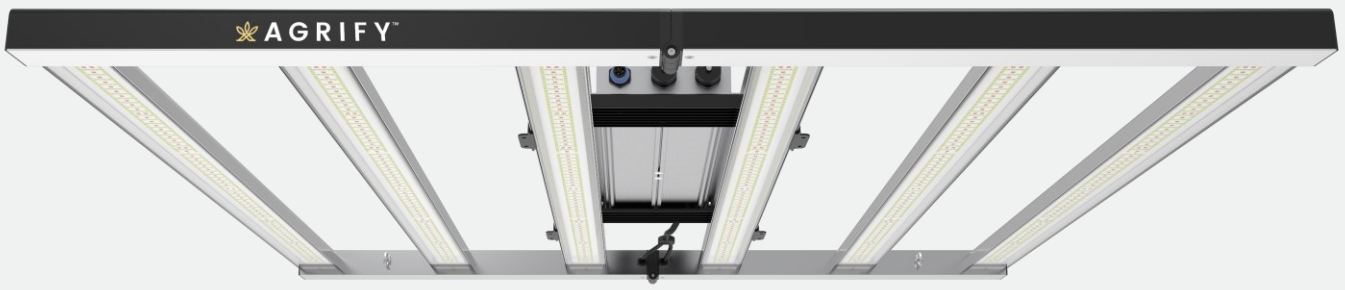
AGRIFY™

Model R Premium Pro
LED Horticultural Fixture

User Guide



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QUICK LINKS

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INTRODUCTION

As indoor cultivation becomes more popular, electrical costs continue to rise. LED grow lights are a vital element in boosting the electrical efficiency of facilities while maintaining yield and quality of output of the crops. To address this, we have developed the Model R Premium Pro light as our state-of-the-art line of LED grow lights and fixtures for cannabis.

This user's guide outlines the mounting and installing of the Model R Premium Pro fixture and describes how to install the unit to maximize its value in your grow room. Installation of the Model R Premium Pro lighting fixtures should only be completed by trained installation and service personnel. Please read this guide prior to the installation of the Model R Premium Pro fixture and only use the product as specified in this guide.

PRODUCT DESCRIPTION

The Model R Premium Pro is an electronic horticultural LED fixture that consists of six LED rails. The fixture is intended to be used in climate-controlled rooms. The Model R Premium is an integrated AC light fixture with spectrum control capabilities designed for large commercial deployments with maximum performance in mind. In this User Guide, the Model R Premium Pro fixture will be referred to as: "the fixture."

Features

- 2-channel adjustable spectrum to tailor the crop for maximized output
- Compact foldable form factor for ease of transport
- Compatible with on-fixture or remote mounting of LED driver units
- High output at 1800 PPF
- Ultra-High efficiency with 3.0 µmol/J
- Waterproof (IP65) and UL Wet Location rated design
- Includes an LED lens, paired with a design meant for superior cleanability
- 5-year warranty

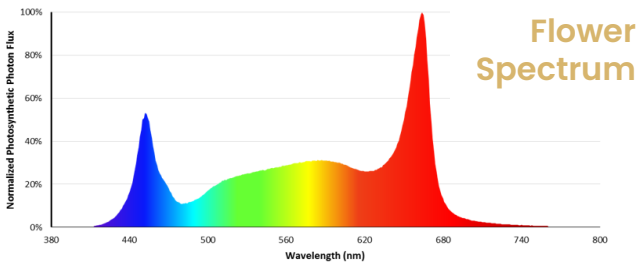
PRODUCT SPECIFICATIONS

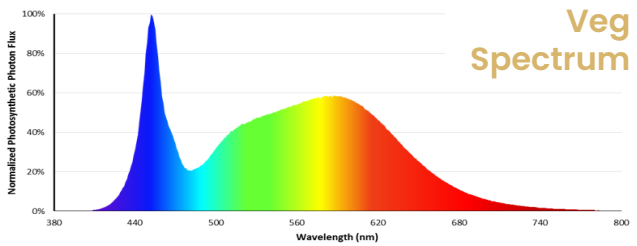
Light Intensity (PPF)	1800 µmol/s
Average Light Density (PPFD) @ 12”	1170 µmol/s/m² at 6” from canopy 1000 µmol/s/m² at 12” from canopy
System Efficiency*	3.0 µmol/J
Spectrum Adjustability	Adjustable (2-channel)
Beam Angle	120°
Dimmability	Yes (0-10V)
Lifetime	> 55,000 hours (Q90)
Waterproofing	IP65
Operating Temperature	10°C to 35°C (50°F to 95°F)
Storage Temperature	-29°C to 54°C (-20°F to 130°F)
Fixture Dimensions	43.2" x 45.0" x 4.06“
Weight	18.3lbs (driver mounted remotely) 30lbs (driver mounted on a fixture)
Certification	UL 8800, UL 1598 Wet Rated, UL 8750, NSF & FCC

High intensity of red light in the spectrum could adversely affect plant health in the vegetative stage. Suggested use of the fixture includes lowering the red content during this stage. The red-light intensity should then be gradually increased as the plants transition into the flowering stage.

Electrical	
Input Power*	600 W
Input Voltage	$120V_{AC}$ – $277V_{AC}$
Power Factor	> 0.9
Driver Model	Inventronics

