



# PHOTONTEK PTEKM0017 LED Digital Lighting Controller User Manual

[Home](#) » [PHOTONTEK](#) » PHOTONTEK PTEKM0017 LED Digital Lighting Controller User Manual 

## PHOTONTEK PTEKM0017 LED Digital Lighting Controller



## Contents

### 1 INTRODUCTION

#### 1.1 Product Description

### 2 PRODUCT SPECIFICATIONS

#### 2.1 General Product Information

#### 2.2 Technical Specifications

#### 2.3 ENVIRONMENT

### 3 COMPONENTS

### 4 SAFETY RECOMMENDATIONS AND WARNINGS

### 5 INSTALLING THE CONTROLLER & FUNCTIONS

#### 5.1 Preparations

#### 5.2 Setting up the Controller

#### 5.3 Setting pre-set Switch On/Off and light intensity times

### 6 CONTROLLER LED INDICATOR

### 7 PHOTONTEK CONTROLLER TROUBLESHOOTING

### 8 MAINTENANCE AND REPAIR

### 9 ENVIRONMENT AND DISPOSAL

### 10 WARRANTY

### 11 Documents / Resources

#### 11.1 References

### 12 Related Posts

## INTRODUCTION

### Product Description

The PhotonTek LED digital lighting controller uses 0-10V signal protocol to externally control PhotonTek LED grow light fixtures. Using innovative technology, this controller smartly monitors your grow room temperatures and automates light switching timing & intensity, safety-controlled dimming and switching On/Off. Simply connect the controller to your PhotonTek LED fixtures and easily regulate your grow room environment.

Thank you for purchasing the PhotonTek LED digital lighting controller, we are sure you will be satisfied for years to come. Please read and understand this manual before installing and using the controller as it contains all the information necessary to successfully install, use and maintain the product. In this manual the PhotonTek LED digital lighting controller will be referred to as “the controller”.

## PRODUCT SPECIFICATIONS

The PhotonTek LED digital lighting controller is a dual channel digital lighting controller with each of the two channels (Zones) capable of controlling up to 50 PhotonTek LED fixtures. It is possible to use each Zone to control fixtures in two independent separate rooms or to control up to 100 fixtures in one room with two different LED driver types.

### General Product Information

PRODUCT NAME	Photontek LED Digital Lighting
PRODUCT CODE	PTEKM0017
MANUFACTURER	PhotonTek Horticultural Lighting
EAN	5060560031000

### Technical Specifications






CONTROLLER DIMENSIONS (LxWxH)	4.92 x 0.98 x 3.14" (125 x 25 x 80mm)
WEIGHT	9.88oz (280g)
POWER SUPPLY	Adaptor 100 – 277V 50/60 Hz AC to 5V/2A DC
MAX NUMBER OF DRIVERS PER ZONE	50
TOTAL NUMBER OF DRIVERS PER CONTROLLER	100
CONTROLLABLE DRIVER TYPE	All Photontek controllable LED drivers
POWER DIMMING SCOPE (1% INCREMENTS)	10 – 100%
POWER REGULATION ACCURACY	1%
TEMPERATURE-CONTROLLED SAFETY DIMMING RANGE	0°C – 40°C
TEMPERATURE-CONTROLLED SAFETY SWITCH OFF RANGE	10°C – 50°C
SUNRISE & SUNSET DURATION	0 – 30 mins
TURN ON DELAY PROTECTION TIME	0, 5, 10, 15, 20, 25, 30mins

## ENVIRONMENT

**WARNING!** The product may not be exposed to moisture, condensing humidity, contamination or dust.

	OPERATING	STORAGE
TEMPERATURE RANGE (AMBIENT)	-20°C – +40 °C	-40°C – +70
OPERATING HUMIDITY (25°C)	20%- 90% non-condensing	10%- 95% non-condensing

