



Lyda System Lamp Head and LED Driver Installation and User Manual

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Overview

The Lyda System is comprised of a lamp head and a LED driver that is flexibly suited for horticultural and other commercial applications.

The lamp head features solid-state, long-life LEDs in a bar style head that is equipped with the latest generation of 5000K sun spectrum or white plus deep red LEDs. The lamp head narrow bar design is ideal to limit shading of crops when used in greenhouses and is powerful enough to be used as overhead lighting. The Lyda lamp head is water-resistant (IP66), convection-cooled, and can be linked together lengthwise to form a long and uniform strip of light.

The LED driver provides power to the Lyda lamp head and is suitable for mains power input in the range of 100-277 VAC, 50/60 Hz. It is dimmable using a 1-10 V input or by using an optional DMX Adapter that is also powered by the LED driver.

The lamp head operates at 100% intensity when installed without an external controller. When used with the DMX Adapter accessory or a third-party 1-10 V controller the lamp head can be dimmed from 10-100%, or dimmed-to-off. A lamp head when off results in a minimum quiescent standby power of less than 0.5 W.

Suspend the lamp head with chain (or a suitable alternative) or suspend multiple lamp heads linked together in a row, creating a linear array. The light output can be installed projecting downward, horizontally sideways for interlighting applications, or built-in to a shelving system. The LED driver must be secured to the support structure within 3 m (10 ft) of the Lyda lamp head.

Safety

Lyda products are intended for professional use only. Read the entire user manual before using this equipment.







WARNING: RISK OF ELECTRIC SHOCK! Circuits that are installed without an accessible power disconnect device cannot be serviced or operated safely.

AVERTISSEMENT : RISQUE DE DÉCHARGE ÉLECTRIQUE! Il est imprudent d'utiliser ou de réparer les circuits installés sans qu'un dispositif de déconnexion de l'alimentation ne soit accessible.

Lyda LED Driver

- UL Class 1 apparatus. This equipment must be grounded. Équipement classe 1. Cet équipement doit être liée à la terre.
- The LED driver is suitable for damp locations. Prevent direct water flow on the LED driver. Do not install any Lyda system component underneath the irrigation system.
- The LED driver is not serviceable. Do not disassemble the driver in any way.

	Independent lighting control gear	Appareil de contrôle d'éclairage indépendant.
	Safety extra low voltage device	Dispositif de sécurité à très basse tension
	The driver for this product prevents overheating by ensuring that the product temperature does not exceed this value.	Le pilote de ce produit empêche la surchauffe en s'assurant que la température du produit ne dépasse pas cette valeur.
	This product should not be discarded as unsorted waste but must be sent to separate collection facilities for recovery and recycling.	Ce produit ne doit pas être jeté avec les déchets ménagers mais doit être déposé dans une collecte de déchets électroniques ou dans un point de collecte.



CAUTION: Risk of personal injury and/or product damage. Handle the LED driver carefully. Do not lift or move the driver using the input or output wires.



CAUTION: RISK OF SHOCK - Do not make or break connection under load.
ATTENTION : RISQUE DE CHOC ELECTRIQUE - Ne pas brancher ou débrancher sous charge.



WARNING: Do not use this fixture with a damaged power cable (cord set). If the cable is damaged, it must be replaced by a qualified technician with an equivalent type before use. Contact your local authorized dealer for spare.

AVERTISSEMENT : N'utilisez pas ce luminaire si le câble d'alimentation est endommagé (cordon amovible). Tout câble endommagé doit être remplacé avant utilisation par un câble de type équivalent par un technicien qualifié. Contactez votre revendeur agréé local pour une pièce de rechange.

Lyda Lamp Head

- Do not install the lamp head against walls or ceilings. Suspend the lamp head in free-air to allow for proper convection cooling.
- The Lyda lamp head is suitable for damp locations. Prevent direct water flow on the lamp head. Do not install any Lyda system component underneath the irrigation system.



Note: *For use with the approved power source only.*

The light source in this lamp head is not user-replaceable and must be replaced only by a qualified technician. Contact your RAYN Growing Systems provider for assistance.

