

LUMATEK
PROFESSIONAL LIGHTING

 **MANUAL**

CONTROL PANEL PLUS 2.0

DUAL SIGNAL LIGHTING CONTROLLER FOR HID & LED



LUMATEK CONTROL PANEL PLUS 2.0 USER MANUAL

ENGLISH

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1. INTRODUCTION

The Lumatek control panel is a digital lighting controller that offers precise external control of your Lumatek lighting fixtures and ballasts. Using innovative technology, this controller smartly monitors your grow room temperatures, light timing & intensity automation, safety-controlled dimming and switching On/Off. Simply connect it to your Lumatek Controllable Fixtures or Ballasts and easily regulate your grow room environment.

Thank you for purchasing the Lumatek Control Panel, we are sure you will be satisfied for years to come. Please read and understand this manual before installing and using the control panel as it contains all the information necessary to successfully install, use and maintain the product. Digital Control Panel will be referred to as "the controller".

2. PRODUCT DESCRIPTION

2.1 Product description

The Lumatek Digital Control Panel Plus is a dual signal twin channel digital lighting controller with each of the two channels (Zones) capable of controlling up to 200 Lumatek controllable HID fixtures or ballasts with a digital RS485 signal or up to 50 LED fixtures with analog 0-10V signal. It is possible to use each Zone to control fixtures in two independent separate rooms or to control up to 400 fixtures in one room with two different light source types.

2.2 General Product Information

PRODUCT NAME	Lumatek Control Panel Plus 2.0
PRODUCT CODE	LUMM0019
EAN	5060560031079
PRODUCER	Lumatek Ltd

2.3 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°C
OPERATING HUMIDITY (25°C)	-20°C - 90°C non-condensing	10°C - 95°C non-condensing
WATERPROOF & DUSTPROOF	IP20	
DIELECTRIC WITHSTAND VOLTAGE(HI-POT)	Communication line to GND:500Vac/60S 5.5mA max	

2.4 Technical Specifications

CONTROLLER DIMENSIONS (LxWxH)	128 x 80 x 25 mm
WEIGHT	280g
POWER SUPPLY	Adaptor 100 - 240V AC 50/60Hz – DC 5V/2A
MAX NUMBER OF BALLASTS PER ZONE	200 (RS485) 50 (0-10V)
TOTAL NUMBER OF BALLAST PER CONTROLLER	400 (RS485) 100 (0-10V)
CONTROLLABLE BALLAST TYPE	250W, 315W, 400W, 600W, 630W, 1000W
CONTROLLABLE LED DRIVER TYPE	All Lumatek controllable LED drivers
HID POWER DIMMING SCOPE (1% INCREMENTS)	250W: 60%-110% (150W-275W) 315W: 50%-100% (158W-315W) 400W: 60%-110% (250W-440W) 600W: 40%-110% (250W-660W) 630W: 80%-100% (500W-630W) 945W: 50%-100% (475W-945W) 1000W: 60% - 115% (600W-1150W)
LED POWER DIMMING SCOPE	10% - 100%
POWER REGULATION ACCURACY	1%
TEMPERATURE-CONTROLLED INSPECTIONSCOPE ADJUSTABLE RANGE	0°C - 40°C
TEMPERATURE-CONTROLLED INSPECTION SCOPE PROTECTION RANGE	10°C - 50°C
SUNRISE & SUNSET DURATION	0 - 30min
TURN ON DELAY PROTECTION TIME	0, 5, 10, 15, 20, 25, 30mins

3. COMPONENTS

	NAME	Qty	PHOTO	NOTE
A	Control Panel Plus	1		2 Channel Dual Signal Light Controller
B	Power Supply Cable/Plug	1		100-240V 50/60Hz AC - 5V/2A DC
C	HID Control Link Cable	2		To Connect Controller to Ballast, with Magnetic Ring on Cable
D	LED Control Link Cable	2		To Connect Controller to LED fixture
E	Temperature Sensor Cable 5m	2		Ambient Temperature Sensor for each Zone
F	Mounting Screws	2		to Mount Controller on Wall

4. SAFETY GUIDELINES

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

Warning! The Lumatek Digital Control Panel may only be used to control compatible Lumatek controllable fixtures and ballasts. 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.