## COMPONENTS

	NAME	QTY	PHOTO	NOTE
<b>A</b>	LED DIGITAL LIGHTING CONTROLLER	1		2 Channel LED Digital Lighting Controller
<b>B</b>	POWER SUPPLY CORD/ADAPTOR	1		100 - 277V 50/60Hz AC to 5V/2A DC
<b>C</b>	LED FIXTURE CONTROL CABLE 16FT (5M)	2		To connect controller to LED fixture
<b>D</b>	TEMPERATURE PROBE 16FT (5M) CABLE	2		Ambient temperature sensor for each zone
<b>E</b>	MOUNTING SCREWS	2		To mount controller on wall

## SAFETY RECOMMENDATIONS AND WARNINGS

**WARNING!** Keep the controller away from fire, excessive heat, water, dust and contamination.

**WARNING!** The PhotonTek LED digital lighting controller may only be used to control compatible PhotonTek fixtures. Do not connect the controller to other products as this may be dangerous and may cause malfunctions in the connected equipment. Doing so will void the warranty.

**WARNING!** Do not open or disassemble the controller, it contains no serviceable parts. Opening the controller will void the warranty.

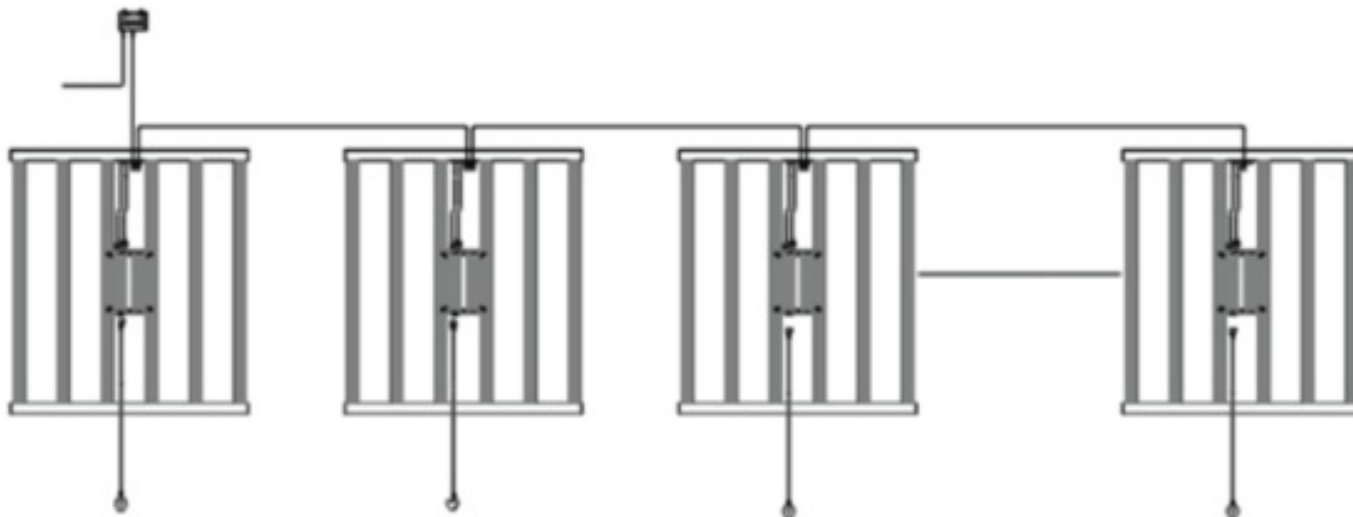
**WARNING!** Make sure the signal cables do not touch the light bars as the passive heat sink fins can get very hot!

