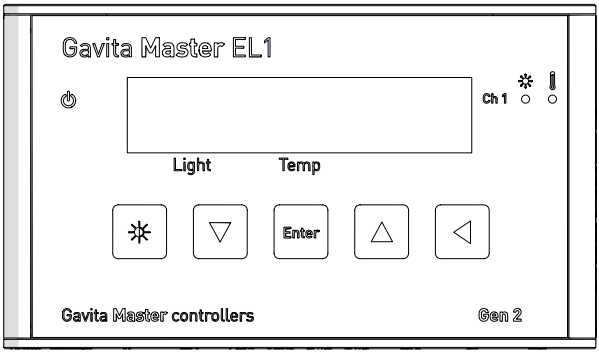
Gavita **Master** Controller EL1



User manual

User manual
Gavita Master controller EL1

Dear customer,

Congratulations on the purchase of your Gavita Master controller EL1.
This manual contains all the information necessary to install, use and maintain the Gavita Master controller EL1. Please read and understand this manual completely before installing and using the product.
Consult the index at the start of this manual to locate information relevant to you.

In this manual, the Gavita Master controller EL1 will be referred to as "the controller".

This is the original manual, keep it in a safe location!

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1. Introduction

1.1. Product description

The Gavita Master controller EL1 is a single channel light controller. The controller's channel can control up to 40 (250*) Gavita e-series fixtures or ballasts.

** When using a repeater bus fixture or ballast. Check the specifications of your fixture for more information.*

1.2. Glossary of Terminology

Ballast	A ballast is a device intended to ignite and power HID lamps
Complete fixture	A ballast integrated with a reflector and lamp

1.3. Used symbols

The following icons will be used throughout the manual:

Warning! A warning indicates severe damage to the user and/or product may occur when a procedure is not carried out as described.

Caution! A caution sign indicates problems may occur if a procedure is not carried out as described.

Note/Example: A note or example provides tips and addition information to the user.

2. Product specifications

2.1. General product information

Product name	Master Controller EL1
Product code	41.00.XX.XX
Producer	Gavita International bv

2.2. Technical specifications

Controller dimensions (LxWxH)	110 x 21 x 65 mm	
Weight	115 gram	
Power supply	Adapter: 100V-240V AC 50/60hz - 15V DC (1000mA)	
Maximum control voltage	11.5V	
Maximum voltage/current alarm contacts (NO/NC)	13,5V/50mA	
Maximum cable length per port	100m (328ft) / 250m (820ft)*	
Total number of ballasts per controller	40	250*

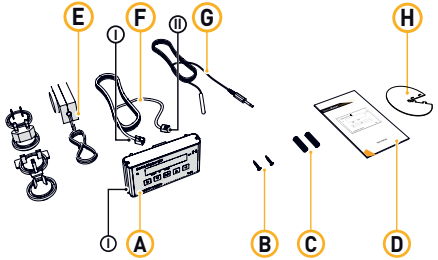
** When using a repeater bus fixture or ballast*

2.3. Environment

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

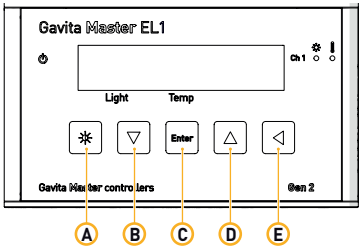
Temperature range	0-35 °C / 32 - 95 °F
Operating humidity (non-condensing)	<80%

2.4. Components



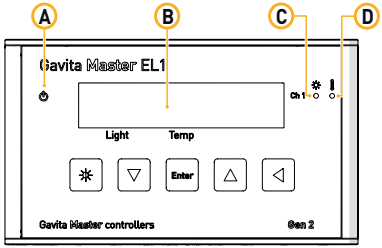
A. Gavita Master controller EL1
   I. Mounting plate
B. 2x Countersunk screw
C. 2x Plug
D. Manual
E. 120-240V AC - 15V DC power adapter (1000mA)
F. 1x Controller cable (5m/16ft)
   I. RJ (6P4C) plug (connect to ballasts)
   II. RJ (4P4C) plug (connect to controller)
G. 1x Temperature sensor with cable (5m/16ft)
H. 1x Hood