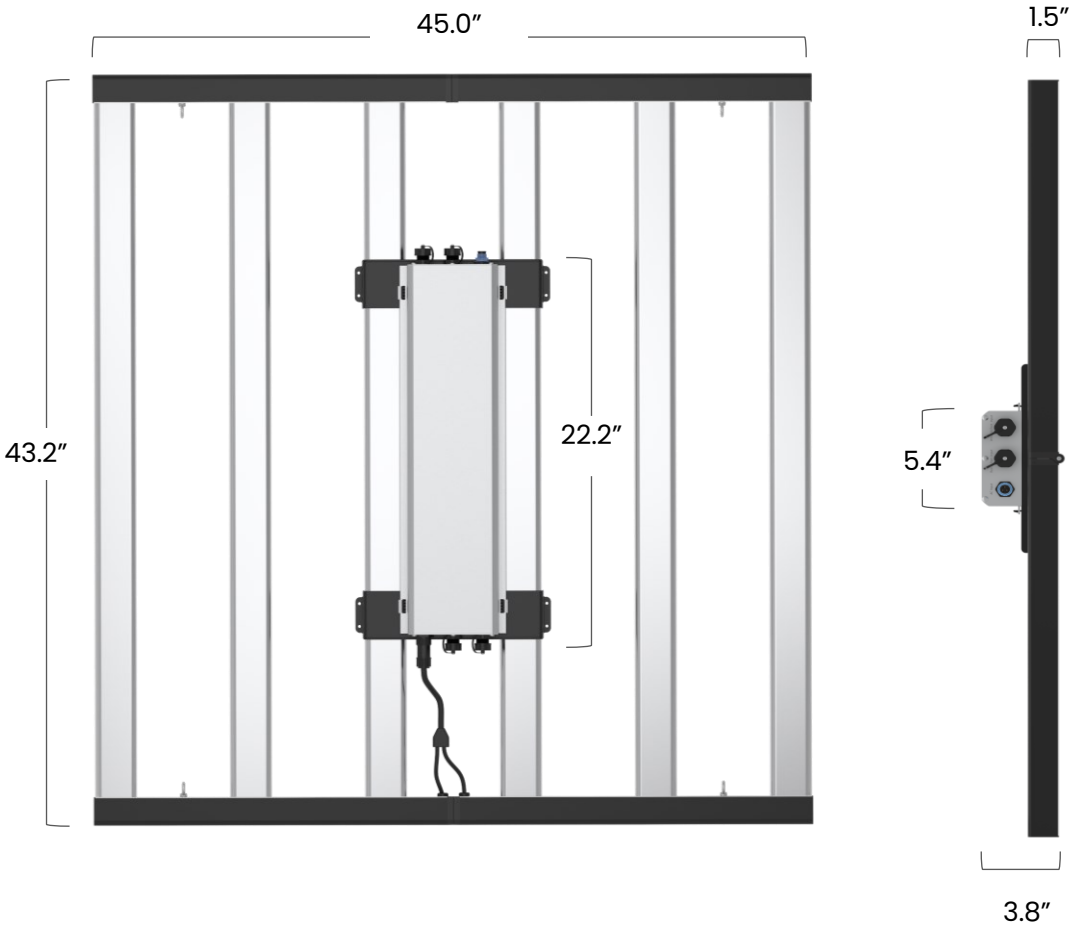
*Data measured at $277V_{AC}$



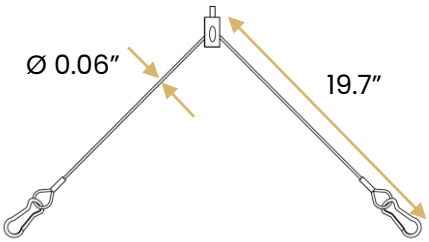


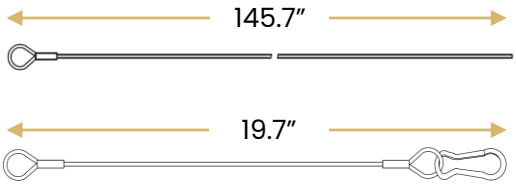
PRODUCT SPECIFICATIONS

LIGHT FIXTURE WITH DRIVER BOX



HANGING ACCESSORIES





SYMBOLS USED

Warning! A warning sign indicates severe damage to the user and/or product may occur if a warning is not heeded.

Caution! A caution sign indicates if the precaution is not taken, it may cause a minor or moderate injury or poor product installation.

Note: A note gives additional information, e.g., for a procedure.

This symbol is an internationally recognized symbol used to designate recyclable materials.

This symbol is a certification mark employed on electronic products manufactured or sold in the United States which certifies that the electromagnetic interference from the device is under the limits approved by the Federal Communications Commission for a Class A digital device.

ETL Rating: The fixture has been tested and complies with UL8800, UL 1598, and CSA 22.2 No. 250.0-08, Luminaries / UL 8800, Outline for Horticultural Lighting Equipment / UL 8750, Light Emitting Diode (LED) Equipment for Use in Lighting Products. The fixture is rated suitable for wet locations. A "wet location" is defined as an interior or exterior location in which water or other liquids may drip, splash or flow on or against the electrical components of a lighting fixture. The fixture and power supply are certified to meet UL standards from the Intertek safety consulting and certification company (ETL).

ETL Sanitation Listed Rating: The fixture is fit for use in the production of food intended for human consumption, and/or the fixture is fit for use in an environment where for food for human consumption is produced. Testing has confirmed compliance with NSF standards.

DLC rating is a performance classification for horticultural luminaires. Products submitted to the DLC Horticultural classification must meet higher efficacy and lumen maintenance requirements.

This symbol is the internationally recognized symbol used to designate fragile materials.

This symbol is the internationally recognized symbol used to designate material requiring dry storage.

This symbol is the internationally recognized symbol used to designate the direction in which materials should be stored- arrows pointing to the top of the packaging.

IP65 IP65 rating gives complete protection against foreign bodies and water jets. Water disposed of by a nozzle of 6.3mm will have no damaging effect on LED light. When you are purchasing an outdoor lighting fixture it should be IP65 rated. The lights meet or exceed the ETL listed and are rated IP65 by IEC standard 60529

CULTIVATION BEST PRACTICES

Below are some general "best practices" to follow for optimizing indoor cultivation. We recognize that no two plants or growing environments are the same and user may have different goals and we do encourage experimentation for our users to pursue and develop their own techniques.

- Regularly check your plant's growth and health. The Model R Premium Pro lighting systems deliver high levels of PAR & PPFD, sometimes at greater levels than what is experienced in nature. Adjustments to VPD, CO_2, pH, humidity, nutrient mix, and/or temperature may be required.
- Mount the fixture at least 6" from the top of your plant canopy to ensure optimal uniformity and consistent PPFD. Plants may prefer different temperature, CO_2 or humidity levels when exposed to high PPFD. It may also be worth experimenting with environmental controls to achieve higher yields. Canopy temperature and ambient room temperature can vary.
- LED fixtures in general give significantly less radiant heat towards the plant canopy in comparison to traditional alternatives such as HID lamps. A majority of the heat generated from LED fixtures is directed up towards the ceiling, away from the plants. Careful monitoring and adjustment of room conditioning is suggested.

High intensity of red light in the spectrum could adversely affect plant health in the vegetative stage.

Suggested use of the fixture includes lowering the red content during this stage.

The **red-light intensity** should then be **gradually increased** as the plants transition into the flowering stage.

Adjustable spectrum functionality enables users to use Model R Premium Pro fixtures for both vegetative and flowering stages of cultivation. Suggested use of the fixture includes lowering the red content during this stage. The red-light intensity should be gradually increased as plants transition into flowering stage.

Information on adjusting the spectrum for Model R Premium Pro fixtures is shown in the "Spectrum/Dimming Control" section of this User Guide.

Agrify's 2-channel lighting controller is needed to enable spectrum adjustability.

GENERAL CARE

The Model R Premium Pro fixture is passively cooled with zero moving components. This state-of-the-art LED fixture is designed for harsh environments and years of maintenance-free performance. Some basic care will keep your system operating at peak performance for every grow cycle.

- Natural convection removes heat away from the heat sink. For the system to properly cool itself, at least one inch of space is required between the console and the roof of your grow area. Failure to do so may shorten the fixture's lifespan.
- To achieve the optimal lifespan and performance of your fixtures, routinely check for and remove excess dust, debris, and mineral build up. Cleaning must always be done with the fixture unplugged from its power source using low-pressure compressed air or water to rinse away from light bars.
- To make cleaning more manageable, a set of lens covers is provided and can be attached to cover the LEDs on the light bars. This is optional and the fixture will operate with and without the lens covers attached.
- When growing cannabis, the user should use lukewarm water and alcohol solution wipe when cleaning the fixture to prevent resin build up, which may eventually affect the fixture's performance.

SAFETY WARNINGS

Warning! Carefully read the warnings below before using or working with the product!

Always adhere to local rules and regulations, which the customer and his contractors are obligated to research and know when installing or using the LED fixture.

Do not open or disassemble the LED fixture, it contains no serviceable parts. Opening or modifying the LED fixture can be dangerous and void the warranty.

This product may cause interference to radio equipment and should not be installed near maritime safety communications equipment or other critical navigation or communication equipment operating between 0.45 – 30MHz.

Do not use the LED fixture when either the LED fixture or its power cord are damaged. Replace the power cord only with original certified cords.

Modifications to the cords can lead to unwanted electromagnetic effects, which makes the product comply with legal requirements.

Always allow for a cool down period of at least 30 minutes before touching the LED rails. Touching the LED rails when the fixture is lit or immediately afterwards will result in severe burns!

Do not use the LED fixture near flammable, explosive, or reactive substances. The LED fixture reaches temperature of 95°F / 35°C.