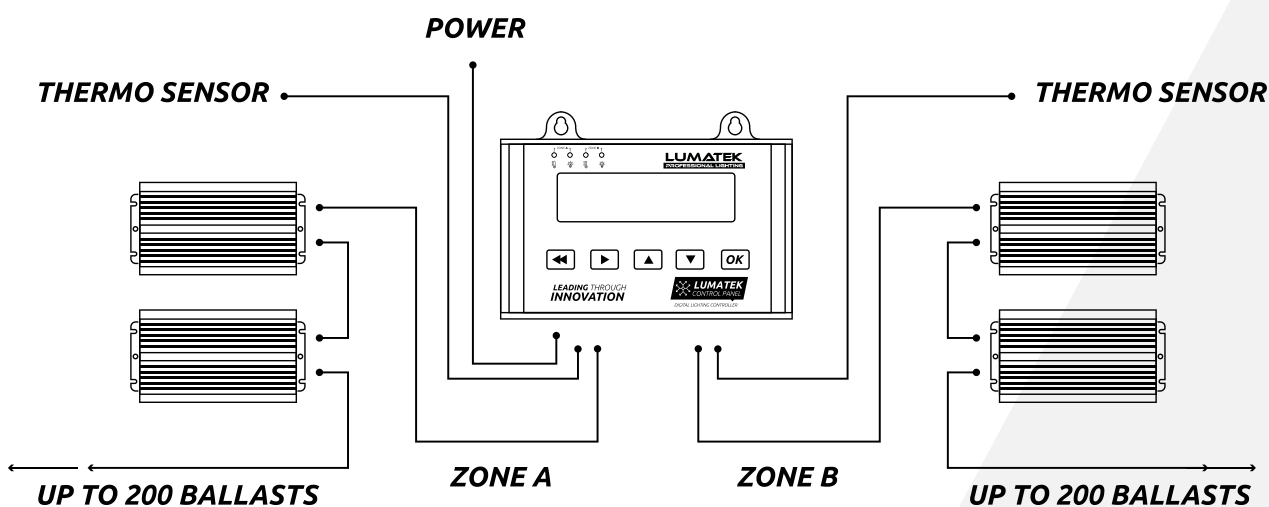
Warning! Make sure the signal cables do not touch the reflectors as the reflectors get very hot!

5. INSTALLING THE CONTROLLER & FUNCTIONS

5.1 Preparations

For HID:

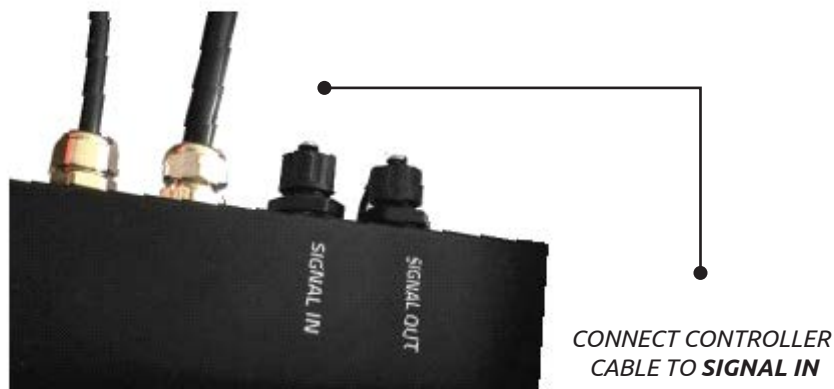
1. Mount the fixtures or ballasts as per your lighting plan. Interconnect them as described in the manual for the fixture or ballast using the control cable (TRS) supplied with each controllable fixture or ballast.
2. **Connect ballast 1 control cable from Out socket of ballast 1 to the In socket of ballast 2.**
3. **Connect ballast 2 control cable from Out socket of ballast 2 to In socket of ballast 3.**
4. Connect all remaining ballasts in series accordingly.
5. Connect the ballasts or fixtures to the mains.