	Do not stare at the operating light source.	Ne pas regarder la source de lumière lorsqu'elle fonctionne.
	The luminaire must be installed at least 0.1 m (4.0 in) away from all lighted objects.	Le luminaire doit être installé à au moins 0,1 m (4,0 po.) de tout objet éclairé.
	This product should not be discarded as unsorted waste but must be sent to separate collection facilities for recovery and recycling.	Ce produit ne doit pas être jeté avec les déchets ménagers mais doit être déposé dans une collecte de déchets électroniques ou dans un point de collecte.
	This product meets the safety requirements specified for Class III according to IEC 60536.	Produit à Protection Classe III Très basse tension conforme à la norme IEC 60536.
	The product input or output is suitable for direct current only.	L'entrée et la sortie de ce produit convient uniquement au courant continu.

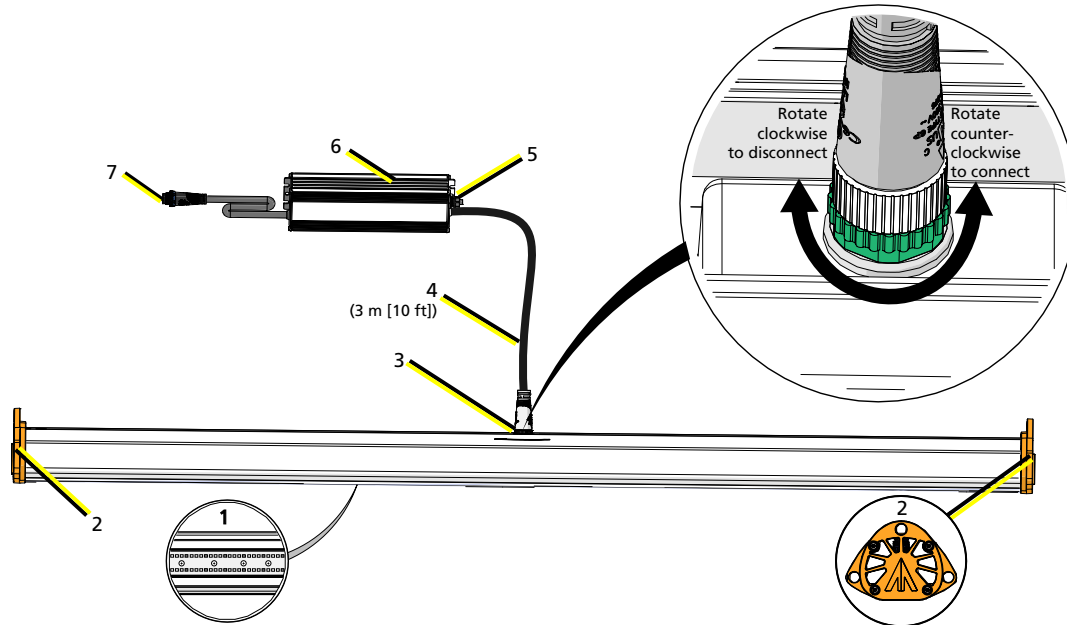


CAUTION: Do not make or break connection under load.

ATTENTION : Ne pas brancher ou débrancher sous charge.

System Overview

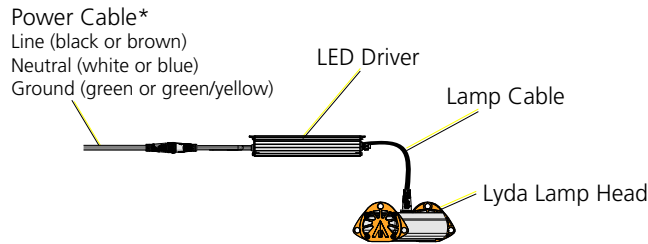
The Lyda lamp head ships complete with the LED driver and a lamp cable. A regional specific power cable is available for connection of the LED driver to the mains power. See [Accessories on page 7](#).



