Dutch Lighting™
Innovations

DLM-4 ZONE
Controller

PLEASE READ FIRST

BEFORE attempting to install of use this product, it is important to read and fully understand this instruction manual. It will provide detailed instructions and guidelines that will help to set up the unit, and to understand the full capability of this unit. Observe all local and national electrical codes and only install this unit as allowed in your area. Any use or application of this product, other than for its original intended purposes are prohibited. If you have any questions, please contact us: **Dutch Lighting Innovations, Kraaiendonk 22, 5428 NZ Venhorst, The Netherlands**

À LIRE EN PREMIER LIEU

AVANT de tenter d'installer ou d'utiliser ce produit, il est important que vous lisiez soigneusement le manuel d'instructions. Ce dernier contient des informations détaillées et des directives permettant d'installer l'unité et d'en comprendre toutes les capacités. Observez toutes les règlementations électriques locales et nationales, et installez l'unité conformément aux règles en vigueur dans votre région. Toute utilisation ou application de ce produit à d'autres fins que celles d'origine est entièrement interdite. Si vous avez des questions, n'hésitez pas à nous contacter: **Dutch Lighting Innovations, Kraaiendonk 22, 5428 NZ Venhorst, The Netherlands**

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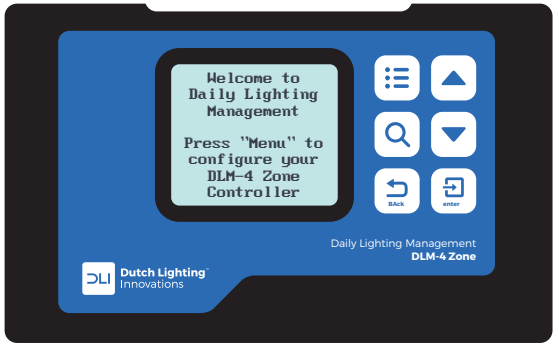
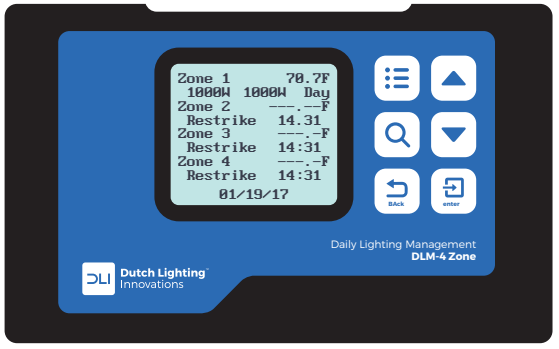
1. Introduction

The DLM-4 Zone Controller is specially designed to set up a Daily Lighting Management system for your Dutch Lighting Innovations fixtures. The controller is equipped with an easy to use menu system in six languages (English, Spanish, German, Dutch, French and Mandarin).



The DLM-4 Zone Controller can be connected to up to 4 separate zones of DLI lighting fixtures. Each zone can control up to 255 lights and 1 sensor, so in total you can control 1020 lights and 4 sensors.

Once connected to the HIDs, the controller will monitor and control (Turn ON and OFF) the lights using a digital timeclock. Up to (4) separate temperature sensors can be connected that will measure the temperature of up to (4) zones / growing areas. The user can select to dim the lights if the temperature goes above their chosen setpoint, or to turn the lights off.



2. Facts

Here are some important things to consider when using the DLM-4 Zone Controller.

- A maximum of 255 ballasts and 1 temperature sensor can be connected to each zone on the DLM-4 ZONE.
- A maximum distance of 1000ft / 300 meters between the DLM-4 ZONE and the ballasts to be controlled.
- Each zone MUST have a single wattage / type of fixture connected to it. You cannot mix fixtures with different wattages on the same zone interconnect wiring.
- A single low-volt cable is used to interconnect the DLM-4 ZONE to the fixtures within each zone. Various length pre-crimped RJ12 cables and additional interconnect splitters can be purchased separately.
- Ballast control is connected using RJ12 cables which are used to daisy-chain the fixtures together. Each of the ballasts comes with an RJ12 "T" splitter.
- Each individual zone can have its own temperature sensor for more accurate control.
- It is also possible to "assign" a specific temperature sensor to link with more than one lighting zone.
- Each temperature sensor can be connected anywhere within the growing area. Temperature sensors are connected using the same RJ12 cables and "T" splitters.
- Follow all local and national electrical codes for installation requirements.