Do not use sulfur vaporizers.

The installation and use of the LED fixture are the responsibility of the end user. Improper use or installation can lead to failure and damage to the LED fixture. Damage to the LED fixture and electronic circuitry as a result of incorrect installation and use revokes the warranty.

Maximum ambient temperature needs to be maintained based on the specifications shown in the fixture's product datasheet. A mechanical ventilation or cooling system is required to maintain the temperature within the growing space within this specified temperature, when the fixture is in operation.

The fixture is IP65 rated and can be used in damp or wet locations. Please ensure that any accessories or wiring connected to the fixture are rated at IP65 or higher.

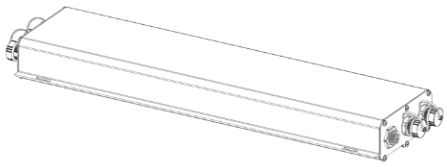
INCLUDED PARTS

The package contains the following parts:

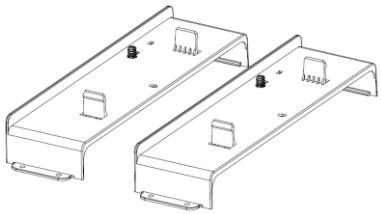
(1x) Folded Light Fixture

(6x) Individual lens covers with protective film covering

(1x) Driver Electronic Box

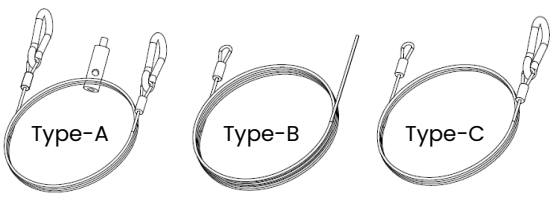


(2x) Attachment bars to secure driver to the light fixture



Hanging Accessories

(6x) Hanging and mounting cables – Type-A, B & C

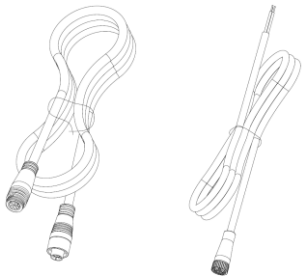


2x 2x 2x

Power Cables

(1x) 4m driver-to-fixture extension cable for remotely mounting the driver

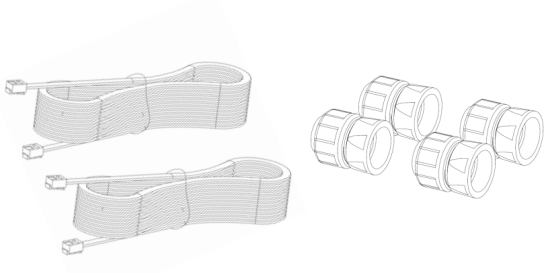
(1x) 3m AC power cord



Dimming Cables

(2x) 4m RJ14 Dimming cables

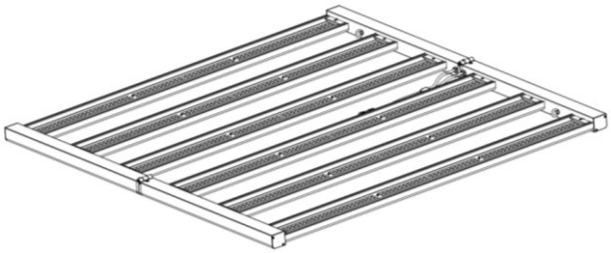
(4x) IP65 RJ14 caps



FIXTURE ASSEMBLY

Fixture assembly should not require any tools unless the option of remotely mounting the driver is desired. In this case, the use of appropriate tools to mount the drivers are required which will vary based on the user's desired mounting method.

1. Unpack shipping box – Open to remove items and packing material.



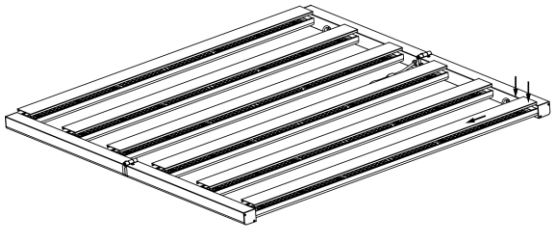
2. Lay folded fixture on a flat surface.

3. Unfold fixture flat with LED showing in up position.

4. Open lens box – Remove lens from the box and remove protective film from the lens. Install lens covers onto light bars by snapping into location at one end as shown in the picture. The lens is designed to cover the entire open light bar area, so please ensure that one end of the lens is aligned to the end of the open light bar area, prior to install.

   Once the end of the lens is fully pressed and aligned in place, press both sides of the lens along the length of lens until the lens is fully pressed into the light bar. Repeat the same installation procedure for remaining lens assemblies.

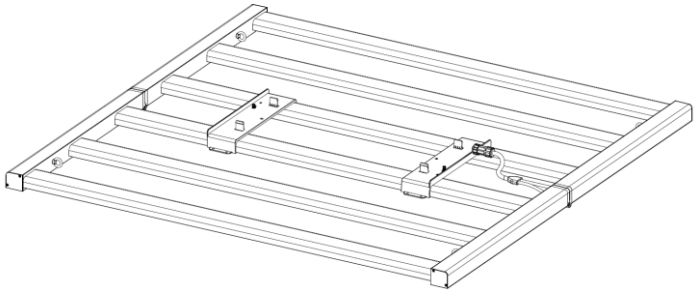
Warning! There is a risk of the protective film on lens melting and burning if not removed prior to the use of the product. Remove film before using lens with fixture.



Note: Lens is hard to remove once attached to the fixture – Align lens to the light bar in the final desired position prior to snapping in place.

5. **Driver Mounting – On Fixture**

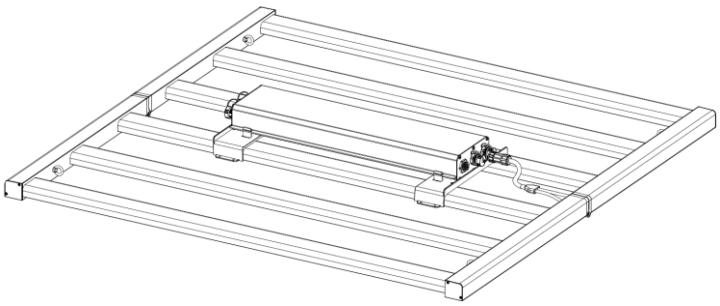
   a) Remove driver fixture attachment bars from the accessory box and snap into position between the two center light bars as indicated.



FIXTURE ASSEMBLY (continued)

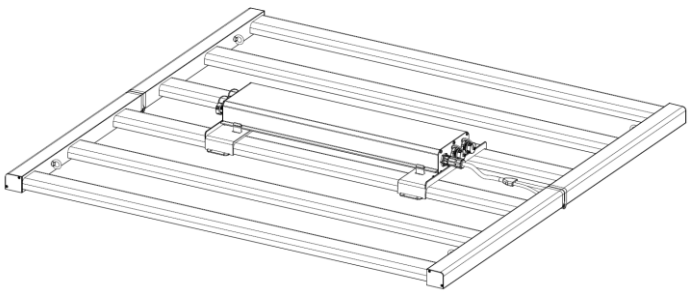
5. **Driver Mounting – On Fixture**

b) Remove driver enclosure from the driver shipping box and attach to driver fixture bars as indicated, making sure to align the driver to lamp connection ports on the driver enclosure to the fixture connection cables.



c) Connect fixture cables to the driver enclosure by inserting and twisting.