2.5. Controls



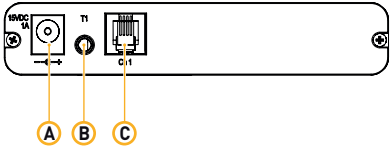
	Key	Function
A	Quick-key	View output level
B	Down	Navigate down in menu / decrease value Press and hold to scroll / decrease smoothly
C	Enter	Go to menu / confirm
D	Up	Navigate up in menu / increase value Press and hold to scroll / increase smoothly
E	Back	Navigate back in menu / cancel / reset

2.6. Indications



	Signal	Function
A	Power	A burning green light indicates controller is active. A blinking green light indicates a power interruption has occured during operation.
B	Display	Displays status, warnings and controller menu.
C	Light CH1	A burning blue light indicates the port is active. Blue light off indicates the port is inactive.
D	Temperature warning CH1	A burning red light indicates the auto-dim temperature has been exceeded in the past. A blinking red light indicates the auto-dim temperature threshold is currently exceeded. The corresponding output channels are being dimmed. A fast blinking red light indicates the shutdown temperature threshold has been exceeded. All output channels have been shut down.

2.7. Connections



A. 15V DC input
B. 3,5 mm jack main temperature sensor (T1)
C. RJ (4P4C) channel 1 port for controlling up to 40 ballasts

2.8. Accessories

Accessories are not included, they have to be bought separately. Visit the website of Gavita International: www.gavita.com for the latest Gavita products.

Part	Variants	Product code
Interconnect cable RJ (6P4C) - RJ (6P4C)	2 ft / 0,60 m	43.50.00.08
	5 ft / 1.5 m - standard cable	43.50.00.04
	8 ft / 2.4 m	43.50.00.09
	10 ft / 3.0 m	43.50.00.10
Controller cable RJ (4P4C) - RJ (6P4C)	5 ft / 1.5 m	43.50.00.11
	16 ft / 5 m - standard cable	43.50.00.12
	25 ft / 7.5 m	43.50.00.13
Universal adapter	100V-240V AC 50/60hz	42.02.03.08
Temperature sensor (with 5 m cable - 3.5 mm mini jack plug)	16 ft / 5.0 m cable length - standard	42.50.00.14

2.9. Compatible ballasts and fixtures

Ballasts and fixtures are not included, they have to be bought separately. Visit the website of Gavita International: www.gavita.com for the latest Gavita products.

The Gavita Master controller EL1 is compatible with all Gavita e-series ballasts and fixtures.

3. Safety guidelines and measures

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

⚠ **Warning!** The Gavita Master controller EL1 may only be used to control compatible Gavita e-series 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.

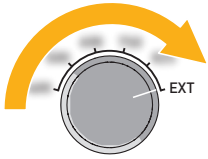
⚠ **Warning!** Do not open or disassemble the controller, it contains no serviceable parts. Opening the controller will void its warranty.

⚠ **Warning!** Make sure the signal wires do not touch the reflectors. The reflectors get very hot.

4. Installing the controller

4.1. Preparations

1. Mount the fixtures or ballasts as per your lighting plan. Interconnect them as described in the manual of the fixture or ballast. Make sure the rotary knob on all ballasts is set to "EXT" (external control). Connect the ballasts or fixtures to the mains.

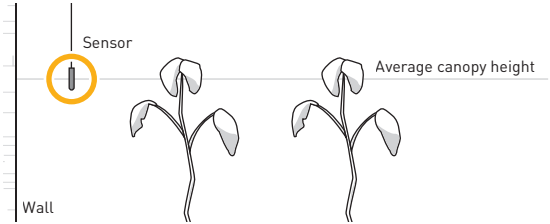


The controller's channel can control up to 40 (250) Gavita e-series fixtures or ballasts.*

** When using a repeater bus fixture or ballast. Check the specifications of your fixture for more information.*

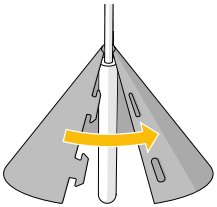
Warning! The controller may only be connected to compatible Gavita e-series remote ballasts and complete fixtures.