3. Components

1 Controller
2 Back Plate
3 Screws and anchors for back plate and temperature sensor
4 16 ft RJ12 cable
5 4 ft RJ12 cable
6 Temperature sensor
7 T splitter
8 12 VDC Power supply

4. Installing the DLM-4 Zone Controller

Determine where to locate the main controller. The controller comes with a simple to use DIN type bracket. Pull the 4 tabs outward to release the bracket from the unit, mount the bracket to a wall or surface, place the unit back on the bracket and press the 4 tabs back in to lock the unit in place.

The interconnecting RJ12 communication cables are available in different lengths, select the correct length for your application. The DLM-4 Zone Controller is supplied with a 4ft and 16ft cable. These interconnecting RJ12 cables are also available in lengths of 25ft and 50ft. Select the correct length for your application.

5. Determining the Zones

Installation of the DLM-4 Zone Controller starts by first designing the DLI fixtures layout and the DLI fixtures will be connected to the controller. Each zone can have separate dimming actions to take place, and each zone can have it own separate temperature sensor that monitors the zone temperature. All of the zones are controlled individually based on the 24-hour timeclock built into the DLM-4 Zone Controller.

Having 4 zones allows the user to create multiple lighting layouts (and dimming sequences) based on their individual preferences. Some examples are shown below.

ZONE 1	ZONE 2	ZONE 1
ZONE 2	ZONE 1	ZONE 2
ZONE 1	ZONE 2	ZONE 1

ZONE 1	ZONE 1	ZONE 1
ZONE 2	ZONE 2	ZONE 2
ZONE 3	ZONE 3	ZONE 3

Each zone can be set up to be a “staged” dimming zone. In other words, each zone has it own independent dimming temperature setting as well as the dimming action.

The example in the above left box shows 2-zones of lights in a “Checkerboard” pattern. In this example zone 2 may be set to dim at a slightly lower temperature than zone 1 would be set for. That will create a “Staged” dimming control function where zone 1 will continue to operate at full power while only zone 2 lights are dimmed.

The example in the above right box shows 3-zones of light set up in a line. Each zone can have independent temperature sensors and separate dimming settings.

Determining the Zones Continued...

THIS BLANK LAYOUT GRID CAN BE USED TO DRAW THE DESIRED PATTERN / LOCATION FOR THE FIXTURES.

1. Once the lighting zones have been designed, the ballast can be connected to the DLM-4 Zone Controller unit.
2. Each of the 4 available zones on the DLM-4 Zone Controller unit will have a separate cable connection to connect to the fixtures within each zone.
3. Simply connect a RJ12 cable to the desired zone connector on the bottom of the DLM-4 Zone Controller, and then run the cable to the nearest ballast to be controlled.
4. Each of the HID ballast is connected to the zone cabling using the included cable "T" splitter and a short cable.
5. The splitter then connects the next ballast in line and repeats this process until all of the fixtures are connected to the desired DLM-4 Zone Controller zone cable.

***NOTE:** The temperature sensor for each zone can be connected **ANYWHERE** along the zone cabling. The same type cable splitter is used to connect the temperature sensor inline with the fixtures. The signal from the temperature sensor communicates with the DLM-4 Zone Controller through the same cables that communicate with the fixtures.

6. Connections

Installation is simple once you understand how the DLM-4 Zone Controller is connected to the fixtures. Please review the "Determining HID Zones" section below and ensure that you have already determined how your lighting zones will be laid out.

Extra interconnecting RJ12 communication cables can be purchased in lengths of 25ft or 50ft. Select the correct length for your application. (in below drawing the correct picture of the fixture)

DLM-4 Zone Controller cables are made specifically for use with the DLM-4 Zone Controller. Other cables will not work properly and improper operation may result.