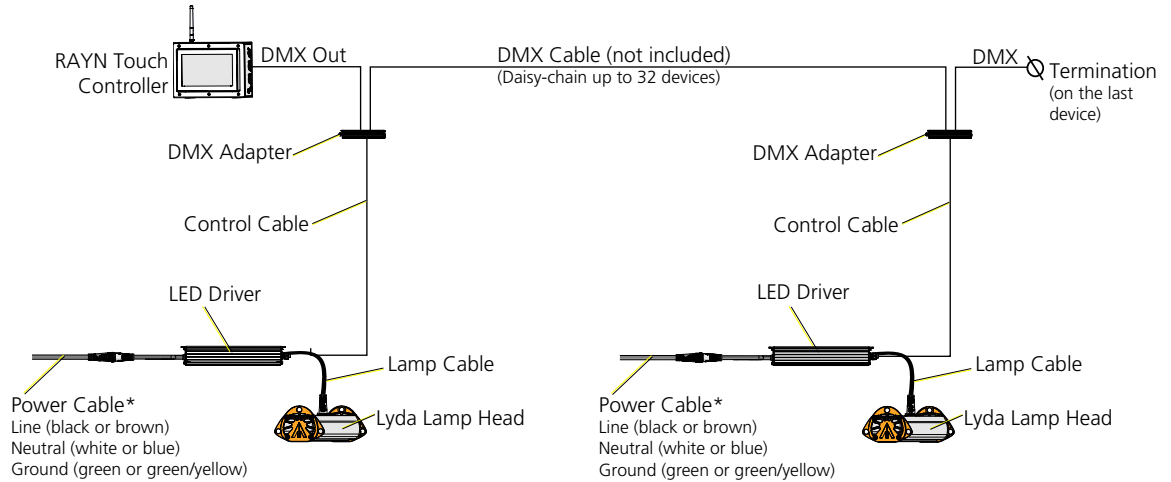
ID	Description	Notes
1	LEDs	Available in Sun Spectrum (5000K) LEDs or White plus Deep Red LEDs
2	Suspension Points	Each end cap offers three suspension points. One on top for straight down installation, and two others for sideways installation. The lamp head must be supported on both ends when installed.
3	Lamp Cable Input	Attach the lamp cable from the LED Driver to the lamp head input receptacle. <ul style="list-style-type: none"> • Rotate the locking ring counter-clockwise to connect the Lamp Cable to the lamp head. • Rotate the locking ring clockwise to disconnect the Lamp Cable from the lamp head.
4	Lamp Cable	The lamp cable between the driver and the lamp head is provided (3 m [10 ft]).
5	1-10 V Dimming Input	Optional use for dimming control. Remove the protective cover for connection of a DMX Adapter or a third-party 1-10 V dimming controller.
6	LED driver	The power source for one Lyda lamp head and auxiliary power for the DMX Adapter accessory. See Electrical for details.
7	Input Power Cable Adapter	Attachment point for a regional specific power cable. Available with regional specific connector or bare ends. See Accessories for details.

Sample Systems

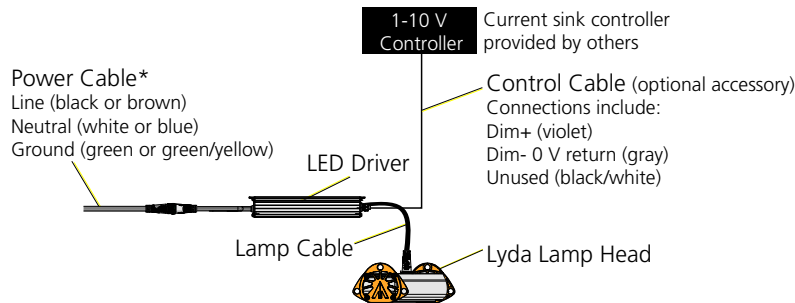
Lyda System with Mains Power



Lyda System with DMX Dimming



Lyda System with 1-10 V Dimming



*Bare end power cable shown. See [Accessories](#) for power cable options with a regional specific connector.

Cabling System

The Lyda lamp head ships with the cables required for On/Off operation utilizing mains power.

