattern differently.

Pattern

Patterns are the foundation of Aurora lighting design. Patterns uniquely analyze incoming audio data and map the data into specific lighting behavior. Each pattern also reacts differently to lighting parameters. Playing with parameters for each palette is recommended to optimize light shows.

Performance Modes

Performance Modes determine how Aurora lighting data is controlled: in real-time (Live Control Mode), through predefined cue lists (Show Mode), or through third-party lighting protocols, such as DMX.

Live Control Mode

Live Control Mode allows users to change patterns, palettes, and parameters in real-time using the Aurora Mobile App.

Show Mode

Show Mode allows users to create and schedule a set of cues.

DMX IN Mode

DMX IN Mode allows users to access the functionality of Live Control Mode via a DMX controller or console. Refer to the **Aurora DMX Specification Appendix** for information.

DMX OUT Mode[12]

DMX OUT Mode allows users to connect DMX fixtures to Aurora Pro.

Shows

A Show is a set of cues played in succession for specific time durations, set to run indefinitely or until an event is registered e.g. silence detection.

[12] For information on setting up DMX fixtures via the mobile app refer to DMX https://support.limbicmedia.ca/guidesmanuals/

TROUBLESHOOTING

Aurora Pro

Issue	Cause(s)	Solution
All lights on a single port turn OFF	Tripped fuse—too much current being pulled	Turn Aurora Pro ON/OFF.
Aurora Pro is not audio reactive	Wrong mode/Wrong connection	Check if audio reactive mode is ON/OFF on Aurora Mobile App or DMX console/controller. Check if audio is connected to IN 1 or IN 2. Check audio input level on the Audio Control page
Aurora Pro is not audio reactive with Auto Gain	Loud audio causes Auto Gain to decrease automatically and requires time to reset to ambient sound levels	Give Aurora Pro ~15 seconds of silence to calibrate the Auto-Gain algorithm.

Aurora Mobile App

Issue	Cause(s)	Solution
Aurora Pro not appearing on mobile device's Wi-Fi settings	--	Turn Wi-Fi network ON/OFF on the mobile device
Aurora Pro not appearing on the Aurora Mobile App's list of devices	--	Close and reopen the Aurora Mobile App. Forget the Aurora network in the mobile device settings and re-find it.
Connecting to Android devices	Android-specific connection issues	Turn mobile data ON/OFF. Turn Bluetooth ON/OFF
Live Control Mode/Show Mode not working	Wrong mode	Ensure that Aurora Pro is not in DMX mode (next mode/pattern status LED is yellow in DMX Mode).

Lighting

Issue	Cause(s)	Solution
LEDs flickering	Not enough power	Check power requirements or do end of line voltage testing. Refer to the **Aurora Pro Power Best Practices Appendix** for details.
LEDs stuck on one color	Broken LED Not enough power	Check for broken LEDs. Check power requirements. Refer to the **Aurora Pro Power Best Practices Appendix** for details.
Odd colors appearing on LEDs	Not enough power	Check power requirements. Refer to the **Aurora Pro Power Best Practices Appendix** for details.

AURORA PRO PATTERNS & LIGHTING PARAMETER EFFECTS

Parameter Effects

Use the following table as a general guideline for parameter effects—Aurora patterns respond to each parameter differently.

Parameter	Effect
Brightness	Adjusts LED brightness from 0—100%
Transition	Transition time until next cue
Speed	Pattern speed across fixtures
Energy	The intensity of color range, brightness, and motion
Variance	Level of brightness control and contrast
Decay	Duration of LED to fade once activated

Parameter Effects on Aurora Patterns

The following tables describe how lighting parameters respond to each pattern. Use this guide when experimenting with Aurora to optimize lighting design for your installation.

In many patterns, lowering variance adds a baseline light activity with little or no audio input.