2. Find a suitable place for the temperature sensor and the controller. Hang the sensor between the plants on average canopy height and preferably not against the wall. Do not position it in direct airflow.

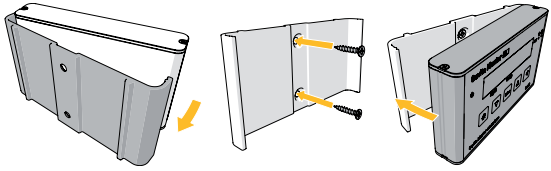


If you are using another climate control system, hang it close to the sensor of that system. If necessary, the sensor cable may be lengthened an extra 5 meter with a standard 3.5 mm jack extension cable. A sensor with a cable length of 30 meter is also available.

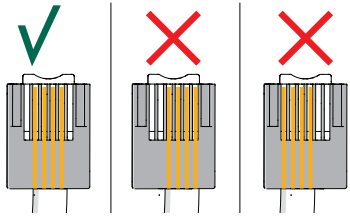
3. Cover the temperature sensor from the light. Use the hood supplied with the controller and fold it around the sensor. Direct light cast upon the sensor will disrupt temperature measurements.



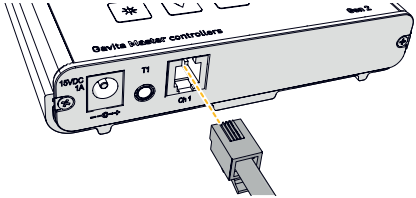
4. Take the controller and remove the mounting plate from the body carefully. Affix the mounting plate to a wall using the countersunk screws. Remount the controller on the mounting plate.



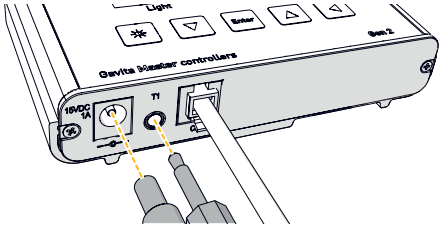
5. If necessary, shorten the RJ cables. You'll need an RJ crimp tool. Cut the cables to the desired length. Strip 8mm of the outer insulation, but leave the inner insulation intact. Push the four wires into the middle four openings of the RJ plug. Crimp the plug on the wire with an RJ crimp tool.



6. Connect the lamp control cable to the controller. Connect the 4P4C end to the controller, and the 6P6C end to the fixture. The lamps will not ignite yet.



7. Connect the power input and the temperature probe. The display will light up, and you can continue to set up the controller.



4.2. Setting up the controller

1. The display lights up when the controller is connected to power. It will ask you to set time and date first. Choose between 12 and 24 hour mode and press **enter** to confirm. Set time and date using the arrow keys and press **enter** to confirm. If you want to change this later, open the menu and select **system time**.



2. If desired, change the language by pressing **enter** to open the menu, and select **language**. Press **enter** again to save your choice.



3. By default, temperature is displayed in °C. If you want to change to °F, press **enter** to open the menu, and select **temp probe**. Select **units** and change to °F. Press **enter** to confirm.



4. Press **enter** to open the menu and select **channel 1**. Select **display mode** and use the arrow keys to select the nominal power of your fixtures. Alternatively, select **100%** to always display power output as a percentage.



This setting determines how power output is displayed when pressing the ☀ key and does not affect the working of the controller. It is for your reference only.

5. In the channel 1 menu, select **output level**. Set the desired light intensity and press **enter** to confirm.



New lamps need to run at nominal power for at least 100 hours to ensure they don't fail prematurely.

6. In the channel 1 menu, select **light cycle**. Set the time to switch the light on and the time to switch the light off. Press **enter** to confirm.



7. In the channel 1 menu, select **set temp levels** to set night, day, auto-dim and shutdown temperature levels.



Auto-dim & shutdown: if the temperature rises above the set treshold, the lamps will firstly be dimmed and, if the temperature continues to rise, shut down to prevent crop damage.