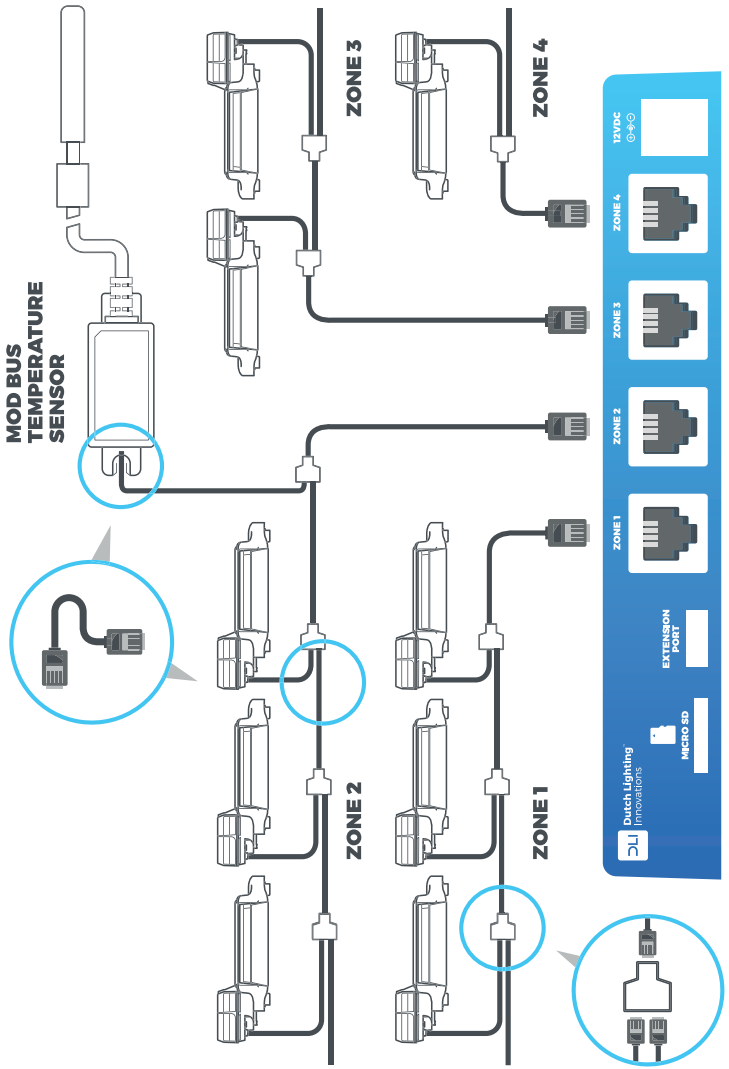
The temperature sensors can be connected **ANYWHERE** within the fixtures communication cabling. The temperature sensors send information to the DLM-4 Zone Controller using the same cabling to reduce installation and allow greater flexibility. To connect a temperature sensor determine where the sensor will be located, and then run a communication cable from the nearest ballast on that zone, to the temperature sensor "T" connection.

***NOTE:** **ONLY** use DLI cables and T-Splitters.

WARNING: **DO NOT** connect the power to the fixtures until all of the settings are entered into the DLM-4 Zone Controller.

AVERTISSEMENT: **NE** branchez **PAS** l'alimentation sur les accessoires tant que tous les paramètres n'ont pas été entrés dans le régulateur de zone DLM-4.

6. Connections Continued...



1. Only use DLM-4 Zone Controller cables
2. Connect the cable going from Zone 1 to the first ballast to be connected. (Refer to image above)
3. Use the supplied "T" connector and short cable so that the first cable can continue on to be connected to the next "T" (ballast) to be connected. Repeat this process until all of the fixtures are connected to the zone. ***NOTE:** Repeat process for the other zones to be used.
4. ***NOTE:** The temperature sensors can be connected **ANYWHERE** within the zone communication wiring. Only (1) temperature sensor can be connected per zone.
5. If the temperature probe receives direct HID light, it can cause premature dimming and inaccurate (high) temperature readings. When positioning the temperature probes, shield them from exposure to direct light.
6. The communication cables should now be connected in a "daisy-chain" configuration so that each ballast is looped / jumped to the next ballast. All ballast and the temperature sensors should be connected to the zones before continuing the installation.
7. Verify that all of the fixtures connected to the DLM-4 Zone Controller have been set to operate using the External control. Turn the selector switch on the side of each of the ballast to the correct position to allow the DLM-4 Zone Controller to control the ballast. ***NOTE:** If the ballast selector switch is NOT positioned to allow External (DLM-4 Zone Controller) control, the ballast will function manually, without control.
8. **DO NOT CONNECT THE POWER CABLES ON THE BALLAST UNTIL THE**
9. **DLM-4 ZONE ZONE WIRING AND SET-UP IS COMPLETE.** Once all of the zone cables are connected, you should now be able to verify the temperature sensors are sending data back to the main DLM-4 Zone Controller unit. Connect the DLM-4 Zone Controller to power and confirm the temperature sensors are connected by viewing the Zone Status screen. (After the unit starts, press the Enter button to display the Zone Status screen)
10. The final step is to continue to choose the settings for the DLM-4 Zone Controller. The following section will explain how to customize the DLM-4 Zone Controller Zone for your set-up.

