# Model-One System User Manual

• OVERVIEW

The ThinkGrow Model-One System is a modular grow light system designed to allow users to customize their lighting setup and to provide even lighting for all shape and size spaces. The Model One System combines LED light bars, individual LED drivers and integrated communication & power cords to create a complete lighting system. Growers can plug-and-play FIVE different types of LED bars to further customize their system. Each LED bar is listed at 90 watts of light. Growers can position each of the Model One drivers close together for high PPFD applications like flowering, or space them further apart for small plants and vegetative areas that do not require high PPFD.

The Model-One System provides two types of replaceable LED drivers. The standard model driver called the TLD-2 features 2 channels of control, with each channel controlling a certain type LED diode on the LED bars. The TLD-4 driver offers 4 channels of advanced spectrum control allowing Full spectrum, Deep Red, Far Red and UV diodes to be controlled separately. Using either model will allow growers to change the light spectrum according to the different stages of their plants.
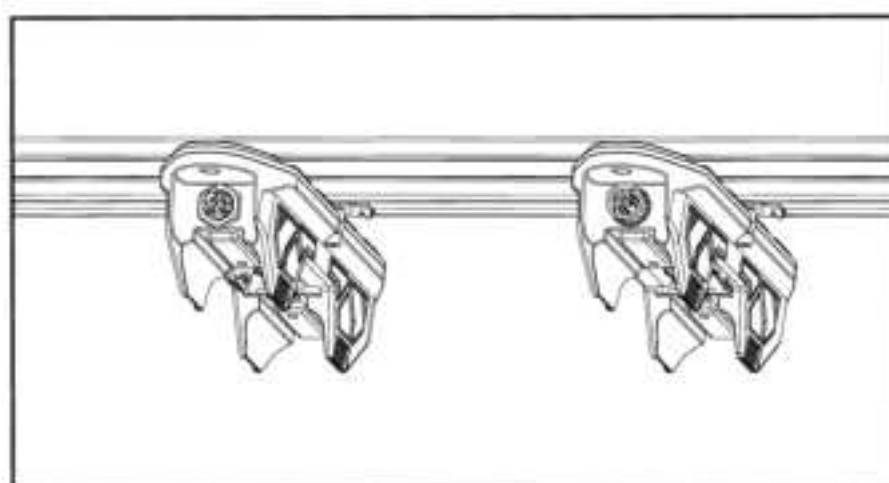
• INSTALLATION
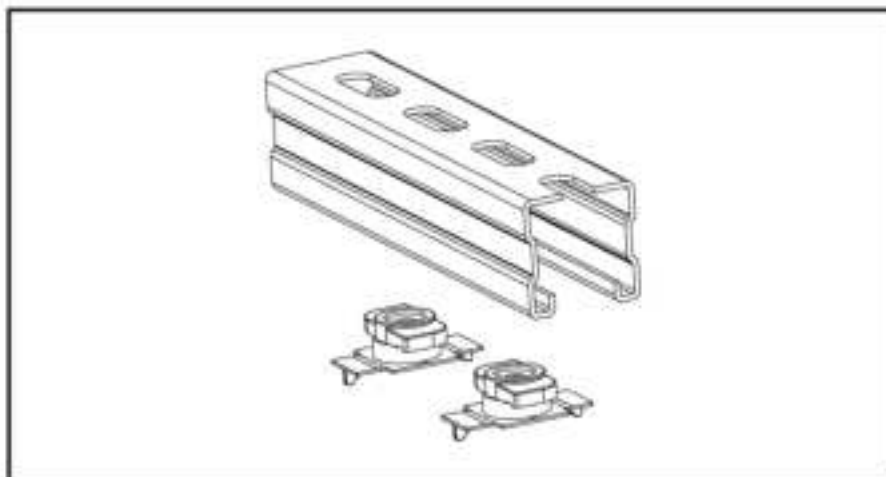
1. Position and install the MQM unistrut nuts securely into the steel C-Channel. Slide them to the correct location to achieve the spacing desired between each LED driver. Twist them 90' counter-clockwise to lock the unistrut nuts in place.
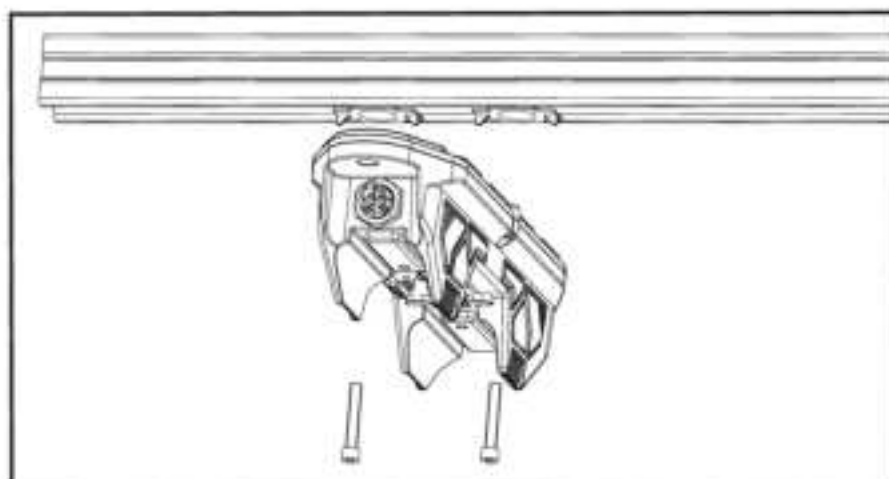
2.Attach the ThinkGrow Light Driver (TLD) to the C-channel steel using the Hex Socket Head Cap Screws.