Note: Requires alignment of the connectors and pins to fit properly. Failure to do so adds risk of electric shock and prevents waterproof sealing.



Once properly aligned, push the cable in to the driver DC port.

Rotate the connector end to lock the cable in place

FIXTURE ASSEMBLY (Continued)

6. **Driver Mounting – Remote Install**

(Hang or mount to a suitable surface per the provided attachment methods)

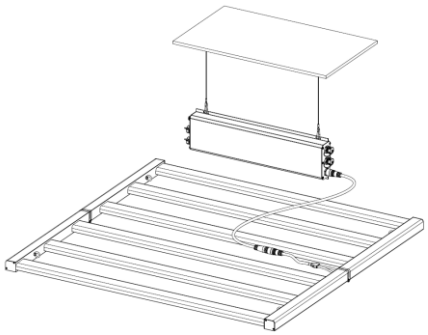
a) Remove the driver-to-fixture extension cable from the cable box and attach between output port of the driver and input cables of the fixture

Caution! Driver is heavy – When mounting remotely, please ensure the mounting method can support the driver weight.

Note: Requires alignment of the connectors and pins to fit properly. Failure to do so risks electrical shock and prevents waterproof sealing.

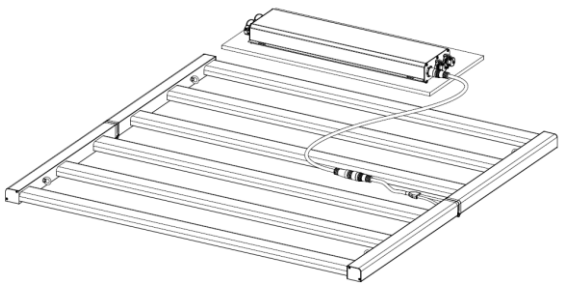
Option 1:

Using Type C hanging cords (included)



Option 2:

Mounting to surface (hardware not included)



b) Connect fixture cables to the driver enclosure by inserting and twisting.

Once properly aligned, push the cable in to the driver DC port.

Rotate the connector end to lock the cable in place

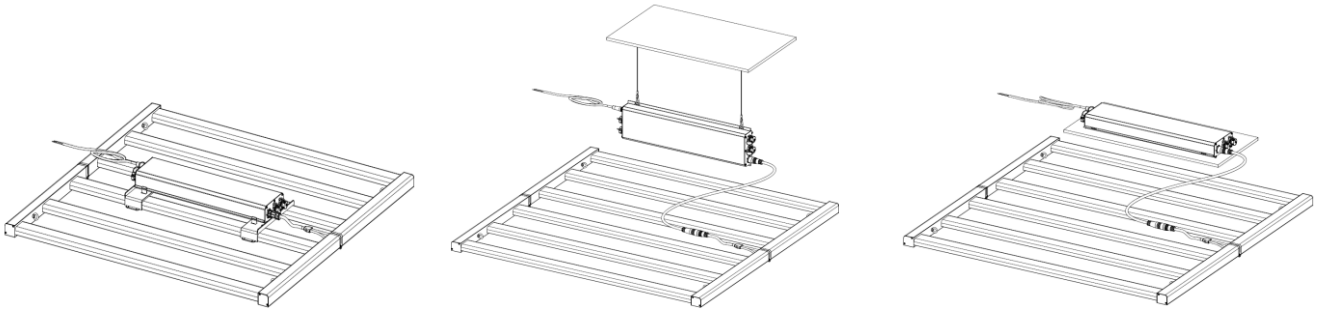
Note:
Requires alignment of the connectors and pins to fit properly. Failure to do so adds risk of electric shock and prevents waterproof sealing.

FIXTURE ASSEMBLY (continued)

7. AC Electrical Connection

Remove AC power cord from the cable box and attach to the AC input connector of the driver enclosure.

Note: Requires alignment of the connectors and pins to fit properly. Failure to do so risks electrical shock and prevents waterproof sealing.

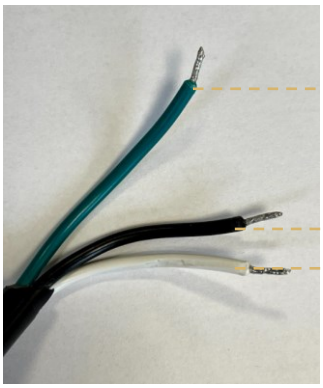


Note:
AC power cord, as provided, is intended for use in 120 to 277V_{AC} hardwiring installations.

Additional power cords with appropriate 120V_{AC}, 244V_{AC}, or 277V_{AC} plugs are available separately for purchase as optional accessories.

Once properly aligned, push the cable in to the driver DC port.

Rotate the connector end to lock the cable in place



Ground (Green)

Live (Black)

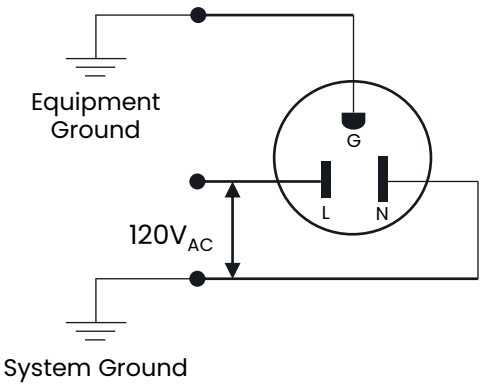
Neutral (White)

The driver comes with an AC input wire on the driver with three open leads as shown below that correspond to AC power line, neutral and ground. The fixture is rated to function only with an input voltage between **120V_{AC}** to **277V_{AC}**, as shown in the specification sheet.

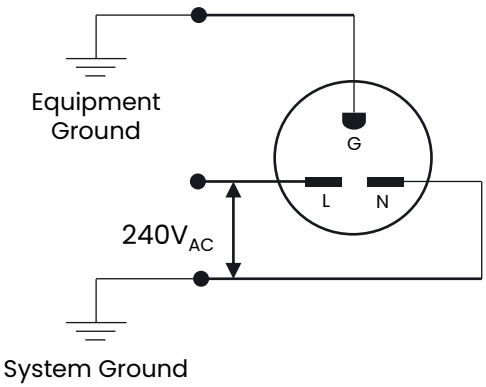
FIXTURE ASSEMBLY (continued)

7. AC Electrical Connection

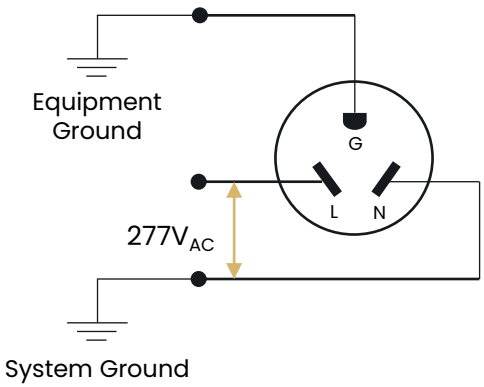
NEC code guidelines need to be strictly followed when connecting the fixture's AC power line to an appropriate power socket in the facility. Reference diagrams are shown below for 120V, 240V and 277V outlet configurations.