***NOTE:** The temperature sensor for each zone can be connected **ANYWHERE** along the zone cabling. The same type cable splitter is used to connect the temperature sensor inline with the ballast. The signal from the temperature sensor communicates with the DLM-4 Zone Controller through the same cables that communicates with the fixtures.

7. Set-up and Using Your DLM-4 Zone Controller

The DLM-4 Zone Controller is extremely easy to use. The backlit 128x128 LCD display will provide the user with the current conditions and access all settings. All settings are accessed by using the 6 pushbuttons on the front of the unit. The button functions are described below.

MENU: The Menu button will change the display from one page to the next page within the menus.
FIND: The Find button opens up the error log and minimum / maximum temperature display pages.
BACK: The Back button goes backwards to exit the current menu item.
UP / DOWN: The Up and Down buttons move the cursor up and down through the menu items.
ENTER: The Enter button is used to open the menu item to be changed as well as to accept and "enter" the new setpoint into memory.

Familiarize yourself with the function of the 6 buttons on the front of the DLM-4 Zone Controller in order to able to access settings, and to better understand how to use the DLM-4 Zone Controller to its greatest potential.

7.1 Start Settings

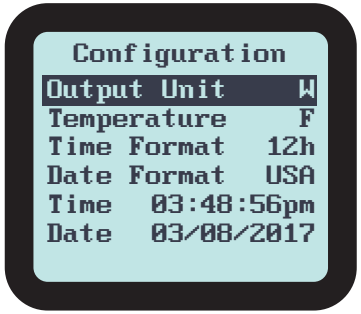
Once you have connected all of the Zone connections from the DLM-4 Zone Controller to the fixtures, and connected and positioned the temperature sensors in each zone, we can start using the DLM-4 Zone Controller.

Connect the plug-in power supply to the power connector on the bottom of the DLM-4 Zone Controller. The DLM-4 Zone Controller will turn on and boot up.

If it is the first time you have used the DLM-4 Zone Controller, when you power on the DLM-4 Zone Controller the Welcome screen / page will be displayed.

***NOTE:** Press Menu to first go to the Configuration page and begin set-up.

7.2 Configuration Page



The DLM-4 Zone Controller unit has several configuration settings that can be customized by the user, those settings are stored in the Configuration page. Below is a description of the Configuration settings.

Temperature: Select whether to display F or C for temperature measurements
Time Format: Select between 12 hour (am/pm) or 24 hour mode
Date Format: Select between USA date display (month-day-year) or International date display (day-month-year)
Current Time: The user can set the current time.
Current Date: The user can set the current date.

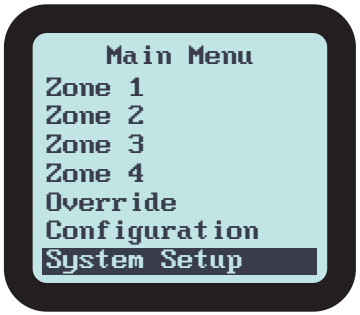
To change Configuration settings:

1. Press the Menu button and then scroll down the Configuration page, press Enter to access the Configuration page.
2. Once the Configuration page is displayed, use the Up and Down buttons to navigate to the desired setting.
3. Press Enter to highlight the desired setting.
4. Use the Up and Down buttons to adjust the line item to your desired setting.
5. Pressing Enter will accept the change.
6. After Configuration is complete, pressing the Back button will return to the Main Menu

After DLM-4 Zone Controller configuration is complete, press the "Back" button to return to main menu.

7.3 Main Menu Page

From the Main menu, all of the other pages can be selected. You will see that there are (4) separate pages for each lighting "zone" settings. There is also the "OverRide" page, (to manually bypass / force each lighting zone On or Off) and finally a "System Setup" page to access the firmware and factory reset.



***NOTE:** Each zone has separate settings, but the steps required to make changes to the settings are the same for each zone.

7.4 Zone Setting Page(s)

Each of the 4 zones within the DLM-4 Zone Controller has a separate page for that zone's particular settings. The settings are described below.

Wattage: Select the wattage of ballast that will be connected to this zone. (Each zone can only have one type of ballast connected) Choose between 1000, 600 and 315 watts.