Provided cables per lamp head include:

- a 3 m (10 ft) lamp cable connects between the LED driver and the lamp head
- an input power cable connects mains power to the LED driver

See [Electrical on page 9](#) for details about the input power required and see [Accessories on the facing page](#) for information on cable lengths available as standard. Coordinate your system requirements with your RAYN Growing Systems provider.



Note: *Cables must be installed so that they are visible over the entire length. Concealing of the cables within walls, floors, ceilings or above suspended or dropped ceilings is not allowed. Cables must be installed so they are not subject to strain or damage.*

DMX Dimming

When utilizing the DMX Adapter to control the lamp head by a DMX control source, connect the control cable provided on the DMX Adapter to the LED driver auxiliary input.

This connection allows the LED driver to power the DMX Adapter and passes the control signal from the DMX control source to control the Lyda lamp head for dimming control with 10% to 100% intensity and Off.

1-10 V Dimming

The LED driver auxiliary input is 1-10 V current source, therefore the connected control device must be capable to sink current.



Note: *When utilizing a third-party 1-10 V controller, order a bare-end control cable (see [Accessories](#) for ordering details).*

Connect the control cable between the LED driver auxiliary input and the 1-10 V controller. This connection allows the LED driver to power the DMX Adapter and passes the control signal to the Lyda lamp head for dimming control with 10% to 100% intensity and Off for an input signal below 0.5 V.

Accessories

Model	Part Number	Description
L-PCEU	W6688	Power Cable, Shuko CEE 7/7, 1.8 m (6 ft) length
L-PCUK	W6689	Power Cable, UK 13 A BS1363, 1.8 m (6 ft) length
L-PCUS	W6690	Power Cable, US NEMA 5-15P, 1.8 m (6 ft) length
L-PCBEUS	W6691	Power Cable, Bare Ends US Color Code, 1.8 m (6 ft) length
L-PCBEIEC	W6692	Power Cable, Bare Ends IEC Color Code, 1.8 m (6 ft) length
L-LNM	7431K1002	Lens, Medium (60°)
L-LN00	7431K1004	Lens, Flat (120°)
L-DRIVER	7131K1005	LED driver (Replacement)
L-DMX	7431K1006	DMX Adapter
MXLR5TERM	SGE1507	DMX Terminator, 5-pin XLR Plug
L-DCBE	W6702	1-10 V Dimming Cable, Bare Ends

Specifications

Environment

Product	Ambient Temperature	Relative Humidity	Protection
Lyda lamp head	-10°C to 35°C (14°F to 95°F) storage maximum is 45°C (113°F)	20-100%, condensing, non-corrosive, sulfur residue free	suitable for damp locations
LED driver	-40°C to 55°C (-40°F to 131°F) storage maximum is 85°C (185°F)	10-100%, condensing, non-corrosive	suitable for damp locations
DMX Adapter	-40°C to 70°C (-40°F to 158°F) storage maximum is 85°C (185°F)	5-100%, condensing, non-corrosive	suitable for damp locations

Weights and Dimensions

Product	Weight		Dimensions		Notes
	kg	lb	mm	in	
Lyda lamp head	2.3	5	1027x104x75	40.4x4x3	Installs suspended
LED driver	1.05	2.3	218x68x39	8.6x2.7x1.5	Includes mounting flange
DMX Adapter	0.2	0.4	90x38x27	3.5x1.5x1.0	Includes mounting flange

Clearance

- Lamp heads can be ganged together lengthwise, but do not install the Lyda lamp head against walls or ceilings. Ensure a minimum clearance of 50 mm (2 in) between the lamp head and other objects such as other lights, the ceiling, or wall surface for proper cooling.
- Suspend the lamp head in free-air to allow for proper convection cooling.

Electrical



Note: *Installation must follow all national and local codes for electrical equipment.*



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LED Driver

100-277 VAC, 50/60 Hz input

	120 VAC	220 VAC	277 VAC
Power Factor	0.99	0.98	0.95
Input AC Current	2.54 A	1.34 A	1.02 A
Inrush Current (I^2t)		4.39 A ² s	
Standby Power	0.5 W max		
Typical Efficiency	89.5%	92.5%	93%

- The LED driver is a UL Class I apparatus. This equipment must be grounded.
- The LED driver is provided with a suitable power input cable. The power input cable is available with bare ends (US or IEC models available) or with a regional specific connector. See [Accessories on page 7](#) for ordering details.