## INSTALLING THE CONTROLLER & FUNCTIONS

### Preparations

- 1.** Mount the fixtures as per your lighting plan. Interconnect them as described in the manual for the fixture, using the LED control cable supplied with the controller and a control link cable purchased separately for each additional fixture to be daisy-chain connected in series.
- 2.** Using LED control link cable, connect LED fixture 1 `Signal Out` port (LED fixture `Frame B`) to the `Signal In` port of LED fixture 2.
- 3.** Connect LED fixture 2 `Signal Out` port to the `Signal In` port on LED fixture 3.
- 4.** Daisy-chain connect all remaining LED fixtures in series accordingly.

**5.** Connect the LED fixtures to the mains.



**NOTE!** Each of the controller's two channels (Zone A & Zone B) can control up to 50 LED fixtures. It is possible to use those channels to control LED fixtures in two separate rooms or to control up to 100 fixtures in one room.

**WARNING!** Only Each Channel (Zone) can only control same-powered LED fixtures/drivers; Zone A can control the same-powered LED fixtures as Zone B or Zone B can be set to control different powered LED fixtures eg: Zone A can be set to control 600W LED fixtures and Zone B set to control 465W or 1000W LED fixtures.

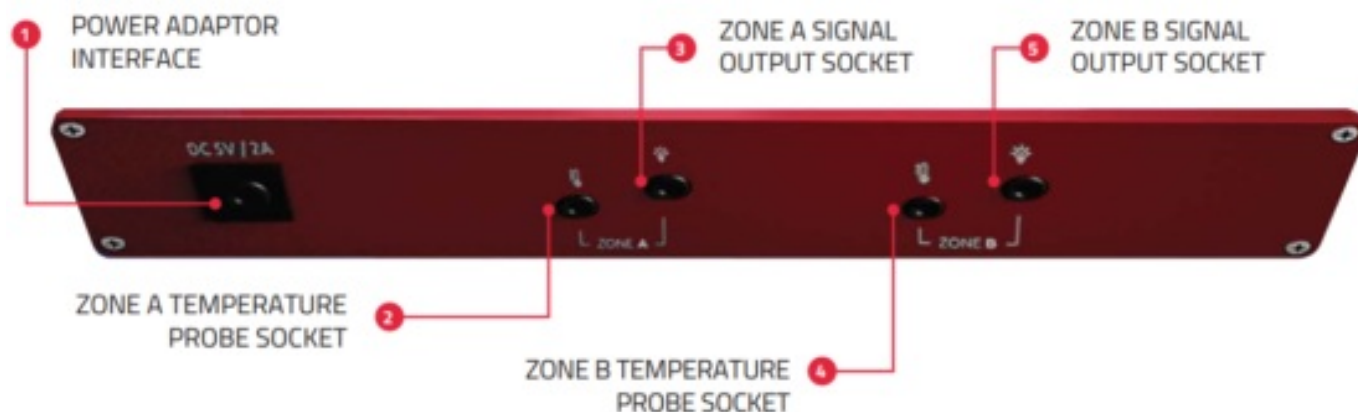
**WARNING!** The controller may only be connected to compatible Photontek fixtures.

**6.** Find a suitable place for the temperature probe and the controller. Hang the probe between the plants at average canopy height and preferably not against the wall. Do not position in direct airflow or light. If you are using another climate control system, hang temp probe close to the probe of that system.

**7.** Position and affix controller to the wall using mounting screws through the mounting loops.

**8.** Connect LED control cable from Zone A/B output port (3) [image of lamp symbol above port on controller] to 'Signal In' port on LED fixture .

**9.** Connect the power input and the temperature probes. The display will light up and you can continue to set up the controller.



## 1. FUNCTION KEYS



**NOTE!** Whilst keying in settings if no operation is performed within 10 seconds the display will revert to Home screen.

## 2. SYSTEM SETTINGS

To set Time and Date to your local time:

The display lights up when the controller is connected to power and displays the **Home** screen

**To set Time and Date to your local time;**

Press **[OK]** and then **[>]** to **System Settings** and **[OK]** to enter.

In **System Settings** page press **[<]or[>]** to **Hour** and **[^]or[v]** to toggle between **24hour** and **am/pm** clock. Press **[OK]** to save.