Output Max: Select the wattage that you would like to operate the fixtures in increments of 25 watts. The user can select any setting between 600 watts and 1150 watts for the 1000 watt fixture. For the 600/750 fixture any setting between 400 watts and 825watts can be selected. (The 315 watt fixture is pre-set at 315 watts) Each zone can operate the fixtures connected to it at different power settings. When the lights are running normally (without dimming) this setting determines the wattage each zone will operate at.

***NOTE:** The DLI 315 watt fixtures **CANNOT** be dimmed.

On at: This is the time of day that the lights for that zone will be turned ON.

Off at: This is the time of day that the lights for that zone will be turned OFF.

Dim at: The user can select the temperature that they want the lights within each zone to dim. Dimming the lights will reduce the heat-load within the growing area and lower the temperature within the growing area. The DLM-4 Zone Controller provides a gradual dimming from full power, down to approximately 60% power as the temperature rises above the user's "Dim At" setpoint. (Dimming occurs over a 5'F differential from the Dim At setpoint)

***NOTE:** The 315 watt ballast cannot be dimmed. The 315 watt lights will ignore the Dim At setting and **ONLY** use the Stop At setting. .

Stop at: The user can select the "maximum" temperature that the growing area can get to before shutting down the lighting zones. This setting should normally be set at least 5'F up to 10 degrees F above the "Dim at" setting. If the temperature continues to rise in the growing area, the lights connected to each zone can be shut off to eliminate overheating of the growing area.

Sun R/S time: The DLM-4 Zone Controller can simulate Sunrise and Sunset. By slowly raising and lowering the lighting level (brightness) Sunrise and Sunset can be simulated. The user can select whether they want to use this feature or not by setting the Sun R/S time.

The user can select up to 30 minutes in 5-minute increments for the Sunrise / Sunset feature. When the lights are turned on by the timeclock, the lights will gradually brighten to simulate morning, and when the lights are scheduled to turn off, they will dim to simulate the setting Sun.

***NOTE:** Using this function will **NOT** add additional Lights ON time to the light cycle.

SENSOR "ASSIGN": Each of the temperature sensors can be assigned to separate control zones, or to multiple zones. Some users may want to assign each sensor to separate zones, others will want to use a single sensor to control multiple zones. Having the ability to assign the temperature sensors to each zone allows much greater flexibility. The user can select which temperature sensor will be assigned to each zone within this setting.

***NOTE:** It is recommended that each zone has a separate temperature sensor for best / most accurate temperature measurements in large areas.

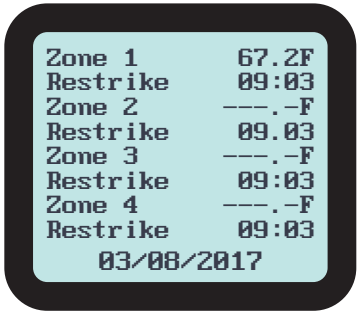
The Zone setup allows the user to select how to display the ballast watts of power as well as to "assign" a specific temperature sensor to each zone. Below shows another example of how the Zone page might look.

The user will set each individual zone up within the Zone pages. Once all of the Zones are set-up, the unit is ready for operation.

7.5 Zone Status Page

Once the DLM-4 Zone Controller has been installed and all settings have been entered, the DLM-4 Zone Controller will constantly monitor the air temperatures, ballast status and current Day or Night status within each of the lighting zones.

The measured temperatures are displayed on the Zone status menu which also displays the current status of the DLM-4 Zone Controller controlled zones.



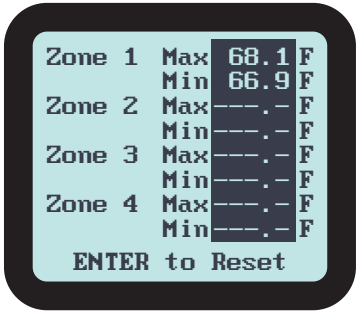
The Zone Status menu will be displayed unless there is an event / error that occurred. If an event is being displayed, pressing Enter will acknowledge the event / error, and reset the event log.

Pressing the Menu button from the Zone Status menu will access the Main menu.

***NOTE:** When one temperature sensor is assigned to more than one zone, that temperature sensor will display it's information within ALL zones that it is assigned to.