The LED driver supports the following output products:

- one Lyda lamp head (~220 W, 60 VDC)
- one DMX Adapter available from RAYN Growing Systems (see [Accessories](#) for ordering information) or a 1-10 V dimming controller (by others) utilizing sink current (0.5 mA maximum).

Lyda Lamp Head

Power is supplied directly from the provided LED driver using the specialized lamp cable provided.

Class II, SELV, 60 VDC maximum, 220 W maximum, 4.2 A maximum.



Note: *For use with the approved power source only.*

DMX Adapter

Power is supplied directly from the provided LED driver using a specialized control cable provided on the DMX Adapter.

The DMX address is set remotely from a compatible RDM controller.

Optical

The Lyda lamp head features 120° beam angle as standard (no lens installed). A 60° medium beam spread lens is available for field-installation and a 120° flat lens is available in cases where additional protection is desired for the face of the lamp head. See [Accessories](#) for ordering information and see [Install Lens on page 17](#) for installation instructions.

Heat Dissipation

Product	Watts	BTUs
Lyda lamp head	144	491
LED driver (L-DRIVER)	22	75
DMX Adapter (L-DMX)	1	3.4

Radiant Flux

The photosynthetic photon flux of the Lyda lamp head depends on the model ordered:

Model	μmol/s	Lumens	CRI
Lyda Luminaire White + Deep Red LEDs (LYDA WDR)	518	31,300	92.5
Lyda Luminaire 5000K Sun Spectrum LEDs (LYDA 5000)	396	22,000	>95

Before You Begin Installation

- Prior to installation, review all safety information. See [Safety on page 2](#).
- Review the [Environment](#) information.
- When linking the lamp heads together lengthwise, always secure them at both ends.
- Ensure the installation location and installation hardware can support four times the weight of the lamp head, cables, and any installed accessories. See [Weights and Dimensions on page 8](#).

Installation



WARNING: Risk of electric shock! This device utilizes high voltage and should only be installed by a qualified installer or electrician. Follow all local codes for installation. Before terminating the AC power wiring verify that the main breaker is in the off position and follow the proper lockout/tag out procedures per NFPA Standard 70E or applicable local regulations.

AVERTISSEMENT : Risque de décharge électrique! Cette appareil utilise une haute tension et ne doit être installé que par un installateur qualifié ou un électricien. Suivez tous les codes locaux pour l'installation. Avant de raccorder le câblage du courant alternatif, vérifiez que le disjoncteur principal est en position d'arrêt et suivez les procédures de Consignation/Déconsignation prescrites par la norme NFPA 70E ou aux réglementations locales applicables.



Note: *For North American installation, lamp head and LED Driver power cables shall be installed so that they are visible over the entire length (as opposed to the building infrastructure cables or conduit). Concealing of the cables within walls, floors ceilings or above suspended or dropped ceilings is not allowed. Cables shall be installed so they are not subject to strain or damage.*

Install the Lyda Lamp Head

The Lyda lamp head can be mounted by suspension or by a mounting bracket in a horizontal (X) or vertical (Y) orientation using the end caps as the attachment points (mounting hardware not provided).

Each end of the lamp head must be secured. Lamp heads may be linked together at the ends, end cap to end cap, and may share the same suspension chain (or suitable alternative) at that point.

The lamp head can be installed projecting downward, horizontally sideways for interlighting applications, or built-in to a shelving system with suitable clearance. See [Clearance on page 8](#).