Press **[<]or[>]** to **Time** and **[^]or[v]** to set time in hours and minutes and **[OK]** to save.

Press **[<]or[>]** to **Date** and **[^]or[v]** to set date in **Month**, **Day** and **Year** and **[OK]** to save.

**To set temperature scale:**

Press **[OK]** and then **[>]** to **System Settings** and **[OK]** to enter

Press **[<]or[>]** to **Temp** and **[^]or[v]** to toggle between **C** (Celsius) or **F** (Fahrenheit). Press **[OK]** to save.

**NOTE** All power output specifications are reported as a percentage of the LED fixture driver nominal power output rating, eg. 75% of 1000W LED fixture driver is 750Watts.

### **3. SETTING ZONE PARAMETERS**

Press **[OK]** to enter **Home** screen

Press **[<]or[>]** to **ZONE A** and **[OK]** to enter

#### **Setting light intensity by selecting power output level:**

In **ZONE A** Press **[<]or[>]** to **Power** and **[^]or[v]** to select required power output and Press **[OK]** to save.

#### **Setting simulated sun rise and set period:**

To allow crops to adjust to either a lights-On period or lights-Off period, a sunrise and sunset period may be set. During this period, the light intensity increases from the lowest dimming level of the fixture up to the desired intensity and the opposite at the lights-Off. The R/S (Rise/Set) period may be set up to 30 minutes.

In **ZONE A** Press **[<]or[>]** to **R/S** and **[^]or[v]** to select required time period in minutes and Press **[OK]** to save.

#### **Setting Auto-dim and safety shutdown temperature parameters:**

Auto-dim and shutdown; if the ambient temperature rises above the set threshold (set in Dim), the LED fixture will firstly be dimmed to minimum dim setting and if the temperature continues to rise and exceeds the second set threshold (set in Stop) the LED fixture will switch Off to prevent crop damage.

In **ZONE A** Press **[<]or[>]** to **Dim** and **[^]or[v]** to select required temperature to engage auto-dim and Press **[OK]** to save.

In **ZONE A** Press **[<]or[>]** to **Stop** and **[^]or[v]** to select required temperature to engage auto-shutdown and Press **[OK]** to save.

#### **Setting Delay time before lights restart after auto-shutdown**

If auto-shutdown has been engaged, the time period after temperature has fallen below set safety threshold and before the LED fixture is switched On, can be set in 5 minute increments from 0 30 minutes.

In **ZONE A** Press **[<]or[>]** to **Delay** and **[^]or[v]** to select required time period in minutes and Press **[OK]** to save.

### **4. SWITCHING ON/OFF & SETTING PRE-SET SWITCH ON/OFF AND LIGHT INTENSITY TIMES**

Switching On/Off only:

Set up Controller System Settings and connect temp sensor Press **[OK]** to enter Home screen.

Press **[OK]** to enter **Home** screen.

Press **[<]or[>]** to **ZONE A** and **[OK]** to enter.



Press [➤] button to **Type** and [^]or[v] to select LED fixture type & [OK] to save.

Press [➤] to **Power** and [^]or[v] to select **100%** & [OK] to save.

Press [➤] to **R/S** and [^]or[v] to select **0min** & [OK] to save.

Press [➤] to **Dim** and [^]or[v] to select temp & [OK] to save.

Press [➤] to **Stop** and [^]or[v] to select temp & [OK] to save.

Press [➤] to **Delay** and [^]or[v] to select **0min** & [OK] to save.

Press [➤] to **NEXT** & [OK] to enter **Zone A time settings** page.

Press [➤] to **1st box** and [^]or[v] to select **unchecked** (no tick mark) to **deactivate** switching/dimming times & [OK] to save.

Press [➤] button to scroll through rest of time settings and **unchecked** (deactivate) all time settings & [OK]

Switch on mains power to fixture and fixture should now be **On** at **100%**.