PATTERN: WAVES

Ideal For:

- Parties/shows
- Active, lively environments
- Music with a strong beat
- Clapping
- Chasers

	PARAMETER CONTROL EFFECT	
Parameter	Audio Reactive	Non-Audio Reactive
Speed	Chaser speed	Chaser speed
Energy	Color and brightness	Color and brightness
Variance	Brightness variation	Brightness variation
Decay	Audio input to light mapping smoothness	N/A

PATTERN: SPECTRUM

Ideal For:

- Dynamic music, such as classical, jazz, and folk
- Loud voices/yelling
- Abstract visualization of frequencies
- Color sweep in non-audio reactive mode
- Reacting sensitively to low audio

	PARAMETER CONTROL EFFECT	
Parameter	**Audio Reactive**	**Non-Audio Reactive**
Speed	Pixel mapping	Sweep speed
Energy	Color and brightness	Color and brightness
Variance	Brightness variation	Brightness variation
Decay	Duration of LED to fade once activated	N/A

PATTERN: STARRY SKY

Ideal For:

- Dancing galaxy animation
- Most music, including rhythmic music with beats
- 2D or 3D fixture configurations

	PARAMETER CONTROL EFFECT	
Parameter	**Audio Reactive**	**Non-Audio Reactive**
Speed	Pulse speed	Pulse speed
Energy	Color and brightness	Color and brightness
Variance	Brightness variation	Brightness variation
Decay	Duration of LED to fade once activated	N/A

PATTERN: WATERFALL

Ideal For:

- Evoking a “waterfall” of sound
- Percussive music
- Clapping and other human interactions

	PARAMETER CONTROL EFFECT	
Parameter	**Audio Reactive**	**Non-Audio Reactive**
Speed	Waterfall speed	Waterfall speed
Energy	Color and brightness	Color and brightness
Variance	Brightness variation	Brightness variation
Decay	Audio input to light mapping smoothness	Burst smoothness

PATTERN: PLASMA

Ideal For:

- Evoking moving shapes
- Bass
- Frequencies <2000 Hz
- 2D and 3D fixture configurations

	PARAMETER CONTROL EFFECT	
Parameter	**Audio Reactive**	**Non-Audio Reactive**
Speed	Movement speed	Movement speed
Energy	Brightness	Brightness
Variance	Shape	Shape
Decay	Audio input to light mapping smoothness	N/A

PATTERN: TWINKLE

Ideal For:

- Evoking an effect that disperses from a central point
- Most music; takes advantage of the full frequency range

	PARAMETER CONTROL EFFECT	
Parameter	**Audio Reactive**	**Non-Audio Reactive**
Speed	N/A	Twinkle rate
Energy	Color and brightness	Color and brightness
Variance	Brightness variation	Brightness variation
Decay	Audio input to light mapping smoothness	Smoothness

PATTERN: SOLID COLOR

Ideal For:

- Non-audio reactive environments
- Simple displays with movement in one color

	PARAMETER CONTROL EFFECT	
Parameter	**Audio Reactive**	**Non-Audio Reactive**
Speed	N/A	Pulse speed
Energy	N/A	Wave motion
Variance	N/A	Color (must be in the currently selected color palette)
Decay	N/A	Amplitude of pulse

PATTERN: FLASH BANG

Ideal For:

- Music with a strong beat
- Strobe lights in a non-audio reactive environment
- High impact displays

	PARAMETER CONTROL EFFECT	
Parameter	**Audio Reactive**	**Non-Audio Reactive**
Speed	N/A	Strobe rate
Energy	Color and brightness	Color and brightness
Variance	N/A	N/A
Decay	Decay of flashes	Decay of flashes

PATTERN: SWEEP

Ideal For:

- High energy displays
- Music with a strong beat
- Clapping
- Evoking sinusoidal movement that changes speed and direction with beat onsets and strength

	PARAMETER CONTROL EFFECT	
Parameter	**Audio Reactive**	**Non-Audio Reactive**
Speed	Movement speed	Movement speed
Energy	Color and brightness	Color and brightness
Variance	Brightness variation	Brightness variation
Decay	Wavelength	Wavelength

AURORA DMX SPECIFICATION

Pro-Tip:

Both Channels 0 and 1 set the DMX base address of Aurora Pro to 1

DMX Channel	Value	Function
1	0-255	Brightness
2	0-255	Color Palette Select For an up-to-date list of color palette values refer to latest DMX specification[13]
3	0-255	Pattern Select For an up-to-date list of patterns refer to latest DMX specification[13]
4	0-255	Transition Duration
5	0-255	Speed
6	0-255	Energy
7	0-255	Variance
8	0-255	Decay
		Audio Reactive Toggle
9	Audio Reactive Mode	1-127
	Non-Audio Reactive Mode	128-255

[13] https://support.limbicmedia.ca/guidesmanuals/

EXTENDED MODES OF INTERACTION

Aurora Pro goes beyond just sound-to-light technology. The following features are available for custom integration into an Aurora Pro platform. Contact Limbic Media for more information.

Motion Tracking

Modulate lighting displays by integrating motion-tracking technology. Use a camera or sensor to track an audience's energy at a show, or with specifically defined gestures like waving and dancing. Aurora Pro translates this motion-based input into its lighting design algorithms.

Voice Recognition

Integrate voice recognition technology into Aurora Pro to trigger lighting behavior in response to select words in any language. Say themed words (e.g. snowflake, rain, wind, or candy cane) and see corresponding light effects in real-time. Voice recognition technology is used in Show Me, an interactive content exploration tool ideal for public directories and events.

Social Media Engagement

Integrate an Aurora Pro system with social media interaction. Send specifically selected hashtags or @-tags via Instagram and Twitter and see corresponding light effects in real-time.

User-Controlled Tablet App

Put Aurora Pro's possibilities in your audience's hands by presenting an installation with a stripped-down version of the Aurora Mobile App. Audiences can adjust Aurora Pro's patterns, palettes, and parameters in real-time using a tablet interface, or finger-paint on the screen to create a corresponding light drawing.

Coin Box Integration

Integrate an Aurora Pro system with a coin box for charity-based or fundraising installations. Offer donors a reward for their coin donations in the form of a light show. The same integration can apply to a number of other mechanisms, such as letter slots.

AURORA PRO SPECIFICATIONS

(AUR-R2-P8D-00-US/AUR-R2-P8D-00-EU)

Control

Input	DMX IN, ⅛” stereo auxiliary input, XLR / ¼” combo, USB audio interface + Mic, USB 2.0 connector x 2, micro USB, panel mount buttons x 2, recessed button
Output	USB 2.0 connector x 2 (USB-to-Ethernet adapter available), ⅛” mono THRU, XLR / ¼” combo jack THRU, DMX OUT/THRU, 8 built-in RGB connectors

Electrical

Input Voltage (NA)	120 VAC 60 Hz
Max. Input Current (NA)	6.8 A
Input Voltage (EU)	240 VAC 50 Hz
Max. Input Current (EU)	3.4 A
Max. Power Output	348 W

Physical

Dimensions	299 x 158 x 85 mm (11.75 x 6.25 x 3.35”)
Weight	2.6 kg (5.7 lb)
Housing	Acrylic/PVC blend
Operating Temperature	-25° - 40°C (13° - 104°F)
Humidity	20~90% RH, non-condensing