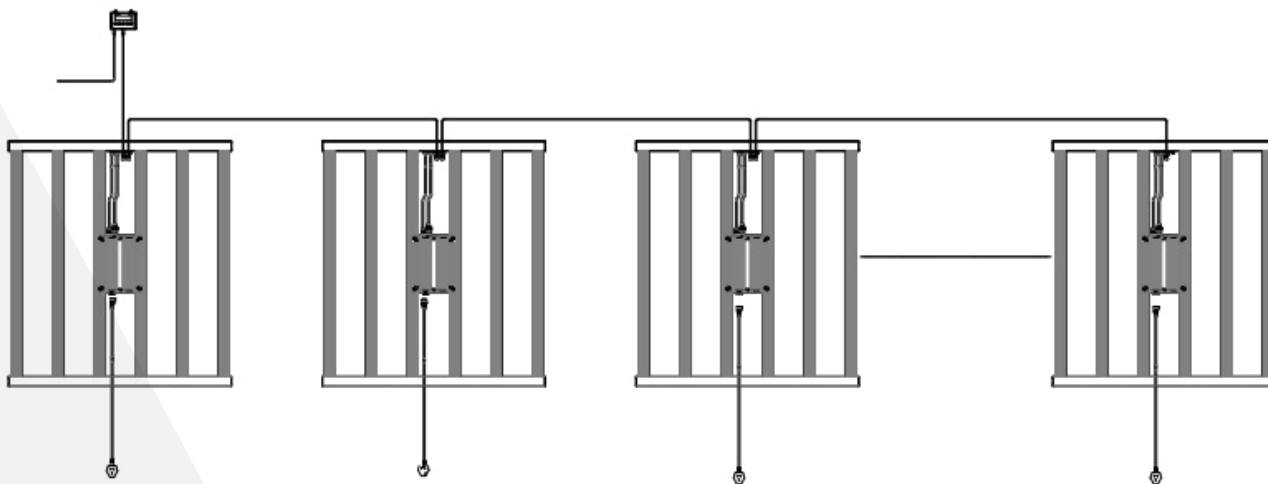
Note! Each of the controller's two channels (Zone A & Zone B) can control up to 200 Lumatek Control fixtures or ballasts. It is possible to use those channels to control fixtures in two separate rooms or to control up to 400 fixtures in one room.

For LED:

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.




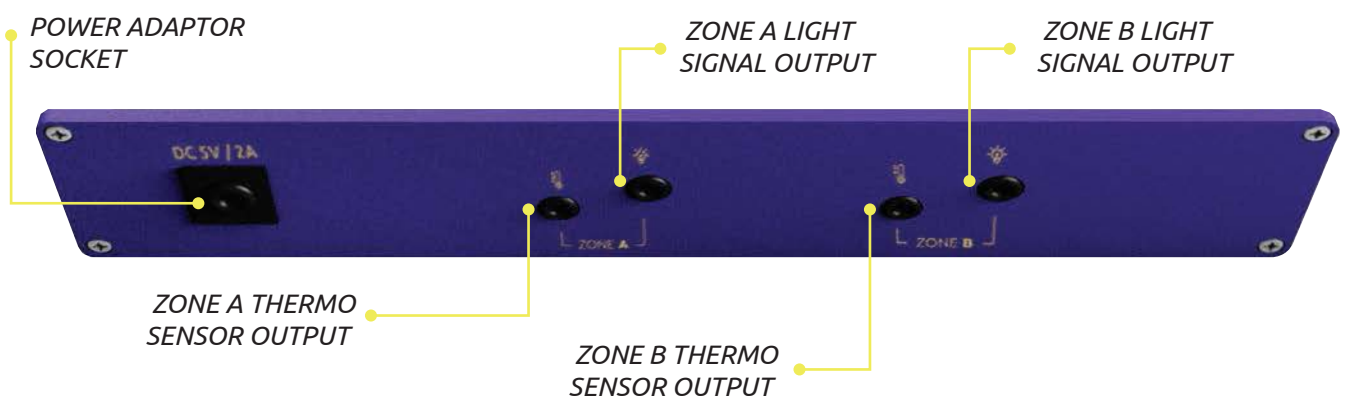
5. Connect the LED fixtures to the mains.

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! 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 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.

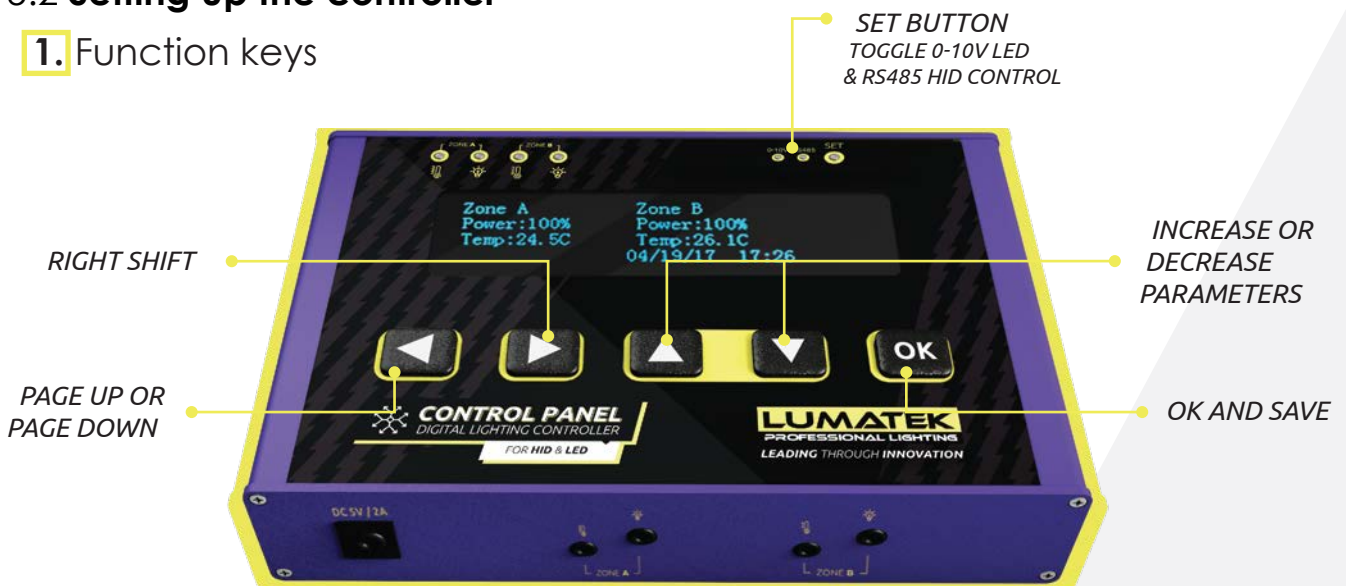
Warning! The controller may only be connected to compatible Lumatek controllable LED fixtures and ballasts.