3.Ensure that the drivers are installed in an alternating pattern so that the male / female TDC cables will match up to the correct connection on the end of the Model One Drivers.

•NOTE: Each group of Model One drivers will be connected to the power source using one of the TDC-240 power cables. The maximum number of Model One drivers that can be connected to the TDC-240 is listed below by supply voltage. DO NOT EXCEED RECOMMENDATIONS.

Maximum number of Model One drivers per different power cable

Voltage	Max No. of TLD-2/4
120V	11 pcs
208V	19 pcs
230V	21 pcs
240V	22 pcs
277V	25 pcs
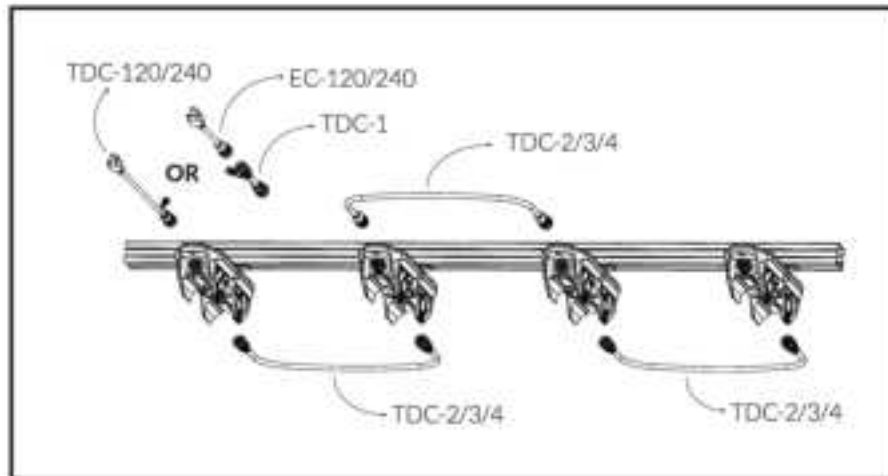
4. To set up the daisy chain configuration, first connect the TDC-120/240 or EC-120/240 and TDC-1 to the input port of the first driver. Users can use an ECS-9 cable to connect the split head of the TDC-120/240 to the controller. After that, start the daisy chain by using the TDC-2/3/4 based on the required cable length. Finally, ensure to plug the TDC-120/240 cable into a power socket to provide the necessary power supply for the connected devices.
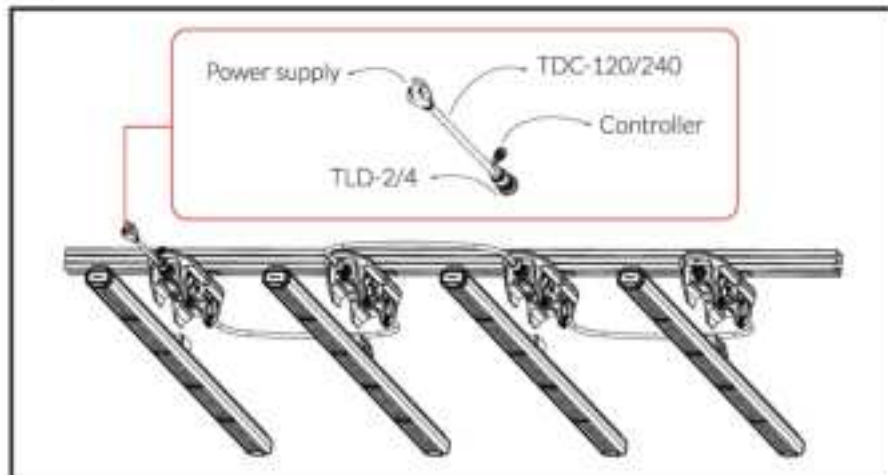