7.6 Temperature Min-Max Page

Pressing the Find button on the DLM-4 Zone Controller will access some important functions. The first page that will be displayed is the Temperature Minimum-Maximum page.
Each of the temperature sensors installed will constantly measure the temperature and record the maximum (high) and minimum (low) temperatures.
These recorded temperatures can be used to confirm that the cooling / heating systems inside the growing area are working properly.
The Min-Max recorded values will also verify that the growing area was not subjected to damaging high temperatures above the DLM-4 Zone Controllers dimming setpoints.
Once the recorded values have been viewed, the user can easily reset the values (each day) by pressing the Enter button. Pressing Enter will rest the recorder values and begin to store new values that can be viewed the next "day".



7.7 Manual OverRide (Force) page

Occasionally the user may want to manually turn each lighting Zone On or Off manually. Each of the 4 zones within the DLM-4 ZONE controller can be manually activated (turned ON or OFF) by accessing the Manual over-ride page. When a zone is manually "forced" on or off, the force will remain in effect until the next scheduled on or off cycle for that zone. (Force is automatically reset once next timed event occurs)

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7.8 To Manually Override / Force a Zone:

1. When the OverRide menu is displayed, use the Up and Down buttons to move the cursor to the Zone # that you want to force On (or Off).
2. Press Enter to access the Zone setting.
3. Use the Up or Down button to change the "×" to a "√"
4. Pressing Enter will force the Zone On (or Off)

***NOTE:** To disable / cancel the OverRide / force function, simply change the "√" back to an "×"

OVERRIDE / FORCE PAGE

The Zone countdown shows the current output status and at the time remaining before changing the ON/OFF status.

7.9 Factory Reset

The unit comes from the factory pre-programmed with common settings. The unit can be returned to it's original factory default setpoints at any time. Access the Configuration menu and open the Factory Reset menu item, pressing Enter a second time will reset the unit to factory settings.

NOTE:** **ALL CURRENT USERS SETTINGS, TEMPERATURE AND EVENT LOG DATA WILL BE LOST.

To reset the setting to factory presetting, select the "System Setup" page in the Main menu and then select "Factory Reset"

FACTORY RESET PAGE

Pressing Enter will bring you the Factory Reset confirmation page, you will be asked to confirm the Factory Reset (press Enter) or to press the Back button to cancel the reset and return to the previous page.

7.9 Factory Reset Continued...

Pressing "Enter", will reset the DLM-4 Zone Controller to the factory settings and automatically return to "System Setup" menu page.

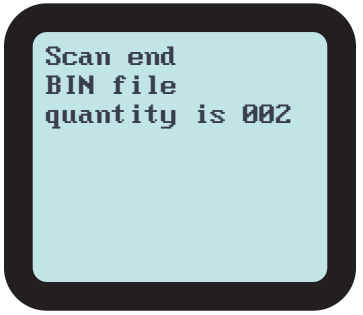
7.10 Firmware Update Page

Occasionally the DLM-4 Zone Controller may release updated firmware / software for the DLM-4 Zone Controller. The new firmware may update older versions firmware, or add new functions to the DLM-4 Zone Controller. To update the firmware:

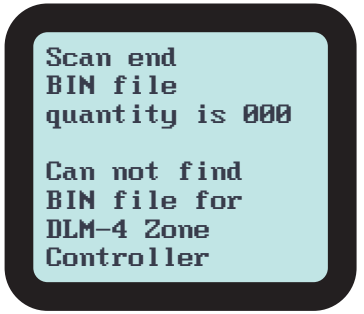
1. First visit **www.dutchlightinginnovations.com** to find out what the most recent version of the firmware is available for download.
2. On the DLM-4 Zone Controller unit, select the System Setup page.
3. The current firmware version will be shown at the bottom of the display. If the firmware needs to be updated, follow the prompts on the computer to download a copy of the newest firmware onto a MicroSD card.
4. Insert the MicroSD card into the slot on the bottom of the DLM-4 Zone Controller unit.
5. Access the Firmware Update menu by going back to the System Setup menu and scrolling down to Firmware Update.
6. Press the Enter button to enter the firmware update menu.

7. Press Enter to scan the SD card files.

7.10 Firmware Update Page Continued...

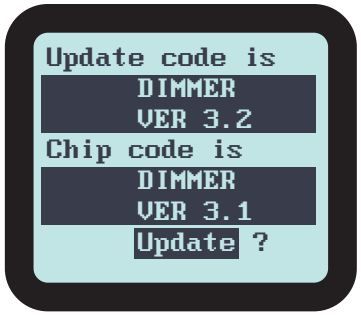


***NOTE:** If the scan does not find any firmware (BIN files), the display will show the following message.



***NOTE:** If the scan does not detect the MicroSD card, the display will read:

8 If the scan is successful, the available firmware file(s) will be displayed. Move the cursor to the newest version of the firmware to be installed.