### To switch OFF:

Press [OK] to enter **Home** screen.

Press [←]or[➤] to **ZONE A** and [OK] to enter.

Press [➤] to **Power** and [^]or[v] to select **0%** & [OK] to save. The LED fixture should now be **Off**.

### Setting pre-set Switch On/Off and light intensity times

The controller has the capacity for up to six different set switching/dimming times per 24 hour period

Press [OK] to enter **Home** screen.

Press [←]or[➤] to **ZONE A** and [OK] to enter.

In **ZONE A** Press [←]or[➤] to **NEXT** and [OK] to enter

**ZONE A time setting**.

In **ZONE A time setting** page; Press [←]or[➤] to first time setting box [check box symbol] and [^]or[v] to toggle between [tick box symbol] to **activate** time setting and [empty box symbol] to **deactivate** time setting.

Press [←]or[➤] to **Hour** and **Minute** settings and [^]or[v] to set time in hours and minutes and [OK] to save.

Press [➤] to **Power** setting and [^]or[v] to set power output and [OK] to save. To pre-set switch **Off**; set **Power** to **0%**.

Repeat '3. Setting Zone parameters' to set up **Zone B**.

## 5. REAL TIME ON/OFF SWITCHING AND ADJUSTING LIGHT INTENSITY:

Ensure all pre-set time settings are de-activated;

Ensure all pre-set time settings are de-activated;

Press [OK] to enter **Home** screen

Press [←]or[➤] to **ZONE A** and [OK] to enter

In **ZONE A** Press [←]or[➤] to **NEXT** and [OK] to enter

**ZONE A time setting**

Press [➤] to 1st **box** and [^]or[v] to select **unchecked** (no tick mark) to **deactivate** switching/dimming times & [OK] to save

Press [➤] button to scroll through rest of time settings and unchecked (deactivate) all time settings & [OK] to save

Return to Zone A page;

Press [OK] to enter **Home** screen

Press [←]or[➤] to **ZONE A** and [OK] to enter

In **ZONE A** Press [←]or[➤] to **Power** and [^]or[v] to select required power output (light intensity) and Press [OK]

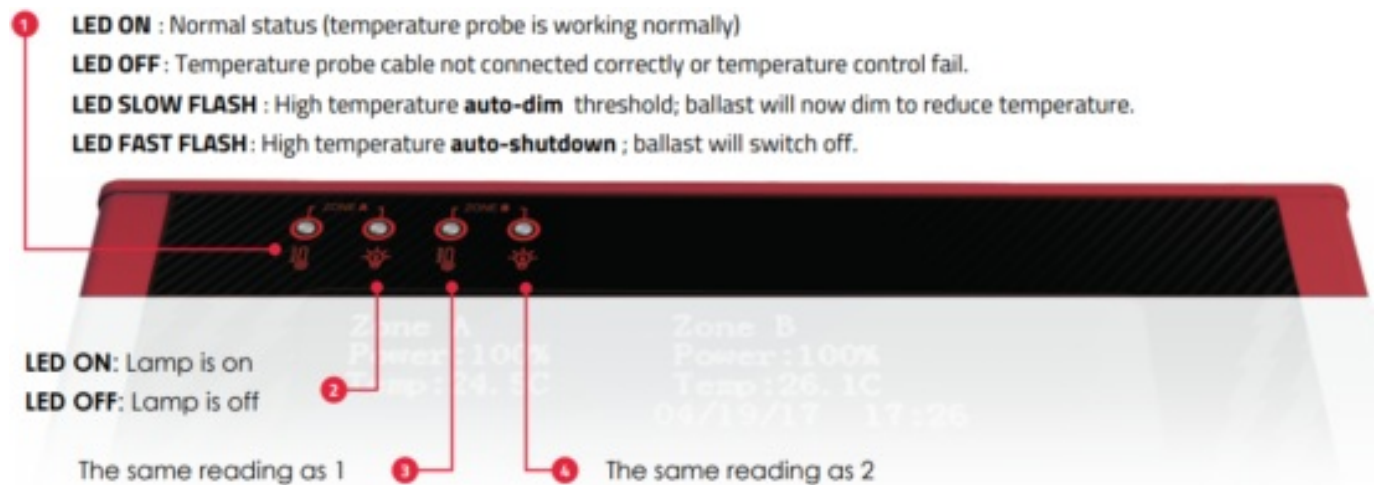


to action and save.