5. Next install the LED bars onto the drivers. Pay attention to the alignment & orientation of the male plug on the LED bar with the female socket on the driver. They must be properly aligned. Apply pressure on the LED bar until you hear a "click" sound confirming it is fully inserted. Ensure each LED bar is inserted fully into the Driver.
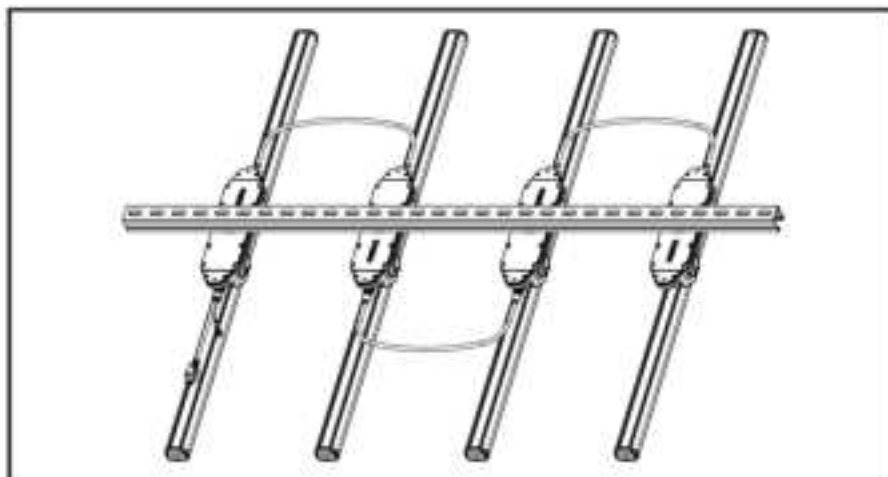
6. When the installation is completed, your LED system should look something like the image above. Ensure all connections and hardware is tight.

MODEL ONE SYSTEM COMPONENTS

Light Drivers

Model One(TLD-2+DR-1)
Horticulture LED Grow Light

Specification

PPF:	> 243 umol/s
Efficacy:	>2.7 µmol/J
Input Power:	90 W
Input Voltage:	100~277VAC / 50/60Hz
Power Factor:	≥96%
Amperage Draw:	0.77A@120V / 0.39A@240V / 0.35A@277V
LED LM Rating and Lifetime:	L90: >54,000 hours
Ingress Protection (IP Rating):	IP56
Working Environments:	Temperature: 32-104°F (0-40°C) Humidity ≤90%
Product Dimensions:	45.35" / 115.2cm (L) x 6.75" / 17.2cm (W) x 5.78" /14.7cm (H)
Product Weight:	4.61 lbs / 2.09 kg
Dimming mode:	RS485
Dimming range:	0-100%
Dimming protocol:	0-10V other
Lighting Scheme:	Indoor Non-stacked and Greenhouse
Use Case:	Supplemental
Lighting Position:	Top Light