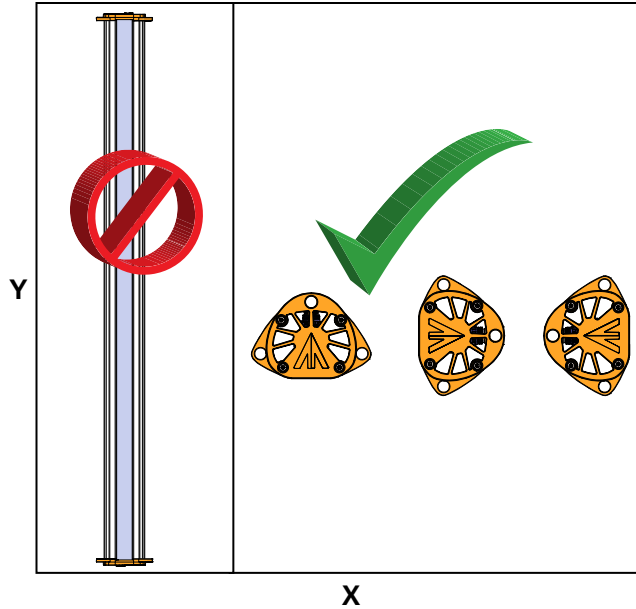
Note: *The lamp head must be installed within 3 m (10 ft) of the LED driver.*

1. For installation convenience, install factory accessories, such as a lens accessory, prior to suspending or attaching the lamp head to the installation location.

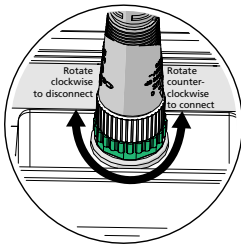
- Each end cap is provided with three mounting holes (10 mm [3/8 in] Ø) for directional suspension. Attach mounting hardware (not provided) to the suspension points (each end cap must be supported). You can interlock (link) end caps together, sharing a suspension point between two linked end caps, creating linear arrays of the lamp heads.



CAUTION: *For effective convection cooling and to prevent overheating, do not install the lamp head vertically on its end.*



- If the LED driver has been previously installed, connect the lamp cable from the driver to the Lyda lamp head. The connection is secured by rotating the locking ring counterclockwise until finger tight. If the LED driver is not yet installed, see [Install the LED Driver on the facing page](#) for instructions.



CAUTION: *Do not make or break connection under load.*
ATTENTION : *Ne pas brancher ou débrancher sous charge.*

Install the LED Driver



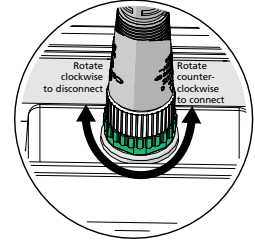
Tip: Before You Begin

- See the [System Overview](#) for example systems.
- Install the related products including the Lyda lamp head and optional DMX Adapter prior to installing the LED driver.



CAUTION: Risk of personal injury and/or product damage. Handle the LED driver carefully. Do not lift, suspend, or move the driver using the input or output wires.

1. Using M4 (#8) hardware, secure the LED driver to a suitable structure using the built-in mounting flange. The installation location must be within 3 m (10 ft) of the desired Lyda lamp head installation location.
2. Connect the lamp cable from the LED driver to the installed Lyda lamp head. The connection is secured by rotating the locking ring counterclockwise until finger tight.
3. Connect the control cable (optional use for 1-10 V dimming control).
 - If using the DMX Adapter, connect the control cable from the DMX Adapter to the input connector on the LED driver.
 - If using a third-party 1-10 V controller, connect the 1-10 V Dimming Cable (L-DCBE) to the connector provided on the LED driver and terminate the bare end wires to the third-party dimming controller.



Purpose	Wire Color	Notes
Dim +	violet	1 to 10 V
Dim -	gray	0 V Return
Unused	black/white	This wire is not used for third-party 1-10 V controller purposes

4. Connect the LED driver to the power source. If using a connectorized power input cable, simply plug the unit into the distributed power input receptacle. If using a bare end power input cable, terminate the wiring according to the cable type and local codes.

Model	Type	Color
Power Cable, US Color Code	ground/earth	green
	line	black
	neutral	white
Power Cable, IEC Color Code	protective earth	green/yellow
	line	brown
	neutral	blue

Install the DMX Adapter

The DMX Adapter converts DMX signal to 1-10 V dimming signal and connects to the LED driver for dimming control (10-100% with dim-to-off and low quiescent current below 10%) of the Lyda lamp head.