NEMA 5-15p



NEMA 6-15p



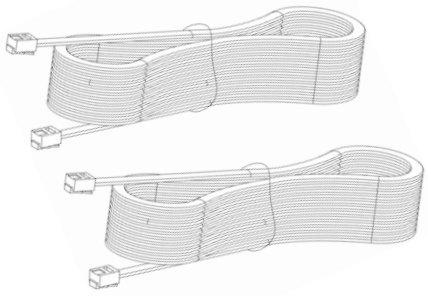
NEMA 7-15p

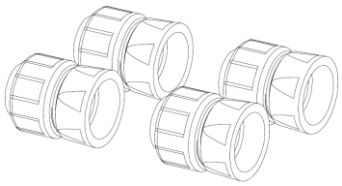
Warning!
Ensure all cables and wire harnesses included with the fixture are not concealed or extended through a wall, floor, ceiling, or other parts of the building structure. They should not be permanently affixed to the building structure and are routed such that they are not subject to strain and are protected from physical damage. They should be visible over their entire length till their connection to NEMA rated power outlets. They should be rated within their rated ampacity as determined for the maximum temperature of the installed environment specified in the fixture datasheet.

FIXTURE ASSEMBLY (continued)

8. Spectrum/Dimming Control – RJ14 Cable Installation

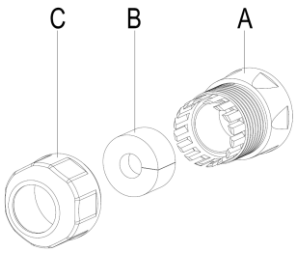
The packaging box includes two waterproof cables that can be used for controlling dimming functionality of the light fixture.

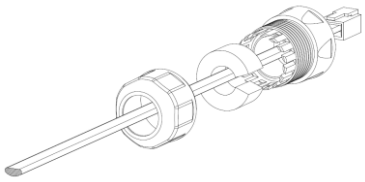


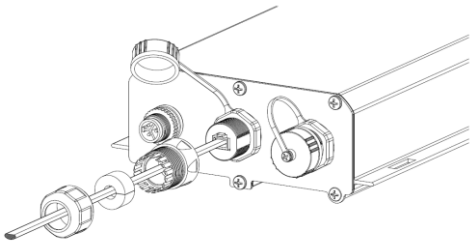


The following installation procedure needs to be followed to ensure a waterproof connection to the integrated RJ14 ports on the driver box. Each of the waterproof caps include three components as shown below.

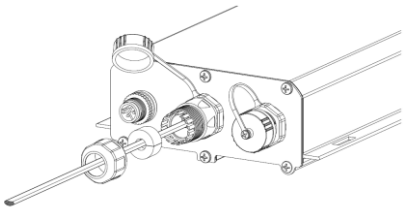
1. Separate the waterproof caps into three subcomponents A,B and C as shown below.
2. Run one end of the RJ14 cable through these and connect to the RJ14 port on the driver box. (The pre-installed cap on the RJ14 connector needs to be removed prior to this step)

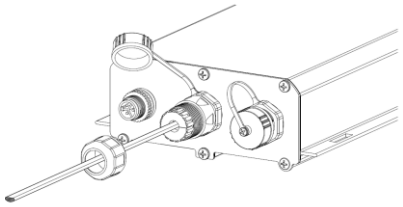


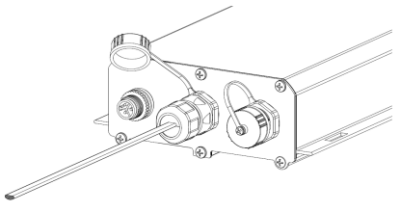




3. Screw in the inner cap “A” around the RJ14 port, push the silicone piece “B” all the way through the connector and screw in the outer cap “C” next, creating the seal.
4. Follow the same installation procedure for installing the RJ14 dimming cables on the second port on the driver box, along with RJ14 connections on the lighting controller.



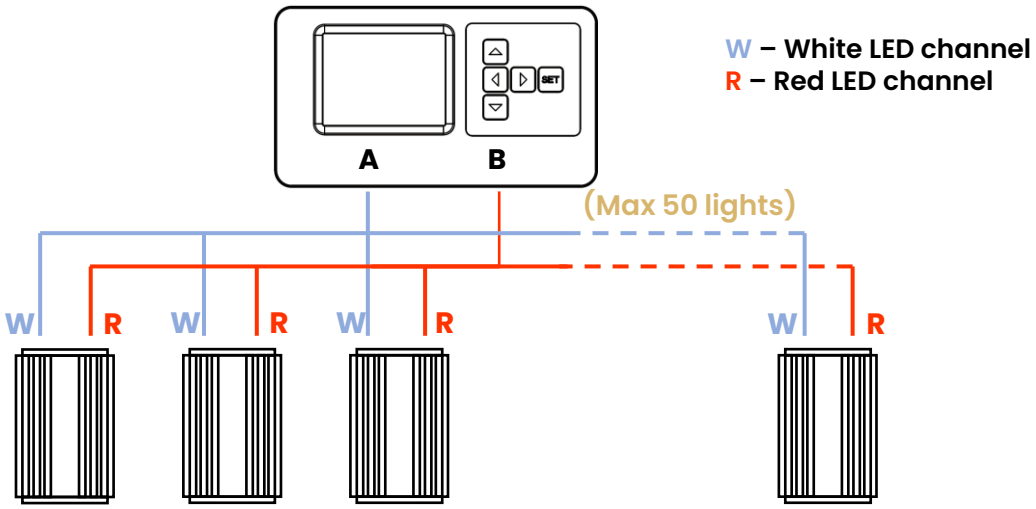




FIXTURE ASSEMBLY (continued)

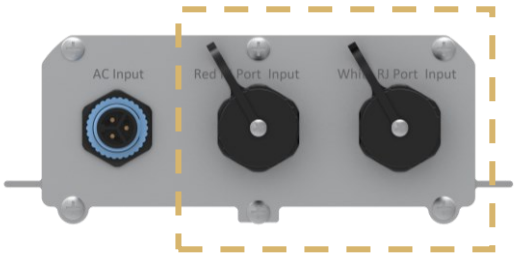
8. Spectrum/Dimming Control (continued)

Spectrum and/or dimming control of the fixture is possible by using Agrify's Luminaire Controller HCL1 or any other compatible 2-channel controller with 0-10VDC dimming capability. Multiple light fixtures can be connected in a daisy chain setup to a single controller using standard RJ14 cables.

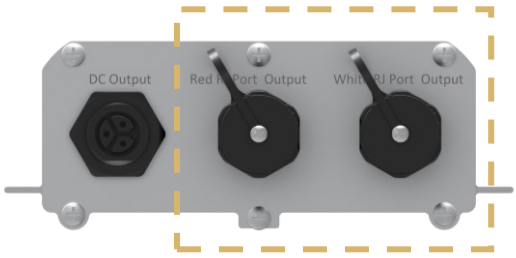


Note: Refer to product specifications of the controller for the allowed total maximum cable length for connection per channel. Signal loss may occur beyond this range.