8. New lamps need to run for at least 100 hours at nominal power to ensure they do not fail prematurely. Select **output level** in the channel menu and set to 100% . Select **output mode** in the channel menu and set to **on**.



9. After this minimum period of 100 hours, browse to **output mode** in the channel menu and set to **auto**. The controller will now operate as programmed.



10. Check the status LEDs of the ballasts or fixtures. Consult the manual of the fixture for the meaning of the codes and possible solutions to errors. Check the controller display. If it indicates an overload, recheck your RJ cables.

4.3. Calibrating the temperature sensor

If necessary, the temperature measured by the Gavita controller can be adjusted to match the temperature measured by another system in the room.

1. Press **enter** to open the menu and select **temp probe**.

2. Press **enter** to leave the temp units setting unchanged.

3. Set **calibrate** to YES.



4. Choose **T1** and press **enter** to select. Adjust the temperature to the desired value and press **enter** to confirm your choice.



The calibrated temperature value is stored in the internal memory of the controller. Resetting the controller will restore this value (see paragraph 5.9).

4.4. Setting the sunrise and sunset period

To allow crops to adjust to either a lights-on or lights-off period, a sunrise and sunset period may be set. During this period, the light intensity increases from 50 percent to up to the desired intensity. By default, both periods are set to 15 minutes.

1. Press **enter** to open the menu and select **channel 1**.

2. Select **sunrise/sunset**.



- Set ramp up time (0-30 min) to simulate sunrise.
- Set ramp down time (0-30 min) to simulate sunset.

5. Using the controller

5.1. Activating or deactivating lights

1. Press **enter** to open the menu and select **channel 1**.
2. Select **output mode**.



The channel can be set to three output modes:

AUTO	Run the programmed light cycle
ON	Lights are on, temperature safety settings apply
OFF	Lights are off

3. Press **enter** to confirm.

When the lights are activated, a blue light burns.

Warning! When replacing lamps, always disconnect them from the mains. Simply switching them off is not sufficient.

5.2. Setting light intensity

1. Press the ✳ key and use the arrow keys to set the intensity.



You can use this setting to boost your lamps to a maximum of 115%.

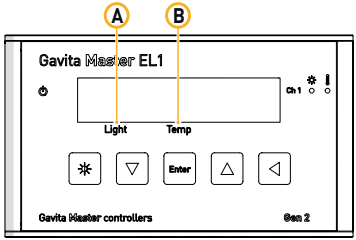
By default, power is displayed as a percentage. You can set the controller to instead display the power output in Watts. Press **enter** *to open the menu and select* **channel 1**. *Select* **display mode** *and use the arrow keys to select the nominal power of your fixtures. This setting determines how power output is*

displayed when pressing the ✳ key and does not affect the working of the controller. It is for your reference only.



5.3. Reading the default screen

The default screen displays whether or not the lights are activated, and at what power they are running (A). The measured temperature is shown (B)



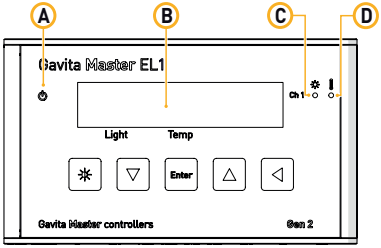
5.4. Show system time and temperature settings

1. Press an arrow key in the default screen to show system time and date.

2. Press an arrow key again to show the highest and lowest registered temperatures.



5.5. Interpreting LED signals



5.5.1. **Green light (A)**

A burning green light indicates the controller is functioning.

A blinking green light indicates the power has been interrupted.
After a power failure the blinking green indicator must be reset. Hold the back button ◀ for three seconds to reset the indicator.

5.5.2. **Blue light (C)**

A burning blue light indicates the ballasts connected to channel 1 are activated.
A blinking blue light indicates an overload in the channel.

When the blue light is off, it indicates the connected ballasts are deactivated.

5.5.3. **Red light (D)**

A blinking red light indicates the auto-dim temperature is exceeded.

A fast blinking red indicates the shutdown temperature has been exceeded.

A burning red light indicates the auto-dim temperature has been exceeded in the past.