6. Find a suitable place for the temperature sensor and the controller. Hang the sensor 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 sensor close to the sensor of that system.
7. Position and affix controller to the wall using mounting screws **(E)** through the mounting loops.
8. Connect controller cable **(C/D)** from Zone A/B output port (3)  to 'Signal In' port on LED fixture 1 or ballast 1 IN port.
9. Connect the power input **(B)** and the temperature probes **(E)**. The display will light up and you can continue to set up the controller.



5.2 Setting 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 temperature scale and power output unit of measurement:

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.

Press [<]or[>] to 'Power'; the display will show either % (percent) when LED is selected in 'Type' in Zone A/B page and W (Watts) when HID is selected.

**Note! LED driver power output is shown as a percentage of the driver 's nominal power output eg. 50% of a 1000W LED driver is 500W.
To set Time and Date to your local time;**

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

In System Settings 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 Day [D], Month [M] and Year [Y] and [OK] to save.'

3. Setting Signal Protocol

1. When setting controller for LED drivers/fixtures;

Using a pointed tool (ball point pen) press [SET] button to select 0-10V analogue signal protocol (0-10V LED indicator light on only). This will make both zones compatible for LED drivers.'

2. When setting controller for HID ballast/fixtures;

Press [SET] button to select RS485 digital signal protocol (LED indicator light on). This will make both Zones compatible for HID electronic ballasts.

3. When setting controller for LED drivers/fixtures and HID ballast/fixtures;

Press [SET] button to select both 0-10V & RS485 signal protocols (both LED indicator lights on). This will make Zone A compatible for LED drivers and Zone B compatible for HID electronic ballasts.

4. Setting Zone Parameters

Press [OK] to enter Home screen

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

Setting ballast/driver/fixture type:

Press [<]or[>] to Type and [^]or[v] to select ballast/driver type and Press [OK] to save.

Setting light intensity by selecting power output level:

Warning! New HID lamps need to run at nominal power for at least 100 hours to ensure they don't fail prematurely. If using new lamp; set Power to 100%. After 100 hours nominal power use, new HPS lamps may be dimmed and boosted and MH/CMH lamps may be dimmed.

Warning! Do not boost MH/CMH lamps which must not exceed their nominal power.

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, the lamps will firstly be dimmed to minimum dim setting and if the temperature continues to rise and exceeds the second set threshold the lamps will shut down 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 lamp restart after auto-shutdown

If auto-shutdown has been engaged, the time period after temperature has fallen below set threshold and lamps are restarted 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.'

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

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 Press [<]or[>] to first time setting check box and [^]or[v] to toggle between to activate time setting and 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%.

6. Real time On/Off switching and adjusting light intensity

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.