The fixture comes with four waterproof RJ14 ports that are located on the driver box as shown below



Input RJ14 Ports



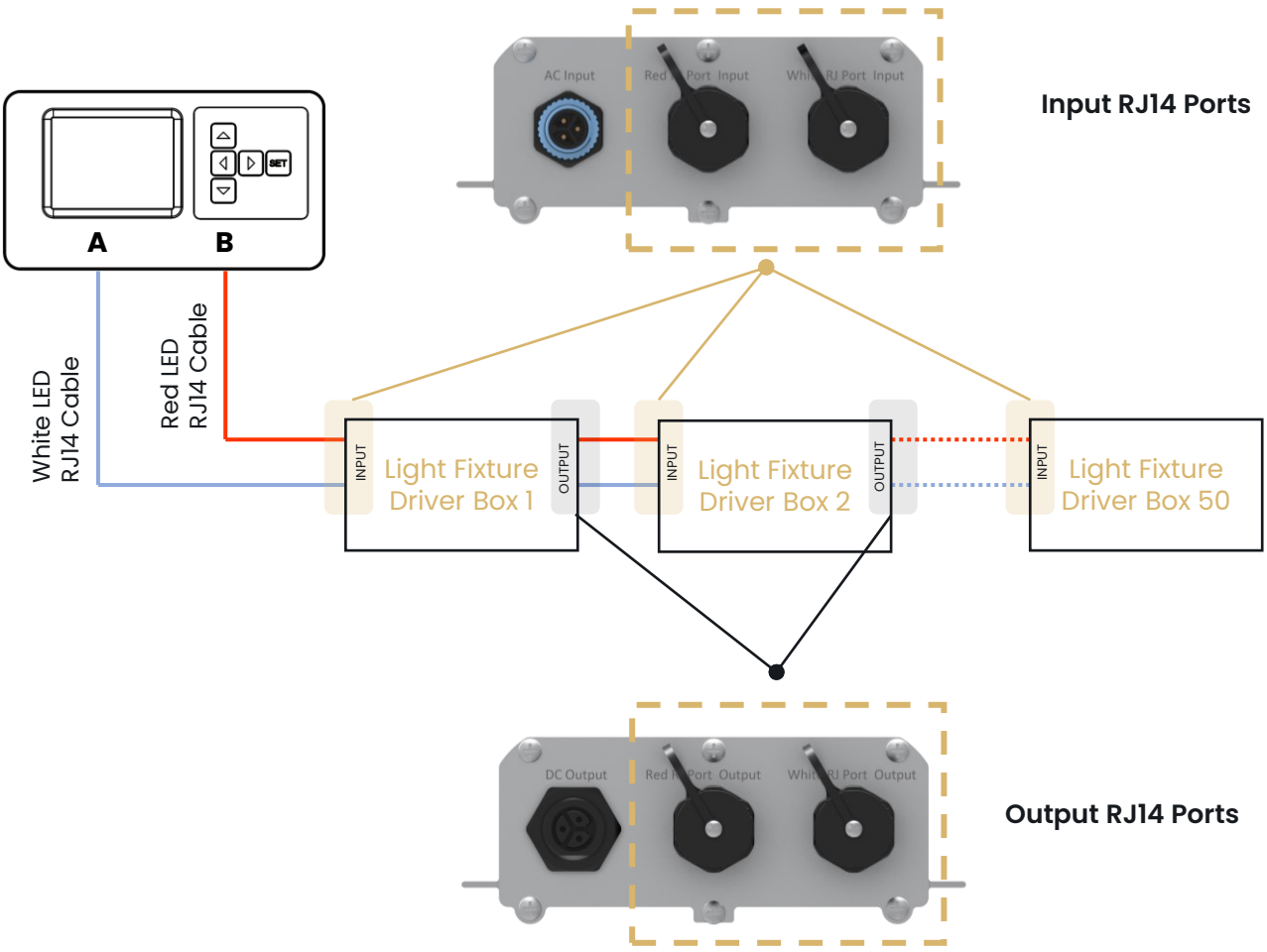
Output RJ14 Ports

FIXTURE ASSEMBLY (continued)

8. Spectrum/Dimming Control (continued)

If spectrum control is desired, two RJ14 adapters are required for installation. Channel A on the controller will be used to adjust intensity of the white LED spectrum, while Channel B on the controller will be used to adjust intensity of the red LED spectrum.

Lighting controller is connected via RJ14 cables to the **Input** RJ14 ports on the first fixture. Details on making the connection waterproof is shown in the previous section. For daisy chaining multiple light fixtures, RJ14 cables are used to connect RJ14 **Output** ports on fixture 1 to RJ14 **Input** ports on fixture 2.

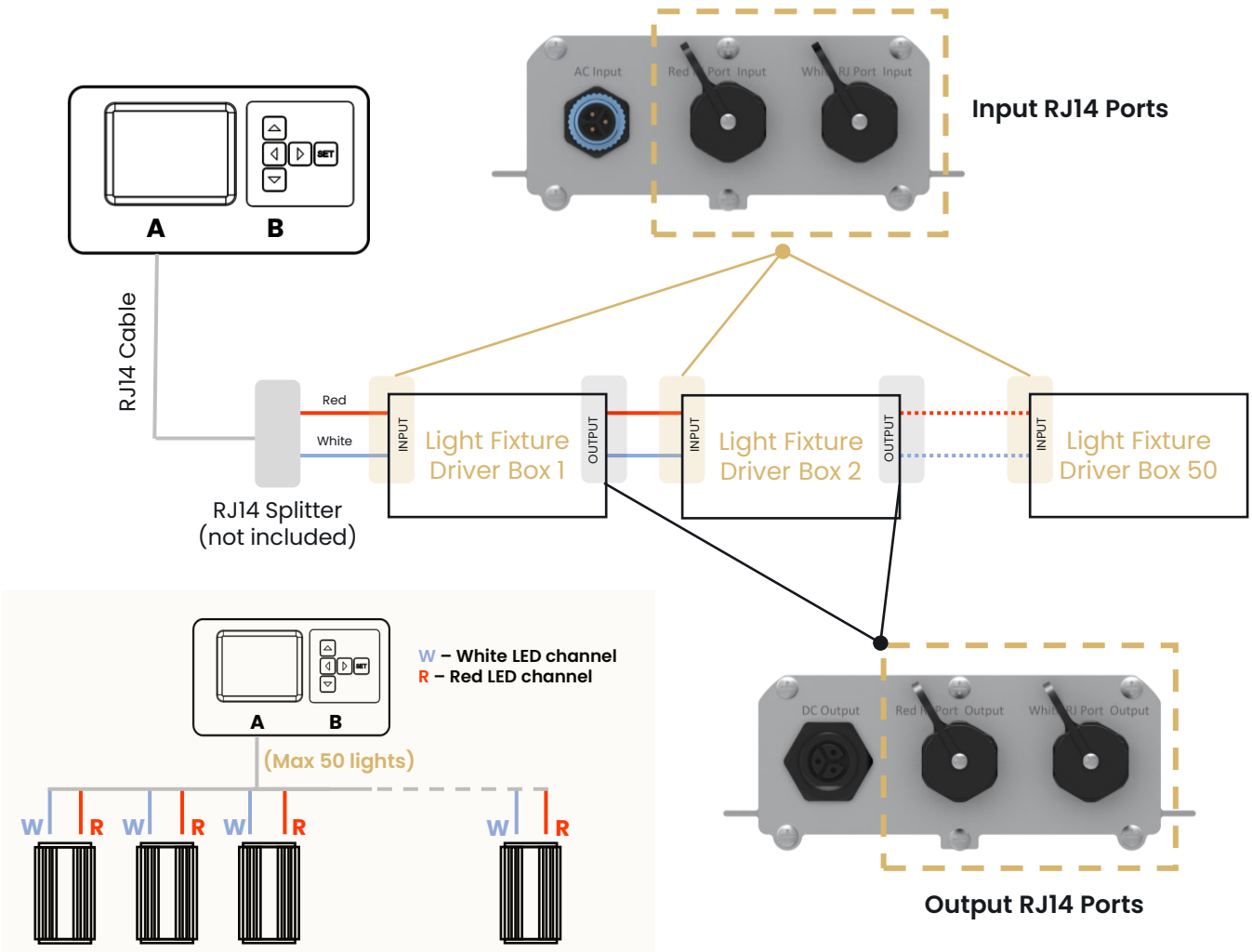


FIXTURE ASSEMBLY (continued)

9. Dimming Only Control (no spectrum adjustability)

If fixture dimming is desired without spectrum adjustability, two RJ14 adapters are required for installation. Channel A on the controller will be used to adjust intensity of both the white and red LED spectrums. Channel B on the controller can be either left open or be used to control a different light fixture zone or room.