Model One(TLD-2+FR-1)
Horticulture LED Grow Light

Specification

PPF:	> 234 umol/s
Efficacy:	>2.6 µmol/J
Input Power:	90 W
Input Voltage:	100–277VAC / 50/60Hz
Power Factor:	≥96%
Amperage Draw:	0.77A@120V / 0.39A@240V / 0.35A@277V
LED LM Rating and Lifetime:	L90: >54,000 hours
Ingress Protection (IP Rating):	IP56
Working Environments:	Temperature: 32-104°F (0-40°C) Humidity ≤90%
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Dimming range:	0-100%
Dimming protocol :	0-10V other
Lighting Scheme:	Indoor Non-stacked and Greenhouse
Use Case:	Supplemental
Lighting Position:	Top Light

Model One(TLD-4+TLB-1)
Horticulture LED Grow Light

Specification

PPF:	> 243 umol/s
Efficacy:	>2.7 µmol/J
Input Power:	90 W
Input Voltage:	100~277VAC / 50/60Hz
Power Factor:	≥96%
Amperage Draw:	0.77A@120V / 0.39A@240V / 0.35A@277V
LED LM Rating and Lifetime:	L90: >54,000 hours
Ingress Protection (IP Rating):	IP56
Working Environments:	Temperature: 32-104°F (0-40°C) Humidity ≤90%
Product Dimensions:	45.35" / 115.2cm (L) x 6.75" / 17.2cm (W) x 5.78" /14.7cm (H)
Product Weight:	4.61 lbs / 2.09 kg
Dimming mode:	RS485
Dimming range:	0-100%
Dimming protocol:	0-10V other
Lighting Scheme:	Indoor Non-stacked and Greenhouse
Use Case:	Supplemental
Lighting Position:	Top Light

Model One(TLD-4+TLB-2)
Horticulture LED Grow Light

Specification

PPF:	> 252 umol/s
Efficacy:	>2.8 µmol/J
Input Power:	90 W
Input Voltage:	100~277VAC / 50/60Hz
Power Factor:	≥96%
Amperage Draw:	0.77A@120V / 0.39A@240V / 0.35A@277V
LED LM Rating and Lifetime:	L90: >54,000 hours
Ingress Protection (IP Rating):	IP56
Working Environments:	Temperature: 32-104°F (0-40°C) Humidity ≤90%
Product Dimensions:	45.35" / 115.2cm (L) x 6.75" / 17.2cm (W) x 5.78" /14.7cm (H)
Product Weight:	5.27 lbs / 2.39 kg
Dimming mode:	RS485
Dimming range:	0-100%
Dimming protocol:	0-10V other
Lighting Scheme:	Indoor Non-stacked and Greenhouse
Use Case:	Supplemental
Lighting Position:	Top Light

90 watt ThinkGrow Model One LED Driver with Two Spectrum Control Channels (TLD-2)

Input Power

Input Power	90W

Input Voltage

Voltage	100~277VAC / 50/60Hz

IP Water Resistance

IP	IP56

Amperage Draw

Amperage Draw	0.77A@120V / 0.39A@240V / 0.35A@277V

Dimensions/Weight

Size	15.15"(L) x 4.07"(W) x 3.58"(H)
Gross Weight	2.03lbs /0.92kg

Package Content

Package Content	1x TLD-2 driver

90 watt ThinkGrow Model One LED Driver with Four Spectrum Control Channels (TLD-4)

Input Power

Input Power	90W

Input Voltage

Voltage	100~277VAC / 50/60Hz

IP Water Resistance

IP	IP56

Amperage Draw

Amperage Draw	0.77A@120V / 0.39A@240V / 0.35A@277V

Dimensions/Weight

Size	15.15"(L) x 4.07"(W) x 3.58"(H)
Gross Weight	2.03lbs /0.92kg

Package Content

Package Content	1x TLD-4 driver

• For use with TrolMaster Agro Instruments Co., Ltd's horticultural LED tube model __ only.
SUITABLE FOR DAMP LOCATIONS
CONVIENT AUX EMPLACEMENTS HUMIDES
ONLY CONNECT TO ADJACENT UNITS
Notice: This control circuit is not isolated-see installation instructions.
10 UNITS MAXIMUM