9 Select the file to be updated.
10 Press the Enter button.
11 Verify the displayed firmware file update is correct on the display.
12 Press the Enter button to update the firmware.
13 When the update is completed, the unit will reset, and return to the Zone status menu.

***NOTE:** The user data will **NOT** be over-written when the firmware is updated.

7.11 Messages / Data Log

MESSAGES / DATA LOG MENU

If there is a dimming event, or a power failure event, a message including details including time and date of the event, temperature recorded, and a description of the event will be created by the DLM-4 Zone Controller and stored within memory to be viewed later. The controller can record and store a total of 10 events.

The messages are accessed by pressing the Find button to display the stored messages, and then pressing the Enter button in order to clear / reset the message log.

7.12 Power Monitoring

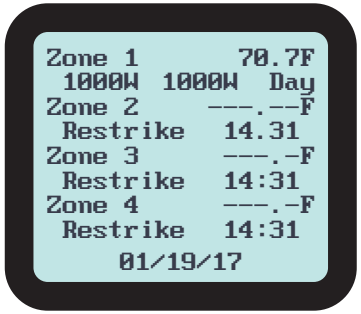
The DLM-4 Zone Controller is constantly monitoring the power going to the DLM-4 Zone Controller. When power is re-applied to the DLM-4 Zone Controller, the unit will start up and display the Power Failure error. The unit will show the time that the power turned off, and the time the power turned back on.

***NOTE:** To return to the Zone status menu, press the ENTER button.

7.13 Hot-start Prevention

If power is interrupted to the DLM-4, the unit will restart the lights after a 15 minute time delay to allow the lamps to cool before re-starting. Each successive zone re-start will be preceded by a 5 second delay in order to reduce electrical startup surges / loads. During the 15-minute delay, the DLM-4 will show the time remaining until the lights will be re-started, (turned On).

***NOTE:** In order to minimize start-up load or high power "spikes", after a power outage each one of the 4-zones will be re-started sequentially. After the first zone re-starts, a 5-second "cascading timer" delay will begin for each of the remaining 3-zones to turn back on 1 at a time.



***NOTE:** While the time delay is counting down, the Zone status menu will display the time remaining, before the lights are allowed to re-strike.

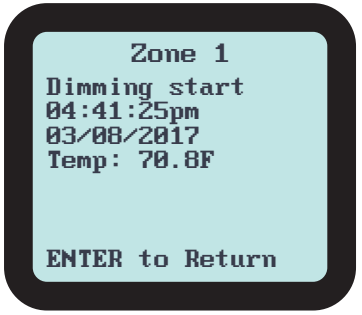
7.14 Dimming and High-temperature Shut Down

The DLM-4 Zone Controller has the ability to monitor the temperature of 4-separate zones. The user can select their desired dimming and high-temp shut down (Stop At) settings within the zone settings.

Dim at setting: If the temperature of any of the zones being monitored rises too high, the lights connected (assigned) to that zone will be dimmed to reduce the temperature inside the growing area.

Stop at setting: If the temperature continues to rise, and the "Stop At" temperature setting is reached, the lights within that zone will be turned off.

***NOTE:** The zones will return to normal operation automatically once the temperature is reduces by 2˚C / 3.6˚F below the dimming and the Stop At setting. (The dimming or high-temp shutdown event will be stored in memory within the error log menu.



***NOTE:** To return to the Zone status menu, press the Enter button.

8. General Information
8.1 Warranty

WARRANTY

Dutch Lighting Innovation only uses high quality components. Under normal operating conditions, the mechanical and electronic components are covered by a three-year warranty from the original date of purchase. For service return the DLM-4 Zone Controller in the original packaging to your shop with the original sales receipt. Components that are excluded from warranty are components that have failed due to abnormal usage.
In the case of defects of the DLM-4 Zone Controller, the Controller will either be replaced or repaired using new or reconditioned products or parts. If the Controller will be replaced 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.