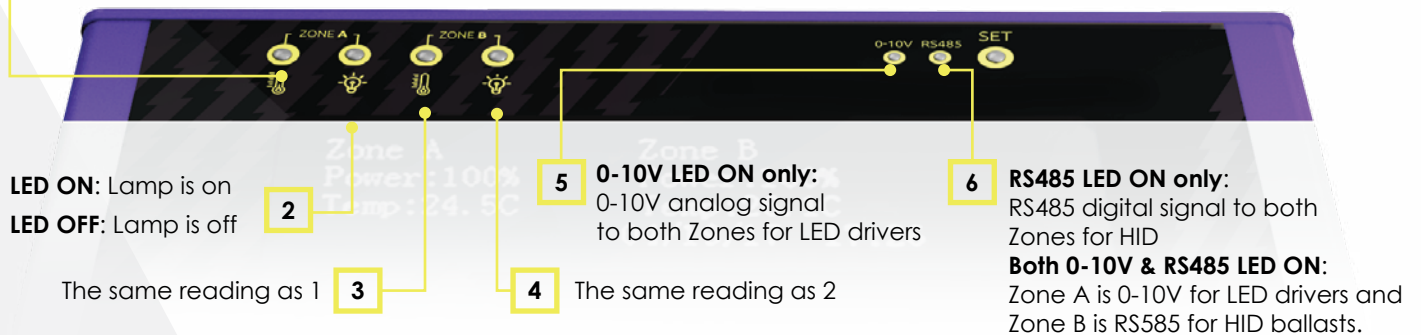
Selecting 0% will switch lamps Off.

Repeat to set up Zone B.

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

6. CONTROLLER LED INDICATOR

- 1 **LED ON:** Normal status (temperature probe is working normally)
- LED OFF:** Temperature probe cable not connected correctly or temperature control fail.
- LED SLOW FLASH:** High temperature **auto-dim** threshold; ballast will now dim to reduce temperature.
- LED FAST FLASH:** High temperature **auto-shutdown**; ballast will switch off.



7. LED FAILURE INDICATOR ON ELECTRONIC BALLAST

Note! If **controller not connected**; the power output LED will go On normally and in the event of any failure; the LED above highest power output setting will flash. See table below to decode fault.

If **controller connected**; the '**controller**' LED on electronic ballast will turn **On** and flash every 2 seconds; this means that the controller is working normally. If the ballast fails to receive signal from the controller (either because of poor signal cable connection or controller failure) the 'controller' LED on ballast will flash quickly (every 0.2 seconds). In the event of any other failure; the **LED above highest power output setting on ballast will flash**. See table below to decode fault.

CONDITION	LED STATUS	DESCRIPTION
Ballast Locked	Flash*1	Maximum amount of ignition attempts without success
Cycle Error	Flash*2	Lamp stopped for unknown reason or output signal interrupted.
Low Mains	Flash*3	Mains Voltage too Low
Over Temperature	Flash*4	Maximum driver temperature exceeded
High Mains	Flash*5	Mains Voltage too High

Note! To reset ballast; disconnect from mains and reconnect after **30 seconds**

Warning! When replacing a lamp, always switch Off ballast first by removing plug from power supply. Never switch off lamp by removing lamp cable from a live ballast.

8. LUMATEK CONTROLLER TROUBLESHOOTING

FAULT	INSPECTION METHOD	TROUBLESHOOTING
Controller doesn't have any display after connecting to power	Check the Power Supply Check the Adaptor Check the Controller	Waiting for power supply to return Change the Adaptor Change the Controller
Fail to control ballasts	Check the connection between controller and ballasts; make sure each connection is well-plugged.	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 lamp	Check 'controller' LED on ballast is flashing normally	Reconnect Cables
Ballast output power is not same as command signal sent from controller	Check the Sun rise and set time periods Check the temperature probe & temperature control values set.	Reset or switch off sun rise /set time period. Reset temperature control values.
When several ballasts are working together, some units are working well but some fail to work	Check control cable connections Check if the ballast is faulty	Disconnect and reconnect control cable or replace cable. Check LED failure indicator on ballast.

9. 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.

10. ENVIRONMENT AND DISPOSAL



**ATTENTION: THIS PRODUCT CONTAINS A BATTERY.
MUST BE DISPOSED OF PROPERLY.**

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 within the EU and in other European countries which use separate collection systems for used 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.

11. REGULATORY STANDARDS

EN 61347-1:2008
EN 61347-2-12:2005
EN 55015

12. WARRANTY

Lumatek Ltd 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 Lumatek Ltd shall, at its discretion, either replace or repair the product using suitable new or reconditioned products or parts. In case Lumatek Ltd 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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SET SIGNAL PROTOCOL

RIGHT SHIFT

INCREASE OR DECREASE PARAMETERS

PAGE UP OR PAGE DOWN

OK AND SAVE

POWER ADAPTOR INPUT

ZONE A LIGHT SIGNAL OUTPUT

ZONE B LIGHT SIGNAL OUTPUT

ZONE A THERMO SENSOR INPUT

ZONE B THERMO SENSOR INPUT

STAY UP TO DATE WITH OUR **SOCIAL MEDIA** CHANNELS



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