• À utiliser avec le modèle de tube LED horticole __ de TrolMaster Agro Instruments Co., Ltd uniquement.
CONNECTEZ SEULEMENT À DES UNITÉS ADJACENTES CAUTION – RISK OF SHOCK. DISCONNECT POWER BEFORE RELAMPING ATTENTION – RISQUE
D' ÉLECTROCUTION. DÉBRANCHER L' ALIMENTATION AVANT DE REMPLACER LA LAMPE.
Remarque : Ce circuit de commande n'est pas isolé - voir les instructions d'installation.
MAXIMUM DE 10 UNITÉS

Light Bars

Model One 4' LED Bar with UV Light Spectrum Channel (UV-1)

Input Power
Input Power	90W

Mounting Height
Height	>6" (15.2cm) Above Canopy

PPF
PPF	> 205 umol/s

Dimensions/Weight
Size	45.35"(L) x 2.68"(W) x 2.20"(H)
Gross Weight	1.17kg/ 2.58lbs

Lifetime
Lifetime	L90:> 54,000 hrs

Package Content
Package Content	1x UV-1 light bar

4' LED Bar with 2x Spectrum Channels (Full Spectrum + Deep Red) for Model One System (DR-1)

Input Power
Input Power	90W

Mounting Height
Height	>6" (15.2cm) Above Canopy

PPF
PPF	> 243 umol/s

Dimensions/Weight
Size	45.35"(L) x 2.68"(W) x 2.20"(H)
Gross Weight	1.17kg/ 2.58lbs

Lifetime
Lifetime	L90:> 54,000 hrs

Package Content
Package Content	1x DR-1 light bar

4' LED Bar with 2x Spectrum Channels (Full Spectrum + Far Red) for Model One LED System (FR-1)

Input Power
Input Power	90W

Mounting Height
Height	>6" (15.2cm) Above Canopy

PPF
PPF	> 234 umol/s

Dimensions/Weight
Size	45.35"(L) x 2.68"(W) x 2.20"(H)
Gross Weight	1.17kg/ 2.58lbs

Lifetime
Lifetime	L90:> 54,000 hrs

Package Content
Package Content	1x FR-1 light bar

4' LED Bar with 4x Spectrum Channels
(White+ Deep Red+ Far Red+ UV) for Model One LED System (TLB-1)

Input Power

Input Power	90W

Mounting Height

Height	>6" (15.2cm) Above Canopy

PPF

PPF	> 243 umol/s

Dimensions/Weight

Size	45.35"(L) x 2.68"(W) x 2.20"(H)
Gross Weight	1.17kg/ 2.58lbs

Lifetime

Lifetime	L90> 54,000 hrs

Package Content

Package Content	1x TLB-1 light bar

5' LED Bar with 4x Spectrum Channels
(White+ Deep Red+ Far Red+ UV) for Model One LED System (TLB-2)

Input Power

Input Power	90W

Mounting Height

Height	>6" (15.2cm) Above Canopy

PPF

PPF	> 252 umol/s

Dimensions/Weight

Size	57.36" (L) x 2.68"(W) x 2.20"(H)
Gross Weight	1.47kg/ 3.24lbs

Lifetime

Lifetime	L90> 54,000 hrs

Package Content

Package Content	1x TLB-2 light bar

4' Inner Canopy LED Bar with Built-in 120 Watt Driver (ICL-300)