Lighting controller is connected via RJ14 cables to the **Input** RJ14 ports on the first fixture. Details on making the connection waterproof is shown in the previous section. For daisy chaining multiple light fixtures, RJ14 cables are used to connect RJ14 **Output** ports on fixture 1 to RJ14 **Input** ports on fixture 2. An RJ14 splitter (not included in the box) is required to connect to the controller as shown below.



FIXTURE INSTALLATION

Warning! Install appropriate infrastructure capable of supporting the lights prior to beginning the LED installation.

- Switch off main power or breaker for unit being installed.
- To install the hangers for the lights, verify that the chosen mounting method can support the weight of the fixture and is appropriate for the intended environment.
- If alternative hangers to the items provided with the fixture are to be used, verify that the hanger hardware can support the weight of the fixture and is appropriate for the intended environment.
- If driver is mounted on the fixture, ensure that the weight of the driver is placed between the two light bars in the center of the fixture for even weight distribution and to ensure the fixture hangs level

Warning! Mounting and installation of the LED fixture shall only be executed by certified service personnel, in accordance with applicable local laws and regulations.

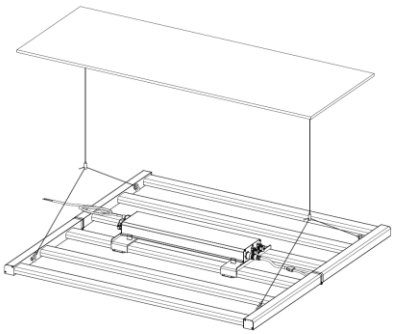
Warning! The installer is responsible for correct and safe installation.

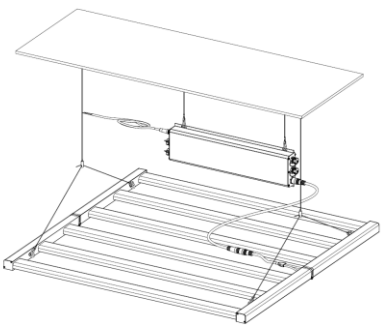
Warning! Avoid winding the power cords tightly as it may ultimately break the casing and expose the wires.

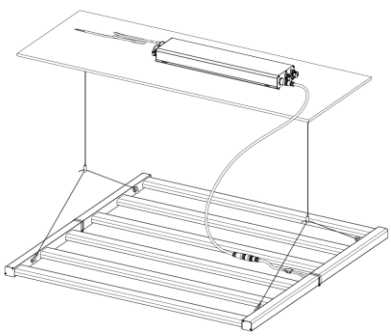
Warning! DO NOT use the power cord as a part of the hanging infrastructure. Avoid putting too much load on the cord as it is not rated to support the weight of the fixture. Putting too much load onto the cord could result in pulling the wires out of the end cap, which may result in electric shock.

Caution! Always hang the LED fixture horizontally

Examples of possible fixture mountings are shown below:







FIXTURE INSTALLATION (continued)

To hang the fixture, use the hanging cords provided: Type-A or Type-B

1. Prepare and identify the mounting method and mounting structure to be used to hang the fixtures, prior to attempting to install.

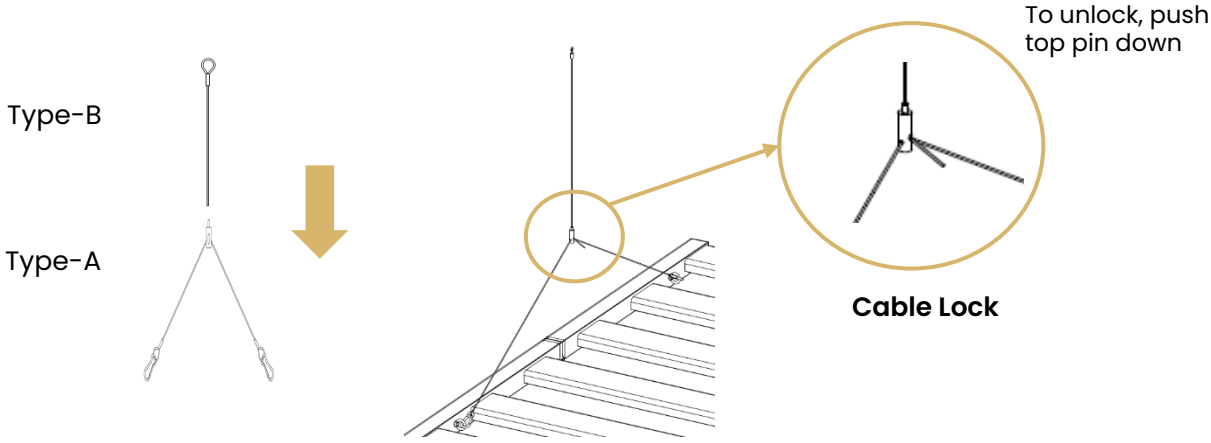
   Caution! Fixture is heavy – when mounting, please ensure the mounting method can support the fixture weight.

2. Remove the Type-A cords from the accessories package.

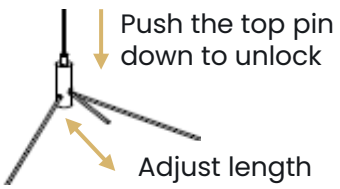
3. Uncoil the two Type-A cords.

Type-A

4. Feed the plain ends of the Type-B cords into the cable locks on the Type-A cords. Push down on the cable lock's top pin to feed wire into cable lock.



5. Adjust the desired lengths between the loop end of the Type-B cables and the cable locks on the Type-A cables. The final adjusted lengths of both sets of the Type-A to Type-B configuration need to be of the same size to ensure the fixture is hung level.

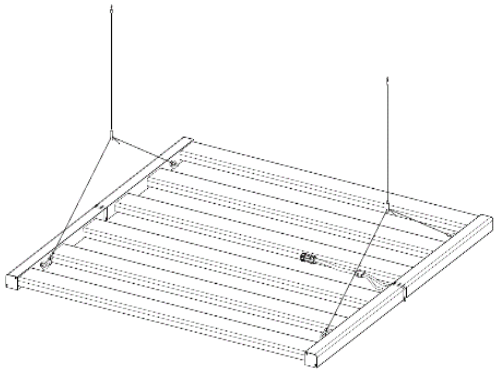


FIXTURE INSTALLATION (continued)

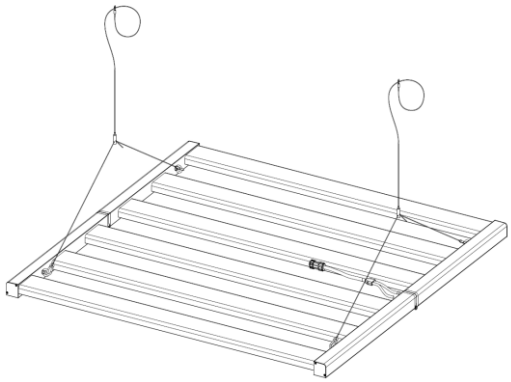
6. Lock the Type-B to Type-A cable position by releasing the lock pin on the Type-A cable lock.