Selecting **0%** will switch LED fixture **Off**. Repeat to set up **ZONE B**.

**NOTE!** If controller is disconnected from power supply; any set parameter values and Time/Date will be saved.

## CONTROLLER LED INDICATOR



## PHOTONTEK CONTROLLER TROUBLESHOOTING

FAULT	INSPECTION METHOD	TROUBLESHOOTING
Controller doesn't have any display after connecting to power	Check the Power Supply	Waiting for power supply to return
	Check the Adaptor	Change the Adaptor
	Check the Controller	Change the Controller
Fail to control LED fixtures	Check the connection between controller and fixture; make sure each connection is well-connected.	Reconnect the control cables.
Controller doesn't have any temperature display after the temperature probe is connected	Check if the temperature probe is damaged.	Change to another temperature probe.
Fail to turn on LED fixture	Check LED driver o/p cables are connected to fixture i/p ports	Reconnect cables
LED fixture output power is not same as command signal sent from controller	Check the Sun rise and set time periods	Reset or switch off sun rise/set time period.
	Check the temperature probe & temperature control values set.	Reset temperature control values.
When several LED fixtures are working together, some units are working well but some fail to work	When several LED fixtures are working together, some units are working well but some fail to work	Disconnect and reconnect control cable or replace cable.
	Check if the LED fixture is faulty	Disconnect fixture from controller and see if lights independently or with manual dimmer connected.

## MAINTENANCE AND REPAIR

**WARNING! Do not open or disassemble the controller as it contains no serviceable parts. Opening the controller will void its warranty.**

**WARNING! Do not use acids, solvents, abrasives or other aggressive substances to clean the controller as this may cause damage.**

The controller is maintenance free. It may be cleaned with a soft dry cloth. Please contact your reseller in case of controller malfunction.