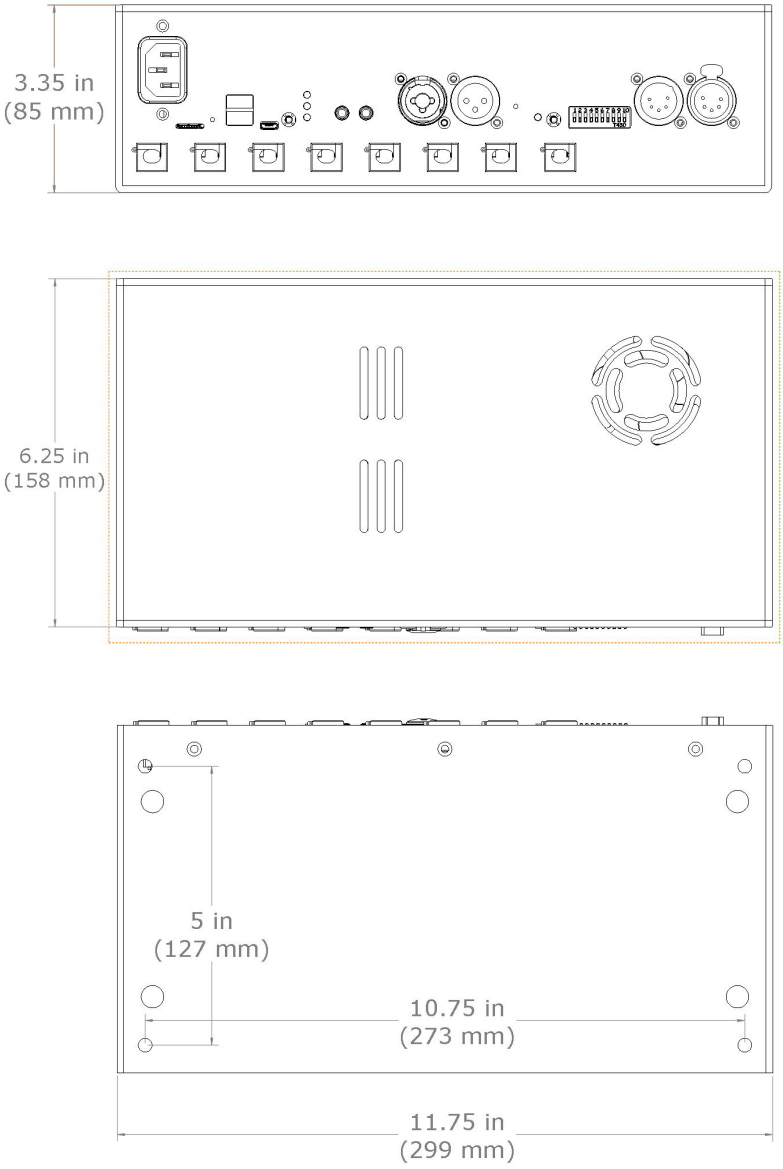
Certifications

Certification	cLCus, FCC, CE
Environment	Indoor/dry location (Outdoor cases available for outdoor deployment. See the Aurora Product Guide for details.)

Lighting

Other light fixtures are compatible using modified versions of the Aurora Pro built-in RGB connectors. These reflect general specifications.

Power	12 V @ 35 mA - 250 mA (depending on fixture)
Lighting/Native Protocol	5 V UCS8903 (16 bits per channel addressing), 5 V WS2811x chip family
Housing	Polycarbonate
Operating Temperature	-20° - 50°C (-4° - 122°F)
Environmental	IP 65/66/67
Certification	