5.6. Error messages and solutions

5.6.1. **Sensor disconnected**

The message "Sensor removed" appears when the temperature sensor is not plugged in. All devices connected to the controller are deactivated. Plug in the

missing sensor to resolve.

5.6.2. **Sensor failure**

If the message "sensor failure" appears, the sensor is defect. All devices connected to the controller are deactivated. The controller must be reset.

- Replace the temperature sensor
- Hold the back button ◀ for 3 seconds to reset the message.

5.6.3. **Controller Overload**

If the message "controller overload" appears, the channel of the controller has been overloaded. The blue led indicator behind the overloaded channel will also start flashing. An overload may occur when the wiring of the channel has short circuited. All devices connected to the controller will be deactivated.

- Search for faulty wiring or contacts and replace it.
- Hold the back button ◀ for 3 seconds to reset the message.

5.6.4. **Auto-dim**

When the auto-dim temperature has been exceeded, the message "auto dim" will appear on the display next to the channel. The red light will also flash. The flashing will continue until the temperature drops half a degree Celsius/ 0.9 degrees Fahrenheit below the auto-dim temperature for at least 30 seconds.
A burning red light indicates the auto-dim temperature has been exceeded in the past.

- To resolve a burning red light, hold the back button ◀ for three seconds to reset the warning.

5.6.5. **Temp Alarm**

When the shutdown temperature has been exceeded, the message "Temp alarm" will appear on the display and the red light will flash rapidly. All devices connected to the controller are deactivated. The controller must be reset;

- Ensure the temperature of the room is below the shutdown temperature. If the temperature is still above shutdown temperature, the controller cannot be reset
- Hold the back button ◀ for three seconds to reset the controller.

5.7. After a power loss

If power is restored within 40 hours, the controller will resume its program as set by the user. If power takes longer than 40 hours to be restored, the controller loses time and date settings. It will therefore set all outputs to "off" until time and date are set again. When set, the controller resumes its program.

5.8. Reading the log

Auto-dim, shutdown and power loss events are logged in the controllers memory. For each channel, the high and low temperatures are kept as well.

To access the log, press **enter** to open the menu and select **logs**.

5.9. View the firmware version on the controller

Your reseller or Gavita International bv may request the firmware version of your controller to check for compatibility with (future) Gavita products.

1. Press **enter** to open the menu and select **info**.
2. The firmware version is displayed.



5.10. Reset to factory settings

1. Press **enter** to open the menu and select **factory reset**.
2. Select **yes** and press **enter** to confirm. All settings are reset to their factory defaults.

6. Maintenance and Repair

⚠ **Warning!** Do not open or disassemble the controller, 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.

7. Environment and Disposal

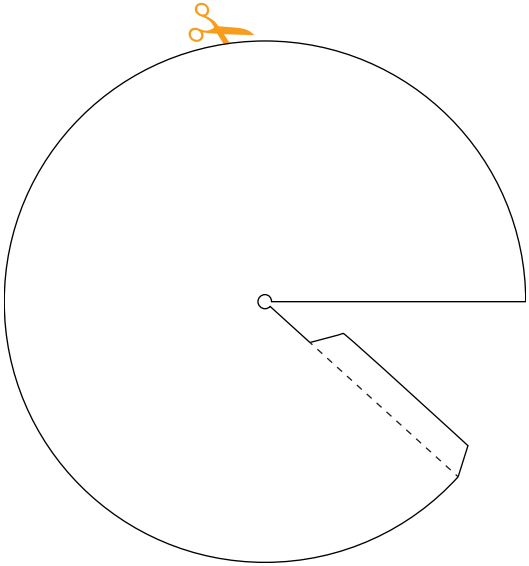
ATTENTION: THIS PRODUCT CONTAINS A BATTERY.
MUST BE DISPOSED OF PROPERLY.



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 center 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. Therefore, please do not dispose of your old electronics and electrical appliances via household waste.

8. Warranty

Gavita International bv 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 Gavita International bv shall, at its discretion, either replace or repair the product using suitable new or reconditioned products or parts. In case Gavita International bv 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.





For more information, or to download documents, contact:

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Changes reserved - Version 18/06

Manual: EL1 controller