## **ENVIRONMENT AND DISPOSAL**

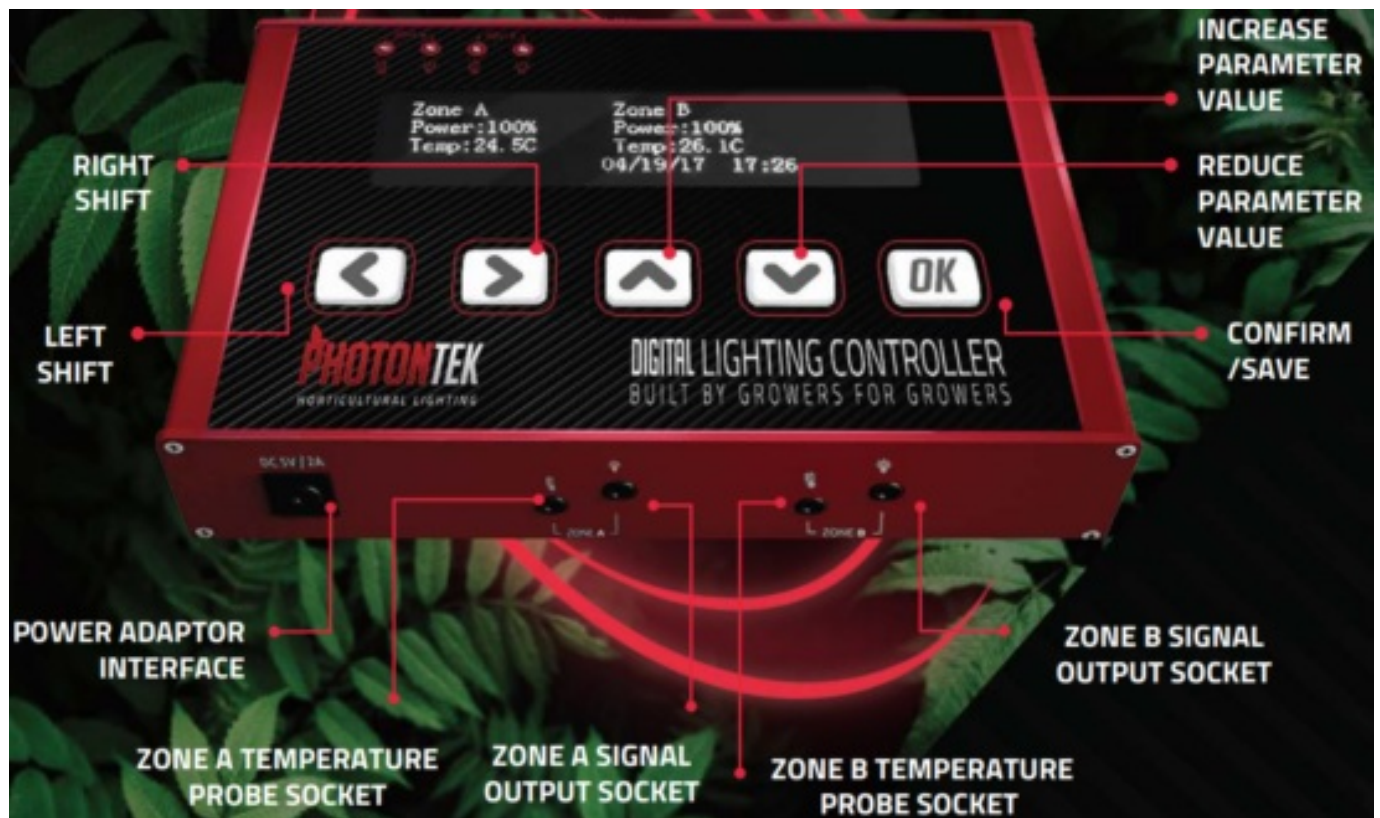
	<b>ATTENTION! THIS PRODUCT CONTAINS A BATTERY. MUST BE DISPOSED OF PROPERLY.</b>
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The symbol on the material, accessories or packaging indicates that this product may not be discarded as household waste. Dispose of the equipment through a recycling centre that handles electronics and electrical appliances. By disposing of the equipment in the proper way, you will be helping to prevent possible risks to the environment and public health which might otherwise be caused by improper handling of the discarded equipment. Recycling of materials contributes to the conservation of natural resources. Please do not dispose of your old electronics and electrical appliances via household waste.

## **WARRANTY**

Photontek Horticultural Lighting warrants the mechanical and electronic components of their product to be free of defects in material and workmanship if used under normal operating conditions for a period of three (3) years from the original date of purchase. If the product shows any defects within this period and that defect is not due to user error or improper use Photontek shall, at its discretion, either replace or repair the product using suitable new or reconditioned products or parts. In case Photontek decides to replace the entire product, this limited warranty shall apply to the replacement product for the remaining initial warranty period, i.e. three (3) years from the date of purchase of the original product. For service; return the product to your shop with the original sales receipt.





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## Documents / Resources



[PHOTONTEK PTEKM0017 LED Digital Lighting Controller](#) [pdf] User Manual  
PTEKM0017, LED Digital Lighting Controller, PTEKM0017 LED Digital Lighting Controller

## References

-  [LED & Conventional lighting solutions | Philips lighting](#)
-  [PHOTONTEK Lighting | LED lighting | LED grow lights | LED Fixtures](#)