The DMX Adapter conforms to ANSI E1.11 USITT DMX 512-A.



CAUTION: Risk of product damage. Handle the DMX Adapter carefully. Do not lift, suspend, or move the device using the wires.

1. Using M4 (#8) hardware, secure the DMX Adapter to a suitable structure using the built-in mounting flange. The installation location must be within 15 cm (6 in) of the LED driver installation location.
2. Two DMX cables with 5-pin XLR connectors are provided for connection to the DMX control system. One for DMX In (pin-style connector) and one for DMX Thru (socket-style connector). Make the connections accordingly. See [Lyda System with DMX Dimming on page 5](#) for example system topology. Contact your RAYN Growing Systems provider for additional system design guidance.



Note: The XLR connectors provided are factory terminated as follows:

	Pin	Use
	1	Common (shield)
	2	Data-
	3	Data+
	4	not connected
	5	not connected

Up to 32 DMX Adapters (or other DMX devices) are allowed on a single control run. You must terminate the last device in the control run with a 120 ohm resistor (connected between pins 2 and 3 (DMX- and DMX+) to prevent signal reflections or install a DMX Terminator Plug on the last device DMX through connector (see [Accessories](#) for ordering information).

3. If the LED driver has been previously installed, connect the control cable from the DMX Adapter to the auxiliary input on the LED driver. If the LED driver is not yet installed, see [Install the LED Driver on the previous page](#) for instructions.

Power Up Procedure



WARNING: RISK OF ELECTRIC SHOCK! Circuits that are installed without an accessible power disconnect device cannot be serviced or operated safely.

AVERTISSEMENT : RISQUE DE DÉCHARGE ÉLECTRIQUE! Il est imprudent d'utiliser ou de réparer les circuits installés sans qu'un dispositif de déconnexion de l'alimentation ne soit accessible.

1. Verify all products in the system are installed according to the specifications.
 2. Check all connections to ensure the connectors are secure.
 3. If not already completed, connect the provided power input cable to the source.
 4. Apply power to the main circuit. As the unit powers up:
 - If no external control (DMX Adapter or third-party 1-10 V controller) is installed, the Lyda lamp head will illuminate to 100% output.
 - If external control is installed, the Lyda lamp head will illuminate to the output level signaled by the controller. Set the appropriate control level on the controller and verify the respective light output.
-



WARNING: Do not use this fixture with a damaged power cable (cord set). If the cable is damaged, it must be replaced by a qualified technician with an equivalent type before use. Contact your local authorized dealer for spare.

AVERTISSEMENT : N'utilisez pas ce luminaire si le câble d'alimentation est endommagé (cordon amovible). Tout câble endommagé doit être remplacé avant utilisation par un câble de type équivalent par un technicien qualifié. Contactez votre revendeur agréé local pour une pièce de rechange.

Operation

The Lyda lamp head receives power and control through the LED driver.

With no external control system, the lamp head has simple On/Off control. You can dim the LED with an external control system, either a DMX control source such as the RAYN Touch controller paired with the DMX Adapter or from a third-party 1-10 V dimming controller.

See the RAYN Touch controller User Manual for details to install and configure the system for control.

Maintenance and Serviceability

To mitigate premature LED failure due to excessive heat, ensure the lamp head is installed within the specifications detailed in [Clearance](#) and [Environment](#) and ensure the LEDs on the lamp head are cleaned regularly from dirt and dust using a lint-free cloth.

The Lyda lamp head, LED driver, and the DMX Adapter (if used) are not user serviceable.



Note: *Do not attempt a repair. Instead, contact your RAYN Growing Systems provider for further assistance. Contact information is available at rayngrowingsystems.com/contact.*

Troubleshooting

LED Driver

To prevent damage to the LED driver, an internal sensor monitors the temperature of the driver and decreases the output current as needed. To mitigate this condition, ensure the LED driver is installed within the specifications detailed in [Environment on page 8](#).