7. Use the loop end of the Type-B cables to attach to mounting surface

8. Using the carbines on the Type-A cables, clip the four carbines into the four mounting eyelets on the fixtures



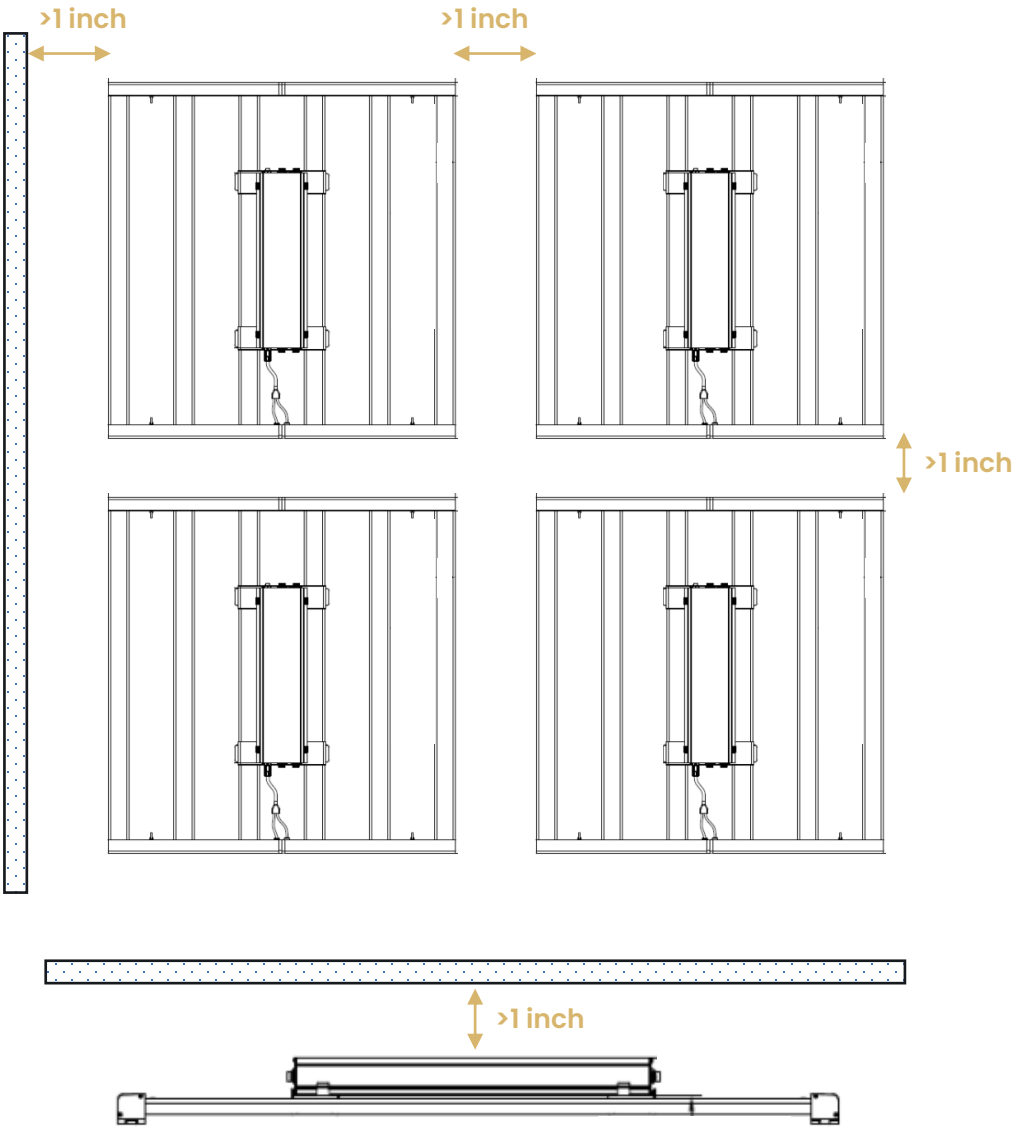
Alternatively, instead of using the loop ends of the Type-B cables to attach to the mounting structure, the plain end of the type-B cable can be looped through the loop end of the Type-B cables prior to feeding into the cable locks to create a larger loop that maybe used.



FIXTURE INSTALLATION (continued)

Installing Multiple Fixtures:

When installing multiple fixtures, a minimum gap of 1 inches need to be maintained between two light fixtures and other interfaces such as walls, ceilings and movable partitions.



MAINTENANCE & REGULAR USE

Warning! Disconnect the LED fixture from the electrical main before performing any maintenance or repairs.

Warning! Do not connect or disconnect the LED fixture when in operation.

Warning! Do not open or disassemble the LED fixture, it contains no serviceable parts inside. Opening the LED fixture can be dangerous and will void the warranty.

Warning! Always wait a minimum of 30 minutes for the LED rails and driver enclosure to cool down before touching any part of the fixture.

Warning! Risk of electrical shock. To reduce the possibility of serious injury, always take the proper precaution and unplug the fixture before moving or cleaning.

Warning! The fixture and power supply are UL1598 Wet Location rated but are not designed to be submerged in water. If the driver or power supply enclosure becomes submersed, first disengage the circuit i breaker, and unplug submersed components from before proceeding to remove from water.

Caution! Do not clean the LED fixture with detergents, abrasives, or other aggressive substances.

Caution! Regularly check the LED fixture for dust or dirt buildup and clean if necessary. Contamination may cause overheating and decreased performance. Clean the outside of the LED fixture using a dry or damp cloth.

Caution! Regularly check the cables of the LED fixture to ensure they are not damaged.

Caution! Electrical surges are sudden spikes in electricity from your electrical circuits. Even though surges last for a fraction for a second, it can take a massive toll on all electrical appliances and devices that may be connected to the circuit. Surges may cause wires and components to overheat, melt, an/or lead to short circuits, all of which are destructive to the LED components. Although our LED lights can last week over 50,000 hours, an electrical surge can cut that life short or even end it entirely in less than a second. The time to protect your LED lights is during install to take advantage of the long lifespan that they provide.

Caution! The LED fixture is very bright. To prevent eye damage, avoid looking directly at the LEDs with unshielded eyes.

Caution! To reduce the risk of overheating or fire, never place operating fixture face down on a flush surface. Always allow for adequate ventilation of fixtures and power supplies.

STORAGE & DISPOSAL

This product must not be discarded as unsorted municipal waste but must be collected separately for the purpose of treatment, recovery, and environmentally sound disposal.

Both lighting upgrades and routine maintenance may entail the removal of light engine from the system. This product must be disposed of according to local, state, and federal regulations; if they conflict, then the stricter regulations must be obeyed.

Storage may be territory-specific. Please refer to your local region for the guidelines.

WARRANTY

5 Year Limited Warranty:
Agrify Corporation warrants its Model R Premium Pro Horticultural LED lighting fixture to be free from defect in materials and workmanship from the date of purchase for the specified warranty period when used as directed. Failure to comply with product warnings and instructions shall void the warranty. This warranty does not cover product subject to accident, neglect, abuse, misuse, or acts of God. If the product fails to operate according to the warranty, return product to place of purchase with proof of purchase data and Agrify will replace with the same or similar product free of charge.

The above is a synopsis of the Agrify warranty statement. The complete warranty statement including return information is available upon request from the following contacts:

Facebook: facebook.com/agrifycorp

Twitter: twitter.com/agrifycorp

LinkedIn: linkedin.com/company/agrifycorp

YouTube: @agrifycorp