RETURNS

All returns need to be done in the original packaging in order to avoid damages of the product during transport. Defective products need to be returned to factory or service shop for repaiir. Non-professionals Do not open the cabinet to prevent electric shock or damage to the equipment

RETOURS

Pour tout retour, le produit doit être replacé dans son emballage d'origine afin d'éviter qu'il soit endommagé pendant le transport. Les produits défectueux doivent être renvoyés à l'usine ou à l'atelier d'entretien pour réparation. Avis aux non professionnels : n'ouvrez pas l'armoire afin d'éviter tout risque de choc électrique ou de dommages matériels.

8.2 Register your Controller for the Latest Software Updates

Dutch Lighting Innovations will occasionally release updated firmware for the DLM-4 Zone Controller.

By registering your DLM-4 Zone Controller on our website **www.dutchlightinginnovations.com** we can notify you when an update is available.

We will not sell, rent or share your personal information.

9. Troubleshooting

Some of the most common issues or problems can be found within this section. Before returning the unit for service, please consult the troubleshooting points below, additional information can be found online at **www.dutchlightinginnovations.com**

PROBLEM	RESOLUTION
The DLM-4 Zone Controller is connected to power, but it does not seem to be working / no display	Check the low-volt power supply is plugged in properly to the DLM-4 Zone Controller.
After setting up the DLM-4 Zone Controller, the fixtures are still not being turn on or controlled.	Each ballast must be manually switched to External (DLM-4 Zone Controller) control. Verify the selector switches on the ballast are correct.
The Zone does not seem to be controlled by the temperature sensor correctly.	Within each Zone settings, you can select which temperature sensor you want to "assign" to that zone. Verify the Sensor setting is correct.
The temperature display within one or more zones does not seem to be correct, reading high.	Make sure the temperature sensor is not receiving direct HID light which would increase the temperature reading.
Power was interrupted to the unit, and now the lights will not turn on.	There is a 15-minute time delay after a power failure to prevent the lamps from hot-starts.
The dimming function does not work for my 315 watt fixtures.	The 315 watt fixtures cannot be dimmed. However, they can be turned OFF if the temperature reaches the "Off At" setpoint.

9. Troubleshooting Continued...

WARNING: DO NOT allow theDLM-4 Zone Controller to be exposed to water or excessive heat. **DO NOT** open or attempt to repair or disassemble the controller, as there are no user-serviceable parts inside. Opening the controller will void the warranty.

If the DLM-4 surface is dirty, wipe it with a dry towel.
The DLM-4 operates under natural ventilation conditions.

AVERTISSEMENT: N'exposez **PAS** le régulateur de zone DLM-4 à de l'eau ou à une chaleur excessive. **NE** l'ouvrez **PAS**, **NE** tentez **PAS** de le réparer ou de le démonter, car il ne contient aucune pièce réparable par l'utilisateur. L'ouverture du régulateur entraîne l'annulation de la garantie.

Si la surface du DLM-4 est sale, essuyez-la à l'aide d'un chiffon sec. Le DLM-4 fonctionne sous des conditions de ventilation naturelle.

SPECIFICATIONS:

Voltage / power supply **Tension / Alimentation électrique**	12vdc @ 200ma 12 V CC 200 mA
Certifications **Certifications**	ETL / FCC ETL / FCC
Degree of ingress protection **Indice de protection**	IP20 IP20
Dimensions	145mmx75mmx50mm
LCD Display	Backlit, 9 lines x 16 characters
Number of lighting zones	FOUR separate zones each with separate temperature sensors
Maximum number of HID fixtures	256 per zone x 4 zones = 1024 HIDs
Maximum distance to HIDs	1000 meters each zone
Temperature sensor	(1) Standard *Additional sensors can be added up to (4) total
Temperature sensor cable length	* Not limited = can be placed anywhere inside growing area
Temperature sensor accuracy	+/- 1 degree F
Environmental considerations	Use between 0-45'C, up to 80% rH non-condensing
External communications	Micro SD card (not included)
External communications	Non-volatile, retained
Timeclock	Battery backup >7 years CR

Dutch Lighting Innovations
DLM-4 ZONE
Controller

ENVIRONMENTAL AND DISPOSAL CONCERNS:

THIS PRODUCT CONTAINS A BATTERY AND OTHER COMPONENTS WHICH MUST BE DISPOSED OF PROPERLY.

This symbol displayed on a product, its accessories, or its 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. By disposing of the equipment in the proper and lawful way you will be helping to prevent possible damage to the environment and risk to public health.

Dutch Lighting™ Innovations

www.dutchlightinginnovations.com