Figs. 36-38: Aurora Pro housing dimensions

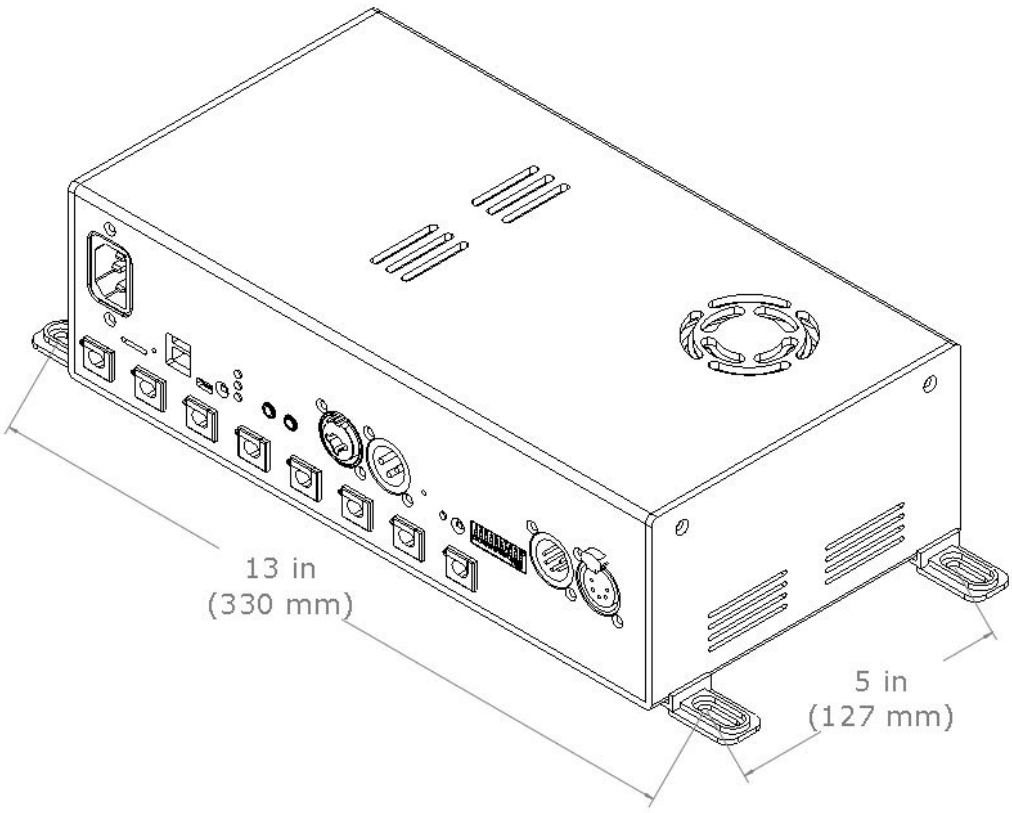


Fig. 39: Aurora Pro housing dimensions

AURORA PRO POWER BEST PRACTICES

Power Requirements

Aurora Pro requires a maximum current of 6.8 A at 120 VAC and 3.4 A at 240 VAC.

Power and Data considerations for installations

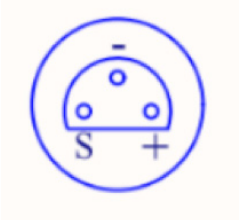
- Each Port on Aurora Pro supplies 2.5 A at 12 V.
  - This will power 75 LED pixels per port for a maximum of 600 LED pixels.
- Power Top-Ups supply 5 A at 12 V.
  - Inject power every 100’ or 100 LED pixels—whichever comes first.
  - Inject power every 80’ or 80 LED pixels for Triklit-style lights—whichever comes first.
- At 2.5 A, a 20’ leader cable drops approximately 1 V.
- At 2.5 A 10’ leader cable drops approximately 0.5 V.
- Power Top-Ups must be used with Power T’s to isolate power in each direction.
- Cable runs greater than 15’ must have a Smart Extender/Receiver adapter and Power Top-Up at the end of each cable run before connecting lights.
- Use a voltmeter to measure the voltage at each end of a light run (see voltage thresholds below).

End of Line Voltage Thresholds

End of line Voltage Threshold	Fixture Type
VEOL > 10 V	Globes
VEOL > 9 V	Triklit-style fixtures
VEOL > 8 V	Bistro Strings, Light Strings, Pebble Module Lights

Measure End of Line Thresholds

Measure the end-of-line voltage to ensure light fixtures are receiving adequate power.




Figs. 40-42: Measuring end-of-line voltage

Required Components

- Aurora Pro
- RGB LED fixture
- Voltmeter

Method

1. Power Aurora Pro ON.
2. Measure voltage between the + and - terminals on the female connector at the end of the light run.
3. Ensure the measured voltage is greater than the thresholds listed above.
4. Remove the last section of lights if the voltage is too low.
5. Add a Power Top-Up (5 A Power Top-Up and a Power-T) and reconnect lights.
6. Retest the end-of-line voltage to ensure it meets the threshold.

Approved Lamp Types

- Lamp type: LED 5050
- Lamp wattage: 1 W
- All RGB LED fixtures use LED 5050 as the lamp type.

Warning:

Please contact Limbic Media to use Aurora Pro with fixtures other than those listed in the following table.