Input Power

Input Power	120W

Input Voltage

Input Voltage	100-277V, 50/60Hz

PPF

PPF	>314umol/s

Dimensions/Weight

Size	46.21"(L) x 3.60"(W) x 2.64"(H)
Gross Weight	2.8kg/ 6.17lbs

Lifetime

Lifetime	L90> 54,000 hrs

Package Content

Package Content	1x ICL-300 light bar

Specification

PPF:	> 314 umol/s
Efficacy:	>2.6 µmol/J
Input Power:	120 W
Input Voltage:	100~277VAC / 50/60Hz
LED LM Rating and Lifetime:	L90: >54,000 hours
Ingress Protection (IP Rating):	IP56
Working Environments:	Temperature: 32-104°F (0-40°C) Humidity ≤90%
Product Dimensions:	46.21"(L) x 3.60"(W) x 2.64"(H)
Product Weight:	6.17lbs /2.8kg
Dimming mode:	RS485
Dimming range:	0-100%
Dimming protocol:	0-10V other
Lighting Scheme:	Indoor Non-stacked and Greenhouse
Use Case:	Supplemental
Lighting Position:	Top Light

FOR USE WITH TROLMASTER AGRO INSTRUMENTS CO., LTD'S HORTICULTURAL LED DRIVER MODEL __ ONLY.
SUITABLE FOR DAMP LOCATIONS
CONVIENT AUX EMPLACEMENTS HUMIDES
CAUTION – RISK OF SHOCK. DISCONNECT POWER BEFORE RELAMPING

À UTILISER AVEC LE MODÈLE DE PILOTE DE LED HORTICOLE __ DE TROLMASTER AGRO INSTRUMENTS CO., LTD UNIQUE-MENT.
ATTENTION – RISQUE D'ÉLECTROCUTION. DÉBRANCHER L'ALIMENTATION AVANT DE
REMPLACER LA LAMPE.

HORTICULTURAL LIGHTING/ NOT SUITABLE FOR HOUSEHOLD ILLUMINATION.
CONSULT A QUALIFIED ELECTRICIAN TO ENSURE CORRECT BRANCH CIRCUIT CONDUCTOR.

CONSULTER UN ÉLECTRICIEN QUALIFIÉ POUR VOUS ASSURER QUE LES CONDUCTEURS DE
LA DÉRIVATION SONT ADÉQUATS.

Daisy Chain Power Cord

There are 5 cables that can be used with the Model One to make the connections and to provide power to each driver. Each of the TDC cables are used to interconnect drivers together. The EC-240 240-volt cable is a main power cable that connects to each group of drivers.

Splitter Power Cord for Model One LED System AWG #18 (TDC-1)

Each "group" of Model One drivers must be connected to power using one of the TDC-1 cables, and an EC-240 power cable. Cables are ordered separately as required for each installation.

AWG		Length		Amp	
AWG	18	Length	15cm / 5.9"	Amp	10A

Input Voltage		Temperature Range	
Input Voltage	100-277V~, 50/60Hz	Temp	32~104 T

1ft AWG #18 Daisy Chain Cord for Model One LED System (TDC-2)

The TDC-2 is a 1ft long interconnecting cable.

AWG		**Length**		**Amp**	
AWG	18	Length	1'	Amp	10A

Input Voltage		**Temperature Range**	
Input Voltage	100-277V~, 50/60Hz	Temp	32~104 °F

2ft AWG #18 Daisy Chain Cord for Model One LED System (TDC-3)

The TDC-3 is a 2-ft long interconnecting cable.

AWG		**Length**		**Amp**	
AWG	18	Length	2'	Amp	10A

Input Voltage		**Temperature Range**	
Input Voltage	100-277V~, 50/60Hz	Temp	32~104 °F

7ft AWG #18 Daisy Chain Cord for Model One LED System (TDC-4)

The TDC-4 is a 5-ft long interconnecting cable.