Lyda Lamp Head

To mitigate premature LED aging due to excessive heat, ensure the lamp head is installed within the specifications detailed in [Clearance](#) and [Environment](#).

To prevent damage to the Lyda lamp head, an internal sensor monitors the LED temperature. The lamp head will shut off the LED output when detrimental temperatures are reached. The LEDs will resume normal operation when the LED temperature falls below a healthy level.

Install Lens

The Lyda lamp head ships without a lens installed for the brightest output and largest beam coverage. You can easily field-install a lens accessory to provide a more directed beam. See [Accessories on page 7](#) for available lens options.

You will need a 3.0 mm hex key tool and a #1 Philips head screwdriver for this procedure.



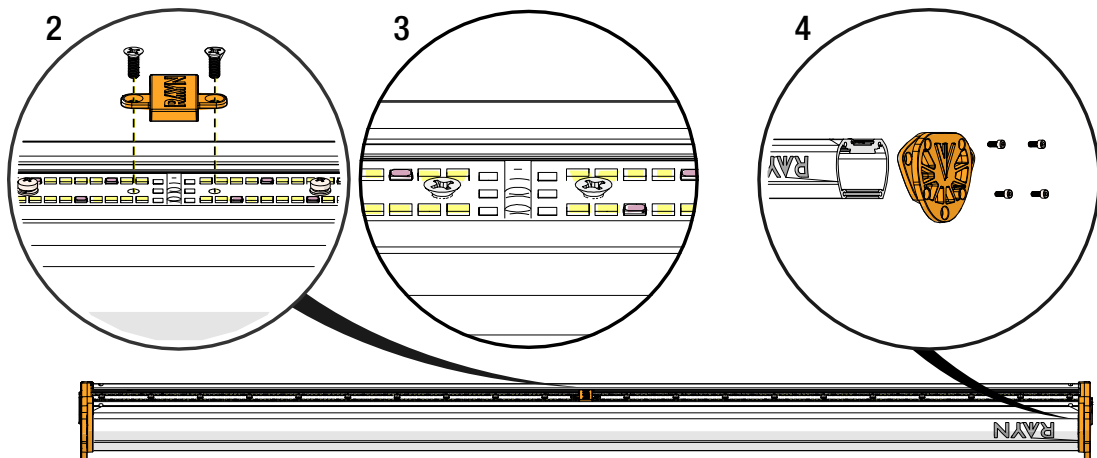
WARNING: RISK OF ELECTRIC SHOCK! Power must be off when you perform this procedure.

**AVERTISSEMENT : RISQUE DE DÉCHARGE ÉLECTRIQUE!
L'alimentation doit être éteinte avant d'exécuter cette procédure.**

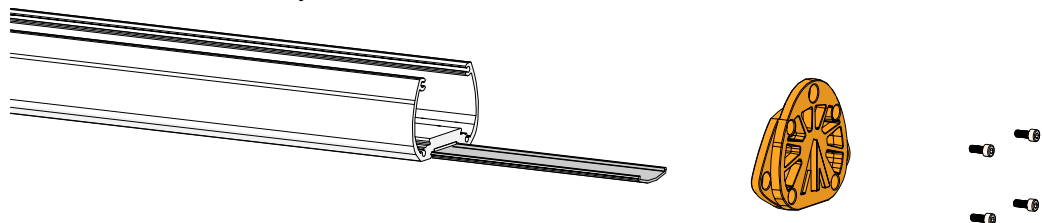


Note: *You will need to remove the end cap for this procedure. Do not attempt this accessory installation with the lamp head suspended. It is best accomplished on a flat work surface with all power and cables disconnected.*

1. Disconnect power to the LED driver and disconnect the Lyda lamp head cable from the LED Driver.



2. Remove the center array cover from the LED face of the lamp head.
3. Reinstall the two screws into the center array.
4. Using a 3.0 mm hex key, remove the four screws securing the end cap to the lamp head enclosure.
5. The lens is convex shaped. Slide the lens into the groove closest to the LEDs with the curve side directed away from the LEDs as shown.



6. Reattach the end cap and secure it in place using the screws previously removed.



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