Aurora Pro Power Fixture Limits Per Port

RGB Fixture Type	LEDs	IP Rating	Current (A)		Max Lights/Port*
			Node	Fixture	23 °C (73 °F)
Mini Triklits	1	65	0.03		75
Triklit 100s	1	65	0.112		15
360° Triklits	1	65	0.03		75
Bistros and Light Strings	1	65	0.03		75
Flexible Strip	28/m	67	0.03		140 (5 m)
Pebble Module Light	1	65	0.03		75
Bullet Pixels	1	65	0.03		75
1’ 360° Light Tube	24	65	0.02	0.36	6
2’ 360° Light Tube	50	65	0.02	0.75	3
3’ 360° Light Tube	74	65	0.02	1.11	2
4’ 360° Light Tube	100	65	0.02	1.5	1
5’ 360° Light Tube	124	65	0.02	1.86	1
250 mm Globes	20	65	0.0075	0.15	16
300 mm Globes	24	65	0.0083	0.20	12
350 mm Globes	28	65	0.0086	0.24	10
400 mm Globes	32	65	0.0094	0.300	8
500 mm Globes	32	65	0.0094	0.300	8

*Without power top-ups.

Wiring and Connection Specification

Specification Item	Value	Unit
Input wire cross-section	0.82	mm^2
Input cable diameter	1.02	mm
	18	AWG
Output wire cross-section	0.52	mm^2
Output cable diameter	0.81	mm
	20	AWG

RGB LED Output Connectors Wiring Diagram

Male Connector

Female Connector

Figs. 43-44: RGB connector ends

ELECTRICAL SAFETY

Safety Hazards Identification and Warnings

The following identification system indicates hazard severity associated with Aurora Pro in accordance with ANSI Z535.4-2002:

DANGER

An imminently hazardous situation which will result in death or serious injury if not avoided.

WARNING

A potentially hazardous situation which could result in death or serious injury if not avoided.

CAUTION

A potentially hazardous situation which could result in minor or moderate injury or property damage if not avoided. Also alerts against unsafe practices.

Ignoring a hazard voids any warranty.

Aurora Pro Safety Hazards

WARNING

Power must be disconnected before installing Aurora AUR-R2-P8D-00-US/AUR-R2-P8D-00-EU or connecting light strands.

WARNING

Aurora AUR-R2-P8D-00-US/AUR-R2-P8D-00-EU must be installed in accordance with relevant local electrical codes by certified professionals.

WARNING

Aurora AUR-R2-P8D-00-US/AUR-R2-P8D-00-EU requires that ventilation openings are not obstructed or covered.

WARNING

Aurora AUR-R2-P8D-00-US/AUR-R2-P8D-00-EU is for indoor use only. Outdoor enclosures are available.

WARNING

Read and fully understand installation instructions and safety labels for Aurora AUR-R2-P8D-00-US/AUR-R2-P8D-00-EU before installing the system.

WARNING

The Aurora AUR-R2-P8D-00-US/AUR-R2-P8D-00-EU must be installed without obstructing any ventilation openings.

WARNING

Ensure power cable is not damaged before connecting Aurora AUR-R2-P8D-00-US/AUR-R2-P8D-00-EU to power.

WARNING

Aurora AUR-R2-P8D-00-US/AUR-R2-P8D-00-EU is certified to FCC Class A standards. It may cause electromagnetic interference (EMI) in domestic (residential) environments. End users are required to take adequate measures in such a case.

CAUTION

Ensure that Aurora AUR-R2-P8D-00-US/AUR-R2-P8D-00-EU is mounted correctly using the provided mounting brackets, and free of excessive vibrations.

CAUTION

Do not hot swap fixtures. Ensure Aurora AUR-R2-P8D-00-US/AUR-R2-P8D-00-EU is disconnected from power before connecting or disconnecting fixtures.

CAUTION

Do not open, modify or alter Aurora AUR-R2-P8D-00-US/AUR-R2-P8D-00-EU in any way.

NOTE

The instructions and precautions set forth in this user manual are not fully-inclusive, or pertinent to all installations as Limbic Media cannot anticipate all possible situations.

Owner/User Responsibilities

It is the responsibility of the contractor, installer, purchaser, owner, and user to install, maintain, and operate Aurora AUR-R2-P8D-00-US/AUR-R2-P8D-00-EU in compliance with all state and local laws, ordinances, and regulations.

NOTE

Aurora AUR-R2-P8D-00-US/AUR-R2-P8D-00-EU is shipped with a US IEC power cable.

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