AWG		Length		Amp	
AWG	18	Length	7'	Amp	10A

Input Voltage		Temperature Range	
Input Voltage	100-277V~, 50/60Hz	Temp	32~104 ℉

7ft Splitter Power Cord for Model One LED system AWG #18 with NEMA 5-15 plug (TDC-120)

Input Voltage		Length		Amp	
Input Voltage	120VAC, 50/60Hz	Length	7'	Amp	10A

Temperature Range	
Temp	32~104 ℉

7ft Splitter Power Cord for Model One LED system
AWG #18 with NEMA 6-15 Plug (TDC-240)

Input Voltage

Input Voltage	240VAC, 50/60Hz

Length

Length	7'

Amp

Amp	10A

Temperature Range

Temp	32~104 ℉

7ft Splitter Power Cord for Model One LED system
AWG #18 with CEE 7/7 Plug
(for EU)

Input Voltage

Input Voltage	230VAC, 50/60Hz

Length

Length	7'

Amp

Amp	10A

Temperature Range

Temp	32~104 ℉

* The TDC-120/240/240E cable is required for the Model-One System, but it is not included in the package content, users need to order the TDC-120/240/240E cable separately. TDC-120 is optional for users who want to use 120V while TDC-240 is optional for users who want to use 240V. TDC-240E is designed for Europe plug type.

· SAFETY PRECAUTION

Read the installation and operation instructions carefully before installing and operating this system. Proper adherence to these instructions is essential.

· WARNING

Users are responsible for the connection and safe installation and usage of the system.

Before installing, servicing, or performing routine maintenance follow these general precautions

It is highly recommended to have a certified personnel or licensed electrician to install your system.

If you are unsure about the installation or maintenance of the fixture, consult certified personnel, licensed electrician and check your electrical code.

Tightly secure the system using appropriate mounting hardware to ensure the fixtures are safe to work under. Please read and follow the instructions.

Ensure the building structure, mounting solutions and components being used are rated to support the weight of the system.

DO NOT make or alter the enclosure of internal wiring or the electrical components during system installation.

Turn off the power and unplug the system when you perform any maintenance.

Verify if the electrical system can support the voltage and current requirements correctly by referring to the information on the specification labels.

Avoid hitting, bending or causing mechanical stress to the system.

DO NOT cover or block any part of the system during operation.

To clean the system, use a damp clean cloth and lukewarm water by gently using a clean soft damp cloth.

Always provide a well-ventilated environment where ambient temperatures do not exceed 104℉ (40℃) regardless of whether the fixtures are in operation or not. Excessive temperatures can inhibit performance and may cause damage or shorten the life of the system and void the warranty.

· CAUTION

Read all instructions carefully before installation.

This system is not intended for use by any persons and children with reduced physical, sensory or mental capabilities or lack of experience and product knowledge.

The system is designed to be installed indoors in a space that is protected from rain and flooding.

General maintenance is not required. DO NOT clean the unit, with any chemicals that might cause damage. To clean the unit, use a damp cloth only.

· 5-YEAR LIMITED WARRANTY

ThinkGrow guarantees its LEDs to be free from defects in materials and workmanship. The product features a 5-year warranty from the date of purchase. Misuse, abuse, or failure to follow instructions is not covered under this warranty. The warranty liability extends only to the replacement cost of the product. ThinkGrow will not be liable for any consequential, indirect, or incidental damages of any kind, including lost revenues, lost profits, or other losses in connection with the product. Some states do not allow limitations on how long an implied warranty lasts or the exclusions may not apply to you. ThinkGrow will, at our discretion, repair or replace its products covered under this warranty.

· WARNING

WARNING: DO NOT allow the system to be exposed to water or excessive heat. DO NOT open or attempt to repair or disassemble the LED drivers, or light bar, as there are no user-serviceable parts inside. Opening the system will void the warranty.

If the surface of the system is dirty, wipe it with a dry or slightly damp towel. The system operated under natural ventilation conditions.

AVERTISSEMENT: NE laissez PAS le système être exposé à l'eau ou à une chaleur excessive. NE PAS ouvrir ni tenter de réparer ou de démonter les pilotes de LED ou la barre lumineuse, car il n'y a aucune pièce réparable par l'utilisateur à l'intérieur. L'ouverture du système annulera la garantie.

Si la surface du système est sale, essuyez-la avec une serviette sèche ou légèrement humide. Le système fonctionnait dans des conditions de ventilation naturelle.

For any issues or concerns with our products, DO NOT return them to the store. Please contact our tech support department at support@trolmaster.com or call 877-420-9876.

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